United States Army Corps of Engineers
New England District

Final
2021 Annual Operations, Maintenance, and Monitoring Report

Area of Contamination 50

Former Fort Devens Army Installation

Devens, Massachusetts

Contract No. W912WJ-19-D-0014

Contract Delivery Order No. W912WJ-20-F-0022

August 2022

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CERTIFICATION

I hereby certify that the enclosed Report, shown and marked in this submittal, is that proposed to be incorporated with Contract Number W912WJ-19-D-0014. This document was prepared in accordance with the United States Army Corps of Engineers (USACE) Scope of Work and is hereby submitted for Government approval.

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NOTICE

The United States Department of Defense, Department of Army, funded wholly or in part the preparation of this document and work described herein under Contract No. W912WJ-22-F-0022. Mention of trade names or commercial products does not constitute endorsement or recommendation for use.

Contents

Tables

Figures

Appendices

Acronyms and Abbreviations

µg/L	microgram per liter
ABC®	Anoxic BioChem®
ABC® Ole’	Anoxic BioChem® plus oleic acid
ABC® Ole’+	Anoxic BioChem® plus oleic acid plus zero valent iron
AFCEE	Air Force Center for Environmental Excellence
AOC	area of contamination
Arcadis	Arcadis U.S., Inc.
Army	United States Army
BCT	Base Realignment and Closure Cleanup Team
bgs	below ground surface
BRAC	Base Realignment and Closure
CCV	continuing calibration verification
cis-1,2-DCE	cis-1,2-dichloroethene
CL	cleanup level
COC	contaminant of concern
CVOC	chlorinated volatile organic compound
DO	dissolved oxygen
DoD	Department of Defense
DOE	Department of Energy
DPT	direct-push technology
DRFTA	Devens Reserve Forces Training Area
ERD	enhanced reductive dechlorination
ESTCP	Environmental Security Technology Certification Program
Fort Devens	Fort Devens Army Installation
ICV	initial calibration verification
IWS	in-well stripping
KGS	KOMAN Government Solutions, LLC
LTM	long-term monitoring
LTMMP	Long-Term Monitoring and Maintenance Plan
LUC	land-use control

MAAF	Moore Army Airfield
MassDevelopment	Massachusetts Development and Finance Agency
mg/L	milligram per liter
MiHPT	membrane interface probe-hydraulic profiling tool
MS	matrix spike
MSD	matrix spike duplicate
mV	millivolt
NAVFAC	Naval Facilities Engineering Service Center
O&M	operation and maintenance
ORP	oxidation-reduction potential
PCE	tetrachloroethene
QAPP	Quality Assurance Project Plan
Quality Systems Manual	Department of Defense and Department of Energy Consolidated Quality Systems Manual for Environmental Laboratories, Version 5.3
RAWP	Remedial Action Work Plan
ROD	Record of Decision
S-A JV	SERES-Arcadis 8(a) Joint Venture 2, LLC
site	Area of Contamination 50
Sovereign	Sovereign Consulting Inc.
SU	standard unit
SVE	soil vapor extraction
TCE	trichloroethene
TOC	total organic carbon
USEPA	United States Environmental Protection Agency
USFWS	United States Fish & Wildlife Service
VC	vinyl chloride
VOC	volatile organic compound

1 Introduction

SERES-Arcadis 8(a) Joint Venture 2, LLC (hereafter referred to as the S-A JV) prepared this 2021 Annual Operations, Maintenance, and Monitoring Report for the United States Army Corps of Engineers – New England District under Contract Number W912WJ-19-D-0014. This report details the operation and performance of ongoing remediation activities and groundwater monitoring results at Area of Contamination (AOC) 50 (the site) at the former Fort Devens Army Installation (Fort Devens) located in Devens, Massachusetts. Field activities were performed in accordance with the Long-Term Monitoring and Maintenance Plan (LTMMP) for AOC 50 (KOMAN Government Solutions, LLC [KGS] 2017) and the Quality Assurance Project Plan (QAPP) for the Annual Long-Term Monitoring and Maintenance Program (S-A JV 2020b). The purpose of this report is to document the operation and maintenance (O&M) activities conducted at the site and to summarize the results of long-term monitoring (LTM) of groundwater conducted by the S-A JV in 2021.

1.1 Site Description and History

The site is located on the northeastern boundary of the former Moore Army Airfield (MAAF), within the former North Post of the former Fort Devens, in the town of Ayer, Massachusetts (Figure 1). Fort Devens was identified for cessation of operations and closure under Public Law 101-510, the Defense Base Realignment and Closure (BRAC) Act of 1990 and was officially closed in March 1996. A portion of the property formerly occupied by Fort Devens was retained by the United States Army (Army) for reserve forces training and was renamed as the Devens Reserve Forces Training Area (DRFTA). Areas not retained as part of the DRFTA were transferred to new owners (the Massachusetts Development and Finance Agency [MassDevelopment] and the United States Fish & Wildlife Service [USFWS]) for reuse and redevelopment. In 2009, the DRFTA was renamed the United States Army Garrison Fort Devens.

All but approximately 13.4 acres of the former MAAF (approximately 246 acres total) were transferred to MassDevelopment for reuse in 1997; the Devens Army Installation retained approximately 9.1 acres of the former airfield for vehicle storage and maintenance and approximately 4.3 acres for remediation activities Currently, the airfield is closed to aircraft traffic and is used by the Massachusetts State Police for training purposes and vehicle storage. The former MAAF is zoned for Special Use II and Innovation and Technology Business by MassDevelopment. Under the Devens Reuse Plan (Vanasse Hangen Brustlin, Inc. 1994), Special Use II and Innovation and Technology Business includes a broad range of industrial, light industrial, office, and research and development use. MassDevelopment is considering repairs and upgrades for the Massachusetts State Police's use of the airfield, but the plans are still under development..

Sources of groundwater contamination at the site include two World War II fueling systems, a drywell formerly connected to the parachute shakeout tower, and the former tetrachloroethene (PCE) drum storage area; these sources are collectively referred to as the source area (Area 1). The source area comprises less than 2 acres and surrounds Building 3803 (the former parachute shop), Building 3840 (the former parachute shakeout tower), Building 3824 (a gazebo), and Building 3801 (the former 10th Special Forces airplane parachute simulation building). The primary area of groundwater contamination at the site is a chlorinated volatile organic compound (CVOC) plume that formerly extended from the source area approximately 3,000 feet downgradient towards the Nashua River. Although the sources of contamination have been removed or taken out of commission, groundwater underlying the site contains residual concentrations of CVOCs, including PCE, trichloroethene

(TCE), cis-1,2-dichloroethene (cis-1,2-DCE) and vinyl chloride (VC). The site layout with existing monitoring wells is shown on Figures 2 and 3.

The Record of Decision (ROD) for AOC 50 (United States Environmental Protection Agency [USEPA] 2004) identified the groundwater contaminants of concern (COCs) and their interim cleanup levels (CLs), as shown in Table 1, below.

Table 1 AOC 50 Interim Cleanup Levels

Chemical	CL (µg/L)	Chemical	CL (µg/L)
Arsenic	10	Lead	15
Benzene	5	Manganese	1,460
1,2-dichloroethane	5	Methylene chloride	5
1,1-dichloroethene	7	Nitrate	10,000
cis-1,2-DCE	70	PCE	5
1,2-dichloropropane	5	TCE	5
Iron	3,129	VC	2

Note:
µg/L = microgram per liter

Some of the contaminants were designated as COCs because they were present at concentrations above the applicable USEPA maximum contaminant level or state groundwater quality standard (i.e., cis-1,2-DCE, iron, methylene chloride, and 1,2-dichloropropane). Benzene was designated as a COC due to past releases, cis-1,2-DCE and nitrate were identified as COCs due to their contribution to risk, and lead was identified as a COC due to its potential to pose ecological risks. In 2006, lead analysis was required as part of the Long-Term Monitoring Plan (Arcadis Geraghty & Miller, Inc. 2006); however, as of 2008, lead monitoring is no longer a requirement (Arcadis 2008). Arsenic was designated as a COC because it may be solubilized (mobilized) by the selected remediation technology, even though it was not predicted to pose significant risks under baseline (i.e., oxic) conditions.

1.2 Site Hydrogeology

An unconfined groundwater aquifer is present within the overburden deposits at the site. Restrictions to vertical groundwater flow, such as silty clay layers, were noted to be present, but not prevalent or continuous, in soil borings drilled in the area during the remedial investigations.

Depth-to-groundwater measurements have been collected from a network of monitoring wells and sampling points routinely since 1997. In 2021, the average depth to groundwater ranged from approximately 12 feet below ground surface (bgs) in the upgradient (northern) portion of Area 1 to approximately 61 feet bgs in Area 5. Hydraulic conductivities at the site range from 1 to more than 50 feet per day, with seepage velocities ranging from 0.024 to 1.19 feet per day (USEPA 2004). As shown on Figure 4 and Figure 5, groundwater recharges near the source area, travels below the MAAF, and discharges to the Nashua River.

1.3 Summary of Historical Groundwater Remediation

The selected remedy for the site, as documented in the ROD (USEPA 2004), was Alternative 6: Soil Vapor Extraction (SVE), Enhanced Reductive Dechlorination (ERD; with solubilized inorganic controls), In-Well Stripping (IWS)/Oxic Bioremediation, Monitoring, and Institutional Controls. In addition, geochemical additives and in-situ chemical oxidation were included as contingencies to address inorganic compounds and CVOCs, respectively, if monitoring data indicate that implementation of these contingencies is warranted.

Portions of the CVOC plume are referred to as Areas 1 through 5 (Figure 2 and Figure 3). These area designations are based on the locations of the initial five ERD injection well transects, beginning with Area 1 in the source area and ending with Area 5 to the southwest, upgradient of the Nashua River, with Areas 2 through 4 spanning the MAAF.

The SVE system was operated from September 2004 until November 2005, when operational monitoring indicated that the recoverable mass of CVOCs had been removed from the vadose zone (KGS 2020). The IWS system was operated from September 2004 until March 2013. The IWS system was shut down once it was clear that it was not needed to treat dissolved arsenic or to “polish” the CVOC plume (Sovereign Consulting Inc. [Sovereign] 2013). In 2017, an assessment of the IWS system was performed and revealed corrosion of pumps and blowers. While the IWS system is not needed at this time, it is likely the central processing unit along with various pumps, blowers, and other system components would need to be replaced if it needed to be reactivated in the future. At the Base Realignment and Closure Cleanup Team (BCT) meeting on January 18, 2018, the Army and USEPA agreed that the system could be repaired in the future if needed.

The first ERD injection event was conducted in October 2004, using molasses as the ERD substrate. HydroGeoLogic, Inc. revised the ERD injection program in November 2008 by changing the substrate from molasses to Anoxic BioChem® (ABC®). Semi-annual injections of ABC® continued through 2014. In 2015, the substrate injection strategy was optimized based on review of the historical data and 2013 and 2014 source area investigation results (Sovereign 2015). The July 2015 injection event used ABC® and modified substrates ABC® plus oleic acid (ABC® Ole’) and ABC® Ole’ plus zero valent iron (ABC® Ole’+). ABC® was injected into existing injection wells in Areas 4 and 5; ABC® Ole’ was injected into existing injection wells in Areas 1, 2, and 3; and ABC® Ole’+ was injected using direct push-technology (DPT) via Geoprobe® into targeted locations in Area 1. Additional injection events in July 2017, August to September 2018, and July to August 2019 also used ABC® Ole’ and ABC® Ole’+, which were injected throughout the CVOC plume using injection wells and DPT injection points, respectively. The details of these injection events are presented in the 2017, 2018, and 2019 Annual O&M and Monitoring Reports (KGS 2018, 2019, 2020).

When the ROD was filed for the site in 2004 (USEPA 2004), it was estimated that ERD injections would be phased out after approximately 10 to 15 years. While some CL exceedances of PCE remain, the following has been observed as a result of performing ERD at the site since 2004:

- The total area of exceedances of the CL for PCE has decreased in size (estimated 15.5 acres in 2004 [Figure 6] to approximately 1 acre in 2021 [Figure 7])
- The maximum observed PCE concentration has decreased by three orders-of-magnitude (14,000 µg/L in 2004 to 21 µg/L in fall 2021).
- The number of wells exceeding the CL has decreased (35 out of 41 wells in 2004 [85%]; 4 out of 38 wells in 2021 [11%]).

2 Long-Term Monitoring Event Methodology

The LTM program at the site was conducted by the S-A JV in spring 2021 (May and June) and fall 2021 (October through November) in accordance with the most recent update of the LTMMP (KGS 2017).

2.1 Water Level Measurements

Before conducting groundwater sampling, static water level measurements were collected from site wells using an electronic water level meter. Water level measurements were collected from a total of 53 wells during both the spring and fall 2021 monitoring events and were recorded within one field day to the extent possible. Before gauging, the monitoring wells were allowed to equilibrate to atmospheric pressure. Water level elevations were calculated by subtracting depth-to-water measurements from the surveyed top-of-casing elevations and used to prepare potentiometric surface maps.

2.2 Groundwater Sampling and Analysis

Groundwater sampling was performed in accordance with the QAPP (S-A JV 2020b) and low-flow procedures documented in Low Stress (low flow) Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells (USEPA 2017). Groundwater samples from each well sampled were analyzed for VOCs. In addition, a subset of wells were sampled for geochemical analytes, including total organic carbon (TOC), dissolved gases (methane, ethane, and ethene), alkalinity, nitrate, sulfide, sulfate, and dissolved metals (manganese, iron, and arsenic). Dissolved metals samples were field-filtered using 0.45-micron filters before being containerized for laboratory analysis. The frequency, sampling locations, and analytical parameters for LTM sampling conducted in 2021 are summarized in Table 2. Information on the analytical methods, sample containers, preservatives, and holding times for the parameters sampled are presented in Table 3. Completed groundwater low-flow sampling forms and equipment calibration records for the 2021 groundwater monitoring events are presented in Appendix A.

2.3 Decontamination Procedures and Waste Management

In accordance with the QAPP (S-A JV 2020b), all non-disposable sampling and field equipment (such as bladder pumps and water level meters) were decontaminated between wells by using a non-phosphate detergent solution (Alconox) and rinsing with distilled water. Dedicated bladders were used at each location.

Investigation-derived waste generated during groundwater sampling activities consisted of purge water from wells, equipment decontamination water, and disposable supplies such as nitrile gloves and paper towels. Purge water and equipment decontamination water were discharged back to the ground at the site of generation after sampling was completed, in accordance with the LTMMP (KGS 2017). Used disposable supplies were bagged and disposed of as general solid waste.

3 Groundwater Monitoring Results

Sampling and analysis of chemical and geochemical parameters in groundwater was performed in accordance with the LTMMP (KGS 2017). Monitoring well inspection, water level elevation, and groundwater analytical results for the spring 2021 (May and June) and fall 2021 (October through November) monitoring events are discussed in the following subsections.

3.1 Monitoring Well Inspection and Maintenance

Before sampling, the following procedures were used to inspect the LTM wells at the site:

- The monitoring well location was identified, and the well identification number was confirmed.
- The wellhead was inspected for signs of damage and any damage was noted.
- The monitoring well gripper seal was removed, and the wellhead was allowed to vent.
- Water levels and total well depth readings (soundings) were collected and compared to historical measurements.

Several wells had missing protective casing locks or missing bolts, which were replaced before completing the monitoring events. Following the completion of the spring 2021 monitoring event, the United States Army Corps of Engineers and S-A JV were notified by the Massachusetts State Police that two historical injection wells (IW-33 and IW-35 in Area 2) were in need of repairs. On August 20, 2021, new flush-mount roadboxes and concrete pads were installed at each location by Drilex Environmental of Auburn, Massachusetts.

3.2 Groundwater Level Measurements

A summary of the groundwater level measurements and the corresponding groundwater elevation data are presented in Tables 4 and 5 for the spring and fall 2021 monitoring events, respectively. Groundwater elevation contours for spring and fall 2021 are presented on Figures 4 and Figure 5, respectively.

Consistent with previous monitoring events, the observed groundwater flow direction was toward the Nashua River, from northeast to southwest. In general, groundwater elevations were higher in the fall compared to the spring. The groundwater hydraulic gradient between Area 1 well G6M 07-02X and downgradient well XSA-12-96X (southwest edge of the CVOC plume) was calculated to be 0.0028 foot per foot in spring 2021 and 0.0046 foot per foot in fall 2021. In general, the horizontal hydraulic gradient is steeper between Area 1 and Area 3, and the hydraulic gradient decreases downgradient of Area 3. Hydraulic conductivities at AOC 50 range from 1 to over 50 feet per day, with seepage velocities ranging from 0.024 to 1.9 ft/day (USEPA 2004).

3.3 Groundwater Chemistry

The spring and fall 2021 monitoring events consisted of sampling 14 wells and 38 wells, respectively, compared to 13 wells and 48 wells in spring and fall 2020:

- One additional monitoring well G6M-04-09X was added to the spring 2021 monitoring event to assess a rebound of CVOC concentrations observed in 2020 samples (S-A JV 2021b).
- A total of 10 monitoring wells sampled in fall 2020 were not sampled in fall 2021:

- Seven monitoring wells are sampled on a biennial basis and are not due for sampling until fall 2022, in accordance with the LTMMP (KGS 2017).
- Two wells (G6M-18-01 and G6M-18-02) were removed from the sampling program. As described in the 2019 Annual Report, sampling of these wells was only required until 2020 (KGS 2020).
- One former injection well location sampled in fall 2020 (G6M-06-01X) selected for one-time monitoring.

The frequency, sampling locations, and analytical parameters for LTM sampling conducted in 2021 are summarized in Table 2. The spring and fall 2021 LTM analytical results and field parameters are presented in Tables 6 and 7, respectively. The laboratory analytical reports for the 2021 monitoring events are included as Appendix B. The data validation reports for the 2021 data are presented in Appendix C. Historical analytical results and groundwater field parameters, including the 2021 sampling results, are presented in Appendix D.

3.3.1 Field Parameters

Field parameter measurements collected during the fall 2021 monitoring event are summarized below. Results of the fall 2021 monitoring event are discussed because more wells were sampled during fall (38 wells) than spring (14 wells), and the spring 2021 field parameters were generally consistent with conditions in fall 2021.

- pH levels in groundwater were within the acceptable pH range for bioremediation (pH of 6 to 8 standard units [SU]) (Interstate Technology and Regulatory Council 2008) in all but five locations (Table 7): wells G6M-04-10X (5.26 SU) and G6M-95-19X (5.44 SU) in Area 1, well G6M-04-02X (5.33 SU) in Area 3, well XSA-12-98X (8.20 SU) in Area 5, and well G6M-04-14X (8.02 SU) to the west of the Nashua River.
- Dissolved oxygen (DO) concentrations less than 1 milligram per liter (mg/L) indicate anoxic conditions, while negative oxidation-reduction potential (ORP) values indicate generally reducing conditions. In general, anoxic and/or reducing conditions were observed within and downgradient of the in-situ reactive zones due to organic carbon addition, allowing for ERD of CVOCs. Oxic or moderately anoxic/reducing conditions are present outside of areas affected by ERD treatment.
  - In Area 1, anoxic conditions (i.e., DO less than 1 mg/L) were observed at seven of the 11 wells sampled, with DO ranging from 0.54 to 0.76 mg/L in those seven wells. Negative ORP was recorded at eight of the 11 wells sampled, with ORP ranging from -169.9 to -53.4 millivolts (mV) in these eight wells.
  - In Area 2, anoxic/reducing conditions were observed at three of the four wells sampled, with DO ranging from 0.51 to 0.70 mg/L and ORP ranging from -128 to -79.2 mV in these wells.
  - In Area 3, anoxic/reducing conditions were observed in all three wells sampled, with DO ranging from 0.01 to 0.55 mg/L and ORP ranging from -105 to -55.5 mV.
  - In Area 4, anoxic conditions were observed in three of the four wells sampled, with DO ranging from 0.60 to 0.68 mg/L in these three wells. Negative ORP was recorded at each of the four wells sampled, ranging from -143 to -11.9 mV.
  - In Area 5, anoxic conditions were observed in 11 of the 15 wells sampled, with DO ranging from 0.01 to 0.90 mg/L at these 11 wells. Negative ORP was recorded at 12 of the 15 wells sampled, ranging from
    -147 to -38.6 mV in these 12 wells.

- Adjacent to the Nashua River, anoxic conditions were observed in the one monitoring well sampled (G6M-04-14X), with a DO value of 0.33 mg/L and an ORP value of -70.8 mV.

3.3.2 Volatile Organic Compounds

Groundwater samples were collected from 14 wells during the spring 2021 monitoring event and 37 wells during the fall 2021 monitoring event for VOC analysis (one monitoring well [G6M-97-28X] was analyzed for dissolved metals only). PCE, TCE, cis-1,2-DCE, and VC were the only VOCs detected above the established AOC 50 CLs during the fall 2021 monitoring event. Concentrations of these CVOCs in spring and fall 2021 are shown in Tables 6 and 7, respectively. Historical concentration trends at select monitoring wells are provided in Appendix E. PCE results from the fall 2021 monitoring event and the associated PCE plume are shown on Figure 7, and a cross-section map is provided as Figure 8. VOC results from the spring and fall 2021 monitoring events are discussed in the following subsections; fall monitoring event results are described in more detail than spring results because more wells were sampled in fall (37 wells) than spring (14 wells).

3.3.2.1 Spring 2021

Results of spring 2021 sampling indicate that the 2019 injections continue to have the intended impact on CVOC concentrations at the targeted wells. Historically, locations where PCE was greater than 100 µg/L had been targeted for ERD treatment. As shown in Table 6, spring 2021 CVOC results indicate that treatment continued to occur throughout the extent of the CVOC plume following the 2019 injections, and all PCE detections were below the historical target level of 100 µg/L. Additional information was included in the Area of Contamination 50, Spring 2021 Performance Evaluation and Recommendations Memorandum (S-A JV 2021a).

3.3.2.2 Fall 2021

Similar to spring 2021, the fall 2021 groundwater quality monitoring results indicate that the 2019 injections continue to have the intended impact on CVOC concentrations at the targeted wells. Analytical results are included in Table 7 and on Figure 9 (Area 1), Figure 10 (Areas 2, 3, and 4), and Figure 11 (Area 5). Figure 7 includes the results for PCE and depicts the associated area where PCE exceeds the CL. Area-specific summaries of locations that exceeded the CL for PCE, TCE, cis-1,2-DCE, and VC in fall 2021 are included in Table 8, below.

Table 8 Area-Specific Summary of Cleanup Level Exceedances

Area	Number of Locations Sampled for VOCs	Number of Locations Exceeding the CL for PCE, TCE, cis-1,2-DCE, and/or VC	Wells that Exceeded the Interim CL
1	11	1	G6M-13-05X: PCE and VC
2	4	1	G6M-07-01X: PCE
3	3	1	G6M-04-02X: cis-1,2-DCE, PCE, TCE, VC
4	3	1	G6M-13-02X: PCE, TCE, VC

Area	Number of Locations Sampled for VOCs	Number of Locations Exceeding the CL for PCE, TCE, cis-1,2-DCE, and/or VC	Wells that Exceeded the Interim CL
5	15	4	G6M-04-07X: cis-1,2-DCE, TCE, VC G6M-97-05B: VC XSA-12-96X: TCE, VC XSA-12-97X: VC
Nashua River	1	0	None

A summary of results for each CVOC is provided below. In accordance with the LTMMP (KGS 2017).

- PCE was detected above the CL of 5 µg/L at four of the 37 sampled locations (compared to 10 of 48 sampled locations in the fall 2020 monitoring event), with a maximum detection of 21 µg/L at well G6M-04-02X (Area 3).
- TCE was detected above the CL of 5 µg/L at four of the 37 sampled locations (compared to four of 48 locations in the fall 2020 monitoring event), with a maximum detection of 38 µg/L at well G6M-04-07X (Area 5).
- cis-1,2-DCE was detected above the CL of 70 µg/L at two of the 37 sampled locations (compared to four of 48 locations in the fall 2020 monitoring event), with a maximum detection of 130 µg/L at well G6M-04-02X (Area 3).
- VC was detected above the CL of 2 µg/L at seven of the 37 sampled locations and one duplicate samle (compared to eight of 48 locations in the fall 2020 monitoring event), with a maximum detection of 18 µg/L at well G6M-04-02X (Area 3).

When compared to prior CVOC concentrations at the site, these results indicate significant improvements to groundwater quality as a result of ERD remediation performed to date.

3.3.2.3 Concentration Trends

Trend graphs showing PCE and associated daughter products (TCE, cis-1,2-DCE, VC, and ethene) for 12 performance monitoring wells are included as Appendix E. These wells are representative of conditions at different locations within the CVOC plume and help illustrate the effects of the ERD injection program. Long-term CVOC trends support the conclusion that the July/August 2019 ERD injections continue to be effective. PCE degradation products are detected throughout the extent of the CVOC plume, and concentrations appear to be generally decreasing or stable in most wells. CVOC trends are described below.

Area 1

- At monitoring well G6M-07-02X, located within the 2019 DPT injection area, PCE concentrations have decreased and all CVOCs are below applicable CLs (Figure 9 and Appendix E, Figure E-1).
- At monitoring well G6M-04-10A, located adjacent to the 2019 DPT injections, PCE concentrations have decreased substantially from 6,100 µg/L in spring 2006 to non-detect in fall 2021. CVOC concentrations

have fluctuated recently, with higher concentrations observed in fall 2019 and fall 2020 compared to 2018 data; however, all CVOC constituents were below CLs in spring and fall 2021 (Appendix D and Appendix E, Figure E-2).

- At monitoring well G6M-04-09X, located outside and down/cross gradient to the 2019 DPT injection area, PCE concentrations have decreased over three orders of magnitude from spring 2004 (7,400 µg/L) to fall 2021 (PCE non-detect). Similar to well G6M-04-10A, CVOC concentrations have fluctuated recently: PCE and TCE concentrations increased to 110 µg/L each in fall 2020, but have since decreased to non-detect and 3.2 µg/L, respectively, in fall 2021 (Appendix E, Figure E-3).
- CVOC concentrations at monitoring well G6M-13-05X, located outside and cross gradient to the area influenced by 2019 injections, decreased steadily from 2017 through 2020 (Appendix E, Figure E-4). PCE and TCE concentrations rebounded to 50 and 18 µg/L, respectively, in spring 2021, but decreased to 9.2 and 2.8 µg/L, respectively, in fall 2021.

Area 2

- At monitoring well G6M-02-01X, CVOC concentrations have remained below applicable CLs in 13 of 14 monitoring events completed since spring 2014, including in spring and fall 2021 (Appendix E, Figure E-5).
- At monitoring well G6M-07-01X, PCE concentrations have declined from 35 µg/L in spring 2019 to 13 µg/L in fall 2021 (Appendix E, Figure E-6). TCE has not exceeded the CL since 2009, and cis-1,2-DCE and VC have never exceeded applicable CLs.

Area 3

- At monitoring well G6M-04-02X, located within the 2019 DPT injection area, PCE and TCE concentrations have decreased since spring 2019 (i.e., prior to the July/August 2019 injection event), from 160 and 130 µg/L, respectively, in spring 2019 to 21 and 13 µg/L in fall 2021. Daughter products cis-1,2-DCE and, to a lesser extent, VC have been generated as a result of reductive dechlorination (Appendix E, Figure E-7).
- At monitoring well G6M-03-07X, CVOC concentrations have remained below applicable CLs in 21 of 24 monitoring events completed since fall 2009, including spring and fall 2021 (Appendix E, Figure E-8).

Area 4

- Monitoring well G6M-13-02X is located hydraulically downgradient of permanent wells used in the 2019 injections. CVOC concentrations are similar to concentrations before the injection event, though have experienced a substantial decline since monitoring began in 2014 (Appendix E, Figure E-9).

Area 5

- Monitoring well G6M-13-04X is located immediately downgradient of the 2019 injection area. Since injections, CVOC concentrations have declined and all CVOCs were below applicable CLs in 2020 and 2021 (Appendix E, Figure E-10).
- Monitoring well G6M-97-05B is located along the centerline of the CVOC plume, and the area surrounding this well was treated via DPT injections in 2019. The previously increasing PCE concentration has decreased from 180 µg/L in spring 2019 (i.e., before the 2019 injections) to non-detect in fall 2021. The TCE concentration at this location has also decreased, while VC concentrations have

increased due to reductive dechlorination. Ethene concentrations increased from non-detect in spring 2019 to 23 µg/L in fall 2021, indicating complete dechlorination is occurring near this well location (Appendix E, Figure E-11).

- PCE concentrations at downgradient well XSA-12-96X continue to follow a long-term decreasing trend. While injections are not performed adjacent to this well, the effect of treatment upgradient is apparent in the PCE concentration trend at this location, decreasing from 120 µg/L in fall 2012 to 2.1 µg/L in fall 2021 (Appendix E, Figure E-12).
- PCE concentrations at downgradient well XSA-12-97X have been below laboratory reporting limits during the last two annual sampling events. While injections are not performed adjacent to this well, the effect of treatment upgradient is apparent, with decreasing PCE concentrations and increasing cis-1,2-DCE and VC concentrations at this location (Appendix E, Figure E-13).
- PCE concentrations have also decreased at downgradient monitoring well G6M-04-07X since spring 2019 and are anticipated to continue decreasing as treated groundwater arrives. The PCE concentration at monitoring well G6M-04-07X decreased from 1,100 µg/L in December 2004 to 4.8 µg/L in fall 2021. Daughter products cis-1,2-DCE and VC have increased since fall 2015 due to reductive dechlorination (Appendix E, Figure E-14).

3.3.3 Geochemical Analytes

As shown in Table 3, groundwater samples were submitted for analysis of dissolved gases (methane, ethene, and ethane), TOC, alkalinity, nitrate, sulfide, and sulfate for select wells during the spring and fall 2021 monitoring events, in accordance with the LTMMP (KGS 2017). These general chemistry parameters were analyzed to document the geochemistry of the aquifer, which can then be used to interpret whether conditions are suitable for reductive dechlorination. The key geochemical parameters for ERD include the following:

- Methane is the result of metabolic reactions involving the reduction of alternate terminal electron acceptor carbon dioxide. Methane concentrations greater than 500 µg/L are indicative of favorable reducing conditions (Air Force Center for Environmental Excellence [AFCEE], Naval Facilities Engineering Service Center [NAVFAC], and Environmental Security Technology Certification Program [ESTCP] 2004).
- The presence of ethene/ethane indicate the microbes required for complete reductive dechlorination are active and present within site groundwater and indicate that PCE is being completely degraded.
- TOC is an indicator of natural organic carbon present at a site during baseline characterization and is an indicator of substrate distribution during performance monitoring.
- Following depletion of oxygen, alternate terminal electron acceptors are used by microorganisms, including nitrate and sulfate, which reduce to sulfide. Concentrations of these anions are generally low across the site and, therefore, will not be discussed further.

A total of 14 monitoring wells were sampled for all general chemistry parameters during the fall 2021 monitoring event (Table 7). A summary of the fall 2021 monitoring event results is provided below, and dissolved gas and TOC concentrations are shown on Figures 9 through 11.

3.3.3.1 Dissolved Gases

The presence of methane, ethene, and ethane throughout the CVOC plume at the site indicates that conditions in the aquifer support continued reductive dechlorination of CVOCs. Methane concentrations were above 500 µg/L in 12 of 14 wells and were highly elevated (defined as above 10,000 µg/L; AFCEE, NAVFAC, and ESTCP 2004) in nine monitoring wells. Methane concentrations were highest in wells within or adjacent to the 2019 injections (e.g., G6M-03-07X, G6M-97-05B, and G6M-04-10A). These elevated methane concentrations indicate conditions are sufficiently reducing to allow for continued reductive dechlorination to occur in site groundwater.

Ethene and/or ethane are present throughout site groundwater and most prevalent within, and immediately downgradient of, injection areas. The presence of ethene and ethane throughout the site indicate the microbes required for complete reductive dechlorination are active and present within site groundwater and indicate that PCE is being completely degraded.

3.3.3.2 Organic Carbon Distribution

Concentrations of TOC measured in and downgradient of former ERD injection areas indicate that carbon is available in the aquifer to continue to support reductive dechlorination of CVOCs. TOC concentrations at wells not influenced by historical ERD injections have historically been below 10 mg/L, and typically below 5 mg/L; therefore, any concentration greater than 10 mg/L is elevated above background. One well located within a 2019 injection area (G6M-07-02X in Area 1) continues to exhibit highly elevated TOC concentrations (greater than 100 mg/L). One additional well, located west of injections performed in Area 1 in 2019 (G6M-13-06X) exhibited TOC concentrations greater than 100 mg/L in fall 2021. The most recent injection adjacent to well G6M-13-06X in Area 1 was performed in July 2017.

Six other wells contained moderately elevated TOC concentrations (between 10 and 40 mg/L), including four wells located within or downgradient of a 2019 injection location (G6M-04-10A in Area 1, G6M-03-07X in Area 2, G6M-04-02X in Area 3, G6M-97-05B in Area 5) and two wells located in Area 1 to the west of where injections were last performed in 2017 and 2018 (G6M-02-08X and G6M-13-05X, respectively).

The organic carbon reagents injected in 2017, 2018, and 2019 are semi-soluble substrates designed to provide both a soluble and readily available carbon substrate (via lactate and/or alcohols) as well as a less soluble portion (vegetable oils and fatty acid esters) that more slowly release organic carbon over a period of years. Monitoring data indicate that the desired slow dissolution of TOC from the injected substrate persists and continues to promote reductive dechlorination of CVOCs in groundwater at the locations discussed above.

3.3.4 Inorganic Metals

Groundwater samples from both 2021 monitoring events were submitted for dissolved metals (arsenic, iron, and manganese) analysis (Table 3). Results for spring 2021 and fall 2021 are included in Tables 6 and 7, respectively. Of the three dissolved metals sampled, arsenic is of primary interest. As noted in Section 1.1, arsenic was designated as a COC in the ROD (USEPA 2004) because it may be solubilized (mobilized) by the selected remediation technology (ERD), even though it was not predicted to pose significant risks under baseline conditions. Under the reducing conditions present at the site, naturally occurring arsenic associated with iron and manganese oxyhydroxide minerals is typically released into solution due to reductive dissolution (USEPA 2007). For example, ferric iron present in the oxides is reduced to ferrous iron, which is more soluble. Similarly, solid manganese minerals (Mn^{4+}) are reduced to more soluble manganese (Mn^{2+}). These dissolution processes also

release arsenic associated with the minerals; and the iron, manganese, and arsenic can then be detected in dissolved metals analyses. This relationship is observed throughout site treatment areas and was an anticipated by-product of the selected remedial action.

Dissolved arsenic concentrations for the fall 2021 monitoring event are presented on Figure 12, while historical arsenic trends at select wells throughout the plume are provided in Appendix F. Arsenic concentrations in groundwater exceeded the CL of 10 µg/L at 26 of 35 wells sampled for metals in fall 2021. These wells are located within and downgradient of former injection locations, where geochemical conditions in groundwater are reducing. The maximum concentration of dissolved arsenic detected in fall 2021 was 680 µg/L at monitoring well G6M-04-01X (Area 2). In wells where conditions are primarily oxidizing and/or locations that are outside the areas where ERD has resulted in reducing geochemical conditions in the aquifer, the fall 2021 dissolved arsenic concentrations are generally non-detect or below the CL of 10 µg/L (Figure 12).

Once ERD injection events are suspended, it will take time for the aquifer to return to conditions that will allow for re-attenuation of arsenic. Conditions were generally oxic (DO above 1 mg/L and positive ORP) before injections were initiated at the site and are expected to return to those conditions gradually once injections are suspended. The dissolved arsenic and iron concentrations in site groundwater typically correlate with a greater than 100:1 ratio of iron to arsenic, indicating that both metals are being solubilized at the site. These metals re-precipitate when groundwater migrates to oxic zones and when the groundwater within the treatment zone returns to oxidizing conditions. Under these conditions, arsenic attenuation occurs as iron oxides form and precipitate and the arsenic sorbs to and co-precipitates with the particulate iron.

3.4 Quality Assurance/Quality Control

Eurofins TestAmerica Laboratories, Inc. of Savannah, Georgia, was the primary contract laboratory used for the analysis of groundwater samples for the spring and fall 2021 monitoring events. This laboratory is compliant with the United States Department of Defense (DoD) and Department of Energy (DOE) Consolidated Quality Systems Manual for Environmental Laboratories, Version 5.3 (Quality Systems Manual; DoD and DOE 2019) under the DoD National Environmental Laboratory Accreditation Program (certification #L2463, expires September 22, 2022) and holds current National Environmental Laboratory Accreditation Program accreditation for all applicable analytical methods. The JV also used Katahdin Analytical Services, located in Westbrook, Maine to analyze a subset of samples (see section 3.5); Katahdin holds DoD ELAP accrediation for all analyses.

As part of the 2021 monitoring events, quality assurance/quality control samples were collected to confirm that the data quality objectives were met for the field sampling and laboratory analysis. Field duplicate samples were collected during monitoring events to evaluate field precision at the rate of 10% (one per 10 samples). Matrix spike (MS)/matrix spike duplicate (MSD) sample pairs were also submitted at a rate of 5% (one per 20 samples) to evaluate matrix effects on analytical precision and accuracy. Trip blank samples were submitted with VOC samples to assess the potential for contamination during sampling and shipping.

Data validation was completed on all laboratory deliverables by Laboratory Data Consultants, Inc. of Carlsbad, California. The analytical results from the 2021 monitoring events were reviewed and evaluated for data acceptability in accordance with the USEPA Region 1 Environmental Data Review Program Guidance (USEPA 2018), the QAPP (S-A JV 2020b), and the DoD General Data Validation Guidelines (DoD 2019). The method requirements from the Quality Systems Manual (QSM) Version 5.3 (DoD and DOE 2019) and the USEPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846 (USEPA 2014) were also used as supplemental information.

The data validation reports for the 2021 monitoring events are presented in Appendix C; a summary of quality control exceedances noted during data validation is also included in Appendix C. Appropriate qualifiers, if needed, have been added to the 2021 analytical data in the project database and are included in Tables 6 and 7 and Appendix C. Some values were J-qualified (analyte detected at estimated concentration) or UJ-qualified (analyte not detected, laboratory reporting limit is estimated) due to quality control exceedances. Sample results that were qualified as estimated (UJ/J) are usable with caution. The data from the spring and fall 2021 monitoring events are acceptable for use with no data being rejected; a detailed summary is included in Appendix C.

3.5 Laboratory and Field Corrective Actions

There were no major laboratory or field corrective actions required in 2021. Laboratory analyses were performed in general compliance with the precision, accuracy, representativeness, completeness, comparability, and sensitivity requirements listed in the QAPP (S-A JV 2020b). Standard analytical practices and method requirements were followed, and the laboratory was determined to be performing properly. Although some results required qualification, as described in Section 3.4, useable analyte results are reported for 100% of samples from the 2021 monitoring events.

A summary of minor corrective actions is provided below:

- During the spring 2021 sampling event, several shipments of groundwater samples were delayed in transit by FedEx at their Memphis, Tennesee hub. Samples from wells G6M-04-02X and G6M-04-10A were received by Eurofins out of temperature range on two occasions; the JV was able to collect samples from these two wells and submit to Katahdin for analysis, but samples were collected approximately 5 weeks after the other AOC 50 wells were sampled.
- During the fall 2021 sampling event, one well location (G6M-07-01X) was sampled approximately 3 weeks after the other AOC 50 wells were sampled; this well was added to the sampling list while the sampling event was already underway, as per USEPA comments sent on October 15, 2021 on the AOC 50 ERD Remedy Spring 2021 Performance Evaluation. Additional glassware was ordered and the JV had to coordinate one additional day of access with the AOC 50 property stakeholders.

4 Remedial System Update

CVOC trends in monitoring wells sampled in spring and fall 2021 indicate that complete dechlorination is occurring across the site, with improvements in groundwater quality observed at most monitoring wells compared to data collected in 2019 (KGS 2020) and 2020 (S-A JV 2021b). Elevated concentrations of TOC (greater than 10 mg/L) remain in wells within and adjacent to 2019 injection areas, and elevated concentrations of methane throughout site groundwater indicate that geochemical conditions remain conducive for reductive dechlorination of CVOCs. Based on these data, as provided in memoranda to the USEPA and Massachusetts Department of Environmental Protection (S-A JV 2020a, 2021a), ERD injections were not performed in 2020 or 2021, and ERD injections are not proposed for 2022. The overall remedial system configuration and approach at the site will continue to be evaluated over time to achieve optimum remedial performance.

5 Land-Use Control Monitoring

Land-use controls (LUCs) are a key component of the ROD (USEPA 2004) and Remedial Action Work Plan (RAWP) for AOC 50 (Arcadis 2005) and were developed to restrict or prevent potential human exposure to groundwater COCs at the site. The RAWP outlined the implementation plan for LUCs at the site. LUCs are implemented in the north plume, the source area, and the CVOC plume. LUCs in the form of institutional controls are necessary to restrict land and groundwater use at the site to mitigate unacceptable risks to human health until the site is suitable for unrestricted use and unlimited exposure.

The objectives of the LUCs for the site are imposed through legal mechanisms that establish environmental use restrictions and controls to limit activities that would interfere with the operation of the remedy. The legal mechanisms are enforced through incorporation of lease provisions into deeds and permits and through negotiations and agreements with local towns and developers. Any proposed actions that affect the property must consider the following ROD (USEPA 2004) requirements:

- Provide continued access to treatment transects and monitoring wells and access to install additional injection or monitoring wells, if necessary
- Coordinate construction plans with the BCT to facilitate ongoing remediation and future access to plume areas
- No groundwater extraction or injection for any purpose
- Coordinate construction plans for modifications to stormwater systems with the BCT.

The RAWP established the LUC objectives for each area. The objectives for all areas are:

- Restricting potential residential and/or commercial/industrial receptors from ingesting contaminated groundwater
- Restricting groundwater pumping and/or stormwater discharge/recharge to avoid drawing the contaminated groundwater from the source area
- Limiting construction in specified areas over the contaminated groundwater that would interfere with the operation of the remedy and providing access to the site for the monitoring and remediation.

Additional objectives for the source area include:

- Protecting commercial/industrial workers from inhaling vapors released from groundwater used as “open” process water
- Preventing potential construction/occupation of residential dwellings, schools, and childcare facilities and inhalation of vapors released from groundwater to indoor air.

The deed notices provided at the time of property transfer (to Tom Eagle of the USFWS, Jeffrey Woodle of Groton Ayer Realty Trust, and Roy Herzig of MassDevelopment) inform each owner of their property use restrictions. These restrictions are reinforced annually; copies of the LUC reinforcement letters are included in Appendix G.

The September 2007 Addendum to the Real Property Master Plan included supplemental information on LUCs established under BRAC and Comprehensive Environmental Response, Compensation, and Liability Act programs that are applicable to Area G (Regional Training Site Maintenance), as well as for three other deeded areas located at the DRFTA. A copy of the Real Property Master Plan is included in Appendix G.

Property inspections and interviews with stakeholders are conducted annually to verify compliance with LUC objectives. Annual LUC compliance reports are prepared and include a summary of the interviews and inspections and identify any deficiencies to the site controls. The annual evaluation addresses whether the use restrictions and controls were communicated in the deed(s), whether the owners and state and local agencies were notified of the use restrictions and controls affecting the property, and whether use of the property has conformed to such restrictions and controls. The AOC 50 annual LUC inspection and interview results are included in Appendix G.

Monitoring activities performed for the 2021 reporting period included a review of the documentation and records, on-site inspections, and annual LUC interviews with property owners.

5.1 On-Site Inspections

LUCs were verified during an annual physical inspection of the site. The physical inspection included the checking for the following:

- Any signs of increased exposure potential to the public from groundwater contaminants
- Any evidence that groundwater extraction wells had been installed at the site
- Any evidence of site use changes
- Any site access issues related to monitoring and remediation activities.

The site was inspected by S-A JV field personnel in December 2021 (Appendix G). There were no issues encountered related to site access for monitoring and remediation activities during the 2021 physical site inspection.

5.2 LUC Interview

Interviews were conducted in January and February 2022 with each property owner, manager, or other designee familiar with “day-to-day” activities of the property. During the interviews, the S-A JV inquired about the following:

- The owner’s familiarity regarding LUCs imposed upon the property and documentation of these controls
- Sources of water used at the property
- Proposed plans for property sale, future development, construction, or demolition activities at the site.

As summarized in Appendix G, each interviewee (Roy Herzig and Neil Angus of MassDevelopment, Tom Eagle of the USFWS, and Jeffrey Woodle of Groton Ayer Realty Trust) stated that no change had occurred on the property during 2021.

5.3 LUC Monitoring Summary

Results of the annual compliance monitoring indicate that no breaches to the LUCs were evident and corrective actions were not necessary because there were no changes in site conditions or land use. There are no proposed changes to inspection and reporting frequency at this time.

6 Summary and Conclusions

LTM and O&M activities were successfully performed in 2021 in accordance with the LTMMP (KGS 2017) and QAPP (S-A JV 2020b). LTM activities included semiannual groundwater sampling, with 14 monitoring wells sampled in spring 2021 and 38 monitoring wells sampled in fall 2021. Locks and missing bolts were replaced at wells where they were missing, and new flush-mount roadboxes were installed on injection wells IW-33 and IW-35. No additional maintenance activities were performed in 2021. The LUCs were verified through inspection and interviews.

While some CL exceedances of PCE remain, the following has been observed as a result of performing ERD at the site since 2004:

- The total area of exceedances of the CL for PCE has decreased in size (estimated 15.5 acres in 2004 [Figure 6] to approximately 1 acre in 2021 [Figure 7])
- The maximum observed PCE concentration has decreased by three orders-of-magnitude (14,000 µg/L in 2004 to 21 µg/L in fall 2021).
- The number of wells exceeding the CL has decreased (35 out of 41 wells in 2004 [85%]; 4 out of 38 wells in 2021 [11%]).

The goal of the most recent injections performed in July/August 2019 was to provide an electron donor to support/enhance reductive dechlorination within the source area and within locations where concentrations of PCE were greater than 100 µg/L. As a result of performing these injections, significant reductions in PCE concentrations were observed at several locations in both 2019 (KGS 2020), 2020 (S-A JV 2021b), and 2021. The generation of advanced daughter products, including ethene, provide evidence that late-stage reductive dechlorination and an overall reduction in CVOC contaminant mass is occurring. In addition, geochemical conditions in these areas (elevated TOC and methane concentrations, pH between 5 and 8 SU, and low DO levels and negative ORP values) remained suitable throughout 2021 to support the transformation of CVOCs into harmless by-products.

The following activities will be performed in 2022 based on the conclusions drawn from this report:

- Continue LUC monitoring, O&M and groundwater sampling in accordance with the LTMMP (KGS 2017).
- Continue to monitor metals (in particular, arsenic) concentrations and distribution throughout the CVOC plume.
- The need for additional injection activities will be reevaluated following analysis of data from the 2022 monitoring events. If additional injection activities are required to sustain reductive dechlorination in specific areas, injection of additional carbon will be implemented with DPT and/or use of injection wells. At that time, an LTMMP addendum will be provided to the USEPA and Massachusetts Department of Environmental Protection outlining the type of organic carbon substrate to be injected, sample depths, and injection volumes.

7 References

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Tables

Table 2
Monitoring Wells Sampled in 2021
2021 Annual Operations, Maintenance, and Monitoring Report
Area of Contamination 50, Former Fort Devens Army Installation
Devens, Massachusetts

Location	Well ID	Sampling Rationale	Well Screen Interval (feet bgs)	Well Screen Elevation (NAVD88)	Sample Parameters	Sampling Frequency	LTMMP Sampling Requirements (if different)
Area1 / FDSA	G6M-04-10A	Monitor VOCs, metals, and geochemistry in the source area.	30-40	192.22-182.22	Full Suite	Semiannual	--
	G6M-04-10X		52-62	170.12-160.12	VOCs	Annual	--
	G6M-04-13X		30-40	193.91-183.91	VOCs	Annual	--
	G6M-07-02X		23-28	200.33-195.33	Full Suite	Semiannual	--
Area 1	G6M-02-08X	Monitor VOC, metal, and geochemistry downgradient of ERD injections.	60-70	162.4-152.4	Full Suite	Annual	--
	G6M-04-09X		55-65	187.66-177.66	VOCs and Metals	Semiannual	Annual
	G6M-04-15X		70-80	181.65-171.65	VOCs and Metals	Annual	--
	G6M-13-05X		45-55	177.5-167.5	Full Suite	Semiannual	--
	G6M-13-06X		50-60	171.87-161.87	Full Suite	Annual	--
	G6M-95-19X		48-58	174-164	VOCs	Annual	--
	G6M-95-20X		18-23	204.2-199.2	VOCs and Metals	Annual	--
Area 2	G6M-02-01X	Monitor VOC and metal trends downgradient of ERD injections.	80-95	183-168	VOCs and Metals	Semiannual	Annual
	G6M-04-01X		82-92	179.69-169.69	VOCs and Metals	Annual	--
	G6M-04-03X	Monitor COC trends and metals where COC cleanup levels were achieved.	85-95	179.81-169.81	Full Suite	Semiannual	VOCs and metals only, annual
	G6M-07-01X	Determine level of VOCs, metals, and geochemistry from a well that was last sampled in 2013.	78-98	184.1-164.1	Full Suite	Semiannual	Well not included in LTMMP, USEPA requested sampling of this injection well in 2020 and additional samples were collected in 2021
Area 3	G6M-03-07X	Monitor VOCs, metals, and geochemistry downgradient of ERD injections.	80-90	182.8-172.8	Full Suite	Semiannual	Annual
	G6M-04-02X	Monitor VOC, metal, and geochemistry trends within the Area 3 plume.	80-90	183.69-174.18	Full Suite	Semiannual	--
	G6M-04-04X	Monitor VOC and metal trends downgradient of ERD injections.	94-104	158.87-168.87	VOCs and Metals	Annual	--
Area 4	G6M-02-04X	Monitor VOC and metal trends downgradient of Area 3.	90-105	172.8-157.8	VOCs and Metals	Annual	--
	G6M-02-13X	Monitor VOC and metal trends within the former portion of the southwest plume in Area 4.	110-120	154-144	VOCs and Metals	Annual	--
	G6M-13-02X	Monitor VOC, metal, and geochemistry trends within the Area 4 portion of the southwest plume.	115-125	148.82-138.82	Full Suite	Semiannual	--
	G6M-97-28X	Monitor VOC, metal, and geochemistry trends within the Area 4 portion of the southwest plume.	100-105	164.89-159.89	VOCs and Metals	Annual	Metals only, annual
Area 5	G6M-02-06X	Monitor VOCs and metals along east bank of the Nashua River.	55-65	153.5-143.5	VOCs and Metals	Annual	--
	G6M-02-07X		30-40	178.7-168.7	VOCs and Metals	Annual	--
	G6M-02-11X	Monitor VOC and metal trends within the former portion of the southwest plume in Area 5.	125-135	139.2-129.2	VOCs and Metals	Annual	--
	G6M-03-10X	Monitor VOC and metal trends within the former portion of the southwest plume in Area 5.	120-135	143.4-128.4	VOCs and Metals	Annual	--
	G6M-04-06X	Monitor VOCs and metals in the shallow overburden within the southwestern portion of the plume in Area 5.	95-105	167.27-157.27	VOCs and Metals	Annual	--

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Area 5 (cont.)	G6M-04-07X	Monitor VOCs and metals with in Area 5.	120-130	141.88-131.88	VOCs and Metals	Semiannual	--
	G6M-13-01X	Monitor VOCs, metals, and geochemistry along the western border of the plume in Area 5.	125-135	139.35-129.35	Full Suite	Semiannual	--
	G6M-13-04X	Monitor VOCs and metals downgradient and adjacent to ERD injection wells.	125-135	138.81-128.81	VOCs and Metals	Annual	--
	G6M-97-05B	Monitor VOCs, metals, and geochemistry within the Area 5 plume.	130-135	135.94-130.94	Full Suite	Semiannual	--
	MW-3	Monitor VOC and metal trends within the former portion of the southwest plume in Area 5.	126-136	137.9-127.9	VOCs and Metals	Annual	--
	MW-7	Monitor VOC and metal trends within the former portion of the southwest plume in Area 5.	125-135	138.9-128.9	VOCs and Metals	Annual	--
	XSA-12-95X	Monitor VOCs and metals along the downgradient portion of the plume before the Nashua River at Area 5.	121-131	146.63-136.63	VOCs and Metals	Annual	--
	XSA-12-96X	Monitor VOCs and metals along the downgradient portion of the plume before the Nashua River at Area 5.	121-131	147.02-137.02	Full Suite	Semiannual	VOCs and metals only
	XSA-12-97X	Monitor VOCs and metals along the downgradient portion of the plume before the Nashua River at Area 5.	121-131	148.16-138.16	VOCs and Metals	Annual	--
	XSA-12-98X		60-70	146.64-136.64	VOCs and Metals	Annual	--
Nashua River	G6M-04-14X	Monitor VOCs and metals along the west bank of the Nashua River.	80-90	130.76-120.76	VOCs and Metals	Annual	--

Notes:
1. Semiannual locations are sampled in the spring and fall; annual and biennial locations are sampled in the fall only.
2. "Metals" analyses include dissolved arsenic, iron, and manganese.
3. "Full Suite" analyses include VOCs, metals, nitrate/nitrite, sulfate, sulfide, alkalinity (fall only), methane, ethane, ethene, and total organic carbon.
4. Field parameters include pH, dissolved oxygen, oxidation-reduction potential, specific conductivity, turbidity, and temperature.

Acronyms and Abbreviations:
bgs = below ground surface
COC = contaminant of concern
ERD = enhanced reductive dechlorination
FDSA = former drum storage area
ID = identification
LTMMP = Long-Term Maintenance and Monitoring Plan (KOMAN Government Solutions, LLC 2017)
NAVD88 = North American Vertical Datum of 1988
TOC = total organic carbon
USEPA = United States Environmental Protection Agency
VOC = volatile organic compound

Reference:
KOMAN Government Solutions, LLC. 2017. Final Long-Term Monitoring and Maintenance Plan (LTMMP) Area of Contamination 50, Former Fort Devens Army Installation, Devens, Massachusetts. November.

Table 3
Sample Preparation and Analysis Methods, Containers, Holding Times, and Preservation
2021 Annual Operations, Maintenance, and Monitoring Report
Area of Contamination 50, Former Fort Devens Army Installation
Devens, Massachusetts

Parameter	Analytical Method	Contaminant of Concern	Sample Container	Preservative	Holding Time
Organic					
Volatile Organic Compounds	SW8260B	TCL	3 x 40-mL vials with Teflon® septa screw caps; no headspace	HCl to pH < 2; 4° ± 2°C	14 Days
Dissolved Gases	RSK-175	MEE	3 x 40-mL VOA vials	HCl to pH < 2; 4°± 2°C	14 Days
Metals					
Dissolved Metals (field filtered)	SW6010B/ 6020A (As)	As, Fe, Mn	1 x 250-mL polyethylene	HNO_3 to pH < 2; 4° ± 2°C	180 Days
Wet Chemistry					
Alkalinity	SM2320B	None	1 x 250-mL polyethylene	Store at 4° ± 2°C	14 Days
Nitrate/Nitrite	E353.2	Nitrate/Nitrite (as Nitrogen)	1 x 500-mL amber glass	H_2SO_4 to pH < 2; 4° ± 2°C	28 Days
Sulfate	SW9056A	Sulfate	1 x 500-mL polyethylene	Store at 4° ± 2°C	28 Days
Sulfide	SW9034	Sulfide	1 x 250-mL polyethylene	Zinc acetate +NaOH to pH > 9, 4 °C	7 Days
Total Organic Carbon	SW9060A	TOC	1 x 250-mL amber glass	H_2SO_4 to pH < 2; 4° ± 2°C	28 Days

Acronyms and Abbreviations:
°C = degree Celsius
As, Fe, Mn = arsenic, iron, and manganese
H_2SO_4 = sulfuric acid
HCl = hydrochloric acid
HNO_3 = nitric acid
MEE = methane, ethane, and ethene
mL = milliliter
NaOH = sodium hydroxide
TCL = Target Compound List
TOC = total organic carbon
VOA = volatile organic analysis

Table 4
Groundwater Level Data, Spring 2021
2021 Annual Operations, Maintenance, and Monitoring Report
Area of Contamination 50, Former Fort Devens Army Installation
Devens, Massachusetts

Well ID	Area	Date	MPE (NAVD88)	DTW (ft below MPE)	GW Elevation (NAVD88)
G6M-02-01X	Area 2	5/13/2021	262.44	54.55	207.89
G6M-02-03X	Area 4	5/14/2021	263.03	57.94	205.09
G6M-02-04X	Area 4	5/14/2021	264.92	59.86	205.06
G6M-02-06X	Area 5	5/13/2021	209.73	6.03	203.70
G6M-02-07X	Area 5	5/13/2021	210.72	7.14	203.58
G6M-02-08X	Area 1	5/13/2021	224.23	13.06	211.17
G6M-02-11X	Area 5	5/13/2021	263.93	59.43	204.50
G6M-02-12X	Area 5	5/13/2021	262.46	58.03	204.43
G6M-02-13X	Area 4	5/13/2021	263.61	58.96	204.65
G6M-03-07X	Area 3	5/14/2021	262.66	56.60	206.06
G6M-03-08X	Area 5	5/13/2021	258.60	54.26	204.34
G6M-03-09X	Area 5	5/13/2021	258.89	54.57	204.32
G6M-03-10X	Area 5	5/13/2021	265.81	61.43	204.38
G6M-04-01X	Area 2	5/13/2021	261.15	52.71	208.44
G6M-04-02X	Area 3	5/13/2021	266.55	62.06	204.49*
G6M-04-03X	Area 2	5/13/2021	264.29	57.04	207.25
G6M-04-04X	Area 3	5/14/2021	262.66	57.64	205.02
G6M-04-05X	Area 5	5/13/2021	258.13	53.80	204.33
G6M-04-06X	Area 5	5/13/2021	263.97	60.55	203.42
G6M-04-07X	Area 5	5/13/2021	263.82	60.29	203.53
G6M-04-08X	Nashua River	5/13/2021	209.55	5.74	203.81**
G6M-04-09X	Area 1	5/13/2021	242.66	31.92	210.74
G6M-04-10A	Area 1/FDSA	5/13/2021	224.02	13.53	210.49
G6M-04-10X	Area 1/FDSA	5/13/2021	224.22	12.85	211.37
G6M-04-11X	Area 1	5/13/2021	229.47	19.67	209.80
G6M-04-13X	Area 1/FDSA	5/13/2021	225.88	14.61	211.27
G6M-04-14X	Nashua River	5/13/2021	210.61	6.76	230.85**
G6M-04-15X	Area 1	5/13/2021	253.23	42.57	210.66
G6M-04-22X	Area 1	5/13/2021	255.89	46.30	209.59
G6M-04-31X	Area 1	5/13/2021	255.91	45.16	210.75
G6M-07-01X	Area 2	5/13/2021	262.10	53.99	208.11
G6M-07-02X	Area 1/FDSA	5/13/2021	225.10	13.75	211.35
G6M-13-01X	Area 5	5/13/2021	266.82	62.42	204.40
G6M-13-02X	Area 4	5/13/2021	263.82	58.99	204.83
G6M-13-03X	Area 3	5/13/2021	264.37	58.01	206.36
G6M-13-04X	Area 5	5/13/2021	266.31	61.72	204.59
G6M-13-05X	Area 1	5/13/2021	225.00	14.48	210.52
G6M-13-06X	Area 1	5/13/2021	224.37	14.06	210.31
G6M-18-01	Area 5	5/14/2021	264.24	59.75	204.49
G6M-18-02	Area 5	5/13/2021	268.33	64.41	203.92
G6M-95-19X	Area 1	5/13/2021	223.89	12.49	211.40
G6M-95-20X	Area 1	5/13/2021	224.61	12.83	211.78
G6M-96-22A	Area 1	5/13/2021	217.59	5.40	212.19

Table 4
Groundwater Level Data, Spring 2021
2021 Annual Operations, Maintenance, and Monitoring Report
Area of Contamination 50, Former Fort Devens Army Installation
Devens, Massachusetts

Well ID	Area	Date	MPE (NAVD88)	DTW (ft below MPE)	GW Elevation (NAVD88)
G6M-96-22B	Area 1	5/13/2021	217.56	6.01	211.55
G6M-97-05B	Area 5	5/13/2021	268.12	64.07	204.05
G6M-97-28X	Area 4	5/14/2021	265.69	60.72	204.97
G6P-97-05X	Area 2	5/13/2021	236.72	26.96	209.76
MW-3	Area 5	5/13/2021	265.75	61.20	204.55
MW-7	Area 5	5/13/2021	264.97	62.75	202.22*
XSA-12-95X	Area 5	5/13/2021	269.63	66.22	203.41
XSA-12-96X	Area 5	5/13/2021	269.99	66.43	203.56
XSA-12-97X	Area 5	5/13/2021	270.78	67.11	203.67
XSA-12-98X	Area 5	5/14/2021	209.61	6.15	203.46

Notes:
* Well not used in contouring due to different vertical head compared to surrounding wells with a similar screen interval.
** Well not used for contouring; wells located on the opposite side of the Nashua River.

Acronyms and Abbreviations:
DTW = depth to water
FDSA = former drum storage area
ft = foot
GW = groundwater
ID = identification
MPE = measuring point elevation
NAVD88 = North American Vertical Datum of 1988

Table 5
Groundwater Level Data, Fall 2021
2021 Annual Operations, Maintenance, and Monitoring Report
Area of Contamination 50, Former Fort Devens Army Installation
Devens, Massachusetts

Well ID	Area	Date	MPE (NAVD88)	DTW (ft below MPE)	GW Elevation (NAVD88)
G6M-02-01X	Area 2	10/15/2021	262.44	52.45	209.99
G6M-02-03X	Area 4	10/15/2021	263.03	56.23	206.80
G6M-02-04X	Area 4	10/15/2021	264.92	58.16	206.76
G6M-02-06X	Area 5	10/15/2021	209.73	5.21	204.52
G6M-02-07X	Area 5	10/15/2021	210.72	6.43	204.29
G6M-02-08X	Area 1	10/15/2021	224.23	13.01	211.22*
G6M-02-11X	Area 5	10/15/2021	263.93	58.24	205.69
G6M-02-12X	Area 5	10/15/2021	262.46	56.90	205.56
G6M-02-13X	Area 4	10/15/2021	263.61	57.19	206.42
G6M-03-07X	Area 3	10/15/2021	262.66	54.82	207.84
G6M-03-08X	Area 5	10/15/2021	258.60	53.21	205.39
G6M-03-09X	Area 5	10/15/2021	258.89	53.47	205.42
G6M-03-10X	Area 5	10/15/2021	265.81	60.33	205.48
G6M-04-01X	Area 2	10/15/2021	261.15	50.55	210.60
G6M-04-02X	Area 3	10/15/2021	266.55	58.14	208.41
G6M-04-03X	Area 2	10/15/2021	264.29	54.83	209.46
G6M-04-04X	Area 3	10/15/2021	262.66	55.71	206.95
G6M-04-05X	Area 5	10/15/2021	258.13	52.71	205.42
G6M-04-06X	Area 5	10/15/2021	263.97	59.42	204.55
G6M-04-07X	Area 5	10/15/2021	263.82	59.25	204.57
G6M-04-08X	Nashua River	10/15/2021	209.55	4.96	204.59**
G6M-04-09X	Area 1	10/15/2021	242.66	29.90	212.76
G6M-04-10A	Area 1/FDSA	10/15/2021	224.02	10.91	213.11
G6M-04-10X	Area 1/FDSA	10/15/2021	224.22	11.63	212.59
G6M-04-11X	Area 1	10/15/2021	229.47	17.67	211.80
G6M-04-13X	Area 1/FDSA	10/15/2021	225.88	12.71	213.17
G6M-04-14X	Nashua River	10/15/2021	210.61	5.98	204.63**
G6M-04-15X	Area 1	10/15/2021	253.23	40.54	212.69
G6M-04-22X	Area 1	10/15/2021	255.89	44.21	211.68
G6M-04-31X	Area 1	10/15/2021	255.91	44.04	211.87
G6M-07-01X	Area 2	10/15/2021	262.10	51.88	210.22
G6M-07-02X	Area 1/FDSA	10/15/2021	225.10	11.03	214.07*
G6M-13-01X	Area 5	10/15/2021	266.82	61.32	205.50
G6M-13-02X	Area 4	10/15/2021	263.82	57.46	206.36
G6M-13-03X	Area 3	10/15/2021	264.37	55.92	208.45
G6M-13-04X	Area 5	10/15/2021	266.31	59.60	206.71*
G6M-13-05X	Area 1	10/15/2021	225.00	12.56	212.44
G6M-13-06X	Area 1	10/15/2021	224.37	12.05	212.32
G6M-18-01	Area 5	10/15/2021	264.24	58.36	205.88
G6M-18-02	Area 5	10/15/2021	268.33	63.56	204.77
G6M-95-19X	Area 1	10/15/2021	223.89	11.28	212.61
G6M-95-20X	Area 1	10/15/2021	224.61	11.11	213.50
G6M-96-22A	Area 1	10/15/2021	217.59	3.55	214.04
G6M-96-22B	Area 1	10/15/2021	217.56	4.02	213.54

Table 5
Groundwater Level Data, Fall 2021
2021 Annual Operations, Maintenance, and Monitoring Report
Area of Contamination 50, Former Fort Devens Army Installation
Devens, Massachusetts

Well ID	Area	Date	MPE (NAVD88)	DTW (ft below MPE)	GW Elevation (NAVD88)
G6M-97-05B	Area 5	10/15/2021	268.12	62.93	205.19
G6M-97-28X	Area 4	10/15/2021	265.69	59.06	206.63
G6P-97-05X	Area 2	10/15/2021	236.72	25.25	211.47
MW-3	Area 5	10/15/2021	265.75	59.83	205.92
MW-7	Area 5	10/15/2021	264.97	59.03	205.94
XSA-12-95X	Area 5	10/15/2021	269.63	65.09	204.54
XSA-12-96X	Area 5	10/15/2021	269.99	68.66	201.33*
XSA-12-97X	Area 5	10/15/2021	270.78	72.22	198.56*
XSA-12-98X	Area 5	10/15/2021	209.61	5.21	204.40

Notes:

* Well not used in contouring due to different vertical head compared to surrounding wells with a similar screen interval.

** Well not used for contouring; wells located on the opposite side of the Nashua River.

Acronyms and Abbreviations:
DTW = depth to water
FDSA = former drum storage area
ft = foot
GW = groundwater
ID = identification
MPE = measuring point elevation
NAVD88 = North American Vertical Datum of 1988

Table 6
Groundwater Analytical Results, Spring 2021
2021 Annual Operations, Maintenance, and Monitoring Report
Area of Contamination 50, Former Fort Devens Army Installation
Devens, Massachusetts

Analyte	Units	Location	G6M-02-01X		G6M-03-07X		G6M-04-02X		G6M-04-02X		G6M-04-03X		G6M-04-07X		G6M-04-09X		G6M-04-10A		G6M-07-01X	
		Sample ID	G6M-02-01X-SPR21		G6M-03-07X-SPR21		G6M-04-02X-SPR21		G6M-04-02X-SPR21		G6M-04-03X-SPR21		G6M-04-07X-SPR21		G6M-04-09X-SPR21		G6M-04-10A-SPR21		G6M-07-01X-SPR21	
		Area	Area 2		Area 3		Area 3				Area 2		Area 5		Area 1		Area 1/FDSA		Area 2	
		Cleanup Goal[1]	05/12/2021		05/12/2021		06/17/2021		05/12/2021		05/11/2021		05/12/2021		05/14/2021		06/17/2021		05/12/2021	
Dissolved Gases																				
Ethane	µg/L	--	0.76	U	9.4		5	U	---		0.73	J	0.76	U	5.8		5	U	0.76	U
Ethene	µg/L	--	11		7.3		33		---		4.2		0.57	J	52		5	U	0.71	U
Methane	µg/L	--	24,000		34,000		20,000		---		16,000		350		38,000		17,000		17	
General Chemistry																				
Alkalinity, Total (as CaCO3)	mg/L	--	140		210		120		---		160		230		140		220	J	39	
Nitrate-Nitrite (as N)	mg/L	10,000	0.05	U	0.05	U	0.12	U	---		0.03	J	0.05	U	0.071	J	0.025	U	0.84	
Sulfate	mg/L	--	13		1	U	1.1		---		4.2		7.4		3.7		13	J	14	
Sulfide	mg/L	--	0.81	U	0.81	U	0.8	U	---		0.81	U	0.81	U	0.81	U	0.8	U	0.81	U
Total Organic Carbon	mg/L	--	2		18		---		40		6.7	J	0.8	U	9.5		17		3.2	
Metals																				
Arsenic	µg/L	10	**230**		**480**		**50**		---		**190**		6.9		**380**		**310**		1.6	J
Iron	µg/L	3,129	**16,000**		**100,000**		**28,000**		---		**44,000**		1,100		**100,000**		**85,000**		180	
Manganese	µg/L	1,460	**2,200**		**2,400**		**7,900**		---		**5,200**		**3,600**		**4,800**		1,200	J	61	
Volatile Organic Compounds																				
1,1,1,2-Tetrachloroethane	µg/L	--	1	U	1	U	0.5	U	---		1	U	1	U	1	U	0.5	U	1	U
1,1,1-Trichloroethane	µg/L	--	1	U	1	U	0.5	U	---		1	U	1	U	1	U	0.5	U	1	U
1,1,2,2-Tetrachloroethane	µg/L	--	2	U	2	U	0.5	U	---		2	U	2	U	2	U	0.5	U	2	U
1,1,2-Trichloroethane	µg/L	--	1	U	1	U	0.5	U	---		1	U	1	U	1	U	0.5	U	1	U
1,1-Dichloroethane	µg/L	--	1	U	1	U	0.5	U	---		1	U	1	U	1	U	0.5	U	1	U
1,1-Dichloroethene	µg/L	7	1	U	1	U	0.63	J	---		1	U	1	U	1	U	0.5	U	1	U
1,1-Dichloropropene	µg/L	--	1	U	1	U	0.5	U	---		1	U	1	U	1	U	0.5	U	1	U
1,2,3-Trichlorobenzene	µg/L	--	5	U	5	U	0.5	U	---		5	U	5	U	5	U	0.5	U	5	U
1,2,3-Trichloropropane	µg/L	--	1	U	1	U	0.5	U	---		1	U	1	U	1	U	0.5	U	1	U
1,2,4-Trichlorobenzene	µg/L	--	5	U	5	U	0.5	U	---		5	U	5	U	5	U	0.5	U	5	U
1,2,4-Trimethylbenzene	µg/L	--	1	U	0.82	J	0.5	U	---		1	U	1	U	2.4		0.81	J	1	U
1,2-Dibromo-3-chloropropane	µg/L	--	4	U	4	U	0.75	U	---		4	U	4	U	4	U	0.75	U	4	U
1,2-Dibromoethane (EDB)	µg/L	--	1	U	1	U	0.5	U	---		1	U	1	U	1	U	0.5	U	1	U
1,2-Dichlorobenzene	µg/L	--	1	U	1	U	0.5	U	---		1	U	1	U	1	U	0.5	U	1	U
1,2-Dichloroethane	µg/L	5	1	U	1	U	0.5	U	---		1	U	1	U	1	U	0.5	U	1	U
1,2-Dichloroethene	µg/L	--	1.2	J	0.95	J	210		---		4.2		90		5.4		5.3		8.6	
1,2-Dichloropropane	µg/L	5	2	U	2	U	0.5	U	---		2	U	2	U	2	U	0.5	U	2	U
1,3,5-Trimethylbenzene	µg/L	--	1	U	0.59	J	0.5	U	---		1	U	1	U	1	U	0.81	J	1	U
1,3-Dichlorobenzene	µg/L	--	1	U	1	U	0.5	U	---		1	U	1	U	1	U	0.5	U	1	U
1,3-Dichloropropane	µg/L	--	1	U	1	U	0.5	U	---		1	U	1	U	1	U	0.5	U	1	U
1,4-Dichlorobenzene	µg/L	--	1	U	1	U	0.5	U	---		1	U	1	U	1	U	0.5	U	1	U
2,2-Dichloropropane	µg/L	--	1	U	1	U	0.5	U	---		1	U	1	U	1	U	0.5	U	1	U
2-Butanone (MEK)	µg/L	--	10	U	10	U	10		---		10	U	10	U	10	U	2.5	U	10	U
2-Chlorotoluene	µg/L	--	1	U	1	U	0.5	U	---		1	U	1	U	1	U	0.5	U	1	U
2-Hexanone	µg/L	--	5	U	5	U	4.8	J	---		5	U	5	U	5	U	2.5	U	5	U
4-Chlorotoluene	µg/L	--	1	U	1	U	0.5	U	---		1	U	1	U	1	U	0.5	U	1	U
4-Methyl-2-pentanone (MIBK)	µg/L	--	5	U	5	U	2.5	U	---		5	U	5	U	5	U	2.5	U	5	U
Acetone	µg/L	--	25	U	25	U	12	J	---		25	U	25	U	25	U	2.5	UJ	25	U
Benzene	µg/L	5	1	U	1	U	0.5	U	---		1	U	1	U	1	U	0.5	U	1	U
Bromobenzene	µg/L	--	1	U	1	U	0.5	U	---		1	U	1	U	1	U	0.5	U	1	U
Bromochloromethane	µg/L	--	1	U	1	U	0.5	U	---		1	U	1	U	1	U	0.5	U	1	U
Bromodichloromethane	µg/L	--	1	U	1	U	0.5	U	---		1	U	1	U	1	U	0.5	U	1	U
Bromoform	µg/L	--	1	U	1	U	0.5	U	---		1	U	1	U	1	U	0.5	U	1	U
Bromomethane	µg/L	--	5	U	5	U	1	U	---		5	U	5	U	5	U	1	U	5	U
Carbon disulfide	µg/L	--	1	U	1	U	0.5	U	---		1	U	1	U	1	U	0.5	U	1	U
Carbon tetrachloride	µg/L	--	1	U	1	U	0.5	U	---		1	U	1	U	1	U	0.5	U	1	U
Chlorobenzene	µg/L	--	1	U	1	U	0.5	U	---		1	U	1	U	1	U	0.5	U	1	U
Chloroethane	µg/L	--	5	UJ	5	UJ	1	U	---		5	U	5	UJ	5	U	1	U	5	UJ
Chloroform	µg/L	--	1	U	1	U	0.5	U	---		1	U	1	U	1	U	0.5	U	1	U
Chloromethane	µg/L	--	1	U	1	U	1	U	---		1	U	1	U	1	U	0.72	J	1	U
cis-1,2-Dichloroethene	µg/L	70	1.2		0.95	J	**170**		---		4.2		**89**		3.2		4.7		8.6	
cis-1,3-Dichloropropene	µg/L	--	1	U	1	U	0.5	U	---		1	U	1	U	1	U	0.5	U	1	U
Dibromochloromethane	µg/L	--	1	U	1	U	0.5	U	---		1	U	1	U	1	U	0.5	U	1	U
Dibromomethane	µg/L	--	1	U	1	U	0.5	U	---		1	U	1	U	1	U	0.5	U	1	U
Dichlorodifluoromethane	µg/L	--	2	UJ	2	UJ	1	U	---		2	U	2	UJ	2	U	1	U	2	UJ
Ethylbenzene	µg/L	--	1	U	0.53	J	0.5	U	---		1	U	1	U	1	U	0.5	U	1	U
Hexachlorobutadiene	µg/L	--	5	U	5	U	0.75	U	---		5	U	5	U	5	U	0.75	U	5	U
Isopropylbenzene (Cumene)	µg/L	--	1	U	1	U	0.5	U	---		1	U	1	U	0.38	J	0.5	U	1	U
m,p-Xylene	µg/L	--	1	U	0.57	J	1	U	---		1	U	1	U	0.54	J	1	U	1	U
Methyl tert-butyl ether (MTBE)	µg/L	--	1	U	1	U	0.5	U	---		1	U	1	U	1	U	0.5	U	1	U
Methylene chloride	µg/L	5	5	U	5	U	2.5	U	---		5	U	5	U	5	U	2.5	U	5	U
n-Butylbenzene	µg/L	--	1	U	1	U	0.5	U	---		1	U	1	U	1	U	0.5	U	1	U
n-Propylbenzene	µg/L	--	1	U	1	U	0.5	U	---		1	U	1	U	1	U	0.5	U	1	U
Naphthalene	µg/L	--	5	U	5	U	0.5	U	---		5	U	5	U	5	U	0.5	U	5	U
o-Xylene	µg/L	--	0.5	U	0.5	U	0.5	U	---		0.5	U	0.5	U	0.28	J	0.5	U	0.5	U
p-Cymene (p-Isopropyltoluene)	µg/L	--	1	U	1	U	0.5	UJ	---		1	U	1	U	1	U	0.5	UJ	1	U
sec-Butylbenzene	µg/L	--	1	U	1	U	0.5	U	---		1	U	1	U	1	U	0.5	U	1	U
Styrene	µg/L	--	1	U	1	U	0.5	U	---		1	U	1	U	1	U	0.5	U	1	U
tert-Butylbenzene	µg/L	--	1	U	1	U	0.5	U	---		1	U	1	U	1	U	0.5	U	1	U
Tetrachloroethene (PCE)	µg/L	5	2	U	2	U	4.2		---		2	U	2	U	2	U	0.5	U	**10**	
Toluene	µg/L	--	1	U	1.4		0.5	U	---		1	U	1	U	1	U	0.5	U	1	U
trans-1,2-Dichloroethene	µg/L	--	1	U	1	U	0.94	J	---		1	U	0.96	J	2.2		0.62	J	1	U
trans-1,3-Dichloropropene	µg/L	--	1	U	1	U	0.5	U	---		1	U	1	U	1	U	0.5	U	1	U
Trichloroethene (TCE)	µg/L	5	2.2		1	U	3.7		---		2.3		**22**		2.5		0.5	U	2.1	
Trichlorofluoromethane	µg/L	--	1	U	1	U	1	U	---		1	U	1	U	1	U	1	U	1	U
Vinyl acetate	µg/L	--	2	UJ	2	UJ	0.5	UJ	---		2	U	2	UJ	2	U	0.5	UJ	2	UJ
Vinyl chloride	µg/L	2	1	U	1	U	**32**		---		**3.2**		**10**		**2.5**		1.5	J	1	U
Xylenes, Total	µg/L	--	2	U	0.57	J	1.5	U	---		2	U	2	U	0.82	J	1.5	U	2	U
Field Parameters																				
pH	SU	--	6.94		6.47		5.33		6.06		6.48		6.46		6.48		6.22		6.50	
Specific Conductivity	mS/cm	--	1.968		0.721		1.356		1.054		1.077		0.402		0.936		0.739		0.991	
Turbidity	NTU	--	108.95		29.36		135.16		50.90		18.44		2.68		426.74		7.84		50.07	
Dissolved Oxygen	mg/L	--	0.55		0.49		0.11		0.48		0.69		1.09		1.12		2.80		1.40	
Temperature	°C	--	13.8		14.4		15.9		15.1		18.6		11.3		10.5		11.6		16.9	
Oxidation Reduction Potential	Mv	--	-126.0		-99.2		-45.8		-94.4		-87.3		12.2		-139.2		-68.8		64.0	

Notes:

[1]Area of Contamination (AOC) 50 cleanup levels are from the Record of Decision (United States Environmental Protection Agency 2004).

Shading = Above Cleanup Goal

--- = not sampled

Acronyms and Abbreviations:

°C = degree Celsius
µg/L = microgram per liter
µS/cm = microsiemen per centimeter
FDSA = former drum storage area
ID = identification
mg/L = milligram per liter
mV = millivolt
NTU = nephelometric turbidity unit
SU = standard unit

Qualifiers:

J The analyte was positively identified, the quantitation is an estimation.
U The analyte was analyzed for, but not detected. The associated numerical value is at or below the limit of detection.
UJ The analyte was not detected and was reported as less than the limit of detection. However, the associated numerical value is approximate.

Reference:

United States Environmental Protection Agency. 2004. Final Record of Decision, AOC 50, Devens, Massachusetts. January 22. Available online at: https://semspub.epa.gov/work/01/201577.pdf.

Table 6
Groundwater Analytical Results, Spring 2021
2021 Annual Operations, Maintenance, and Monitoring Report
Area of Contamination 50, Former Fort Devens Army Installation
Devens, Massachusetts

Location		G6M-07-02X		G6M-13-01X	G6M-13-02X	G6M-13-05X	G6M-97-05B	XSA-12-96X
Sample ID		AOC50-DUP01-SPR21	G6M-07-02X-SPR21	G6M-13-01X-SPR21	G6M-13-02X-SPR21	G6M-13-05X-SPR21	G6M-97-05B-SPR21	XSA-12-96X-SPR21
Area		Area 1/FDSA		Area 5	Area 4	Area 1	Area 5	Area 5
Analyte	Units	Cleanup Goal[1]	05/12/2021	05/12/2021	05/11/2021	05/14/2021	05/11/2021	05/11/2021	05/14/2021
Dissolved Gases									
Ethane	µg/L	--	5	4.6	2.5	1.5	45	5.7	---
Ethene	µg/L	--	5.8	5.7	6.8	2.5	77	24	---
Methane	µg/L	--	21,000	20,000	9,300	13,000	17,000	27,000	---
General Chemistry									
Alkalinity, Total (as CaCO3)	mg/L	--	190	230	170	75	71	170	---
Nitrate-Nitrite (as N)	mg/L	10,000	0.14	0.12	0.05 U	0.02 J	0.028 J	0.046 J	---
Sulfate	mg/L	--	1.2	1 U	8.3	7.9	0.59 J	1 U	---
Sulfide	mg/L	--	4.3 U	4 U	0.81 U	0.81 U	0.81 U	0.81 U	---
Total Organic Carbon	mg/L	--	250	260	3	2.5	4.4	67	---
Metals									
Arsenic	µg/L	10	7.5	6.2	**14**	**15**	**120**	**250**	1.8 J
Iron	µg/L	3,129	**240,000**	**240,000**	1,100	**3,500**	**53,000**	**74,000**	2,300
Manganese	µg/L	1,460	**4,600**	**4,500**	**6,000**	1,200	**6,400**	**13,000**	**5,400**
Volatile Organic Compounds									
1,1,1,2-Tetrachloroethane	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	µg/L	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,1,2-Trichloroethane	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	µg/L	7	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloropropene	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2,3-Trichlorobenzene	µg/L	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2,3-Trichloropropane	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2,4-Trichlorobenzene	µg/L	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2,4-Trimethylbenzene	µg/L	--	1.3	1.2	1 U	1 U	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane	µg/L	--	4 U	4 U	4 U	4 U	4 U	4 U	4 U
1,2-Dibromoethane (EDB)	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	µg/L	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethene	µg/L	--	13	14	24	11	43	32	15
1,2-Dichloropropane	µg/L	5	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,3,5-Trimethylbenzene	µg/L	--	0.72 J	0.65 J	1 U	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3-Dichloropropane	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2,2-Dichloropropane	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2-Butanone (MEK)	µg/L	--	15	13	10 U	10 U	10 U	40	10 U
2-Chlorotoluene	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
2-Hexanone	µg/L	--	5 U	5 U	5 U	5 U	5 U	2.4 J	5 U
4-Chlorotoluene	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
4-Methyl-2-pentanone (MIBK)	µg/L	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	µg/L	--	12 J	14 J	25 U	25 U	25 U	18 J	25 U
Benzene	µg/L	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromobenzene	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromochloromethane	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromomethane	µg/L	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Carbon disulfide	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Carbon tetrachloride	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	µg/L	--	5 UJ	5 UJ	5 U	5 U	5 U	5 U	2.5 J
Chloroform	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloromethane	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	µg/L	70	13	14	24	10	42	32	10
cis-1,3-Dichloropropene	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Dibromomethane	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Dichlorodifluoromethane	µg/L	--	2 UJ	2 UJ	2 U	2 U	2 U	2 U	2 U
Ethylbenzene	µg/L	--	0.66 J	0.64 J	1 U	1 U	1 U	1 U	1 U
Hexachlorobutadiene	µg/L	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Isopropylbenzene (Cumene)	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
m,p-Xylene	µg/L	--	1.1	1.1	1 U	1 U	0.58 J	1 U	1 U
Methyl tert-butyl ether (MTBE)	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methylene chloride	µg/L	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U
n-Butylbenzene	µg/L	--	1 U	0.81 J	1 U	1 U	1 U	1 U	1 U
n-Propylbenzene	µg/L	--	0.7 J	1 U	1 U	1 U	1 U	1 U	1 U
Naphthalene	µg/L	--	4.1 J	3.5 J	5 U	5 U	5 U	5 U	5 U
o-Xylene	µg/L	--	0.76 J	0.76 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
p-Cymene (p-Isopropyltoluene)	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
sec-Butylbenzene	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Styrene	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
tert-Butylbenzene	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene (PCE)	µg/L	5	2 U	2 U	2 U	3.3	**50**	1.9 J	2.9
Toluene	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,2-Dichloroethene	µg/L	--	1 U	1 U	1 U	0.73 J	1	1 U	4.6
trans-1,3-Dichloropropene	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene (TCE)	µg/L	5	1 U	1 U	1 U	4.8	**18**	3.4	**10**
Trichlorofluoromethane	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl acetate	µg/L	--	2 UJ	2 UJ	2 U	2 UJ	2 U	2 U	2 U
Vinyl chloride	µg/L	2	**2.3**	**2.6**	**6.7**	**3.2**	**29**	**10**	**9.5**
Xylenes, Total	µg/L	--	1.9 J	1.9 J	2 U	2 U	0.58 J	2 U	2 U
Field Parameters									
pH	SU	--	--	6.50	6.50	6.13	6.51	6.40	6.71
Specific Conductivity	mS/cm	--	--	0.737	0.686	1.178	0.567	0.806	1.183
Turbidity	NTU	--	--	23.40	291.90	1.11	154.92	330.02	90.52
Dissolved Oxygen	mg/L	--	--	1.46	0.89	0.56	0.97	0.56	0.11
Temperature	°C	--	--	19.4	11.9	19.1	14.2	14.0	13.2
Oxidation Reduction Potential	Mv	--	--	-166.9	-99.8	-107.0	-75.5	-83.9	-49.1

Notes:

[1]Area of Contamination (AOC) 50 cleanup levels are from the Record of Decision (United States Environmental Protection Agency 2004).

Shading = Above Cleanup Goal

--- = not sampled

Acronyms and Abbreviations:

°C = degree Celsius
µg/L = microgram per liter
µS/cm = microsiemen per centimeter
FDSA = former drum storage area
ID = identification
mg/L = milligram per liter
mV = millivolt
NTU = nephelometric turbidity unit
SU = standard unit

Qualifiers:

J The analyte was positively identified, the quantitation is an estimation.
U The analyte was analyzed for, but not detected. The associated numerical value is at or below the limit of detection.
UJ The analyte was not detected and was reported as less than the limit of detection. However, the associated numerical value is approximate.

Reference:

United States Environmental Protection Agency. 2004. Final Record of Decision, AOC 50, Devens, Massachusetts. January 22. Available online at: https://semspub.epa.gov/work/01/201577.pdf.

Table 7
Groundwater Analytical Results, Fall 2021
2021 Annual Operations, Maintenance, and Monitoring Report
Area of Contamination 50, Former Fort Devens Army Installation
Devens, Massachusetts

Location		G6M-02-01X		G6M-02-04X		G6M-02-06X		G6M-02-07X		G6M-02-08X		G6M-02-11X		G6M-02-13X		G6M-03-07X		G6M-03-10X	
Sample ID		G6M-02-01X-FAL21		G6M-02-04X-FAL21		G6M-02-06X-FAL21		G6M-02-07X-FAL21		G6M-02-08X-FAL21		G6M-02-11X-FAL21		G6M-02-13X-FAL21		G6M-03-07X-FAL21		G6M-03-10X-FAL21	
Area		Area 2		Area 4		Area 5		Area 5		Area 1		Area 5		Area 4		Area 3		Area 5	
Analyte	Units	Cleanup Goal[1]	10/13/2021		10/12/2021		10/14/2021		10/14/2021		10/14/2021		10/12/2021		10/15/2021		10/18/2021		10/12/2021	
Dissolved Gases																				
Ethane	µg/L	--	---		---		---		---		2.5		---		---		9.4		---	
Ethene	µg/L	--	---		---		---		---		6.7		---		---		0.71	U	---	
Methane	µg/L	--	---		---		---		---		25,000		---		---		37,000		---	
General Chemistry																				
Alkalinity, Total (as CaCO3)	mg/L	--	---		---		---		---		87		---		---		190		---	
Nitrate-Nitrite (as N)	mg/L	10	---		---		---		---		0.047	J	---		---		0.026	J	---	
Sulfate	mg/L	--	---		---		---		---		2	U	---		---		1	U	---	
Sulfide	mg/L	--	---		---		---		---		0.81	U	---		---		0.81	U	---	
Total Organic Carbon	mg/L	--	---		---		---		---		25		---		---		19		---	
General Chemistry																				
Arsenic	µg/L	10	**310**		**400**		1.5	J	3	U	**260**		**520**		**250**		**580**		**290**	
Iron	µg/L	3,129	**22,000**		**37,000**		50	U	42	J	**22,000**		**39,000**		**14,000**		**98,000**		**44,000**	
Manganese	µg/L	1,460	**1,900**		**2,000**		3	U	13		110		**8,800**		**22,000**		**2,400**		**1,900**	
Volatile Organic Compounds																				
1,1,1,2-Tetrachloroethane	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1,1-Trichloroethane	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2,2-Tetrachloroethane	µg/L	--	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
1,1,2-Trichloroethane	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethane	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethene	µg/L	7	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloropropene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2,3-Trichlorobenzene	µg/L	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
1,2,3-Trichloropropane	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2,4-Trichlorobenzene	µg/L	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
1,2,4-Trimethylbenzene	µg/L	--	1	U	1	U	1	U	1	U	2.1		1	U	1	U	1	U	1	U
1,2-Dibromo-3-chloropropane	µg/L	--	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
1,2-Dibromoethane (EDB)	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethane	µg/L	5	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethene	µg/L	--	1.4	J	2	U	2	U	2	U	3.3		2	U	2	U	0.76	J	2	U
1,2-Dichloropropane	µg/L	5	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
1,3,5-Trimethylbenzene	µg/L	--	1	U	1	U	1	U	1	U	0.73	J	1	U	1	U	1	U	1	U
1,3-Dichlorobenzene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,3-Dichloropropane	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
2,2-Dichloropropane	µg/L	--	1	U	1	UJ	1	U	1	U	1	U	1	UJ	1	U	1	U	1	UJ
2-Butanone (MEK)	µg/L	--	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
2-Chlorotoluene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
2-Hexanone	µg/L	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
4-Chlorotoluene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
4-Methyl-2-pentanone (MIBK)	µg/L	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Acetone	µg/L	--	25	U	25	U	25	U	25	U	25	U	25	U	25	UJ	25	U	25	UJ
Benzene	µg/L	5	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromobenzene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromochloromethane	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	UJ
Bromodichloromethane	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromoform	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromomethane	µg/L	--	5	UJ	5	U	5	U	5	U	5	U	5	U	5	UJ	5	U	5	U
Carbon disulfide	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Carbon Tetrachloride	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chlorobenzene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chloroethane	µg/L	--	5	UJ	5	UJ	5	U	5	U	5	U	5	UJ	5	UJ	5	UJ	5	U
Chloroform	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chloromethane	µg/L	--	1	UJ	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
cis-1,2-Dichloroethene	µg/L	70	1.4		1	U	1	U	1	U	3.3		1	U	1	U	0.5	J	1	U
cis-1,3-Dichloropropene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Cumene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Dibromochloromethane	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Dibromomethane	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Dichlorodifluoromethane	µg/L	--	2	U	2	UJ	2	U	2	U	2	U	2	UJ	2	UJ	2	U	2	U
Ethylbenzene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Hexachlorobutadiene	µg/L	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
m,p-Xylene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Methyl tert-butyl ether (MTBE)	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Methylene chloride	µg/L	5	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
n-Butylbenzene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
n-Propylbenzene	µg/L	--	1	U	1	U	1	U	1	U	0.47	J	1	U	1	U	1	U	1	U
Naphthalene	µg/L	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
o-Xylene	µg/L	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
p-Cymene (p-Isopropyltoluene)	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
sec-Butylbenzene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	0.96	J
Styrene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
tert-Butylbenzene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	0.93	J
Tetrachloroethene (PCE)	µg/L	5	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
Toluene	µg/L	--	1	U	1	U	1	U	1	U	6.4		1	U	1	U	1.1		1	U
trans-1,2-Dichloroethene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
trans-1,3-Dichloropropene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Trichloroethene (TCE)	µg/L	5	2.4		1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Trichlorofluoromethane	µg/L	--	1	U	1	UJ	1	U	1	U	1	U	1	UJ	1	U	1	U	1	U
Vinyl acetate	µg/L	--	2	UJ	2	UJ	2	UJ	2	UJ	2	UJ	2	UJ	2	U	2	UJ	2	UJ
Vinyl chloride	µg/L	2	0.72	J	1	U	1	U	1	U	1.6		1	U	1	U	1	U	1	U
Xylenes, Total	µg/L	--	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
Field Parameters																				
pH	pH Units	--	6.87		7.04		7.26		7.78		6.95		6.98		6.72		6.35		6.94	
Specific Conductivity	mS/cm	--	3.78		0.727		0.119		1.51		0.597		0.917		2.58		0.955		1.07	
Turbidity	NTU	--	39.9		47		0.5		4.41		28.9		9.25		1.22		2.34		24.7	
Dissolved Oxygen	mg/L	--	0.51		0.68		6.97		0.01		0.63		0.9		0.68		0.51		1.1	
Temperature	°C	--	15.4		15		13.8		14.3		13.4		15.1		12.4		15		13.7	
Oxidation Reduction Potential	mV	--	-127		-143		107		-56.8		-119		-129		-96.8		-105		-118	

Notes:

[1]Area of Contamination (AOC) 50 cleanup levels are from the Record of Decision (United States Environmental Protection Agency 2004).

Shading = Above Cleanup Goal

--- = not sampled

Acronyms and Abbreviations:

°C = degree Celsius
µg/L = microgram per liter
µS/cm = microsiemen per centimeter
FDSA = former drum storage area
ID = identification
mg/L = milligram per liter
mV = millivolt
NTU = nephelometric turbidity unit

Qualifiers:

J The analyte was positively identified, the quantitation is an estimation.
U The analyte was analyzed for, but not detected. The associated numerical value is at or below the limit of detection.
UJ The analyte was not detected and was reported as less than the limit of detection. However, the associated numerical value is approximate.

Reference:

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Table 7
Groundwater Analytical Results, Fall 2021
2021 Annual Operations, Maintenance, and Monitoring Report
Area of Contamination 50, Former Fort Devens Army Installation
Devens, Massachusetts

		Location	G6M-04-01X		G6M-04-02X		G6M-04-03X		G6M-04-04X		G6M-04-04X		G6M-04-06X		G6M-04-07X		G6M-04-09X		G6M-04-10A	
		Sample ID	G6M-04-01X-FAL21		G6M-04-02X-FAL21		G6M-04-03X-FAL21		AOC50-DUP03-FAL21		G6M-04-04X-FAL21		G6M-04-06X-FAL21		G6M-04-07X-FAL21		G6M-04-09X-FAL21		G6M-04-10A-FAL21	
		Area	Area 2		Area 3		Area 2		Area 3				Area 5		Area 5		Area 1		Area 1/FDSA	
Analyte	Units	Cleanup Goal[1]	10/13/2021		10/18/2021		10/13/2021		10/18/2021		10/18/2021		10/14/2021		10/14/2021		10/18/2021		10/13/2021	
Dissolved Gases																				
Ethane	µg/L	--	---		0.56	J	1.9		---		---		---		0.34	J	---		6.9	
Ethene	µg/L	--	---		37		3.5		---		---		---		0.64	J	---		9.3	
Methane	µg/L	--	---		19,000		20,000		---		---		---		520		---		27,000	
General Chemistry																				
Alkalinity, Total (as CaCO3)	mg/L	--	---		120		200		---		---		---		260		---		140	
Nitrate-Nitrite (as N)	mg/L	10	---		0.05	U	0.05	U	---		---		---		0.05	U	---		0.05	UJ
Sulfate	mg/L	--	---		3.4		2.3		---		---		---		7.5		---		2.8	
Sulfide	mg/L	--	---		0.81	U	0.81	U	---		---		---		0.81	U	---		0.81	U
Total Organic Carbon	mg/L	--	---		17		7.3		---		---		---		1.4		---		22	
General Chemistry																				
Arsenic	µg/L	10	**680**		**61**		**210**		**480**		**470**		3	U	8		**460**		**320**	**J**
Iron	µg/L	3,129	**42,000**		**22,000**		**36,000**		**85,000**		**88,000**		26	J	1,200		**94,000**		**85,000**	
Manganese	µg/L	1,460	**11,000**		**6,500**		**3,600**		**18,000**		**19,000**		100		**4,200**		**3,100**		1,100	
Volatile Organic Compounds																				
1,1,1,2-Tetrachloroethane	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1,1-Trichloroethane	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2,2-Tetrachloroethane	µg/L	--	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
1,1,2-Trichloroethane	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethane	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethene	µg/L	7	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloropropene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2,3-Trichlorobenzene	µg/L	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
1,2,3-Trichloropropane	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2,4-Trichlorobenzene	µg/L	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
1,2,4-Trimethylbenzene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1.2		0.97	J
1,2-Dibromo-3-chloropropane	µg/L	--	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
1,2-Dibromoethane (EDB)	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethane	µg/L	5	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethene	µg/L	--	2	U	130		1.3	J	2	U	2	U	0.82	J	120		13		4	
1,2-Dichloropropane	µg/L	5	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
1,3,5-Trimethylbenzene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,3-Dichlorobenzene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,3-Dichloropropane	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
2,2-Dichloropropane	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
2-Butanone (MEK)	µg/L	--	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	UJ	10	U
2-Chlorotoluene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
2-Hexanone	µg/L	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
4-Chlorotoluene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
4-Methyl-2-pentanone (MIBK)	µg/L	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Acetone	µg/L	--	25	U	15	J	25	U	25	U	25	U	25	U	25	U	25	U	25	U
Benzene	µg/L	5	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromobenzene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromochloromethane	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromodichloromethane	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromoform	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromomethane	µg/L	--	5	UJ	5	U	5	UJ	5	U	5	U	5	U	5	U	5	U	5	UJ
Carbon disulfide	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Carbon Tetrachloride	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chlorobenzene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chloroethane	µg/L	--	5	UJ	5	UJ	5	UJ	5	UJ	5	UJ	5	U	5	UJ	5	U	5	UJ
Chloroform	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chloromethane	µg/L	--	1	UJ	1	U	1	UJ	1	U	1	U	1	U	1	U	1	U	1	UJ
cis-1,2-Dichloroethene	µg/L	70	1	U	**130**		0.58	J	0.55	J	0.68	J	0.82	J	**120**		12		3.6	
cis-1,3-Dichloropropene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Cumene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Dibromochloromethane	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Dibromomethane	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Dichlorodifluoromethane	µg/L	--	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
Ethylbenzene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Hexachlorobutadiene	µg/L	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
m,p-Xylene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	0.42	J	1	U
Methyl tert-butyl ether (MTBE)	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Methylene chloride	µg/L	5	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
n-Butylbenzene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
n-Propylbenzene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Naphthalene	µg/L	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
o-Xylene	µg/L	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
p-Cymene (p-Isopropyltoluene)	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
sec-Butylbenzene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Styrene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
tert-Butylbenzene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Tetrachloroethene (PCE)	µg/L	5	2	U	**21**		2	U	2	U	2	U	1.5	J	4.8		2	U	2	U
Toluene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
trans-1,2-Dichloroethene	µg/L	--	1	U	0.84	J	0.72	J	1	U	1	U	1	U	0.66	J	1.1		1	U
trans-1,3-Dichloropropene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Trichloroethene (TCE)	µg/L	5	1	U	**13**		0.6	J	1	U	1	U	1.1		**38**		3.2		1	U
Trichlorofluoromethane	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Vinyl acetate	µg/L	--	2	UJ	2	UJ	2	UJ	2	UJ	2	UJ	2	UJ	2	UJ	2	UJ	2	UJ
Vinyl chloride	µg/L	2	1	U	**18**		0.71	J	1	U	1	U	1	U	**14**		1.7		1.7	
Xylenes, Total	µg/L	--	2	U	2	U	2	U	2	U	2	U	2	U	2	U	0.42	J	2	U
Field Parameters																				
pH	pH Units	--	6.45		5.87		6.87		6.48		6.48		6.32		6.24		6.57		6.52	
Specific Conductivity	mS/cm	--	5.25		2.08		2.69		2.22		2.22		0.174		0.536		0.515		0.596	
Turbidity	NTU	--	7.57		12.2		32.4		29.3		29.3		0.25		0.03		22.3		76.2	
Dissolved Oxygen	mg/L	--	0.68		0.55		0.7		0.01		0.01		0.89		1.04		0.74		0.54	
Temperature	°C	--	15.6		11.6		19.2		15.5		15.5		12.1		12		10.3		11.4	
Oxidation Reduction Potential	mV	--	-79.2		-55.5		-128		-102		-102		104.8		55.4		-138		-121	

Notes:

[1]Area of Contamination (AOC) 50 cleanup levels are from the Record of Decision (United States Environmental Protection Agency 2004).

Shading = Above Cleanup Goal

--- = not sampled

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Qualifiers:

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U	The analyte was analyzed for, but not detected. The associated numerical value is at or below the limit of detection.
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Table 7
Groundwater Analytical Results, Fall 2021
2021 Annual Operations, Maintenance, and Monitoring Report
Area of Contamination 50, Former Fort Devens Army Installation
Devens, Massachusetts

		Location	G6M-04-10X		G6M-04-13X		G6M-04-14X		G6M-04-15X		G6M-07-01X		G6M-07-02X		G6M-07-02X		G6M-13-01X	
		Sample ID	G6M-04-10X-FAL21		G6M-04-13X-FAL21		G6M-04-14X-FAL21		G6M-04-15X-FAL21		G6M-07-01X-FAL21		AOC50-DUP02-FAL21		G6M-07-02X-FAL21		G6M-13-01X-FAL21	
		Area	Area 1/FDSA		Area 1/FDSA		Nashua River		Area 1		Area 2		Area 1/FDSA				Area 5	
Analyte	Units	Cleanup Goal[1]	10/13/2021		10/13/2021		10/15/2021		10/18/2021		11/03/2021		10/12/2021		10/12/2021		10/12/2021	
Dissolved Gases																		
Ethane	µg/L	--	---		---		---		---		0.76	U	3.9		3.4		0.76	U
Ethene	µg/L	--	---		---		---		---		0.71	U	3.6		3.2		0.6	J
Methane	µg/L	--	---		---		---		---		13	J	18,000		15,000		2,200	
General Chemistry																		
Alkalinity, Total (as CaCO3)	mg/L	--	---		---		---		---		6.4	U	150		130		98	
Nitrate-Nitrite (as N)	mg/L	10	---		---		---		---		1		0.067	J	0.074	J	0.05	U
Sulfate	mg/L	--	---		---		---		---		12		1	U	1	U	11	
Sulfide	mg/L	--	---		---		---		---		0.81	U	8.1	U	8.1	U	0.81	U
Total Organic Carbon	mg/L	--	---		---		---		---		5.3		190		190		1.3	
General Chemistry																		
Arsenic	µg/L	10	---		---		6.3		**94**		1.6	J	**27**		**25**		**160**	
Iron	µg/L	3,129	---		---		50	U	**4,300**		170		**180,000**		**170,000**		1,400	
Manganese	µg/L	1,460	---		---		6.4	J	670		42		**4,400**		**4,300**		**5,800**	
Volatile Organic Compounds																		
1,1,1,2-Tetrachloroethane	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1,1-Trichloroethane	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2,2-Tetrachloroethane	µg/L	--	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
1,1,2-Trichloroethane	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethane	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethene	µg/L	7	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloropropene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2,3-Trichlorobenzene	µg/L	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
1,2,3-Trichloropropane	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2,4-Trichlorobenzene	µg/L	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
1,2,4-Trimethylbenzene	µg/L	--	1	U	1	U	1	U	1	U	1	U	0.97	J	1.4		1	U
1,2-Dibromo-3-chloropropane	µg/L	--	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
1,2-Dibromoethane (EDB)	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethane	µg/L	5	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethene	µg/L	--	2	U	2	U	2	U	1.6	J	2	U	12		9.8		1.9	J
1,2-Dichloropropane	µg/L	5	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
1,3,5-Trimethylbenzene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	0.8	J	1	U
1,3-Dichlorobenzene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,3-Dichloropropane	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
2,2-Dichloropropane	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	UJ	1	U
2-Butanone (MEK)	µg/L	--	10	U	10	U	10	U	10	UJ	10	UJ	8.1	J	10	U	10	U
2-Chlorotoluene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
2-Hexanone	µg/L	--	5	U	5	U	5	U	5	U	5	UJ	5	U	5	U	5	U
4-Chlorotoluene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
4-Methyl-2-pentanone (MIBK)	µg/L	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Acetone	µg/L	--	25	U	25	U	25	UJ	25	U	25	U	21	J	19	J	25	U
Benzene	µg/L	5	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromobenzene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromochloromethane	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	UJ	1	U
Bromodichloromethane	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromoform	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromomethane	µg/L	--	5	U	5	U	5	UJ	5	U	5	U	5	U	5	U	5	U
Carbon disulfide	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Carbon Tetrachloride	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chlorobenzene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chloroethane	µg/L	--	5	UJ	5	U	5	UJ	5	U	5	UJ	5	UJ	5	U	5	UJ
Chloroform	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chloromethane	µg/L	--	1	U	1	UJ	1	U	1	U	1	U	1	U	1	U	1	U
cis-1,2-Dichloroethene	µg/L	70	1	U	1	U	1	U	1.6		0.71	J	12		9.8		1.9	
cis-1,3-Dichloropropene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Cumene	µg/L	--	1	U	1	U	1	U	0.79	J	1	U	1	U	1	U	1	U
Dibromochloromethane	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Dibromomethane	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Dichlorodifluoromethane	µg/L	--	2	U	2	U	2	UJ	2	U	2	U	2	U	2	U	2	U
Ethylbenzene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Hexachlorobutadiene	µg/L	--	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
m,p-Xylene	µg/L	--	1	U	1	U	1	U	1	U	1	U	0.76	J	0.57	J	1	U
Methyl tert-butyl ether (MTBE)	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Methylene chloride	µg/L	5	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
n-Butylbenzene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	0.8	J	1	U
n-Propylbenzene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	0.84	J	1	U
Naphthalene	µg/L	--	5	U	5	U	5	U	5	U	5	U	4.2	J	5.2		5	U
o-Xylene	µg/L	--	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.49	J	1		0.5	U
p-Cymene (p-Isopropyltoluene)	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	0.8	J	1	U
sec-Butylbenzene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	0.86	J	1	U
Styrene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
tert-Butylbenzene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Tetrachloroethene (PCE)	µg/L	5	1.7	J	2	U	2	U	0.87	J	**13**		0.9	J	2	U	2	U
Toluene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
trans-1,2-Dichloroethene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
trans-1,3-Dichloropropene	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Trichloroethene (TCE)	µg/L	5	1	U	1	U	1	U	0.88	J	1.8		2.3		1	U	1.6	
Trichlorofluoromethane	µg/L	--	1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Vinyl acetate	µg/L	--	2	U	2	UJ	2	U	2	UJ	2	UJ	2	UJ	2	UJ	2	UJ
Vinyl chloride	µg/L	2	1	U	1	U	1	U	1	U	1	U	**2.3**		1.5		1	U
Xylenes, Total	µg/L	--	2	U	2	U	2	U	2	U	2	U	1.3	J	1.6	J	2	U
Field Parameters																		
pH	pH Units	--	5.26		6.69		8.02		6.56		6.44		---		6.96		6.48	
Specific Conductivity	mS/cm	--	2.26		0.07		0.948		0.94		1.44		---		0.459		1.62	
Turbidity	NTU	--	1.4		8.48		29.2		2.97		17.4		---		62.44		8.77	
Dissolved Oxygen	mg/L	--	0.89		1.91		0.33		0.75		1.52		---		0.64		0.69	
Temperature	°C	--	12		12		15.6		11.9		8.7		---		13.3		12.2	
Oxidation Reduction Potential	mV	--	122		-75.5		-70.8		-53.4		81.1		---		-169.9		-38.6	

Notes:

[1]Area of Contamination (AOC) 50 cleanup levels are from the Record of Decision (United States Environmental Protection Agency 2004).

Shading = Above Cleanup Goal

--- = not sampled

Acronyms and Abbreviations:

°C = degree Celsius
µg/L = microgram per liter
µS/cm = microsiemen per centimeter
FDSA = former drum storage area
ID = identification
mg/L = milligram per liter
mV = millivolt
NTU = nephelometric turbidity unit

Qualifiers:

J	The analyte was positively identified, the quantitation is an estimation.
U	The analyte was analyzed for, but not detected. The associated numerical value is at or below the limit of detection.
UJ	The analyte was not detected and was reported as less than the limit of detection. However, the associated numerical value is approximate.

Reference:

United States Environmental Protection Agency. 2004. Final Record of Decision, AOC 50, Devens, Massachusetts. January 22. Available online at: https://semspub.epa.gov/work/01/201577.pdf.

Table 7
Groundwater Analytical Results, Fall 2021
2021 Annual Operations, Maintenance, and Monitoring Report
Area of Contamination 50, Former Fort Devens Army Installation
Devens, Massachusetts

Location		G6M-13-02X		G6M-13-04X	G6M-13-05X	G6M-13-06X	G6M-95-19X	G6M-95-20X		G6M-97-05B
Sample ID		AOC50-DUP04-FAL21	G6M-13-02X-FAL21	G6M-13-04X-FAL21	G6M-13-05X-FAL21	G6M-13-06X-FAL21	G6M-95-19X-FAL21	AOC50-DUP01-FAL21	G6M-95-20X-FAL21	G6M-97-05B-FAL21
Area		Area 4		Area 5	Area 1	Area 1	Area 1	Area 1		Area 5
Analyte	Units	Cleanup Goal[1]	10/18/2021	10/18/2021	10/12/2021	10/14/2021	10/12/2021	10/14/2021	10/14/2021	10/14/2021	10/13/2021
Dissolved Gases											
Ethane	µg/L	--	0.71 J	0.69 J	---	30	8.4	---	---	---	6.3
Ethene	µg/L	--	0.99 J	0.84 J	---	35	4.7	---	---	---	23
Methane	µg/L	--	6,100	6,500	---	17,000	12,000	---	---	---	28,000
General Chemistry											
Alkalinity, Total (as CaCO3)	mg/L	--	100	100	---	91	310	---	---	---	110
Nitrate-Nitrite (as N)	mg/L	10	0.05 U	0.05 U	---	0.043 J	0.064 J	---	---	---	0.05 U
Sulfate	mg/L	--	8.1	8	---	1 U	1 U	---	---	---	0.67 J
Sulfide	mg/L	--	0.81 U	0.81 U	---	0.81 U	0.81 U	---	---	---	0.81 U
Total Organic Carbon	mg/L	--	6.6	7	---	11	150	---	---	---	34
General Chemistry											
Arsenic	µg/L	10	**14**	**14**	**450**	**130**	**440**	---	**36**	**37**	**170**
Iron	µg/L	3,129	1,600	1,700	**41,000**	**92,000**	**220,000**	---	**6,400**	**6,500**	**52,000**
Manganese	µg/L	1,460	**2,600**	**2,700**	**8,300**	**10,000**	**2,300**	---	430	440	**6,600**
Volatile Organic Compounds											
1,1,1,2-Tetrachloroethane	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
1,1,1-Trichloroethane	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
1,1,2,2-Tetrachloroethane	µg/L	--	2 U	2 U	2 U	2 U	2 U	2 U	2 UJ	2 U	2 U
1,1,2-Trichloroethane	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
1,1-Dichloroethane	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
1,1-Dichloroethene	µg/L	7	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
1,1-Dichloropropene	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
1,2,3-Trichlorobenzene	µg/L	--	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U
1,2,3-Trichloropropane	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
1,2,4-Trichlorobenzene	µg/L	--	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U
1,2,4-Trimethylbenzene	µg/L	--	1 U	1 U	1 U	1 U	1.9	1 U	1 UJ	1 U	1 U
1,2-Dibromo-3-chloropropane	µg/L	--	4 U	4 U	4 U	4 U	4 U	4 U	4 UJ	4 U	4 U
1,2-Dibromoethane (EDB)	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
1,2-Dichlorobenzene	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
1,2-Dichloroethane	µg/L	5	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
1,2-Dichloroethene	µg/L	--	14	13	0.91 J	23	1.5 J	2 U	2 UJ	2 UJ	21
1,2-Dichloropropane	µg/L	5	2 U	2 U	2 U	2 U	2 U	2 U	2 UJ	2 U	2 U
1,3,5-Trimethylbenzene	µg/L	--	1 U	1 U	1 U	1 U	0.51 J	1 U	1 UJ	1 U	1 U
1,3-Dichlorobenzene	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
1,3-Dichloropropane	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
1,4-Dichlorobenzene	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
2,2-Dichloropropane	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
2-Butanone (MEK)	µg/L	--	10 UJ	10 UJ	10 U	11	640	10 U	10 UJ	10 U	31
2-Chlorotoluene	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
2-Hexanone	µg/L	--	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	13
4-Chlorotoluene	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
4-Methyl-2-pentanone (MIBK)	µg/L	--	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U
Acetone	µg/L	--	25 U	25 U	25 U	25 U	110	25 U	25 UJ	25 U	14 J
Benzene	µg/L	5	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
Bromobenzene	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
Bromochloromethane	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
Bromodichloromethane	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
Bromoform	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
Bromomethane	µg/L	--	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U
Carbon disulfide	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
Carbon Tetrachloride	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
Chlorobenzene	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
Chloroethane	µg/L	--	5 U	5 U	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 U
Chloroform	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
Chloromethane	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 UJ
cis-1,2-Dichloroethene	µg/L	70	13	13	0.91 J	23	1.5	1 U	1 UJ	1 UJ	21
cis-1,3-Dichloropropene	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
Cumene	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
Dibromochloromethane	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
Dibromomethane	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
Dichlorodifluoromethane	µg/L	--	2 U	2 U	2 U	2 U	2 U	2 U	2 UJ	2 U	2 U
Ethylbenzene	µg/L	--	1 U	1 U	1 U	1 U	2	1 U	1 UJ	1 U	1 U
Hexachlorobutadiene	µg/L	--	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U
m,p-Xylene	µg/L	--	1 U	1 U	1 U	0.36 J	0.71 J	1 U	1 UJ	1 U	1 U
Methyl tert-butyl ether (MTBE)	µg/L	--	1 U	1 U	1 U	1 U	0.4 J	1 U	1 UJ	1 U	1 U
Methylene chloride	µg/L	5	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U
n-Butylbenzene	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
n-Propylbenzene	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
Naphthalene	µg/L	--	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U
o-Xylene	µg/L	--	0.5 U	0.5 U	0.5 U	0.5 U	0.49 J	0.5 U	0.5 UJ	0.5 U	0.5 U
p-Cymene (p-Isopropyltoluene)	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
sec-Butylbenzene	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
Styrene	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
tert-Butylbenzene	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
Tetrachloroethene (PCE)	µg/L	5	**10**	**11**	2 U	**9.2**	2 U	0.92 J	2 UJ	2 UJ	2 U
Toluene	µg/L	--	1 U	1 U	1 U	1 U	9.3	1 U	1 UJ	1 U	1 U
trans-1,2-Dichloroethene	µg/L	--	1	0.68 J	1 U	0.64 J	1 U	1 U	1 UJ	1 U	1 U
trans-1,3-Dichloropropene	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
Trichloroethene (TCE)	µg/L	5	**11**	**12**	0.88 J	2.8	1 U	1 U	1 UJ	1 U	3.1
Trichlorofluoromethane	µg/L	--	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U
Vinyl acetate	µg/L	--	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ
Vinyl chloride	µg/L	2	**2.2**	**2.3**	1 U	**13**	0.59 J	1 U	1 UJ	1 U	**8**
Xylenes, Total	µg/L	--	2 U	2 U	2 U	0.36 J	1.2 J	2 U	2 UJ	2 U	2 U
Field Parameters											
pH	pH Units	--	6.25	6.25	6.98	6.74	6.28	5.44	6.04	6.04	6.49
Specific Conductivity	mS/cm	--	1.98	1.98	1.14	1.8	2.08	5.98	0.887	0.887	1.625
Turbidity	NTU	--	7.36	7.36	32.4	21.4	23.8	2.38	44.8	44.8	11.96
Dissolved Oxygen	mg/L	--	0.6	0.6	0.65	0.74	0.76	4.46	1.11	1.11	0.7
Temperature	°C	--	11	11	13.2	12.5	11.8	11.3	11.5	11.5	8.9
Oxidation Reduction Potential	mV	--	-11.9	-11.9	-135	-117	-69.2	242	22.9	22.9	-105.1

Notes:

[1]Area of Contamination (AOC) 50 cleanup levels are from the Record of Decision (United States Environmental Protection Agency 2004).

Shading = Above Cleanup Goal

--- = not sampled

Acronyms and Abbreviations:

°C = degree Celsius
µg/L = microgram per liter
µS/cm = microsiemen per centimeter
FDSA = former drum storage area
ID = identification
mg/L = milligram per liter
mV = millivolt
NTU = nephelometric turbidity unit

Qualifiers:

J	The analyte was positively identified, the quantitation is an estimation.
U	The analyte was analyzed for, but not detected. The associated numerical value is at or below the limit of detection.
UJ	The analyte was not detected and was reported as less than the limit of detection. However, the associated numerical value is approximate.

Reference:

United States Environmental Protection Agency. 2004. Final Record of Decision, AOC 50, Devens, Massachusetts. January 22. Available online at: https://semspub.epa.gov/work/01/201577.pdf.

Table 7
Groundwater Analytical Results, Fall 2021
2021 Annual Operations, Maintenance, and Monitoring Report
Area of Contamination 50, Former Fort Devens Army Installation
Devens, Massachusetts

Analyte	Units	Location	G6M-97-28X		MW-3		MW-7		XSA-12-95X		XSA-12-96X		XSA-12-97X		XSA-12-98X	
		Sample ID	G6M-97-28X-FAL21		MW-3-FAL21		MW-7-FAL21		XSA-12-95X-FAL21		XSA-12-96X-FAL21		XSA-12-97X-FAL21		XSA-12-98X-FAL21	
		Area	Area 4		Area 5		Area 5		Area 5		Area 5		Area 5		Area 5	
		Cleanup Goal[1]	10/12/2021		10/12/2021		10/12/2021		10/13/2021		10/13/2021		10/14/2021		10/14/2021	
Dissolved Gases																
Ethane	µg/L	--	---		---		---		---		0.66	J	---		---	
Ethene	µg/L	--	---		---		---		---		0.71	U	---		---	
Methane	µg/L	--	---		---		---		---		25		---		---	
General Chemistry																
Alkalinity, Total (as CaCO3)	mg/L	--	---		---		---		---		250		---		---	
Nitrate-Nitrite (as N)	mg/L	10	---		---		---		---		0.05	U	---		---	
Sulfate	mg/L	--	---		---		---		---		5.7		---		---	
Sulfide	mg/L	--	---		---		---		---		0.81	U	---		---	
Total Organic Carbon	mg/L	--	---		---		---		---		0.8	U	---		---	
General Chemistry																
Arsenic	µg/L	10	**120**		**530**		**490**		2.2	J	1.6	J	**21**		3	U
Iron	µg/L	3,129	**7,700**		**41,000**		**26,000**		**3,500**		2,200		**4,800**		410	
Manganese	µg/L	1,460	**6,800**		**8,900**		**11,000**		**11,000**		**5,600**		**7,400**		30	
Volatile Organic Compounds																
1,1,1,2-Tetrachloroethane	µg/L	--	---		1	U	1	U	1	U	1	U	1	U	1	U
1,1,1-Trichloroethane	µg/L	--	---		1	U	1	U	1	U	1	U	1	U	1	U
1,1,2,2-Tetrachloroethane	µg/L	--	---		2	U	2	U	2	U	2	U	2	U	2	U
1,1,2-Trichloroethane	µg/L	--	---		1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethane	µg/L	--	---		1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethene	µg/L	7	---		1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloropropene	µg/L	--	---		1	U	1	U	1	U	1	U	1	U	1	U
1,2,3-Trichlorobenzene	µg/L	--	---		5	U	5	U	5	U	5	U	5	U	5	U
1,2,3-Trichloropropane	µg/L	--	---		1	U	1	U	1	U	1	U	1	U	1	U
1,2,4-Trichlorobenzene	µg/L	--	---		5	U	5	U	5	U	5	U	5	U	5	U
1,2,4-Trimethylbenzene	µg/L	--	---		1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dibromo-3-chloropropane	µg/L	--	---		4	U	4	U	4	U	4	U	4	U	4	U
1,2-Dibromoethane (EDB)	µg/L	--	---		1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene	µg/L	--	---		1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethane	µg/L	5	---		1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethene	µg/L	--	---		2	U	3		6		12		11		2	U
1,2-Dichloropropane	µg/L	5	---		2	U	2	U	2	U	2	U	2	U	2	U
1,3,5-Trimethylbenzene	µg/L	--	---		1	U	1	U	1	U	1	U	1	U	1	U
1,3-Dichlorobenzene	µg/L	--	---		1	U	1	U	1	U	1	U	1	U	1	U
1,3-Dichloropropane	µg/L	--	---		1	U	1	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene	µg/L	--	---		1	U	1	U	1	U	1	U	1	U	1	U
2,2-Dichloropropane	µg/L	--	---		1	UJ	1	U	1	U	1	U	1	U	1	U
2-Butanone (MEK)	µg/L	--	---		10	U	10	U	10	U	10	U	10	U	10	U
2-Chlorotoluene	µg/L	--	---		1	U	1	U	1	U	1	U	1	U	1	U
2-Hexanone	µg/L	--	---		5	U	5	U	5	U	5	U	5	U	5	U
4-Chlorotoluene	µg/L	--	---		1	U	1	U	1	U	1	U	1	U	1	U
4-Methyl-2-pentanone (MIBK)	µg/L	--	---		5	U	5	U	5	U	5	U	5	U	5	U
Acetone	µg/L	--	---		25	U	25	U	25	U	25	U	25	U	25	U
Benzene	µg/L	5	---		1	U	1	U	1	U	1	U	1	U	1	U
Bromobenzene	µg/L	--	---		1	U	1	U	1	U	1	U	1	U	1	U
Bromochloromethane	µg/L	--	---		1	U	1	U	1	U	1	U	1	U	1	U
Bromodichloromethane	µg/L	--	---		1	U	1	U	1	U	1	U	1	U	1	U
Bromoform	µg/L	--	---		1	U	1	U	1	U	1	U	1	U	1	U
Bromomethane	µg/L	--	---		5	U	5	U	5	U	5	U	5	U	5	U
Carbon disulfide	µg/L	--	---		1	U	1	U	1	U	1	U	1	U	1	U
Carbon Tetrachloride	µg/L	--	---		1	U	1	U	1	U	1	U	1	U	1	U
Chlorobenzene	µg/L	--	---		1	U	1	U	1	U	1	U	1	U	1	U
Chloroethane	µg/L	--	---		5	UJ	5	UJ	5	U	5	U	5	UJ	5	UJ
Chloroform	µg/L	--	---		1	U	1	U	1	U	1	U	1	U	1	U
Chloromethane	µg/L	--	---		1	U	1	U	1	UJ	1	UJ	1	U	1	U
cis-1,2-Dichloroethene	µg/L	70	---		0.51	J	3		4.3		8.6		11		1	U
cis-1,3-Dichloropropene	µg/L	--	---		1	U	1	U	1	U	1	U	1	U	1	U
Cumene	µg/L	--	---		1	U	1	U	1	U	1	U	1	U	1	U
Dibromochloromethane	µg/L	--	---		1	U	1	U	1	U	1	U	1	U	1	U
Dibromomethane	µg/L	--	---		1	U	1	U	1	U	1	U	1	U	1	U
Dichlorodifluoromethane	µg/L	--	---		2	UJ	2	U	2	U	2	U	2	U	2	U
Ethylbenzene	µg/L	--	---		1	U	1	U	1	U	1	U	1	U	1	U
Hexachlorobutadiene	µg/L	--	---		5	U	5	U	5	U	5	U	5	U	5	U
m,p-Xylene	µg/L	--	---		1	U	1	U	1	U	1	U	1	U	1	U
Methyl tert-butyl ether (MTBE)	µg/L	--	---		1	U	1	U	1	U	1	U	1	U	1	U
Methylene chloride	µg/L	5	---		5	U	5	U	5	U	5	U	5	U	5	U
n-Butylbenzene	µg/L	--	---		1	U	1	U	1	U	1	U	1	U	1	U
n-Propylbenzene	µg/L	--	---		1	U	1	U	1	U	1	U	1	U	1	U
Naphthalene	µg/L	--	---		5	U	5	U	5	U	5	U	5	U	5	U
o-Xylene	µg/L	--	---		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
p-Cymene (p-Isopropyltoluene)	µg/L	--	---		1	U	1	U	1	U	1	U	1	U	1	U
sec-Butylbenzene	µg/L	--	---		1	U	1	U	1	U	1	U	1	U	1	U
Styrene	µg/L	--	---		1	U	1	U	1	U	1	U	1	U	1	U
tert-Butylbenzene	µg/L	--	---		1	U	1	U	1	U	1	U	1	U	1	U
Tetrachloroethene (PCE)	µg/L	5	---		2	U	2	U	2.8		2.1		2	U	0.83	J
Toluene	µg/L	--	---		1	U	1	U	1	U	1	U	1	U	1	U
trans-1,2-Dichloroethene	µg/L	--	---		1	U	1	U	1.7		3.1		1	U	1	U
trans-1,3-Dichloropropene	µg/L	--	---		1	U	1	U	1	U	1	U	1	U	1	U
Trichloroethene (TCE)	µg/L	5	---		1	U	0.65	J	2.7		**8.3**		1	U	1	U
Trichlorofluoromethane	µg/L	--	---		1	UJ	1	U	1	U	1	U	1	U	1	U
Vinyl acetate	µg/L	--	---		2	UJ	2	UJ	2	UJ	2	UJ	2	UJ	2	UJ
Vinyl chloride	µg/L	2	---		1	U	1.6		0.86	J	**4.4**		**3.3**		1	U
Xylenes, Total	µg/L	--	---		2	U	2	U	2	U	2	U	2	U	2	U
Field Parameters																
pH	pH Units	--	6.69		6.82		6.61		6.83		7.43		7.07		8.2	
Specific Conductivity	mS/cm	--	0.55		1.641		1.398		1.179		1.212		0.902		1.2	
Turbidity	NTU	--	4.89		13.87		30.98		30.7		330		124.7		69.9	
Dissolved Oxygen	mg/L	--	1.25		1.12		0.72		0.02		0.01		0.01		0.01	
Temperature	°C	--	17.5		12.6		11.1		13.6		14.8		14		15.9	
Oxidation Reduction Potential	mV	--	-125		-108		-93.5		-99.5		-131.2		-81.2		-147	

Notes:

[1]Area of Contamination (AOC) 50 cleanup levels are from the Record of Decision (United States Environmental Protection Agency 2004).

Shading = Above Cleanup Goal

--- = not sampled

Acronyms and Abbreviations:

°C = degree Celsius
µg/L = microgram per liter
µS/cm = microsiemen per centimeter
FDSA = former drum storage area
ID = identification
mg/L = milligram per liter
mV = millivolt
NTU = nephelometric turbidity unit

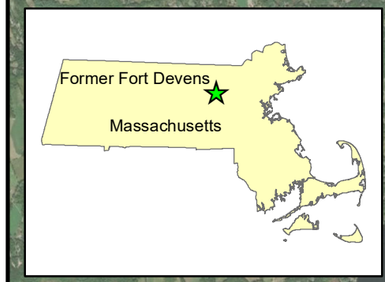
Qualifiers:

J	The analyte was positively identified, the quantitation is an estimation.
U	The analyte was analyzed for, but not detected. The associated numerical value is at or below the limit of detection.
UJ	The analyte was not detected and was reported as less than the limit of detection. However, the associated numerical value is approximate.

Reference:

United States Environmental Protection Agency. 2004. Final Record of Decision, AOC 50, Devens, Massachusetts. January 22. Available online at: https://semspub.epa.gov/work/01/201577.pdf.

Figures



AOC 50

Former North Post

Former Main Post

Former Fort Devens Army Installation and Fort Devens Reserve Forces Training Area (South Post)

Downtown Ayer

Shirley

Middlesex County

Worcester County

George W Stanton Hwy

Lancaster

Harvard

N

Legend

- Former Fort Devens Boundary
- Area of Contamination (AOC)
- County Line
- Highway
- Major Road

0 1 2

Miles

Aerial Source: ESRI, ArcGIS Online, World Imagery

2021 Annual Operations, Maintenance, and Monitoring Report
Area of Contamination 50
Former Fort Devens Army Installation
Devens, Massachusetts

Site Location

SERES Engineering & Services, LLC
ARCADIS
a joint venture

Figure 1

Legend

- Former Fort Devens Boundary
- Groundwater Flow Direction
- ERD LTM Well - Sampled Semi-Annually
- ERD LTM Well - Sampled Annually
- ERD LTM Well - Sampled Biennially
- Monitoring Well Converted to Injection Well
- Monitoring Well - Not Included in Approved LTM Network
- MicroWell - Sampled Annually
- MicroWell - Sampled Semi-Annually
- Injection Well Installed Prior to 01/2014
- Injection Well Installed 01/2014

Notes:
ERD = enhanced reductive dechlorination
IWS = in-well stripping
LTM = long-term monitoring

0 200 400
Feet

2021 Annual Operations, Maintenance, and Monitoring Report
Area of Contamination 50
Former Fort Devens Army Installation
Devens, Massachusetts

Site Layout

SERES Engineering & Services, LLC
ARCADIS a joint venture

Figure 2

File: Figure 2 - AOC50 Site Layout.mxd

Legend

- Former Fort Devens Boundary
- ERD LTM Well - Sampled Semi-Annually
- ERD LTM Well - Sampled Annually
- ERD LTM Well - Sampled Biennially
- Monitoring Well Converted to Injection Well
- Monitoring Well - Not Included in Approved LTM Network
- Injection Well Installed Prior to 01/2014
- Vertical Groundwater Profiling Location
- Former Dry Well
- Floor Drain
- Floor Drain Piping
- Janitor Sink
- Building Footprint
- Former Feature

Notes:
ERD = enhanced reductive dechlorination
LTM = long-term monitoring
PCE = tetrachloroethene
SVE = soil vapor extraction

0 50 100
Feet

2021 Annual Operations, Maintenance, and Monitoring Report
Area of Contamination 50
Former Fort Devens Army Installation
Devens, Massachusetts

Site Layout
Source Area

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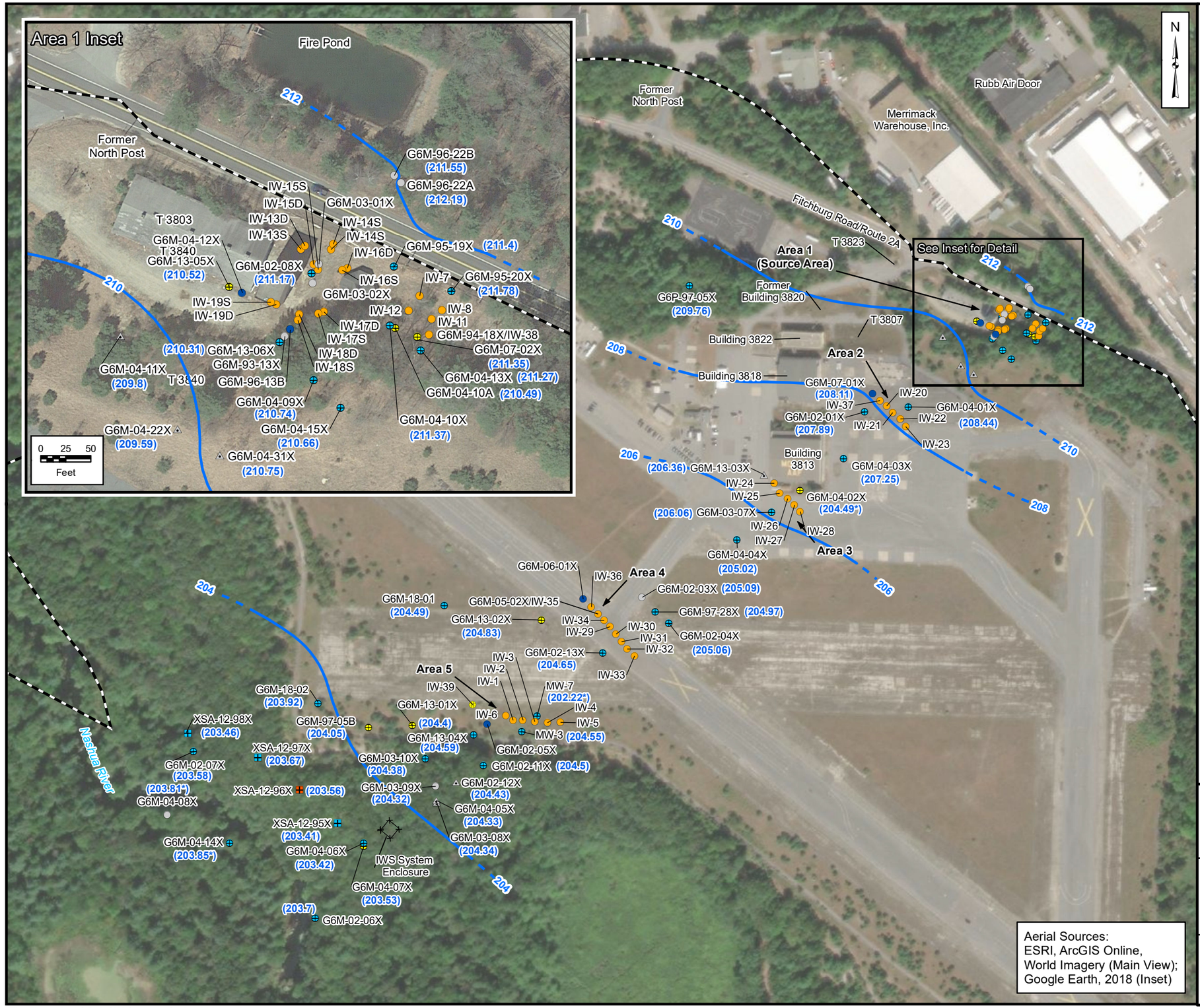
Figure
3

File: Figure 3 - AOC50 Source Area.mxd



Legend

- Former Fort Devens Boundary
- ERD LTM Well - Sampled Semi-Annually
- ERD LTM Well - Sampled Annually
- ERD LTM Well - Sampled Biennially
- Monitoring Well Converted to Injection Well
- Monitoring Well - Not Included in Approved LTM Network
- MicroWell - Sampled Annually
- MicroWell - Sampled Semi-Annually
- Injection Well Installed Prior to 01/2014
- Injection Well Installed 01/2014
- Groundwater Contour (ft NAVD88) (Interval = 2 ft)
- Groundwater Contour (ft NAVD88) (Interval = 2 ft) (Inferred)

Notes:
1. G6M-04-02X, G6M-04-08X, G6M-04-14X, and MW-7 were not used in contouring.

ERD = enhanced reductive dechlorination
ft = feet
IWS = in-well stripping
LTM = long-term monitoring
NAVD88 = North American Vertical Datum of 1988

2021 Annual Operations, Maintenance, and Monitoring Report
Area of Contamination 50
Former Fort Devens Army Installation
Devens, Massachusetts

Groundwater Contour Map - Spring 2021

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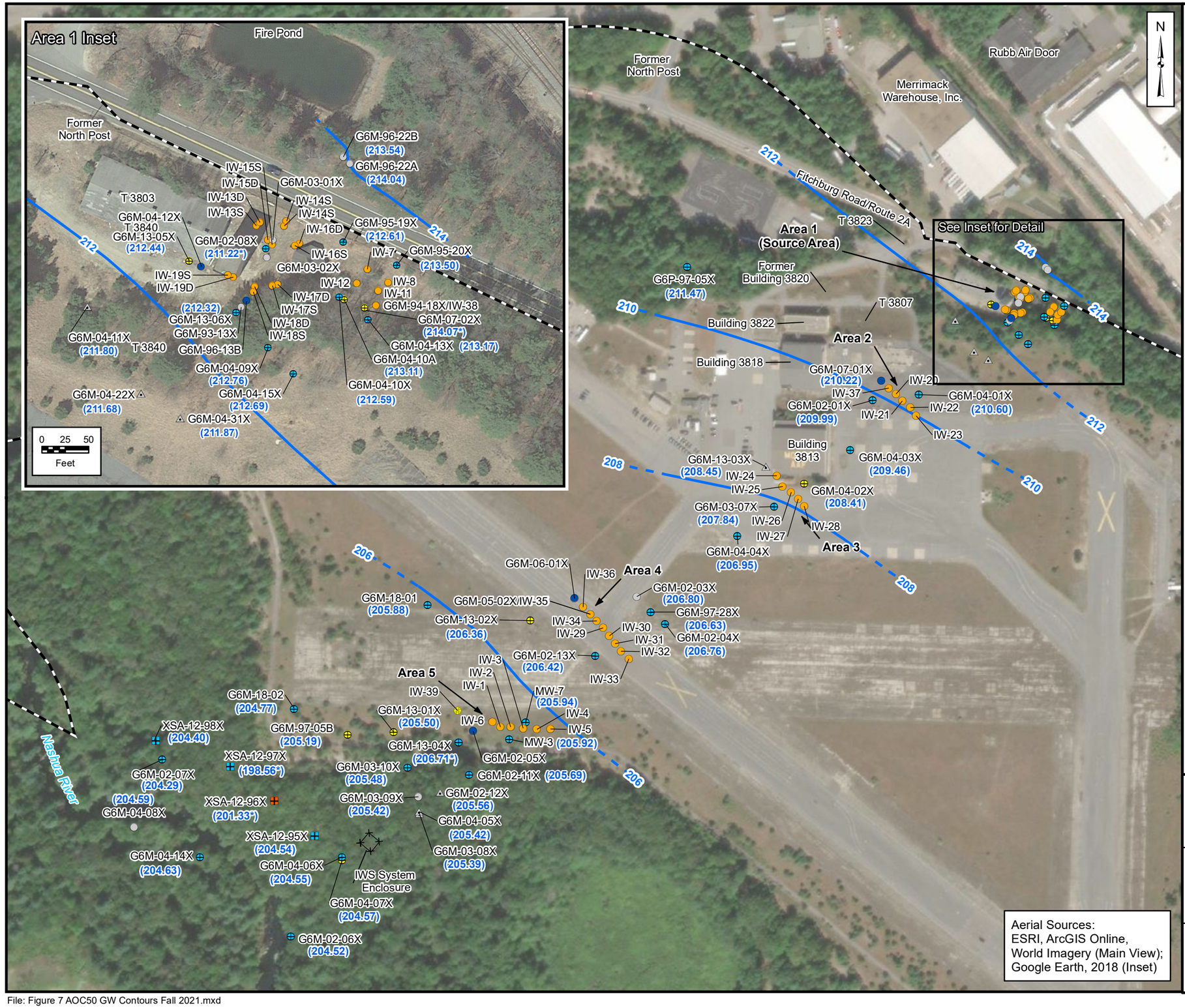
Figure 4

File: Figure 6 - AOC50 GW Contours Spring 2021.mxd



2021 Annual Operations, Maintenance, and Monitoring Report
Area of Contamination 50
Former Fort Devens Army Installation
Devens, Massachusetts

Groundwater Contour Map - Fall 2021

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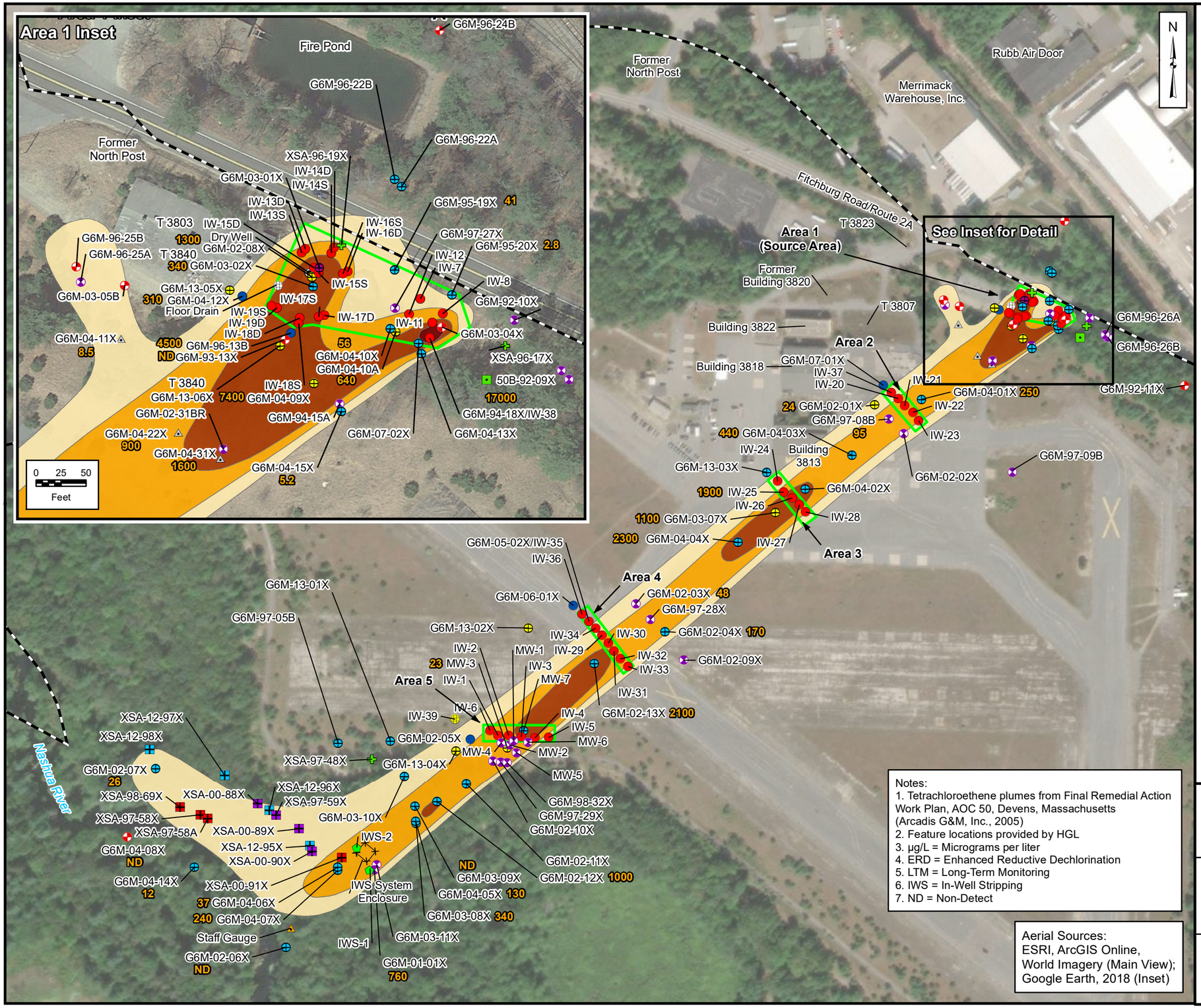
Figure 5

File: Figure 7 AOC50 GW Contours Fall 2021.mxd



Legend

- Former Fort Devens Boundary
- ERD LTM Well - Sampled Semi-Annually
- ERD LTM Well - Sampled Annually
- ERD LTM Well - Sampled Biennially
- ERD LTM Well - Sampled Every 3 Years
- LTM Well - Gauge Only
- Monitoring Well
- Monitoring Well Converted to Injection Well
- In-Well Stripping System Well
- MicroWell - Sampled Annually
- MicroWell - Gauge Only
- MicroWell
- Injection Well Installed Prior to 01/2014
- Staff Gauge
- Historical Vertical Groundwater Profiling Location
- Historical Soil Boring
- Injection Well Installed 01/2014
- Dry Well
- Floor Drain
- ERD Injection Well Transect

Interpretive Tetrachloroethene (PCE) Plumes

- 5 - 100 (µg/L)
- 100 - 1,000 (µg/L)
- 1000 - 10,000 (µg/L)
- > 10,000 (µg/L)

1.7 Tetrachloroethene (PCE) Concentration (µg/L)

Notes:
1. Tetrachloroethene plumes from Final Remedial Action Work Plan, AOC 50, Devens, Massachusetts (Arcadis G&M, Inc., 2005)
2. Feature locations provided by HGL
3. µg/L = Micrograms per liter
4. ERD = Enhanced Reductive Dechlorination
5. LTM = Long-Term Monitoring
6. IWS = In-Well Stripping
7. ND = Non-Detect

Aerial Sources:
ESRI, ArcGIS Online, World Imagery (Main View); Google Earth, 2018 (Inset)

2021 Annual Operations, Maintenance, and Monitoring Report
Area of Contamination 50
Former Fort Devens Army Installation
Devens, Massachusetts

Tetrachloroethene Concentrations in Groundwater - Fall 2004

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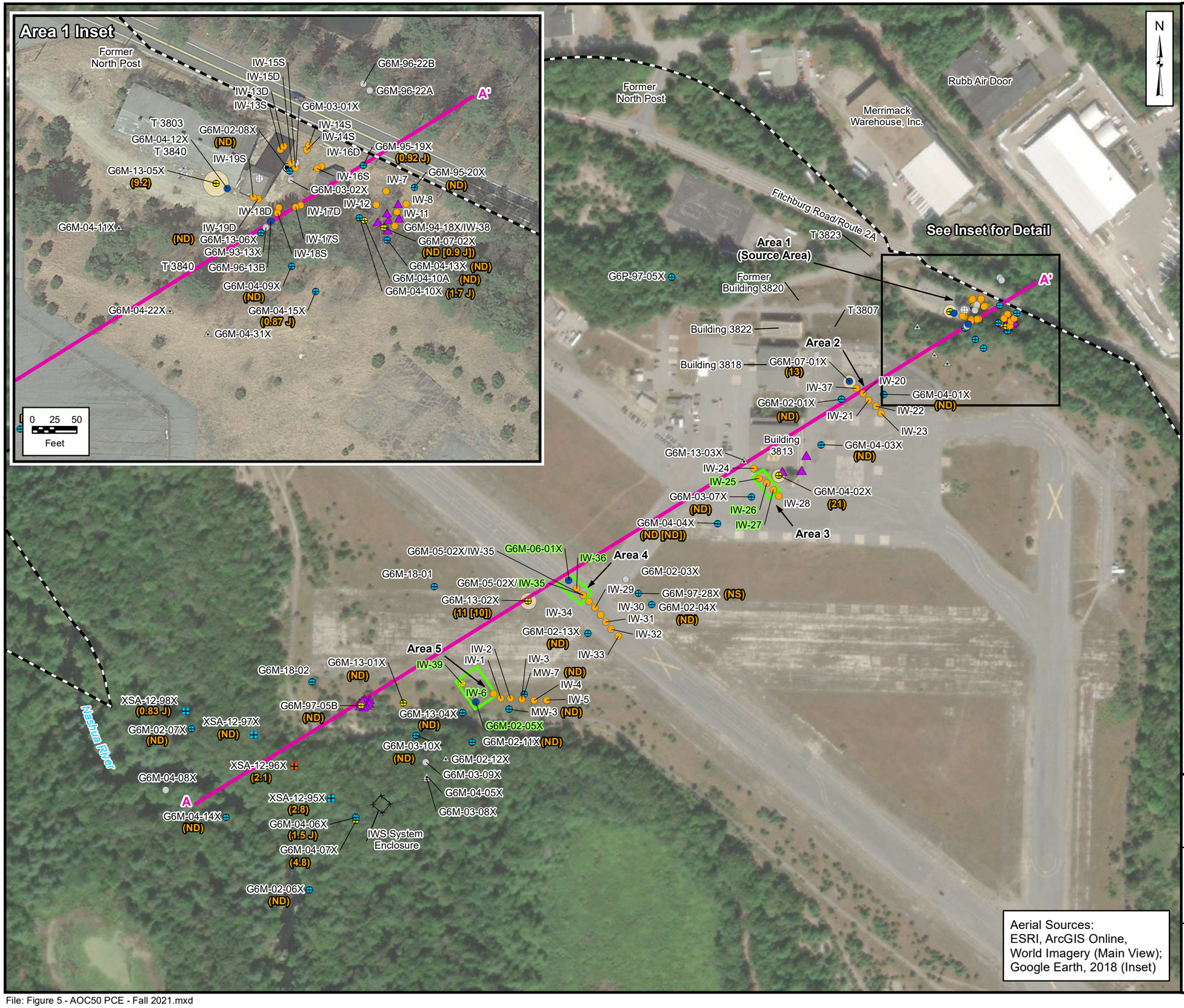
Figure 6

File: Figure 4 - AOC50 PCE - 2004 v2.mxd



Legend

- Former Fort Devens Boundary
- ERD LTM Well - Sampled Semi-Annually
- ERD LTM Well - Sampled Annually
- ERD LTM Well - Sampled Biennially
- Monitoring Well Converted to Injection Well
- Monitoring Well - Not Included in Approved LTM Network
- MicroWell - Sampled Annually
- MicroWell - Sampled Semi-Annually
- Injection Well Installed Prior to 01/2014
- Injection Well Installed 01/2014
- Dry Well
- Floor Drain
- Geoprobe Injection Location - July/Aug. 2019
- ERD Injection Well Transect - July/Aug. 2019
- Cross-Section Transect

Interpretive Tetrachloroethene (PCE) Plumes (dashed where inferred)

- 5 - 100 (µg/L)

IW-25 Well Used for Injection in July/Aug. 2019

16 Fall 2021 PCE Result

Notes:
1. Feature locations were provided by HGL.
2. All concentrations are in micrograms per liter (µg/L).
3. Duplicate results are shown in brackets.
4. J = The result is qualified as estimated.
5. ND = Nondetect
6. The cleanup value for PCE is 5 µg/L.

ERD = enhanced reductive dechlorination
IWS = in-well stripping
LTM = long-term monitoring
PCE = tetrachloroethene

0 200 400
Feet

Aerial Sources:
ESRI, ArcGIS Online, World Imagery (Main View); Google Earth, 2018 (Inset)

2021 Annual Operations, Maintenance, and Monitoring Report
Area of Contamination 50
Former Fort Devens Army Installation
Devens, Massachusetts

Tetrachloroethene Concentrations in Groundwater - Fall 2021

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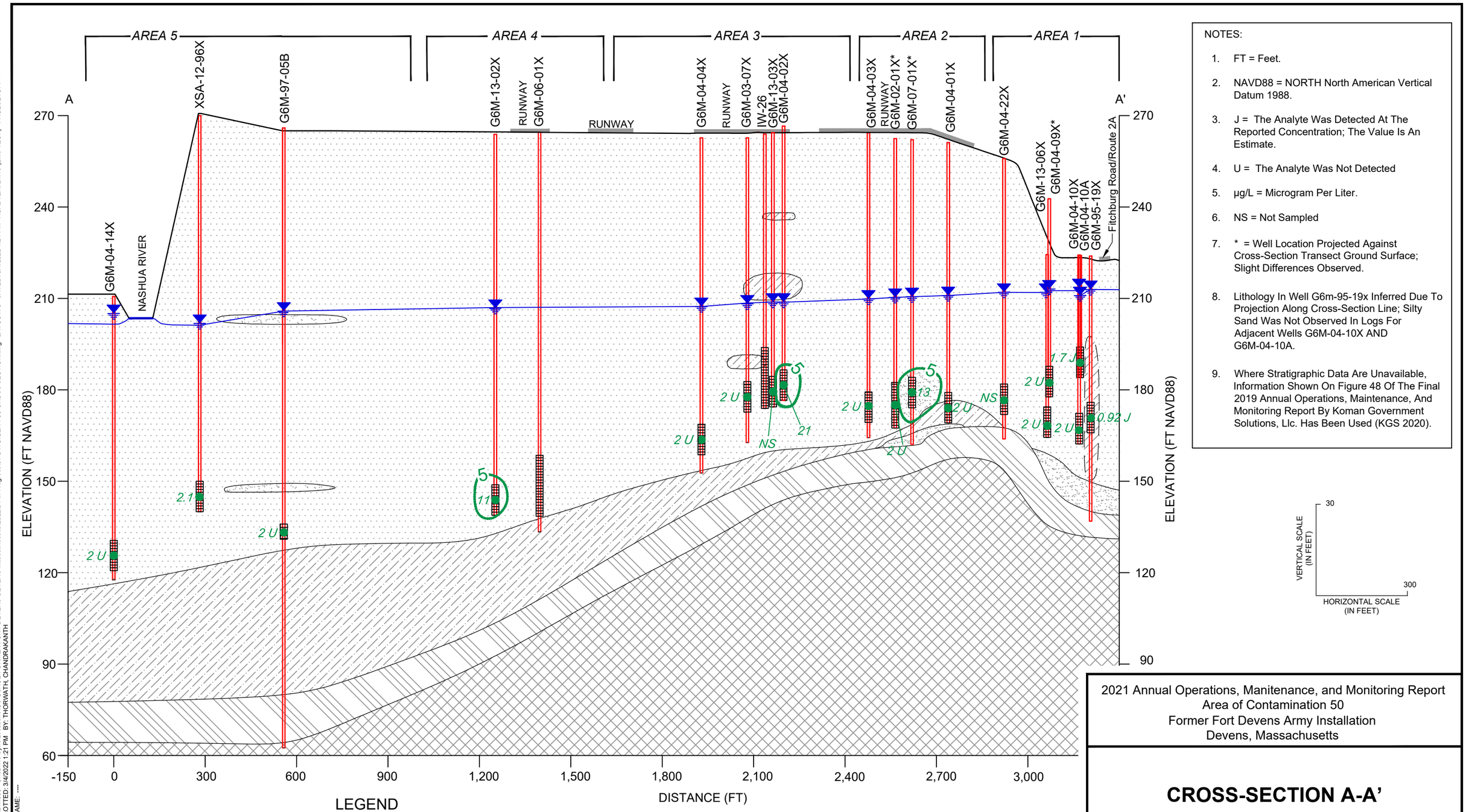
Figure 7

File: Figure 5 - AOC50 PCE - Fall 2021.mxd



NOTES:

1. FT = Feet.
2. NAVD88 = NORTH North American Vertical Datum 1988.
3. J = The Analyte Was Detected At The Reported Concentration; The Value Is An Estimate.
4. U = The Analyte Was Not Detected
5. µg/L = Microgram Per Liter.
6. NS = Not Sampled
7. * = Well Location Projected Against Cross-Section Transect Ground Surface; Slight Differences Observed.
8. Lithology In Well G6m-95-19x Inferred Due To Projection Along Cross-Section Line; Silty Sand Was Not Observed In Logs For Adjacent Wells G6M-04-10X AND G6M-04-10A.
9. Where Stratigraphic Data Are Unavailable, Information Shown On Figure 48 Of The Final 2019 Annual Operations, Maintenance, And Monitoring Report By Koman Government Solutions, Llc. Has Been Used (KGS 2020).

LEGEND

- FINE SAND
- COARSE SAND
- SILTY SAND
- GLACIAL TILL
- BEDROCK
- GW ELEVATION (2021)
- WELL SCREEN INTERVAL
- BORING
- G6M-13-02X BORING/WELL IDENTIFICATION
- 13 TETRACHLOROETHENE SAMPLE CONCENTRATION (µg/L)
- 2021 TETRACHLOROETHENE CONTOUR (µg/L)

2021 Annual Operations, Manitenance, and Monitoring Report
Area of Contamination 50
Former Fort Devens Army Installation
Devens, Massachusetts

CROSS-SECTION A-A'

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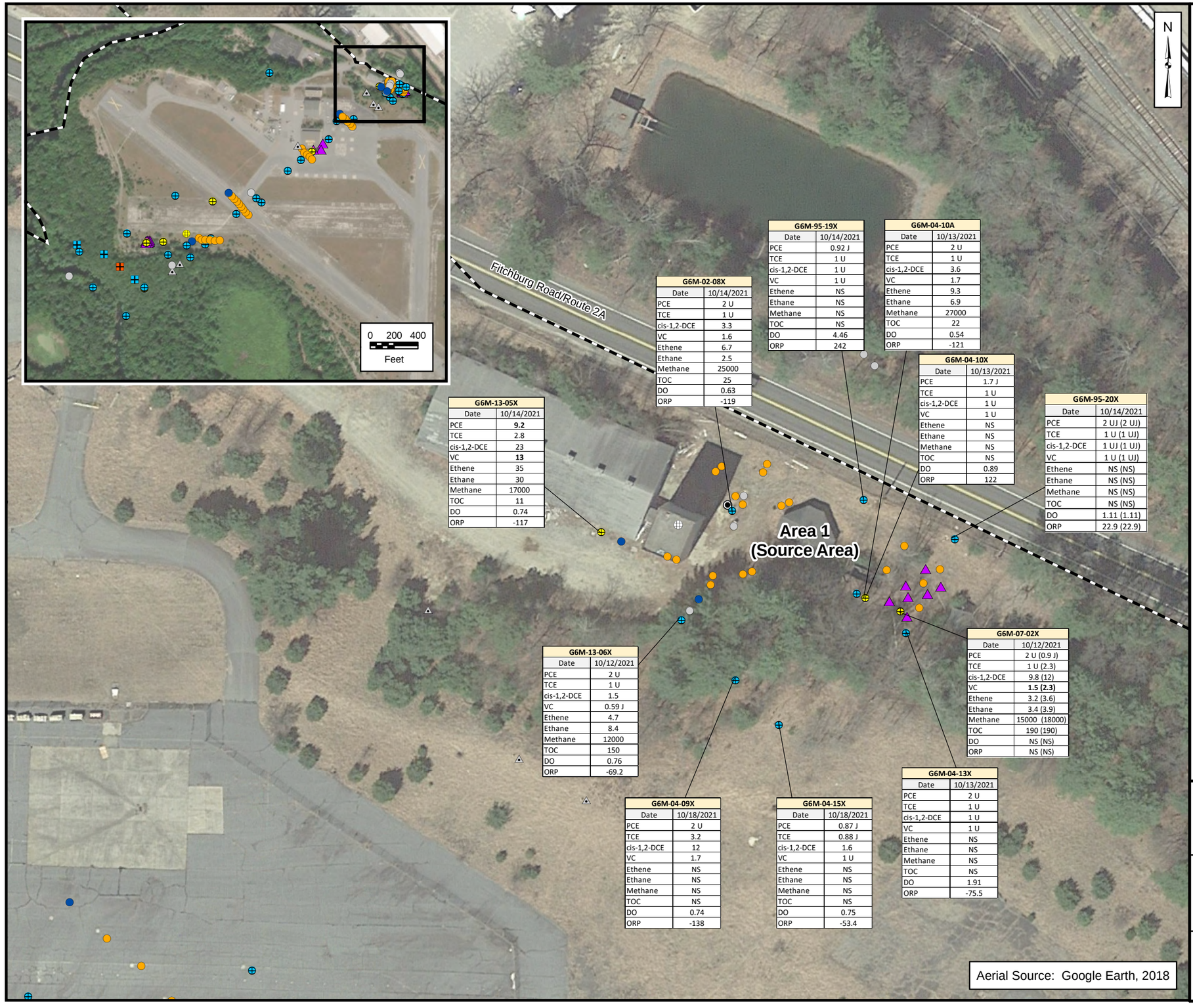
Figure 8



G6M-13-05X	
Date	10/14/2021
PCE	**9.2**
TCE	2.8
cis-1,2-DCE	23
VC	**13**
Ethene	35
Ethane	30
Methane	17000
TOC	11
DO	0.74
ORP	-117

G6M-02-08X	
Date	10/14/2021
PCE	2 U
TCE	1 U
cis-1,2-DCE	3.3
VC	1.6
Ethene	6.7
Ethane	2.5
Methane	25000
TOC	25
DO	0.63
ORP	-119

G6M-95-19X	
Date	10/14/2021
PCE	0.92 J
TCE	1 U
cis-1,2-DCE	1 U
VC	1 U
Ethene	NS
Ethane	NS
Methane	NS
TOC	NS
DO	4.46
ORP	242

G6M-04-10A	
Date	10/13/2021
PCE	2 U
TCE	1 U
cis-1,2-DCE	3.6
VC	1.7
Ethene	9.3
Ethane	6.9
Methane	27000
TOC	22
DO	0.54
ORP	-121

G6M-04-10X	
Date	10/13/2021
PCE	1.7 J
TCE	1 U
cis-1,2-DCE	1 U
VC	1 U
Ethene	NS
Ethane	NS
Methane	NS
TOC	NS
DO	0.89
ORP	122

G6M-95-20X	
Date	10/14/2021
PCE	2 UJ (2 UJ)
TCE	1 U (1 UJ)
cis-1,2-DCE	1 UJ (1 UJ)
VC	1 U (1 UJ)
Ethene	NS (NS)
Ethane	NS (NS)
Methane	NS (NS)
TOC	NS (NS)
DO	1.11 (1.11)
ORP	22.9 (22.9)

G6M-13-06X	
Date	10/12/2021
PCE	2 U
TCE	1 U
cis-1,2-DCE	1.5
VC	0.59 J
Ethene	4.7
Ethane	8.4
Methane	12000
TOC	150
DO	0.76
ORP	-69.2

G6M-04-09X	
Date	10/18/2021
PCE	2 U
TCE	3.2
cis-1,2-DCE	12
VC	1.7
Ethene	NS
Ethane	NS
Methane	NS
TOC	NS
DO	0.74
ORP	-138

G6M-04-15X	
Date	10/18/2021
PCE	0.87 J
TCE	0.88 J
cis-1,2-DCE	1.6
VC	1 U
Ethene	NS
Ethane	NS
Methane	NS
TOC	NS
DO	0.75
ORP	-53.4

G6M-04-13X	
Date	10/13/2021
PCE	2 U
TCE	1 U
cis-1,2-DCE	1 U
VC	1 U
Ethene	NS
Ethane	NS
Methane	NS
TOC	NS
DO	1.91
ORP	-75.5

G6M-07-02X	
Date	10/12/2021
PCE	2 U (0.9 J)
TCE	1 U (2.3)
cis-1,2-DCE	9.8 (12)
VC	**1.5 (2.3)**
Ethene	3.2 (3.6)
Ethane	3.4 (3.9)
Methane	15000 (18000)
TOC	190 (190)
DO	NS (NS)
ORP	NS (NS)

Legend

- Former Fort Devens Boundary
- ERD LTM Well - Sampled Semi-Annually
- ERD LTM Well - Sampled Annually
- ERD LTM Well - Sampled Biennially
- Monitoring Well Converted to Injection Well
- Monitoring Well - Not Included in Approved LTM Network
- MicroWell - Sampled Annually
- MicroWell - Sampled Semi-Annually
- Injection Well Installed Prior to 01/2014
- Injection Well Installed 01/2014
- Dry Well
- Floor Drain
- Geoprobe Injection Location - July/Aug. 2019

Notes:
1. All concentrations are in micrograms per liter (µg/L) except TOC (milligrams per liter [mg/L]), DO (mg/L) and ORP (millivolts [mv]).
2. Duplicate results are shown in brackets.
3. J/UJ = The result is qualified as estimated (detect/nondetect).
4. U = The constituent was not detected above the given laboratory reporting limit.
5. NS = The analyte was not sampled for.
6. **BOLD** values indicate exceedances of the AOC 50 cleanup level.

cis-1,2-DCE = cis-1,2-dichloroethene
CVOC = chlorinated volatile organic compound
ERD = enhanced reductive dechlorination
LTM = long-term monitoring
PCE = tetrachloroethene
TCE = trichloroethene
TOC = total organic carbon
VC = vinyl chloride
DO = dissolved oxygen
ORP = oxidation reduction potential

0 100 200
Feet

2021 Annual Operations, Maintenance, and Monitoring Report
Area of Contamination 50
Former Fort Devens Army Installation
Devens, Massachusetts

CVOC and Biogeochemical Data - Fall 2021, Area 1

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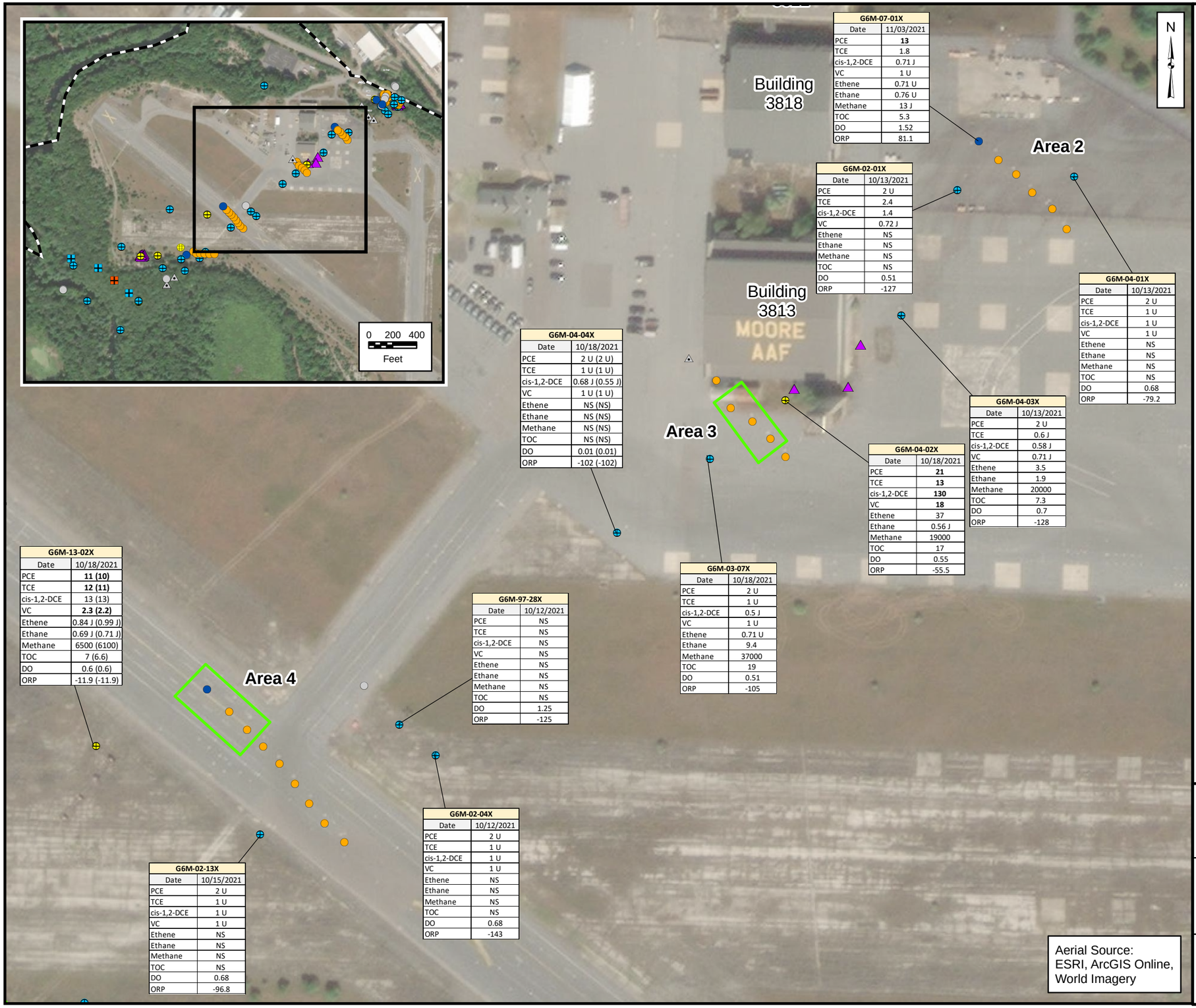
Figure 9



G6M-07-01X	
Date	11/03/2021
PCE	**13**
TCE	1.8
cis-1,2-DCE	0.71 J
VC	1 U
Ethene	0.71 U
Ethane	0.76 U
Methane	13 J
TOC	5.3
DO	1.52
ORP	81.1

G6M-02-01X	
Date	10/13/2021
PCE	2 U
TCE	2.4
cis-1,2-DCE	1.4
VC	0.72 J
Ethene	NS
Ethane	NS
Methane	NS
TOC	NS
DO	0.51
ORP	-127

G6M-04-01X	
Date	10/13/2021
PCE	2 U
TCE	1 U
cis-1,2-DCE	1 U
VC	1 U
Ethene	NS
Ethane	NS
Methane	NS
TOC	NS
DO	0.68
ORP	-79.2

G6M-04-04X	
Date	10/18/2021
PCE	2 U (2 U)
TCE	1 U (1 U)
cis-1,2-DCE	0.68 J (0.55 J)
VC	1 U (1 U)
Ethene	NS (NS)
Ethane	NS (NS)
Methane	NS (NS)
TOC	NS (NS)
DO	0.01 (0.01)
ORP	-102 (-102)

G6M-04-03X	
Date	10/13/2021
PCE	2 U
TCE	0.6 J
cis-1,2-DCE	0.58 J
VC	0.71 J
Ethene	3.5
Ethane	1.9
Methane	20000
TOC	7.3
DO	0.7
ORP	-128

G6M-04-02X	
Date	10/18/2021
PCE	**21**
TCE	**13**
cis-1,2-DCE	**130**
VC	**18**
Ethene	37
Ethane	0.56 J
Methane	19000
TOC	17
DO	0.55
ORP	-55.5

G6M-03-07X	
Date	10/18/2021
PCE	2 U
TCE	1 U
cis-1,2-DCE	0.5 J
VC	1 U
Ethene	0.71 U
Ethane	9.4
Methane	37000
TOC	19
DO	0.51
ORP	-105

G6M-13-02X	
Date	10/18/2021
PCE	**11 (10)**
TCE	**12 (11)**
cis-1,2-DCE	13 (13)
VC	**2.3 (2.2)**
Ethene	0.84 J (0.99 J)
Ethane	0.69 J (0.71 J)
Methane	6500 (6100)
TOC	7 (6.6)
DO	0.6 (0.6)
ORP	-11.9 (-11.9)

G6M-97-28X	
Date	10/12/2021
PCE	NS
TCE	NS
cis-1,2-DCE	NS
VC	NS
Ethene	NS
Ethane	NS
Methane	NS
TOC	NS
DO	1.25
ORP	-125

G6M-02-04X	
Date	10/12/2021
PCE	2 U
TCE	1 U
cis-1,2-DCE	1 U
VC	1 U
Ethene	NS
Ethane	NS
Methane	NS
TOC	NS
DO	0.68
ORP	-143

G6M-02-13X	
Date	10/15/2021
PCE	2 U
TCE	1 U
cis-1,2-DCE	1 U
VC	1 U
Ethene	NS
Ethane	NS
Methane	NS
TOC	NS
DO	0.68
ORP	-96.8

Aerial Source:
ESRI, ArcGIS Online,
World Imagery

Legend

- Former Fort Devens Boundary
- ERD LTM Well - Sampled Semi-Annually
- ERD LTM Well - Sampled Annually
- ERD LTM Well - Sampled Biennially
- Monitoring Well Converted to Injection Well
- Monitoring Well - Not Included in Approved LTM Network
- MicroWell - Sampled Annually
- MicroWell - Sampled Semi-Annually
- Injection Well Installed Prior to
- Injection Well Installed 01/2014
- Geoprobe Injection Location - July/Aug. 2019
- ERD Injection Well Transect - July/Aug. 2019

Notes:
1. All concentrations are in micrograms per liter (µg/L) except TOC (milligrams per liter [mg/L]), DO (mg/L) and ORP (millivolts [mv]).
2. Duplicate results are shown in brackets.
3. J/UJ = result is qualified as estimated (detect/nondetect)
4. U = The constituent was not detected above the given laboratory reporting limit.
5. NS = The analyte was not sampled for.
6. **BOLD** values indicate exceedances of the AOC 50 cleanup level.

cis-1,2-DCE = cis-1,2-dichloroethene
CVOC = chlorinated volatile organic compound
ERD = enhanced reductive dechlorination
LTM = long-term monitoring
PCE = tetrachloroethene
TCE = trichloroethene
TOC = total organic carbon
VC = vinyl chloride
DO = dissolved oxygen
ORP = oxidation reduction potential

0 100 200
Feet

2021 Annual Operations, Maintenance, and Monitoring Report
Area of Contamination 50
Former Fort Devens Army Installation
Devens, Massachusetts

CVOC and Biogeochemical Data - Fall 2021, Areas 2 through 4

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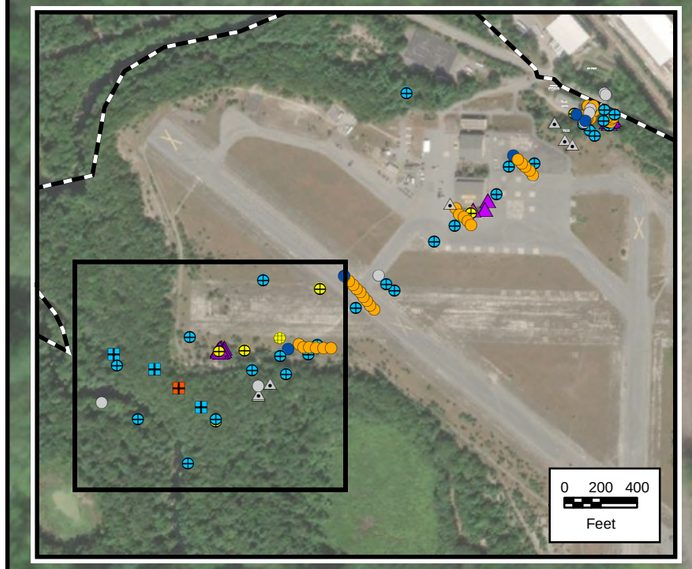
Figure 10



N

Area 5

IWS System Enclosure

XSA-12-98X	
Date	10/14/2021
PCE	0.83 J
TCE	1 U
cis-1,2-DCE	1 U
VC	1 U
Ethene	NS
Ethane	NS
Methane	NS
TOC	NS
DO	0.01
ORP	-147

XSA-12-97X	
Date	10/14/2021
PCE	2 U
TCE	1 U
cis-1,2-DCE	11
VC	**3.3**
Ethene	NS
Ethane	NS
Methane	NS
TOC	NS
DO	NS
ORP	NS

G6M-97-05B	
Date	10/13/2021
PCE	2 U
TCE	3.1
cis-1,2-DCE	21
VC	**8**
Ethene	23
Ethane	6.3
Methane	28000
TOC	34
DO	NS
ORP	NS

G6M-13-01X	
Date	10/12/2021
PCE	2 U
TCE	1.6
cis-1,2-DCE	1.9
VC	1 U
Ethene	0.6 J
Ethane	0.76 U
Methane	2200
TOC	1.3
DO	NS
ORP	NS

G6M-03-10X	
Date	10/12/2021
PCE	2 U
TCE	1 U
cis-1,2-DCE	1 U
VC	1 U
Ethene	NS
Ethane	NS
Methane	NS
TOC	NS
DO	1.1
ORP	-118

MW-7	
Date	10/12/2021
PCE	2 U
TCE	0.65 J
cis-1,2-DCE	3
VC	1.6
Ethene	NS
Ethane	NS
Methane	NS
TOC	NS
DO	NS
ORP	NS

G6M-13-04X	
Date	10/12/2021
PCE	2 U
TCE	0.88 J
cis-1,2-DCE	0.91 J
VC	1 U
Ethene	NS
Ethane	NS
Methane	NS
TOC	NS
DO	0.65
ORP	-135

MW-3	
Date	10/12/2021
PCE	2 U
TCE	1 U
cis-1,2-DCE	0.51 J
VC	1 U
Ethene	NS
Ethane	NS
Methane	NS
TOC	NS
DO	NS
ORP	NS

G6M-02-07X	
Date	10/14/2021
PCE	2 U
TCE	1 U
cis-1,2-DCE	1 U
VC	1 U
Ethene	NS
Ethane	NS
Methane	NS
TOC	NS
DO	0.01
ORP	-56.8

XSA-12-96X	
Date	10/13/2021
PCE	2.1
TCE	**8.3**
cis-1,2-DCE	8.6
VC	**4.4**
Ethene	0.71 U
Ethane	0.66 J
Methane	25
TOC	0.8 U
DO	NS
ORP	NS

XSA-12-95X	
Date	10/13/2021
PCE	2.8
TCE	2.7
cis-1,2-DCE	4.3
VC	0.86 J
Ethene	NS
Ethane	NS
Methane	NS
TOC	NS
DO	NS
ORP	NS

G6M-04-14X	
Date	10/15/2021
PCE	2 U
TCE	1 U
cis-1,2-DCE	1 U
VC	1 U
Ethene	NS
Ethane	NS
Methane	NS
TOC	NS
DO	0.33
ORP	-70.8

G6M-04-06X	
Date	10/14/2021
PCE	1.5 J
TCE	1.1
cis-1,2-DCE	0.82 J
VC	1 U
Ethene	NS
Ethane	NS
Methane	NS
TOC	NS
DO	NS
ORP	NS

G6M-04-07X	
Date	10/14/2021
PCE	4.8
TCE	**38**
cis-1,2-DCE	**120**
VC	**14**
Ethene	0.64 J
Ethane	0.34 J
Methane	520
TOC	1.4
DO	1.04
ORP	55.4

G6M-02-06X	
Date	10/14/2021
PCE	2 U
TCE	1 U
cis-1,2-DCE	1 U
VC	1 U
Ethene	NS
Ethane	NS
Methane	NS
TOC	NS
DO	6.97
ORP	107

G6M-02-11X	
Date	10/12/2021
PCE	2 U
TCE	1 U
cis-1,2-DCE	1 U
VC	1 U
Ethene	NS
Ethane	NS
Methane	NS
TOC	NS
DO	0.9
ORP	-129

Aerial Source:
ESRI, ArcGIS Online,
World Imagery

Legend

- Former Fort Devens Boundary
- ERD LTM Well - Sampled Semi-Annually
- ERD LTM Well - Sampled Annually
- ERD LTM Well - Sampled Biennially
- Monitoring Well Converted to Injection Well
- Monitoring Well - Not Included in Approved LTM Network
- MicroWell - Sampled Annually
- MicroWell - Sampled Semi-Annually
- Injection Well Installed Prior to 01/2014
- Injection Well Installed 01/2014
- Geoprobe Injection Location - July/Aug. 2019
- ERD Injection Well Transect - July/Aug. 2019

Notes:
1. All concentrations are in micrograms per liter (µg/L) except TOC (milligrams per liter [mg/L]), DO (mg/L) and ORP (millivolts [mv]).
2. Duplicate results are shown in brackets.
3. J/UJ = The result is qualified as estimated (detect/nondetect).
4. U = The constituent was not detected above the given laboratory reporting limit.
5. NS = The analyte was not sampled for.
6. **BOLD** values indicate exceedances of the AOC 50 cleanup level.

cis-1,2-DCE = cis-1,2-dichloroethene
CVOC = chlorinated volatile organic compound
ERD = enhanced reductive dechlorination
IWS = in-well stripping
LTM = long-term monitoring
PCE = tetrachloroethene
TCE = trichloroethene
TOC = total organic carbon
VC = vinyl chloride
DO = dissolved oxygen
ORP = oxidation reduction potential

0 100 200
Feet

2021 Annual Operations, Maintenance, and Monitoring Report
Area of Contamination 50
Former Fort Devens Army Installation
Devens, Massachusetts

CVOC and Biogeochemical Data - Fall 2021, Area 5

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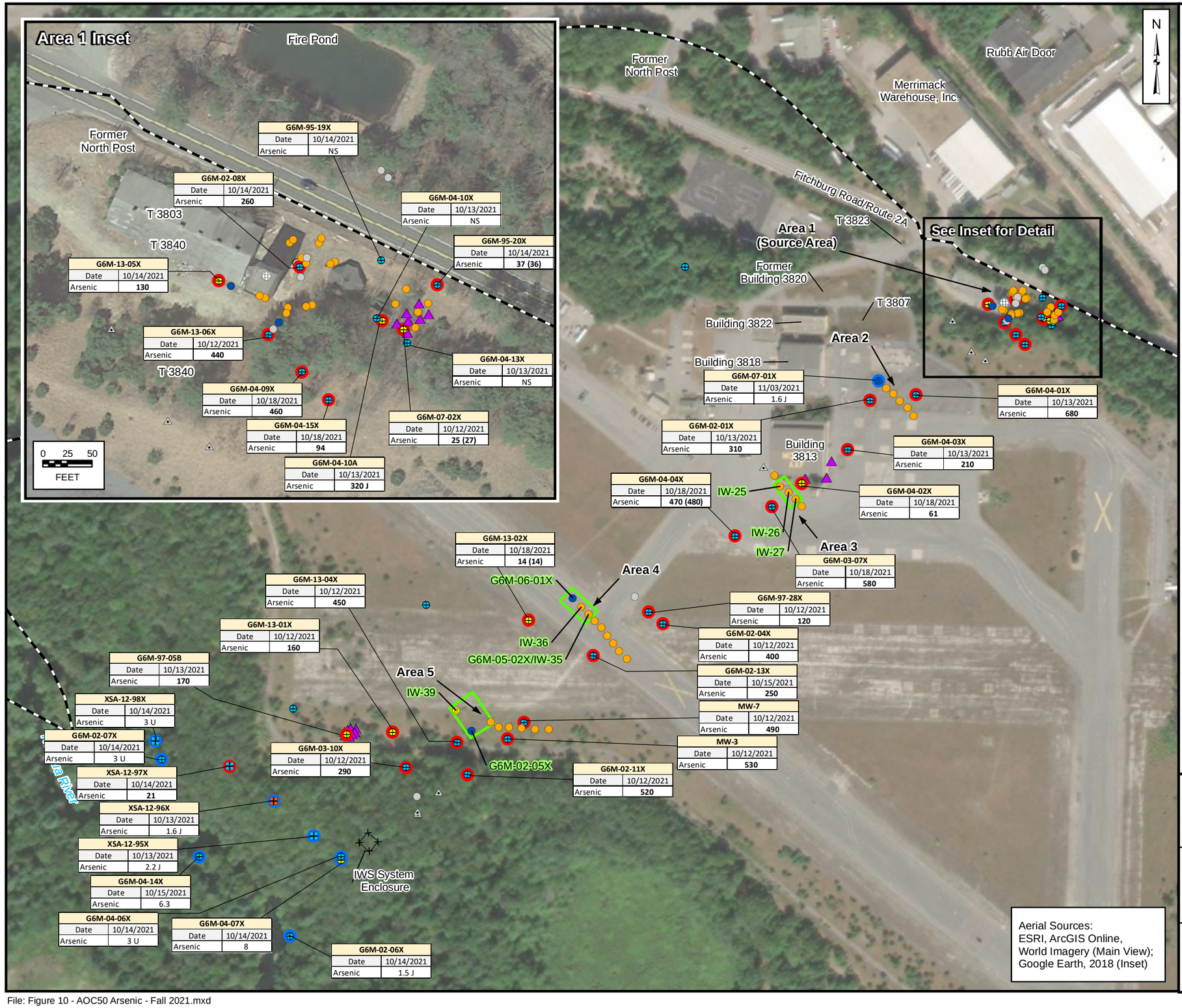
Figure
11

File: Figure 11 - CVOC and Biogeochemical Data - Fall 2021 - Area 5.mxd



Legend

- Former Fort Devens Boundary
- ERD LTM Well - Sampled Semi-Annually
- ERD LTM Well - Sampled Annually
- ERD LTM Well - Sampled Biennially
- Monitoring Well Converted to Injection Well
- Monitoring Well - Not Included in Approved LTM Network
- MicroWell - Sampled Annually
- MicroWell - Sampled Semi-Annually
- Injection Well Installed Prior to 01/2014
- Injection Well Installed 01/2014
- Dry Well
- Floor Drain
- Geoprobe Injection Location - July/Aug. 2019
- Arsenic Above Cleanup Goal
- Arsenic Below Cleanup Goal
- ERD Injection Well Transect - July/Aug. 2019
- IW-25 Well Used for Injection in July/Aug. 2019

Notes:
1. All concentrations are in micrograms per liter (µg/L).
2. Duplicate results are shown in parentheses.
3. J = The result is qualified as estimated .
4. U = The constituent was not detected above the given laboratory reporting limit
5. NS = The analyte was not sampled for.
6. Arsenic cleanup leve l = 10 µg/L
7. **BOLD** values indicate exceedances of the AOC 50 cleanup level.

ERD = enhanced reductive dechlorination
IWS = in-well stripping
LTM = long-term monitoring

0 200 400
FEET

Aerial Sources:
ESRI, ArcGIS Online, World Imagery (Main View); Google Earth, 2018 (Inset)

2021 Annual Operations, Maintenance, and Monitoring Report
Area of Contamination 50
Former Fort Devens Army Installation
Devens, Massachusetts

Arsenic Concentrations in Groundwater Fall 2021

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Figure 12

File: Figure 10 - AOC50 Arsenic - Fall 2021.mxd

Appendix A

Groundwater Monitoring Field Forms

Summary of Groundwater Elevations
SERES-Arcadis: Former Fort Devens Army Installation Gauging
AOC 50, Spring 2021

SERES
ARCADIS
a joint venture

Well ID	Date	Time	Depth to Water (ft)	Depth to Bottom (ft)	Comments
G6M-02-01X	5/13/2021	11:59	54.55	89.40	
G6M-02-03X	5/14/2021	13:11	57.94	102.52	
G6M-02-04X	5/14/2021	13:51	59.86	103.68	
G6M-02-06X	5/13/2021	15:03	6.03	65.73	
G6M-02-07X	5/13/2021	15:09	7.14	40.49	
G6M-02-08X	5/13/2021	10:46	13.06	72.05	Casing is 4” steel, well is 2” pvc
G6M-02-11X	5/13/2021	11:16	59.43	131.33	
G6M-02-12X	5/13/2021	13:10	58.03	133.63	
G6M-02-13X	5/13/2021	12:55	58.96	120.34	
G6M-03-07X	5/14/2021	14:36	56.60	89.97	
G6M-03-08X	5/13/2021	14:15	54.26	138.63	
G6M-03-09X	5/13/2021	13:42	54.57	138.63	
G6M-03-10X	5/13/2021	15:33	61.43	138.17	
G6M-04-01X	5/13/2021	12:32	52.71	90.66	
G6M-04-02X	5/13/2021	11:42	62.06	92.30	Casing is 10” steel, well is 2” pvc
G6M-04-03X	5/13/2021	11:47	57.04	93.01	
G6M-04-04X	5/14/2021	14:17	57.64	103.89	
G6M-04-05X	5/13/2021	15:25	53.80	112.49	
G6M-04-06X	5/13/2021	13:15	60.55	99.28	
G6M-04-07X	5/13/2021	13:25	60.29	NA	Weight on measuring tape for depth to bottom stops at 55 ft but water probe and pump go deeper. Cannot get depth to bottom
G6M-04-08X	5/13/2021	11:37	5.74	92.56	
G6M-04-09X	5/13/2021	16:28	31.92	66.33	
G6M-04-10A	5/13/2021	11:18	13.53	63.45	Casing is 10” steel, well is 2” pvc,
G6M-04-10X	5/13/2021	11:20	12.85	42.21	Casing is 10” steel, well is 2” pvc, new lock
G6M-04-11X	5/13/2021	10:03	19.67	46.57	
G6M-04-13X	5/13/2021	11:21	14.61	42.00	Casing is 10” steel, well is 2” pvc
G6M-04-14X	5/13/2021	11:24	6.76	92.79	
G6M-04-15X	5/13/2021	16:23	42.57	80.95	
G6M-04-22X	5/13/2021	15:15	46.30	83.94	
G6M-04-31X	5/13/2021	16:15	45.16	78.93	
G6M-07-01X	5/13/2021	12:27	53.99	95.20	
G6M-07-02X	5/13/2021	11:17	13.75	29.95	Casing is 4” steel, well is 2” pvc. New lock
G6M-13-01X	5/13/2021	10:20	62.42	135.25	
G6M-13-02X	5/13/2021	14:41	58.99	124.99	
G6M-13-03X	5/13/2021	11:30	58.01	90.25	
G6M-13-04X	5/13/2021	10:38	61.72	136.09	
G6M-13-05X	5/13/2021	10:27	14.48	56.70	Casing material is steel. Well is pvc. Not sure what this program is looking for. Casing is 6” well is 2”
G6M-13-06X	5/13/2021	10:35	14.06	61.30	Casing is 6” steel , well is 2” pvc New love installed
G6M-18-01	5/14/2021	12:57	59.75	127.20	
G6M-18-02	5/13/2021	13:48	64.41	136.20	
G6M-95-19X	5/13/2021	10:53	12.49	58.70	Casing is 4” steel well is 2” pvc. New lock. Stand pipe is rusty and difficult to close
G6M-95-20X	5/13/2021	11:02	12.83	25.00	Casing is 4” steel, well is 2” pvc. New lock
G6M-96-22A	5/13/2021	09:59	5.40	52.50	
G6M-96-22B	5/13/2021	09:52	6.01	71.90	
G6M-97-05B	5/13/2021	14:05	64.07	137.70	Very soft bottom
G6P-97-05X	5/13/2021	16:00	26.96	43.29	
G6M-97-28X	5/14/2021	13:31	60.72	133.68	
MW-3	5/13/2021	13:18	61.20	69.00	Obstructed at 69.00. Dedicated pump removed but could not get weight past the obstruction at 69’
MW-7	5/13/2021	13:36	62.75	137.00	Very soft bottom
XSA-12-95X	5/13/2021	14:01	66.22	79.08	Cannot pull tubing out of well. Water level meter measure the bottom at 79.08 but it is possible there is a dedicated pump in the well measuring tools cannot pass.
XSA-12-96X	5/13/2021	14:11	66.43	131.88	Tubing but no dedicated pump
XSA-12-97X	5/13/2021	14:28	67.11	128.87	
XSA-12-98X	5/14/2021	12:51	6.15	73.10	

Groundwater Sampling - Low-Flow

Well ID: G6M-02-01X **Date:** 5/12/2021 **Event:** Semiannual

Former Fort Devens Army Installation/AOC

Client: USACE **Facility/Area:** 50 **Field Technician:** Diane Champagne

Weather Conditions: Sunny **Temp (°F):** 57 **wind:** 9 mph

Well head PID Reading: NA **Measuring Point Description:** Top of Inner Casing **Other:**

Casing Material: PVC **Diameter:** 2 in **Surface Finish:** Flush Mount **Purge Method:** Low-Flow

Static Water Level (ft-bmp): 54.55 **Depth to Product (ft-bmp):** NA **Total Depth (ft-bmp):** --

Water Column (ft): 40.45 **Gallons in Well:** 6.60 **Type of Equipment:** Bladder **Other:**

Purge Start Time: 09:00 **Total Volume Purged (gal):** 4.0 **Water Quality Meter:** YSI Pro DSS

Purge End Time: 10:40 **Purge Water Disposal:** Adjacent to the well **Replicate Type:** Not Applicable

Sample Method: Pump **Sample Time:** 10:05 **Replicate Number:**

Time	Minutes Elapsed	Rate mL/min	Depth to Water (ft)	mL Purged	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	ORP (mV)	Appearance Color	Appearance Odor
09:10	0	150.00	54.69	1,500	7.32	2.166	86.67	1.03	12.9	-101.6	Clear	None
09:15	5	150.00	54.75	2,250	7.08	2.147	134.70	0.80	12.9	-106.4	Clear	None
09:20	10	150.00	54.76	3,000	7.03	2.115	146.63	0.71	12.9	-110.3	Clear	None
09:25	15	150.00	54.72	3,750	6.99	2.107	217.05	0.67	13.1	-113.2	Clear	None
09:30	20	150.00	54.72	4,500	6.97	2.064	245.68	0.62	13.1	-117.1	Clear	None
09:36	26	150.00	54.72	5,250	6.96	2.048	208.30	0.61	13.1	-118.3	Clear	None
09:41	31	150.00	54.72	6,000	6.96	2.038	190.89	0.60	13.2	-119.9	Clear	None
09:45	35	150.00	54.72	6,750	6.95	2.028	112.01	2.03	13.3	-121.1	Clear	None
09:51	41	150.00	54.72	7,500	6.95	2.014	110.59	0.57	13.2	-122.3	Clear	None
09:56	46	150.00	54.72	8,250	6.95	1.979	102.11	0.56	13.3	-123.9	Clear	None
10:02	52	150.00	54.72	9,000	6.94	1.968	108.95	0.55	13.8	-126.0	Clear	None

Constituents Sampled	Container	Number	Preservative
TOC 9060A	250 mL Amber Glass	1	H2SO4
Alkalinity (2320B)	250 mL Plastic	1	None
Sulfate 9056A	125 mL Plastic	1	None
Nitrate/ Nitrite 353.2	500 mL Amber Glass	1	H2SO4
Dissolved Metals (As/Fe/Mn) 6010C/6020A	250 mL Plastic	1	Nitric Acid-HN03
VOCs 8260B	40 mL Glass Vial	6	HCL
Sulfide 9034	250 mL Plastic	2	NaOH

Well Infomation G6M-02-01X

Well Locked At Arrival: No **Arrival Action Taken:** None **Lock Functioning:** No **Lock Function Action Taken:** None

Well Locked at Departure: No **Departure Action Taken:** None **Well Labeled Properly:** Yes **Label Action Taken:**

Comments:

Groundwater Sampling - Low-Flow

Well ID: G6M-03-07X **Date:** 5/12/2021 **Event:** Semiannual

Former Fort Devens Army Installation/AOC

Client: USACE **Facility/Area:** 50 **Field Technician:** Billy Keane

Weather Conditions: Sunny **Temp (°F):** 63 **wind:** 10 mph

Well head PID Reading: NA **Measuring Point Description:** Top of Inner Casing **Other:**

Casing Material: PVC **Diameter:** 2 in **Surface Finish:** Flush Mount **Purge Method:** Low-Flow

Static Water Level (ft-bmp): 56.62 **Depth to Product (ft-bmp):** NA **Total Depth (ft-bmp):** --

Water Column (ft): 33.38 **Gallons in Well:** 5.45 **Type of Equipment:** Bladder **Other:**

Purge Start Time: 13:50 **Total Volume Purged (gal):** 4.2 **Water Quality Meter:** YSI Pro DSS

Purge End Time: 15:35 **Purge Water Disposal:** Grass **Replicate Type:** Not Applicable

Sample Method: Pump **Sample Time:** 15:00 **Replicate Number:**

Time	Minutes Elapsed	Rate mL/min	Depth to Water (ft)	mL Purged	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	ORP (mV)	Appearance Color	Appearance Odor
13:55	0	150.00	54.43	750	9.70	0.383	15.26	0.76	14.8	-73.9	Green	None
14:00	5	150.00	54.43	1,500	6.46	0.491	18.57	0.73	14.6	-77.5	Green	None
14:05	10	150.00	54.43	2,250	6.45	0.573	38.25	0.67	14.6	-81.2	Green	None
14:10	15	150.00	54.43	3,000	6.46	0.631	63.35	0.65	14.3	-83.6	Green	None
14:15	20	150.00	54.02	3,750	6.47	0.580	168.40	0.59	13.7	-90.1	Green	None
14:20	25	150.00	54.02	4,500	6.47	0.662	163.45	0.57	13.6	-92.0	Green	None
14:25	30	150.00	53.24	5,250	6.47	0.695	161.23	0.53	14.2	-95.2	Green	None
14:30	35	150.00	53.02	6,000	6.47	0.694	162.20	0.51	13.7	-96.6	Green	None
14:35	40	150.00	53.05	6,750	6.47	0.696	163.65	0.51	13.8	-96.3	Green	None
14:40	45	150.00	53.05	7,500	6.47	0.708	77.98	0.50	14.4	-97.6	Green	None
14:43	48	150.00	53.02	7,950	6.47	0.722	28.23	0.50	14.4	-98.6	Green	None
14:46	51	150.00	53.02	8,400	6.47	0.720	29.56	0.49	14.4	-99.2	Green	None
14:49	54	150.00	53.02	8,850	6.47	0.721	29.36	0.49	14.4	-99.2	Green	None

Constituents Sampled	Container	Number	Preservative
TOC 9060A	250 mL Amber Glass	1	H2SO4
Alkalinity (2320B)	250 mL Plastic	1	None
Sulfate 9056A	125 mL Plastic	1	None
Nitrate/ Nitrite 353.2	500 mL Amber Glass	1	H2SO4
Dissolved Metals (As/Fe/Mn) 6010C/6020A	250 mL Plastic	1	Nitric Acid-HN03
VOCs 8260B	40 mL Glass Vial	6	HCL
Sulfide 9034	250 mL Plastic	2	NaOH

Well Infomation G6M-03-07X

Well Locked At Arrival: NA **Arrival Action Taken:** **Lock Functioning:** NA **Lock Function Action Taken:**

Well Locked at Departure: NA **Departure Action Taken:** **Well Labeled Properly:** No **Label Action Taken:** Bolt put back in

Comments:

Groundwater Sampling - Low-Flow

Well ID: G6M-04-02X **Date:** 5/12/2021 **Event:** Semiannual

Former Fort Devens Army Installation/AOC

Client: USACE **Facility/Area:** 50 **Field Technician:** Diane Champagne

Weather Conditions: Overcast **Temp (°F):** 57 **wind:** 10 mph

Well head PID Reading: NA **Measuring Point Description:** Top of Inner Casing **Other:**

Casing Material: PVC **Diameter:** 2 in **Surface Finish:** Stick up **Purge Method:** Low-Flow

Static Water Level (ft-bmp): 60.38 **Depth to Product (ft-bmp):** NA **Total Depth (ft-bmp):** --

Water Column (ft): 29.62 **Gallons in Well:** 4.83 **Type of Equipment:** Bladder **Other:**

Purge Start Time: 13:05 **Total Volume Purged (gal):** 7.8 **Water Quality Meter:** YSI Pro DSS

Purge End Time: 15:32 **Purge Water Disposal:** Adjacent to the well **Replicate Type:** Not Applicable

Sample Method: Pump **Sample Time:** 15:00 **Replicate Number:**

Time	Minutes Elapsed	Rate mL/min	Depth to Water (ft)	mL Purged	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	ORP (mV)	Appearance Color	Appearance Odor
13:15	0	200	60.38	2,000	5.99	1.038	756.98	1.92	14.0	-4.9	Clear	Medium
13:21	6	200	60.48	3,000	5.81	0.974	1,907.94	0.98	13.8	-26.6	Clear	Medium
13:25	10	200	60.38	3,000	5.83	0.979	2,148.70	0.86	13.7	-36.1	Clear	Medium
13:30	15	200	60.38	4,000	5.89	0.976	2,339.40	0.80	13.7	-46.7	Clear	Medium
13:36	21	200	60.38	5,000	5.90	0.974	2,334.70	0.79	13.8	-48.2	Clear	Medium
13:40	25	200	60.38	6,000	5.94	0.985	2,319.76	0.70	13.9	-56.7	Clear	Medium
13:45	30	200	60.38	7,000	5.97	0.983	2,341.48	0.66	13.8	-60.1	Clear	Medium
13:50	35	200	60.38	8,000	5.99	0.988	2,383.49	0.61	13.6	-64.4	Clear	Medium
13:55	40	200	60.38	9,000	6.01	0.994	2,346.51	0.58	14.0	-69.4	Clear	Medium
14:00	45	200	60.38	10,000	6.02	1.042	2,215.63	0.54	15.6	-73.4	Clear	Medium
14:05	50	200	60.39	11,000	6.03	1.019	104.95	0.54	15.0	-76.0	Clear	Medium
14:10	55	200	60.38	12,000	6.05	1.042	105.21	0.53	14.6	-80.4	Clear	Medium
14:16	61	200	60.39	13,000	6.06	0.990	96.78	0.54	13.7	-82.1	Clear	Medium
14:20	65	200	60.39	14,000	6.06	0.979	97.97	0.55	13.1	-82.1	Clear	Medium
14:25	70	200	60.40	14,000	6.04	0.951	98.46	0.55	13.1	-82.5	Clear	Medium
14:30	75	200	60.40	15,000	6.05	0.992	54.77	0.51	14.5	-85.7	Clear	Medium
14:36	81	200	60.40	16,000	6.06	1.064	49.22	0.49	15.3	-88.9	Clear	Medium
14:41	86	200	60.40	17,000	6.07	1.018	51.55	0.51	13.8	-90.8	Clear	Medium
14:46	91	200	60.40	17,000	6.05	1.029	52.41	0.49	15.0	-92.7	Clear	Medium
14:50	95	200	60.40	18,000	6.06	1.055	51.54	0.48	15.1	-95.1	Clear	Medium
14:55	100	200	60.40	19,000	6.06	1.054	50.90	0.48	15.1	-94.4	Clear	Medium

Constituents Sampled	Container	Number	Preservative
TOC 9060A	250 mL Amber Glass	1	H2SO4
Alkalinity (2320B)	250 mL Plastic	1	None
Sulfate 9056A	125 mL Plastic	1	None
Nitrate/ Nitrite 353.2	500 mL Amber Glass	1	H2SO4
Dissolved Metals (As/Fe/Mn) 6010C/6020A	250 mL Plastic	1	Nitric Acid-HN03
VOCs 8260B	40 mL Glass Vial	6	HCL
Sulfide 9034	250 mL Plastic	2	NaOH

Well Locked At Arrival: Yes	**Arrival Action Taken:**		**Lock Functioning:** Yes	**Lock Function Action Taken:**	
Well Locked at Departure: Yes	**Departure Action Taken:**		**Well Labeled Properly:** Yes	**Label Action Taken:**	

Comments:

Groundwater Sampling - Low-Flow

Well ID: G6M-04-02X **Date:** 6/17/2021 **Event:** Semiannual

Client: USACE **Facility/Area:** Former Fort Devens Army Installation/AOC 50 **Field Technician:** Diane Champagne

Weather Conditions: Sunny **Temp (°F):** 71 **wind:** 6 mph

Well head PID Reading: **Measuring Point Description:** Top of Inner Casing **Other:**

Casing Material: PVC **Diameter:** 2 in **Surface Finish:** Stick up **Purge Method:** Low-Flow

Static Water Level (ft-bmp): 59.83 **Depth to Product (ft-bmp):** **Total Depth (ft-bmp):**

Water Column (ft): 30.17 **Gallons in Well:** 4.92 **Type of Equipment:** Bladder **Other:**

Purge Start Time: 11:25 **Total Volume Purged:** **Water Quality Meter:** YSI Pro DSS

Purge End Time: 12:40 **Purge Water Disposal:** Adjacent to the well **Replicate Type:** Not Applicable

Sample Method: Pump **Sample Time:** 12:15 **Replicate Number:**

Time	Minutes Elapsed	Rate mL/min	Depth to Water (ft)	mL Purged	pH	Conduct ivity (mS/cm)	Turbid- ity (NTU)	Dissolved Oxygen (mg/L)	Temper ature (°C)	ORP (mV)	Appearance Color	Appearance Odor
11:30	0	150	59.82	750	5.24	1.367	77.61	0.99	15.5	21.4	Clear	None
11:35	5	150	59.94	1,500	5.21	1.369	77.04	0.37	15.5	7.1	Clear	None
11:40	10	150	60.01	2,250	5.23	1.371	36.23	0.26	15.4	-3.3	Clear	None
11:46	16	150	60.01	3,000	5.26	1.368	33.46	0.20	15.8	-14.6	Clear	None
11:50	20	150	60.01	3,750	5.28	1.362	135.34	0.17	15.9	-21.7	Clear	None
11:55	25	150	60.01	4,500	5.30	1.360	136.26	0.15	15.8	-29.5	Clear	None
12:00	30	150	60.01	5,250	5.31	1.360	136.22	0.12	15.7	-36.1	Clear	None
12:05	35	150	60.01	6,000	5.32	1.363	144.75	0.12	15.9	-42.1	Clear	None
12:10	40	150	60.01	6,750	5.33	1.356	135.16	0.11	15.9	-45.8	Clear	None

Constituents Sampled	Container	Number	Preservative
VOCs 8260B	40 mL Glass Vial	3	HCL
Dissolved Metals (As/Fe/Mn) 6010C/6020A	250 mL Plastic	1	Nitric Acid-HN03
Nitrate/ Nitrite 353.2	125 mL Plastic	1	H2SO4
Sulfate 9056A	500 mL Plastic	1	NaOH
Sulfide 9034	250 mL Plastic	1	None
Alkalinity (2320B)	125 mL Plastic	1	None
Methane/ Ethane /Ethene RSK-175	40 mL Glass Vial	3	HCL
TOC 9060A	40 mL Glass Vial	2	H2SO4

Well Infomation G6M-04-02X

Well Locked At Arrival: Yes **Arrival Action Taken:** **Lock Functioning:** Yes **Lock Function Action Taken:**

Well Locked at Departure: Yes **Departure Action Taken:** **Well Labeled Properly:** Yes **Label Action Taken:**

Comments:

Groundwater Sampling - Low-Flow

Well ID: G6M-04-03X **Date:** 5/11/2021 **Event:** Semiannual

Former Fort Devens Army Installation/AOC

Client: USACE **Facility/Area:** 50 **Field Technician:** Diane Champagne

Weather Conditions: Sunny **Temp (°F):** 64 **wind:** 14 mph

Well head PID Reading: NA **Measuring Point Description:** Top of Inner Casing **Other:**

Casing Material: PVC **Diameter:** 2 in **Surface Finish:** Flush Mount **Purge Method:** Low-Flow

Static Water Level (ft-bmp): 57.10 **Depth to Product (ft-bmp):** NA **Total Depth (ft-bmp):** --

Water Column (ft): 37.90 **Gallons in Well:** 6.19 **Type of Equipment:** Bladder **Other:**

Purge Start Time: 15:00 **Total Volume Purged (gal):** 4.1 **Water Quality Meter:** YSI Pro DSS

Purge End Time: 16:50 **Purge Water Disposal:** Adjacent to the well **Replicate Type:** Not Applicable

Sample Method: Pump **Sample Time:** 16:20 **Replicate Number:**

Time	Minutes Elapsed	Rate mL/min	Depth to Water (ft)	mL Purged	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	ORP (mV)	Appearance Color	Appearance Odor
15:05	0	140.00	57.10	700	7.10	1.245	8.76	2.37	18.0	-141.8	Clear	None
15:11	6	140.00	57.20	1,400	7.11	1.333	90.43	1.49	18.1	-147.1	Clear	None
15:20	15	140.00	57.29	2,800	7.08	1.316	354.77	1.24	18.8	-137.9	Clear	None
15:25	20	140.00	57.19	3,500	6.75	0.881	117.95	1.09	16.9	-91.5	Clear	None
15:30	25	140.00	57.19	4,200	6.55	0.871	25.76	0.96	17.6	-87.4	Clear	None
15:36	31	140.00	57.19	4,900	6.51	0.859	28.05	0.94	16.5	-82.7	Clear	None
15:40	35	140.00	57.19	5,600	6.49	0.882	23.69	0.89	17.3	-85.7	Clear	None
15:45	40	140.00	57.19	6,300	6.48	0.940	23.02	0.84	17.6	-86.5	Clear	None
15:51	46	140.00	57.19	7,000	6.48	0.992	21.41	0.79	18.6	-87.1	Clear	None
15:56	51	140.00	57.19	7,700	6.48	1.017	18.55	0.77	18.7	-87.3	Clear	None
16:01	56	140.00	57.19	8,400	6.47	1.049	18.53	0.75	18.9	-87.5	Clear	None
16:05	60	140.00	57.19	9,100	6.48	1.073	18.64	0.74	18.7	-87.6	Clear	None
16:10	65	140.00	57.19	9,800	6.47	1.078	18.18	0.69	18.7	-87.6	Clear	None
16:15	70	140.00	57.19	10,500	6.48	1.077	18.44	0.69	18.6	-87.3	Clear	None

Constituents Sampled	Container	Number	Preservative
TOC 9060A	250 mL Amber Glass	1	H2SO4
Alkalinity (2320B)	250 mL Plastic	1	None
Sulfate 9056A	125 mL Plastic	1	None
Nitrate/ Nitrite 353.2	500 mL Amber Glass	1	H2SO4
Dissolved Metals (As/Fe/Mn) 6010C/6020A	250 mL Plastic	1	Nitric Acid-HN03
VOCs 8260B	40 mL Glass Vial	6	HCL
Sulfide 9034	250 mL Plastic	2	NaOH

Well Infomation G6M-04-03X

Well Locked At Arrival: No **Arrival Action Taken:** None **Lock Functioning:** No **Lock Function Action Taken:** Nonej

Well Locked at Departure: No **Departure Action Taken:** None)n **Well Labeled Properly:** No **Label Action Taken:** None

Comments:

Groundwater Sampling - Low-Flow

Well ID: G6M-04-07X **Date:** 5/12/2021 **Event:** Semiannual

Former Fort Devens Army Installation/AOC

Client: USACE **Facility/Area:** 50 **Field Technician:** Billy Keane

Weather Conditions: Sunny **Temp (°F):** 57 **wind:** 13 mph

Well head PID Reading: NA **Measuring Point Description:** Top of Inner Casing **Other:**

Casing Material: PVC **Diameter:** 2 in **Surface Finish:** Stick up **Purge Method:** Low-Flow

Static Water Level (ft-bmp): 59.85 **Depth to Product (ft-bmp):** NA **Total Depth (ft-bmp):** --

Water Column (ft): 70.15 **Gallons in Well:** 11.45 **Type of Equipment:** Bladder **Other:**

Purge Start Time: 10:25 **Total Volume Purged (gal):** 2.2 **Water Quality Meter:** YSI Pro DSS

Purge End Time: 11:36 **Purge Water Disposal:** Ground **Replicate Type:** Not Applicable

Sample Method: Pump **Sample Time:** 11:10 **Replicate Number:**

Time	Minutes Elapsed	Rate mL/min	Depth to Water (ft)	mL Purged	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	ORP (mV)	Appearance Color	Appearance Odor
10:30	0	120.00	59.86	600	6.47	0.408	5.32	1.01	11.0	11.5	Clear	None
10:35	5	120.00	59.86	1,200	6.46	0.406	6.34	1.01	10.9	11.5	Clear	None
10:40	10	120.00	59.98	1,800	6.46	0.406	5.74	0.99	11.0	11.2	Clear	None
10:45	15	120.00	59.98	2,400	6.46	0.404	5.10	0.96	11.1	10.3	Clear	None
10:50	20	120.00	59.82	3,000	6.46	0.410	2.26	1.04	12.0	9.8	Clear	None
10:55	25	120.00	59.89	3,600	6.47	0.416	3.12	1.09	11.4	11.0	Clear	None
11:00	30	120.00	59.89	4,200	6.46	0.402	2.68	1.09	11.3	12.2	Clear	None

Constituents Sampled	Container	Number	Preservative
TOC 9060A	250 mL Amber Glass	1	H2SO4
Alkalinity (2320B)	250 mL Plastic	1	None
Sulfate 9056A	125 mL Plastic	1	None
Nitrate/ Nitrite 353.2	500 mL Amber Glass	1	H2SO4
Dissolved Metals (As/Fe/Mn) 6010C/6020A	250 mL Plastic	1	Nitric Acid-HN03
VOCs 8260B	40 mL Glass Vial	6	HCL
Sulfide 9034	250 mL Plastic	2	NaOH

Well Infomation G6M-04-07X

Well Locked At Arrival: Yes **Arrival Action Taken:** **Lock Functioning:** Yes **Lock Function Action Taken:**

Well Locked at Departure: Yes **Departure Action Taken:** **Well Labeled Properly:** Yes **Label Action Taken:**

Comments: Micro bladder in well already

Groundwater Sampling - Low-Flow

Well ID: G6M-04-09X **Date:** 5/12/2021 **Event:** Semiannual

Former Fort Devens Army Installation/AOC

Client: USACE **Facility/Area:** 50 **Field Technician:** Spencer Gust

Weather Conditions: Sunny **Temp (°F):** 58 **wind:** 13 mph

Well head PID Reading: NA **Measuring Point Description:** Top of Inner Casing **Other:**

Casing Material: PVC **Diameter:** 2 in **Surface Finish:** Stick up **Purge Method:** Low-Flow

Static Water Level (ft-bmp): 32.60 **Depth to Product (ft-bmp):** NA **Total Depth (ft-bmp):** --

Water Column (ft): 32.40 **Gallons in Well:** 5.28 **Type of Equipment:** Bladder **Other:**

Purge Start Time: 9:30 **Total Volume Purged (gal):** 8.4 **Water Quality Meter:** YSI Pro DSS

Purge End Time: 10:50 **Purge Water Disposal:** Ground **Replicate Type:** Not Applicable

Sample Method: Pump **Sample Time:** 10:20 **Replicate Number:**

Time	Minutes Elapsed	Rate mL/min	Depth to Water (ft)	mL Purged	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	ORP (mV)	Appearance Color	Appearance Odor
9:45	0	400	32.27	6,000	6.52	1.040	961.22	1.00	10.7	-128.2	Clear	None
9:50	5	400	32.27	8,000	6.49	0.987	1,270.29	1.05	10.5	-131.9	Clear	None
9:55	10	400	32.27	10,000	6.48	0.979	1,094.06	1.06	10.5	-133.8	Clear	None
10:00	15	400	32.27	12,000	6.47	0.965	494.01	1.08	10.5	-135.1	Clear	None
10:05	20	400	32.27	14,000	6.47	0.949	641.80	1.10	10.5	-136.4	Clear	None
10:10	25	400	32.27	16,000	6.48	0.941	418.49	1.11	10.5	-137.7	Clear	None
10:15	30	400	32.27	18,000	6.47	0.936	435.60	1.12	10.5	-138.4	Clear	None
10:20	35	400	32.27	20,000	6.48	0.936	426.74	1.12	10.5	-139.2	Clear	None

Constituents Sampled	Container	Number	Preservative
TOC 9060A	250 mL Amber Glass	1	H2SO4
Alkalinity (2320B)	250 mL Plastic	1	None
Sulfate 9056A	125 mL Plastic	1	None
Nitrate/ Nitrite 353.2	500 mL Amber Glass	1	H2SO4
Dissolved Metals (As/Fe/Mn) 6010C/6020A	250 mL Plastic	1	Nitric Acid-HN03
VOCs 8260B	40 mL Glass Vial	6	HCL
Sulfide 9034	250 mL Plastic	2	NaOH

Well Infomation G6M-04-09X

Well Locked At Arrival: Yes **Arrival Action Taken:** **Lock Functioning:** Yes **Lock Function Action Taken:**

Well Locked at Departure: Yes **Departure Action Taken:** **Well Labeled Properly:** Yes **Label Action Taken:**

Comments:

Groundwater Sampling Form

Project Number	30087304	**Well ID**	G6M-04-10A			**Date**	06/17/2021
Project Name/Location	Devens		**Weather(°F)**	Sunny, 70 °F, , winds at mph.			
Measuring Pt. Description	Top of Inner Casing	**Screen Setting (ft-bmp)**	--	**Casing Diameter (in)**	2	**Well Casing Material**	PVC
Static Water Level (ft-bmp)	12.65	**Total Depth (ft-bmp)**	33.85	**Water Column(ft)**	21.2	**Gallons in Well**	3.44
MP Elevation		**Pump Intake (ft-bmp)**		**Purge Method**	Low-Flow	**Sample Method**	
Sample Time	10:30	**Volumes Purged**	1.16	**Sample ID**	G6M-04-10A-SPR21	**Sampled by**	Nicole Bailey
Purge Start	09:35	**Gallons Purged**	4.00	**Replicate/ Code No.**			
Purge End	11:33						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
09:40	0	0	175	12.70		6.58	0.803	6.81	2.88	12.9	-18.5	Yellow	Medium
09:45	5	5	175	12.72		6.31	0.754	8.51	2.15	11.7	-61.7	Yellow	Medium
09:50	5	10	175	12.72		6.25	0.733	7.12	2.50	11.6	-65.6	Yellow	Medium
09:55	5	15	175	12.72		6.27	0.722	5.49	3.00	11.8	-70.6	Yellow	Medium
10:00	5	20	175	12.72		6.22	0.718	5.55	2.86	11.8	-69.8	Yellow	Medium
10:05	5	25	175	12.72		6.24	0.731	7.01	2.88	11.6	-67.5	Yellow	Medium
10:10	5	30	175	12.72		6.24	0.735	7.68	2.79	11.7	-68.5	Yellow	Medium
10:15	5	35	175	12.72		6.22	0.739	7.84	2.80	11.6	-68.8	Yellow	Medium

Constituent Sampled	Container	Number	Preservative

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot

1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location:

Condition of Well: Good condition

Well Completion: Stick-up

Well Locked at Arrival: yes

Well Locked at Departure: yes

Key Number To Well: 3573

Groundwater Sampling - Low-Flow

Well ID: G6M-07-01X **Date:** 5/12/2021 **Event:** Semiannual

Former Fort Devens Army Installation/AOC

Client: USACE **Facility/Area:** 50 **Field Technician:** Diane Champagne

Weather Conditions: Sunny **Temp (°F):** 57 **wind:** 9 mph

Well head PID Reading: NA **Measuring Point Description:** Ground Surface **Other:**

Casing Material: PVC **Diameter:** 2 in **Surface Finish:** Flush Mount **Purge Method:** Low-Flow

Static Water Level (ft-bmp): 54.10 **Depth to Product (ft-bmp):** NA **Total Depth (ft-bmp):** --

Water Column (ft): 40.90 **Gallons in Well:** 6.67 **Type of Equipment:** Bladder **Other:**

Purge Start Time: 10:45 **Total Volume Purged (gal):** 5.8 **Water Quality Meter:** YSI Pro DSS

Purge End Time: 12:34 **Purge Water Disposal:** Adjacent to the well **Replicate Type:** Not Applicable

Sample Method: Pump **Sample Time:** 12:10 **Replicate Number:**

Time	Minutes Elapsed	Rate mL/min	Depth to Water (ft)	mL Purged	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	ORP (mV)	Appearance Color	Appearance Odor
10:55	0	200	54.15	1,000	7.71	0.477	199.56	7.09	16.6	36.4	Brown	None
11:00	5	200	54.15	2,000	7.09	1.255	135.49	1.78	15.8	47.2	Brown	None
11:05	10	200	54.15	3,000	7.02	1.276	121.85	1.23	16.4	46.6	Brown	None
11:10	15	200	54.15	4,000	7.01	1.286	104.30	1.18	17.1	44.3	Brown	None
11:15	20	200	54.15	5,000	7.01	1.253	83.46	1.07	16.1	37.7	Brown	None
11:20	25	200	54.15	6,000	6.99	1.269	79.42	1.01	16.8	34.1	Brown	None
11:25	30	200	54.15	7,000	6.99	1.246	86.08	1.04	16.4	33.9	Brown	None
11:30	35	200	54.15	8,000	6.96	1.189	80.03	0.97	16.1	35.4	Brown	None
11:40	45	200	54.15	10,000	6.86	1.289	58.63	1.07	18.1	37.7	Brown	None
11:45	50	200	54.15	11,000	6.84	1.120	61.44	1.07	16.5	44.2	Brown	None
11:50	55	200	54.15	12,000	6.72	1.077	54.54	1.21	17.8	51.5	Brown	None
11:55	60	200	54.15	13,000	6.64	1.020	53.39	1.34	17.1	56.7	Brown	None
12:00	65	200	54.15	14,000	6.58	0.988	52.36	1.40	16.9	59.7	Brown	None
12:05	70	200	54.15	15,000	6.50	0.991	50.07	1.40	16.9	64.0	Brown	None

Constituents Sampled	Container	Number	Preservative
TOC 9060A	250 mL Amber Glass	1	H2SO4
Alkalinity (2320B)	250 mL Plastic	1	None
Sulfate 9056A	125 mL Plastic	1	None
Dissolved Metals (As/Fe/Mn) 6010C/6020A	250 mL Plastic	1	Nitric Acid-HN03
VOCs 8260B	40 mL Glass Vial	6	HCL
Sulfide 9034	250 mL Plastic	2	NaOH

Well Infomation G6M-07-01X

Well Locked At Arrival: NA **Arrival Action Taken:** **Lock Functioning:** NA **Lock Function Action Taken:**

Well Locked at Departure: NA **Departure Action Taken:** **Well Labeled Properly:** Yes **Label Action Taken:**

Comments:

Groundwater Sampling - Low-Flow

Well ID: G6M-07-02X **Date:** 5/12/2021 **Event:** Semiannual

Former Fort Devens Army Installation/AOC

Client: USACE **Facility/Area:** 50 **Field Technician:** Spencer Gust

Weather Conditions: Light_Rain,Sunny **Temp (°F):** 56 **wind:** 0 mph

Well head PID Reading: NA **Measuring Point Description:** Top of Inner Casing **Other:**

Casing Material: PVC **Diameter:** 2 in **Surface Finish:** Stick up **Purge Method:** Low-Flow

Static Water Level (ft-bmp): 13.82 **Depth to Product (ft-bmp):** NA **Total Depth (ft-bmp):** --

Water Column (ft): 14.18 **Gallons in Well:** 2.31 **Type of Equipment:** Bladder **Other:**

Purge Start Time: 09:45 **Total Volume Purged (gal):** 0.7 **Water Quality Meter:** YSI Pro DSS

Purge End Time: 11:00 **Purge Water Disposal:** Into ground near well. **Replicate Type:** Not Applicable

Sample Method: Pump **Sample Time:** 10:25 **Replicate Number:** AOC50-DUP01-SPR21

Time	Minutes Elapsed	Rate mL/min	Depth to Water (ft)	mL Purged	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	ORP (mV)	Appearance Color	Appearance Odor
09:50	0	60.00	14.54	300	6.42	0.679	48.18	1.77	14.0	-113.5	Clear	Mild
09:55	245	60.00	14.62	600	6.55	0.641	29.13	1.81	13.0	-131.0	Clear	Mild
10:00	250	30.00	14.62	750	6.54	0.663	31.19	1.71	14.2	-133.8	Clear	Mild
10:05	255	30.00	14.62	900	6.48	0.690	21.41	1.61	16.2	-138.3	Clear	Mild
10:10	260	30.00	14.62	1,050	6.51	0.709	18.53	1.54	17.4	-145.2	Clear	Mild
10:15	265	30.00	14.62	1,200	6.51	0.732	16.62	1.46	19.0	-156.7	Clear	Mild
10:20	270	30.00	14.62	1,350	6.51	0.734	24.54	1.45	19.2	-163.5	Clear	Mild
10:25	275	30.00	14.62	1,500	6.50	0.737	23.40	1.46	19.4	-166.9	Clear	Mild

Constituents Sampled	Container	Number	Preservative
VOCs 8260B	40 mL Glass Vial	3	HCL
Nitrate/ Nitrite 353.2	500 mL Amber Glass	1	H2SO4
Methane/ Ethane /Ethene RSK-175	40 mL Glass Vial	3	HCL
Dissolved Metals (As/Fe/Mn) 6010C/6020A	250 mL Plastic	1	Nitric Acid-HN03
Sulfide 9034	250 mL Plastic	2	ZnAC
Sulfate 9056A	125 mL Plastic	1	None
TOC 9060A	250 mL Plastic	1	None

Well Infomation G6M-07-02X

Well Locked At Arrival: Yes **Arrival Action Taken:** **Lock Functioning:** Yes **Lock Function Action Taken:**

Well Locked at Departure: Yes **Departure Action Taken:** **Well Labeled Properly:** Yes **Label Action Taken:**

Comments: Copied from paper log 5/17/21, geopoint is not of well.

Groundwater Sampling - Low-Flow

Well ID: G6M-13-01X **Date:** 5/11/2021 **Event:** Semiannual

Former Fort Devens Army Installation/AOC

Client: USACE **Facility/Area:** 50 **Field Technician:** Billy Keane

Weather Conditions: Sunny **Temp (°F):** 61 **wind:** 14 mph

Well head PID Reading: NA **Measuring Point Description:** Top of Inner Casing **Other:**

Casing Material: PVC **Diameter:** 2 in **Surface Finish:** Stick up **Purge Method:** Low-Flow

Static Water Level (ft-bmp): 62.31 **Depth to Product (ft-bmp):** NA **Total Depth (ft-bmp):** --

Water Column (ft): 72.69 **Gallons in Well:** 11.86 **Type of Equipment:** Bladder **Other:**

Purge Start Time: 12:50 **Total Volume Purged (gal):** 1.9 **Water Quality Meter:** YSI Pro DSS

Purge End Time: 15:15 **Purge Water Disposal:** Grass **Replicate Type:** Not Applicable

Sample Method: Pump **Sample Time:** 14:10 **Replicate Number:**

Time	Minutes Elapsed	Rate mL/min	Depth to Water (ft)	mL Purged	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	ORP (mV)	Appearance Color	Appearance Odor
13:15	0	95.00	60.82	2,375	6.54	0.710	230.60	1.16	13.7	-89.1	Clear	None
13:20	5	95.00	61.36	2,850	6.54	0.719	192.02	1.11	14.1	-93.2	Clear	None
13:25	10	50.00	61.89	3,100	6.54	0.724	253.13	1.10	14.0	-97.2	Clear	None
13:30	15	50.00	62.05	3,350	6.54	0.722	242.39	1.10	14.2	-98.6	Clear	None
13:35	20	50.00	62.23	3,600	6.53	0.724	256.46	1.10	14.4	-100.1	Clear	None
13:40	25	50.00	62.31	3,850	6.52	0.723	291.55	1.08	14.1	-102.5	Clear	None
13:45	30	50.00	62.51	4,100	6.51	0.718	280.44	1.03	13.4	-101.6	Clear	None
13:50	35	50.00	62.91	4,350	6.50	0.692	285.31	0.96	12.2	-100.2	Clear	None
13:55	40	50.00	63.12	4,600	6.50	0.688	277.58	0.92	12.1	-99.9	Clear	None
14:00	45	50.00	63.30	4,850	6.50	0.686	291.90	0.89	11.9	-99.8	Clear	None

Constituents Sampled	Container	Number	Preservative
VOCs 8260B	40 mL Glass Vial	3	HCL
Nitrate/ Nitrite 353.2	500 mL Amber Glass	1	H2SO4
Methane/ Ethane /Ethene RSK-175	40 mL Glass Vial	3	HCL
Dissolved Metals (As/Fe/Mn) 6010C/6020A	250 mL Plastic	1	Nitric Acid-HN03
Sulfide 9034	250 mL Plastic	2	ZnAC
Sulfate 9056A	125 mL Plastic	1	None
TOC 9060A	250 mL Plastic	1	None

Well Infomation G6M-13-01X

Well Locked At Arrival: Yes **Arrival Action Taken:** **Lock Functioning:** Yes **Lock Function Action Taken:**

Well Locked at Departure: Yes **Departure Action Taken:** **Well Labeled Properly:** Yes **Label Action Taken:**

Comments:

Groundwater Sampling - Low-Flow

Well ID: G6M-13-02X **Date:** 5/14/2021 **Event:** Semiannual

Former Fort Devens Army Installation/AOC

Client: USACE **Facility/Area:** 50 **Field Technician:** Diane Champagne

Weather Conditions: Sunny **Temp (°F):** 67 **wind:** 6 mph

Well head PID Reading: NA **Measuring Point Description:** Top of Inner Casing **Other:**

Casing Material: PVC **Diameter:** 2 in **Surface Finish:** Flush Mount **Purge Method:** Low-Flow

Static Water Level (ft-bmp): 59.00 **Depth to Product (ft-bmp):** NA **Total Depth (ft-bmp):** --

Water Column (ft): 66.00 **Gallons in Well:** 10.77 **Type of Equipment:** Bladder **Other:**

Purge Start Time: 08:59 **Total Volume Purged (gal):** 7.6 **Water Quality Meter:** YSI Pro DSS

Purge End Time: 11:22 **Purge Water Disposal:** Adjacent to the well **Replicate Type:** Not Applicable

Sample Method: Pump **Sample Time:** 10:45 **Replicate Number:**

Time	Minutes Elapsed	Rate mL/min	Depth to Water (ft)	mL Purged	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	ORP (mV)	Appearance Color	Appearance Odor
09:10	0	200.00	59.00	1,000	6.17	1.228	45.14	1.89	19.0	-66.9	Clear	Mild
09:15	5	200.00	59.02	2,000	6.14	1.229	53.42	1.55	19.1	-66.0	Clear	Mild
09:21	11	200.00	59.02	3,000	6.05	1.231	169.56	1.09	19.6	-65.4	Clear	Mild
09:25	15	200.00	59.02	4,000	6.04	1.224	188.60	0.95	19.5	-69.6	Clear	Mild
09:30	20	200.00	59.02	5,000	6.03	1.229	83.72	0.88	19.9	-73.1	Clear	Mild
09:35	25	200.00	59.02	6,000	6.03	1.234	49.42	0.82	20.4	-78.9	Clear	Mild
09:45	35	200.00	59.02	7,000	6.03	1.327	7.02	0.90	23.1	-80.6	Clear	Mild
09:51	41	200.00	59.02	8,000	6.13	1.930	5.57	0.84	18.6	-85.3	Clear	Mild
09:56	46	200.00	59.02	9,000	6.14	1.196	6.99	0.71	18.8	-93.7	Clear	Mild
10:00	50	200.00	59.02	10,000	6.14	1.860	9.56	0.67	18.7	-95.2	Clear	Mild
10:05	55	200.00	59.02	11,000	6.14	1.186	5.56	0.65	18.5	-96.9	Clear	Mild
10:11	61	200.00	59.02	12,000	6.14	1.189	4.31	0.61	18.9	-100.5	Clear	Mild
10:17	67	200.00	59.02	13,000	6.14	1.189	2.57	0.60	19.0	-102.2	Clear	Mild
10:21	71	200.00	59.02	14,000	6.12	1.185	1.12	0.59	19.0	-101.7	Clear	Mild
10:35	85	200.00	59.02	17,000	6.13	1.178	1.11	0.56	19.1	-107.0	Clear	Mild

Constituents Sampled	Container	Number	Preservative
VOCs 8260B	40 mL Glass Vial	3	HCL
Nitrate/ Nitrite 353.2	500 mL Amber Glass	1	H2SO4
Methane/ Ethane /Ethene RSK-175	40 mL Glass Vial	3	HCL
Dissolved Metals (As/Fe/Mn) 6010C/6020A	250 mL Plastic	1	Nitric Acid-HN03
Sulfide 9034	250 mL Plastic	2	ZnAC
Sulfate 9056A	125 mL Plastic	1	None
TOC 9060A	250 mL Plastic	1	None

Well Infomation G6M-13-02X

Well Locked At Arrival: No **Arrival Action Taken:** None **Lock Functioning:** No **Lock Function Action Taken:** None

Well Locked at Departure: No **Departure Action Taken:** None **Well Labeled Properly:** Yes **Label Action Taken:**

Comments:

Groundwater Sampling - Low-Flow

Well ID: G6M-13-05X **Date:** 5/11/2021 **Event:** Semiannual

Former Fort Devens Army Installation/AOC

Client: USACE **Facility/Area:** 50 **Field Technician:** Diane Champagne

Weather Conditions: Sunny **Temp (°F):** 63 **wind:** 12 mph

Well head PID Reading: NA **Measuring Point Description:** Top of Inner Casing **Other:**

Casing Material: PVC **Diameter:** 2 in **Surface Finish:** Stick up **Purge Method:** Low-Flow

Static Water Level (ft-bmp): 14.55 **Depth to Product (ft-bmp):** NA **Total Depth (ft-bmp):** --

Water Column (ft): 40.45 **Gallons in Well:** 6.60 **Type of Equipment:** Peristaltic **Other:**

Purge Start Time: 12:06 **Total Volume Purged (gal):** 4.5 **Water Quality Meter:** YSI Pro DSS

Purge End Time: 13:59 **Purge Water Disposal:** Adjacent to the well **Replicate Type:** Not Applicable

Sample Method: Pump **Sample Time:** 13:30 **Replicate Number:**

Time	Minutes Elapsed	Rate mL/min	Depth to Water (ft)	mL Purged	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	ORP (mV)	Appearance Color	Appearance Odor
12:16	0	150.00	14.55	750	6.61	0.619	4.41	1.44	13.9	-72.1	Clear	Mild
12:21	5	150.00	14.57	1,500	6.48	0.561	29.15	1.23	13.4	-66.8	Clear	Mild
12:27	11	150.00	14.57	2,250	6.45	0.543	123.54	1.13	13.5	-66.9	Clear	Mild
12:32	16	150.00	14.57	3,000	6.45	0.546	215.71	1.10	13.8	-67.6	Clear	Mild
12:38	22	150.00	14.57	3,750	6.45	0.543	124.25	1.07	13.6	-69.1	Clear	Mild
12:42	26	150.00	14.57	4,500	6.57	0.545	126.12	1.05	13.9	-70.5	Clear	Mild
12:46	30	150.00	14.57	5,250	6.47	0.546	127.44	1.04	14.0	-71.4	Clear	Mild
12:51	35	150.00	14.57	6,000	6.47	0.548	125.97	1.02	14.0	-72.5	Clear	Mild
12:56	40	150.00	14.57	6,750	6.48	0.543	232.89	1.03	13.6	-73.6	Clear	Mild
13:01	45	150.00	14.57	7,250	6.49	0.545	313.93	1.01	13.9	-74.0	Clear	Mild
13:07	51	150.00	14.57	8,250	6.49	0.550	203.10	1.00	14.0	-73.5	Clear	Mild
13:11	55	150.00	14.57	9,000	6.49	0.552	155.87	0.99	14.3	-73.2	Clear	Mild
13:17	61	150.00	14.57	9,750	6.50	0.553	154.06	1.00	14.2	-73.8	Clear	Mild
13:21	65	150.00	14.57	9,750	6.50	0.560	169.21	0.98	14.3	-75.1	Clear	Mild
13:28	72	150.00	14.57	10,500	6.51	0.567	154.92	0.97	14.2	-75.5	Clear	Mild

Constituents Sampled	Container	Number	Preservative
VOCs 8260B	40 mL Glass Vial	3	HCL
Nitrate/ Nitrite 353.2	500 mL Amber Glass	1	H2SO4
Methane/ Ethane /Ethene RSK-175	40 mL Glass Vial	3	HCL
Dissolved Metals (As/Fe/Mn) 6010C/6020A	250 mL Plastic	1	Nitric Acid-HN03
Sulfide 9034	250 mL Plastic	2	ZnAC
Sulfate 9056A	125 mL Plastic	1	None
TOC 9060A	250 mL Plastic	1	None

Well Infomation G6M-13-05X

Well Locked At Arrival: Yes **Arrival Action Taken:** **Lock Functioning:** Yes **Lock Function Action Taken:**

Well Locked at Departure: Yes **Departure Action Taken:** **Well Labeled Properly:** Yes **Label Action Taken:**

Comments:

Groundwater Sampling - Low-Flow

Well ID: G6M-97-05B **Date:** 5/11/2021 **Event:** Semiannual

Former Fort Devens Army Installation/AOC

Client: USACE **Facility/Area:** 50 **Field Technician:** Spencer Gust

Weather Conditions: Sunny **Temp (°F):** 55 **wind:** 7 mph

Well head PID Reading: NA **Measuring Point Description:** Top of Inner Casing **Other:**

Casing Material: PVC **Diameter:** 2 in **Surface Finish:** Stick up **Purge Method:** Low-Flow

Static Water Level (ft-bmp): 63.84 **Depth to Product (ft-bmp):** NA **Total Depth (ft-bmp):** --

Water Column (ft): 71.16 **Gallons in Well:** 11.61 **Type of Equipment:** Bladder **Other:**

Purge Start Time: 13:45 **Total Volume Purged (gal):** 0.7 **Water Quality Meter:** YSI Pro DSS

Purge End Time: 14:50 **Purge Water Disposal:** Back into ground around well. **Replicate Type:** Not Applicable

Sample Method: Pump **Sample Time:** 14:20 **Replicate Number:**

Time	Minutes Elapsed	Rate mL/min	Depth to Water (ft)	mL Purged	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	ORP (mV)	Appearance Color	Appearance Odor
13:50	0	38.00	63.84	190	6.30	0.800	370.10	0.82	14.6	-49.4	Green	Mild
13:55	5	38.00	63.84	380	6.34	0.836	377.86	0.68	16.1	-63.6	Green	Mild
14:00	10	38.00	63.84	570	6.37	0.832	324.37	0.63	15.6	-72.2	Green	Mild
14:05	15	38.00	63.84	760	6.39	0.820	326.96	0.61	14.6	-76.6	Green	Mild
14:10	20	38.00	63.84	950	6.39	0.805	342.48	0.59	13.8	-80.0	Green	Mild
14:15	25	38.00	63.84	1,140	6.40	0.803	327.39	0.58	13.8	-82.4	Green	Mild
14:20	30	38.00	63.84	1,330	6.40	0.806	330.02	0.56	14.0	-83.9	Green	Mild

Constituents Sampled	Container	Number	Preservative
VOCs 8260B	40 mL Glass Vial	3	HCL
Nitrate/ Nitrite 353.2	500 mL Amber Glass	1	H2SO4
Methane/ Ethane /Ethene RSK-175	40 mL Glass Vial	3	HCL
Dissolved Metals (As/Fe/Mn) 6010C/6020A	250 mL Plastic	1	Nitric Acid-HN03
Sulfide 9034	250 mL Plastic	2	ZnAC
Sulfate 9056A	125 mL Plastic	1	None
TOC 9060A	250 mL Plastic	1	None

Well Infomation G6M-97-05B

Well Locked At Arrival: Yes **Arrival Action Taken:** **Lock Functioning:** Yes **Lock Function Action Taken:**

Well Locked at Departure: Yes **Departure Action Taken:** **Well Labeled Properly:** Yes **Label Action Taken:**

Comments: geolocation is not of well.

Groundwater Sampling - Low-Flow

Well ID: XSA-12-96X **Date:** 5/14/2021 **Event:** Semiannual

Former Fort Devens Army Installation/AOC

Client: USACE **Facility/Area:** 50 **Field Technician:** Billy Keane

Weather Conditions: Sunny **Temp (°F):** 73 **wind:** 7 mph

Well head PID Reading: NA **Measuring Point Description:** Top of Outer Casing **Other:**

Casing Material: Stainless Steel **Diameter:** Other in **Surface Finish:** Stick up **Purge Method:** Low-Flow

Static Water Level (ft-bmp): 66.92 **Depth to Product (ft-bmp):** NA **Total Depth (ft-bmp):** --

Water Column (ft): 64.08 **Gallons in Well:** 2.61 **Type of Equipment:** Bladder **Other:**

Purge Start Time: 14:17 **Total Volume Purged (gal):** 1.1 **Water Quality Meter:** YSI Pro DSS

Purge End Time: 15:35 **Purge Water Disposal:** Ground **Replicate Type:** Not Applicable

Sample Method: Pump **Sample Time:** 15:00 **Replicate Number:**

Time	Minutes Elapsed	Rate mL/min	Depth to Water (ft)	mL Purged	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	ORP (mV)	Appearance Color	Appearance Odor
14:20	0	55.00	66.95	165	7.78	0.972	96.81	0.32	13.8	-69.3	Clear	None
14:23	3	55.00	66.95	330	7.68	0.994	100.95	0.29	13.9	-70.7	Clear	None
14:26	6	55.00	66.95	495	7.43	1.046	79.93	0.25	14.1	-76.8	Clear	None
14:29	9	55.00	66.95	660	7.29	1.067	80.95	0.23	13.9	-76.1	Clear	None
14:32	12	55.00	66.95	825	7.16	1.088	75.62	0.20	13.8	-72.7	Clear	None
14:35	15	55.00	66.95	990	7.02	1.125	80.84	0.18	14.1	-67.6	Clear	None
14:38	18	55.00	66.95	1,155	6.92	1.148	83.13	0.16	13.9	-62.2	Clear	None
14:41	21	55.00	66.95	1,320	6.87	1.161	86.76	0.15	13.8	-59.0	Clear	None
14:44	24	55.00	66.95	1,485	6.78	1.180	90.29	0.12	13.3	-52.7	Clear	None
14:47	27	55.00	66.95	1,650	6.75	1.183	90.47	0.11	13.3	-50.0	Clear	None
14:50	30	55.00	66.95	1,815	6.73	1.182	90.39	0.11	13.2	-49.5	Clear	None
14:53	33	55.00	66.95	1,980	6.71	1.183	90.52	0.11	13.2	-49.1	Clear	None

Constituents Sampled	Container	Number	Preservative
VOCs 8260B	40 mL Glass Vial	3	HCL
Dissolved Metals (As/Fe/Mn) 6010C/6020A	250 mL Plastic	1	Nitric Acid-HN03

Well Infomation XSA-12-96X

Well Locked At Arrival: No **Arrival Action Taken:** No hole for lock **Lock Functioning:** No **Lock Function Action Taken:** No hole for lock

Well Locked at Departure: No **Departure Action Taken:** No hole for lock **Well Labeled Properly:** Yes **Label Action Taken:**

Comments:

WATER QUALITY METER CALIBRATION LOG

PROJECT NAME	Devens
PROJECT NUMBER	30048392
MODEL	["YSI ProDSS"]
SERIAL NUMBER	0564
SAMPLER	Diane Champagne
DATE	5/11/2021

SINGLE POINT CALIBRATION

LOT NUMBER	2039034
EXPIRATION DATE	10/29/2021

PARAMETERS	PRE-CALIBRATION	POST-CALIBRATION	SINGLE POINT CALIBRATION WITHIN RANGE	TIME
pH	7.13	7	yes	08:49
pH	4.24	4	yes	08:52
pH	9.85	9.99	yes	08:54
Conductivity	--	1.413	yes	08:47
ORP	224.1	238.5	yes	08:41
DO	98.2	99.2	yes	08:33
Turbidity	0.1	0	yes	08:35

[1] CALIBRATION RANGES ARE SPECIFIC TO THE MODEL OF THE QUALITY METER

NOTES:

SIGNED

5/11/2021
DATE

WATER QUALITY METER CALIBRATION LOG

PROJECT NAME	Devens
PROJECT NUMBER	30048392
MODEL	["YSI ProDSS"]
SERIAL NUMBER	0564
SAMPLER	Diane Champagne
DATE	5/12/2021

SINGLE POINT CALIBRATION

LOT NUMBER				
EXPIRATION DATE				
PARAMETERS	PRE-CALIBRATION	POST-CALIBRATION	SINGLE POINT CALIBRATION WITHIN RANGE	TIME
pH	5.28	4	yes	07:50
pH	10.15	10.12	yes	07:53
Conductivity	1.423	1.413	yes	07:48
ORP	247.7	234	yes	07:46
DO	99.4	99.9	yes	07:43
Turbidity	-0.39	0	yes	07:45

[1] CALIBRATION RANGES ARE SPECIFIC TO THE MODEL OF THE QUALITY METER

NOTES:

SIGNED

5/12/2021
DATE

Fort devens

Created	2021-05-12 14:03:42 UTC by William Keane
Updated	2021-05-12 14:06:27 UTC by Shamsia Muktar
Location	42.57166812075404, -71.61111660310631

Selecting "Yes" confirms your digital signature as having read the QP and/or TGI relevant to this use case.

NOTE: For general use only. State specific or regulatory requirements for calibration are not included in this form. Please refer to Site project team for specific requirements.

This app is best used to calibrate equipment with auto-cal solutions or turbidity only solutions. Use of this app for three point calibrations is not advised.

Project Details

Project Name	Fort devens
Model	YSI ProDSS
Serial Number(s)	17E101577
Sampler	William Keane
Date	2021-05-12
Calibration Type?	Single Point Calibration

Single Point Calibration

Calibrated Parameters	Turbidity, DO, ORP, Conductivity, pH

09:40

Calibration Range for pH - +/- 0.2 S.U	
Time	09:40
pH Pre Calibration	4.56
pH Post Calibration	4.01
pH Calibration Within Range	Yes

1.425

Calibration Range for Conductivity - +/- 1% of the calibration standard	
Time	09:45
Conductivity Pre Calibration	1.425
Conductivity Post Calibration	1.413
Conductivity Calibration Within Range	Yes

239

Calibration Range for ORP- +/- 25mV	
Time	09:48
ORP Pre Calibration	239
ORP Post Calibration	234
ORP Calibration Within Range	Yes

0.79

Calibration Range for DO- Atmospheric	
Time	09:52
DO Pre Calibration	0.79
DO Post Calibration	0.01

DO Calibration Within Range	Yes

0.56

Calibration Range for Turbidity - +/- 5% of the calibration standard	
Time	09:59
Turbidity Pre Calibration	0.56
Turbidity Post Calibration	0.05
Turbidity Calibration Within Range	Yes

Signed

Signed 2021-05-12 14:06:22 UTC

Date	2021-05-12

WATER QUALITY METER CALIBRATION LOG

PROJECT NAME	Devens
PROJECT NUMBER	30048392
MODEL	["YSI ProDSS"]
SERIAL NUMBER	0564
SAMPLER	Diane Champagne
DATE	5/13/2021

SINGLE POINT CALIBRATION

LOT NUMBER	
EXPIRATION DATE	

PARAMETERS	PRE-CALIBRATION	POST-CALIBRATION	SINGLE POINT CALIBRATION WITHIN RANGE	TIME
pH	7.38	7.08	yes	07:52
pH	4	4	yes	07:54
pH	10.13	10	yes	07:55
Conductivity	1.396	1.413	yes	07:58
ORP	259.08	247.6	yes	08:01
DO	99.9	99.9	yes	07:47
DO	1.89	0.48	--	08:03
Turbidity	0.1	0	yes	07:51

[1] CALIBRATION RANGES ARE SPECIFIC TO THE MODEL OF THE QUALITY METER

NOTES:

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5/13/2021
DATE

Fort devens

Created	2021-05-13 11:59:28 UTC by William Keane
Updated	2021-05-13 12:18:31 UTC by Shamsia Muktar
Location	42.5482801627764, -71.60234212882034

Selecting "Yes" confirms your digital signature as having read the QP and/or TGI relevant to this use case.

NOTE: For general use only. State specific or regulatory requirements for calibration are not included in this form. Please refer to Site project team for specific requirements.

This app is best used to calibrate equipment with auto-cal solutions or turbidity only solutions. Use of this app for three point calibrations is not advised.

Project Details

Project Name	Fort devens
Model	YSI ProDSS
Serial Number(s)	17E101577
Sampler	William Keane
Date	2021-05-13
Calibration Type?	Single Point Calibration

Single Point Calibration

Calibrated Parameters	Turbidity, DO, ORP, Conductivity, pH

07:40

Calibration Range for pH - +/- 0.2 S.U	
Time	07:40
pH Pre Calibration	4.11
pH Post Calibration	4
pH Calibration Within Range	Yes

1.052

Calibration Range for Conductivity - +/- 1% of the calibration standard	
Time	07:45
Conductivity Pre Calibration	1.052
Conductivity Post Calibration	1.414
Conductivity Calibration Within Range	Yes

238.4

Calibration Range for ORP- +/- 25mV	
Time	07:55
ORP Pre Calibration	238.4
ORP Post Calibration	234
ORP Calibration Within Range	Yes

0.84

Calibration Range for DO- Atmospheric	
Time	08:00
DO Pre Calibration	0.84
DO Post Calibration	0.01

DO Calibration Within Range	Yes

0.25

Calibration Range for Turbidity - +/- 5% of the calibration standard	
Time	08:16
Turbidity Pre Calibration	0.25
Turbidity Post Calibration	0.02
Turbidity Calibration Within Range	Yes

Signed

Signed 2021-05-13 12:18:27 UTC

Date	2021-05-13

WATER QUALITY METER CALIBRATION LOG

PROJECT NAME	Devens
PROJECT NUMBER	30048392
MODEL	["YSI ProDSS"]
SERIAL NUMBER	19J101315
SAMPLER	Desmond Bedard
DATE	6/17/2021

SINGLE POINT CALIBRATION

LOT NUMBER	See Notes
EXPIRATION DATE	06/17/2021

PARAMETERS	PRE-CALIBRATION	POST-CALIBRATION	SINGLE POINT CALIBRATION WITHIN RANGE	TIME
pH	7.02	7.01	yes	10:31
Conductivity	1.41	1.413	yes	10:39
ORP	236.9	233.9	yes	10:47
DO	0.02	0.01	yes	10:55
Turbidity	126.7	123.8	yes	11:07

[1] CALIBRATION RANGES ARE SPECIFIC TO THE MODEL OF THE QUALITY METER

NOTES:

Conductivity standard - lot #: 20390034; expiration: 10/2021
pH 4 standard - lot #: k324-28; expiration: 12/2022
pH 7 standard - lot #: k149-13; expiration: 5/2022
pH 10 standard - lot #: k309-08; expiration: 11/2021
ORP standard - lot #: 19360107; expiration: 8/2024
DO standard - lot #: 18282772; expiration: 6/2023
Turbidity standard - lot #: 20M20410100; expiration: 12/2021

VBH

SIGNED

6/17/2021

DATE

WATER QUALITY METER CALIBRATION LOG

PROJECT NAME	Devens
PROJECT NUMBER	30048392
MODEL	["YSI ProDSS"]
SERIAL NUMBER	0564
SAMPLER	Diane Champagne
DATE	6/17/2021

SINGLE POINT CALIBRATION

LOT NUMBER				
EXPIRATION DATE				
PARAMETERS	PRE-CALIBRATION	POST-CALIBRATION	SINGLE POINT CALIBRATION WITHIN RANGE	TIME
pH	8.15	7	yes	08:01
pH	6.03	4	yes	08:06
pH	10.76	10	yes	08:09
Conductivity	1.022	1.397	yes	08:16
ORP	243.8	245.6	yes	08:14
DO	99	99.1	yes	08:00
Turbidity	-0.19	0	yes	08:00

[1] CALIBRATION RANGES ARE SPECIFIC TO THE MODEL OF THE QUALITY METER

NOTES:

Zero D.O. =0.11

SIGNED

6/17/2021

DATE

SERES
ARCADIS
a joint venture

Client:	USACE
Project Name/Location:	Devens, Massachusetts
Date(s):	10/15/2021
Sampler(s):	Diane Champagne William Keane Michael Spaulding
Equipment:	Solinst 101 water level probe

Well	Date	Time	Depth to Water (ft)	Well Depth (ft)	Remarks
G6M-02-01X	10/15/2021	9:58:00	52.45	90.33	
G6M-02-03X	10/15/2021	10:03:00	56.23	103.70	Dedicated tubing
G6M-02-04X	10/15/2021	09:52:00	58.16	106.49	Dedicated tubing
G6M-02-06X	10/15/2021	13:01:00	5.21	66.90	Dedicated tubing
G6M-02-07X	10/15/2021	13:32:00	6.43	40.46	Dedicated tubing
G6M-02-08X	10/15/2021	08:58:00	13.01	72.70	
G6M-02-11X	10/15/2021	11:49:00	58.24	136.78	Dedicated bladder pump
G6M-02-12X	10/15/2021	11:58:00	56.90	134.77	Dedicated tubing
G6M-02-13X	10/15/2021	11:03:00	57.19	119.55	Dedicated bladder pump
G6M-03-07X	10/15/2021	11:23:00	54.82	89.30	Dedicated pump in the well
G6M-03-08X	10/15/2021	12:16:00	53.21	139.44	Dedicated tubing
G6M-03-09X	10/15/2021	12:07:00	53.47	140.97	Dedicated bladder pump
G6M-03-10X	10/15/2021	12:30:00	60.33	136.81	Dedicated bladder pump
G6M-04-01X	10/15/2021	12:03:00	50.55	90.71	
G6M-04-02X	10/15/2021	9:07:00	58.14	92.26	
G6M-04-03X	10/15/2021	11:31:00	54.83	93.10	
G6M-04-04X	10/15/2021	9:28:00	55.71	104.04	
G6M-04-05X	10/15/2021	12:24:00	52.71	112.33	Dedicated bladder pump
G6M-04-06X	10/15/2021	12:41:00	59.42	106.00	Dedicated bladder pump
G6M-04-07X	10/15/2021	12:48:00	59.25	131.66	Dedicated bladder pump
G6M-04-08X	10/15/2021	14:20:00	4.96	92.30	
G6M-04-09X	10/15/2021	14:52:00	29.90	66.41	Dedicated tubing
G6M-04-10A	10/15/2021	09:59:00	10.91	42.28	
G6M-04-10X	10/15/2021	09:51:00	11.63	63.55	
G6M-04-11X	10/15/2021	10:39:00	17.67	46.91	
G6M-04-13X	10/15/2021	09:03:00	12.71	42.08	
G6M-04-14X	10/15/2021	16:00:00	5.98	92.81	
G6M-04-15X	10/15/2021	12:20:00	40.54	81.03	
G6M-04-22X	10/15/2021	12:38:00	44.21	85.35	
G6M-04-31X	10/15/2021	12:26:00	44.04	80.25	
G6M-07-01X	10/15/2021	11:42:00	51.88	95.32	
G6M-07-02X	10/15/2021	09:01:00	11.03	29.99	
G6M-13-01X	10/15/2021	11:25:00	61.32	136.48	Dedicated tubing

SERES
Engineering & Services, LLC
ARCADIS
a joint venture

Client:	USACE
Project Name/Location:	Devens, Massachusetts
Date(s):	10/15/2021
Sampler(s):	Diane Champagne William Keane Michael Spaulding
Equipment:	Solinst 101 water level probe

Well	Date	Time	Depth to Water (ft)	Well Depth (ft)	Remarks
G6M-13-02X	10/15/2021	10:52:00	57.46	124.98	Dedicated tubing
G6M-13-03X	10/15/2021	9:28:00	55.92	91.05	
G6M-13-04X	10/15/2021	11:17:00	59.60	137.38	Dedicated tubing
G6M-13-05X	10/15/2021	10:28:00	12.56	56.75	
G6M-13-06X	10/15/2021	10:21:00	12.05	62.18	
G6M-18-01	10/15/2021	11:33:00	58.36	125.82	
G6M-18-02	10/15/2021	11:22:00	63.56	135.84	
G6M-95-19X	10/15/2021	09:22:00	11.28	59.29	
G6M-95-20X	10/15/2021	09:16:00	11.11	25.03	
G6M-96-22A	10/15/2021	08:51:00	3.55	52.56	
G6M-96-22B	10/15/2021	08:56:00	4.02	71.91	
G6M-97-05B	10/15/2021	11:13:00	62.93	136.99	
G6M-97-28X	10/15/2021	09:41:00	59.06	107.09	Dedicated tubing
G6P-97-05X	10/15/2021	11:07:00	25.25	29.80	4” well. New lock
MW-3	10/15/2021	10:55:00	59.83	137.20	
MW-7	10/15/2021	11:04:00	59.03	134.73	
XSA-12-95X	10/15/2021	10:08:00	65.09	131.72	No trail to access well.
XSA-12-96X	10/15/2021	09:46:00	68.66	131.83	
XSA-12-97X	10/15/2021	09:30:00	72.22	132.40	
XSA-12-98X	10/15/2021	10:26:00	5.21	73.14	

Groundwater Sampling Form

Project Number	30087304	**Well ID**	G6M-02-01X			**Date**	10/13/2021
Project Name/Location	Devens, Massachusetts		**Weather(°F)**	70.0 degrees F and Clear. The wind is blowing W/SW at 5.8 mph.			
Measuring Pt. Description	Top of Inner Casing	**Screen Setting (ft-bmp)**	80 - 95	**Casing Diameter (in)**	2	**Well Casing Material**	PVC
Static Water Level (ft-bmp)	52.36	**Total Depth (ft-bgs)**	--	**Water Column(ft)**	42.64	**Gallons in Well**	6.93
MP Elevation	262.44	**Pump Intake (ft-bmp)**	87.5	**Purge Method**	Low-Flow	**Sample Method**	Grab
Sample Time	13:45	**Volumes Purged**	0.27	**Sample ID**	G6M-02-01X-FAL21	**Sampled by**	Diane Champagne
Purge Start	13:10	**Gallons Purged**	1.90	**Replicate/ Code No.**			
Purge End	13:53						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
13:15	0	0	200	52.39	0.26	6.98	3.881	5.6	0.81	17	-157.8	Orange	Strong
13:20	5	5	200	52.39	0.53	6.86	3.836	42.45	0.58	15.8	-131.5	Orange	Strong
13:25	5	10	200	52.39	0.79	6.86	3.808	40.71	0.55	15.6	-128.8	Orange	Strong
13:30	5	15	200	52.39	1.06	6.86	3.779	41.72	0.54	15.6	-126.2	Orange	Strong
13:35	5	20	200	52.39	1.32	6.87	3.774	41.56	0.52	15.8	-126.9	Orange	Strong
13:40	5	25	200	52.39	1.59	6.87	3.784	39.93	0.51	15.4	-126.6	Orange	Strong

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Glass	3	HCL
Dissolved Metals	250 mL Plastic	1	HNO3

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot

1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Inside fenced area near the hangars

Condition of Well: Needs repairs

Well Completion: Flush mount

Well Locked at Arrival: no

Well Locked at Departure: no

Key Number To Well: NA

Groundwater Sampling Form

Project Number	30087304	**Well ID**	G6M-02-04X			**Date**	10/12/2021
Project Name/Location	Former Fort Devens - Devens, MA		**Weather(°F)**	75.0 degrees F and Clear. The wind is blowing undefined at 0.0 mph.			
Measuring Pt. Description	Top of Inner Casing	**Screen Setting (ft-bgs)**	90 - 105	**Casing Diameter (in)**	2	**Well Casing Material**	PVC
Static Water Level (ft-bmp)	58.17	**Total Depth (ft-bgs)**	--	**Water Column(ft)**	46.83	**Gallons in Well**	7.61
MP Elevation	264.92	**Pump Intake (ft-bmp)**	100	**Purge Method**	Low-Flow	**Sample Method**	Grab
Sample Time	11:19	**Volumes Purged**	0.23	**Sample ID**	G6M-02-04X-FAL21	**Sampled by**	Michael Spaulding
Purge Start	10:35	**Gallons Purged**	1.8	**Replicate/ Code No.**			
Purge End	11:28						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
10:35	0	0	100	58.14	0.00	6.42	0.589	0.37	3.14	16.2	-27.6	Clear	None
10:44	9	9	100	58.14	0.24	6.8	0.68	4.51	1.46	15.2	-82.1	Clear	None
10:49	5	14	100	58.14	0.34	6.93	0.695	14.96	1.04	14.7	-108.3	Clear	None
10:54	5	19	145	58.14	0.58	7.03	0.706	19.83	0.91	14.7	-119.9	Clear	None
10:58	4	23	145	58.14	0.66	7	0.716	28.22	0.84	14.8	-126.5	Clear	None
11:01	3	26	145	58.14	0.79	7.01	0.716	30.09	0.8	14.8	-129.8	Clear	None
11:05	4	30	145	58.14	0.92	7.03	0.721	34.81	0.77	14.8	-134	Clear	None
11:08	3	33	145	58.14	1.06	7.03	0.718	41.17	0.74	14.8	-136.5	Clear	None
11:12	4	37	145	58.14	1.19	7.1	0.723	45.15	0.71	15.1	-139.7	Clear	None
11:15	3	40	145	58.14	1.32	7.04	0.726	48.98	0.7	15.1	-141.2	Clear	None
11:18	3	43	145	58.14	1.45	7.04	0.727	46.96	0.68	15	-142.8	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs SW-846 8260B	40 mL Glass	3	HCL
Metals	250 mL Plastic	1	HNO3

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: AOX 50
Condition of Well: Good condition
Well Completion: Stick-up
Well Locked at Arrival: yes
Well Locked at Departure: yes
Key Number To Well: NA

Groundwater Sampling Form

Project Number	30087304	**Well ID**	G6M-02-06X			**Date**	10/14/2021
Project Name/Location	Former Fort Devens LTM AOC 50		**Weather(°F)**	Sunny 70			
Measuring Pt. Description	Top of Inner Casing	**Screen Setting (ft-bmp)**	55 - 65	**Casing Diameter (in)**	2	**Well Casing Material**	PVC
Static Water Level (ft-bmp)	5.11	**Total Depth (ft-bgs)**	--	**Water Column(ft)**	59.89	**Gallons in Well**	9.73
MP Elevation	209.73	**Pump Intake (ft-bmp)**	60	**Purge Method**	Low-Flow	**Sample Method**	Grab
Sample Time	11:45	**Volumes Purged**	0.23	**Sample ID**	G6M-02-06X-FAL21	**Sampled by**	Michael Spaulding
Purge Start	11:06	**Gallons Purged**	2.25	**Replicate/ Code No.**			
Purge End	11:51						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
11:08	0	0	200	5.11	0.00	7.08	0.127	41.71	7.39	14.2	100.6	Clear	None
11:11	3	3	200	5.13	0.20	7.13	0.1619	23.92	6.91	13.8	110.5	Clear	None
11:14	3	6	200	5.13	0.40	7.17	0.119	18.71	6.83	13.8	114	Clear	None
11:17	3	9	200	5.13	0.53	7.19	0.119	13.3	6.91	13.7	115.8	Clear	None
11:20	3	12	200	5.13	0.66	7.21	0.119	7	6.87	13.9	117	Clear	None
11:23	3	15	200	5.13	0.85	7.21	0.119	6.76	6.88	13.6	117.8	Clear	None
11:26	3	18	200	5.13	1.00	7.22	0.119	3.85	6.85	13.7	118.1	Clear	None
11:29	3	21	200	5.13	1.19	7.23	0.119	2.56	6.82	13.6	118	Clear	None
11:32	3	24	200	5.13	1.32	7.23	0.119	1.61	6.94	13.6	118	Clear	None
11:35	3	27	200	5.13	1.48	7.24	0.119	1.52	6.9	13.7	84.4	Clear	None
11:39	4	31	200	5.13	17.17	7.25	0.119	0.45	6.9	13.9	98.8	Clear	None
11:42	3	34	200	5.13	1.85	7.26	0.119	0.39	6.95	13.7	103.9	Clear	None
11:45	3	37	200	5.13	1.98	7.26	0.119	0.5	6.97	13.8	106.6	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs SW-846 8260B	40 mL Glass	3	HCL
Metals	250 mL Plastic	1	HNO3

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location:	Former Fort Devens AOC50	Well Locked at Arrival:	yes
Condition of Well:	Good condition	Well Locked at Departure:	yes
Well Completion:	Stick-up	Key Number To Well:	NA

Groundwater Sampling Form

Project Number	30087304	**Well ID**	G6M-02-07X			**Date**	10/14/2021
Project Name/Location	Fort devens/ AOC 50		**Weather(°F)**	Sunny 70			
Measuring Pt. Description	Top of Inner Casing	**Screen Setting (ft-bmp)**	30 - 40	**Casing Diameter (in)**	2	**Well Casing Material**	PVC
Static Water Level (ft-bmp)	6.35	**Total Depth (ft-bgs)**	--	**Water Column(ft)**	33.65	**Gallons in Well**	5.47
MP Elevation	210.72	**Pump Intake (ft-bmp)**	35	**Purge Method**	Low-Flow	**Sample Method**	Grab
Sample Time	12:15	**Volumes Purged**	0.48	**Sample ID**	G6M-02-07X	**Sampled by**	William Keane
Purge Start	11:05	**Gallons Purged**	2.60	**Replicate/ Code No.**			
Purge End	12:25						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
11:10	0	0	150	6.35	0.20	7.71	1.533	65	0.87	14.3	-74.4	Clear	None
11:15	5	5	150	6.35	0.40	7.72	1.563	49.75	0.63	14.3	-73.8	Clear	None
11:20	5	10	150	6.35	0.59	7.71	1.561	42.99	0.52	14.3	-72.4	Clear	None
11:25	5	15	150	6.35	0.79	7.71	1.547	17.33	0.17	14.3	-65.5	Clear	None
11:30	5	20	150	6.35	0.99	7.71	1.545	16.45	0.14	14.3	-64.5	Clear	None
11:35	5	25	150	6.35	1.19	7.73	1.541	18.06	0.03	14.4	-64.3	Clear	None
11:40	5	30	150	6.35	1.39	7.73	1.539	15.93	0.03	14.4	-63.5	Clear	None
11:45	5	35	150	6.35	1.59	7.74	1.534	16.9	0.01	14.4	-63.7	Clear	None
11:50	5	40	150	6.35	1.78	7.74	1.531	15.9	0.01	14.4	-63.7	Clear	None
11:55	5	45	150	6.35	1.98	7.77	1.518	6.77	0.01	14.3	-60.2	Clear	None
12:00	5	50	150	6.35	2.18	7.77	1.516	4.42	0.01	14.3	-58.5	Clear	None
12:05	5	55	150	6.35	2.38	7.77	1.515	4.5	0.01	14.3	-56.5	Clear	None
12:10	5	60	150	6.35	2.58	7.78	1.513	4.41	0.01	14.3	-56.8	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Glass	3	HCL
Dissolved Metals	250 mL Plastic	1	HNO3

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Woods AOC 50
Condition of Well: Good condition
Well Completion: Stick-up
Well Locked at Arrival: yes
Well Locked at Departure: yes
Key Number To Well: NA

Groundwater Sampling Form

Project Number	30087304	**Well ID**	G6M-02-08X			**Date**	10/14/2021
Project Name/Location	Devens, Massachusetts		**Weather(°F)**	73.9 degrees F and Clear. The wind is blowing N at 10.3 mph.			
Measuring Pt. Description	Top of Inner Casing	**Screen Setting (ft-bmp)**	60 - 70	**Casing Diameter (in)**	2	**Well Casing Material**	PVC
Static Water Level (ft-bmp)	13.11	**Total Depth (ft-bgs)**	--	**Water Column(ft)**	56.89	**Gallons in Well**	9.24
MP Elevation	224.23	**Pump Intake (ft-bmp)**	65	**Purge Method**	Low-Flow	**Sample Method**	Low-Flow
Sample Time	13:25	**Volumes Purged**	0.35	**Sample ID**	G6M-02-08X-FAL21	**Sampled by**	Diane Champagne
Purge Start	12:00	**Gallons Purged**	3.27	**Replicate/ Code No.**			
Purge End	14:00						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate gal/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
12:15	0	0	0.0396	13.11	0.59	6.95	0.531	155.05	1.41	14.7	-99.9	Black/orange	Strong
12:21	6	6	0.0396	13.35	0.83	7	0.507	68.47	1.03	14.2	-118.1	Black/orange	Strong
12:25	4	10	0.0396	13.58	0.99	7	0.513	119.75	0.91	14	-121.2	Black/orange	Strong
12:30	5	15	0.0396	13.59	1.19	7	0.518	174.77	0.85	13.7	-122.7	Black/orange	Strong
12:40	10	25	0.0396	13.58	1.59	6.98	0.545	149.87	0.76	14.1	-121.9	Black/orange	Strong
12:45	5	30	0.0396	13.59	1.79	6.98	0.557	258.77	0.73	13.8	-120.6	Black/orange	Strong
12:50	5	35	0.0396	13.59	1.99	6.98	0.563	352.65	0.72	13.6	-121.1	Black/orange	Strong
12:56	6	41	0.0396	13.59	2.23	6.97	0.568	184.57	0.7	13.4	-121.4	Black/orange	Strong
13:00	4	45	0.0396	13.58	2.39	6.96	0.576	42.21	0.68	13.6	-120.9	Black/orange	Strong
13:06	6	51	0.0396	13.58	2.63	6.96	0.574	32.13	0.67	13.5	-120.6	Black/orange	Strong
13:10	4	55	0.0396	13.58	2.79	6.96	0.588	30.01	0.66	13.6	-120.1	Black/orange	Strong
13:15	5	60	0.0396	13.58	2.99	6.95	0.593	28.56	0.67	13.6	-119.5	Black/orange	Strong
13:22	7	67	0.0396	13.58	3.27	6.95	0.597	28.89	0.63	13.4	-119.1	Black/orange	Strong

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Glass	3	HCL
Dissolved Metals	250 mL Plastic	1	HNO3
Nitrate/Nitrite	1L Amber	1	H2SO4
Sulfate	250 mL Plastic	2	NaHSO4
Sulfide	125 mL Plastic	1	None
Alkalinity	250 mL Plastic	1	None
Ethane,Ethene,Methane	40 mL Glass	3	HCL
Total Organic Carbon	250 mL Amber	1	H2SO4

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot

1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Near parachute tower

Condition of Well: Good condition

Well Completion: Stick-up

Well Locked at Arrival: yes

Well Locked at Departure: yes

Key Number To Well: 3753

Groundwater Sampling Form

Project Number	30087304	**Well ID**	G6M-02-11X			**Date**	10/12/2021
Project Name/Location	Former Fort Devens - Devens, MA		**Weather(°F)**	75.0 degrees F and Clear. The wind is blowing undefined at 0.0 mph.			
Measuring Pt. Description	Top of Inner Casing	**Screen Setting (ft-bgs)**	125 - 135	**Casing Diameter (in)**	2	**Well Casing Material**	PVC
Static Water Level (ft-bmp)	58.08	**Total Depth (ft-bgs)**	--	**Water Column(ft)**	76.92	**Gallons in Well**	12.5
MP Elevation	263.93	**Pump Intake (ft-bmp)**	130	**Purge Method**	Low-Flow	**Sample Method**	Grab
Sample Time	13:15	**Volumes Purged**	0.24	**Sample ID**	G6M-02-11X	**Sampled by**	William Keane
Purge Start	12:05	**Gallons Purged**	2.97	**Replicate/ Code No.**			
Purge End	13:20						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
12:30	0	0	150	58.08	0.99	6.87	0.918	7.55	1.8	15.7	-119.1	Clear	None
12:35	5	5	150	58.08	1.19	6.89	0.9	9.02	1.67	15.5	-120.9	Clear	None
12:40	5	10	150	58.08	1.39	6.94	0.893	14.58	1.04	15.2	-125	Clear	None
12:45	5	15	150	58.08	1.59	6.94	0.895	13.33	1.02	15.2	-124.5	Clear	None
12:50	5	20	150	58.08	1.78	6.97	0.912	11.2	0.94	15.1	-128.9	Clear	None
12:55	5	25	150	58.08	1.98	6.97	0.913	9.33	0.92	15	-129.1	Clear	None
13:00	5	30	150	58.08	2.18	6.98	0.915	8.63	0.91	15.1	-129.1	Clear	None
13:05	5	35	150	58.08	2.38	6.98	0.917	9.25	0.9	15.1	-129.2	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Glass	3	HCL
Dissolved Metals	250 mL Plastic	1	HNO3

Comments: Designated pump

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot

1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Aoc 50 woods

Condition of Well: Good condition

Well Completion: Stick-up

Well Locked at Arrival: yes

Well Locked at Departure: yes

Key Number To Well: NA

Groundwater Sampling Form

Project Number	30087304	**Well ID**	G6M-02-13X			**Date**	10/15/2021
Project Name/Location	Devens, Massachusetts		**Weather(°F)**				
Measuring Pt. Description	Top of Inner Casing	**Screen Setting (ft-bmp)**	110 - 120	**Casing Diameter (in)**	2	**Well Casing Material**	PVC
Static Water Level (ft-bmp)	57.21	**Total Depth (ft-bgs)**	--	**Water Column(ft)**	62.79	**Gallons in Well**	10.2
MP Elevation	263.93	**Pump Intake (ft-bmp)**	115	**Purge Method**	Low-Flow	**Sample Method**	Low-Flow
Sample Time	14:45	**Volumes Purged**	0.51	**Sample ID**	G6m-13-02X-FAL21	**Sampled by**	Diane Champagne
Purge Start	13:00	**Gallons Purged**	5.24	**Replicate/ Code No.**			
Purge End	14:59						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate gal/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
13:15	0	0	0.0528	57.21	0.79	6.94	1.173	12.52	3.14	13.4	44.6	Clear	None
13:21	6	6	0.0528	57.21	1.11	6	0.859	13.21	1.62	12.8	91.9	Clear	None
13:30	9	15	0.0528	57.21	1.59	6.12	1.083	11.27	1.24	12.8	47.4	Clear	None
13:35	5	20	0.0528	57.21	1.85	6.47	1.799	10.06	1.03	12.9	-35.6	Clear	None
13:40	5	25	0.0528	57.21	2.11	6.49	1.944	10.76	1.02	12.9	-39.6	Clear	None
13:45	5	30	0.0528	57.21	2.37	6.57	2.125	13.13	0.98	12.5	-59.2	Clear	None
13:50	5	35	0.0528	57.21	2.63	6.65	2.498	13.33	0.85	12.7	-80.9	Clear	None
13:55	5	40	0.0528	57.21	2.89	6.67	2.52	15.35	0.84	12.6	-83.1	Clear	None
14:00	5	45	0.0528	57.21	3.15	6.67	2.545	29.85	0.82	12.6	-87.3	Clear	None
14:06	6	51	0.0528	57.21	3.47	6.69	2.55	79.87	0.79	12.4	-90.4	Clear	None
14:10	4	55	0.0528	57.21	3.68	6.7	2.548	49.14	0.78	12.4	-91.5	Clear	None
14:15	5	60	0.0528	57.21	3.94	6.7	2.557	50.86	0.75	12.4	-92.7	Clear	None
14:20	5	65	0.0528	57.21	4.20	6.71	2.584	58.96	0.72	12.6	-94.2	Clear	None
14:25	5	70	0.0528	57.21	4.46	6.71	2.58	13.5	0.71	12.5	-95.1	Clear	None
14:30	5	75	0.0528	57.21	4.72	6.71	2.584	2.04	0.7	12.5	-95.7	Clear	None
14:35	5	80	0.0528	57.21	4.98	6.71	2.581	1.39	0.69	12.5	-96.1	Clear	None
14:40	5	85	0.0528	57.21	5.24	6.72	2.577	1.22	0.68	12.4	-96.8	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Glass	3	HCL
Dissolved Metals	250 mL Plastic	1	HNO3

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Airstrip
Condition of Well: Good condition
Well Completion: Flush mount
Well Locked at Arrival: no
Well Locked at Departure: no
Key Number To Well: NA

Groundwater Sampling Form

Project Number	30087304	**Well ID**	G6M-03-07X			**Date**	10/18/2021
Project Name/Location	Former Fort Devens LTM AOC 50		**Weather(°F)**	55.0 degrees F and Clear.			
Measuring Pt. Description	Top of Inner Casing	**Screen Setting (ft-bmp)**	80 - 90	**Casing Diameter (in)**	2	**Well Casing Material**	PVC
Static Water Level (ft-bmp)	53	**Total Depth (ft-bgs)**	--	**Water Column(ft)**	37	**Gallons in Well**	6.01
MP Elevation	262.66	**Pump Intake (ft-bmp)**	85	**Purge Method**	Low-Flow	**Sample Method**	Grab
Sample Time	14:15	**Volumes Purged**	0.50	**Sample ID**	G6M-03-07X-FAL21	**Sampled by**	Michael Spaulding
Purge Start	12:30	**Gallons Purged**	3.00	**Replicate/ Code No.**			
Purge End	14:28						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
13:33	0	0	175	52.99	1.45	6.35	0.926	1.95	0.55	15	-99.2	Clear	None
13:36	3	3	175	52.99	1.59	6.42	0.932	1.37	0.54	15	-100.3	Clear	None
13:39	3	6	175	52.99	1.80	6.36	0.936	5.5	0.53	15.2	-101.2	Clear	None
13:42	3	9	175	52.99	1.85	6.35	0.939	1.47	0.53	15.2	-101.8	Clear	None
13:45	3	12	150	52.99	1.98	6.35	0.946	3.13	0.52	15.2	-102.7	Clear	None
13:48	3	15	150	52.99	2.11	6.35	0.95	3.3	0.52	15.2	-103.3	Clear	None
13:51	3	18	150	52.99	2.11	6.35	0.948	2	0.51	15.1	-103.5	Clear	None
13:54	3	21	150	52.99	2.25	6.36	0.948	3.52	0.51	15.1	-104.1	Clear	None
13:56	2	23	150	52.99	2.38	6.35	0.947	2.37	0.51	14.9	-104.3	Clear	None
13:59	3	26	150	52.99	2.64	6.35	0.935	2.33	0.51	15	-104.7	Clear	None
14:02	3	29	150	52.99	0.00	6.35	0.955	2.34	0.51	15	-105	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Glass	3	HCL
Dissolved Metals	250 mL Plastic	1	HNO3
Nitrate/Nitrite	1L Amber	1	H2SO4
Sulfate	250 mL Plastic	2	NaHSO4
Sulfide	125 mL Plastic	1	None
Alkalinity	250 mL Plastic	1	None
Ethane,Ethene,Methane	40 mL Glass	3	HCL
Total Organic Carbon	250 mL Amber	1	H2SO4

Comments: Some product in well, sheen in IDW
1330 nitrogen swap out

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Former Fort Devens AOC50
Condition of Well: Good condition
Well Completion: Flush mount
Well Locked at Arrival: yes
Well Locked at Departure: yes
Key Number To Well: NA

Groundwater Sampling Form

Project Number	30087304	**Well ID**	G6M-03-10X			**Date**	10/12/2021
Project Name/Location	Former Fort Devens - Devens, MA		**Weather(°F)**	75.0 degrees F and Clear. The wind is blowing undefined at 0.0 mph.			
Measuring Pt. Description	Top of Inner Casing	**Screen Setting (ft-bgs)**	120 - 135	**Casing Diameter (in)**	2	**Well Casing Material**	PVC
Static Water Level (ft-bmp)	59.56	**Total Depth (ft-bgs)**	--	**Water Column(ft)**	95.44	**Gallons in Well**	15.51
MP Elevation	265.81	**Pump Intake (ft-bmp)**	125	**Purge Method**	Low-Flow	**Sample Method**	Grab
Sample Time	15:45	**Volumes Purged**	0.16	**Sample ID**	G6M-03-10X	**Sampled by**	William Keane
Purge Start	14:50	**Gallons Purged**	2.57	**Replicate/ Code No.**			
Purge End	15:55						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
14:55	0	0	150	59.56	0.20	6.92	0.994	14.72	2.32	14.2	-109.6	Clear	None
15:00	5	5	150	59.56	0.40	6.91	1	17.54	2.13	14.1	-110.3	Clear	None
15:05	5	10	150	59.56	0.59	6.9	1.009	20.42	1.99	14	-111	Clear	None
15:10	5	15	150	59.56	0.79	6.89	1.057	41.52	1.48	14	-115	Clear	None
15:15	5	20	150	59.56	0.99	6.9	1.064	23.81	1.43	14	-115.4	Clear	None
15:20	5	25	150	59.56	1.19	6.93	1.069	20.3	1.2	13.8	-117.5	Clear	None
15:25	5	30	150	59.56	1.39	6.93	1.069	22.8	1.18	13.7	-117.6	Clear	None
15:30	5	35	150	59.56	1.59	6.94	1.068	24.6	1.15	13.7	-118.4	Clear	None
15:35	5	40	150	59.56	1.78	6.94	1.069	24.7	1.1	13.7	-118.2	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Glass	3	HCL
Dissolved Metals	250 mL Plastic	1	HNO3

Comments: Tubing for air was busted needed to be fixed caused delays

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot

1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Woods in AOC 50

Condition of Well: Good condition

Well Completion: Stick-up

Well Locked at Arrival: yes

Well Locked at Departure: yes

Key Number To Well: NA

Groundwater Sampling Form

Project Number	30087304	**Well ID**	G6M-04-01X			**Date**	10/13/2021
Project Name/Location	Devens, Massachusetts		**Weather(°F)**	66.9 degrees F and Clear. The wind is blowing W at 9.2 mph.			
Measuring Pt. Description	Top of Inner Casing	**Screen Setting (ft-bmp)**	82 - 92	**Casing Diameter (in)**	2	**Well Casing Material**	PVC
Static Water Level (ft-bmp)	50.58	**Total Depth (ft-bgs)**	--	**Water Column(ft)**	41.42	**Gallons in Well**	6.73
MP Elevation	261.15	**Pump Intake (ft-bmp)**	87	**Purge Method**	Low-Flow	**Sample Method**	Low-Flow
Sample Time	12:35	**Volumes Purged**	0.55	**Sample ID**	G6M-04-01X-FAL21	**Sampled by**	Diane Champagne
Purge Start	11:21	**Gallons Purged**	3.70	**Replicate/ Code No.**			
Purge End	13:00						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
11:31	0	0	200	50.58	0.53	8.17	2.221	70.07	7.81	15.8	-129.7	Clear	None
11:36	5	5	200	50.58	0.79	6.33	4.85	159.27	2.23	15.4	-48.1	Clear	None
11:41	5	10	200	50.58	1.06	6.31	5.065	219.01	1.31	14.8	-48.5	Clear	None
11:46	5	15	200	50.58	1.32	6.32	5.114	291.4	1.05	14.8	-51.9	Clear	None
11:50	4	19	200	50.58	1.53	6.33	5.106	311.62	0.98	14.7	-54.1	Clear	None
11:56	6	25	200	50.58	1.85	6.35	5.14	368.8	0.86	14.9	-58.1	Clear	None
12:00	4	29	200	50.58	2.06	6.36	5.18	91.16	0.82	15.2	-60.8	Clear	None
12:05	5	34	200	50.58	2.32	6.37	5.225	39.51	0.77	15.4	-64.7	Clear	None
12:10	5	39	200	50.58	2.59	6.4	5.246	19.1	0.74	15.6	-69.8	Clear	None
12:15	5	44	200	50.58	2.85	6.4	5.253	16.89	0.72	15.6	-70.6	Clear	None
12:20	5	49	200	50.58	3.12	6.43	5.256	7.19	0.72	15.7	-74.5	Clear	None
12:25	5	54	200	50.58	3.38	6.44	5.284	7.82	0.68	15.9	-78.3	Clear	None
12:30	5	59	200	50.58	3.65	6.45	5.251	7.57	0.68	15.6	-79.2	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Glass	3	HCL
Dissolved Metals	250 mL Plastic	1	HNO3

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Inside fenced area near hangar
Condition of Well: Needs repairs
Well Completion: Flush mount
Well Locked at Arrival: no
Well Locked at Departure: no
Key Number To Well: NA

Groundwater Sampling Form

Project Number	30087304	**Well ID**	G6M-04-02X			**Date**	10/18/2021
Project Name/Location	Devens, Massachusetts		**Weather(°F)**	55.0 degrees F and Clear.			
Measuring Pt. Description	Top of Inner Casing	**Screen Setting (ft-bmp)**	80 - 90	**Casing Diameter (in)**	2	**Well Casing Material**	PVC
Static Water Level (ft-bmp)	57.88	**Total Depth (ft-bgs)**	--	**Water Column(ft)**	32.12	**Gallons in Well**	5.22
MP Elevation	266.55	**Pump Intake (ft-bmp)**	85	**Purge Method**	Low-Flow	**Sample Method**	Low-Flow
Sample Time	13:40	**Volumes Purged**	0.91	**Sample ID**	G6M-04-02X-FAL21	**Sampled by**	Diane Champagne
Purge Start	12:05	**Gallons Purged**	4.77	**Replicate/ Code No.**			
Purge End	14:14						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate gal/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
12:10	0	0	0.0528	58.04	0.32	5.74	2.072	104.61	2.45	11.7	-13.9	Gray	Medium
12:15	5	5	0.0528	58.02	0.52	5.75	2.085	142.13	1.46	11.8	-20.9	Gray	Medium
12:25	10	15	0.0528	58.02	1.05	5.77	2.087	223.13	1.11	11.5	-26.4	Gray	Medium
12:30	5	20	0.0528	58.02	1.31	5.78	2.069	147.83	0.96	11.3	-29.9	Gray	Medium
12:35	5	25	0.0582	58.02	1.60	5.8	2.091	227.32	0.84	11.4	-34.3	Gray	Medium
12:40	5	30	0.0582	58.02	1.89	5.83	2.094	391.77	0.75	11.4	-39.3	Gray	Medium
12:46	6	36	0.0528	58.02	2.21	5.82	2.09	415.68	0.83	11.4	-40.1	Gray	Medium
12:51	5	41	0.0528	58.02	2.47	5.84	2.103	448.45	0.69	11.5	-42.4	Gray	Medium
12:56	5	46	0.0528	58.02	2.73	5.84	1.108	483.18	0.66	11.5	-44.7	Gray	Medium
13:00	4	50	0.0528	58.02	2.94	5.84	2.108	408.76	0.64	11.5	-46.4	Gray	Medium
13:05	5	55	0.0528	58.02	3.20	5.85	2.111	280.29	0.61	11.7	-48.3	Gray	Medium
13:10	5	60	0.0528	58.02	3.47	5.86	2.13	143.18	0.59	11.9	-50.4	Gray	Medium
13:15	5	65	0.0528	58.02	3.72	5.86	2.118	57.81	0.57	11.8	-51.8	Gray	Medium
13:21	6	71	0.0528	58.02	4.04	5.87	2.109	13.5	0.56	11.6	-53.3	Gray	Medium
13:25	4	75	0.0528	58.02	4.25	5.87	2.107	12.4	0.55	11.7	-53.7	Gray	Medium
13:30	5	80	0.0528	58.02	4.51	5.87	2.101	12.09	0.55	11.4	-54.9	Gray	Medium
13:35	5	85	0.0528	58.01	4.77	5.87	2.079	12.17	0.55	11.6	-55.5	Gray	Medium

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Glass	3	HCL
Dissolved Metals	250 mL Plastic	1	HNO3
Nitrate/Nitrite	1L Amber	1	H2SO4
Sulfate	250 mL Plastic	2	NaHSO4
Sulfide	125 mL Plastic	1	None
Alkalinity	250 mL Plastic	1	None
Ethane,Ethene,Methane	40 mL Glass	3	HCL
Total Organic Carbon	250 mL Amber	1	H2SO4

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Grassy area near old control tower
Condition of Well: Good condition
Well Completion: Stick-up
Well Locked at Arrival: yes
Well Locked at Departure: yes
Key Number To Well: 3753

Groundwater Sampling Form

Project Number	30087304	**Well ID**	G6M-04-03X			**Date**	10/13/2021
Project Name/Location	Devens, Massachusetts		**Weather(°F)**	73.0 degrees F and Clear. The wind is blowing S at 9.2 mph.			
Measuring Pt. Description	Top of Inner Casing	**Screen Setting (ft-bmp)**	85 - 95	**Casing Diameter (in)**	2	**Well Casing Material**	PVC
Static Water Level (ft-bmp)	54.86	**Total Depth (ft-bgs)**	--	**Water Column(ft)**	40.14	**Gallons in Well**	6.52
MP Elevation	264.29	**Pump Intake (ft-bmp)**	90	**Purge Method**	Low-Flow	**Sample Method**	Low-Flow
Sample Time	15:40	**Volumes Purged**	0.52	**Sample ID**	G6M-04-03X-FAL21	**Sampled by**	Diane Champagne
Purge Start	14:30	**Gallons Purged**	3.40	**Replicate/ Code No.**			
Purge End	16:03						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate gal/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
14:36	0	0	0.0528	54.86	0.32	9.27	1.177	34.89	4.57	20.5	-59.9	Orange w/black floaters	Medium
14:40	4	4	0.0528	54.86	0.53	7.63	1.412	26.86	3.54	19.9	-139.8	Orange w/black floaters	Medium
14:45	5	9	0.0528	54.86	0.79	7.04	2.465	11.83	1.63	19.7	-130.4	Orange w/black floaters	Medium
14:50	5	14	0.0528	54.86	1.05	7	2.806	11.05	1.01	19.4	-136.7	Orange w/black floaters	Medium
14:55	5	19	0.0528	54.86	1.31	7	2.817	11.44	0.94	19.4	-138.1	Orange w/black floaters	Medium
15:00	5	24	0.0528	54.86	1.57	7	2.832	21.13	0.84	19.3	-140.3	Orange w/black floaters	Medium
15:05	5	29	0.0528	54.86	1.83	6.99	2.855	12.32	0.78	19.7	-139.4	Orange w/black floaters	Medium
15:10	5	34	0.0528	54.86	2.09	6.98	2.846	14.71	0.72	19.8	-138.1	Orange w/black floaters	Medium
15:16	6	40	0.0528	54.86	2.41	6.97	2.846	17.47	0.71	20	-137.9	Orange w/black floaters	Medium
15:21	5	45	0.0528	54.86	2.67	6.96	2.817	32.51	0.67	19.7	-136.6	Orange w/black floaters	Medium
15:25	4	49	0.0528	54.86	2.88	6.94	2.738	33.66	0.66	19.2	-133.2	Orange w/black floaters	Medium
15:30	5	54	0.0528	54.86	3.14	6.89	2.679	32.78	0.67	19.1	-130.3	Orange w/black floaters	Medium
15:35	5	59	0.0528	54.86	3.40	6.87	2.686	32.43	0.7	19.2	-128.1	Orange w/black floaters	Medium

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Glass	3	HCL
Dissolved Metals	250 mL Plastic	1	HNO3
Nitrate/Nitrite	1L Amber	1	H2SO4
Sulfate	250 mL Plastic	2	NaHSO4
Sulfide	125 mL Plastic	1	None
Alkalinity	250 mL Plastic	1	None
Ethane,Ethene,Methane	40 mL Glass	3	HCL
Total Organic Carbon	250 mL Amber	1	H2SO4

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot

1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Next to hangar and old control tower

Condition of Well: Needs repairs

Well Completion: Flush mount

Well Locked at Arrival: no

Well Locked at Departure: no

Key Number To Well: NA

Groundwater Sampling Form

Project Number	30087304	**Well ID**	G6M-04-04X			**Date**	10/18/2021
Project Name/Location	Devens, Massachusetts		**Weather(°F)**	Sunny 62			
Measuring Pt. Description	Top of Inner Casing	**Screen Setting (ft-bmp)**	94 - 104	**Casing Diameter (in)**	2	**Well Casing Material**	PVC
Static Water Level (ft-bmp)	55.73	**Total Depth (ft-bgs)**	--	**Water Column(ft)**	48.27	**Gallons in Well**	7.84
MP Elevation	262.66	**Pump Intake (ft-bmp)**	97	**Purge Method**	Low-Flow	**Sample Method**	Low-Flow
Sample Time	12:35	**Volumes Purged**	0.58	**Sample ID**	G6M-04-04X	**Sampled by**	William Keane
Purge Start	11:05	**Gallons Purged**	4.55	**Replicate/ Code No.**	AOC50-DUP03-FAL21		
Purge End	13:00						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
11:20	0	0	150	55.73	0.59	6.2	1.34	7.4	4.17	17.4	-62.9	Clear	None
11:25	5	5	150	55.73	0.79	6.2	1.633	8	3.43	17.5	-71.9	Clear	None
11:30	5	10	150	55.73	0.99	6.39	2.202	5.9	1.48	16.2	-88.2	Clear	None
11:35	5	15	150	55.73	1.19	6.46	2.235	3.6	0.6	15.9	-93.3	Clear	None
11:40	5	20	150	55.73	1.39	6.48	2.245	24.3	0.24	15.9	-99	Clear	None
11:45	5	25	150	55.73	1.59	6.49	2.245	24.22	0.23	15.8	-99.3	Clear	None
11:50	5	30	150	55.73	1.78	6.49	2.243	24.77	0.21	15.8	-99.6	Clear	None
11:55	5	35	150	55.73	1.98	6.49	2.236	25.8	0.2	15.7	-100.1	Clear	None
12:00	5	40	150	55.73	2.18	6.49	2.236	28.7	0.14	15.7	-100.5	Clear	None
12:05	5	45	150	55.73	2.38	6.48	2.233	28.7	0.11	15.7	-100.6	Clear	None
12:10	5	50	150	55.73	2.58	6.48	2.225	8.73	0.06	15.6	-101.4	Clear	None
12:15	5	55	150	55.73	2.77	6.48	2.225	28.4	0.02	15.5	-102	Clear	None
12:20	5	60	150	55.73	2.97	6.48	2.226	29.3	0.01	15.5	-102	Clear	None
12:25	5	65	150	55.73	3.17	6.48	2.225	29.2	0.01	15.5	-102	Clear	None
12:30	5	70	150	55.73	3.37	6.48	2.224	29.3	0.01	15.5	-102.3	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Glass	3	HCL
Dissolved Metals	250 mL Plastic	1	HNO3

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Airfield AOC50
Condition of Well: Missing bolts
Well Completion: Flush mount
Well Locked at Arrival: no
Well Locked at Departure: no
Key Number To Well: NA

Groundwater Sampling Form

Project Number	30087304	**Well ID**	G6M-04-06X			**Date**	10/14/2021
Project Name/Location	Former Fort Devens LTM AOC 50		**Weather(°F)**	73.9 degrees F and Clear. The wind is blowing N at 10.3 mph.			
Measuring Pt. Description	Top of Inner Casing	**Screen Setting (ft-bmp)**	95 - 105	**Casing Diameter (in)**	2	**Well Casing Material**	PVC
Static Water Level (ft-bmp)	59.58	**Total Depth (ft-bgs)**	--	**Water Column(ft)**	56.42	**Gallons in Well**	9.19
MP Elevation	263.97	**Pump Intake (ft-bmp)**	100	**Purge Method**	Low-Flow	**Sample Method**	Grab
Sample Time	13:50	**Volumes Purged**	0.20	**Sample ID**	G6M-04-06X-FAL21	**Sampled by**	Michael Spaulding
Purge Start	13:01	**Gallons Purged**	2.50	**Replicate/ Code No.**			
Purge End	13:52						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
13:01	0	0	200	59.58	0.00	7.11	0.172	9.27	4.86	12.3	124	Clear	None
13:04	3	3	200	59.58	0.13	6.55	0.178	2.72	1.9	12.2	130.5	Clear	None
13:07	3	6	200	59.58	0.26	6.44	0.179	1.31	1.55	12.2	130.2	Clear	None
13:10	3	9	200	59.58	0.53	6.37	0.179	0.73	1.38	12.3	129.9	Clear	None
13:13	3	12	200	59.58	0.66	6.35	0.178	0.51	1.28	12.3	126.5	Clear	None
13:16	3	15	225	59.58	0.87	6.4	0.18	0.28	1.27	12.7	97.1	Clear	None
13:19	3	18	225	59.58	1.06	6.35	0.18	0.27	1.25	12.7	105.8	Clear	None
13:22	3	21	225	59.58	1.25	6.34	0.179	0.14	1.2	12.9	109.7	Clear	None
13:28	6	27	225	59.58	1.32	6.33	0.182	0.64	1.21	13.8	111.3	Clear	None
13:31	3	30	225	59.58	1.40	6.35	0.188	0.61	1.35	14.7	91	Clear	None
13:34	3	33	225	59.58	1.45	6.34	0.184	0.12	1.41	13.2	95.7	Clear	None
13:38	4	37	200	59.58	1.59	6.34	0.176	1.06	1.08	12.3	101.5	Clear	None
13:41	3	40	200	59.58	1.85	6.33	0.175	0.36	0.95	12.1	102.9	Clear	None
13:44	3	43	200	59.58	1.98	6.33	0.174	0.22	0.88	12.1	104	Clear	None
13:47	3	46	200	59.58	2.11	6.32	0.174	0.25	0.89	12.1	104.8	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs SW-846 8260B	40 mL Glass	3	HCL
Metals	250 mL Plastic	1	HNO3

Comments: Nitrogen swap at 1325

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Former Fort Devens AOC50
Condition of Well: Good condition
Well Completion: Stick-up
Well Locked at Arrival: yes
Well Locked at Departure: yes
Key Number To Well: NA

Groundwater Sampling Form

Project Number	30087304	**Well ID**	G6M-04-07X			**Date**	10/14/2021
Project Name/Location	Former Fort Devens LTM AOC 50		**Weather(°F)**	73.9 degrees F and Clear. The wind is blowing N at 10.3 mph.			
Measuring Pt. Description	Top of Inner Casing	**Screen Setting (ft-bmp)**	120 - 130	**Casing Diameter (in)**	2	**Well Casing Material**	PVC
Static Water Level (ft-bmp)	59.01	**Total Depth (ft-bgs)**	--	**Water Column(ft)**	70.99	**Gallons in Well**	11.54
MP Elevation	263.82	**Pump Intake (ft-bmp)**	125	**Purge Method**	Low-Flow	**Sample Method**	
Sample Time	14:45	**Volumes Purged**	0.17	**Sample ID**	G6M-04-07X-FAL21	**Sampled by**	Michael Spaulding
Purge Start	14:11	**Gallons Purged**	2.00	**Replicate/ Code No.**			
Purge End	14:56						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
14:12	0	0	175	59.1	0.00	6.75	0.483	5	6.07	12.4	127.2	Clear	None
14:16	4	4	175	59.1	0.13	6.25	0.544	1.31	1.99	11.9	106.9	Clear	None
14:19	3	7	175	59.1	0.33	6.22	0.55	1.03	1.55	11.9	94.4	Clear	None
14:22	3	10	175	59.1	0.45	6.22	0.551	0.57	1.35	11.9	84.5	Clear	None
14:25	3	13	175	59.1	0.53	6.21	0.548	0.26	1.24	11.9	76.8	Clear	None
14:28	3	16	175	59.1	0.66	6.21	0.548	0.1	1.19	11.9	70.4	Clear	None
14:32	4	20	175	59.1	0.92	6.22	0.544	0.03	1.11	11.9	63.4	Clear	None
14:35	3	23	175	59.1	1.06	6.23	0.541	0.07	1.07	12	58.4	Clear	None
14:38	3	26	175	59.1	1.19	6.24	0.536	0.03	1.04	12	55.4	Clear	None

Constituent Sampled	Container	Number	Preservative
Alkalinity	250 mL Plastic	1	None
Nitrate/Nitrite	500 mL Amber	1	H2SO4
RSK175(A)	40 mL Glass	3	HCL
Metals	250 mL Plastic	1	HNO3
VOCs SW-846 8260B	40 mL Glass	3	HCL
Sulfate	125 mL Plastic	1	None
Total Organic Carbon	500 mL Amber	1	H2SO4
Sulfide	250 mL Plastic	2	NaOh

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Former Fort Devens AOC50
Condition of Well: Good condition
Well Completion: Stick-up
Well Locked at Arrival: yes
Well Locked at Departure: yes
Key Number To Well: NA

Groundwater Sampling Form

Project Number	30087304	**Well ID**	G6M-04-09X			**Date**	10/18/2021
Project Name/Location	Former Fort Devens LTM AOC 50		**Weather(°F)**	Sunny 62			
Measuring Pt. Description	Top of Inner Casing	**Screen Setting (ft-bmp)**	55 - 65	**Casing Diameter (in)**	2	**Well Casing Material**	PVC
Static Water Level (ft-bmp)	30.04	**Total Depth (ft-bgs)**	--	**Water Column(ft)**	36.4	**Gallons in Well**	5.91
MP Elevation	242.66	**Pump Intake (ft-bmp)**	60	**Purge Method**	Low-Flow	**Sample Method**	
Sample Time	09:55	**Volumes Purged**	0.38	**Sample ID**	G6M-04-09X-FAL21	**Sampled by**	Michael Spaulding
Purge Start	09:16	**Gallons Purged**	2.25	**Replicate/ Code No.**			
Purge End	10:10						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
09:16	0	0	200	30.06	0.00	9.07	0.43	19.19	4.37	10.6	120.7	Clear	None
09:20	4	4	200	30.06	0.13	9.57	0.432	17.81	1.32	10.3	109.7	Clear	None
09:23	3	7	200	30.11	0.32	9.55	0.428	18.3	1.06	10.3	106.6	Clear	None
09:26	3	10	200	30.11	0.53	9.42	0.418	19.75	0.9	10.3	104	Clear	None
09:29	3	13	200	30.11	0.66	8.71	0.413	15.88	0.81	10.3	-218.2	Clear	None
09:32	3	16	200	30.11	0.71	7.07	0.456	20.94	0.79	10.3	-171.1	Clear	None
09:35	3	19	200	30.11	0.92	6.79	0.47	48.9	0.79	10.3	-153.7	Clear	None
09:38	3	22	200	30.11	1.19	6.64	0.486	55.07	0.77	10.3	-143.7	Clear	None
09:41	3	25	200	30.11	1.32	6.6	0.495	22	0.76	10.3	-139.9	Clear	None
09:44	3	28	200	30.11	1.45	6.58	0.503	35.01	0.74	10.3	-137.8	Clear	None
09:47	3	31	200	30.11	1.59	6.58	0.509	23.12	0.73	10.3	-137.5	Clear	None
09:50	3	34	200	30.11	1.72	6.57	0.513	21.97	0.71	10.3	-137.7	Clear	None
09:53	3	37	200	30.11	1.98	6.57	0.515	22.33	0.74	10.3	-137.6	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs SW-846 8260B	40 mL Glass	3	HCL
Metals	250 mL Plastic	1	HNO3

Comments: Slight effervescence in water

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location:	Former Fort Devens AOC50	Well Locked at Arrival:	yes
Condition of Well:	Good condition	Well Locked at Departure:	yes
Well Completion:	Stick-up	Key Number To Well:	NA

Groundwater Sampling Form

Project Number	30087304	**Well ID**	G6M-04-10A			**Date**	10/13/2021
Project Name/Location	Former Fort Devens LTM AOC 50		**Weather(°F)**	73.0 degrees F and Clear. The wind is blowing S at 9.2 mph.			
Measuring Pt. Description	Top of Inner Casing	**Screen Setting (ft-bmp)**	30 - 40	**Casing Diameter (in)**	2	**Well Casing Material**	PVC
Static Water Level (ft-bmp)	10.83	**Total Depth (ft-bgs)**	--	**Water Column(ft)**	29.17	**Gallons in Well**	4.74
MP Elevation	224.02	**Pump Intake (ft-bmp)**	35	**Purge Method**	Low-Flow	**Sample Method**	
Sample Time	12:15	**Volumes Purged**		**Sample ID**	G6M-04-10X-FAL21	**Sampled by**	Michael Spaulding
Purge Start	10:48	**Gallons Purged**		**Replicate/ Code No.**			
Purge End	12:54						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
10:48	0	0	175	10.83	0.00	6.2	0.87	143.5	1.92	12.1	5	Clear	None
10:52	4	4	175	10.89	0.13	6.4	0.672	622.3	1.03	11.3	-49.5	Clear	None
10:55	3	7	200	10.89	0.26	6.43	0.642	419	0.67	11.2	-79.8	Clear	None
10:58	3	10	200	10.89	0.53	6.43	0.636	445.08	0.73	11.5	-89.2	Clear	None
11:01	3	13	200	10.89	0.66	6.43	0.641	360.8	0.72	11.9	-95.7	Clear	None
11:04	3	16	200	10.89	0.73	6.45	0.651	401.99	0.69	12.9	-102.9	Clear	None
11:08	4	20	75	10.89	0.92	6.43	0.662	206	0.96	13.5	-104.8	Clear	None
11:11	3	23	175	10.89	0.92	6.43	0.667	37.1	0.67	13.2	-106.9	Clear	None
11:15	4	27	175	10.89	0.92	6.43	6.57	113.47	0.62	12.5	-108.8	Clear	None
11:18	3	30	150	10.89	1.27	6.44	0.63	123.44	0.6	12	-110.9	Clear	None
11:22	4	34	150	10.89	1.32	6.46	0.626	222.05	0.58	11.5	-113.2	Clear	None
11:25	3	37	150	10.89	1.37	6.46	0.617	67.54	0.57	11.5	-114.6	Clear	None
11:29	4	41	150	10.89	1.45	6.46	0.612	70.81	0.57	11.4	-115.7	Clear	None
11:32	3	44	150	10.89	1.59	6.46	0.608	50.78	0.57	11.6	-116.7	Clear	None
11:36	4	48	150	10.89	1.66	6.47	0.599	15.29	0.56	11.5	-118.3	Clear	None
11:41	5	53	150	10.89	1.98	6.47	0.597	65.7	0.55	11.4	-119.1	Clear	None
11:45	4	57	150	10.89	1.98	6.46	0.601	77.78	0.55	11.4	-119.4	Clear	None
11:48	3	60	150	10.89	0.00	6.47	0.603	75.56	0.55	11.5	-120.2	Clear	None
11:53	5	65	150	10.89	2.38	6.52	0.596	76.21	0.54	11.4	-121.2	Clear	None

Constituent Sampled	Container	Number	Preservative
Alkalinity	250 mL Plastic	3	None
Nitrate/Nitrite	500 mL Amber	3	H2SO4
RSK175 (A)	40 mL Glass	9	HCL
Metals	250 mL Plastic	3	HNO3
VOCs SW-846 8260B	40 mL Glass	3	HCL
Sulfate	125 mL Plastic	3	None
Total Organic Carbon	250 mL Amber	3	H2SO4
Sulfide	250 mL Plastic	6	NaOh

Comments: Effervescent water on turbidity probe at start of readings

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Former Fort Devens AOC50
Condition of Well: Good condition
Well Completion: Stick-up
Well Locked at Arrival: yes
Well Locked at Departure: yes
Key Number To Well: NA

Groundwater Sampling Form

Project Number	30087304	**Well ID**	G6M-04-10X			**Date**	10/13/2021
Project Name/Location	Former Fort Devens LTM AOC 50		**Weather(°F)**	73.0 degrees F and Clear. The wind is blowing S at 9.2 mph.			
Measuring Pt. Description	Top of Inner Casing	**Screen Setting (ft-bmp)**	52 - 62	**Casing Diameter (in)**	2	**Well Casing Material**	PVC
Static Water Level (ft-bmp)	11.58	**Total Depth (ft-bgs)**	--	**Water Column(ft)**	50.42	**Gallons in Well**	8.19
MP Elevation	224.22	**Pump Intake (ft-bmp)**	55	**Purge Method**	Low-Flow	**Sample Method**	
Sample Time	09:32	**Volumes Purged**		**Sample ID**	G6M-04-10X-FAL21	**Sampled by**	Michael Spaulding
Purge Start	08:58	**Gallons Purged**		**Replicate/ Code No.**			
Purge End	09:34						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
08:58	0	0	200	11.6	0.00	6.53	0.017	125.79	10.6	13.4	87.2	Clear	None
09:02	4	4	200	11.61	0.16	6.38	2.24	4.33	2.14	11.5	48.7	Clear	None
09:06	4	8	200	11.61	0.40	5.34	2.277	4.67	1.27	11.7	107.1	Clear	None
09:11	5	13	200	11.61	0.53	5.32	2.3	0.99	2.13	12.4	121.9	Clear	None
09:14	3	16	200	11.61	0.66	5.26	2.298	2.12	1.19	11.7	124	Clear	None
09:17	3	19	175	11.61	0.79	5.25	2.266	1.94	1.13	11.6	123.5	Clear	None
09:20	3	22	175	11.61	0.92	5.25	2.252	0.94	0.92	11.5	123	Clear	None
09:23	3	25	175	11.61	1.03	5.25	2.257	1.66	0.91	11.7	122.4	Clear	None
09:27	4	29	175	11.61	1.25	5.26	2.258	1.12	0.92	11.9	121.7	Clear	None
09:30	3	32	175	11.61	1.45	5.26	2.258	1.4	0.89	12	121.6	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs SW-846 8260B	40 mL Glass	3	HCL

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Former Fort Devens AOC50
Condition of Well: Good condition
Well Completion: Stick-up
Well Locked at Arrival: yes
Well Locked at Departure: yes
Key Number To Well: NA

Groundwater Sampling Form

Project Number	30087304	**Well ID**	G6M-04-13X			**Date**	10/13/2021
Project Name/Location	Former Fort Devens LTM AOC 50		**Weather(°F)**	73.0 degrees F and Clear. The wind is blowing S at 9.2 mph.			
Measuring Pt. Description	Top of Inner Casing	**Screen Setting (ft-bmp)**	30 - 40	**Casing Diameter (in)**	2	**Well Casing Material**	PVC
Static Water Level (ft-bmp)	12.62	**Total Depth (ft-bgs)**	--	**Water Column(ft)**	27.38	**Gallons in Well**	4.45
MP Elevation	225.88	**Pump Intake (ft-bmp)**	35	**Purge Method**	Low-Flow	**Sample Method**	
Sample Time	15:03	**Volumes Purged**	1.49	**Sample ID**	G6M-04-13X-FAL21	**Sampled by**	Michael Spaulding
Purge Start	13:59	**Gallons Purged**	6.65	**Replicate/ Code No.**			
Purge End	15:05						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
14:00	0	0	150	12.68	0.00	5.58	0.117	6.39	3.89	13.1	-22.2	Clear	None
14:03	3	3	200	12.68	0.13	6.89	0.112	7.37	1.18	12.2	-57.8	Clear	None
14:06	3	6	200	12.68	0.32	6.93	0.11	13.45	1.01	12.3	-79.4	Clear	None
14:09	3	9	200	12.67	0.48	6.96	0.109	5.05	0.91	12.2	-92	Clear	None
14:12	3	12	200	12.67	0.66	6.96	0.108	5.3	0.88	12.1	-101.1	Clear	None
14:15	3	15	200	12.68	0.79	6.99	0.104	9.62	0.86	12	-106.1	Clear	None
14:18	3	18	200	12.68	0.98	6.96	0.101	23.85	0.88	12.2	-109.3	Clear	None
14:22	4	22	200	12.68	1.19	6.94	0.097	33.6	0.91	12.2	-111.4	Clear	None
14:26	4	26	200	12.68	1.37	6.92	0.091	14.83	0.98	12	-111.3	Clear	None
14:29	3	29	200	12.68	0.00	6.89	0.089	14.2	1.03	12.1	-109.1	Clear	None
14:32	3	32	200	12.68	1.72	6.87	0.085	8.8	1.11	12.1	-106.2	Clear	None
14:36	4	36	200	12.68	1.85	6.83	0.083	7.25	1.22	12	-102.4	Clear	None
14:39	3	39	200	12.68	2.09	6.81	0.08	5.89	1.31	11.9	-98.9	Clear	None
14:42	3	42	200	12.68	2.25	6.78	0.079	8.2	1.31	11.9	-95.3	Clear	None
14:46	4	46	200	12.68	2.46	6.8	0.077	7.02	1.54	12.1	-90.9	Clear	None
14:49	3	49	200	12.68	2.62	6.75	0.075	5.8	1.57	12.1	-87.2	Clear	None
14:52	3	52	200	12.68	2.64	6.74	0.074	8.01	1.64	11.9	-83.6	Clear	None
14:55	3	55	200	12.68	2.94	6.72	0.072	8.78	1.79	11.9	-80.7	Clear	None
14:58	3	58	200	12.68	3.04	6.7	0.072	8.88	1.82	11.9	-77.9	Clear	None
15:01	3	61	200	12.68	3.24	6.69	0.07	8.48	1.91	12	-75.5	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs SW-846 8260B	40 mL Glass	3	HCL

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Former Fort Devens AOC50
Condition of Well: Good condition
Well Completion: Stick-up
Well Locked at Arrival: yes
Well Locked at Departure: yes
Key Number To Well: NA

Groundwater Sampling Form

Project Number	30087304	**Well ID**	G6M-04-14X			**Date**	10/15/2021
Project Name/Location	Devens, Massachusetts		**Weather(°F)**	Overcast 73			
Measuring Pt. Description	Top of Inner Casing	**Screen Setting (ft-bmp)**	80 - 90	**Casing Diameter (in)**	2	**Well Casing Material**	PVC
Static Water Level (ft-bmp)	5.98	**Total Depth (ft-bgs)**	--	**Water Column(ft)**	84.02	**Gallons in Well**	13.65
MP Elevation	210.61	**Pump Intake (ft-bmp)**	85	**Purge Method**	Low-Flow	**Sample Method**	Low-Flow
Sample Time	15:20	**Volumes Purged**	0.16	**Sample ID**	G6M-04-14X	**Sampled by**	William Keane
Purge Start	14:35	**Gallons Purged**	2.18	**Replicate/ Code No.**			
Purge End	15:30						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
14:40	0	0	150	6.2	0.20	7.94	0.951	81	0.76	15.7	-80	Clear	None
14:45	5	5	150	6.2	0.40	7.95	0.952	58	0.74	15.7	-81.6	Clear	None
14:50	5	10	150	6.2	0.59	7.97	0.954	43	0.51	15.7	-79.4	Clear	None
14:55	5	15	150	6.2	0.79	7.99	0.953	30	0.45	15.6	-76.4	Clear	None
15:00	5	20	150	6.2	0.99	8.01	0.951	23.82	0.37	15.6	-72	Clear	None
15:05	5	25	150	6.2	1.19	8.01	0.951	30	0.35	15.6	-71.5	Clear	None
15:10	5	30	150	6.2	1.39	8.02	0.95	29.8	0.34	15.6	-71.4	Clear	None
15:15	5	35	150	6.2	1.59	8.02	0.948	29.2	0.33	15.6	-70.8	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Glass	3	HCL
Dissolved Metals	250 mL Plastic	1	HNO3

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot

1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Other side of river

Condition of Well: Good condition

Well Completion: Stick-up

Well Locked at Arrival: yes

Well Locked at Departure: yes

Key Number To Well: NA

Groundwater Sampling Form

Project Number	30087304	**Well ID**	G6M-04-15X			**Date**	10/18/2021
Project Name/Location	Former Fort Devens LTM AOC 50		**Weather(°F)**	Sunny 62			
Measuring Pt. Description	Top of Inner Casing	**Screen Setting (ft-bmp)**	70 - 80	**Casing Diameter (in)**	2	**Well Casing Material**	PVC
Static Water Level (ft-bmp)	40.54	**Total Depth (ft-bgs)**	--	**Water Column(ft)**	40.42	**Gallons in Well**	6.57
MP Elevation	253.23	**Pump Intake (ft-bmp)**	75	**Purge Method**	Low-Flow	**Sample Method**	Grab
Sample Time	11:52	**Volumes Purged**	0.46	**Sample ID**	G6M-04-15X-FAL21	**Sampled by**	Michael Spaulding
Purge Start	10:50	**Gallons Purged**	3.00	**Replicate/ Code No.**			
Purge End	11:55						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
10:50	0	0	200	40.71	0.00	6.76	0.757	5.15	4.9	12.2	-18.6	Clear	None
10:53	3	3	200	40.61	0.13	6.55	0.977	8.23	1.86	12	-22.2	Clear	None
10:56	3	6	200	40.61	0.26	6.56	0.899	14.83	1.52	11.8	-27.4	Clear	None
10:59	3	9	200	40.65	0.40	6.54	0.918	17.77	1.24	11.8	-30.6	Clear	None
11:02	3	12	200	40.65	0.58	6.54	0.896	17.84	1.17	11.8	-32.8	Clear	None
11:05	3	15	200	40.68	0.74	6.53	0.88	11.36	1.13	11.8	-35.4	Clear	None
11:09	4	19	200	40.68	0.92	6.53	0.872	13.6	1.09	11.8	-37.3	Clear	None
11:12	3	22	200	40.68	1.11	6.52	0.893	9.21	1.04	11.8	-39.3	Clear	None
11:15	3	25	200	40.68	1.27	6.53	0.904	11.45	1.01	11.8	-40.8	Clear	None
11:18	3	28	200	40.68	1.45	6.53	0.907	8.72	0.97	11.7	-42.5	Clear	None
11:21	3	31	200	40.68	1.59	6.54	0.9	4.14	0.94	11.7	-43.9	Clear	None
11:24	3	34	200	40.68	1.72	6.54	0.908	13.3	0.91	11.8	-45	Clear	None
11:27	3	37	200	40.68	1.90	6.54	0.934	5.62	0.88	11.8	-46.2	Clear	None
11:30	3	40	200	40.68	2.03	6.55	0.943	3.33	0.85	11.8	-48.1	Clear	None
11:34	4	44	200	40.68	2.25	6.55	0.929	2.52	0.82	11.8	-49.7	Clear	None
11:38	4	48	200	40.68	2.51	6.55	0.932	3.94	0.8	11.8	-50.4	Clear	None
11:41	3	51	200	40.68	2.64	6.55	0.935	2.7	0.79	11.9	-51.2	Clear	None
11:44	3	54	200	40.68	2.77	6.55	0.941	3.77	0.77	11.8	-52.1	Clear	None
11:47	3	57	200	40.68	2.96	6.56	0.939	2.9	0.75	11.8	-52.3	Clear	None
11:50	3	60	200	40.68	3.10	6.56	0.94	2.97	0.75	11.9	-53.4	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs SW-846 8260B	40 mL Glass	3	HCL
Metals	250 mL Plastic	1	HNO3

Comments: Slight effervescence in water, no well cap

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot

1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Former Fort Devens AOC50

Condition of Well: Good condition

Well Completion: Stick-up

Well Locked at Arrival: yes

Well Locked at Departure: yes

Key Number To Well: NA

Groundwater Sampling Form

Project Number	30087304	**Well ID**	G6M-07-01X			**Date**	11/03/2021
Project Name/Location	Devens, Massachusetts		**Weather(°F)**	46.0 degrees F and Clear. The wind is blowing W/NW at 10.3 mph.			
Measuring Pt. Description	Top of Inner Casing	**Screen Setting (ft-bmp)**	--	**Casing Diameter (in)**	2	**Well Casing Material**	PVC
Static Water Level (ft-bmp)	51.77	**Total Depth (ft-bmp)**	90	**Water Column(ft)**	38.23	**Gallons in Well**	6.21
MP Elevation		**Pump Intake (ft-bmp)**	85	**Purge Method**	Low-Flow	**Sample Method**	Low-Flow
Sample Time	12:25	**Volumes Purged**	0.51	**Sample ID**	G6M-07-01X-FAL21	**Sampled by**	Diane Champagne
Purge Start	11:20	**Gallons Purged**	3.15	**Replicate/ Code No.**			

Purge End

Time	Minutes Elapsed	Total Elapsed Minutes	Rate gal/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
11:30	0	0	0.0528	51.77	0.53	6.76	1.564	101.87	1.96	8.8	37.1	Brown	Mild
11:34	4	4	0.0528	51.77	0.74	6.78	1.618	92.18	1.24	8.7	41.4	Brown	Mild
11:40	6	10	0.0528	51.77	1.06	6.78	1.619	74.55	1.16	8.7	43.3	Brown	Mild
11:45	5	15	0.0528	51.77	1.32	6.78	1.612	78.62	1.13	8.7	44.7	Brown	Mild
11:50	5	20	0.0528	51.77	1.58	6.75	1.578	72.83	1.17	8.7	48.5	Brown	Mild
11:55	5	25	0.0528	51.77	1.84	6.7	1.546	59.84	1.23	8.6	53.5	Brown	Mild
12:00	5	30	0.0528	51.77	2.10	6.67	1.515	66.12	1.31	8.6	59.9	Brown	Mild
12:06	6	36	0.0528	51.77	2.42	6.59	1.471	61.09	1.42	8.6	65.1	Brown	Mild
12:10	4	40	0.0528	51.77	2.63	6.51	1.435	17.8	1.55	8.6	73.2	Brown	Mild
12:15	5	45	0.0528	51.77	2.89	6.45	1.434	17.2	1.53	8.7	77.8	Brown	Mild
12:20	5	50	0.0528	51.77	3.15	6.44	1.441	17.35	1.52	8.7	81.1	Brown	Mild

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	250 mL Plastic	1	HNO3
Alkalinity	250 mL Plastic	1	None
Chloride,Sulfide	125 mL Plastic	1	None
COD	250 mL Amber	1	H2SO4

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Inside fence area near hangar
Condition of Well: Needs repairs
Well Completion: Flush mount
Well Locked at Arrival: no
Well Locked at Departure: no
Key Number To Well: NA

Groundwater Sampling Form

Project Number	30087304	**Well ID**	G6M-07-02X			**Date**	10/12/2021
Project Name/Location	Former Fort Devens - Devens, MA		**Weather(°F)**	75.0 degrees F and Clear. The wind is blowing undefined at 0.0 mph.			
Measuring Pt. Description	Top of Inner Casing	**Screen Setting (ft-bgs)**	125 - 135	**Casing Diameter (in)**	2	**Well Casing Material**	PVC
Static Water Level (ft-bmp)	11.72	**Total Depth (ft-bgs)**	--	**Water Column(ft)**	15.78	**Gallons in Well**	2.56
MP Elevation	225.1	**Pump Intake (ft-bmp)**	25	**Purge Method**	Low-Flow	**Sample Method**	Grab
Sample Time	15:40	**Volumes Purged**	0.93	**Sample ID**	G6M-07-02X-FAL21	**Sampled by**	Michael Spaulding
Purge Start	15:07	**Gallons Purged**	2.38	**Replicate/ Code No.**	AOC50-DUP02-FAL21		
Purge End	16:25						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
15:11	0	0	185	11.72	0.13	7	0.469	58.74	1.04	13.4	-137.9	Yellow	None
15:15	4	4	185	13.52	0.40	6.99	0.466	212.12	0.81	13.4	-145.3	Yellow	None
15:18	3	7	200	13.52	0.53	6.97	0.467	197.44	0.74	13.5	-153.5	Yellow	None
15:21	3	10	200	13.52	0.66	6.97	0.467	74.25	0.71	13.5	-161.4	Yellow	None
15:24	3	13	200	14.6	0.79	7.02	0.47	68.45	0.68	13.4	-166.8	Yellow	None
15:27	3	16	200	14.6	0.95	6.97	0.462	66.54	0.65	13.3	-169.1	Yellow	None
15:30	3	19	200	14.6	1.12	6.96	0.459	62.44	0.64	13.3	-169.9	Yellow	None

Constituent Sampled	Container	Number	Preservative
Alkalinity	125 mL Plastic	1	None
Nitrate/Nitrite	500 mL Amber	1	H2SO4
RSK175	40 mL Glass	3	HCL
Metals	250 mL Plastic	1	HNO3
VOCs	40 mL Glass	3	HCL
Sulfide	250 mL Plastic	2	NaOh
Sulfate	125 mL Plastic	1	None
Total Organic Carbon	250 mL Amber	1	H2SO4

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Former Fort Devens AOC50
Condition of Well: Good condition
Well Completion: Stick-up
Well Locked at Arrival: yes
Well Locked at Departure: yes
Key Number To Well: NA

Groundwater Sampling Form

Project Number	30087304	**Well ID**	G6M-13-01X			**Date**	10/12/2021
Project Name/Location	Former Fort Devens - Devens, MA		**Weather(°F)**	72.0 degrees F and Clear. The wind is blowing undefined at 0.0 mph.			
Measuring Pt. Description	Top of Inner Casing	**Screen Setting (ft-bgs)**	115 - 125	**Casing Diameter (in)**	2	**Well Casing Material**	PVC
Static Water Level (ft-bmp)	61.12	**Total Depth (ft-bgs)**	--	**Water Column(ft)**	73.88	**Gallons in Well**	12
MP Elevation	266.82	**Pump Intake (ft-bmp)**	130	**Purge Method**	Low-Flow	**Sample Method**	Grab
Sample Time	13:30	**Volumes Purged**	0.22	**Sample ID**	G6M-13-01-FALL-21	**Sampled by**	Diane Champagne
Purge Start	12:40	**Gallons Purged**	2.64	**Replicate/ Code No.**			
Purge End	14:04						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
12:45	0	0	200	61.12	0.00	6.61	1.619	14.51	2.53	13.1	-72.6	Clear	Medium
12:51	6	6	200	61.12	0.00	6.53	1.546	14.98	1.14	12.1	-68.1	Clear	Medium
12:55	4	10	200	61.12	0.00	6.5	1.575	10.15	0.92	12.2	-61.6	Clear	Medium
13:00	5	15	200	61.14	0.00	6.47	1.602	8.65	0.85	12.1	-53.1	Clear	Medium
13:05	5	20	200	61.14	0.00	6.46	1.617	8.11	0.83	12.1	-47.4	Clear	Medium
13:10	5	25	200	61.15	0.00	6.46	1.623	7.87	0.82	12.3	-43.1	Clear	Medium
13:16	6	31	200	61.15	0.00	6.47	1.622	8.41	0.75	12.2	-40.4	Clear	Medium
13:20	4	35	200	61.15	0.00	6.47	1.615	8.9	0.71	12.1	-38.9	Clear	Medium
13:25	5	40	200	61.16	0.00	6.48	1.62	8.77	0.69	12.2	-38.6	Clear	Medium

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Glass	3	HCL
Dissolved Metals	250 mL Plastic	1	HNO3
Nitrate/Nitrite	1L Amber	1	H2SO4
Sulfate	250 mL Plastic	2	NaHSO4
Sulfide	250 mL Plastic	1	None
Alkalinity	125 mL Plastic	1	None
Ethane,Ethene,Methane	40 mL Glass	3	HCL
Total Organic Carbon	250 mL Amber	1	H2SO4

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Weedy area off runway bypass road
Condition of Well: Good condition
Well Completion: Stick-up
Well Locked at Arrival: yes
Well Locked at Departure: yes
Key Number To Well: 3753

Groundwater Sampling Form

Project Number	30087304	**Well ID**	G6M-13-02X			**Date**	10/18/2021
Project Name/Location	Devens, Massachusetts		**Weather(°F)**	46.0 degrees F and Clear. The wind is blowing N/NW at 3.4 mph.			
Measuring Pt. Description	Top of Inner Casing	**Screen Setting (ft-bmp)**	115-125	**Casing Diameter (in)**	2	**Well Casing Material**	PVC
Static Water Level (ft-bmp)	57.57	**Total Depth (ft-bgs)**	--	**Water Column(ft)**	67.43	**Gallons in Well**	10.96
MP Elevation	263.82	**Pump Intake (ft-bmp)**	120	**Purge Method**	Low-Flow	**Sample Method**	Low-Flow
Sample Time	10:45	**Volumes Purged**	0.51	**Sample ID**	G6M-13-02X-FAL21	**Sampled by**	Diane Champagne
Purge Start	08:55	**Gallons Purged**	5.57	**Replicate/ Code No.**	AOC50-DUP04-FAL21		
Purge End	11:26						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate gal/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
09:15	0	0	0.0528	57.57	1.06	6.44	1.972	23.97	1.18	10.4	-34.1	Clear	Medium
09:20	5	5	0.0528	57.57	1.32	6.32	1.906	13.41	0.93	10.3	-13.2	Clear	Medium
09:25	5	10	0.0528	57.57	1.58	6.27	1.91	11.65	0.88	10.5	-7.2	Clear	Medium
09:31	6	16	0.0528	57.57	1.90	6.26	1.917	11.74	0.84	10.5	-6.8	Clear	Medium
09:35	4	20	0.0528	57.56	2.11	6.26	1.925	10.64	0.8	10.7	-5.4	Clear	Medium
09:40	5	25	0.0528	57.56	2.37	6.26	1.937	11.04	0.77	10.6	-6.8	Clear	Medium
09:45	5	30	0.0528	57.56	2.63	6.25	1.978	10.14	0.76	11.2	-7	Clear	Medium
09:56	11	41	0.0528	57.56	3.21	6.27	1.987	13.99	0.81	10.9	-10	Clear	Medium
10:00	4	45	0.0528	57.56	3.42	6.27	1.973	13.21	0.72	10.7	-9.4	Clear	Medium
10:05	5	50	0.0528	57.56	3.68	6.25	1.958	14.95	0.68	10.7	-7.3	Clear	Medium
10:10	5	55	0.0528	57.56	3.94	6.26	1.968	17.22	0.66	10.7	-8.9	Clear	Medium
10:15	5	60	0.0528	57.56	4.20	6.26	1.966	7.05	0.64	10.7	-9.2	Clear	Medium
10:20	5	65	0.0528	57.56	4.46	6.26	1.965	6.16	0.63	10.7	-10.7	Clear	Medium
10:25	5	70	0.0528	57.56	4.72	6.26	1.969	7.26	0.62	10.9	-11.4	Clear	Medium
10:31	6	76	0.0528	57.56	5.04	6.25	1.967	7.72	0.61	10.8	-10.4	Clear	Medium
10:41	10	86	0.0528	57.56	5.57	6.25	1.978	7.36	0.6	11	-11.9	Clear	Medium

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Glass	3	HCL
Dissolved Metals	250 mL Plastic	1	HNO3
Nitrate/Nitrite	1L Amber	1	H2SO4
Sulfate	250 mL Plastic	2	NaHSO4
Sulfide	125 mL Plastic	1	None
Alkalinity	250 mL Plastic	1	None
Ethane,Ethene,Methane	40 mL Glass	3	HCL
Total Organic Carbon	250 mL Amber	1	H2SO4

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot

1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Across runway, in weeds, near stack of tires

Condition of Well: Missing bolts

Well Completion: Flush mount

Well Locked at Arrival: no

Well Locked at Departure: no

Key Number To Well: NA

Groundwater Sampling Form

Project Number	30087304	**Well ID**	G6M-13-04X			**Date**	10/12/2021
Project Name/Location	Former Fort Devens - Devens, MA		**Weather(°F)**	75.0 degrees F and Clear. The wind is blowing undefined at 0.0 mph.			
Measuring Pt. Description	Top of Inner Casing	**Screen Setting (ft-bgs)**	125 - 135	**Casing Diameter (in)**	2	**Well Casing Material**	PVC
Static Water Level (ft-bmp)	59.38	**Total Depth (ft-bgs)**	--	**Water Column(ft)**	75.62	**Gallons in Well**	12.29
MP Elevation	266.31	**Pump Intake (ft-bmp)**	130	**Purge Method**	Low-Flow	**Sample Method**	Grab
Sample Time	13:33	**Volumes Purged**	0.22	**Sample ID**	G6M-13-04X-FAL21	**Sampled by**	Michael Spaulding
Purge Start	12:37	**Gallons Purged**	2.74	**Replicate/ Code No.**			
Purge End	13:42						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
12:37	0	0	120	59.38	0.00	6.52	0.927	1.22	4.27	15.5	26.6	Clear	None
12:40	3	3	160	59.5	0.13	6.72	1.093	42.99	2.41	13.7	-37.8	Clear	None
12:43	3	6	160	59.5	0.22	6.85	1.152	15.8	1.6	13.5	-78.9	Clear	None
12:47	4	10	160	59.5	0.40	6.92	1.143	70.4	1.23	13.3	-99.4	Clear	None
12:50	3	13	160	59.94	0.53	6.96	1.133	69.4	1.04	13.2	-112.8	Clear	None
12:53	3	16	160	59.94	0.66	6.98	1.129	104.2	0.98	13.1	-116.5	Clear	None
12:57	4	20	160	59.94	0.85	6.97	1.126	97.92	0.88	13.1	-121.7	Clear	None
13:01	4	24	160	59.94	1.00	6.97	1.125	18.25	0.79	13	-124.8	Clear	None
13:04	3	27	160	59.94	1.11	6.97	1.127	51.44	0.79	13.2	-127	Clear	None
13:08	4	31	160	59.94	1.27	7.01	1.132	119.28	0.79	13.2	-128.4	Clear	None
13:11	3	34	160	59.94	1.43	6.98	1.127	181.22	0.75	13.1	-129.6	Clear	None
13:15	4	38	160	59.94	1.59	6.98	1.132	28.68	0.73	13.1	-131.1	Clear	None
13:18	3	41	160	59.94	1.72	6.98	1.133	22.15	0.71	13.1	-132.2	Clear	None
13:22	4	45	160	60.14	1.90	7.04	1.131	77.85	0.69	13.2	-133.2	Clear	None
13:26	4	49	160	60.14	2.06	6.99	1.133	34.03	0.68	13.2	-134	Clear	None
13:29	3	52	160	60.14	2.17	6.98	1.133	32.1	0.67	13.2	-134.4	Clear	None
13:32	3	55	160	60.14	2.25	6.98	1.135	32.41	0.65	13.2	-134.7	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs SW-846 8260B	40 mL Glass	3	HCL
Metals	250 mL Plastic	1	HNO3

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot

1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Former Fort Devens AOC50

Condition of Well: Good condition

Well Completion: Stick-up

Well Locked at Arrival: yes

Well Locked at Departure: yes

Key Number To Well: NA

Groundwater Sampling Form

Project Number	30087304	**Well ID**	G6M-13-05X			**Date**	10/14/2021
Project Name/Location	Devens, Massachusetts		**Weather(°F)**	77.0 degrees F and Mostly Clear. The wind is blowing undefined at 0.0 mph.			
Measuring Pt. Description	Top of Inner Casing	**Screen Setting (ft-bmp)**	45 - 55	**Casing Diameter (in)**	2	**Well Casing Material**	PVC
Static Water Level (ft-bmp)	12.52	**Total Depth (ft-bgs)**	--	**Water Column(ft)**	42.48	**Gallons in Well**	6.9
MP Elevation	225	**Pump Intake (ft-bmp)**	50	**Purge Method**	Low-Flow	**Sample Method**	Grab
Sample Time	15:05	**Volumes Purged**	0.29	**Sample ID**	G6M-13-05X-FAL21	**Sampled by**	Diane Champagne
Purge Start	14:10	**Gallons Purged**	2.00	**Replicate/ Code No.**			
Purge End	15:20						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate gal/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
14:20	0	0	0.0396	12.52	0.40	6.67	1.782	9.38	0.91	12.5	-92.1	Clear	Strong
14:25	5	5	0.0396	12.63	0.60	6.7	1.771	4.21	0.79	11.9	-102.3	Clear	Strong
14:30	5	10	0.0396	12.81	0.80	6.72	1.773	19.92	0.76	11.9	-107.5	Clear	Strong
14:35	5	15	0.0396	12.83	1.00	6.73	1.775	22.1	0.74	12.1	-108.7	Clear	Strong
14:40	5	20	0.0396	12.81	1.20	6.73	1.777	25.35	0.75	12.1	-110.8	Clear	Strong
14:46	6	26	0.0396	12.81	1.44	6.74	1.791	23.45	0.67	12.3	-113.1	Clear	Strong
14:50	4	30	0.0396	12.81	1.60	6.74	1.796	22.68	0.71	12.3	-114.2	Clear	Strong
14:55	5	35	0.0396	12.81	1.80	6.74	1.798	21.17	0.71	12.4	-115.5	Clear	Strong
15:00	5	40	0.0396	12.81	2.00	6.74	1.802	21.36	0.74	12.5	-116.6	Clear	Strong

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Glass	3	HCL
Dissolved Metals	250 mL Plastic	1	HNO3
Nitrate/Nitrite	1L Amber	1	H2SO4
Sulfate	250 mL Plastic	2	NaHSO4
Sulfide	125 mL Plastic	1	None
Alkalinity	250 mL Plastic	1	None
Ethane,Ethene,Methane	40 mL Glass	3	HCL
Total Organic Carbon	250 mL Amber	1	H2SO4

Comments: New lock

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Near garage door of parachute tower building
Condition of Well: Good condition
Well Completion: Stick-up
Well Locked at Arrival: yes
Well Locked at Departure: yes
Key Number To Well: 2006

Groundwater Sampling Form

Project Number	30087304	**Well ID**	G6M-13-06X			**Date**	10/12/2021
Project Name/Location	Former Fort Devens - Devens, MA		**Weather(°F)**	75.0 degrees F and Clear. The wind is blowing undefined at 0.0 mph.			
Measuring Pt. Description	Top of Inner Casing	**Screen Setting (ft-bgs)**	50 - 60	**Casing Diameter (in)**	2	**Well Casing Material**	PVC
Static Water Level (ft-bmp)	11.99	**Total Depth (ft-bgs)**	--	**Water Column(ft)**	48.01	**Gallons in Well**	7.8
MP Elevation	224.37	**Pump Intake (ft-bmp)**	55	**Purge Method**	Low-Flow	**Sample Method**	Grab
Sample Time	15:45	**Volumes Purged**	0.51	**Sample ID**	G6M-13-06X	**Sampled by**	Diane Champagne
Purge Start	14:30	**Gallons Purged**	3.96	**Replicate/ Code No.**			
Purge End	16:00						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
14:40	0	0	200	11.99	0.00	6.33	2.27	282.51	1.13	15.2	-89.6	Orange	Strong
14:47	7	7	200	12.13	0.00	6.29	2.156	64.77	0.85	13.2	-77.9	Orange	Strong
14:50	3	10	200	12.13	0.00	6.29	2.13	295.94	0.79	12.7	-76.8	Orange	Strong
14:55	5	15	200	12.13	0.00	6.29	2.214	105.67	0.78	12.5	-76.2	Orange	Strong
15:00	5	20	200	12.13	0.00	6.29	2.104	82.89	0.8	12.2	-75.2	Orange	Strong
15:05	5	25	200	12.13	0.00	6.29	2.098	97.66	0.76	12.2	-74.5	Orange	Strong
15:10	5	30	200	12.13	0.00	6.29	2.103	146.72	0.78	12.2	-73.1	Orange	Strong
15:15	5	35	200	12.13	0.00	6.28	2.091	52.49	0.77	12.1	-71.7	Orange	Strong
15:21	6	41	200	12.13	0.00	6.26	2.077	40.33	0.76	11.8	-71.2	Orange	Strong
15:25	4	45	200	12.13	0.00	6.28	2.081	41.47	0.76	11.9	-71.1	Orange	Strong
15:31	6	51	200	12.13	0.00	6.29	2.082	26.17	0.77	11.9	-70.5	Orange	Strong
15:36	5	56	200	12.13	0.00	6.29	2.079	25.57	0.79	11.8	-69.8	Orange	Strong
15:40	4	60	200	12.13	0.00	6.28	2.079	23.78	0.76	11.8	-69.2	Orange	Strong

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Glass	3	HCL
Dissolved Metals	250 mL Plastic	1	HNO3
Nitrate/Nitrite	1L Amber	1	H2SO4
Sulfate	250 mL Plastic	2	NaHSO4
Sulfide	250 mL Plastic	1	None
Alkalinity	250 mL Plastic	1	None
Ethane,Ethene,Methane	40 mL Glass	3	HCL
Total Organic Carbon	250 mL Amber	1	H2SO4

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot

1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Near parachute tower

Condition of Well: Good condition

Well Completion: Stick-up

Well Locked at Arrival: yes

Well Locked at Departure: yes

Key Number To Well: 2006

Groundwater Sampling Form

Project Number	30087304	**Well ID**	G6M-95-19X			**Date**	10/14/2021
Project Name/Location	Devens, Massachusetts		**Weather(°F)**	72.0 degrees F and Clear. The wind is blowing N/NW at 5.8 mph.			
Measuring Pt. Description	Top of Inner Casing	**Screen Setting (ft-bmp)**	48 - 58	**Casing Diameter (in)**	2	**Well Casing Material**	PVC
Static Water Level (ft-bmp)	11.27	**Total Depth (ft-bgs)**	--	**Water Column(ft)**	47.73	**Gallons in Well**	7.76
MP Elevation	223.89	**Pump Intake (ft-bmp)**	54	**Purge Method**	Low-Flow	**Sample Method**	Low-Flow
Sample Time	11:25	**Volumes Purged**	0.26	**Sample ID**	G6M-95-19X-FAL21	**Sampled by**	Diane Champagne
Purge Start	10:30	**Gallons Purged**	2.00	**Replicate/ Code No.**			
Purge End	11:29						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate gal/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
10:40	0	0	0.0396	11.27	0.40	5.35	5.631	5.01	5.65	11.4	175.5	Clear	None
10:45	5	5	0.0396	11.38	0.60	5.39	5.877	3.35	5.06	11.4	201.5	Clear	None
10:50	5	10	0.0396	11.35	0.80	5.41	5.934	8.44	4.78	11.4	211.7	Clear	None
10:55	5	15	0.0396	11.37	1.00	5.42	5.979	2.41	4.66	11.4	221.8	Clear	None
11:01	6	21	0.0396	11.36	1.24	5.42	5.985	2.83	4.57	11.4	226.9	Clear	None
11:05	4	25	0.0396	11.36	1.40	5.43	5.981	5.89	4.51	11.3	230.8	Clear	None
11:11	6	31	0.0396	11.36	1.64	5.44	5.982	2.61	4.47	11.3	235.5	Clear	None
11:15	4	35	0.0396	11.37	1.80	5.44	5.982	2.65	4.45	11.3	239.1	Clear	None
11:20	5	40	0.0396	11.36	2.00	5.44	5.977	2.38	4.46	11.3	242.3	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Glass	3	HCL

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Weeds next to fence, parachute tower area
Condition of Well: Good condition
Well Completion: Stick-up
Well Locked at Arrival: yes
Well Locked at Departure: yes
Key Number To Well: 2006

Groundwater Sampling Form

Project Number	30087304	**Well ID**	G6M-95-20X			**Date**	10/14/2021
Project Name/Location	Devens, Massachusetts		**Weather(°F)**	It is Clear. The wind is blowing NW at 4.7 mph.			
Measuring Pt. Description	Top of Inner Casing	**Screen Setting (ft-bmp)**	18 - 23	**Casing Diameter (in)**	2	**Well Casing Material**	PVC
Static Water Level (ft-bmp)	11.11	**Total Depth (ft-bgs)**	--	**Water Column(ft)**	13.63	**Gallons in Well**	2.21
MP Elevation	224.61	**Pump Intake (ft-bmp)**	21.5	**Purge Method**	Low-Flow	**Sample Method**	Low-Flow
Sample Time	10:10	**Volumes Purged**	1.81	**Sample ID**	G6M-95-20X-FAL21	**Sampled by**	Diane Chmpagne
Purge Start	09:20	**Gallons Purged**	4.00	**Replicate/ Code No.**	AC50-DUP01-FAL21		
Purge End	10:21						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate gal/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
09:30	0	0	0.0396	11.53	0.40	5.92	0.795	134.96	1.38	10.4	68.2	Orange	None
09:35	5	5	0.0396	11.81	0.60	5.92	0.801	131.25	1.35	10.5	64.2	Orange	None
09:40	5	10	0.0396	11.83	0.80	5.97	0.837	61.01	1.22	10.6	42.1	Orange	None
09:45	5	15	0.0396	11.83	1.00	5.98	0.841	58.46	1.21	10.8	40.4	Orange	None
09:50	5	20	0.0396	11.82	1.20	6	0.848	56.49	1.17	10.8	35.8	Orange	None
09:56	6	26	0.396	11.83	3.58	6.01	0.869	45.23	1.15	11.3	30.1	Orange	None
10:00	4	30	0.0396	11.81	3.74	6.03	0.876	47.34	1.12	11.2	26.7	Orange	None
10:05	5	35	0.0396	11.81	3.94	6.04	0.887	44.76	1.11	11.5	22.9	Orange	None

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Glass	3	HCL
Dissolved Metals	250 mL Plastic	1	HNO3

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot

1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: In weeds and trees near parachute tower

Condition of Well: Good condition

Well Completion: Stick-up

Well Locked at Arrival: yes

Well Locked at Departure: yes

Key Number To Well: 3753

Groundwater Sampling Form

Project Number	30087304	**Well ID**	G6M-97-05B			**Date**	10/13/2021
Project Name/Location	Devens, Massachusetts		**Weather(°F)**	55.0 degrees F and Clear. The wind is blowing undefined at 0.0 mph.			
Measuring Pt. Description	Top of Inner Casing	**Screen Setting (ft-bmp)**	121 - 131	**Casing Diameter (in)**	2	**Well Casing Material**	PVC
Static Water Level (ft-bmp)	62.81	**Total Depth (ft-bgs)**	--	**Water Column(ft)**	72.19	**Gallons in Well**	11.73
MP Elevation	268.12	**Pump Intake (ft-bmp)**	132.5	**Purge Method**	Low-Flow	**Sample Method**	Low-Flow
Sample Time	09:35	**Volumes Purged**	0.24	**Sample ID**	G6M-97-05B-FAL21	**Sampled by**	Diane Champagne
Purge Start	08:55	**Gallons Purged**	2.80	**Replicate/ Code No.**			
Purge End	10:04						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
09:06	0	0	200	62.81	0.00	6.4	1.569	305.14	1.08	8.7	-100	Orange	Strong
09:10	4	4	200	62.89	0.00	6.42	1.579	153.06	0.91	8.8	-100.5	Orange	Strong
09:15	5	9	200	63.01	0.00	6.45	1.603	12.71	0.75	8.8	-102.1	Orange	Strong
09:21	6	15	200	63.13	0.00	6.47	1.594	12.11	0.71	8.9	-103.4	Orange	Strong
09:25	4	19	200	63.13	1.85	6.49	1.625	11.96	0.7	8.9	-105.1	Orange	Strong

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Glass	3	HCL
Dissolved Metals	250 mL Plastic	1	HNO3
Nitrate/Nitrite	1L Amber	1	H2SO4
Sulfate	250 mL Plastic	2	NaHSO4
Sulfide	125 mL Plastic	1	None
Alkalinity	250 mL Plastic	1	None
Ethane,Ethene,Methane	40 mL Glass	3	HCL
Total Organic Carbon	250 mL Amber	1	H2SO4

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Off access road on airstrip
Condition of Well: Good condition
Well Completion: Stick-up
Well Locked at Arrival: yes
Well Locked at Departure: yes
Key Number To Well: 3753

Groundwater Sampling Form

Project Number	30087304	**Well ID**	G6M-97-28X			**Date**	10/12/2021
Project Name/Location	Former Fort Devens - Devens, MA		**Weather(°F)**	75.0 degrees F and Clear. The wind is blowing undefined at 0.0 mph.			
Measuring Pt. Description	Top of Inner Casing	**Screen Setting (ft-bgs)**	100 - 105	**Casing Diameter (in)**	2	**Well Casing Material**	PVC
Static Water Level (ft-bmp)	58.97	**Total Depth (ft-bgs)**	--	**Water Column(ft)**	46.03	**Gallons in Well**	7.48
MP Elevation	265.69	**Pump Intake (ft-bmp)**	102.5	**Purge Method**	Low-Flow	**Sample Method**	Grab
Sample Time	10:45	**Volumes Purged**	0.35	**Sample ID**	G6M-97-28X	**Sampled by**	William Keane
Purge Start	09:45	**Gallons Purged**	2.65	**Replicate/ Code No.**			
Purge End	10:52						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
10:00	0	0	150	59.1	0.59	6.7	0.425	6.19	2.34	16.8	-107.3	Clear	None
10:05	5	5	150	59.1	0.79	6.7	0.429	6.44	2.13	16.9	-109.9	Clear	None
10:10	5	10	150	59.1	0.99	6.68	0.442	5.7	1.82	16.9	-115.4	Clear	None
10:15	5	15	150	59.1	1.19	6.68	0.477	5.19	1.57	17	-119.6	Clear	None
10:20	5	20	150	59.1	1.39	6.67	0.501	4.69	1.46	17.2	-121.9	Clear	None
10:25	5	25	150	59.1	1.59	6.68	0.513	5.17	1.42	17.3	-122.5	Clear	None
10:30	5	30	150	59.1	1.78	6.69	0.537	4.99	1.31	17.5	-124.4	Clear	None
10:35	5	35	150	59.1	1.98	6.7	0.541	4.98	1.29	17.5	-124.4	Clear	None
10:40	5	40	150	59.1	2.18	6.69	0.55	4.89	1.25	17.5	-124.7	Clear	None

Constituent Sampled	Container	Number	Preservative
Dissolved Metals	NA	1	NA

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot

1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Airfield

Condition of Well: Good condition

Well Completion: Stick-up

Well Locked at Arrival: yes

Well Locked at Departure: yes

Key Number To Well: NA

Groundwater Sampling Form

Project Number	30087304	**Well ID**	MW-3			**Date**	10/12/2021
Project Name/Location	Former Fort Devens - Devens, MA		**Weather(°F)**	75.0 degrees F and Clear. The wind is blowing undefined at 0.0 mph.			
Measuring Pt. Description	Top of Inner Casing	**Screen Setting (ft-bgs)**	126 - 136	**Casing Diameter (in)**	2	**Well Casing Material**	PVC
Static Water Level (ft-bmp)	59.73	**Total Depth (ft-bgs)**	--	**Water Column(ft)**	76.27	**Gallons in Well**	12.39
MP Elevation	265.75	**Pump Intake (ft-bmp)**	131	**Purge Method**	Low-Flow	**Sample Method**	Grab
Sample Time	12:05	**Volumes Purged**	0.28	**Sample ID**	MW-3- FAL21	**Sampled by**	Diane Champagne
Purge Start	11:00	**Gallons Purged**	3.43	**Replicate/ Code No.**	MW-3-FAL21		
Purge End	12:22						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
11:06	0	0	200	59.73	0.00	6.97	1.386	4.03	5.03	12.2	-97.6	Orange	Medium
11:11	5	5	200	59.75	0.00	6.85	1.46	7.79	1.83	12.1	-101.8	Orange	Medium
11:16	5	10	200	59.77	0.00	6.86	1.464	8.63	1.52	12.2	-102.8	Orange	Medium
11:21	5	15	200	59.81	0.00	6.86	1.473	7.83	1.4	12.4	-103.7	Orange	Medium
11:25	4	19	200	59.82	0.00	6.86	1.476	8.2	1.33	12.1	-103.8	Orange	Medium
11:30	5	24	200	59.83	0.00	6.84	1.519	7.91	1.28	12.1	-104.9	Orange	Medium
11:36	6	30	200	59.83	0.00	6.82	1.605	9.15	1.23	12.1	-106.5	Orange	Medium
11:40	4	34	200	59.82	0.00	6.82	1.619	9.19	1.21	12.3	-107.1	Orange	Medium
11:47	7	41	200	59.82	0.00	6.82	1.622	7.47	1.17	12.2	-107.5	Orange	Medium
11:52	5	46	200	59.83	0.00	6.82	1.627	14.65	1.14	12.3	-107.7	Orange	Medium
11:55	3	49	200	59.83	0.00	6.82	1.625	14.75	1.13	12.3	-107.4	Orange	Medium
12:00	5	54	200	59.83	0.00	6.82	1.641	13.87	1.12	12.6	-108	Orange	Medium

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Glass	9	HCL
Metals	250 mL Plastic	3	HNO3

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Grassy area off runway near injection wells
Condition of Well: Good condition
Well Completion: Stick-up
Well Locked at Arrival: yes
Well Locked at Departure: yes
Key Number To Well: 2006

Groundwater Sampling Form

Project Number	30087304	**Well ID**	MW-7			**Date**	10/12/2021
Project Name/Location	Former Fort Devens - Devens, MA		**Weather(°F)**	75.0 degrees F and Clear. The wind is blowing undefined at 0.0 mph.			
Measuring Pt. Description	Top of Outer Casing	**Screen Setting (ft-bgs)**	125 - 135	**Casing Diameter (in)**	2	**Well Casing Material**	PVC
Static Water Level (ft-bmp)	59.75	**Total Depth (ft-bgs)**	--	**Water Column(ft)**	76.25	**Gallons in Well**	12.39
MP Elevation	264.97	**Pump Intake (ft-bmp)**	131	**Purge Method**	Low-Flow	**Sample Method**	Grab
Sample Time	10:30	**Volumes Purged**	0.23	**Sample ID**	MW-7-FAL21	**Sampled by**	Diane Champagne
Purge Start	09:35	**Gallons Purged**	2.91	**Replicate/ Code No.**			
Purge End	10:46						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
09:45	0	0	200	59.75	0.00	6.6	1.352	85.24	2.58	12	-93.3	Grey	Mild
09:50	5	5	200	59.75	0.00	6.65	1.441	81.1	2.08	12.2	-98.1	Grey	Mild
09:55	5	10	200	59.75	0.00	6.65	1.363	39.95	1.02	10.6	-95.1	Grey	Mild
10:00	5	15	200	59.75	0.00	6.64	1.363	37.75	0.89	10.8	-96.1	Grey	Mild
10:05	5	20	200	59.75	0.00	6.64	1.377	37.63	0.83	10.9	-97.2	Grey	Mild
10:10	5	25	200	59.75	0.00	6.64	1.382	32.32	0.82	10.9	-97.2	Grey	Mild
10:15	5	30	200	59.75	0.00	6.62	1.389	32.15	0.76	10.9	-95.1	Grey	Mild
10:20	5	35	200	59.75	0.00	6.61	1.398	33.27	0.73	11.1	-94.1	Grey	Mild
10:25	5	40	200	59.75	0.00	6.61	1.398	30.98	0.72	11.1	-93.5	Grey	Mild

Constituent Sampled	Container	Number	Preservative
VOCs SW-846 8260B	40 mL Glass	3	HCL
Metals	250 mL Plastic	1	HNO3

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot

1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Grassy and weed area across airstrip

Condition of Well: Good condition

Well Completion: Stick-up

Well Locked at Arrival: yes

Well Locked at Departure: yes

Key Number To Well: 2006

Groundwater Sampling Form

Project Number	30087304	**Well ID**	XSA-12-95X			**Date**	10/13/2021
Project Name/Location	Fort devens/ AOC 50		**Weather(°F)**	55.0 degrees F and Clear. The wind is blowing undefined at 0.0 mph.			
Measuring Pt. Description	Top of Outer Casing	**Screen Setting (ft-bmp)**	121 - 131	**Casing Diameter (in)**	1	**Well Casing Material**	Steel
Static Water Level (ft-bmp)	64.94	**Total Depth (ft-bgs)**	--	**Water Column(ft)**	66.06	**Gallons in Well**	2.68
MP Elevation	269.63	**Pump Intake (ft-bmp)**	125	**Purge Method**	Low-Flow	**Sample Method**	Grab
Sample Time	11:20	**Volumes Purged**	133	**Sample ID**	XSA-12-95X	**Sampled by**	William Keane
Purge Start	10:00	**Gallons Purged**	3.56	**Replicate/ Code No.**			
Purge End	11:30						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
10:10	0	0	150	64.94	0.40	9.67	0.969	5.96	4.16	13.9	-81.7	Clear	None
10:15	5	5	150	64.94	0.59	9.8	0.946	29.2	3.65	13.6	-95.6	Clear	None
10:20	5	10	150	64.94	0.79	11.46	0.844	46.79	0.57	13.3	-194.9	Clear	None
10:25	5	15	150	64.94	1.51	11.51	0.841	54.4	0.39	13.2	-199.5	Clear	None
10:30	5	20	150	64.94	1.19	11.57	0.838	50.78	0.31	13.4	-210.7	Clear	None
10:35	5	25	150	64.94	1.39	10.75	0.879	41.56	0.1	13.4	-241.7	Clear	None
10:40	5	30	150	64.94	1.59	10.31	0.916	33.78	0.1	13.4	-219.8	Clear	None
10:45	5	35	150	64.94	1.78	7.5	1.175	30.5	0.09	13.3	-125	Clear	None
10:50	5	40	150	64.94	1.98	7.13	1.182	30.12	0.06	13.4	-111.6	Clear	None
10:55	5	45	150	64.94	2.18	6.96	1.179	31.04	0.03	13.4	-102	Clear	None
11:00	5	50	150	64.94	2.38	6.93	1.179	32.06	0.02	13.5	-100.6	Clear	None
11:05	5	55	150	64.94	2.58	6.89	1.177	31.15	0.03	13.5	-99.9	Clear	None
11:10	5	60	150	64.94	2.77	6.87	1.177	30.96	0.01	13.5	-99.8	Clear	None
11:15	5	65	150	64.94	2.97	6.83	1.179	30.7	0.02	13.6	-99.5	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Glass	3	HCL
Dissolved Metals	250 mL Plastic	1	HNO3

Comments: Air line had holes in it. Pump designated to well. There should be notes on which wells have designated pumps

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Woods AOC 50
Condition of Well: Good condition
Well Completion: Stick-up
Well Locked at Arrival: no
Well Locked at Departure: no
Key Number To Well: NA

Groundwater Sampling Form

Project Number	30087304	**Well ID**	XSA-12-96X			**Date**	10/13/2021
Project Name/Location	Fort devens/ AOC 50		**Weather(°F)**	Sunny 72			
Measuring Pt. Description	Top of Outer Casing	**Screen Setting (ft-bmp)**	121 - 131	**Casing Diameter (in)**	1	**Well Casing Material**	Steel
Static Water Level (ft-bmp)	65.77	**Total Depth (ft-bgs)**	--	**Water Column(ft)**	65.23	**Gallons in Well**	2.65
MP Elevation	270.78	**Pump Intake (ft-bmp)**	125	**Purge Method**	Low-Flow	**Sample Method**	Grab
Sample Time	14:45	**Volumes Purged**	0.82	**Sample ID**	XSA-12-96X	**Sampled by**	William Keane
Purge Start	13:30	**Gallons Purged**	2.18	**Replicate/ Code No.**			
Purge End	15:40						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
13:35	0	0	150	65.77	0.36	10.12	0.835	53.88	4.33	18.1	-48.8	Clear	None
13:40	5	5	150	65.77	0.40	10.09	0.839	60.72	4.24	18	-48.3	Clear	None
13:45	5	10	150	65.77	0.59	9.9	0.876	81.2	3.06	17.7	-38.9	Clear	None
13:50	5	15	150	65.77	0.79	9.83	0.878	85.93	2.68	17	-52.6	Clear	None
13:55	5	20	150	65.77	0.99	8.71	0.94	180.42	0.81	16	-162.8	Clear	None
14:00	5	25	150	65.77	1.19	8.61	0.96	187.02	0.71	15.8	-157	Clear	None
14:05	5	30	150	65.77	1.39	8.27	1.006	217	0.47	15.7	-150.8	Clear	None
14:10	5	35	150	65.77	1.59	7.99	1.067	251.46	0.22	15.4	-144.6	Clear	None
14:15	5	40	150	65.77	1.78	7.71	1.131	293.4	0.05	14.9	137.3	Clear	None
14:20	5	45	150	65.77	1.98	7.45	1.215	352.6	0.01	15.8	-135.9	Clear	None
14:25	5	50	150	65.77	2.18	7.45	1.219	310	0.01	15.8	-137	Clear	None
14:30	5	55	150	65.77	2.38	7.45	1.216	368	0.01	15.2	-135.2	Clear	None
14:35	5	60	150	65.77	2.58	7.43	1.212	330	0.01	14.8	-131.2	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Glass	3	HCL
Dissolved Metals	250 mL Plastic	1	HNO3
Nitrate/Nitrite	1L Amber	1	H2SO4
Sulfate	250 mL Plastic	2	NaHSO4
Sulfide	125 mL Plastic	1	None
Alkalinity	250 mL Plastic	1	None
Ethane,Ethene,Methane	40 mL Glass	3	HCL
Total Organic Carbon	250 mL Amber	1	H2SO4

Comments: Had issues with micro bladder pump. Called palms to resolve. We'll sampled at 100 not completely stable due to off gassing of we'll throwing readings off.

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location:	Woods in AOC 50	Well Locked at Arrival:	no
Condition of Well:	Good condition	Well Locked at Departure:	no
Well Completion:	Stick-up	Key Number To Well:	NA

Groundwater Sampling Form

Project Number	30087304	**Well ID**	XSA-12-97X			**Date**	10/14/2021
Project Name/Location	Fort devens/ AOC 50		**Weather(°F)**	Overcast 75			
Measuring Pt. Description	Top of Outer Casing	**Screen Setting (ft-bmp)**	121 - 131	**Casing Diameter (in)**	1	**Well Casing Material**	Steel
Static Water Level (ft-bmp)	71.36	**Total Depth (ft-bgs)**	--	**Water Column(ft)**	65.53	**Gallons in Well**	2.66
MP Elevation	269.99	**Pump Intake (ft-bmp)**	125	**Purge Method**	Low-Flow	**Sample Method**	Grab
Sample Time	15:10	**Volumes Purged**	0.86	**Sample ID**	XSA-12-97X	**Sampled by**	William Keane
Purge Start	14:10	**Gallons Purged**	2.30	**Replicate/ Code No.**			
Purge End	15:22						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
14:15	0	0	150	71.36	0.20	8.22	0.783	83.3	0.18	12.9	-127	Black	None
14:20	5	5	150	71.36	0.40	7.93	0.776	62.15	0.03	13.5	-126.4	Black	None
14:25	5	10	150	71.36	0.59	7.78	0.787	51.22	0.03	13.9	-117.6	Black	None
14:30	5	15	150	71.36	0.79	7.75	0.789	57.8	0.02	13.9	-115	Black	None
14:35	5	20	150	71.36	0.99	7.53	0.814	71.44	0.02	14.1	-99.5	Black	None
14:40	5	25	150	71.36	1.19	7.42	0.827	74.15	0.01	14.1	-94.6	Black	None
14:45	5	30	150	71.36	1.39	7.07	0.9	109.56	0.01	14	-68.6	Black	None
14:50	5	35	150	71.36	1.59	7.05	0.915	125	0.01	14.8	-69.5	Black	None
14:55	5	40	150	71.36	1.78	7.06	0.906	120	0.01	14	-77	Black	None
15:00	5	45	150	71.36	1.98	7.07	0.903	123	0.01	14	-80	Black	None
15:05	5	50	150	71.36	2.18	7.07	0.902	124.7	0.01	14	-81.2	Black	None

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Glass	3	HCL
Dissolved Metals	250 mL Plastic	1	HNO3

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Woods AOC 50
Condition of Well: Good condition
Well Completion: Stick-up
Well Locked at Arrival: yes
Well Locked at Departure: yes
Key Number To Well: NA

Groundwater Sampling Form

Project Number	30087304	**Well ID**	XSA-12-98X			**Date**	10/14/2021
Project Name/Location	Fort devens/ AOC 50		**Weather(°F)**	Sunny 70			
Measuring Pt. Description	Top of Outer Casing	**Screen Setting (ft-bmp)**	60 - 70	**Casing Diameter (in)**	0.2	**Well Casing Material**	Steel
Static Water Level (ft-bmp)	6.5	**Total Depth (ft-bgs)**	--	**Water Column(ft)**	63.5	**Gallons in Well**	0.1
MP Elevation	209.61	**Pump Intake (ft-bmp)**	65	**Purge Method**	Low-Flow	**Sample Method**	Grab
Sample Time	13:40	**Volumes Purged**	22.00	**Sample ID**	XSA-12-98X	**Sampled by**	William Keane
Purge Start	12:40	**Gallons Purged**	2.20	**Replicate/ Code No.**			
Purge End	13:45						

Time	Minutes Elapsed	Total Elapsed Minutes	Rate mL/min	Depth to Water (ft)	Gallons Purged	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature °C	Redox (mV)	Appearance	
												Color	Odor
12:45	0	0	150	6.5	0.20	9.67	0.527	36.38	0.93	16.1	-131.9	Clear	None
12:50	5	5	150	6.5	0.40	9.62	0.558	37.24	0.77	16	-149.5	Clear	None
12:55	5	10	150	6.5	0.59	9.56	0.58	33.08	0.64	15.8	-167.8	Clear	None
13:00	5	15	150	6.5	0.79	8.96	0.941	42.22	0.17	15.9	-195.5	Clear	None
13:05	5	20	150	6.5	0.99	8.87	0.988	43.57	0.1	15.9	-189	Clear	None
13:10	5	25	150	6.5	1.19	8.44	1.131	60	0.02	15.8	-164	Clear	None
13:15	5	30	150	6.5	1.39	8.41	1.42	62	0.02	15.7	-161.9	Clear	None
13:20	5	35	150	6.5	1.59	8.37	1.15	59.51	0.01	15.8	-157	Clear	None
13:25	5	40	150	6.5	1.78	8.24	1.187	68.23	0.01	15.9	-150	Clear	None
13:30	5	45	150	6.5	1.98	8.21	1.194	69.3	0.01	15.9	-148.6	Clear	None
13:35	5	50	150	6.5	2.18	8.2	1.198	69.9	0.01	15.9	-147.2	Clear	None

Constituent Sampled	Container	Number	Preservative
VOCs	40 mL Glass	3	HCL
Dissolved Metals	250 mL Plastic	1	HNO3

Comments:

Well Casing Volume Conversion

Well diameter (inches) = gallons per foot

1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Well Information

Well Location: Woods lower hill woods of AOC 50

Condition of Well: Good condition

Well Completion: Stick-up

Well Locked at Arrival: yes

Well Locked at Departure: yes

Key Number To Well: NA

Former Fort Devens Fall LTM

Created	2021-10-12 11:24:56 UTC by Michael Spaulding
Updated	2021-10-12 12:49:50 UTC by Michael Spaulding
Location	42.5381851, -71.5925963
Have you read the Quality Procedure (QP) and/or Technical Guidance Instruction (TGI) relevant to this use case?	Yes

Selecting "Yes" confirms your digital signature as having read the QP and/or TGI relevant to this use case.

NOTE: For general use only. State specific or regulatory requirements for calibration are not included in this form. Please refer to Site project team for specific requirements.

This app is best used to calibrate equipment with auto-cal solutions or turbidity only solutions. Use of this app for three point calibrations is not advised.

Project Details

Project Name	Former Fort Devens Fall LTM
Client	Seres/Arcadis
Model	YSI ProDSS
Serial Number(s)	21F102556
Sampler	Michael Spaulding
Date	2021-10-12
Calibration Type?	Single Point and Turbidity Calibration

Single Point Calibration

Calibrated Parameters	pH, Conductivity, ORP, DO, Turbidity

07:49

Calibration Range for pH - +/- 0.2 S.U	
Time	07:49
pH Pre Calibration	7.14
pH Post Calibration	7.04
pH Calibration Within Range	Yes

07:52

Calibration Range for pH - +/- 0.2 S.U	
Time	07:52
pH Pre Calibration	4.03
pH Post Calibration	4
pH Calibration Within Range	Yes

07:55

Calibration Range for pH - +/- 0.2 S.U	
Time	07:55
pH Pre Calibration	10.01
pH Post Calibration	10
pH Calibration Within Range	Yes

248.1

Calibration Range for ORP- +/- 25mV	
Time	08:45
ORP Pre Calibration	248.1
ORP Post Calibration	234

95.9

Calibration Range for DO- Atmospheric	
Time	07:39
DO Pre Calibration	95.9
DO Post Calibration	99.9

10

Calibration Range for Turbidity - +/- 5% of the calibration standard	
Time	08:18
Turbidity Pre Calibration	10
Turbidity Post Calibration	0

163.25

Calibration Range for Turbidity - +/- 5% of the calibration standard	
Time	08:26
Turbidity Pre Calibration	163.25
Turbidity Post Calibration	124

Signed

Signed 2021-10-12 12:49:40 UTC

Date	2021-10-12

Devens

Created	2021-10-12 11:41:50 UTC by Diane Champagne
Updated	2021-10-12 11:49:45 UTC by Diane Champagne
Location	42.548304512205114, -71.6024910752397

Selecting "Yes" confirms your digital signature as having read the QP and/or TGI relevant to this use case.

NOTE: For general use only. State specific or regulatory requirements for calibration are not included in this form. Please refer to Site project team for specific requirements.

This app is best used to calibrate equipment with auto-cal solutions or turbidity only solutions. Use of this app for three point calibrations is not advised.

Project Details

Project Name	Devens
Project Number	30087304
Client	USACE
Model	YSI ProDSS
Serial Number(s)	17E101577
Sampler	Diane Champagne
Date	2021-10-12
Calibration Type?	Auto Calibration, Auto and Turbidity Calibration

Turbidity Calibration

Lot Number	20211011
Expiration Date	2022-10-31

07:30, -0.04, 0, yes

Pre Calibration	-0.04
Post Calibration	0
Calibration Within Range	Yes
Time	07:30

Auto Calibration

Lot Number	19360107
Expiration Date	2024-08-31

07:46

Please select all parameters you wish to calibrate together and enter them together at the same time in the form.

Time	07:46
Calibrated Parameters	ORP

Calibration Ranges are specific to the model of the water quality meter

pH

Calibration Range for pH - +/- 0.2 S.U	
pH Pre Calibration	7.07
pH Post Calibration	7
pH Calibration Within Range	Yes

Conductivity

Calibration Range for Conductivity - +/- 1% of the calibration standard	
Conductivity Pre Calibration	1.444
Conductivity Post Calibration	1.413
Conductivity Calibration Within Range	Yes

ORP

Calibration Range for ORP- +/- 25mV	
ORP Pre Calibration	244.4
ORP Post Calibration	234.9
ORP Calibration Within Range	Yes

Dissolved Oxygen

Calibration Range for DO- Atmospheric	
DO Pre Calibration	10.65
DO Post Calibration	10.04
DO Calibration Within Range	Yes

Turbidity

Calibration Range for Turbidity - +/- 5% of the calibration standard	
Turbidity Pre Calibration	0.04
Turbidity Post Calibration	0
Turbidity Calibration Within Range	Yes

Signed

Signed 2021-10-12 11:48:11 UTC

Date	2021-10-12

WATER QUALITY METER CALIBRATION LOG

PROJECT NAME	Devens
PROJECT NUMBER	30087304
MODEL	["YSI ProDSS"]
SERIAL NUMBER	17E101577
SAMPLER	Diane Champagne
DATE	10/13/2021

TURBIDITY CALIBRATION

CALIBRATION READING			
LOT NUMBER	20211013		
EXPIRATION DATE	12/31/2021		
PRE-CALIBRATION	POST-CALIBRATION	TURBIDITY CALIBRATION WITHIN RANGE	TIME
-0.01	0	yes	07:58

AUTOCALIBRATION

LOT NUMBER	2125049					
EXPIRATION DATE	07/22/2022					
CALIBRATION PARAMETERS	CALIBRATION READINGS		AUTOCALIBRATION WITHIN RANGE	TIME	CALIBRATION RANGES [1]	
	PRE-CALIBRATION	POST-CALIBRATION				
pH	7.26	7.07		07:45	pH	yes
CONDUCTIVITY	112.2	125		07:45	CONDUCTIVITY	yes
ORP	254.2	251.3		07:45	ORP	
DO	99.4	99.4		07:45	DO	yes
TURBIDITY	-0.01	0		07:45	TURBIDITY	yes

[1] CALIBRATION RANGES ARE SPECIFIC TO THE MODEL OF THE QUALITY METER

NOTES:

SIGNED

10/13/2021
DATE

WATER QUALITY METER CALIBRATION LOG

PROJECT NAME	Former Fort Devens Fall LTM
PROJECT NUMBER	30087304
MODEL	["YSI ProDSS"]
SERIAL NUMBER	21F102556
SAMPLER	Michael Spaulding
DATE	10/13/2021

SINGLE POINT CALIBRATION

LOT NUMBER				
EXPIRATION DATE				
PARAMETERS	PRE-CALIBRATION	POST-CALIBRATION	SINGLE POINT CALIBRATION WITHIN RANGE	TIME
pH	7.19	7	yes	07:29
pH	3.9	4	--	07:34
pH	10.2	10	yes	07:38
Conductivity	1183	1413	--	07:43
ORP	235.1	234	yes	07:57
DO	102.2	99.4	yes	07:25
Turbidity	-0.7	0	yes	07:48
Turbidity	122.04	124	yes	07:51

[1] CALIBRATION RANGES ARE SPECIFIC TO THE MODEL OF THE QUALITY METER

NOTES:

SIGNED

10/13/2021
DATE

WATER QUALITY METER CALIBRATION LOG

PROJECT NAME	Fort devens
PROJECT NUMBER	30087304
MODEL	["YSI ProDSS"]
SERIAL NUMBER	17E101577
SAMPLER	William Keane
DATE	10/13/2021

TURBIDITY CALIBRATION

CALIBRATION READING			
LOT NUMBER			
EXPIRATION DATE			
PRE-CALIBRATION	POST-CALIBRATION	TURBIDITY CALIBRATION WITHIN RANGE	TIME
--	--	--	--

AUTOCALIBRATION

LOT NUMBER						
EXPIRATION DATE						
CALIBRATION PARAMETERS	CALIBRATION READINGS		AUTOCALIBRATION WITHIN RANGE	TIME	CALIBRATION RANGES [1]	
	PRE-CALIBRATION	POST-CALIBRATION				
pH	4.3	4.01		08:00	pH	yes
CONDUCTIVITY	1.396	1.412		08:00	CONDUCTIVITY	yes
ORP	238	233.7		08:00	ORP	yes
DO	0.5	0.1		08:00	DO	yes
TURBIDITY	1.6	0.01		08:00	TURBIDITY	yes

[1] CALIBRATION RANGES ARE SPECIFIC TO THE MODEL OF THE QUALITY METER

NOTES:

SIGNED

10/13/2021
DATE

WATER QUALITY METER CALIBRATION LOG

PROJECT NAME	USACE NE Devens Seed TO Y2 8a JV
PROJECT NUMBER	30087304
MODEL	["YSI ProDSS"]
SERIAL NUMBER	17E101577
SAMPLER	William Keane
DATE	10/14/2021

TURBIDITY CALIBRATION

CALIBRATION READING			
LOT NUMBER			
EXPIRATION DATE			
PRE-CALIBRATION	POST-CALIBRATION	TURBIDITY CALIBRATION WITHIN RANGE	TIME
--	--	--	--

AUTOCALIBRATION

LOT NUMBER						
EXPIRATION DATE						
CALIBRATION PARAMETERS	CALIBRATION READINGS		AUTOCALIBRATION WITHIN RANGE	TIME	CALIBRATION RANGES [1]	
	PRE-CALIBRATION	POST-CALIBRATION				
pH	3.85	4.03		07:55	pH	yes
CONDUCTIVITY	1.5	1.409		07:55	CONDUCTIVITY	yes
ORP	238	233.9		07:55	ORP	yes
DO	0.18	0		07:55	DO	yes
TURBIDITY	1.4	0		07:55	TURBIDITY	yes

[1] CALIBRATION RANGES ARE SPECIFIC TO THE MODEL OF THE QUALITY METER

NOTES:

SIGNED

10/14/2021
DATE

WATER QUALITY METER CALIBRATION LOG

PROJECT NAME	USACE NE Devens Seed TO Y2 8a JV
PROJECT NUMBER	30087304
MODEL	["YSI ProDSS"]
SERIAL NUMBER	17E101577
SAMPLER	Diane Champagne
DATE	10/14/2021

TURBIDITY CALIBRATION

CALIBRATION READING			
LOT NUMBER	10142021		
EXPIRATION DATE	10/31/2021		
PRE-CALIBRATION	POST-CALIBRATION	TURBIDITY CALIBRATION WITHIN RANGE	TIME
0.44	0	yes	--

AUTOCALIBRATION

LOT NUMBER	19360107					
EXPIRATION DATE	08/30/2024					
CALIBRATION PARAMETERS	CALIBRATION READINGS		AUTOCALIBRATION WITHIN RANGE	TIME	CALIBRATION RANGES [1]	
	PRE-CALIBRATION	POST-CALIBRATION				
pH	7.09	7.07		07:46	pH	yes
CONDUCTIVITY	131.7	130.1		07:46	CONDUCTIVITY	yes
ORP	246.5	250		07:46	ORP	yes
DO	104.1	99		07:46	DO	yes
TURBIDITY	0.46	0		07:46	TURBIDITY	yes

[1] CALIBRATION RANGES ARE SPECIFIC TO THE MODEL OF THE QUALITY METER

NOTES:

SIGNED

10/14/2021
DATE

WATER QUALITY METER CALIBRATION LOG

PROJECT NAME	USACE NE Devens Seed TO Y2 8a JV
PROJECT NUMBER	30087304
MODEL	["YSI ProDSS"]
SERIAL NUMBER	21F102556
SAMPLER	Michael Spaulding
DATE	10/14/2021

SINGLE POINT CALIBRATION

LOT NUMBER				
EXPIRATION DATE				
PARAMETERS	PRE-CALIBRATION	POST-CALIBRATION	SINGLE POINT CALIBRATION WITHIN RANGE	TIME
pH	7.1	7	yes	07:50
pH	4	4	--	07:52
pH	9.95	10	--	07:57
Conductivity	1394	1413	--	08:00
ORP	233.4	234	--	08:10
DO	98.5	99	yes	07:47
Turbidity	-0.02	0	--	08:02
Turbidity	129.44	124	--	08:06

[1] CALIBRATION RANGES ARE SPECIFIC TO THE MODEL OF THE QUALITY METER

NOTES:

SIGNED

10/14/2021
DATE

WATER QUALITY METER CALIBRATION LOG

PROJECT NAME	USACE NE Devens Seed TO Y2 8a JV
PROJECT NUMBER	30087304
MODEL	["YSI ProDSS"]
SERIAL NUMBER	17E101577
SAMPLER	Diane Champagne
DATE	10/15/2021

AUTOCALIBRATION

LOT NUMBER	19360107					
EXPIRATION DATE	08/30/2024					
CALIBRATION	CALIBRATION READINGS		AUTOCALIBRATION	TIME	CALIBRATION RANGES [1]	
PARAMETERS	PRE-CALIBRATION	POST-CALIBRATION	WITHIN RANGE			
pH	7.3	7.06		07:59	pH	yes
CONDUCTIVITY	168.3	136.7		07:59	CONDUCTIVITY	yes
ORP	247	246.2		07:59	ORP	yes
DO	99.1	99.1		07:59	DO	yes
TURBIDITY	0.14	0		07:59	TURBIDITY	yes

[1] CALIBRATION RANGES ARE SPECIFIC TO THE MODEL OF THE QUALITY METER

NOTES:

10/15/2021

SIGNED DATE

WATER QUALITY METER CALIBRATION LOG

PROJECT NAME	Former Fort Devens Fall LTM
PROJECT NUMBER	30087304
MODEL	["YSI ProDSS"]
SERIAL NUMBER	21F102556
SAMPLER	Michael Spaulding
DATE	10/15/2021

SINGLE POINT CALIBRATION

LOT NUMBER				
EXPIRATION DATE				
PARAMETERS	PRE-CALIBRATION	POST-CALIBRATION	SINGLE POINT CALIBRATION WITHIN RANGE	TIME
pH	7.07	7	yes	07:52
pH	3.96	4	--	07:56
pH	9.94	10	yes	08:00
Conductivity	1397	1413	--	08:04
ORP	229.5	234	--	08:15
DO	99.2	99.1	--	07:50
Turbidity	-0.48	0	--	08:07
Turbidity	124.52	124	--	08:09

[1] CALIBRATION RANGES ARE SPECIFIC TO THE MODEL OF THE QUALITY METER

NOTES:

SIGNED

10/15/2021
DATE

WATER QUALITY METER CALIBRATION LOG

PROJECT NAME	USACE NE Devens Seed TO Y2 8a JV
PROJECT NUMBER	30087304
MODEL	["YSI ProDSS"]
SERIAL NUMBER	17E101577
SAMPLER	William Keane
DATE	10/18/2021

TURBIDITY CALIBRATION

CALIBRATION READING			
LOT NUMBER			
EXPIRATION DATE			
PRE-CALIBRATION	POST-CALIBRATION	TURBIDITY CALIBRATION WITHIN RANGE	TIME
--	--	--	--

AUTOCALIBRATION

LOT NUMBER						
EXPIRATION DATE						
CALIBRATION PARAMETERS	CALIBRATION READINGS		AUTOCALIBRATION WITHIN RANGE	TIME	CALIBRATION RANGES [1]	
	PRE-CALIBRATION	POST-CALIBRATION				
pH	4.4	4.06		09:00	pH	yes
CONDUCTIVITY	1.413	1.411		09:00	CONDUCTIVITY	yes
ORP	236	234		09:00	ORP	yes
DO	0.09	0		09:00	DO	yes
TURBIDITY	0.8	0		09:00	TURBIDITY	yes

[1] CALIBRATION RANGES ARE SPECIFIC TO THE MODEL OF THE QUALITY METER

NOTES:

SIGNED

10/18/2021
DATE

WATER QUALITY METER CALIBRATION LOG

PROJECT NAME	USACE NE Devens Seed TO Y2 8a JV
PROJECT NUMBER	30087304
MODEL	["YSI ProDSS"]
SERIAL NUMBER	17E101577
SAMPLER	Diane Champagne
DATE	10/18/2021

TURBIDITY CALIBRATION

CALIBRATION READING			
LOT NUMBER	10182021		
EXPIRATION DATE	10/29/2021		
PRE-CALIBRATION	POST-CALIBRATION	TURBIDITY CALIBRATION WITHIN RANGE	TIME
--	--	--	--

AUTOCALIBRATION

LOT NUMBER						
EXPIRATION DATE						
CALIBRATION PARAMETERS	CALIBRATION READINGS		AUTOCALIBRATION WITHIN RANGE	TIME	CALIBRATION RANGES [1]	
	PRE-CALIBRATION	POST-CALIBRATION				
pH	7.09	7.07		07:49	pH	yes
CONDUCTIVITY	187.2	141.5		07:49	CONDUCTIVITY	yes
ORP	255.9	254.6		07:49	ORP	yes
DO	97.1	98.4		07:49	DO	yes
TURBIDITY	0.12	0		07:49	TURBIDITY	yes

[1] CALIBRATION RANGES ARE SPECIFIC TO THE MODEL OF THE QUALITY METER

NOTES:

SIGNED

10/18/2021
DATE

WATER QUALITY METER CALIBRATION LOG

PROJECT NAME	Former Fort Devens Fall LTM
PROJECT NUMBER	30087304
MODEL	["YSI ProDSS"]
SERIAL NUMBER	21F102556
SAMPLER	Michael Spaulding
DATE	10/18/2021

SINGLE POINT CALIBRATION

LOT NUMBER				
EXPIRATION DATE				
PARAMETERS	PRE-CALIBRATION	POST-CALIBRATION	SINGLE POINT CALIBRATION WITHIN RANGE	TIME
pH	7.09	7	yes	07:39
pH	3.95	4	yes	07:41
pH	9.99	10	yes	07:44
Conductivity	1397	1413	--	07:48
ORP	241.8	234	--	07:57
DO	95.6	98.5	--	07:36
Turbidity	-0.07	0	yes	07:52
Turbidity	123.08	124	--	07:54

[1] CALIBRATION RANGES ARE SPECIFIC TO THE MODEL OF THE QUALITY METER

NOTES:

SIGNED

10/18/2021
DATE

WATER QUALITY METER CALIBRATION LOG

PROJECT NAME	Fort devens
PROJECT NUMBER	30087304
MODEL	["YSI ProDSS"]
SERIAL NUMBER	17E101577
SAMPLER	William Keane
DATE	11/3/2021

TURBIDITY CALIBRATION

CALIBRATION READING			
LOT NUMBER			
EXPIRATION DATE			
PRE-CALIBRATION	POST-CALIBRATION	TURBIDITY CALIBRATION WITHIN RANGE	TIME
--	--	--	--

AUTOCALIBRATION

LOT NUMBER						
EXPIRATION DATE						
CALIBRATION	CALIBRATION READINGS		AUTOCALIBRATION	TIME	CALIBRATION RANGES [1]	
PARAMETERS	PRE-CALIBRATION	POST-CALIBRATION	WITHIN RANGE			
pH	4.15	4		08:30	pH	yes
CONDUCTIVITY	1.413	1.413		08:30	CONDUCTIVITY	yes
ORP	235.1	234		08:30	ORP	yes
DO	0.08	0.01		08:30	DO	yes
TURBIDITY	2.1	0.01		08:30	TURBIDITY	yes

[1] CALIBRATION RANGES ARE SPECIFIC TO THE MODEL OF THE QUALITY METER

NOTES:

SIGNED

11/3/2021
DATE

WATER QUALITY METER CALIBRATION LOG

PROJECT NAME	USACE NE Devens Seed TO Y2 8a JV
PROJECT NUMBER	30087304
MODEL	["YSI ProDSS"]
SERIAL NUMBER	17E101577
SAMPLER	Diane Champagne
DATE	11/3/2021

TURBIDITY CALIBRATION

CALIBRATION READING			
LOT NUMBER	20211103		
EXPIRATION DATE	11/30/2021		
PRE-CALIBRATION	POST-CALIBRATION	TURBIDITY CALIBRATION WITHIN RANGE	TIME
1.11	0	yes	07:40

SINGLE POINT CALIBRATION

LOT NUMBER				
EXPIRATION DATE				
PARAMETERS	PRE-CALIBRATION	POST-CALIBRATION	SINGLE POINT CALIBRATION WITHIN	TIME
pH	7.42	7.02	yes	08:03
Conductivity	1.442	1.413	yes	07:50
ORP	262.1	240.6	yes	07:47
DO	98.3	99.8	yes	07:42
Turbidity	1.11	0	yes	07:40

[1] CALIBRATION RANGES ARE SPECIFIC TO THE MODEL OF THE QUALITY METER

NOTES:

SIGNED

11/3/2021
DATE

Appendix B

Laboratory Analytical Reports

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins TestAmerica, Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

Laboratory Job ID: 680-198882-1
Client Project/Site: Fort Devens, LTM, AOC 50, Spring 2021
Revision: 1

For:
Seres Engineering & Services LLC
669 Marina Drive
Suite B7
Charleston, South Carolina 29492

Attn: Heather Levesque

Jerry Lanier

Authorized for release by:
12/28/2021 5:56:07 PM

Jerry Lanier, Project Manager I
(912)250-0281
Jerry.Lanier@Eurofinset.com

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
M	Manual integrated compound.
Q	One or more quality control criteria failed.
U	Undetected at the Limit of Detection.

GC VOA

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Undetected at the Limit of Detection.

HPLC/IC

Qualifier	Qualifier Description
M	Manual integrated compound.
U	Undetected at the Limit of Detection.

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
J	Estimated: The analyte was positively identified; the quantitation is an estimation
J1	Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
U	Undetected at the Limit of Detection.

General Chemistry

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Undetected at the Limit of Detection.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Sample Summary

Client: Seres Engineering & Services LLC
Job ID: 680-198882-1
Project/Site: Fort Devens, LTM, AOC 50, Spring 2021

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-198882-1	G6M-02-01X-SPR21	Water	05/12/21 10:05	05/14/21 09:45
680-198882-2	G6M-03-07X-SPR21	Water	05/12/21 15:00	05/14/21 09:45
680-198882-3	G6M-04-02X-SPR21	Water	05/12/21 15:00	05/14/21 09:45
680-198882-4	G6M-04-07X-SPR21	Water	05/12/21 11:10	05/14/21 09:45
680-198882-6	G6M-07-01X-SPR21	Water	05/12/21 12:10	05/14/21 09:45
680-198882-7	G6M-07-02X-SPR21	Water	05/12/21 10:25	05/14/21 09:45
680-198882-8	AOC50-DUP01-SPR21	Water	05/12/21 10:25	05/14/21 09:45

Job ID: 680-198882-1

Laboratory: Eurofins TestAmerica, Savannah

Narrative

CASE NARRATIVE

Client: Seres Engineering & Services LLC

Project: Fort Devens, LTM, AOC 50, Spring 2021

Report Number: 680-198882-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

RECEIPT
The samples were received on 5/14/2021 9:45 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 0.5º C, 4.7º C and 14.6º C.

VOLATILE ORGANIC COMPOUNDS (GC/MS)
Samples G6M-02-01X-SPR21 (680-198882-1), G6M-03-07X-SPR21 (680-198882-2), G6M-04-07X-SPR21 (680-198882-4), G6M-07-01X-SPR21 (680-198882-6), G6M-07-02X-SPR21 (680-198882-7) and AOC50-DUP01-SPR21 (680-198882-8) were analyzed for Volatile Organic Compounds (GC/MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 05/24/2021.

The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for analytical batch 680-669818 recovered outside control limits for the following analyte: Chloroethane. This analyte was biased high in the LCS and was not detected in the associated samples; therefore, the data have been reported.

The closing continuing calibration verification (CCVC) associated with batch 680-669818 recovered above the upper control limit for Chloroethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 680-669818.

The continuing calibration verification (CCV) associated with batch 680-669818 recovered above the upper control limit for Chloroethane, Dichlorodifluoromethane and Vinyl acetate. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DISSOLVED GASES
Samples G6M-02-01X-SPR21 (680-198882-1), G6M-03-07X-SPR21 (680-198882-2), G6M-04-07X-SPR21 (680-198882-4), G6M-07-01X-SPR21 (680-198882-6), G6M-07-02X-SPR21 (680-198882-7) and AOC50-DUP01-SPR21 (680-198882-8) were analyzed for dissolved gases in accordance with RSK-175. The samples were analyzed on 05/19/2021 and 05/20/2021.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICP) - DISSOLVED
Samples G6M-02-01X-SPR21 (680-198882-1), G6M-03-07X-SPR21 (680-198882-2), G6M-04-07X-SPR21 (680-198882-4), G6M-07-01X-SPR21 (680-198882-6), G6M-07-02X-SPR21 (680-198882-7) and AOC50-DUP01-SPR21 (680-198882-8) were analyzed for Metals (ICP) - Dissolved in accordance with EPA SW-846 Method 6010C. The samples were prepared on 05/14/2021 and analyzed on 05/21/2021.

Job ID: 680-198882-1 (Continued)

Laboratory: Eurofins TestAmerica, Savannah (Continued)

Iron and Manganese failed the recovery criteria low for the MS/MSD of sample G6M-03-07X-SPR21 (680-198882-2) in batch 680-669599.

Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICPMS) - DISSOLVED

Samples G6M-02-01X-SPR21 (680-198882-1), G6M-03-07X-SPR21 (680-198882-2), G6M-04-07X-SPR21 (680-198882-4), G6M-07-01X-SPR21 (680-198882-6), G6M-07-02X-SPR21 (680-198882-7) and AOC50-DUP01-SPR21 (680-198882-8) were analyzed for Metals (ICPMS) - Dissolved in accordance with EPA SW-846 Method 6020A. The samples were prepared on 05/14/2021 and analyzed on 05/17/2021.

Arsenic failed the recovery criteria low for the MS of sample G6M-03-07X-SPR21MS (680-198882-2) in batch 680-668959.

Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ALKALINITY

Samples G6M-02-01X-SPR21 (680-198882-1), G6M-03-07X-SPR21 (680-198882-2), G6M-04-07X-SPR21 (680-198882-4), G6M-07-01X-SPR21 (680-198882-6), G6M-07-02X-SPR21 (680-198882-7) and AOC50-DUP01-SPR21 (680-198882-8) were analyzed for alkalinity in accordance with SM 2320B. The samples were analyzed on 05/17/2021.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

NITRATE-NITRITE AS NITROGEN

Samples G6M-02-01X-SPR21 (680-198882-1), G6M-03-07X-SPR21 (680-198882-2), G6M-04-07X-SPR21 (680-198882-4), G6M-07-01X-SPR21 (680-198882-6), G6M-07-02X-SPR21 (680-198882-7) and AOC50-DUP01-SPR21 (680-198882-8) were analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2. The samples were analyzed on 05/18/2021.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

SULFIDE

Samples G6M-02-01X-SPR21 (680-198882-1), G6M-03-07X-SPR21 (680-198882-2), G6M-04-07X-SPR21 (680-198882-4), G6M-07-01X-SPR21 (680-198882-6), G6M-07-02X-SPR21 (680-198882-7) and AOC50-DUP01-SPR21 (680-198882-8) were analyzed for sulfide in accordance with EPA SW846 Method 9034. The samples were analyzed on 05/17/2021.

Samples G6M-07-02X-SPR21 (680-198882-7)[5X] and AOC50-DUP01-SPR21 (680-198882-8)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ANIONS BY ION CHROMATOGRAPHY (28 DAY)

Samples G6M-02-01X-SPR21 (680-198882-1), G6M-03-07X-SPR21 (680-198882-2), G6M-04-07X-SPR21 (680-198882-4), G6M-07-01X-SPR21 (680-198882-6), G6M-07-02X-SPR21 (680-198882-7) and AOC50-DUP01-SPR21 (680-198882-8) were analyzed for Anions by Ion Chromatography (28 Day) in accordance with SW 846 9056A. The samples were analyzed on 05/21/2021.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL ORGANIC CARBON

Samples G6M-02-01X-SPR21 (680-198882-1), G6M-03-07X-SPR21 (680-198882-2), G6M-04-02X-SPR21 (680-198882-3), G6M-04-07X-SPR21 (680-198882-4), G6M-07-01X-SPR21 (680-198882-6), G6M-07-02X-SPR21 (680-198882-7) and AOC50-DUP01-SPR21 (680-198882-8) were analyzed for total organic carbon in accordance with EPA SW-846 Method 9060A. The samples were analyzed on 05/27/2021 and 05/28/2021.

Job ID: 680-198882-1 (Continued)

Laboratory: Eurofins TestAmerica, Savannah (Continued)

The instrument blank for analytical batch 280-537613 contained total organic carbon greater than one-half the reporting limit (RL), and the samples were not re-analyzed because the results were greater than 10X the CCB. The data have been qualified and reported.

Samples G6M-07-02X-SPR21 (680-198882-7)[6X] and AOC50-DUP01-SPR21 (680-198882-8)[6X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Client: Seres Engineering & Services LLC
Project/Site: Fort Devens, LTM, AOC 50, Spring 2021

Job ID: 680-198882-1

Client Sample ID: G6M-02-01X-SPR21
Date Collected: 05/12/21 10:05
Date Received: 05/14/21 09:45

Lab Sample ID: 680-198882-1
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 17:46	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 17:46	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		05/24/21 17:46	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		05/24/21 17:46	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		05/24/21 17:46	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		05/24/21 17:46	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		05/24/21 17:46	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 17:46	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		05/24/21 17:46	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 17:46	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		05/24/21 17:46	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		05/24/21 17:46	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 17:46	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		05/24/21 17:46	1
1,2-Dichloroethene, Total	**1.2**	**J**	2.0	2.0	0.74	ug/L		05/24/21 17:46	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		05/24/21 17:46	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		05/24/21 17:46	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		05/24/21 17:46	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		05/24/21 17:46	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		05/24/21 17:46	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 17:46	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		05/24/21 17:46	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		05/24/21 17:46	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		05/24/21 17:46	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		05/24/21 17:46	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		05/24/21 17:46	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		05/24/21 17:46	1
Acetone	25	U	25	25	7.0	ug/L		05/24/21 17:46	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		05/24/21 17:46	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		05/24/21 17:46	1
Bromoform	1.0	U M	1.0	1.0	0.43	ug/L		05/24/21 17:46	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 17:46	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		05/24/21 17:46	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		05/24/21 17:46	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		05/24/21 17:46	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		05/24/21 17:46	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		05/24/21 17:46	1
Chloroethane	5.0	U Q	5.0	5.0	2.5	ug/L		05/24/21 17:46	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		05/24/21 17:46	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		05/24/21 17:46	1
cis-1,2-Dichloroethene	**1.2**		1.0	1.0	0.41	ug/L		05/24/21 17:46	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		05/24/21 17:46	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		05/24/21 17:46	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		05/24/21 17:46	1
Dichlorodifluoromethane	2.0	U Q	2.0	2.0	0.60	ug/L		05/24/21 17:46	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		05/24/21 17:46	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		05/24/21 17:46	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 17:46	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		05/24/21 17:46	1

Client Sample ID: G6M-02-01X-SPR21
Lab Sample ID: 680-198882-1

Date Collected: 05/12/21 10:05
Matrix: Water
Date Received: 05/14/21 09:45

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		05/24/21 17:46	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 17:46	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		05/24/21 17:46	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 17:46	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		05/24/21 17:46	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		05/24/21 17:46	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		05/24/21 17:46	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		05/24/21 17:46	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		05/24/21 17:46	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		05/24/21 17:46	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		05/24/21 17:46	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		05/24/21 17:46	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 17:46	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		05/24/21 17:46	1
Trichloroethene	**2.2**		1.0	1.0	0.48	ug/L		05/24/21 17:46	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		05/24/21 17:46	1
Vinyl acetate	2.0	U Q	2.0	2.0	0.81	ug/L		05/24/21 17:46	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		05/24/21 17:46	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		05/24/21 17:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*85 - 114*		*05/24/21 17:46*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 119*		*05/24/21 17:46*	*1*
Toluene-d8 (Surr)	*100*		*89 - 112*		*05/24/21 17:46*	*1*
1,2-Dichloroethane-d4 (Surr)	*91*		*81 - 118*		*05/24/21 17:46*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Ethane	0.76	U	1.1	0.76	0.30	ug/L		05/19/21 23:33	1
Ethylene	**11**		1.0	0.71	0.31	ug/L		05/19/21 23:33	1
Methane (TCD)	**24000**		390	77	39	ug/L		05/19/21 23:33	1

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Sulfate	**13**		1.0	1.0	0.40	mg/L		05/21/21 18:04	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	**16000**		50	50	17	ug/L		05/21/21 06:54	1
Manganese	**2200**		10	3.0	1.0	ug/L		05/21/21 06:54	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**230**		3.0	3.0	1.5	ug/L		05/17/21 15:01	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate/Nitrite-N	0.050	U	0.10	0.050	0.019	mg/L		05/18/21 17:51	1
Sulfide	0.81	U	0.81	0.81	0.81	mg/L		05/17/21 07:58	1
Total Organic Carbon - Duplicates	**2.0**		1.0	0.80	0.35	mg/L		05/28/21 05:59	1
Alkalinity	**140**		10	6.4	3.1	mg/L		05/17/21 16:00	1

Client: Seres Engineering & Services LLC
Project/Site: Fort Devens, LTM, AOC 50, Spring 2021

Job ID: 680-198882-1

Client Sample ID: G6M-03-07X-SPR21
Date Collected: 05/12/21 15:00
Date Received: 05/14/21 09:45

Lab Sample ID: 680-198882-2
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 18:09	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 18:09	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		05/24/21 18:09	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		05/24/21 18:09	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		05/24/21 18:09	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		05/24/21 18:09	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		05/24/21 18:09	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 18:09	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		05/24/21 18:09	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 18:09	1
1,2,4-Trimethylbenzene	**0.82**	**J**	1.0	1.0	0.47	ug/L		05/24/21 18:09	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		05/24/21 18:09	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 18:09	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		05/24/21 18:09	1
1,2-Dichloroethene, Total	**0.95**	**J**	2.0	2.0	0.74	ug/L		05/24/21 18:09	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		05/24/21 18:09	1
1,3,5-Trimethylbenzene	**0.59**	**J**	1.0	1.0	0.31	ug/L		05/24/21 18:09	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		05/24/21 18:09	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		05/24/21 18:09	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		05/24/21 18:09	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 18:09	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		05/24/21 18:09	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		05/24/21 18:09	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		05/24/21 18:09	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		05/24/21 18:09	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		05/24/21 18:09	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		05/24/21 18:09	1
Acetone	25	U	25	25	7.0	ug/L		05/24/21 18:09	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		05/24/21 18:09	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		05/24/21 18:09	1
Bromoform	1.0	U M	1.0	1.0	0.43	ug/L		05/24/21 18:09	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 18:09	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		05/24/21 18:09	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		05/24/21 18:09	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		05/24/21 18:09	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		05/24/21 18:09	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		05/24/21 18:09	1
Chloroethane	5.0	U Q	5.0	5.0	2.5	ug/L		05/24/21 18:09	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		05/24/21 18:09	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		05/24/21 18:09	1
cis-1,2-Dichloroethene	**0.95**	**J**	1.0	1.0	0.41	ug/L		05/24/21 18:09	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		05/24/21 18:09	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		05/24/21 18:09	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		05/24/21 18:09	1
Dichlorodifluoromethane	2.0	U Q	2.0	2.0	0.60	ug/L		05/24/21 18:09	1
Ethylbenzene	**0.53**	**J**	1.0	1.0	0.33	ug/L		05/24/21 18:09	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		05/24/21 18:09	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 18:09	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		05/24/21 18:09	1

Client Sample ID: G6M-03-07X-SPR21
Lab Sample ID: 680-198882-2

Date Collected: 05/12/21 15:00
Matrix: Water
Date Received: 05/14/21 09:45

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		05/24/21 18:09	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 18:09	1
m-Xylene & p-Xylene	**0.57**	**J**	1.0	1.0	0.35	ug/L		05/24/21 18:09	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 18:09	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		05/24/21 18:09	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		05/24/21 18:09	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		05/24/21 18:09	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		05/24/21 18:09	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		05/24/21 18:09	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		05/24/21 18:09	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		05/24/21 18:09	1
Toluene	**1.4**	**M**	1.0	1.0	0.48	ug/L		05/24/21 18:09	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 18:09	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		05/24/21 18:09	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		05/24/21 18:09	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		05/24/21 18:09	1
Vinyl acetate	2.0	U Q	2.0	2.0	0.81	ug/L		05/24/21 18:09	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		05/24/21 18:09	1
Xylenes, Total	**0.57**	**J**	2.0	2.0	0.23	ug/L		05/24/21 18:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*85 - 114*		*05/24/21 18:09*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 119*		*05/24/21 18:09*	*1*
Toluene-d8 (Surr)	*100*		*89 - 112*		*05/24/21 18:09*	*1*
1,2-Dichloroethane-d4 (Surr)	*90*		*81 - 118*		*05/24/21 18:09*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Ethane	**9.4**		1.1	0.76	0.30	ug/L		05/19/21 23:46	1
Ethylene	**7.3**		1.0	0.71	0.31	ug/L		05/19/21 23:46	1
Methane (TCD)	**34000**		390	77	39	ug/L		05/19/21 23:46	1

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Sulfate	1.0	U	1.0	1.0	0.40	mg/L		05/21/21 18:42	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	**100000**	**J1**	50	50	17	ug/L		05/21/21 05:53	1
Manganese	**2400**	**J1**	10	3.0	1.0	ug/L		05/21/21 05:53	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**480**	**J1**	3.0	3.0	1.5	ug/L		05/17/21 14:28	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate/Nitrite-N	0.050	U	0.10	0.050	0.019	mg/L		05/18/21 17:53	1
Sulfide	0.81	U	0.81	0.81	0.81	mg/L		05/17/21 07:58	1
Total Organic Carbon - Duplicates	**18**		1.0	0.80	0.35	mg/L		05/27/21 00:20	1
Alkalinity	**210**		10	6.4	3.1	mg/L		05/17/21 13:40	1

Client Sample Results

Client: Seres Engineering & Services LLC
Job ID: 680-198882-1
Project/Site: Fort Devens, LTM, AOC 50, Spring 2021

Client Sample ID: G6M-04-02X-SPR21
Lab Sample ID: 680-198882-3
Date Collected: 05/12/21 15:00
Matrix: Water
Date Received: 05/14/21 09:45

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	40		1.0	0.80	0.35	mg/L		05/27/21 01:06	1

Client: Seres Engineering & Services LLC
Project/Site: Fort Devens, LTM, AOC 50, Spring 2021

Job ID: 680-198882-1

Client Sample ID: G6M-04-07X-SPR21
Date Collected: 05/12/21 11:10
Date Received: 05/14/21 09:45

Lab Sample ID: 680-198882-4
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 18:32	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 18:32	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		05/24/21 18:32	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		05/24/21 18:32	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		05/24/21 18:32	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		05/24/21 18:32	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		05/24/21 18:32	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 18:32	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		05/24/21 18:32	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 18:32	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		05/24/21 18:32	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		05/24/21 18:32	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 18:32	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		05/24/21 18:32	1
1,2-Dichloroethene, Total	**90**		2.0	2.0	0.74	ug/L		05/24/21 18:32	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		05/24/21 18:32	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		05/24/21 18:32	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		05/24/21 18:32	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		05/24/21 18:32	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		05/24/21 18:32	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 18:32	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		05/24/21 18:32	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		05/24/21 18:32	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		05/24/21 18:32	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		05/24/21 18:32	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		05/24/21 18:32	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		05/24/21 18:32	1
Acetone	25	U	25	25	7.0	ug/L		05/24/21 18:32	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		05/24/21 18:32	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		05/24/21 18:32	1
Bromoform	1.0	U M	1.0	1.0	0.43	ug/L		05/24/21 18:32	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 18:32	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		05/24/21 18:32	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		05/24/21 18:32	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		05/24/21 18:32	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		05/24/21 18:32	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		05/24/21 18:32	1
Chloroethane	5.0	U Q	5.0	5.0	2.5	ug/L		05/24/21 18:32	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		05/24/21 18:32	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		05/24/21 18:32	1
cis-1,2-Dichloroethene	**89**		1.0	1.0	0.41	ug/L		05/24/21 18:32	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		05/24/21 18:32	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		05/24/21 18:32	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		05/24/21 18:32	1
Dichlorodifluoromethane	2.0	U Q	2.0	2.0	0.60	ug/L		05/24/21 18:32	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		05/24/21 18:32	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		05/24/21 18:32	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 18:32	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		05/24/21 18:32	1

Client Sample ID: G6M-04-07X-SPR21
Lab Sample ID: 680-198882-4

Date Collected: 05/12/21 11:10
Matrix: Water
Date Received: 05/14/21 09:45

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		05/24/21 18:32	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 18:32	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		05/24/21 18:32	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 18:32	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		05/24/21 18:32	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		05/24/21 18:32	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		05/24/21 18:32	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		05/24/21 18:32	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		05/24/21 18:32	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		05/24/21 18:32	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		05/24/21 18:32	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		05/24/21 18:32	1
trans-1,2-Dichloroethene	**0.96**	**J**	1.0	1.0	0.37	ug/L		05/24/21 18:32	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		05/24/21 18:32	1
Trichloroethene	**22**		1.0	1.0	0.48	ug/L		05/24/21 18:32	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		05/24/21 18:32	1
Vinyl acetate	2.0	U Q	2.0	2.0	0.81	ug/L		05/24/21 18:32	1
Vinyl chloride	**10**		1.0	1.0	0.50	ug/L		05/24/21 18:32	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		05/24/21 18:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*85 - 114*		*05/24/21 18:32*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 119*		*05/24/21 18:32*	*1*
Toluene-d8 (Surr)	*100*		*89 - 112*		*05/24/21 18:32*	*1*
1,2-Dichloroethane-d4 (Surr)	*90*		*81 - 118*		*05/24/21 18:32*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Ethane	0.76	U	1.1	0.76	0.30	ug/L		05/19/21 23:59	1
Ethylene	**0.57**	**J**	1.0	0.71	0.31	ug/L		05/19/21 23:59	1
Methane	**350**		1.2	1.2	0.57	ug/L		05/19/21 23:59	1

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Sulfate	**7.4**	**M**	1.0	1.0	0.40	mg/L		05/21/21 18:55	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	**1100**		50	50	17	ug/L		05/21/21 06:07	1
Manganese	**3600**	**J1**	10	3.0	1.0	ug/L		05/21/21 06:07	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**6.9**		3.0	3.0	1.5	ug/L		05/17/21 14:41	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate/Nitrite-N	0.050	U	0.10	0.050	0.019	mg/L		05/18/21 17:55	1
Sulfide	0.81	U	0.81	0.81	0.81	mg/L		05/17/21 07:58	1
Total Organic Carbon - Duplicates	**1.4**		1.0	0.80	0.35	mg/L		05/27/21 01:20	1
Alkalinity	**230**		10	6.4	3.1	mg/L		05/17/21 20:17	1

Client: Seres Engineering & Services LLC
Project/Site: Fort Devens, LTM, AOC 50, Spring 2021

Job ID: 680-198882-1

Client Sample ID: G6M-07-01X-SPR21
Date Collected: 05/12/21 12:10
Date Received: 05/14/21 09:45

Lab Sample ID: 680-198882-6
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 18:55	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 18:55	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		05/24/21 18:55	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		05/24/21 18:55	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		05/24/21 18:55	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		05/24/21 18:55	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		05/24/21 18:55	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 18:55	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		05/24/21 18:55	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 18:55	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		05/24/21 18:55	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		05/24/21 18:55	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 18:55	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		05/24/21 18:55	1
1,2-Dichloroethene, Total	**8.6**		2.0	2.0	0.74	ug/L		05/24/21 18:55	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		05/24/21 18:55	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		05/24/21 18:55	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		05/24/21 18:55	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		05/24/21 18:55	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		05/24/21 18:55	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 18:55	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		05/24/21 18:55	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		05/24/21 18:55	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		05/24/21 18:55	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		05/24/21 18:55	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		05/24/21 18:55	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		05/24/21 18:55	1
Acetone	25	U	25	25	7.0	ug/L		05/24/21 18:55	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		05/24/21 18:55	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		05/24/21 18:55	1
Bromoform	1.0	U M	1.0	1.0	0.43	ug/L		05/24/21 18:55	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 18:55	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		05/24/21 18:55	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		05/24/21 18:55	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		05/24/21 18:55	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		05/24/21 18:55	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		05/24/21 18:55	1
Chloroethane	5.0	U Q	5.0	5.0	2.5	ug/L		05/24/21 18:55	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		05/24/21 18:55	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		05/24/21 18:55	1
cis-1,2-Dichloroethene	**8.6**		1.0	1.0	0.41	ug/L		05/24/21 18:55	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		05/24/21 18:55	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		05/24/21 18:55	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		05/24/21 18:55	1
Dichlorodifluoromethane	2.0	U Q	2.0	2.0	0.60	ug/L		05/24/21 18:55	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		05/24/21 18:55	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		05/24/21 18:55	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 18:55	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		05/24/21 18:55	1

Client Sample ID: G6M-07-01X-SPR21
Lab Sample ID: 680-198882-6

Date Collected: 05/12/21 12:10
Matrix: Water
Date Received: 05/14/21 09:45

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		05/24/21 18:55	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 18:55	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		05/24/21 18:55	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 18:55	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		05/24/21 18:55	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		05/24/21 18:55	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		05/24/21 18:55	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		05/24/21 18:55	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		05/24/21 18:55	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		05/24/21 18:55	1
Tetrachloroethene	**10**		2.0	2.0	0.74	ug/L		05/24/21 18:55	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		05/24/21 18:55	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 18:55	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		05/24/21 18:55	1
Trichloroethene	**2.1**		1.0	1.0	0.48	ug/L		05/24/21 18:55	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		05/24/21 18:55	1
Vinyl acetate	2.0	U Q	2.0	2.0	0.81	ug/L		05/24/21 18:55	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		05/24/21 18:55	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		05/24/21 18:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*85 - 114*		*05/24/21 18:55*	*1*
Dibromofluoromethane (Surr)	*96*		*80 - 119*		*05/24/21 18:55*	*1*
Toluene-d8 (Surr)	*96*		*89 - 112*		*05/24/21 18:55*	*1*
1,2-Dichloroethane-d4 (Surr)	*89*		*81 - 118*		*05/24/21 18:55*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Ethane	0.76	U	1.1	0.76	0.30	ug/L		05/20/21 00:12	1
Ethylene	0.71	U	1.0	0.71	0.31	ug/L		05/20/21 00:12	1
Methane	**17**		1.2	1.2	0.57	ug/L		05/20/21 00:12	1

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Sulfate	**14**		1.0	1.0	0.40	mg/L		05/21/21 19:07	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	**180**		50	50	17	ug/L		05/21/21 06:44	1
Manganese	**61**		10	3.0	1.0	ug/L		05/21/21 06:44	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**1.6**	**J**	3.0	3.0	1.5	ug/L		05/17/21 14:56	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate/Nitrite-N	**0.84**		0.10	0.050	0.019	mg/L		05/18/21 17:57	1
Sulfide	0.81	U	0.81	0.81	0.81	mg/L		05/17/21 07:58	1
Total Organic Carbon - Duplicates	**3.2**		1.0	0.80	0.35	mg/L		05/27/21 02:11	1
Alkalinity	**39**		10	6.4	3.1	mg/L		05/17/21 20:22	1

Client: Seres Engineering & Services LLC
Project/Site: Fort Devens, LTM, AOC 50, Spring 2021

Job ID: 680-198882-1

Client Sample ID: G6M-07-02X-SPR21
Date Collected: 05/12/21 10:25
Date Received: 05/14/21 09:45

Lab Sample ID: 680-198882-7
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 19:18	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 19:18	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		05/24/21 19:18	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		05/24/21 19:18	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		05/24/21 19:18	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		05/24/21 19:18	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		05/24/21 19:18	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 19:18	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		05/24/21 19:18	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 19:18	1
1,2,4-Trimethylbenzene	**1.2**		1.0	1.0	0.47	ug/L		05/24/21 19:18	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		05/24/21 19:18	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 19:18	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		05/24/21 19:18	1
1,2-Dichloroethene, Total	**14**		2.0	2.0	0.74	ug/L		05/24/21 19:18	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		05/24/21 19:18	1
1,3,5-Trimethylbenzene	**0.65**	**J**	1.0	1.0	0.31	ug/L		05/24/21 19:18	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		05/24/21 19:18	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		05/24/21 19:18	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		05/24/21 19:18	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 19:18	1
2-Butanone (MEK)	**13**		10	10	3.4	ug/L		05/24/21 19:18	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		05/24/21 19:18	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		05/24/21 19:18	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		05/24/21 19:18	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		05/24/21 19:18	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		05/24/21 19:18	1
Acetone	**14**	**J**	25	25	7.0	ug/L		05/24/21 19:18	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		05/24/21 19:18	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		05/24/21 19:18	1
Bromoform	1.0	U M	1.0	1.0	0.43	ug/L		05/24/21 19:18	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 19:18	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		05/24/21 19:18	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		05/24/21 19:18	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		05/24/21 19:18	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		05/24/21 19:18	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		05/24/21 19:18	1
Chloroethane	5.0	U Q	5.0	5.0	2.5	ug/L		05/24/21 19:18	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		05/24/21 19:18	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		05/24/21 19:18	1
cis-1,2-Dichloroethene	**14**		1.0	1.0	0.41	ug/L		05/24/21 19:18	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		05/24/21 19:18	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		05/24/21 19:18	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		05/24/21 19:18	1
Dichlorodifluoromethane	2.0	U Q	2.0	2.0	0.60	ug/L		05/24/21 19:18	1
Ethylbenzene	**0.64**	**J**	1.0	1.0	0.33	ug/L		05/24/21 19:18	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		05/24/21 19:18	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 19:18	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		05/24/21 19:18	1

Client Sample ID: G6M-07-02X-SPR21
Lab Sample ID: 680-198882-7

Date Collected: 05/12/21 10:25
Matrix: Water
Date Received: 05/14/21 09:45

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		05/24/21 19:18	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 19:18	1
m-Xylene & p-Xylene	**1.1**		1.0	1.0	0.35	ug/L		05/24/21 19:18	1
Naphthalene	**3.5**	**J**	5.0	5.0	2.5	ug/L		05/24/21 19:18	1
n-Butylbenzene	**0.81**	**J**	1.0	1.0	0.47	ug/L		05/24/21 19:18	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		05/24/21 19:18	1
o-Xylene	**0.76**	**J**	1.0	0.50	0.23	ug/L		05/24/21 19:18	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		05/24/21 19:18	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		05/24/21 19:18	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		05/24/21 19:18	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		05/24/21 19:18	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		05/24/21 19:18	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 19:18	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		05/24/21 19:18	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		05/24/21 19:18	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		05/24/21 19:18	1
Vinyl acetate	2.0	U Q	2.0	2.0	0.81	ug/L		05/24/21 19:18	1
Vinyl chloride	**2.6**		1.0	1.0	0.50	ug/L		05/24/21 19:18	1
Xylenes, Total	**1.9**	**J**	2.0	2.0	0.23	ug/L		05/24/21 19:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*85 - 114*		*05/24/21 19:18*	*1*
Dibromofluoromethane (Surr)	*97*		*80 - 119*		*05/24/21 19:18*	*1*
Toluene-d8 (Surr)	*97*		*89 - 112*		*05/24/21 19:18*	*1*
1,2-Dichloroethane-d4 (Surr)	*87*		*81 - 118*		*05/24/21 19:18*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Ethane	**4.6**		1.1	0.76	0.30	ug/L		05/20/21 00:25	1
Ethylene	**5.7**		1.0	0.71	0.31	ug/L		05/20/21 00:25	1
Methane (TCD)	**20000**		390	77	39	ug/L		05/20/21 00:25	1

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Sulfate	1.0	U	1.0	1.0	0.40	mg/L		05/21/21 19:20	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	**240000**		50	50	17	ug/L		05/21/21 06:39	1
Manganese	**4500**		10	3.0	1.0	ug/L		05/21/21 06:39	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**6.2**		3.0	3.0	1.5	ug/L		05/17/21 14:53	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate/Nitrite-N	**0.12**		0.10	0.050	0.019	mg/L		05/18/21 18:11	1
Sulfide	4.0	U	4.0	4.0	4.0	mg/L		05/17/21 07:58	5
Total Organic Carbon - Duplicates	**260**		6.0	4.8	2.1	mg/L		05/27/21 02:34	6
Alkalinity	**230**		10	6.4	3.1	mg/L		05/17/21 13:08	1

Client: Seres Engineering & Services LLC
Project/Site: Fort Devens, LTM, AOC 50, Spring 2021

Job ID: 680-198882-1

Client Sample ID: AOC50-DUP01-SPR21

Date Collected: 05/12/21 10:25
Date Received: 05/14/21 09:45

Lab Sample ID: 680-198882-8

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 19:40	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 19:40	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		05/24/21 19:40	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		05/24/21 19:40	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		05/24/21 19:40	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		05/24/21 19:40	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		05/24/21 19:40	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 19:40	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		05/24/21 19:40	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 19:40	1
1,2,4-Trimethylbenzene	**1.3**		1.0	1.0	0.47	ug/L		05/24/21 19:40	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		05/24/21 19:40	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 19:40	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		05/24/21 19:40	1
1,2-Dichloroethene, Total	**13**		2.0	2.0	0.74	ug/L		05/24/21 19:40	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		05/24/21 19:40	1
1,3,5-Trimethylbenzene	**0.72**	**J**	1.0	1.0	0.31	ug/L		05/24/21 19:40	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		05/24/21 19:40	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		05/24/21 19:40	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		05/24/21 19:40	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 19:40	1
2-Butanone (MEK)	**15**		10	10	3.4	ug/L		05/24/21 19:40	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		05/24/21 19:40	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		05/24/21 19:40	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		05/24/21 19:40	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		05/24/21 19:40	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		05/24/21 19:40	1
Acetone	**12**	**J**	25	25	7.0	ug/L		05/24/21 19:40	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		05/24/21 19:40	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		05/24/21 19:40	1
Bromoform	1.0	U M	1.0	1.0	0.43	ug/L		05/24/21 19:40	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 19:40	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		05/24/21 19:40	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		05/24/21 19:40	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		05/24/21 19:40	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		05/24/21 19:40	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		05/24/21 19:40	1
Chloroethane	5.0	U Q	5.0	5.0	2.5	ug/L		05/24/21 19:40	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		05/24/21 19:40	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		05/24/21 19:40	1
cis-1,2-Dichloroethene	**13**		1.0	1.0	0.41	ug/L		05/24/21 19:40	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		05/24/21 19:40	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		05/24/21 19:40	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		05/24/21 19:40	1
Dichlorodifluoromethane	2.0	U Q	2.0	2.0	0.60	ug/L		05/24/21 19:40	1
Ethylbenzene	**0.66**	**J**	1.0	1.0	0.33	ug/L		05/24/21 19:40	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		05/24/21 19:40	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 19:40	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		05/24/21 19:40	1

Client Sample ID: AOC50-DUP01-SPR21
Lab Sample ID: 680-198882-8

Date Collected: 05/12/21 10:25
Matrix: Water
Date Received: 05/14/21 09:45

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		05/24/21 19:40	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 19:40	1
m-Xylene & p-Xylene	**1.1**		1.0	1.0	0.35	ug/L		05/24/21 19:40	1
Naphthalene	**4.1**	**J**	5.0	5.0	2.5	ug/L		05/24/21 19:40	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		05/24/21 19:40	1
N-Propylbenzene	**0.70**	**J M**	1.0	1.0	0.38	ug/L		05/24/21 19:40	1
o-Xylene	**0.76**	**J**	1.0	0.50	0.23	ug/L		05/24/21 19:40	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		05/24/21 19:40	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		05/24/21 19:40	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		05/24/21 19:40	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		05/24/21 19:40	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		05/24/21 19:40	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 19:40	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		05/24/21 19:40	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		05/24/21 19:40	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		05/24/21 19:40	1
Vinyl acetate	2.0	U Q	2.0	2.0	0.81	ug/L		05/24/21 19:40	1
Vinyl chloride	**2.3**	**M**	1.0	1.0	0.50	ug/L		05/24/21 19:40	1
Xylenes, Total	**1.9**	**J**	2.0	2.0	0.23	ug/L		05/24/21 19:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*85 - 114*		*05/24/21 19:40*	*1*
Dibromofluoromethane (Surr)	*96*		*80 - 119*		*05/24/21 19:40*	*1*
Toluene-d8 (Surr)	*97*		*89 - 112*		*05/24/21 19:40*	*1*
1,2-Dichloroethane-d4 (Surr)	*88*		*81 - 118*		*05/24/21 19:40*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Ethane	**5.0**		1.1	0.76	0.30	ug/L		05/20/21 00:37	1
Ethylene	**5.8**		1.0	0.71	0.31	ug/L		05/20/21 00:37	1
Methane (TCD)	**21000**		390	77	39	ug/L		05/20/21 00:37	1

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Sulfate	**1.2**		1.0	1.0	0.40	mg/L		05/21/21 19:33	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	**240000**		50	50	17	ug/L		05/21/21 06:30	1
Manganese	**4600**		10	3.0	1.0	ug/L		05/21/21 06:30	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**7.5**		3.0	3.0	1.5	ug/L		05/17/21 14:43	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate/Nitrite-N	**0.14**		0.10	0.050	0.019	mg/L		05/18/21 18:13	1
Sulfide	4.3	U	4.3	4.3	4.3	mg/L		05/17/21 07:58	5
Total Organic Carbon - Duplicates	**250**		6.0	4.8	2.1	mg/L		05/27/21 02:56	6
Alkalinity	**190**		10	6.4	3.1	mg/L		05/17/21 13:15	1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-669818/10
Matrix: Water
Analysis Batch: 669818

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 14:28	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 14:28	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		05/24/21 14:28	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		05/24/21 14:28	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		05/24/21 14:28	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		05/24/21 14:28	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		05/24/21 14:28	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 14:28	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		05/24/21 14:28	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 14:28	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		05/24/21 14:28	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		05/24/21 14:28	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 14:28	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		05/24/21 14:28	1
1,2-Dichloroethene, Total	2.0	U	2.0	2.0	0.74	ug/L		05/24/21 14:28	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		05/24/21 14:28	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		05/24/21 14:28	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		05/24/21 14:28	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		05/24/21 14:28	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		05/24/21 14:28	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 14:28	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		05/24/21 14:28	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		05/24/21 14:28	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		05/24/21 14:28	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		05/24/21 14:28	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		05/24/21 14:28	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		05/24/21 14:28	1
Acetone	25	U	25	25	7.0	ug/L		05/24/21 14:28	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		05/24/21 14:28	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		05/24/21 14:28	1
Bromoform	1.0	U M	1.0	1.0	0.43	ug/L		05/24/21 14:28	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 14:28	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		05/24/21 14:28	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		05/24/21 14:28	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		05/24/21 14:28	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		05/24/21 14:28	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		05/24/21 14:28	1
Chloroethane	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 14:28	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		05/24/21 14:28	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		05/24/21 14:28	1
cis-1,2-Dichloroethene	1.0	U	1.0	1.0	0.41	ug/L		05/24/21 14:28	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		05/24/21 14:28	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		05/24/21 14:28	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		05/24/21 14:28	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		05/24/21 14:28	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		05/24/21 14:28	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		05/24/21 14:28	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 14:28	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-669818/10
Matrix: Water
Analysis Batch: 669818

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		05/24/21 14:28	1
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		05/24/21 14:28	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 14:28	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		05/24/21 14:28	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 14:28	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		05/24/21 14:28	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		05/24/21 14:28	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		05/24/21 14:28	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		05/24/21 14:28	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		05/24/21 14:28	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		05/24/21 14:28	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		05/24/21 14:28	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		05/24/21 14:28	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 14:28	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		05/24/21 14:28	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		05/24/21 14:28	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		05/24/21 14:28	1
Vinyl acetate	2.0	U	2.0	2.0	0.81	ug/L		05/24/21 14:28	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		05/24/21 14:28	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		05/24/21 14:28	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*85 - 114*		*05/24/21 14:28*	*1*
Dibromofluoromethane (Surr)	*97*		*80 - 119*		*05/24/21 14:28*	*1*
Toluene-d8 (Surr)	*100*		*89 - 112*		*05/24/21 14:28*	*1*
1,2-Dichloroethane-d4 (Surr)	*92*		*81 - 118*		*05/24/21 14:28*	*1*

Lab Sample ID: LCS 680-669818/5
Matrix: Water
Analysis Batch: 669818

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	50.0	51.5		ug/L		103	78 - 124
1,1,1-Trichloroethane	50.0	47.4		ug/L		95	74 - 131
1,1,2,2-Tetrachloroethane	50.0	53.0		ug/L		106	71 - 121
1,1,2-Trichloroethane	50.0	47.9		ug/L		96	80 - 119
1,1-Dichloroethane	50.0	46.8		ug/L		94	77 - 125
1,1-Dichloroethene	50.0	43.5		ug/L		87	71 - 131
1,1-Dichloropropene	50.0	46.4		ug/L		93	79 - 125
1,2,3-Trichlorobenzene	50.0	48.9		ug/L		98	69 - 129
1,2,3-Trichloropropane	50.0	52.8		ug/L		106	73 - 122
1,2,4-Trichlorobenzene	50.0	48.4		ug/L		97	69 - 130
1,2,4-Trimethylbenzene	50.0	50.4		ug/L		101	76 - 124
1,2-Dibromo-3-Chloropropane	50.0	50.5		ug/L		101	62 - 128
1,2-Dichlorobenzene	50.0	51.6		ug/L		103	80 - 119
1,2-Dichloroethane	50.0	49.3		ug/L		99	73 - 128
1,2-Dichloroethene, Total	100	92.6		ug/L		93	79 - 121
1,2-Dichloropropane	50.0	50.2		ug/L		100	78 - 122

Client: Seres Engineering & Services LLC
Project/Site: Fort Devens, LTM, AOC 50, Spring 2021

Job ID: 680-198882-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-669818/5
Matrix: Water
Analysis Batch: 669818

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3,5-Trimethylbenzene	50.0	50.3		ug/L		101	75 - 124
1,3-Dichlorobenzene	50.0	53.5		ug/L		107	80 - 119
1,3-Dichloropropane	50.0	52.5		ug/L		105	80 - 119
1,4-Dichlorobenzene	50.0	51.6		ug/L		103	79 - 118
2,2-Dichloropropane	50.0	53.4		ug/L		107	60 - 139
2-Butanone (MEK)	250	265		ug/L		106	56 - 143
2-Chlorotoluene	50.0	50.0		ug/L		100	79 - 122
2-Hexanone	250	243		ug/L		97	57 - 139
4-Chlorotoluene	50.0	50.4		ug/L		101	78 - 122
4-Isopropyltoluene	50.0	49.8		ug/L		100	77 - 127
4-Methyl-2-pentanone (MIBK)	250	244		ug/L		98	67 - 130
Acetone	250	256		ug/L		102	39 - 160
Benzene	50.0	51.4		ug/L		103	79 - 120
Bromobenzene	50.0	54.8		ug/L		110	80 - 120
Bromoform	50.0	49.8		ug/L		100	66 - 130
Bromomethane	50.0	54.8		ug/L		110	53 - 141
Carbon disulfide	50.0	44.6		ug/L		89	64 - 133
Carbon tetrachloride	50.0	47.9		ug/L		96	72 - 136
Chlorobenzene	50.0	53.1		ug/L		106	82 - 118
Chlorobromomethane	50.0	47.2		ug/L		94	78 - 123
Chlorodibromomethane	50.0	49.0		ug/L		98	74 - 126
Chloroethane	50.0	77.1	Q	ug/L		154	60 - 138
Chloroform	50.0	47.0		ug/L		94	79 - 124
Chloromethane	50.0	46.6		ug/L		93	50 - 139
cis-1,2-Dichloroethene	50.0	46.1		ug/L		92	78 - 123
cis-1,3-Dichloropropene	50.0	50.2		ug/L		100	75 - 124
Dibromomethane	50.0	46.1		ug/L		92	79 - 123
Dichlorobromomethane	50.0	51.7		ug/L		103	79 - 125
Dichlorodifluoromethane	50.0	65.0		ug/L		130	32 - 152
Ethylbenzene	50.0	50.3		ug/L		101	79 - 121
Ethylene Dibromide	50.0	54.0		ug/L		108	75 - 127
Hexachlorobutadiene	50.0	46.9		ug/L		94	66 - 134
Isopropylbenzene	50.0	50.2		ug/L		100	72 - 131
Methyl tert-butyl ether	50.0	49.6		ug/L		99	71 - 124
Methylene Chloride	50.0	45.5		ug/L		91	74 - 124
m-Xylene & p-Xylene	50.0	50.7		ug/L		101	80 - 121
Naphthalene	50.0	52.0		ug/L		104	61 - 128
n-Butylbenzene	50.0	49.6		ug/L		99	75 - 128
N-Propylbenzene	50.0	51.1		ug/L		102	76 - 126
o-Xylene	50.0	49.4		ug/L		99	78 - 122
sec-Butylbenzene	50.0	50.9		ug/L		102	77 - 126
Styrene	50.0	52.8		ug/L		106	78 - 123
tert-Butylbenzene	50.0	50.8		ug/L		102	78 - 124
Tetrachloroethene	50.0	48.7		ug/L		97	74 - 129
Toluene	50.0	54.5		ug/L		109	80 - 121
trans-1,2-Dichloroethene	50.0	46.5		ug/L		93	75 - 124
trans-1,3-Dichloropropene	50.0	50.8		ug/L		102	73 - 127
Trichloroethene	50.0	46.0		ug/L		92	79 - 123
Trichlorofluoromethane	50.0	58.1		ug/L		116	65 - 141

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-669818/5
Matrix: Water
Analysis Batch: 669818

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Vinyl acetate	100	129		ug/L		129	54 - 146
Vinyl chloride	50.0	46.1		ug/L		92	58 - 137
Xylenes, Total	100	100		ug/L		100	79 - 121

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*94*		*85 - 114*
Dibromofluoromethane (Surr)	*97*		*80 - 119*
Toluene-d8 (Surr)	*100*		*89 - 112*
1,2-Dichloroethane-d4 (Surr)	*93*		*81 - 118*

Lab Sample ID: LCSD 680-669818/6
Matrix: Water
Analysis Batch: 669818

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	50.0	51.6		ug/L		103	78 - 124	0	20
1,1,1-Trichloroethane	50.0	47.8		ug/L		96	74 - 131	1	20
1,1,2,2-Tetrachloroethane	50.0	52.0		ug/L		104	71 - 121	2	20
1,1,2-Trichloroethane	50.0	47.8		ug/L		96	80 - 119	0	20
1,1-Dichloroethane	50.0	46.9		ug/L		94	77 - 125	0	20
1,1-Dichloroethene	50.0	44.3		ug/L		89	71 - 131	2	20
1,1-Dichloropropene	50.0	47.6		ug/L		95	79 - 125	2	20
1,2,3-Trichlorobenzene	50.0	50.7		ug/L		101	69 - 129	4	20
1,2,3-Trichloropropane	50.0	52.1		ug/L		104	73 - 122	1	20
1,2,4-Trichlorobenzene	50.0	48.9		ug/L		98	69 - 130	1	20
1,2,4-Trimethylbenzene	50.0	50.2		ug/L		100	76 - 124	0	20
1,2-Dibromo-3-Chloropropane	50.0	51.5		ug/L		103	62 - 128	2	20
1,2-Dichlorobenzene	50.0	51.4		ug/L		103	80 - 119	0	20
1,2-Dichloroethane	50.0	48.9		ug/L		98	73 - 128	1	20
1,2-Dichloroethene, Total	100	92.9		ug/L		93	79 - 121	0	20
1,2-Dichloropropane	50.0	50.6		ug/L		101	78 - 122	1	20
1,3,5-Trimethylbenzene	50.0	50.7		ug/L		101	75 - 124	1	20
1,3-Dichlorobenzene	50.0	53.6		ug/L		107	80 - 119	0	20
1,3-Dichloropropane	50.0	50.8		ug/L		102	80 - 119	3	20
1,4-Dichlorobenzene	50.0	51.3		ug/L		103	79 - 118	1	20
2,2-Dichloropropane	50.0	54.2		ug/L		108	60 - 139	2	20
2-Butanone (MEK)	250	257		ug/L		103	56 - 143	3	20
2-Chlorotoluene	50.0	50.1		ug/L		100	79 - 122	0	20
2-Hexanone	250	237		ug/L		95	57 - 139	3	20
4-Chlorotoluene	50.0	49.9		ug/L		100	78 - 122	1	20
4-Isopropyltoluene	50.0	49.5		ug/L		99	77 - 127	1	20
4-Methyl-2-pentanone (MIBK)	250	241		ug/L		96	67 - 130	1	20
Acetone	250	249		ug/L		99	39 - 160	3	20
Benzene	50.0	51.1		ug/L		102	79 - 120	1	20
Bromobenzene	50.0	54.0		ug/L		108	80 - 120	1	20
Bromoform	50.0	49.6		ug/L		99	66 - 130	1	20
Bromomethane	50.0	55.0		ug/L		110	53 - 141	0	20
Carbon disulfide	50.0	44.0		ug/L		88	64 - 133	1	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 680-669818/6
Matrix: Water
Analysis Batch: 669818

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Carbon tetrachloride			50.0	48.2		ug/L		96	72 - 136	1	20
Chlorobenzene			50.0	53.4		ug/L		107	82 - 118	0	20
Chlorobromomethane			50.0	47.1		ug/L		94	78 - 123	0	20
Chlorodibromomethane			50.0	48.8		ug/L		98	74 - 126	0	20
Chloroethane			50.0	79.1	Q	ug/L		158	60 - 138	3	20
Chloroform			50.0	47.4		ug/L		95	79 - 124	1	20
Chloromethane			50.0	47.0		ug/L		94	50 - 139	1	20
cis-1,2-Dichloroethene			50.0	45.9		ug/L		92	78 - 123	0	20
cis-1,3-Dichloropropene			50.0	50.6		ug/L		101	75 - 124	1	20
Dibromomethane			50.0	46.4		ug/L		93	79 - 123	1	20
Dichlorobromomethane			50.0	51.5		ug/L		103	79 - 125	0	20
Dichlorodifluoromethane			50.0	64.5		ug/L		129	32 - 152	1	20
Ethylbenzene			50.0	50.6		ug/L		101	79 - 121	1	20
Ethylene Dibromide			50.0	53.0		ug/L		106	75 - 127	2	20
Hexachlorobutadiene			50.0	47.6		ug/L		95	66 - 134	2	20
Isopropylbenzene			50.0	50.7		ug/L		101	72 - 131	1	20
Methyl tert-butyl ether			50.0	49.0		ug/L		98	71 - 124	1	20
Methylene Chloride			50.0	44.7		ug/L		89	74 - 124	2	20
m-Xylene & p-Xylene			50.0	50.5		ug/L		101	80 - 121	1	20
Naphthalene			50.0	53.4		ug/L		107	61 - 128	3	20
n-Butylbenzene			50.0	49.9		ug/L		100	75 - 128	1	20
N-Propylbenzene			50.0	51.7		ug/L		103	76 - 126	1	20
o-Xylene			50.0	49.1		ug/L		98	78 - 122	1	20
sec-Butylbenzene			50.0	51.1		ug/L		102	77 - 126	0	20
Styrene			50.0	52.6		ug/L		105	78 - 123	0	20
tert-Butylbenzene			50.0	50.2		ug/L		100	78 - 124	1	20
Tetrachloroethene			50.0	49.5		ug/L		99	74 - 129	2	20
Toluene			50.0	54.5		ug/L		109	80 - 121	0	20
trans-1,2-Dichloroethene			50.0	47.0		ug/L		94	75 - 124	1	20
trans-1,3-Dichloropropene			50.0	49.8		ug/L		100	73 - 127	2	20
Trichloroethene			50.0	46.2		ug/L		92	79 - 123	0	20
Trichlorofluoromethane			50.0	57.3		ug/L		115	65 - 141	1	20
Vinyl acetate			100	128		ug/L		128	54 - 146	1	20
Vinyl chloride			50.0	46.8		ug/L		94	58 - 137	1	20
Xylenes, Total			100	99.6		ug/L		100	79 - 121	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*93*		*85 - 114*
Dibromofluoromethane (Surr)	*96*		*80 - 119*
Toluene-d8 (Surr)	*99*		*89 - 112*
1,2-Dichloroethane-d4 (Surr)	*92*		*81 - 118*

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 680-669301/36
Matrix: Water
Analysis Batch: 669301

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Ethane	0.76	U	1.1	0.76	0.30	ug/L		05/19/21 20:19	1
Ethylene	0.71	U	1.0	0.71	0.31	ug/L		05/19/21 20:19	1
Methane	1.2	U	1.2	1.2	0.57	ug/L		05/19/21 20:19	1
Methane (TCD)	77	U	390	77	39	ug/L		05/19/21 20:19	1

Lab Sample ID: LCS 680-669301/32
Matrix: Water
Analysis Batch: 669301

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methane (TCD)	1920	1980		ug/L		103	73 - 125

Lab Sample ID: LCS 680-669301/34
Matrix: Water
Analysis Batch: 669301

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane	288	318		ug/L		110	74 - 131
Ethylene	269	286		ug/L		106	72 - 133
Methane	154	163		ug/L		106	73 - 125

Lab Sample ID: LCSD 680-669301/33
Matrix: Water
Analysis Batch: 669301

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methane (TCD)	1920	1990		ug/L		103	73 - 125	0	30

Lab Sample ID: LCSD 680-669301/35
Matrix: Water
Analysis Batch: 669301

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane	288	318		ug/L		110	74 - 131	0	30
Ethylene	269	288		ug/L		107	72 - 133	1	30
Methane	154	164		ug/L		107	73 - 125	1	30

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 680-669607/2
Matrix: Water
Analysis Batch: 669607

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Sulfate	1.0	U	1.0	1.0	0.40	mg/L		05/21/21 11:49	1

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 680-669607/3
Matrix: Water
Analysis Batch: 669607

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			10.0	10.4		mg/L		104	87 - 112		

Lab Sample ID: LCSD 680-669607/4
Matrix: Water
Analysis Batch: 669607

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate			10.0	10.4		mg/L		104	87 - 112	0	15

Lab Sample ID: 680-198882-1 MS
Matrix: Water
Analysis Batch: 669607

Client Sample ID: G6M-02-01X-SPR21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate	13		10.0	23.2		mg/L		102	87 - 112		

Lab Sample ID: 680-198882-1 MSD
Matrix: Water
Analysis Batch: 669607

Client Sample ID: G6M-02-01X-SPR21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	13		10.0	23.4		mg/L		104	87 - 112	1	15

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-668681/1-A
Matrix: Water
Analysis Batch: 669599

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 668681

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	50	U	50	50	17	ug/L		05/21/21 05:43	1
Manganese	3.0	U	10	3.0	1.0	ug/L		05/21/21 05:43	1

Lab Sample ID: LCS 680-668681/2-A
Matrix: Water
Analysis Batch: 669599

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 668681

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Iron			2000	1900		ug/L		95	87 - 115		
Manganese			400	381		ug/L		95	90 - 114		

Lab Sample ID: 680-198882-2 MS
Matrix: Water
Analysis Batch: 669599

Client Sample ID: G6M-03-07X-SPR21
Prep Type: Dissolved
Prep Batch: 668681

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Iron	100000	J1	2000	103000	4	ug/L		-43	87 - 115		
Manganese	2400	J1	400	2670	4	ug/L		76	90 - 114		

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 680-198882-2 MSD
Matrix: Water
Analysis Batch: 669599

Client Sample ID: G6M-03-07X-SPR21
Prep Type: Dissolved
Prep Batch: 668681

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	100000	J1	2000	102000	4	ug/L		-106	87 - 115	1	20
Manganese	2400	J1	400	2650	4	ug/L		70	90 - 114	1	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 680-668680/1-A
Matrix: Water
Analysis Batch: 668959

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 668680

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	3.0	U	3.0	3.0	1.5	ug/L		05/17/21 14:23	1

Lab Sample ID: LCS 680-668680/2-A
Matrix: Water
Analysis Batch: 668959

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 668680

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	100	102		ug/L		102	84 - 116

Lab Sample ID: 680-198882-2 MS
Matrix: Water
Analysis Batch: 668959

Client Sample ID: G6M-03-07X-SPR21
Prep Type: Dissolved
Prep Batch: 668680

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	480	J1	100	552	4	ug/L		75	84 - 116

Lab Sample ID: 680-198882-2 MSD
Matrix: Water
Analysis Batch: 668959

Client Sample ID: G6M-03-07X-SPR21
Prep Type: Dissolved
Prep Batch: 668680

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	480	J1	100	561	4	ug/L		84	84 - 116	2	20

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 280-536615/22
Matrix: Water
Analysis Batch: 536615

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate/Nitrite-N	0.050	U	0.10	0.050	0.019	mg/L		05/18/21 17:05	1

Lab Sample ID: LCS 280-536615/21
Matrix: Water
Analysis Batch: 536615

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate/Nitrite-N	5.00	5.38		mg/L		108	90 - 110

Method: 9034 - Sulfide, Acid Soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 680-668799/1
Matrix: Water
Analysis Batch: 668799

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Sulfide	1.0	U	1.0	1.0	1.0	mg/L		05/17/21 07:58	1

Lab Sample ID: LCS 680-668799/2
Matrix: Water
Analysis Batch: 668799

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	10.0	10.2		mg/L		102	75 - 125

Lab Sample ID: LCSD 680-668799/3
Matrix: Water
Analysis Batch: 668799

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfide	10.0	10.3		mg/L		103	75 - 125	1	30

Lab Sample ID: 680-198882-1 DU
Matrix: Water
Analysis Batch: 668799

Client Sample ID: G6M-02-01X-SPR21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Sulfide	0.81	U	0.81	U	mg/L		NC	30

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 280-537613/35
Matrix: Water
Analysis Batch: 537613

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	0.414	J	1.0	0.80	0.35	mg/L		05/26/21 20:25	1

Lab Sample ID: MB 280-537613/4
Matrix: Water
Analysis Batch: 537613

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	0.80	U	1.0	0.80	0.35	mg/L		05/26/21 12:23	1

Lab Sample ID: LCS 280-537613/34
Matrix: Water
Analysis Batch: 537613

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	25.0	25.3		mg/L		101	88 - 112

Method: 9060A - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: 680-198882-4 MS
Matrix: Water
Analysis Batch: 537613

Client Sample ID: G6M-04-07X-SPR21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	1.4		25.0	25.7		mg/L		97	88 - 112

Lab Sample ID: 680-198882-4 MSD
Matrix: Water
Analysis Batch: 537613

Client Sample ID: G6M-04-07X-SPR21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Duplicates	1.4		25.0	25.7		mg/L		97	88 - 112	0	15

Lab Sample ID: MB 280-537999/35
Matrix: Water
Analysis Batch: 537999

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	0.80	U	1.0	0.80	0.35	mg/L		05/28/21 02:09	1

Lab Sample ID: MB 280-537999/4
Matrix: Water
Analysis Batch: 537999

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	0.80	U	1.0	0.80	0.35	mg/L		05/27/21 17:11	1

Lab Sample ID: LCS 280-537999/3
Matrix: Water
Analysis Batch: 537999

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	25.0	23.3		mg/L		93	88 - 112

Lab Sample ID: LCS 280-537999/34
Matrix: Water
Analysis Batch: 537999

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	25.0	23.1		mg/L		92	88 - 112

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 280-536502/5
Matrix: Water
Analysis Batch: 536502

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	6.4	U	10	6.4	3.1	mg/L		05/17/21 12:49	1

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: MB 280-536502/57
Matrix: Water
Analysis Batch: 536502

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	6.4	U	10	6.4	3.1	mg/L		05/17/21 19:24	1

Lab Sample ID: LCS 280-536502/4
Matrix: Water
Analysis Batch: 536502

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Alkalinity			200	198		mg/L		99	89 - 109		

Lab Sample ID: LCS 280-536502/56
Matrix: Water
Analysis Batch: 536502

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Alkalinity			200	201		mg/L		101	89 - 109		

Client: Seres Engineering & Services LLC
Job ID: 680-198882-1
Project/Site: Fort Devens, LTM, AOC 50, Spring 2021

GC/MS VOA

Analysis Batch: 669818

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-198882-1	G6M-02-01X-SPR21	Total/NA	Water	8260B	
680-198882-2	G6M-03-07X-SPR21	Total/NA	Water	8260B	
680-198882-4	G6M-04-07X-SPR21	Total/NA	Water	8260B	
680-198882-6	G6M-07-01X-SPR21	Total/NA	Water	8260B	
680-198882-7	G6M-07-02X-SPR21	Total/NA	Water	8260B	
680-198882-8	AOC50-DUP01-SPR21	Total/NA	Water	8260B	
MB 680-669818/10	Method Blank	Total/NA	Water	8260B	
LCS 680-669818/5	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-669818/6	Lab Control Sample Dup	Total/NA	Water	8260B	

GC VOA

Analysis Batch: 669301

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-198882-1	G6M-02-01X-SPR21	Total/NA	Water	RSK-175	
680-198882-2	G6M-03-07X-SPR21	Total/NA	Water	RSK-175	
680-198882-4	G6M-04-07X-SPR21	Total/NA	Water	RSK-175	
680-198882-6	G6M-07-01X-SPR21	Total/NA	Water	RSK-175	
680-198882-7	G6M-07-02X-SPR21	Total/NA	Water	RSK-175	
680-198882-8	AOC50-DUP01-SPR21	Total/NA	Water	RSK-175	
MB 680-669301/36	Method Blank	Total/NA	Water	RSK-175	
LCS 680-669301/32	Lab Control Sample	Total/NA	Water	RSK-175	
LCS 680-669301/34	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 680-669301/33	Lab Control Sample Dup	Total/NA	Water	RSK-175	
LCSD 680-669301/35	Lab Control Sample Dup	Total/NA	Water	RSK-175	

HPLC/IC

Analysis Batch: 669607

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-198882-1	G6M-02-01X-SPR21	Total/NA	Water	9056A	
680-198882-2	G6M-03-07X-SPR21	Total/NA	Water	9056A	
680-198882-4	G6M-04-07X-SPR21	Total/NA	Water	9056A	
680-198882-6	G6M-07-01X-SPR21	Total/NA	Water	9056A	
680-198882-7	G6M-07-02X-SPR21	Total/NA	Water	9056A	
680-198882-8	AOC50-DUP01-SPR21	Total/NA	Water	9056A	
MB 680-669607/2	Method Blank	Total/NA	Water	9056A	
LCS 680-669607/3	Lab Control Sample	Total/NA	Water	9056A	
LCSD 680-669607/4	Lab Control Sample Dup	Total/NA	Water	9056A	
680-198882-1 MS	G6M-02-01X-SPR21	Total/NA	Water	9056A	
680-198882-1 MSD	G6M-02-01X-SPR21	Total/NA	Water	9056A	

Metals

Prep Batch: 668680

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-198882-1	G6M-02-01X-SPR21	Dissolved	Water	3005A	
680-198882-2	G6M-03-07X-SPR21	Dissolved	Water	3005A	
680-198882-4	G6M-04-07X-SPR21	Dissolved	Water	3005A	
680-198882-6	G6M-07-01X-SPR21	Dissolved	Water	3005A	
680-198882-7	G6M-07-02X-SPR21	Dissolved	Water	3005A	
680-198882-8	AOC50-DUP01-SPR21	Dissolved	Water	3005A	

Metals (Continued)

Prep Batch: 668680 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 680-668680/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 680-668680/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
680-198882-2 MS	G6M-03-07X-SPR21	Dissolved	Water	3005A	
680-198882-2 MSD	G6M-03-07X-SPR21	Dissolved	Water	3005A	

Prep Batch: 668681

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-198882-1	G6M-02-01X-SPR21	Dissolved	Water	3005A	
680-198882-2	G6M-03-07X-SPR21	Dissolved	Water	3005A	
680-198882-4	G6M-04-07X-SPR21	Dissolved	Water	3005A	
680-198882-6	G6M-07-01X-SPR21	Dissolved	Water	3005A	
680-198882-7	G6M-07-02X-SPR21	Dissolved	Water	3005A	
680-198882-8	AOC50-DUP01-SPR21	Dissolved	Water	3005A	
MB 680-668681/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 680-668681/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
680-198882-2 MS	G6M-03-07X-SPR21	Dissolved	Water	3005A	
680-198882-2 MSD	G6M-03-07X-SPR21	Dissolved	Water	3005A	

Analysis Batch: 668959

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-198882-1	G6M-02-01X-SPR21	Dissolved	Water	6020A	668680
680-198882-2	G6M-03-07X-SPR21	Dissolved	Water	6020A	668680
680-198882-4	G6M-04-07X-SPR21	Dissolved	Water	6020A	668680
680-198882-6	G6M-07-01X-SPR21	Dissolved	Water	6020A	668680
680-198882-7	G6M-07-02X-SPR21	Dissolved	Water	6020A	668680
680-198882-8	AOC50-DUP01-SPR21	Dissolved	Water	6020A	668680
MB 680-668680/1-A	Method Blank	Total Recoverable	Water	6020A	668680
LCS 680-668680/2-A	Lab Control Sample	Total Recoverable	Water	6020A	668680
680-198882-2 MS	G6M-03-07X-SPR21	Dissolved	Water	6020A	668680
680-198882-2 MSD	G6M-03-07X-SPR21	Dissolved	Water	6020A	668680

Analysis Batch: 669599

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-198882-1	G6M-02-01X-SPR21	Dissolved	Water	6010C	668681
680-198882-2	G6M-03-07X-SPR21	Dissolved	Water	6010C	668681
680-198882-4	G6M-04-07X-SPR21	Dissolved	Water	6010C	668681
680-198882-6	G6M-07-01X-SPR21	Dissolved	Water	6010C	668681
680-198882-7	G6M-07-02X-SPR21	Dissolved	Water	6010C	668681
680-198882-8	AOC50-DUP01-SPR21	Dissolved	Water	6010C	668681
MB 680-668681/1-A	Method Blank	Total Recoverable	Water	6010C	668681
LCS 680-668681/2-A	Lab Control Sample	Total Recoverable	Water	6010C	668681
680-198882-2 MS	G6M-03-07X-SPR21	Dissolved	Water	6010C	668681
680-198882-2 MSD	G6M-03-07X-SPR21	Dissolved	Water	6010C	668681

General Chemistry

Analysis Batch: 536502

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-198882-1	G6M-02-01X-SPR21	Total/NA	Water	SM 2320B	
680-198882-2	G6M-03-07X-SPR21	Total/NA	Water	SM 2320B	
680-198882-4	G6M-04-07X-SPR21	Total/NA	Water	SM 2320B	

General Chemistry (Continued)

Analysis Batch: 536502 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-198882-6	G6M-07-01X-SPR21	Total/NA	Water	SM 2320B	
680-198882-7	G6M-07-02X-SPR21	Total/NA	Water	SM 2320B	
680-198882-8	AOC50-DUP01-SPR21	Total/NA	Water	SM 2320B	
MB 280-536502/5	Method Blank	Total/NA	Water	SM 2320B	
MB 280-536502/57	Method Blank	Total/NA	Water	SM 2320B	
LCS 280-536502/4	Lab Control Sample	Total/NA	Water	SM 2320B	
LCS 280-536502/56	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 536615

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-198882-1	G6M-02-01X-SPR21	Total/NA	Water	353.2	
680-198882-2	G6M-03-07X-SPR21	Total/NA	Water	353.2	
680-198882-4	G6M-04-07X-SPR21	Total/NA	Water	353.2	
680-198882-6	G6M-07-01X-SPR21	Total/NA	Water	353.2	
680-198882-7	G6M-07-02X-SPR21	Total/NA	Water	353.2	
680-198882-8	AOC50-DUP01-SPR21	Total/NA	Water	353.2	
MB 280-536615/22	Method Blank	Total/NA	Water	353.2	
LCS 280-536615/21	Lab Control Sample	Total/NA	Water	353.2	

Analysis Batch: 537613

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-198882-2	G6M-03-07X-SPR21	Total/NA	Water	9060A	
680-198882-3	G6M-04-02X-SPR21	Total/NA	Water	9060A	
680-198882-4	G6M-04-07X-SPR21	Total/NA	Water	9060A	
680-198882-6	G6M-07-01X-SPR21	Total/NA	Water	9060A	
680-198882-7	G6M-07-02X-SPR21	Total/NA	Water	9060A	
680-198882-8	AOC50-DUP01-SPR21	Total/NA	Water	9060A	
MB 280-537613/35	Method Blank	Total/NA	Water	9060A	
MB 280-537613/4	Method Blank	Total/NA	Water	9060A	
LCS 280-537613/34	Lab Control Sample	Total/NA	Water	9060A	
680-198882-4 MS	G6M-04-07X-SPR21	Total/NA	Water	9060A	
680-198882-4 MSD	G6M-04-07X-SPR21	Total/NA	Water	9060A	

Analysis Batch: 537999

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-198882-1	G6M-02-01X-SPR21	Total/NA	Water	9060A	
MB 280-537999/35	Method Blank	Total/NA	Water	9060A	
MB 280-537999/4	Method Blank	Total/NA	Water	9060A	
LCS 280-537999/3	Lab Control Sample	Total/NA	Water	9060A	
LCS 280-537999/34	Lab Control Sample	Total/NA	Water	9060A	

Analysis Batch: 668799

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-198882-1	G6M-02-01X-SPR21	Total/NA	Water	9034	
680-198882-2	G6M-03-07X-SPR21	Total/NA	Water	9034	
680-198882-4	G6M-04-07X-SPR21	Total/NA	Water	9034	
680-198882-6	G6M-07-01X-SPR21	Total/NA	Water	9034	
680-198882-7	G6M-07-02X-SPR21	Total/NA	Water	9034	
680-198882-8	AOC50-DUP01-SPR21	Total/NA	Water	9034	
MB 680-668799/1	Method Blank	Total/NA	Water	9034	
LCS 680-668799/2	Lab Control Sample	Total/NA	Water	9034	

General Chemistry (Continued)

Analysis Batch: 668799 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 680-668799/3	Lab Control Sample Dup	Total/NA	Water	9034	
680-198882-1 DU	G6M-02-01X-SPR21	Total/NA	Water	9034	

Client Sample ID: G6M-02-01X-SPR21

Lab Sample ID: 680-198882-1

Date Collected: 05/12/21 10:05

Matrix: Water

Date Received: 05/14/21 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	669818	05/24/21 17:46	UI	TAL SAV
	Instrument ID: CMSO2									
Total/NA	Analysis	RSK-175		1	17 mL	17 mL	669301	05/19/21 23:33	JCK	TAL SAV
	Instrument ID: CVGU									
Total/NA	Analysis	9056A		1	5 mL	5 mL	669607	05/21/21 18:04	UI	TAL SAV
	Instrument ID: CICK									
Dissolved	Prep	3005A			50 mL	50 mL	668681	05/14/21 15:20	BJB	TAL SAV
Dissolved	Analysis	6010C		1			669599	05/21/21 06:54	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	668680	05/14/21 15:20	BJB	TAL SAV
Dissolved	Analysis	6020A		1			668959	05/17/21 15:01	BWR	TAL SAV
	Instrument ID: ICPMSD									
Total/NA	Analysis	353.2		1	100 mL	100 mL	536615	05/18/21 17:51	SVC	TAL DEN
	Instrument ID: WC_Alp 2									
Total/NA	Analysis	9034		1	310 mL	310 mL	668799	05/17/21 07:58	NVF	TAL SAV
	Instrument ID: NOEQUIP									
Total/NA	Analysis	9060A		1	20 mL	20 mL	537999	05/28/21 05:59	RAF	TAL DEN
	Instrument ID: WC_SHI2									
Total/NA	Analysis	SM 2320B		1			536502	05/17/21 16:00	QJB	TAL DEN
	Instrument ID: WC_AT4									

Client Sample ID: G6M-03-07X-SPR21

Lab Sample ID: 680-198882-2

Date Collected: 05/12/21 15:00

Matrix: Water

Date Received: 05/14/21 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	669818	05/24/21 18:09	UI	TAL SAV
	Instrument ID: CMSO2									
Total/NA	Analysis	RSK-175		1	17 mL	17 mL	669301	05/19/21 23:46	JCK	TAL SAV
	Instrument ID: CVGU									
Total/NA	Analysis	9056A		1	5 mL	5 mL	669607	05/21/21 18:42	UI	TAL SAV
	Instrument ID: CICK									
Dissolved	Prep	3005A			50 mL	50 mL	668681	05/14/21 15:20	BJB	TAL SAV
Dissolved	Analysis	6010C		1			669599	05/21/21 05:53	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	668680	05/14/21 15:20	BJB	TAL SAV
Dissolved	Analysis	6020A		1			668959	05/17/21 14:28	BWR	TAL SAV
	Instrument ID: ICPMSD									
Total/NA	Analysis	353.2		1	100 mL	100 mL	536615	05/18/21 17:53	SVC	TAL DEN
	Instrument ID: WC_Alp 2									
Total/NA	Analysis	9034		1	310 mL	310 mL	668799	05/17/21 07:58	NVF	TAL SAV
	Instrument ID: NOEQUIP									
Total/NA	Analysis	9060A		1	20 mL	20 mL	537613	05/27/21 00:20	RAF	TAL DEN
	Instrument ID: WC_SHI3									

Lab Chronicle

Client: Seres Engineering & Services LLC
Job ID: 680-198882-1
Project/Site: Fort Devens, LTM, AOC 50, Spring 2021

Client Sample ID: G6M-03-07X-SPR21
Lab Sample ID: 680-198882-2
Date Collected: 05/12/21 15:00
Matrix: Water
Date Received: 05/14/21 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2320B		1			536502	05/17/21 13:40	QJB	TAL DEN

Client Sample ID: G6M-04-02X-SPR21
Lab Sample ID: 680-198882-3
Date Collected: 05/12/21 15:00
Matrix: Water
Date Received: 05/14/21 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060A		1	20 mL	20 mL	537613	05/27/21 01:06	RAF	TAL DEN
	Instrument ID: WC_SHI3									

Client Sample ID: G6M-04-07X-SPR21
Lab Sample ID: 680-198882-4
Date Collected: 05/12/21 11:10
Matrix: Water
Date Received: 05/14/21 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	669818	05/24/21 18:32	UI	TAL SAV
	Instrument ID: CMSO2									
Total/NA	Analysis	RSK-175		1	17 mL	17 mL	669301	05/19/21 23:59	JCK	TAL SAV
	Instrument ID: CVGU									
Total/NA	Analysis	9056A		1	5 mL	5 mL	669607	05/21/21 18:55	UI	TAL SAV
	Instrument ID: CICK									
Dissolved	Prep	3005A			50 mL	50 mL	668681	05/14/21 15:20	BJB	TAL SAV
Dissolved	Analysis	6010C		1			669599	05/21/21 06:07	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	668680	05/14/21 15:20	BJB	TAL SAV
Dissolved	Analysis	6020A		1			668959	05/17/21 14:41	BWR	TAL SAV
	Instrument ID: ICPMSD									
Total/NA	Analysis	353.2		1	100 mL	100 mL	536615	05/18/21 17:55	SVC	TAL DEN
	Instrument ID: WC_Alp 2									
Total/NA	Analysis	9034		1	310 mL	310 mL	668799	05/17/21 07:58	NVF	TAL SAV
	Instrument ID: NOEQUIP									
Total/NA	Analysis	9060A		1	20 mL	20 mL	537613	05/27/21 01:20	RAF	TAL DEN
	Instrument ID: WC_SHI3									
Total/NA	Analysis	SM 2320B		1			536502	05/17/21 20:17	QJB	TAL DEN
	Instrument ID: WC_AT4									

Client Sample ID: G6M-07-01X-SPR21
Lab Sample ID: 680-198882-6
Date Collected: 05/12/21 12:10
Matrix: Water
Date Received: 05/14/21 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	669818	05/24/21 18:55	UI	TAL SAV
	Instrument ID: CMSO2									
Total/NA	Analysis	RSK-175		1	17 mL	17 mL	669301	05/20/21 00:12	JCK	TAL SAV
	Instrument ID: CVGU									

Lab Chronicle

Client: Seres Engineering & Services LLC
Job ID: 680-198882-1
Project/Site: Fort Devens, LTM, AOC 50, Spring 2021

Client Sample ID: G6M-07-01X-SPR21
Lab Sample ID: 680-198882-6
Date Collected: 05/12/21 12:10
Matrix: Water
Date Received: 05/14/21 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	5 mL	5 mL	669607	05/21/21 19:07	UI	TAL SAV
Dissolved	Prep	3005A			50 mL	50 mL	668681	05/14/21 15:20	BJB	TAL SAV
Dissolved	Analysis	6010C		1			669599	05/21/21 06:44	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	668680	05/14/21 15:20	BJB	TAL SAV
Dissolved	Analysis	6020A		1			668959	05/17/21 14:56	BWR	TAL SAV
	Instrument ID: ICPMSD									
Total/NA	Analysis	353.2		1	100 mL	100 mL	536615	05/18/21 17:57	SVC	TAL DEN
	Instrument ID: WC_Alp 2									
Total/NA	Analysis	9034		1	310 mL	310 mL	668799	05/17/21 07:58	NVF	TAL SAV
	Instrument ID: NOEQUIP									
Total/NA	Analysis	9060A		1	20 mL	20 mL	537613	05/27/21 02:11	RAF	TAL DEN
	Instrument ID: WC_SHI3									
Total/NA	Analysis	SM 2320B		1			536502	05/17/21 20:22	QJB	TAL DEN
	Instrument ID: WC_AT4									

Client Sample ID: G6M-07-02X-SPR21
Lab Sample ID: 680-198882-7
Date Collected: 05/12/21 10:25
Matrix: Water
Date Received: 05/14/21 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	669818	05/24/21 19:18	UI	TAL SAV
	Instrument ID: CMSO2									
Total/NA	Analysis	RSK-175		1	17 mL	17 mL	669301	05/20/21 00:25	JCK	TAL SAV
	Instrument ID: CVGU									
Total/NA	Analysis	9056A		1	5 mL	5 mL	669607	05/21/21 19:20	UI	TAL SAV
	Instrument ID: CICK									
Dissolved	Prep	3005A			50 mL	50 mL	668681	05/14/21 15:20	BJB	TAL SAV
Dissolved	Analysis	6010C		1			669599	05/21/21 06:39	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	668680	05/14/21 15:20	BJB	TAL SAV
Dissolved	Analysis	6020A		1			668959	05/17/21 14:53	BWR	TAL SAV
	Instrument ID: ICPMSD									
Total/NA	Analysis	353.2		1	100 mL	100 mL	536615	05/18/21 18:11	SVC	TAL DEN
	Instrument ID: WC_Alp 2									
Total/NA	Analysis	9034		5	310 mL	310 mL	668799	05/17/21 07:58	NVF	TAL SAV
	Instrument ID: NOEQUIP									
Total/NA	Analysis	9060A		6	20 mL	20 mL	537613	05/27/21 02:34	RAF	TAL DEN
	Instrument ID: WC_SHI3									
Total/NA	Analysis	SM 2320B		1			536502	05/17/21 13:08	QJB	TAL DEN
	Instrument ID: WC_AT4									

Lab Chronicle

Client: Seres Engineering & Services LLC
Job ID: 680-198882-1
Project/Site: Fort Devens, LTM, AOC 50, Spring 2021

Client Sample ID: AOC50-DUP01-SPR21
Lab Sample ID: 680-198882-8

Date Collected: 05/12/21 10:25
Matrix: Water
Date Received: 05/14/21 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	669818	05/24/21 19:40	UI	TAL SAV
	Instrument ID: CMSO2									
Total/NA	Analysis	RSK-175		1	17 mL	17 mL	669301	05/20/21 00:37	JCK	TAL SAV
	Instrument ID: CVGU									
Total/NA	Analysis	9056A		1	5 mL	5 mL	669607	05/21/21 19:33	UI	TAL SAV
	Instrument ID: CICK									
Dissolved	Prep	3005A			50 mL	50 mL	668681	05/14/21 15:20	BJB	TAL SAV
Dissolved	Analysis	6010C		1			669599	05/21/21 06:30	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	668680	05/14/21 15:20	BJB	TAL SAV
Dissolved	Analysis	6020A		1			668959	05/17/21 14:43	BWR	TAL SAV
	Instrument ID: ICPMSD									
Total/NA	Analysis	353.2		1	100 mL	100 mL	536615	05/18/21 18:13	SVC	TAL DEN
	Instrument ID: WC_Alp 2									
Total/NA	Analysis	9034		5	290 mL	290 mL	668799	05/17/21 07:58	NVF	TAL SAV
	Instrument ID: NOEQUIP									
Total/NA	Analysis	9060A		6	20 mL	20 mL	537613	05/27/21 02:56	RAF	TAL DEN
	Instrument ID: WC_SHI3									
Total/NA	Analysis	SM 2320B		1			536502	05/17/21 13:15	QJB	TAL DEN
	Instrument ID: WC_AT4									

Laboratory References:

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SAV = Eurofins TestAmerica, Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Accreditation/Certification Summary

Client: Seres Engineering & Services LLC
Job ID: 680-198882-1
Project/Site: Fort Devens, LTM, AOC 50, Spring 2021

Laboratory: Eurofins TestAmerica, Savannah

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
ANAB	Dept. of Defense ELAP	L2463	09-18-22

Laboratory: Eurofins TestAmerica, Denver

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	06-30-21

Method Summary

Client: Seres Engineering & Services LLC
Job ID: 680-198882-1
Project/Site: Fort Devens, LTM, AOC 50, Spring 2021

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
RSK-175	Dissolved Gases (GC)	RSK	TAL SAV
9056A	Anions, Ion Chromatography	SW846	TAL SAV
6010C	Metals (ICP)	SW846	TAL SAV
6020A	Metals (ICP/MS)	SW846	TAL SAV
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL DEN
9034	Sulfide, Acid Soluble and Insoluble (Titrimetric)	SW846	TAL SAV
9060A	Organic Carbon, Total (TOC)	SW846	TAL DEN
SM 2320B	Alkalinity	SM	TAL DEN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL SAV
5030B	Purge and Trap	SW846	TAL SAV

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SAV = Eurofins TestAmerica, Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

CHAIN OF-CUSTODY RECORD

Seres-Arcadis JV
Nathan Mullens
669 Marina Drive, Suite B7, Charleston, SC 29492
(843) 478.0336, jennifer.singer@arcadis.com

COC # AOC50_SPR21

Boston #215

Project Name: Former Fort Devens, Long Term Monitoring	Laboratory: Eurofins TestAmerica, Savannah	Event: Seres-Arcadis JV, Long Term Monitoring, AOC 50, Spring 2021
Project Number: DEVNS-LTM	POC: Jerry Lanier, 912-250-0281, jerry.lanier@eurofinset.com	
WBS Code:	Ship to: Eurofins TestAmerica, 5102 LaRoche Avenue, Savannah, GA 31404	

Comments:
A2320B (A) = Alkalinity
E353.2 (A) = Nitrite Nitrate as N
RSK175 (A) = Dissolved Gases
SW6010C/FLDFLT (B) = Fe Mn
SW6020A/FLDFLT (B) = As
SW9034 (A) = Sulfide

Equipment:

Code	Matrix
WG	Ground Water

Code	Container/Preservative
5	1x 125mL plastic, Cool < 6degC
7	2x 250mL plastic, ZnAc/NaOH Cool < 6degC
8	3x 40mL glass VOA Vials, HCl, pH < 2, Cool < 6degC
9	1x 250mL, plastic, HNO3, pH < 2, Cool < 6degC
10	1x 250mL, plastic, HNO3, pH < 2, Cool < 6degC
29	3x 40mL glass VOA Vials, HCl, pH < 2, Cool < 6degC
46	1x 250mL, plastic, Cool < 6degC
47	1x 500mL, amber glass, H2SO4, Cool < 6degC

680-198882 Chain of Custody

Event: Seres-Arcadis JV, Long Term Monitoring, AOC 50, Spring 2021

						Analytical Test Method	A2320B (A)	E353.2 (A)	RSK175 (A)	SW6010C/FLDFLT (B)	SW6020A/FLDFLT (B)	SW8260B - VOCs	SW9034 (A)	SW9056A - SO4	SW9060A - TOC						
							46	47	8	9	9	29	7	5	10						
	Sample ID	Matrix	Date	Time	Samp Init.											Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom	Cooler	Comments
1	G6M-02-01X-SPR21	WG	5-12-21	1005	DC		X	X	X	X	X	X	X	X	X	G6M-02-01X	N1	80.00	95.00	1	
2	G6M-03-07X-SPR21	WG	5-12-21	1500	BK		X	X	X	X	X	X	X	X	X	G6M-03-07X	N1	80.00	90.00	1	
3	G6M-04-02X-SPR21	WG	5-12-21	1500	DC		X	X	X	X	X	X	X	X	X	G6M-04-02X	N1	80.00	90.00	1	
4	G6M-04-03X-SPR21	WG					X	X	X	X	X	X	X	X	X	G6M-04-03X	N1	85.00	95.00	1	
5	G6M-04-07X-SPR21	WG	5-12-21	1110	BK		X	X	X	X	X	X	X	X	X	G6M-04-07X	N1	120.00	130.00	1	
6	G6M-04-09X-SPR21	WG					X	X	X	X	X	X	X	X	X	G6M-04-09X	N1	55.00	65.00	1	
7	G6M-04-10A-SPR21	WG	5-12-21	1435	SG		X	X	X	X	X	X	X	X	X	G6M-04-10A	MS1	30.00	40.00	1	
8	G6M-04-10A-SPR21	WG					X	X	X	X	X	X	X	X	X	G6M-04-10A	N1	30.00	40.00	1	
9	G6M-04-10A-SPR21	WG					X	X	X	X	X	X	X	X	X	G6M-04-10A	SD1	30.00	40.00	1	
10	G6M-07-01X-SPR21	WG	5-12-21	1210	DC		X	X	X	X	X	X	X	X	X	G6M-07-01X	N1	78.00	89.00	1	
11	G6M-07-02X-SPR21	WG	5-12-21	1025	SG		X	X	X	X	X	X	X	X	X	G6M-07-02X	N1	22.50	27.50	1	
12	AOC50-DUP01-SPR21	WG	5-12-21	1025	SG		X	X	X	X	X	X	X	X	X	G6M-07-02X	FD1	22.50	27.50	1	
13	G6M-13-01X-SPR21	WG					X	X	X	X	X	X	X	X	X	G6M-13-01X	N1	125.00	135.00	1	
14	G6M-13-02X-SPR21	WG					X	X	X	X	X	X	X	X	X	G6M-13-02X	N1	115.00	125.00	1	
15	G6M-13-05X-SPR21	WG					X	X	X	X	X	X	X	X	X	G6M-13-05X	N1	45.00	55.00	1	
16	G6M-97-05B-SPR21	WG					X	X	X	X	X	X	X	X	X	G6M-97-05B	N1	130.00	135.00	1	
17	XSA-12-96X-SPR21	WG								X	X	X				XSA-12-96X	N1	120.00	130.00	1	

Relinquished by: *(Signature)* [signature]
Date 5/12/21
Time 1700
Received by: *(Signature)* [signature]
Devens eCOCs_Spring 2021

Date 5/13/21 1700 FTA
Time
Shipping Date:
Received by Laboratory. ***(Signature, Date, Time)*** & conditio [signature]

[signature]
05-14-21 0945
4.6/0.4(c)4.7/0.5c

12/28/2021 (Rev. 1)

CHAIN-OF-CUSTODY RECORD

Seres-Arcadis JV
Nathan Mullens
669 Marina Drive, Suite B7, Charleston, SC 29492
(843) 478.0336, jennifer.singer@arcadis.com

COC # AOC50_SPR21

Boston #215

Project Name: Former Fort Devens, Long Term Monitoring	Laboratory: Eurofins TestAmerica, Savannah	Event: Seres-Arcadis JV, Long Term Monitoring, AOC 50, Spring 2021
Project Number: DEVNS-LTM	POC: Jerry Lanier, 912-250-0281, jerry.lanier@eurofinset.com	
WBS Code:	Ship to: Eurofins TestAmerica, 5102 LaRoche Avenue, Savannah, GA 31404	

Comments:
A2320B (A) = Alkalinity
E353.2 (A) = Nitrite Nitrate as N
RSK175 (A) = Dissolved Gases
SW6010C/FLDFLT (B) = Fe Mn
SW6020A/FLDFLT (B) = As
SW9034 (A) = Sulfide

Equipment:

Code	Matrix
WG	Ground Water

Code	Container/Preservative
5	1x 125mL plastic, Cool < 6degC
7	2x 250mL plastic, ZnAc/NaOH Cool < 6degC
8	3x 40mL glass VOA Vials, HCl, pH < 2, Cool < 6degC
9	1x 250mL, plastic, HNO3, pH < 2, Cool < 6degC
10	1x 250mL, plastic, HNO3, pH < 2, Cool < 6degC
29	3x 40mL glass VOA Vials, HCl, pH < 2, Cool < 6degC
46	1x 250mL, plastic, Cool < 6degC
47	1x 500mL, amber glass, H2SO4, Cool < 6degC

Event: Seres-Arcadis JV, Long Term Monitoring, AOC 50, Spring 2021

	Sample ID	Matrix	Date	Time	Samp Init.	Analytical Test Method: A2320B (A)	E353.2 (A)	RSK175 (A)	SW6010C/FLDFLT (B)	SW6020A/FLDFLT (B)	SW8260B - VOCs	SW9034 (A)	SW9056A - SO4	SW9060A - TOC		Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom	Cooler	Comments
						46	47	8	9	9	29	7	5	10							
18																					
19																					
20																					
21																					
22																					

Turnaround Time: standard

Page 43 of 49

12/28/2021 (Rev. 1)

Relinquished by: *(Signature)*
Date
Time
Received by: *(Signature)*
Devens eCOCs_Spring 2021

Date
Time
Shipping Date:
Received by Laboratory: ***(Signature, Date, Time)*** & conditio

05-14-21 0945
4.6/0.4 (c-) 4.7/0.5°C

Eurofins TestAmerica, Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Phone: 912-354-7858 Fax: 912-352-0165

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler	Lab PM: Lanier, Jerry A	Carrier Tracking No(s)	COC No: 680-653772 1
Client Contact: Shipping/Receiving	Phone	E-Mail: Jerry.Lanier@Eurofinset.com	State of Origin: Massachusetts	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): Dept. of Defense ELAP - A2LA, DoD - ANAB		Job #: 680-198882-1
Address: 4955 Yarrow Street,	Due Date Requested: 5/27/2021			
City: Arvada	TAT Requested (days):			
State, Zip: CO, 80002				
Phone: 303-736-0100(Tel) 303-431-7171(Fax)	PO #			
Email:	WO #			
Project Name: Fort Devens, LTM, AOC 50, Spring 2021	Project #: 68023801			
Site:	SSOW#			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2320B/ Alkalinity	353.2_Pres	9060A/ (MOD) Waters - TOC Duplicates	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
G6M-02-01X-SPR21 (680-198882-1)	5/12/21	10:05 Eastern		Water			X	X	X	3	
G6M-03-07X-SPR21 (680-198882-2)	5/12/21	15:00 Eastern		Water			X	X	X	3	
G6M-04-02X-SPR21 (680-198882-3)	5/12/21	15:00 Eastern		Water					X	1	
G6M-04-07X-SPR21 (680-198882-4)	5/12/21	11:10 Eastern		Water			X	X	X	3	
G6M-07-01X-SPR21 (680-198882-6)	5/12/21	12:10 Eastern		Water			X	X	X	2	
G6M-07-02X-SPR21 (680-198882-7)	5/12/21	10:25 Eastern		Water			X	X	X	3	
AOC50-DUP01-SPR21 (680-198882-8)	5/12/21	10:25 Eastern		Water			X	X	X	3	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date	Time:	Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Relinquished by	Date/Time	Company	Received by	Date/Time	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 11/01/2020

CHAIN-OF-CUSTODY RECORD

Seres-Arcadis JV
Nathan Mullens
669 Marina Drive, Suite B7, Charleston, SC 29492
(843) 478.0336, jennifer.singer@arcadis.com

COC # AOC50_SPR21

Boston #215

Project Name: Former Fort Devens, Long Term Monitoring	Laboratory: Eurofins TestAmerica, Savannah	Event: Seres-Arcadis JV, Long Term Monitoring, AOC 50, Spring 2021
Project Number: DEVNS-LTM	POC: Jerry Lanier, 912-250-0281, jerry.lanier@eurofinset.com	
WBS Code:	Ship to: Eurofins TestAmerica, 5102 LaRoche Avenue, Savannah, GA 31404	

Comments:
A2320B (A) = Alkalinity
E353.2 (A) = Nitrite Nitrate as N
RSK175 (A) = Dissolved Gases
SW6010C/FLDFLT (B) = Fe Mn
SW6020A/FLDFLT (B) = As
SW9034 (A) = Sulfide

Equipment:

Code	Matrix
WG	Ground Water

Code	Container/Preservative
5	1x 125mL plastic, Cool < 6degC
7	2x 250mL plastic, ZnAc/NaOH Cool < 6degC
8	3x 40mL glass VOA Vials, HCl, pH < 2, Cool < 6degC
9	1x 250mL, plastic, HNO3, pH < 2; Cool < 6degC
10	1x 250mL, plastic, HNO3, pH < 2; Cool < 6degC
29	3x 40mL glass VOA Vials, HCl, pH < 2, Cool < 6degC
46	1x 250mL, plastic, Cool < 6degC
47	1x 500mL, amber glass, H2SO4, Cool < 6degC

Loc: 630
198882

Event: Seres-Arcadis JV, Long Term Monitoring, AOC 50, Spring 2021

Analytical Test Method

	A2320B (A)	E353 2 (A)	RSK175 (A)	SW6010C/FLDFLT (B)	SW6020A/FLDFLT (B)	SW8260B - VOCs	SW9034 (A)	SW9056A - SO4	SW9060A - TOC
	46	47	8	9	9	29	7	5	10

	Sample ID	Matrix	Date	Time	Samp Init.	Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom	Cooler	Comments
1	G6M-02-01X-SPR21	WG	5-12-21	1005	DC	G6M-02-01X	N1	80.00	95.00	1	
2	G6M-03-07X-SPR21	WG	5-12-21	1500	BK	G6M-03-07X	N1	80.00	90.00	1	
3	G6M-04-02X-SPR21	WG	5-12-21	1500	DC	G6M-04-02X	N1	80.00	90.00	1	
4	G6M-04-03X-SPR21	WG				G6M-04-03X	N1	85.00	95.00	1	
5	G6M-04-07X-SPR21	WG	5-12-21	1116	BK	G6M-04-07X	N1	120.00	130.00	1	
6	G6M-04-09X-SPR21	WG				G6M-04-09X	N1	55.00	65.00	1	
7	G6M-04-10A-SPR21	WG	5-12-21	1435	SG	G6M-04-10A	MS1	30.00	40.00	1	
8	G6M-04-10A-SPR21	WG				G6M-04-10A	N1	30.00	40.00	1	
9	G6M-04-10A-SPR21	WG				G6M-04-10A	SD1	30.00	40.00	1	
10	G6M-07-01X-SPR21	WG	5-12-21	1210	DC	G6M-07-01X	N1	78.00	89.00	1	
11	G6M-07-02X-SPR21	WG	5-12-21	1025	SG	G6M-07-02X	N1	22.50	27.50	1	
12	AOC50-DUP01-SPR21	WG	5-12-21	1025	SG	G6M-07-02X	FD1	22.50	27.50	1	
13	G6M-13-01X-SPR21	WG				G6M-13-01X	N1	125.00	135.00	1	
14	G6M-13-02X-SPR21	WG				G6M-13-02X	N1	115.00	125.00	1	
15	G6M-13-05X-SPR21	WG				G6M-13-05X	N1	45.00	55.00	1	
16	G6M-97-05B-SPR21	WG				G6M-97-05B	N1	130.00	135.00	1	
17	XSA-12-96X-SPR21	WG				XSA-12-96X	N1	120.00	130.00	1	

680-198882 Chain of Custody

Relinquished by: *(Signature)*
Date 5/12/21
Time 1700
Received by: *(Signature)*
Devens eCOCs_Spring 2021

Date 5/13/21
Time 1700 FTA
Shipping Date:
Received by Laboratory: ***(Signature, Date, Time)*** & conditio

05-17-21
0920
14.5/14.6°c

12/28/2021 (Rev. 1)

Eurofins TestAmerica, Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Phone: 912-354-7858 Fax: 912-352-0165

Chain of Custody Record

eurofins Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Lanier, Jerry A	Carrier Tracking No(s):	COC No: 680-653772.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Jerry.Lanier@Eurofinset.com	State of Origin: Massachusetts	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): Dept. of Defense ELAP - A2LA, DoD - ANAB		Job #: 680-198882-1
Address: 4955 Yarrow Street,	Due Date Requested: 5/27/2021			
City: Arvada	TAT Requested (days):			
State, Zip: CO, 80002				
Phone: 303-736-0100(Tel) 303-431-7171(Fax)	PO #:			
Email:	WO #:			
Project Name: Fort Devens, LTM, AOC 50, Spring 2021	Project #: 68023801			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL; B - NaOH; C - Zn Acetate; D - Nitric Acid; E - NaHSO4; F - MeOH; G - Amchlor; H - Ascorbic Acid; I - Ice; J - DI Water; K - EDTA; L - EDA
M - Hexane; N - None; O - AsNaO2; P - Na2O4S; Q - Na2SO3; R - Na2S2O3; S - H2SO4; T - TSP Dodecahydrate; U - Acetone; V - MCAA; W - pH 4-5; Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2320B/ Alkalinity	353.2_Pres	9060A/ (MOD) Waters - TOC Duplicates	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
G6M-02-01X-SPR21 (680-198882-1)	5/12/21	10:05 Eastern		Water			X	X	X	3	
G6M-03-07X-SPR21 (680-198882-2)	5/12/21	15:00 Eastern		Water			X	X	X	3	
G6M-04-02X-SPR21 (680-198882-3)	5/12/21	15:00 Eastern		Water					X	1	
G6M-04-07X-SPR21 (680-198882-4)	5/12/21	11:10 Eastern		Water			X	X	X	3	
G6M-07-01X-SPR21 (680-198882-6)	5/12/21	12:10 Eastern		Water			X	X	X		
G6M-07-02X-SPR21 (680-198882-7)	5/12/21	10:25 Eastern		Water			X	X	X		
AOC50-DUP01-SPR21 (680-198882-8)	5/12/21	10:25 Eastern		Water			X	X	X		

680-198882 Chain of Custody

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months

Deliverable Requested: I, II, III, IV, Other (specify) | Primary Deliverable Rank: 2 | Special Instructions/QC Requirements:

Empty Kit Relinquished by:		Date:	Time:	Method of Shipment	
Relinquished by: [signature]	Date/Time: 5-14-21 / 1524	Company	Received by: [signature]	Date/Time: 5/15/21 0935	Company: EJAPON
Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: 28.0/.8/1.0 4 BC		

Ver: 11/01/2020

Login Sample Receipt Checklist

Client: Seres Engineering & Services LLC

Job Number: 680-198882-1

Login Number: 198882
List Number: 1
Creator: Banda, Christy S

List Source: Eurofins TestAmerica, Savannah

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Seres Engineering & Services LLC

Job Number: 680-198882-1

Login Number: 198882

List Source: Eurofins TestAmerica, Savannah

List Number: 3

Creator: Banda, Christy S

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	False	
Cooler Temperature is acceptable.	False	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	

Login Sample Receipt Checklist

Client: Seres Engineering & Services LLC

Job Number: 680-198882-1

Login Number: 198882
List Number: 2
Creator: Cavalli, Haden G

List Source: Eurofins TestAmerica, Denver
List Creation: 05/15/21 01:32 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

Eurofins TestAmerica, Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

Laboratory Job ID: 680-198996-1
Client Project/Site: Fort Devens, LTM, AOC 50, Spring 2021
Revision: 1

For:
Seres Engineering & Services LLC
669 Marina Drive
Suite B7
Charleston, South Carolina 29492

Attn: Nathan R Mullens

Jerry Lanier

Authorized for release by:
12/28/2021 6:04:10 PM

Jerry Lanier, Project Manager I
(912)250-0281
Jerry.Lanier@Eurofinset.com

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
M	Manual integrated compound.
Q	One or more quality control criteria failed.
U	Undetected at the Limit of Detection.

GC VOA

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.

HPLC/IC

Qualifier	Qualifier Description
M	Manual integrated compound.
U	Undetected at the Limit of Detection.

Metals

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Undetected at the Limit of Detection.

General Chemistry

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
J1	Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
U	Undetected at the Limit of Detection.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Sample Summary

Client: Seres Engineering & Services LLC
Project/Site: Fort Devens, LTM, AOC 50, Spring 2021

Job ID: 680-198996-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-198996-1	G6M-04-09X-SPR21	Water	05/14/21 10:20	05/18/21 10:20
680-198996-2	G6M-13-02X-SPR21	Water	05/14/21 10:45	05/18/21 10:20
680-198996-3	XSA-12-96X-SPR21	Water	05/14/21 15:00	05/18/21 10:20
680-198996-4	AOC50-TB01-SPR21	Water	05/14/21 00:00	05/18/21 10:20

Job ID: 680-198996-1

Laboratory: Eurofins TestAmerica, Savannah

Narrative

CASE NARRATIVE

Client: Seres Engineering & Services LLC

Project: Fort Devens, LTM, AOC 50, Spring 2021

Report Number: 680-198996-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

RECEIPT
The samples were received on 05/18/2021; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 0.9 C.

REVISION
The final report was revised to edit the data formatter to report to the lab LOD per client request.

VOLATILE ORGANIC COMPOUNDS (GC/MS)
Samples G6M-04-09X-SPR21 (680-198996-1), G6M-13-02X-SPR21 (680-198996-2), XSA-12-96X-SPR21 (680-198996-3) and AOC50-TB01-SPR21 (680-198996-4) were analyzed for Volatile Organic Compounds (GC/MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 05/26/2021.

The initial calibration verification (ICV) result for batch 680-664341 was above the upper control limit. Sample results were non-detects, and have been reported as qualified data.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 680-670208.

The continuing calibration verification (CCV) associated with analytical batch 680-670208 recovered outside control limits for the following analyte(s): 1,2,3-Trichlorobenzene and 1,4-Dioxane. These analytes have been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction/re-analysis was not performed. These results have been reported and qualified. (CCVIS 680-670208/2)

The method blank for analytical batch 680-670208 contained Acetone above the method detection limit (MDL). Associated samples were not re-analyzed because results were less than the 1/2 RL.

The continuing calibration verification (CCV) analyzed in batch 680-670250 was outside the method criteria for the following analyte(s): Chloroethane. This analyte has been identified as a poor performing analyte when using this method. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

(CCVIS 680-670250/3)

The laboratory control sample (LCS) for analytical batch 680-670250 recovered outside control limits for the following analytes: Bromomethane. This analyte was biased high in the LCS and was not detected in the associated samples; therefore, the data have been reported.

Job ID: 680-198996-1 (Continued)

Laboratory: Eurofins TestAmerica, Savannah (Continued)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DISSOLVED GASES
Samples G6M-04-09X-SPR21 (680-198996-1) and G6M-13-02X-SPR21 (680-198996-2) were analyzed for dissolved gases in accordance with RSK-175. The samples were analyzed on 05/19/2021 and 05/20/2021.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICP) - DISSOLVED
Samples G6M-04-09X-SPR21 (680-198996-1), G6M-13-02X-SPR21 (680-198996-2) and XSA-12-96X-SPR21 (680-198996-3) were analyzed for Metals (ICP) - Dissolved in accordance with EPA SW-846 Method 6010C. The samples were prepared on 05/19/2021 and analyzed on 05/20/2021.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICPMS) - DISSOLVED
Samples G6M-04-09X-SPR21 (680-198996-1), G6M-13-02X-SPR21 (680-198996-2) and XSA-12-96X-SPR21 (680-198996-3) were analyzed for Metals (ICPMS) - Dissolved in accordance with EPA SW-846 Method 6020A. The samples were prepared and analyzed on 05/19/2021.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ALKALINITY
Samples G6M-04-09X-SPR21 (680-198996-1) and G6M-13-02X-SPR21 (680-198996-2) were analyzed for alkalinity in accordance with SM 2320B. The samples were analyzed on 05/21/2021.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

NITRATE-NITRITE AS NITROGEN
Samples G6M-04-09X-SPR21 (680-198996-1) and G6M-13-02X-SPR21 (680-198996-2) were analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2. The samples were analyzed on 05/20/2021.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

SULFIDE
Samples G6M-04-09X-SPR21 (680-198996-1) and G6M-13-02X-SPR21 (680-198996-2) were analyzed for sulfide in accordance with EPA SW846 Method 9034. The samples were analyzed on 05/19/2021.

Sulfide failed the recovery criteria high for the MS/MSD of sample G6M-13-02X-SPR21 (680-198996-2) in batch 680-669119.

Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ANIONS BY ION CHROMATOGRAPHY (28 DAY)
Samples G6M-04-09X-SPR21 (680-198996-1) and G6M-13-02X-SPR21 (680-198996-2) were analyzed for Anions by Ion Chromatography (28 Day) in accordance with SW 846 9056A. The samples were analyzed on 05/25/2021.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL ORGANIC CARBON
Samples G6M-04-09X-SPR21 (680-198996-1) and G6M-13-02X-SPR21 (680-198996-2) were analyzed for total organic carbon in accordance with EPA SW-846 Method 9060A. The samples were analyzed on 05/28/2021.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Job ID: 680-198996-1 (Continued)

Laboratory: Eurofins TestAmerica, Savannah (Continued)

Client: Seres Engineering & Services LLC
Project/Site: Fort Devens, LTM, AOC 50, Spring 2021

Job ID: 680-198996-1

Client Sample ID: G6M-04-09X-SPR21
Date Collected: 05/14/21 10:20
Date Received: 05/18/21 10:20

Lab Sample ID: 680-198996-1
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		05/26/21 19:44	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		05/26/21 19:44	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		05/26/21 19:44	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		05/26/21 19:44	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		05/26/21 19:44	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		05/26/21 19:44	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		05/26/21 19:44	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		05/26/21 19:44	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		05/26/21 19:44	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		05/26/21 19:44	1
1,2,4-Trimethylbenzene	**2.4**		1.0	1.0	0.47	ug/L		05/26/21 19:44	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		05/26/21 19:44	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		05/26/21 19:44	1
1,2-Dichloroethane	1.0	U	1.0	1.0	0.50	ug/L		05/26/21 19:44	1
1,2-Dichloroethene, Total	**5.4**		2.0	2.0	0.74	ug/L		05/26/21 19:44	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		05/26/21 19:44	1
1,3,5-Trimethylbenzene	1.0	U M	1.0	1.0	0.31	ug/L		05/26/21 19:44	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		05/26/21 19:44	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		05/26/21 19:44	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		05/26/21 19:44	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		05/26/21 19:44	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		05/26/21 19:44	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		05/26/21 19:44	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		05/26/21 19:44	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		05/26/21 19:44	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		05/26/21 19:44	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		05/26/21 19:44	1
Acetone	25	U	25	25	7.0	ug/L		05/26/21 19:44	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		05/26/21 19:44	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		05/26/21 19:44	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		05/26/21 19:44	1
Bromomethane	5.0	U Q	5.0	5.0	2.5	ug/L		05/26/21 19:44	1
Carbon disulfide	1.0	U M	2.0	1.0	0.43	ug/L		05/26/21 19:44	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		05/26/21 19:44	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		05/26/21 19:44	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		05/26/21 19:44	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		05/26/21 19:44	1
Chloroethane	5.0	U Q	5.0	5.0	2.5	ug/L		05/26/21 19:44	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		05/26/21 19:44	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		05/26/21 19:44	1
cis-1,2-Dichloroethene	**3.2**		1.0	1.0	0.41	ug/L		05/26/21 19:44	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		05/26/21 19:44	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		05/26/21 19:44	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		05/26/21 19:44	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		05/26/21 19:44	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		05/26/21 19:44	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		05/26/21 19:44	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		05/26/21 19:44	1
Isopropylbenzene	**0.38**	**J**	1.0	1.0	0.35	ug/L		05/26/21 19:44	1

Client Sample ID: G6M-04-09X-SPR21

Date Collected: 05/14/21 10:20
Date Received: 05/18/21 10:20

Lab Sample ID: 680-198996-1

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		05/26/21 19:44	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		05/26/21 19:44	1
m-Xylene & p-Xylene	**0.54**	**J**	1.0	1.0	0.35	ug/L		05/26/21 19:44	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		05/26/21 19:44	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		05/26/21 19:44	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		05/26/21 19:44	1
o-Xylene	**0.28**	**J M**	1.0	0.50	0.23	ug/L		05/26/21 19:44	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		05/26/21 19:44	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		05/26/21 19:44	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		05/26/21 19:44	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		05/26/21 19:44	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		05/26/21 19:44	1
trans-1,2-Dichloroethene	**2.2**		1.0	1.0	0.37	ug/L		05/26/21 19:44	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		05/26/21 19:44	1
Trichloroethene	**2.5**		1.0	1.0	0.48	ug/L		05/26/21 19:44	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		05/26/21 19:44	1
Vinyl acetate	2.0	U	2.0	2.0	0.81	ug/L		05/26/21 19:44	1
Vinyl chloride	**2.5**	**M**	1.0	1.0	0.50	ug/L		05/26/21 19:44	1
Xylenes, Total	**0.82**	**J**	2.0	2.0	0.23	ug/L		05/26/21 19:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*85 - 114*		*05/26/21 19:44*	*1*
Dibromofluoromethane (Surr)	*96*		*80 - 119*		*05/26/21 19:44*	*1*
Toluene-d8 (Surr)	*96*		*89 - 112*		*05/26/21 19:44*	*1*
1,2-Dichloroethane-d4 (Surr)	*94*		*81 - 118*		*05/26/21 19:44*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Ethane	**5.8**		1.1	0.76	0.30	ug/L		05/20/21 00:50	1
Ethylene	**52**		1.0	0.71	0.31	ug/L		05/20/21 00:50	1
Methane (TCD)	**38000**		390	77	39	ug/L		05/20/21 00:50	1

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Sulfate	**3.7**	**M**	1.0	1.0	0.40	mg/L		05/25/21 02:03	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	**100000**		50	50	17	ug/L		05/20/21 19:36	1
Manganese	**4800**		10	3.0	1.0	ug/L		05/20/21 19:36	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**380**		3.0	3.0	1.5	ug/L		05/19/21 15:53	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate/Nitrite-N	**0.071**	**J**	0.10	0.050	0.019	mg/L		05/20/21 13:38	1
Sulfide	0.81	U	0.81	0.81	0.81	mg/L		05/19/21 08:11	1
Total Organic Carbon - Duplicates	**9.5**		1.0	0.80	0.35	mg/L		05/28/21 06:19	1
Alkalinity	**140**		10	6.4	3.1	mg/L		05/21/21 09:54	1

Client: Seres Engineering & Services LLC
Project/Site: Fort Devens, LTM, AOC 50, Spring 2021

Job ID: 680-198996-1

Client Sample ID: G6M-13-02X-SPR21
Date Collected: 05/14/21 10:45
Date Received: 05/18/21 10:20

Lab Sample ID: 680-198996-2
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		05/26/21 20:04	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		05/26/21 20:04	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		05/26/21 20:04	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		05/26/21 20:04	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		05/26/21 20:04	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		05/26/21 20:04	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		05/26/21 20:04	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		05/26/21 20:04	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		05/26/21 20:04	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		05/26/21 20:04	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		05/26/21 20:04	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		05/26/21 20:04	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		05/26/21 20:04	1
1,2-Dichloroethane	1.0	U	1.0	1.0	0.50	ug/L		05/26/21 20:04	1
1,2-Dichloroethene, Total	**11**		2.0	2.0	0.74	ug/L		05/26/21 20:04	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		05/26/21 20:04	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		05/26/21 20:04	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		05/26/21 20:04	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		05/26/21 20:04	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		05/26/21 20:04	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		05/26/21 20:04	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		05/26/21 20:04	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		05/26/21 20:04	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		05/26/21 20:04	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		05/26/21 20:04	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		05/26/21 20:04	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		05/26/21 20:04	1
Acetone	25	U	25	25	7.0	ug/L		05/26/21 20:04	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		05/26/21 20:04	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		05/26/21 20:04	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		05/26/21 20:04	1
Bromomethane	5.0	U Q	5.0	5.0	2.5	ug/L		05/26/21 20:04	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		05/26/21 20:04	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		05/26/21 20:04	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		05/26/21 20:04	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		05/26/21 20:04	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		05/26/21 20:04	1
Chloroethane	5.0	U Q	5.0	5.0	2.5	ug/L		05/26/21 20:04	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		05/26/21 20:04	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		05/26/21 20:04	1
cis-1,2-Dichloroethene	**10**		1.0	1.0	0.41	ug/L		05/26/21 20:04	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		05/26/21 20:04	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		05/26/21 20:04	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		05/26/21 20:04	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		05/26/21 20:04	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		05/26/21 20:04	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		05/26/21 20:04	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		05/26/21 20:04	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		05/26/21 20:04	1

Client Sample ID: G6M-13-02X-SPR21
Lab Sample ID: 680-198996-2

Date Collected: 05/14/21 10:45
Matrix: Water
Date Received: 05/18/21 10:20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		05/26/21 20:04	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		05/26/21 20:04	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		05/26/21 20:04	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		05/26/21 20:04	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		05/26/21 20:04	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		05/26/21 20:04	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		05/26/21 20:04	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		05/26/21 20:04	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		05/26/21 20:04	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		05/26/21 20:04	1
Tetrachloroethene	**3.3**		2.0	2.0	0.74	ug/L		05/26/21 20:04	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		05/26/21 20:04	1
trans-1,2-Dichloroethene	**0.73**	**J**	1.0	1.0	0.37	ug/L		05/26/21 20:04	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		05/26/21 20:04	1
Trichloroethene	**4.8**		1.0	1.0	0.48	ug/L		05/26/21 20:04	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		05/26/21 20:04	1
Vinyl acetate	2.0	U	2.0	2.0	0.81	ug/L		05/26/21 20:04	1
Vinyl chloride	**3.2**		1.0	1.0	0.50	ug/L		05/26/21 20:04	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		05/26/21 20:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*85 - 114*		*05/26/21 20:04*	*1*
Dibromofluoromethane (Surr)	*95*		*80 - 119*		*05/26/21 20:04*	*1*
Toluene-d8 (Surr)	*95*		*89 - 112*		*05/26/21 20:04*	*1*
1,2-Dichloroethane-d4 (Surr)	*95*		*81 - 118*		*05/26/21 20:04*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Ethane	**1.5**		1.1	0.76	0.30	ug/L		05/19/21 20:45	1
Ethylene	**2.5**		1.0	0.71	0.31	ug/L		05/19/21 20:45	1
Methane (TCD)	**13000**		390	77	39	ug/L		05/19/21 20:45	1

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Sulfate	**7.9**		1.0	1.0	0.40	mg/L		05/25/21 02:15	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	**3500**		50	50	17	ug/L		05/20/21 19:26	1
Manganese	**1200**		10	3.0	1.0	ug/L		05/20/21 19:26	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**15**		3.0	3.0	1.5	ug/L		05/19/21 15:48	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate/Nitrite-N	**0.020**	**J**	0.10	0.050	0.019	mg/L		05/20/21 13:40	1
Sulfide	0.81	U J1	0.81	0.81	0.81	mg/L		05/19/21 08:11	1
Total Organic Carbon - Duplicates	**2.5**		1.0	0.80	0.35	mg/L		05/28/21 06:41	1
Alkalinity	**75**		10	6.4	3.1	mg/L		05/21/21 10:00	1

Client: Seres Engineering & Services LLC
Project/Site: Fort Devens, LTM, AOC 50, Spring 2021

Job ID: 680-198996-1

Client Sample ID: XSA-12-96X-SPR21
Date Collected: 05/14/21 15:00
Date Received: 05/18/21 10:20

Lab Sample ID: 680-198996-3
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		05/26/21 20:24	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		05/26/21 20:24	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		05/26/21 20:24	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		05/26/21 20:24	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		05/26/21 20:24	1
1,1-Dichloroethene	1.0	U M	1.0	1.0	0.36	ug/L		05/26/21 20:24	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		05/26/21 20:24	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		05/26/21 20:24	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		05/26/21 20:24	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		05/26/21 20:24	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		05/26/21 20:24	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		05/26/21 20:24	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		05/26/21 20:24	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		05/26/21 20:24	1
1,2-Dichloroethene, Total	**15**		2.0	2.0	0.74	ug/L		05/26/21 20:24	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		05/26/21 20:24	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		05/26/21 20:24	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		05/26/21 20:24	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		05/26/21 20:24	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		05/26/21 20:24	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		05/26/21 20:24	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		05/26/21 20:24	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		05/26/21 20:24	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		05/26/21 20:24	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		05/26/21 20:24	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		05/26/21 20:24	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		05/26/21 20:24	1
Acetone	25	U	25	25	7.0	ug/L		05/26/21 20:24	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		05/26/21 20:24	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		05/26/21 20:24	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		05/26/21 20:24	1
Bromomethane	5.0	U Q	5.0	5.0	2.5	ug/L		05/26/21 20:24	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		05/26/21 20:24	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		05/26/21 20:24	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		05/26/21 20:24	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		05/26/21 20:24	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		05/26/21 20:24	1
Chloroethane	**2.5**	**J Q**	5.0	5.0	2.5	ug/L		05/26/21 20:24	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		05/26/21 20:24	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		05/26/21 20:24	1
cis-1,2-Dichloroethene	**10**		1.0	1.0	0.41	ug/L		05/26/21 20:24	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		05/26/21 20:24	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		05/26/21 20:24	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		05/26/21 20:24	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		05/26/21 20:24	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		05/26/21 20:24	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		05/26/21 20:24	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		05/26/21 20:24	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		05/26/21 20:24	1

Client: Seres Engineering & Services LLC
Project/Site: Fort Devens, LTM, AOC 50, Spring 2021

Job ID: 680-198996-1

Client Sample ID: XSA-12-96X-SPR21

Date Collected: 05/14/21 15:00
Date Received: 05/18/21 10:20

Lab Sample ID: 680-198996-3

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		05/26/21 20:24	1
Methylene Chloride	5.0	U M	5.0	5.0	2.5	ug/L		05/26/21 20:24	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		05/26/21 20:24	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		05/26/21 20:24	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		05/26/21 20:24	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		05/26/21 20:24	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		05/26/21 20:24	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		05/26/21 20:24	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		05/26/21 20:24	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		05/26/21 20:24	1
Tetrachloroethene	**2.9**		2.0	2.0	0.74	ug/L		05/26/21 20:24	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		05/26/21 20:24	1
trans-1,2-Dichloroethene	**4.6**		1.0	1.0	0.37	ug/L		05/26/21 20:24	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		05/26/21 20:24	1
Trichloroethene	**10**		1.0	1.0	0.48	ug/L		05/26/21 20:24	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		05/26/21 20:24	1
Vinyl acetate	2.0	U	2.0	2.0	0.81	ug/L		05/26/21 20:24	1
Vinyl chloride	**9.5**		1.0	1.0	0.50	ug/L		05/26/21 20:24	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		05/26/21 20:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*85 - 114*		*05/26/21 20:24*	*1*
Dibromofluoromethane (Surr)	*97*		*80 - 119*		*05/26/21 20:24*	*1*
Toluene-d8 (Surr)	*95*		*89 - 112*		*05/26/21 20:24*	*1*
1,2-Dichloroethane-d4 (Surr)	*95*		*81 - 118*		*05/26/21 20:24*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	**2300**		50	50	17	ug/L		05/20/21 19:31	1
Manganese	**5400**		10	3.0	1.0	ug/L		05/20/21 19:31	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**1.8**	**J**	3.0	3.0	1.5	ug/L		05/19/21 15:51	1

Client: Seres Engineering & Services LLC
Project/Site: Fort Devens, LTM, AOC 50, Spring 2021

Job ID: 680-198996-1

Client Sample ID: AOC50-TB01-SPR21

Date Collected: 05/14/21 00:00
Date Received: 05/18/21 10:20

Lab Sample ID: 680-198996-4

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		05/26/21 14:10	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		05/26/21 14:10	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		05/26/21 14:10	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		05/26/21 14:10	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		05/26/21 14:10	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		05/26/21 14:10	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		05/26/21 14:10	1
1,2,3-Trichlorobenzene	5.0	U Q	5.0	5.0	2.5	ug/L		05/26/21 14:10	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		05/26/21 14:10	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		05/26/21 14:10	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		05/26/21 14:10	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		05/26/21 14:10	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		05/26/21 14:10	1
1,2-Dichloroethane	1.0	U	1.0	1.0	0.50	ug/L		05/26/21 14:10	1
1,2-Dichloroethene, Total	2.0	U	2.0	2.0	0.74	ug/L		05/26/21 14:10	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		05/26/21 14:10	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		05/26/21 14:10	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		05/26/21 14:10	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		05/26/21 14:10	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		05/26/21 14:10	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		05/26/21 14:10	1
2-Butanone (MEK)	10	U M	10	10	3.4	ug/L		05/26/21 14:10	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		05/26/21 14:10	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		05/26/21 14:10	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		05/26/21 14:10	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		05/26/21 14:10	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		05/26/21 14:10	1
Acetone	25	U	25	25	7.0	ug/L		05/26/21 14:10	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		05/26/21 14:10	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		05/26/21 14:10	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		05/26/21 14:10	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		05/26/21 14:10	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		05/26/21 14:10	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		05/26/21 14:10	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		05/26/21 14:10	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		05/26/21 14:10	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		05/26/21 14:10	1
Chloroethane	5.0	U	5.0	5.0	2.5	ug/L		05/26/21 14:10	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		05/26/21 14:10	1
Chloromethane	1.0	U Q	1.0	1.0	0.40	ug/L		05/26/21 14:10	1
cis-1,2-Dichloroethene	1.0	U	1.0	1.0	0.41	ug/L		05/26/21 14:10	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		05/26/21 14:10	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		05/26/21 14:10	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		05/26/21 14:10	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		05/26/21 14:10	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		05/26/21 14:10	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		05/26/21 14:10	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		05/26/21 14:10	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		05/26/21 14:10	1

Client: Seres Engineering & Services LLC
Project/Site: Fort Devens, LTM, AOC 50, Spring 2021

Job ID: 680-198996-1

Client Sample ID: AOC50-TB01-SPR21
Date Collected: 05/14/21 00:00
Date Received: 05/18/21 10:20

Lab Sample ID: 680-198996-4
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		05/26/21 14:10	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		05/26/21 14:10	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		05/26/21 14:10	1
Naphthalene	5.0	U Q	5.0	5.0	2.5	ug/L		05/26/21 14:10	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		05/26/21 14:10	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		05/26/21 14:10	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		05/26/21 14:10	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		05/26/21 14:10	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		05/26/21 14:10	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		05/26/21 14:10	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		05/26/21 14:10	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		05/26/21 14:10	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		05/26/21 14:10	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		05/26/21 14:10	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		05/26/21 14:10	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		05/26/21 14:10	1
Vinyl acetate	2.0	U	2.0	2.0	0.81	ug/L		05/26/21 14:10	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		05/26/21 14:10	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		05/26/21 14:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*85 - 114*		*05/26/21 14:10*	*1*
Dibromofluoromethane (Surr)	*104*		*80 - 119*		*05/26/21 14:10*	*1*
Toluene-d8 (Surr)	*99*		*89 - 112*		*05/26/21 14:10*	*1*
1,2-Dichloroethane-d4 (Surr)	*94*		*81 - 118*		*05/26/21 14:10*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-670208/8
Matrix: Water
Analysis Batch: 670208

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		05/26/21 13:15	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		05/26/21 13:15	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		05/26/21 13:15	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		05/26/21 13:15	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		05/26/21 13:15	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		05/26/21 13:15	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		05/26/21 13:15	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		05/26/21 13:15	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		05/26/21 13:15	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		05/26/21 13:15	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		05/26/21 13:15	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		05/26/21 13:15	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		05/26/21 13:15	1
1,2-Dichloroethane	1.0	U	1.0	1.0	0.50	ug/L		05/26/21 13:15	1
1,2-Dichloroethene, Total	2.0	U	2.0	2.0	0.74	ug/L		05/26/21 13:15	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		05/26/21 13:15	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		05/26/21 13:15	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		05/26/21 13:15	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		05/26/21 13:15	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		05/26/21 13:15	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		05/26/21 13:15	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		05/26/21 13:15	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		05/26/21 13:15	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		05/26/21 13:15	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		05/26/21 13:15	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		05/26/21 13:15	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		05/26/21 13:15	1
Acetone	11.9	J	25	25	7.0	ug/L		05/26/21 13:15	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		05/26/21 13:15	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		05/26/21 13:15	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		05/26/21 13:15	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		05/26/21 13:15	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		05/26/21 13:15	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		05/26/21 13:15	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		05/26/21 13:15	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		05/26/21 13:15	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		05/26/21 13:15	1
Chloroethane	5.0	U	5.0	5.0	2.5	ug/L		05/26/21 13:15	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		05/26/21 13:15	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		05/26/21 13:15	1
cis-1,2-Dichloroethene	1.0	U	1.0	1.0	0.41	ug/L		05/26/21 13:15	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		05/26/21 13:15	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		05/26/21 13:15	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		05/26/21 13:15	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		05/26/21 13:15	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		05/26/21 13:15	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		05/26/21 13:15	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		05/26/21 13:15	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-670208/8
Matrix: Water
Analysis Batch: 670208

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		05/26/21 13:15	1
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		05/26/21 13:15	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		05/26/21 13:15	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		05/26/21 13:15	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		05/26/21 13:15	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		05/26/21 13:15	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		05/26/21 13:15	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		05/26/21 13:15	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		05/26/21 13:15	1
Styrene	1.0	U M	1.0	1.0	0.27	ug/L		05/26/21 13:15	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		05/26/21 13:15	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		05/26/21 13:15	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		05/26/21 13:15	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		05/26/21 13:15	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		05/26/21 13:15	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		05/26/21 13:15	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		05/26/21 13:15	1
Vinyl acetate	2.0	U	2.0	2.0	0.81	ug/L		05/26/21 13:15	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		05/26/21 13:15	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		05/26/21 13:15	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*85 - 114*		*05/26/21 13:15*	*1*
Dibromofluoromethane (Surr)	*103*		*80 - 119*		*05/26/21 13:15*	*1*
Toluene-d8 (Surr)	*99*		*89 - 112*		*05/26/21 13:15*	*1*
1,2-Dichloroethane-d4 (Surr)	*92*		*81 - 118*		*05/26/21 13:15*	*1*

Lab Sample ID: LCS 680-670208/3
Matrix: Water
Analysis Batch: 670208

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	50.0	48.0		ug/L		96	78 - 124
1,1,1-Trichloroethane	50.0	45.1		ug/L		90	74 - 131
1,1,2,2-Tetrachloroethane	50.0	49.7		ug/L		99	71 - 121
1,1,2-Trichloroethane	50.0	58.3		ug/L		117	80 - 119
1,1-Dichloroethane	50.0	52.6		ug/L		105	77 - 125
1,1-Dichloroethene	50.0	51.0		ug/L		102	71 - 131
1,1-Dichloropropene	50.0	52.2		ug/L		104	79 - 125
1,2,3-Trichlorobenzene	50.0	36.3		ug/L		73	69 - 129
1,2,3-Trichloropropane	50.0	47.5		ug/L		95	73 - 122
1,2,4-Trichlorobenzene	50.0	42.0		ug/L		84	69 - 130
1,2,4-Trimethylbenzene	50.0	49.3		ug/L		99	76 - 124
1,2-Dibromo-3-Chloropropane	50.0	46.2		ug/L		92	62 - 128
1,2-Dichlorobenzene	50.0	50.5		ug/L		101	80 - 119
1,2-Dichloroethane	50.0	47.2		ug/L		94	73 - 128
1,2-Dichloroethene, Total	100	103		ug/L		103	79 - 121
1,2-Dichloropropane	50.0	55.9		ug/L		112	78 - 122

Client: Seres Engineering & Services LLC
Project/Site: Fort Devens, LTM, AOC 50, Spring 2021

Job ID: 680-198996-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-670208/3
Matrix: Water
Analysis Batch: 670208

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3,5-Trimethylbenzene	50.0	49.1		ug/L		98	75 - 124
1,3-Dichlorobenzene	50.0	54.4		ug/L		109	80 - 119
1,3-Dichloropropane	50.0	58.8		ug/L		118	80 - 119
1,4-Dichlorobenzene	50.0	54.1		ug/L		108	79 - 118
2,2-Dichloropropane	50.0	50.7		ug/L		101	60 - 139
2-Butanone (MEK)	250	274		ug/L		110	56 - 143
2-Chlorotoluene	50.0	50.7		ug/L		101	79 - 122
2-Hexanone	250	282		ug/L		113	57 - 139
4-Chlorotoluene	50.0	51.7		ug/L		103	78 - 122
4-Isopropyltoluene	50.0	53.6		ug/L		107	77 - 127
4-Methyl-2-pentanone (MIBK)	250	252		ug/L		101	67 - 130
Acetone	250	305		ug/L		122	39 - 160
Benzene	50.0	52.8		ug/L		106	79 - 120
Bromobenzene	50.0	55.1		ug/L		110	80 - 120
Bromoform	50.0	54.7		ug/L		109	66 - 130
Bromomethane	50.0	51.2		ug/L		102	53 - 141
Carbon disulfide	50.0	53.0		ug/L		106	64 - 133
Carbon tetrachloride	50.0	47.7		ug/L		95	72 - 136
Chlorobenzene	50.0	55.1		ug/L		110	82 - 118
Chlorobromomethane	50.0	51.6		ug/L		103	78 - 123
Chlorodibromomethane	50.0	59.6		ug/L		119	74 - 126
Chloroethane	50.0	55.9		ug/L		112	60 - 138
Chloroform	50.0	49.3		ug/L		99	79 - 124
Chloromethane	50.0	55.5		ug/L		111	50 - 139
cis-1,2-Dichloroethene	50.0	51.8		ug/L		104	78 - 123
cis-1,3-Dichloropropene	50.0	58.1		ug/L		116	75 - 124
Dibromomethane	50.0	50.8		ug/L		102	79 - 123
Dichlorobromomethane	50.0	51.2		ug/L		102	79 - 125
Dichlorodifluoromethane	50.0	48.0		ug/L		96	32 - 152
Ethylbenzene	50.0	52.4		ug/L		105	79 - 121
Ethylene Dibromide	50.0	59.7		ug/L		119	75 - 127
Hexachlorobutadiene	50.0	47.9		ug/L		96	66 - 134
Isopropylbenzene	50.0	51.6		ug/L		103	72 - 131
Methyl tert-butyl ether	50.0	50.6		ug/L		101	71 - 124
Methylene Chloride	50.0	51.6		ug/L		103	74 - 124
m-Xylene & p-Xylene	50.0	53.6		ug/L		107	80 - 121
Naphthalene	50.0	36.8		ug/L		74	61 - 128
n-Butylbenzene	50.0	51.8		ug/L		104	75 - 128
N-Propylbenzene	50.0	50.9		ug/L		102	76 - 126
o-Xylene	50.0	52.7		ug/L		105	78 - 122
sec-Butylbenzene	50.0	50.4		ug/L		101	77 - 126
Styrene	50.0	56.1		ug/L		112	78 - 123
tert-Butylbenzene	50.0	53.1		ug/L		106	78 - 124
Tetrachloroethene	50.0	53.6		ug/L		107	74 - 129
Toluene	50.0	56.8		ug/L		114	80 - 121
trans-1,2-Dichloroethene	50.0	51.6		ug/L		103	75 - 124
trans-1,3-Dichloropropene	50.0	58.6		ug/L		117	73 - 127
Trichloroethene	50.0	54.6		ug/L		109	79 - 123
Trichlorofluoromethane	50.0	44.7	M	ug/L		89	65 - 141

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-670208/3
Matrix: Water
Analysis Batch: 670208

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Vinyl acetate			100	110		ug/L		110	54 - 146		
Vinyl chloride			50.0	50.1		ug/L		100	58 - 137		
Xylenes, Total			100	106		ug/L		106	79 - 121		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*110*		*85 - 114*
Dibromofluoromethane (Surr)	*98*		*80 - 119*
Toluene-d8 (Surr)	*104*		*89 - 112*
1,2-Dichloroethane-d4 (Surr)	*90*		*81 - 118*

Lab Sample ID: LCSD 680-670208/4
Matrix: Water
Analysis Batch: 670208

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane			50.0	48.4		ug/L		97	78 - 124	1	20
1,1,1-Trichloroethane			50.0	43.7		ug/L		87	74 - 131	3	20
1,1,2,2-Tetrachloroethane			50.0	49.3		ug/L		99	71 - 121	1	20
1,1,2-Trichloroethane			50.0	55.9		ug/L		112	80 - 119	4	20
1,1-Dichloroethane			50.0	51.9		ug/L		104	77 - 125	1	20
1,1-Dichloroethene			50.0	48.7		ug/L		97	71 - 131	4	20
1,1-Dichloropropene			50.0	52.0		ug/L		104	79 - 125	0	20
1,2,3-Trichlorobenzene			50.0	36.2		ug/L		72	69 - 129	0	20
1,2,3-Trichloropropane			50.0	47.9		ug/L		96	73 - 122	1	20
1,2,4-Trichlorobenzene			50.0	40.5		ug/L		81	69 - 130	4	20
1,2,4-Trimethylbenzene			50.0	49.1		ug/L		98	76 - 124	1	20
1,2-Dibromo-3-Chloropropane			50.0	45.8		ug/L		92	62 - 128	1	20
1,2-Dichlorobenzene			50.0	50.6		ug/L		101	80 - 119	0	20
1,2-Dichloroethane			50.0	48.3		ug/L		97	73 - 128	2	20
1,2-Dichloroethene, Total			100	102		ug/L		102	79 - 121	2	20
1,2-Dichloropropane			50.0	55.8		ug/L		112	78 - 122	0	20
1,3,5-Trimethylbenzene			50.0	49.5		ug/L		99	75 - 124	1	20
1,3-Dichlorobenzene			50.0	53.6		ug/L		107	80 - 119	1	20
1,3-Dichloropropane			50.0	59.6		ug/L		119	80 - 119	1	20
1,4-Dichlorobenzene			50.0	53.4		ug/L		107	79 - 118	1	20
2,2-Dichloropropane			50.0	48.2		ug/L		96	60 - 139	5	20
2-Butanone (MEK)			250	274		ug/L		109	56 - 143	0	20
2-Chlorotoluene			50.0	50.6		ug/L		101	79 - 122	0	20
2-Hexanone			250	280		ug/L		112	57 - 139	1	20
4-Chlorotoluene			50.0	51.9		ug/L		104	78 - 122	0	20
4-Isopropyltoluene			50.0	51.8		ug/L		104	77 - 127	3	20
4-Methyl-2-pentanone (MIBK)			250	248		ug/L		99	67 - 130	1	20
Acetone			250	296		ug/L		118	39 - 160	3	20
Benzene			50.0	52.7		ug/L		105	79 - 120	0	20
Bromobenzene			50.0	55.9		ug/L		112	80 - 120	1	20
Bromoform			50.0	54.5		ug/L		109	66 - 130	0	20
Bromomethane			50.0	51.2		ug/L		102	53 - 141	0	20
Carbon disulfide			50.0	50.1		ug/L		100	64 - 133	6	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 680-670208/4
Matrix: Water
Analysis Batch: 670208

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Carbon tetrachloride	50.0	45.4		ug/L		91	72 - 136	5	20
Chlorobenzene	50.0	55.1		ug/L		110	82 - 118	0	20
Chlorobromomethane	50.0	51.5		ug/L		103	78 - 123	0	20
Chlorodibromomethane	50.0	58.8		ug/L		118	74 - 126	1	20
Chloroethane	50.0	55.4		ug/L		111	60 - 138	1	20
Chloroform	50.0	48.7		ug/L		97	79 - 124	1	20
Chloromethane	50.0	51.1		ug/L		102	50 - 139	8	20
cis-1,2-Dichloroethene	50.0	51.1		ug/L		102	78 - 123	1	20
cis-1,3-Dichloropropene	50.0	58.4		ug/L		117	75 - 124	0	20
Dibromomethane	50.0	52.1		ug/L		104	79 - 123	3	20
Dichlorobromomethane	50.0	50.5		ug/L		101	79 - 125	1	20
Dichlorodifluoromethane	50.0	43.8		ug/L		88	32 - 152	9	20
Ethylbenzene	50.0	52.0		ug/L		104	79 - 121	1	20
Ethylene Dibromide	50.0	58.8		ug/L		118	75 - 127	2	20
Hexachlorobutadiene	50.0	47.6		ug/L		95	66 - 134	1	20
Isopropylbenzene	50.0	51.3		ug/L		103	72 - 131	1	20
Methyl tert-butyl ether	50.0	49.4		ug/L		99	71 - 124	2	20
Methylene Chloride	50.0	50.2		ug/L		100	74 - 124	3	20
m-Xylene & p-Xylene	50.0	53.2		ug/L		106	80 - 121	1	20
Naphthalene	50.0	36.1		ug/L		72	61 - 128	2	20
n-Butylbenzene	50.0	49.9		ug/L		100	75 - 128	4	20
N-Propylbenzene	50.0	51.0		ug/L		102	76 - 126	0	20
o-Xylene	50.0	52.8		ug/L		106	78 - 122	0	20
sec-Butylbenzene	50.0	49.2		ug/L		98	77 - 126	2	20
Styrene	50.0	56.3		ug/L		113	78 - 123	0	20
tert-Butylbenzene	50.0	52.6		ug/L		105	78 - 124	1	20
Tetrachloroethene	50.0	53.3		ug/L		107	74 - 129	1	20
Toluene	50.0	57.5		ug/L		115	80 - 121	1	20
trans-1,2-Dichloroethene	50.0	50.6		ug/L		101	75 - 124	2	20
trans-1,3-Dichloropropene	50.0	57.8		ug/L		116	73 - 127	1	20
Trichloroethene	50.0	54.1		ug/L		108	79 - 123	1	20
Trichlorofluoromethane	50.0	43.5	M	ug/L		87	65 - 141	3	20
Vinyl acetate	100	115		ug/L		115	54 - 146	4	20
Vinyl chloride	50.0	51.5		ug/L		103	58 - 137	3	20
Xylenes, Total	100	106		ug/L		106	79 - 121	0	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*107*		*85 - 114*
Dibromofluoromethane (Surr)	*98*		*80 - 119*
Toluene-d8 (Surr)	*105*		*89 - 112*
1,2-Dichloroethane-d4 (Surr)	*90*		*81 - 118*

Lab Sample ID: MB 680-670250/9
Matrix: Water
Analysis Batch: 670250

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		05/26/21 15:14	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-670250/9
Matrix: Water
Analysis Batch: 670250

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		05/26/21 15:14	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		05/26/21 15:14	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		05/26/21 15:14	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		05/26/21 15:14	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		05/26/21 15:14	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		05/26/21 15:14	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		05/26/21 15:14	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		05/26/21 15:14	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		05/26/21 15:14	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		05/26/21 15:14	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		05/26/21 15:14	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		05/26/21 15:14	1
1,2-Dichloroethane	1.0	U	1.0	1.0	0.50	ug/L		05/26/21 15:14	1
1,2-Dichloroethene, Total	2.0	U	2.0	2.0	0.74	ug/L		05/26/21 15:14	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		05/26/21 15:14	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		05/26/21 15:14	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		05/26/21 15:14	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		05/26/21 15:14	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		05/26/21 15:14	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		05/26/21 15:14	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		05/26/21 15:14	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		05/26/21 15:14	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		05/26/21 15:14	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		05/26/21 15:14	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		05/26/21 15:14	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		05/26/21 15:14	1
Acetone	25	U	25	25	7.0	ug/L		05/26/21 15:14	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		05/26/21 15:14	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		05/26/21 15:14	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		05/26/21 15:14	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		05/26/21 15:14	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		05/26/21 15:14	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		05/26/21 15:14	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		05/26/21 15:14	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		05/26/21 15:14	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		05/26/21 15:14	1
Chloroethane	5.0	U	5.0	5.0	2.5	ug/L		05/26/21 15:14	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		05/26/21 15:14	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		05/26/21 15:14	1
cis-1,2-Dichloroethene	1.0	U	1.0	1.0	0.41	ug/L		05/26/21 15:14	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		05/26/21 15:14	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		05/26/21 15:14	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		05/26/21 15:14	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		05/26/21 15:14	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		05/26/21 15:14	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		05/26/21 15:14	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		05/26/21 15:14	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		05/26/21 15:14	1
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		05/26/21 15:14	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-670250/9
Matrix: Water
Analysis Batch: 670250

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		05/26/21 15:14	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		05/26/21 15:14	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		05/26/21 15:14	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		05/26/21 15:14	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		05/26/21 15:14	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		05/26/21 15:14	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		05/26/21 15:14	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		05/26/21 15:14	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		05/26/21 15:14	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		05/26/21 15:14	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		05/26/21 15:14	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		05/26/21 15:14	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		05/26/21 15:14	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		05/26/21 15:14	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		05/26/21 15:14	1
Vinyl acetate	2.0	U	2.0	2.0	0.81	ug/L		05/26/21 15:14	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		05/26/21 15:14	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		05/26/21 15:14	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*85 - 114*		*05/26/21 15:14*	*1*
Dibromofluoromethane (Surr)	*97*		*80 - 119*		*05/26/21 15:14*	*1*
Toluene-d8 (Surr)	*96*		*89 - 112*		*05/26/21 15:14*	*1*
1,2-Dichloroethane-d4 (Surr)	*94*		*81 - 118*		*05/26/21 15:14*	*1*

Lab Sample ID: LCS 680-670250/4
Matrix: Water
Analysis Batch: 670250

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	50.0	48.9		ug/L		98	78 - 124
1,1,1-Trichloroethane	50.0	51.7		ug/L		103	74 - 131
1,1,2,2-Tetrachloroethane	50.0	47.7		ug/L		95	71 - 121
1,1,2-Trichloroethane	50.0	47.7		ug/L		95	80 - 119
1,1-Dichloroethane	50.0	52.1		ug/L		104	77 - 125
1,1-Dichloroethene	50.0	49.6		ug/L		99	71 - 131
1,1-Dichloropropene	50.0	51.3		ug/L		103	79 - 125
1,2,3-Trichlorobenzene	50.0	50.1		ug/L		100	69 - 129
1,2,3-Trichloropropane	50.0	48.2		ug/L		96	73 - 122
1,2,4-Trichlorobenzene	50.0	48.6		ug/L		97	69 - 130
1,2,4-Trimethylbenzene	50.0	48.3		ug/L		97	76 - 124
1,2-Dibromo-3-Chloropropane	50.0	50.1		ug/L		100	62 - 128
1,2-Dichlorobenzene	50.0	47.5		ug/L		95	80 - 119
1,2-Dichloroethane	50.0	50.9		ug/L		102	73 - 128
1,2-Dichloroethene, Total	100	105		ug/L		105	79 - 121
1,2-Dichloropropane	50.0	50.1		ug/L		100	78 - 122
1,3,5-Trimethylbenzene	50.0	48.1		ug/L		96	75 - 124
1,3-Dichlorobenzene	50.0	48.0		ug/L		96	80 - 119

Client: Seres Engineering & Services LLC
Project/Site: Fort Devens, LTM, AOC 50, Spring 2021

Job ID: 680-198996-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-670250/4
Matrix: Water
Analysis Batch: 670250

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3-Dichloropropane	50.0	50.2		ug/L		100	80 - 119
1,4-Dichlorobenzene	50.0	47.0		ug/L		94	79 - 118
2,2-Dichloropropane	50.0	52.6		ug/L		105	60 - 139
2-Butanone (MEK)	250	237		ug/L		95	56 - 143
2-Chlorotoluene	50.0	48.0		ug/L		96	79 - 122
2-Hexanone	250	251		ug/L		100	57 - 139
4-Chlorotoluene	50.0	48.6		ug/L		97	78 - 122
4-Isopropyltoluene	50.0	49.5		ug/L		99	77 - 127
4-Methyl-2-pentanone (MIBK)	250	242		ug/L		97	67 - 130
Acetone	250	263		ug/L		105	39 - 160
Benzene	50.0	49.1		ug/L		98	79 - 120
Bromobenzene	50.0	46.2		ug/L		92	80 - 120
Bromoform	50.0	52.5		ug/L		105	66 - 130
Bromomethane	50.0	75.9	Q	ug/L		152	53 - 141
Carbon disulfide	50.0	60.3	M	ug/L		121	64 - 133
Carbon tetrachloride	50.0	52.4		ug/L		105	72 - 136
Chlorobenzene	50.0	47.9		ug/L		96	82 - 118
Chlorobromomethane	50.0	53.1		ug/L		106	78 - 123
Chlorodibromomethane	50.0	51.3		ug/L		103	74 - 126
Chloroethane	50.0	63.5		ug/L		127	60 - 138
Chloroform	50.0	50.0		ug/L		100	79 - 124
Chloromethane	50.0	45.2		ug/L		90	50 - 139
cis-1,2-Dichloroethene	50.0	52.0		ug/L		104	78 - 123
cis-1,3-Dichloropropene	50.0	51.7		ug/L		103	75 - 124
Dibromomethane	50.0	50.7		ug/L		101	79 - 123
Dichlorobromomethane	50.0	52.1		ug/L		104	79 - 125
Dichlorodifluoromethane	50.0	49.4		ug/L		99	32 - 152
Ethylbenzene	50.0	48.2		ug/L		96	79 - 121
Ethylene Dibromide	50.0	48.9		ug/L		98	75 - 127
Hexachlorobutadiene	50.0	48.3		ug/L		97	66 - 134
Isopropylbenzene	50.0	48.6		ug/L		97	72 - 131
Methyl tert-butyl ether	50.0	49.4		ug/L		99	71 - 124
Methylene Chloride	50.0	48.9		ug/L		98	74 - 124
m-Xylene & p-Xylene	50.0	47.9		ug/L		96	80 - 121
Naphthalene	50.0	49.5		ug/L		99	61 - 128
n-Butylbenzene	50.0	52.4		ug/L		105	75 - 128
N-Propylbenzene	50.0	48.1		ug/L		96	76 - 126
o-Xylene	50.0	48.2		ug/L		96	78 - 122
sec-Butylbenzene	50.0	47.4		ug/L		95	77 - 126
Styrene	50.0	47.4		ug/L		95	78 - 123
tert-Butylbenzene	50.0	47.6		ug/L		95	78 - 124
Tetrachloroethene	50.0	48.6		ug/L		97	74 - 129
Toluene	50.0	50.8		ug/L		102	80 - 121
trans-1,2-Dichloroethene	50.0	53.2		ug/L		106	75 - 124
trans-1,3-Dichloropropene	50.0	51.8		ug/L		104	73 - 127
Trichloroethene	50.0	50.7		ug/L		101	79 - 123
Trichlorofluoromethane	50.0	50.0		ug/L		100	65 - 141
Vinyl acetate	100	104		ug/L		104	54 - 146
Vinyl chloride	50.0	51.0		ug/L		102	58 - 137

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-670250/4
Matrix: Water
Analysis Batch: 670250

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Xylenes, Total			100	96.1		ug/L		96	79 - 121		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*102*		*85 - 114*
Dibromofluoromethane (Surr)	*102*		*80 - 119*
Toluene-d8 (Surr)	*102*		*89 - 112*
1,2-Dichloroethane-d4 (Surr)	*102*		*81 - 118*

Lab Sample ID: LCSD 680-670250/5
Matrix: Water
Analysis Batch: 670250

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane			50.0	49.3		ug/L		99	78 - 124	1	20
1,1,1-Trichloroethane			50.0	52.4		ug/L		105	74 - 131	1	20
1,1,2,2-Tetrachloroethane			50.0	46.3		ug/L		93	71 - 121	3	20
1,1,2-Trichloroethane			50.0	47.8		ug/L		96	80 - 119	0	20
1,1-Dichloroethane			50.0	51.7		ug/L		103	77 - 125	1	20
1,1-Dichloroethene			50.0	50.1		ug/L		100	71 - 131	1	20
1,1-Dichloropropene			50.0	51.6		ug/L		103	79 - 125	1	20
1,2,3-Trichlorobenzene			50.0	52.0		ug/L		104	69 - 129	4	20
1,2,3-Trichloropropane			50.0	46.4		ug/L		93	73 - 122	4	20
1,2,4-Trichlorobenzene			50.0	50.2		ug/L		100	69 - 130	3	20
1,2,4-Trimethylbenzene			50.0	47.1		ug/L		94	76 - 124	2	20
1,2-Dibromo-3-Chloropropane			50.0	52.3		ug/L		105	62 - 128	4	20
1,2-Dichlorobenzene			50.0	48.1		ug/L		96	80 - 119	1	20
1,2-Dichloroethane			50.0	50.1		ug/L		100	73 - 128	2	20
1,2-Dichloroethene, Total			100	103		ug/L		103	79 - 121	2	20
1,2-Dichloropropane			50.0	49.5		ug/L		99	78 - 122	1	20
1,3,5-Trimethylbenzene			50.0	48.5		ug/L		97	75 - 124	1	20
1,3-Dichlorobenzene			50.0	49.0		ug/L		98	80 - 119	2	20
1,3-Dichloropropane			50.0	49.8		ug/L		100	80 - 119	1	20
1,4-Dichlorobenzene			50.0	46.5		ug/L		93	79 - 118	1	20
2,2-Dichloropropane			50.0	51.1		ug/L		102	60 - 139	3	20
2-Butanone (MEK)			250	238		ug/L		95	56 - 143	0	20
2-Chlorotoluene			50.0	47.8		ug/L		96	79 - 122	0	20
2-Hexanone			250	242		ug/L		97	57 - 139	4	20
4-Chlorotoluene			50.0	48.2		ug/L		96	78 - 122	1	20
4-Isopropyltoluene			50.0	49.3		ug/L		99	77 - 127	0	20
4-Methyl-2-pentanone (MIBK)			250	234		ug/L		94	67 - 130	3	20
Acetone			250	255		ug/L		102	39 - 160	3	20
Benzene			50.0	49.4		ug/L		99	79 - 120	0	20
Bromobenzene			50.0	47.9		ug/L		96	80 - 120	4	20
Bromoform			50.0	52.7		ug/L		105	66 - 130	1	20
Bromomethane			50.0	69.3	M	ug/L		139	53 - 141	9	20
Carbon disulfide			50.0	60.5	M	ug/L		121	64 - 133	0	20
Carbon tetrachloride			50.0	53.8		ug/L		108	72 - 136	3	20
Chlorobenzene			50.0	48.0		ug/L		96	82 - 118	0	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 680-670250/5
Matrix: Water
Analysis Batch: 670250

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chlorobromomethane			50.0	55.4		ug/L		111	78 - 123	4	20
Chlorodibromomethane			50.0	52.0		ug/L		104	74 - 126	1	20
Chloroethane			50.0	63.7		ug/L		127	60 - 138	0	20
Chloroform			50.0	50.3		ug/L		101	79 - 124	1	20
Chloromethane			50.0	48.9		ug/L		98	50 - 139	8	20
cis-1,2-Dichloroethene			50.0	50.4		ug/L		101	78 - 123	3	20
cis-1,3-Dichloropropene			50.0	52.1		ug/L		104	75 - 124	1	20
Dibromomethane			50.0	50.0		ug/L		100	79 - 123	1	20
Dichlorobromomethane			50.0	52.2		ug/L		104	79 - 125	0	20
Dichlorodifluoromethane			50.0	50.6		ug/L		101	32 - 152	2	20
Ethylbenzene			50.0	48.4		ug/L		97	79 - 121	0	20
Ethylene Dibromide			50.0	49.9		ug/L		100	75 - 127	2	20
Hexachlorobutadiene			50.0	49.5		ug/L		99	66 - 134	2	20
Isopropylbenzene			50.0	48.3		ug/L		97	72 - 131	1	20
Methyl tert-butyl ether			50.0	50.3		ug/L		101	71 - 124	2	20
Methylene Chloride			50.0	48.5		ug/L		97	74 - 124	1	20
m-Xylene & p-Xylene			50.0	47.9		ug/L		96	80 - 121	0	20
Naphthalene			50.0	51.0		ug/L		102	61 - 128	3	20
n-Butylbenzene			50.0	52.0		ug/L		104	75 - 128	1	20
N-Propylbenzene			50.0	48.5		ug/L		97	76 - 126	1	20
o-Xylene			50.0	47.9		ug/L		96	78 - 122	1	20
sec-Butylbenzene			50.0	47.6		ug/L		95	77 - 126	0	20
Styrene			50.0	47.6		ug/L		95	78 - 123	0	20
tert-Butylbenzene			50.0	47.9		ug/L		96	78 - 124	1	20
Tetrachloroethene			50.0	49.4		ug/L		99	74 - 129	1	20
Toluene			50.0	51.3		ug/L		103	80 - 121	1	20
trans-1,2-Dichloroethene			50.0	53.0		ug/L		106	75 - 124	0	20
trans-1,3-Dichloropropene			50.0	52.3		ug/L		105	73 - 127	1	20
Trichloroethene			50.0	52.3		ug/L		105	79 - 123	3	20
Trichlorofluoromethane			50.0	51.1		ug/L		102	65 - 141	2	20
Vinyl acetate			100	102		ug/L		102	54 - 146	1	20
Vinyl chloride			50.0	50.8		ug/L		102	58 - 137	0	20
Xylenes, Total			100	95.8		ug/L		96	79 - 121	0	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*85 - 114*
Dibromofluoromethane (Surr)	*101*		*80 - 119*
Toluene-d8 (Surr)	*102*		*89 - 112*
1,2-Dichloroethane-d4 (Surr)	*99*		*81 - 118*

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 680-669301/36
Matrix: Water
Analysis Batch: 669301

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Ethane	0.76	U	1.1	0.76	0.30	ug/L		05/19/21 20:19	1
Ethylene	0.71	U	1.0	0.71	0.31	ug/L		05/19/21 20:19	1

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: MB 680-669301/36
Matrix: Water
Analysis Batch: 669301

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methane	1.2	U	1.2	1.2	0.57	ug/L		05/19/21 20:19	1
Methane (TCD)	77	U	390	77	39	ug/L		05/19/21 20:19	1

Lab Sample ID: LCS 680-669301/32
Matrix: Water
Analysis Batch: 669301

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methane (TCD)	1920	1980		ug/L		103	73 - 125

Lab Sample ID: LCS 680-669301/34
Matrix: Water
Analysis Batch: 669301

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane	288	318		ug/L		110	74 - 131
Ethylene	269	286		ug/L		106	72 - 133
Methane	154	163		ug/L		106	73 - 125

Lab Sample ID: LCSD 680-669301/33
Matrix: Water
Analysis Batch: 669301

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methane (TCD)	1920	1990		ug/L		103	73 - 125	0	30

Lab Sample ID: LCSD 680-669301/35
Matrix: Water
Analysis Batch: 669301

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane	288	318		ug/L		110	74 - 131	0	30
Ethylene	269	288		ug/L		107	72 - 133	1	30
Methane	154	164		ug/L		107	73 - 125	1	30

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 680-669894/33
Matrix: Water
Analysis Batch: 669894

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Sulfate	1.0	U	1.0	1.0	0.40	mg/L		05/24/21 20:21	1

Lab Sample ID: LCS 680-669894/34
Matrix: Water
Analysis Batch: 669894

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	10.0	9.65		mg/L		97	87 - 112

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 680-669894/35
Matrix: Water
Analysis Batch: 669894

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate			10.0	9.70		mg/L		97	87 - 112	1	15

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-669130/1-A
Matrix: Water
Analysis Batch: 669635

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 669130

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	50	U	50	50	17	ug/L		05/20/21 18:35	1
Manganese	3.0	U	10	3.0	1.0	ug/L		05/20/21 18:35	1

Lab Sample ID: LCS 680-669130/2-A
Matrix: Water
Analysis Batch: 669635

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 669130

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Iron			2000	1870		ug/L		94	87 - 115		
Manganese			400	382		ug/L		95	90 - 114		

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 680-669129/1-A
Matrix: Water
Analysis Batch: 669312

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 669129

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	3.0	U	3.0	3.0	1.5	ug/L		05/19/21 14:58	1

Lab Sample ID: LCS 680-669129/2-A
Matrix: Water
Analysis Batch: 669312

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 669129

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Arsenic			100	85.9		ug/L		86	84 - 116		

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 280-536880/60
Matrix: Water
Analysis Batch: 536880

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate/Nitrite-N	0.050	U	0.10	0.050	0.019	mg/L		05/20/21 12:48	1

Lab Sample ID: LCS 280-536880/59
Matrix: Water
Analysis Batch: 536880

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrate/Nitrite-N			5.00	4.95		mg/L		99	90 - 110		

Method: 9034 - Sulfide, Acid Soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 680-669119/1
Matrix: Water
Analysis Batch: 669119

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Sulfide	1.0	U	1.0	1.0	1.0	mg/L		05/19/21 08:11	1

Lab Sample ID: LCS 680-669119/2
Matrix: Water
Analysis Batch: 669119

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	10.0	10.5		mg/L		105	75 - 125

Lab Sample ID: LCSD 680-669119/3
Matrix: Water
Analysis Batch: 669119

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfide	10.0	11.0		mg/L		110	75 - 125	4	30

Lab Sample ID: 680-198996-2 MS
Matrix: Water
Analysis Batch: 669119

Client Sample ID: G6M-13-02X-SPR21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	0.81	U J1	6.50	10.1	J1	mg/L		155	75 - 125

Lab Sample ID: 680-198996-2 MSD
Matrix: Water
Analysis Batch: 669119

Client Sample ID: G6M-13-02X-SPR21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfide	0.81	U J1	6.50	10.1	J1	mg/L		155	75 - 125	0	30

Lab Sample ID: 680-198996-1 DU
Matrix: Water
Analysis Batch: 669119

Client Sample ID: G6M-04-09X-SPR21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Sulfide	0.81	U	0.86	U	mg/L		NC	30

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 280-537999/35
Matrix: Water
Analysis Batch: 537999

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	0.80	U	1.0	0.80	0.35	mg/L		05/28/21 02:09	1

Method: 9060A - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: MB 280-537999/4
Matrix: Water
Analysis Batch: 537999

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	0.80	U	1.0	0.80	0.35	mg/L		05/27/21 17:11	1

Lab Sample ID: LCS 280-537999/3
Matrix: Water
Analysis Batch: 537999

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	25.0	23.3		mg/L		93	88 - 112

Lab Sample ID: LCS 280-537999/34
Matrix: Water
Analysis Batch: 537999

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	25.0	23.1		mg/L		92	88 - 112

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 280-537002/60
Matrix: Water
Analysis Batch: 537002

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	6.4	U	10	6.4	3.1	mg/L		05/20/21 21:00	1

Lab Sample ID: LCS 280-537002/58
Matrix: Water
Analysis Batch: 537002

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	200	197		mg/L		99	89 - 109

Lab Sample ID: LCSD 280-537002/59
Matrix: Water
Analysis Batch: 537002

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity	200	201		mg/L		100	89 - 109	2	10

GC/MS VOA

Analysis Batch: 670208

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-198996-4	AOC50-TB01-SPR21	Total/NA	Water	8260B	
MB 680-670208/8	Method Blank	Total/NA	Water	8260B	
LCS 680-670208/3	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-670208/4	Lab Control Sample Dup	Total/NA	Water	8260B	

Analysis Batch: 670250

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-198996-1	G6M-04-09X-SPR21	Total/NA	Water	8260B	
680-198996-2	G6M-13-02X-SPR21	Total/NA	Water	8260B	
680-198996-3	XSA-12-96X-SPR21	Total/NA	Water	8260B	
MB 680-670250/9	Method Blank	Total/NA	Water	8260B	
LCS 680-670250/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-670250/5	Lab Control Sample Dup	Total/NA	Water	8260B	

GC VOA

Analysis Batch: 669301

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-198996-1	G6M-04-09X-SPR21	Total/NA	Water	RSK-175	
680-198996-2	G6M-13-02X-SPR21	Total/NA	Water	RSK-175	
MB 680-669301/36	Method Blank	Total/NA	Water	RSK-175	
LCS 680-669301/32	Lab Control Sample	Total/NA	Water	RSK-175	
LCS 680-669301/34	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 680-669301/33	Lab Control Sample Dup	Total/NA	Water	RSK-175	
LCSD 680-669301/35	Lab Control Sample Dup	Total/NA	Water	RSK-175	

HPLC/IC

Analysis Batch: 669894

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-198996-1	G6M-04-09X-SPR21	Total/NA	Water	9056A	
680-198996-2	G6M-13-02X-SPR21	Total/NA	Water	9056A	
MB 680-669894/33	Method Blank	Total/NA	Water	9056A	
LCS 680-669894/34	Lab Control Sample	Total/NA	Water	9056A	
LCSD 680-669894/35	Lab Control Sample Dup	Total/NA	Water	9056A	

Metals

Prep Batch: 669129

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-198996-1	G6M-04-09X-SPR21	Dissolved	Water	3005A	
680-198996-2	G6M-13-02X-SPR21	Dissolved	Water	3005A	
680-198996-3	XSA-12-96X-SPR21	Dissolved	Water	3005A	
MB 680-669129/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 680-669129/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 669130

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-198996-1	G6M-04-09X-SPR21	Dissolved	Water	3005A	
680-198996-2	G6M-13-02X-SPR21	Dissolved	Water	3005A	
680-198996-3	XSA-12-96X-SPR21	Dissolved	Water	3005A	
MB 680-669130/1-A	Method Blank	Total Recoverable	Water	3005A	

Metals (Continued)

Prep Batch: 669130 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 680-669130/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 669312

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-198996-1	G6M-04-09X-SPR21	Dissolved	Water	6020A	669129
680-198996-2	G6M-13-02X-SPR21	Dissolved	Water	6020A	669129
680-198996-3	XSA-12-96X-SPR21	Dissolved	Water	6020A	669129
MB 680-669129/1-A	Method Blank	Total Recoverable	Water	6020A	669129
LCS 680-669129/2-A	Lab Control Sample	Total Recoverable	Water	6020A	669129

Analysis Batch: 669635

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-198996-1	G6M-04-09X-SPR21	Dissolved	Water	6010C	669130
680-198996-2	G6M-13-02X-SPR21	Dissolved	Water	6010C	669130
680-198996-3	XSA-12-96X-SPR21	Dissolved	Water	6010C	669130
MB 680-669130/1-A	Method Blank	Total Recoverable	Water	6010C	669130
LCS 680-669130/2-A	Lab Control Sample	Total Recoverable	Water	6010C	669130

General Chemistry

Analysis Batch: 536880

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-198996-1	G6M-04-09X-SPR21	Total/NA	Water	353.2	
680-198996-2	G6M-13-02X-SPR21	Total/NA	Water	353.2	
MB 280-536880/60	Method Blank	Total/NA	Water	353.2	
LCS 280-536880/59	Lab Control Sample	Total/NA	Water	353.2	

Analysis Batch: 537002

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-198996-1	G6M-04-09X-SPR21	Total/NA	Water	SM 2320B	
680-198996-2	G6M-13-02X-SPR21	Total/NA	Water	SM 2320B	
MB 280-537002/60	Method Blank	Total/NA	Water	SM 2320B	
LCS 280-537002/58	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 280-537002/59	Lab Control Sample Dup	Total/NA	Water	SM 2320B	

Analysis Batch: 537999

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-198996-1	G6M-04-09X-SPR21	Total/NA	Water	9060A	
680-198996-2	G6M-13-02X-SPR21	Total/NA	Water	9060A	
MB 280-537999/35	Method Blank	Total/NA	Water	9060A	
MB 280-537999/4	Method Blank	Total/NA	Water	9060A	
LCS 280-537999/3	Lab Control Sample	Total/NA	Water	9060A	
LCS 280-537999/34	Lab Control Sample	Total/NA	Water	9060A	

Analysis Batch: 669119

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-198996-1	G6M-04-09X-SPR21	Total/NA	Water	9034	
680-198996-2	G6M-13-02X-SPR21	Total/NA	Water	9034	
MB 680-669119/1	Method Blank	Total/NA	Water	9034	
LCS 680-669119/2	Lab Control Sample	Total/NA	Water	9034	
LCSD 680-669119/3	Lab Control Sample Dup	Total/NA	Water	9034	

General Chemistry (Continued)

Analysis Batch: 669119 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-198996-2 MS	G6M-13-02X-SPR21	Total/NA	Water	9034	
680-198996-2 MSD	G6M-13-02X-SPR21	Total/NA	Water	9034	
680-198996-1 DU	G6M-04-09X-SPR21	Total/NA	Water	9034	

Lab Chronicle

Client: Seres Engineering & Services LLC
Job ID: 680-198996-1
Project/Site: Fort Devens, LTM, AOC 50, Spring 2021

Client Sample ID: G6M-04-09X-SPR21
Lab Sample ID: 680-198996-1
Date Collected: 05/14/21 10:20
Matrix: Water
Date Received: 05/18/21 10:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	670250	05/26/21 19:44	Y1S	TAL SAV
	Instrument ID: CMSU									
Total/NA	Analysis	RSK-175		1	17 mL	17 mL	669301	05/20/21 00:50	JCK	TAL SAV
	Instrument ID: CVGU									
Total/NA	Analysis	9056A		1	5 mL	5 mL	669894	05/25/21 02:03	UI	TAL SAV
	Instrument ID: CICK									
Dissolved	Prep	3005A			50 mL	50 mL	669130	05/19/21 09:10	BJB	TAL SAV
Dissolved	Analysis	6010C		1			669635	05/20/21 19:36	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	669129	05/19/21 09:10	BJB	TAL SAV
Dissolved	Analysis	6020A		1			669312	05/19/21 15:53	BWR	TAL SAV
	Instrument ID: ICPMSD									
Total/NA	Analysis	353.2		1	100 mL	100 mL	536880	05/20/21 13:38	ZPM	TAL DEN
	Instrument ID: WC_Alp 2									
Total/NA	Analysis	9034		1	310 mL	310 mL	669119	05/19/21 08:11	NVF	TAL SAV
	Instrument ID: NOEQUIP									
Total/NA	Analysis	9060A		1	20 mL	20 mL	537999	05/28/21 06:19	RAF	TAL DEN
	Instrument ID: WC_SHI2									
Total/NA	Analysis	SM 2320B		1			537002	05/21/21 09:54	QJB	TAL DEN
	Instrument ID: WC_AT4									

Client Sample ID: G6M-13-02X-SPR21
Lab Sample ID: 680-198996-2
Date Collected: 05/14/21 10:45
Matrix: Water
Date Received: 05/18/21 10:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	670250	05/26/21 20:04	Y1S	TAL SAV
	Instrument ID: CMSU									
Total/NA	Analysis	RSK-175		1	17 mL	17 mL	669301	05/19/21 20:45	JCK	TAL SAV
	Instrument ID: CVGU									
Total/NA	Analysis	9056A		1	5 mL	5 mL	669894	05/25/21 02:15	UI	TAL SAV
	Instrument ID: CICK									
Dissolved	Prep	3005A			50 mL	50 mL	669130	05/19/21 09:10	BJB	TAL SAV
Dissolved	Analysis	6010C		1			669635	05/20/21 19:26	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	669129	05/19/21 09:10	BJB	TAL SAV
Dissolved	Analysis	6020A		1			669312	05/19/21 15:48	BWR	TAL SAV
	Instrument ID: ICPMSD									
Total/NA	Analysis	353.2		1	100 mL	100 mL	536880	05/20/21 13:40	ZPM	TAL DEN
	Instrument ID: WC_Alp 2									
Total/NA	Analysis	9034		1	310 mL	310 mL	669119	05/19/21 08:11	NVF	TAL SAV
	Instrument ID: NOEQUIP									
Total/NA	Analysis	9060A		1	20 mL	20 mL	537999	05/28/21 06:41	RAF	TAL DEN
	Instrument ID: WC_SHI2									

Lab Chronicle

Client: Seres Engineering & Services LLC
Job ID: 680-198996-1
Project/Site: Fort Devens, LTM, AOC 50, Spring 2021

Client Sample ID: G6M-13-02X-SPR21
Lab Sample ID: 680-198996-2
Date Collected: 05/14/21 10:45
Matrix: Water
Date Received: 05/18/21 10:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2320B		1			537002	05/21/21 10:00	QJB	TAL DEN

Client Sample ID: XSA-12-96X-SPR21
Lab Sample ID: 680-198996-3
Date Collected: 05/14/21 15:00
Matrix: Water
Date Received: 05/18/21 10:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	670250	05/26/21 20:24	Y1S	TAL SAV
	Instrument ID: CMSU									
Dissolved	Prep	3005A			50 mL	50 mL	669130	05/19/21 09:10	BJB	TAL SAV
Dissolved	Analysis	6010C		1			669635	05/20/21 19:31	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	669129	05/19/21 09:10	BJB	TAL SAV
Dissolved	Analysis	6020A		1			669312	05/19/21 15:51	BWR	TAL SAV
	Instrument ID: ICPMSD									

Client Sample ID: AOC50-TB01-SPR21
Lab Sample ID: 680-198996-4
Date Collected: 05/14/21 00:00
Matrix: Water
Date Received: 05/18/21 10:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	670208	05/26/21 14:10	UI	TAL SAV
	Instrument ID: CMSS									

Laboratory References:

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SAV = Eurofins TestAmerica, Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Accreditation/Certification Summary

Client: Seres Engineering & Services LLC
Job ID: 680-198996-1
Project/Site: Fort Devens, LTM, AOC 50, Spring 2021

Laboratory: Eurofins TestAmerica, Savannah

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
ANAB	Dept. of Defense ELAP	L2463	09-18-22

Laboratory: Eurofins TestAmerica, Denver

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	06-30-21

Method Summary

Client: Seres Engineering & Services LLC
Job ID: 680-198996-1
Project/Site: Fort Devens, LTM, AOC 50, Spring 2021

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
RSK-175	Dissolved Gases (GC)	RSK	TAL SAV
9056A	Anions, Ion Chromatography	SW846	TAL SAV
6010C	Metals (ICP)	SW846	TAL SAV
6020A	Metals (ICP/MS)	SW846	TAL SAV
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL DEN
9034	Sulfide, Acid Soluble and Insoluble (Titrimetric)	SW846	TAL SAV
9060A	Organic Carbon, Total (TOC)	SW846	TAL DEN
SM 2320B	Alkalinity	SM	TAL DEN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL SAV
5030B	Purge and Trap	SW846	TAL SAV

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SAV = Eurofins TestAmerica, Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

CHAIN-OF-CUSTODY RECORD

Seres-Arcadis JV
Nathan Mullens
669 Marina Drive, Suite B7, Charleston, SC 29492
(843) 478.0336, jennifer.singer@arcadis.com

COC # AOC50_SPR21

Boston #215

Project Name: Former Fort Devens, Long Term Monitoring	Laboratory: Eurofins TestAmerica, Savannah	Event: Seres-Arcadis JV, Long Term Monitoring, AOC 50, Spring 2021
Project Number: DEVNS-LTM	POC: Jerry Lanier, 912-250-0281, jerry.lanier@eurofinset.com	
WBS Code:	Ship to: Eurofins TestAmerica, 5102 LaRoche Avenue, Savannah, GA 31404	

Comments:
A2320B (A) = Alkalinity
E353.2 (A) = Nitrite Nitrate as N
RSK175 (A) = Dissolved Gases
SW6010C/FLDFLT (B) = Fe Mn
SW6020A/FLDFLT (B) = As
SW9034 (A) = Sulfide

Equipment:

Code	Matrix
WG	Ground Water

Code	Container/Preservative
5	1x 125mL plastic, Cool < 6degC
7	2x 250mL plastic, ZnAc/NaOH Cool < 6degC
8	3x 40mL glass VOA Vials, HCl, pH < 2, Cool < 6degC
9	1x 250mL, plastic, HNO3, pH < 2; Cool < 6degC
10	1x 250mL, plastic, HNO3, pH < 2, Cool < 6degC
29	3x 40mL glass VOA Vials, HCl, pH < 2, Cool < 6degC
46	1x 250mL, plastic, Cool < 6degC
47	1x 500mL, amber glass, H2SO4, Cool < 6degC

680-198996 Chain of Custody

Event: Seres-Arcadis JV, Long Term Monitoring, AOC 50, Spring 2021

						Analytical Test Method	A2320B (A)	E353.2 (A)	RSK175 (A)	SW6010C/FLDFLT (B)	SW6020A/FLDFLT (B)	SW8260B - VOCs	SW9034 (A)	SW9056A - SO4	SW9060A - TOC			Sample	Depth (ft bgs)			
	Sample ID	Matrix	Date	Time	Samp Init.		46	47	8	9	9	29	7	5	10		Location ID	Type	Top	Bottom	Cooler	Comments
1	G6M-02-01X-SPR21	WG					X	X	X	X	X	X	X	X	X		G6M-02-01X	N1	80.00	95.00	1	
2	G6M-03-07X-SPR21	WG					X	X	X	X	X	X	X	X	X		G6M-03-07X	N1	80.00	90.00	1	
3	G6M-04-02X-SPR21	WG					X	X	X	X	X	X	X	X	X		G6M-04-02X	N1	80.00	90.00	1	
4	G6M-04-03X-SPR21	WG					X	X	X	X	X	X	X	X	X		G6M-04-03X	N1	85.00	95.00	1	
5	G6M-04-07X-SPR21	WG					X	X	X	X	X	X	X	X	X		G6M-04-07X	N1	120.00	130.00	1	
6	G6M-04-09X-SPR21	WG	5-14-21	1028	BK		X	X	X	X	X	X	X	X	X		G6M-04-09X	N1	55.00	65.00	1	
7	G6M-04-10A-SPR21	WG					X	X	X	X	X	X	X	X	X		G6M-04-10A	MS1	30.00	40.00	1	
8	G6M-04-10A-SPR21	WG					X	X	X	X	X	X	X	X	X		G6M-04-10A	N1	30.00	40.00	1	
9	G6M-04-10A-SPR21	WG					X	X	X	X	X	X	X	X	X		G6M-04-10A	SD1	30.00	40.00	1	
10	G6M-07-01X-SPR21	WG					X	X	X	X	X	X	X	X	X		G6M-07-01X	N1	78.00	89.00	1	
11	G6M-07-02X-SPR21	WG					X	X	X	X	X	X	X	X	X		G6M-07-02X	N1	22.50	27.50	1	
12	AOC50-DUP01-SPR21	WG					X	X	X	X	X	X	X	X	X		G6M-07-02X	FD1	22.50	27.50	1	
13	G6M-13-01X-SPR21	WG					X	X	X	X	X	X	X	X	X		G6M-13-01X	N1	125.00	135.00	1	
14	G6M-13-02X-SPR21	WG	5-14-21	1045	BK		X	X	X	X	X	X	X	X	X		G6M-13-02X	N1	115.00	125.00	1	
15	G6M-13-05X-SPR21	WG					X	X	X	X	X	X	X	X	X		G6M-13-05X	N1	45.00	55.00	1	
16	G6M-97-05B-SPR21	WG					X	X	X	X	X	X	X	X	X		G6M-97-05B	N1	130.00	135.00	1	
17	XSA-12-96X-SPR21	WG	5-14-21	1500	BK					X	X	X					XSA-12-96X	N1	120.00	130.00	1	

Relinquished by: *(Signature)* [signature]
Date 5/17/21
Time 1736
Received by: *(Signature)* [signature]

Date 5/17/21
Time 1736

Shipping Date:
Received by Laboratory *(Signature, Date, Time)* & conditio

[signature]
05-18-21 1020
08/0.9°C

CHAIN-OF-CUSTODY RECORD

Seres-Arcadis JV
Nathan Mullens
669 Marina Drive, Suite B7, Charleston, SC 29492
(843) 478 0336, jennifer.singer@arcadis.com

COC # AOC50_SPR21

Boston #215

Project Name: Former Fort Devens, Long Term Monitoring	Laboratory: Eurofins TestAmerica, Savannah	Event: Seres-Arcadis JV, Long Term Monitoring, AOC 50, Spring 2021
Project Number: DEVNS-LTM	POC: Jerry Lanier, 912-250-0281, jerry.lanier@eurofinset.com	
WBS Code:	Ship to: Eurofins TestAmerica, 5102 LaRoche Avenue, Savannah, GA 31404	

Comments:
A2320B (A) = Alkalinity
E353.2 (A) = Nitrite Nitrate as N
RSK175 (A) = Dissolved Gases
SW6010C/FLDFLT (B) = Fe Mn
SW6020A/FLDFLT (B) = As
SW9034 (A) = Sulfide

Equipment:

Code	Matrix
WG	Ground Water

Code	Container/Preservative
5	1x 125mL plastic, Cool < 6degC
7	2x 250mL plastic, ZnAc/NaOH Cool < 6degC
8	3x 40mL glass VOA Vials, HCl, pH < 2; Cool < 6degC
9	1x 250mL, plastic, HNO3, pH < 2; Cool < 6degC
10	1x 250mL, plastic, HNO3, pH < 2, Cool < 6degC
29	3x 40mL glass VOA Vials, HCl, pH < 2; Cool < 6degC
46	1x 250mL, plastic, Cool < 6degC
47	1x 500mL, amber glass, H2SO4, Cool < 6degC

						Analytical Test Method	A2320B (A)	E353.2 (A)	RSK175 (A)	SW6010C/FLDFLT (B)	SW6020A/FLDFLT (B)	SW8260B - VOCs	SW9034 (A)	SW9056A - SO4	SW9060A - TOC						
	Event: Seres-Arcadis JV, Long Term Monitoring, AOC 50, Spring 2021						46	47	8	9	9	29	7	5	10						
	Sample ID	Matrix	Date	Time	Samp Init.											Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom	Cooler	Comments
18	Trip Blank	WG	-	-	LAB							2									
19																					
20																					
21																					
22																					

Turnaround Time: standard

Page 38 of 41

12/28/2021 (Rev. 1)

Relinquished by: *(Signature)* [signature]
Date 5/14/21
Time 1730
Received by: *(Signature)* [signature]
Devens eCOCs_Spring 2021

[signature] 5/17/21
Date
Time 1700

Shipping Date:
Received by Laboratory: ***(Signature, Date, Time)*** & conditio

[signature]
05-18-21 1020
0.8/0.9c

Eurofins TestAmerica, Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Phone: 912-354-7858 Fax: 912-352-0165

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Lanier, Jerry A	Carrier Tracking No(s):	COC No: 680-654077.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Jerry.Lanier@Eurofinset.com	State of Origin: Massachusetts	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): Dept. of Defense ELAP - A2LA; DoD - ANAB		Job #: 680-198996-1
Address: 4955 Yarrow Street,	Due Date Requested: 5/31/2021			
City: Arvada	TAT Requested (days):			
State, Zip: CO, 80002				
Phone: 303-736-0100(Tel) 303-431-7171(Fax)	PO #:			
Email:	WO #:			
Project Name: Fort Devens, LTM, AOC 50, Spring 2021	Project #: 68023801			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2320B/ Alkalinity	353.2_Pres	9060A/ (MOD) Waters - TOC Duplicates	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
G6M-04-09X-SPR21 (680-198996-1)	5/14/21	10:20 Eastern		Water			X	X	X	3	
G6M-13-02X-SPR21 (680-198996-2)	5/14/21	10:45 Eastern		Water			X	X	X	3	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:
Empty Kit Relinquished by:	Date: Time: Method of Shipment:

Relinquished by:	Date/Time: 5-18-21 1600	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:
	Cooler Temperature(s) °C and Other Remarks:

Ver: 11/01/2020

Login Sample Receipt Checklist

Client: Seres Engineering & Services LLC

Job Number: 680-198996-1

Login Number: 198996
List Number: 1
Creator: Banda, Christy S

List Source: Eurofins TestAmerica, Savannah

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Seres Engineering & Services LLC

Job Number: 680-198996-1

Login Number: 198996
List Number: 2
Creator: Dubicki, Adam L

List Source: Eurofins TestAmerica, Denver
List Creation: 05/19/21 03:24 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

Eurofins TestAmerica, Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

Laboratory Job ID: 680-198842-1
Client Project/Site: Fort Devens, LTM, AOC 50, Spring 2021
Revision: 1

For:
Seres Engineering & Services LLC
669 Marina Drive
Suite B7
Charleston, South Carolina 29492

Attn: Nathan R Mullens

Jerry Lanier

Authorized for release by:
12/28/2021 5:42:03 PM

Jerry Lanier, Project Manager I
(912)250-0281
Jerry.Lanier@Eurofinset.com

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
M	Manual integrated compound.
Q	One or more quality control criteria failed.
U	Undetected at the Limit of Detection.

GC VOA

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Undetected at the Limit of Detection.

HPLC/IC

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
M	Manual integrated compound.
U	Undetected at the Limit of Detection.

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
J1	Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
U	Undetected at the Limit of Detection.

General Chemistry

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
J1	Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
U	Undetected at the Limit of Detection.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Sample Summary

Client: Seres Engineering & Services LLC
Project/Site: Fort Devens, LTM, AOC 50, Spring 2021

Job ID: 680-198842-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-198842-1	G6M-04-03X-SPR21	Water	05/11/21 16:20	05/13/21 09:30
680-198842-2	G6M-13-01X-SPR21	Water	05/11/21 14:10	05/13/21 09:30
680-198842-3	G6M-13-05X-SPR21	Water	05/11/21 13:30	05/13/21 09:30
680-198842-4	G6M-97-05B-SPR21	Water	05/11/21 14:20	05/13/21 09:30

Job ID: 680-198842-1

Laboratory: Eurofins TestAmerica, Savannah

Narrative

CASE NARRATIVE

Client: Seres Engineering & Services LLC

Project: Fort Devens, LTM, AOC 50, Spring 2021

Report Number: 680-198842-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

RECEIPT
The samples were received on 05/13/2021; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 3.9 C.

REVISION
The final report was revised to edit the data formatter to report to the lab LOD per client request.

VOLATILE ORGANIC COMPOUNDS (GC/MS)
Samples G6M-04-03X-SPR21 (680-198842-1), G6M-13-01X-SPR21 (680-198842-2), G6M-13-05X-SPR21 (680-198842-3) and G6M-97-05B-SPR21 (680-198842-4) were analyzed for Volatile Organic Compounds (GC/MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 05/24/2021.

The closing continuing calibration verification (CCVC) associated with batch 680-669818 recovered above the upper control limit for Chloroethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

The continuing calibration verification (CCV) associated with batch 680-669818 recovered above the upper control limit for Chloroethane, Dichlorodifluoromethane and Vinyl acetate. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for analytical batch 680-669818 recovered outside control limits for the following analyte: Chloroethane. This analyte was biased high in the LCS and was not detected in the associated samples; therefore, the data have been reported.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 680-669818.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DISSOLVED GASES
Samples G6M-04-03X-SPR21 (680-198842-1), G6M-13-01X-SPR21 (680-198842-2), G6M-13-05X-SPR21 (680-198842-3) and G6M-97-05B-SPR21 (680-198842-4) were analyzed for dissolved gases in accordance with RSK-175. The samples were analyzed on 05/19/2021.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICP) - DISSOLVED

Job ID: 680-198842-1 (Continued)

Laboratory: Eurofins TestAmerica, Savannah (Continued)

Samples G6M-04-03X-SPR21 (680-198842-1), G6M-13-01X-SPR21 (680-198842-2), G6M-13-05X-SPR21 (680-198842-3) and G6M-97-05B-SPR21 (680-198842-4) were analyzed for Metals (ICP) - Dissolved in accordance with EPA SW-846 Method 6010C. The samples were prepared on 05/14/2021 and analyzed on 05/15/2021.

Iron and Manganese failed the recovery criteria low for the MS/MSD of sample G6M-04-03X-SPR21 (680-198842-1) in batch 680-668792.

Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICPMS) - DISSOLVED

Samples G6M-04-03X-SPR21 (680-198842-1), G6M-13-01X-SPR21 (680-198842-2), G6M-13-05X-SPR21 (680-198842-3) and G6M-97-05B-SPR21 (680-198842-4) were analyzed for Metals (ICPMS) - Dissolved in accordance with EPA SW-846 Method 6020A. The samples were prepared and analyzed on 05/14/2021.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ALKALINITY

Samples G6M-04-03X-SPR21 (680-198842-1), G6M-13-01X-SPR21 (680-198842-2), G6M-13-05X-SPR21 (680-198842-3) and G6M-97-05B-SPR21 (680-198842-4) were analyzed for alkalinity in accordance with SM 2320B. The samples were analyzed on 05/17/2021 and 05/18/2021.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

NITRATE-NITRITE AS NITROGEN

Samples G6M-04-03X-SPR21 (680-198842-1), G6M-13-01X-SPR21 (680-198842-2), G6M-13-05X-SPR21 (680-198842-3) and G6M-97-05B-SPR21 (680-198842-4) were analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2. The samples were analyzed on 05/20/2021.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

SULFIDE

Samples G6M-04-03X-SPR21 (680-198842-1), G6M-13-01X-SPR21 (680-198842-2), G6M-13-05X-SPR21 (680-198842-3) and G6M-97-05B-SPR21 (680-198842-4) were analyzed for sulfide in accordance with EPA SW846 Method 9034. The samples were analyzed on 05/14/2021.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ANIONS BY ION CHROMATOGRAPHY (28 DAY)

Samples G6M-04-03X-SPR21 (680-198842-1), G6M-13-01X-SPR21 (680-198842-2), G6M-13-05X-SPR21 (680-198842-3) and G6M-97-05B-SPR21 (680-198842-4) were analyzed for Anions by Ion Chromatography (28 Day) in accordance with SW 846 9056A. The samples were analyzed on 05/20/2021.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL ORGANIC CARBON

Samples G6M-04-03X-SPR21 (680-198842-1), G6M-13-01X-SPR21 (680-198842-2), G6M-13-05X-SPR21 (680-198842-3) and G6M-97-05B-SPR21 (680-198842-4) were analyzed for total organic carbon in accordance with EPA SW-846 Method 9060A. The samples were analyzed on 05/25/2021.

Total Organic Carbon - Duplicates was detected in method blank MB 280-537420/35 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Total Organic Carbon - Duplicates failed the recovery criteria low for the MSD of sample G6M-04-03X-SPR21MSD (680-198842-1) in batch

Job ID: 680-198842-1 (Continued)

Laboratory: Eurofins TestAmerica, Savannah (Continued)

280-537420.

The presence of the '4' qualifier indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount.

Refer to the QC report for details.

Sample G6M-97-05B-SPR21 (680-198842-4)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Client: Seres Engineering & Services LLC
Project/Site: Fort Devens, LTM, AOC 50, Spring 2021

Job ID: 680-198842-1

Client Sample ID: G6M-04-03X-SPR21
Date Collected: 05/11/21 16:20
Date Received: 05/13/21 09:30

Lab Sample ID: 680-198842-1
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 16:14	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 16:14	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		05/24/21 16:14	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		05/24/21 16:14	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		05/24/21 16:14	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		05/24/21 16:14	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		05/24/21 16:14	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 16:14	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		05/24/21 16:14	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 16:14	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		05/24/21 16:14	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		05/24/21 16:14	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 16:14	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		05/24/21 16:14	1
1,2-Dichloroethene, Total	**4.2**		2.0	2.0	0.74	ug/L		05/24/21 16:14	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		05/24/21 16:14	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		05/24/21 16:14	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		05/24/21 16:14	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		05/24/21 16:14	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		05/24/21 16:14	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 16:14	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		05/24/21 16:14	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		05/24/21 16:14	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		05/24/21 16:14	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		05/24/21 16:14	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		05/24/21 16:14	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		05/24/21 16:14	1
Acetone	25	U	25	25	7.0	ug/L		05/24/21 16:14	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		05/24/21 16:14	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		05/24/21 16:14	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		05/24/21 16:14	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 16:14	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		05/24/21 16:14	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		05/24/21 16:14	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		05/24/21 16:14	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		05/24/21 16:14	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		05/24/21 16:14	1
Chloroethane	5.0	U Q	5.0	5.0	2.5	ug/L		05/24/21 16:14	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		05/24/21 16:14	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		05/24/21 16:14	1
cis-1,2-Dichloroethene	**4.2**		1.0	1.0	0.41	ug/L		05/24/21 16:14	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		05/24/21 16:14	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		05/24/21 16:14	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		05/24/21 16:14	1
Dichlorodifluoromethane	2.0	U Q	2.0	2.0	0.60	ug/L		05/24/21 16:14	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		05/24/21 16:14	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		05/24/21 16:14	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 16:14	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		05/24/21 16:14	1

Client Sample ID: G6M-04-03X-SPR21
Lab Sample ID: 680-198842-1

Date Collected: 05/11/21 16:20
Matrix: Water
Date Received: 05/13/21 09:30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		05/24/21 16:14	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 16:14	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		05/24/21 16:14	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 16:14	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		05/24/21 16:14	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		05/24/21 16:14	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		05/24/21 16:14	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		05/24/21 16:14	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		05/24/21 16:14	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		05/24/21 16:14	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		05/24/21 16:14	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		05/24/21 16:14	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 16:14	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		05/24/21 16:14	1
Trichloroethene	**2.3**		1.0	1.0	0.48	ug/L		05/24/21 16:14	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		05/24/21 16:14	1
Vinyl acetate	2.0	U Q	2.0	2.0	0.81	ug/L		05/24/21 16:14	1
Vinyl chloride	**3.2**	**M**	1.0	1.0	0.50	ug/L		05/24/21 16:14	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		05/24/21 16:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*85 - 114*		*05/24/21 16:14*	*1*
Dibromofluoromethane (Surr)	*98*		*80 - 119*		*05/24/21 16:14*	*1*
Toluene-d8 (Surr)	*99*		*89 - 112*		*05/24/21 16:14*	*1*
1,2-Dichloroethane-d4 (Surr)	*88*		*81 - 118*		*05/24/21 16:14*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Ethane	**0.73**	**J**	1.1	0.76	0.30	ug/L		05/19/21 22:15	1
Ethylene	**4.2**		1.0	0.71	0.31	ug/L		05/19/21 22:15	1
Methane (TCD)	**16000**		390	77	39	ug/L		05/19/21 22:15	1

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Sulfate	**4.2**	**M**	1.0	1.0	0.40	mg/L		05/20/21 22:46	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	**44000**	**J1**	50	50	17	ug/L		05/15/21 01:01	1
Manganese	**5200**	**J1**	10	3.0	1.0	ug/L		05/15/21 01:01	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**190**		3.0	3.0	1.5	ug/L		05/14/21 15:34	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate/Nitrite-N	**0.030**	**J**	0.10	0.050	0.019	mg/L		05/20/21 12:37	1
Sulfide	0.81	U	0.81	0.81	0.81	mg/L		05/14/21 10:04	1
Total Organic Carbon - Duplicates	**6.7**	**J1**	1.0	0.80	0.35	mg/L		05/25/21 06:12	1
Alkalinity	**160**		10	6.4	3.1	mg/L		05/18/21 18:10	1

Client: Seres Engineering & Services LLC
Project/Site: Fort Devens, LTM, AOC 50, Spring 2021

Job ID: 680-198842-1

Client Sample ID: G6M-13-01X-SPR21
Date Collected: 05/11/21 14:10
Date Received: 05/13/21 09:30

Lab Sample ID: 680-198842-2
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 16:37	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 16:37	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		05/24/21 16:37	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		05/24/21 16:37	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		05/24/21 16:37	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		05/24/21 16:37	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		05/24/21 16:37	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 16:37	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		05/24/21 16:37	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 16:37	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		05/24/21 16:37	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		05/24/21 16:37	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 16:37	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		05/24/21 16:37	1
1,2-Dichloroethene, Total	**24**		2.0	2.0	0.74	ug/L		05/24/21 16:37	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		05/24/21 16:37	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		05/24/21 16:37	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		05/24/21 16:37	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		05/24/21 16:37	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		05/24/21 16:37	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 16:37	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		05/24/21 16:37	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		05/24/21 16:37	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		05/24/21 16:37	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		05/24/21 16:37	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		05/24/21 16:37	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		05/24/21 16:37	1
Acetone	25	U	25	25	7.0	ug/L		05/24/21 16:37	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		05/24/21 16:37	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		05/24/21 16:37	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		05/24/21 16:37	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 16:37	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		05/24/21 16:37	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		05/24/21 16:37	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		05/24/21 16:37	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		05/24/21 16:37	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		05/24/21 16:37	1
Chloroethane	5.0	U Q	5.0	5.0	2.5	ug/L		05/24/21 16:37	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		05/24/21 16:37	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		05/24/21 16:37	1
cis-1,2-Dichloroethene	**24**		1.0	1.0	0.41	ug/L		05/24/21 16:37	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		05/24/21 16:37	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		05/24/21 16:37	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		05/24/21 16:37	1
Dichlorodifluoromethane	2.0	U Q	2.0	2.0	0.60	ug/L		05/24/21 16:37	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		05/24/21 16:37	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		05/24/21 16:37	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 16:37	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		05/24/21 16:37	1

Client Sample ID: G6M-13-01X-SPR21
Lab Sample ID: 680-198842-2

Date Collected: 05/11/21 14:10
Matrix: Water
Date Received: 05/13/21 09:30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		05/24/21 16:37	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 16:37	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		05/24/21 16:37	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 16:37	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		05/24/21 16:37	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		05/24/21 16:37	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		05/24/21 16:37	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		05/24/21 16:37	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		05/24/21 16:37	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		05/24/21 16:37	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		05/24/21 16:37	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		05/24/21 16:37	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 16:37	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		05/24/21 16:37	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		05/24/21 16:37	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		05/24/21 16:37	1
Vinyl acetate	2.0	U Q	2.0	2.0	0.81	ug/L		05/24/21 16:37	1
Vinyl chloride	**6.7**		1.0	1.0	0.50	ug/L		05/24/21 16:37	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		05/24/21 16:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*85 - 114*		*05/24/21 16:37*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 119*		*05/24/21 16:37*	*1*
Toluene-d8 (Surr)	*98*		*89 - 112*		*05/24/21 16:37*	*1*
1,2-Dichloroethane-d4 (Surr)	*90*		*81 - 118*		*05/24/21 16:37*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Ethane	**2.5**		1.1	0.76	0.30	ug/L		05/19/21 22:28	1
Ethylene	**6.8**		1.0	0.71	0.31	ug/L		05/19/21 22:28	1
Methane (TCD)	**9300**		390	77	39	ug/L		05/19/21 22:28	1

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Sulfate	**8.3**		1.0	1.0	0.40	mg/L		05/20/21 23:24	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	**1100**		50	50	17	ug/L		05/15/21 01:24	1
Manganese	**6000**		10	3.0	1.0	ug/L		05/15/21 01:24	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**14**		3.0	3.0	1.5	ug/L		05/14/21 15:47	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate/Nitrite-N	0.050	U	0.10	0.050	0.019	mg/L		05/20/21 12:39	1
Sulfide	0.81	U	0.81	0.81	0.81	mg/L		05/14/21 10:04	1
Total Organic Carbon - Duplicates	**3.0**		1.0	0.80	0.35	mg/L		05/25/21 07:21	1
Alkalinity	**170**		10	6.4	3.1	mg/L		05/17/21 13:21	1

Client: Seres Engineering & Services LLC
Project/Site: Fort Devens, LTM, AOC 50, Spring 2021

Job ID: 680-198842-1

Client Sample ID: G6M-13-05X-SPR21
Date Collected: 05/11/21 13:30
Date Received: 05/13/21 09:30

Lab Sample ID: 680-198842-3
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 17:00	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 17:00	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		05/24/21 17:00	1
1,1,2-Trichloroethane	1.0	U M	1.0	1.0	0.33	ug/L		05/24/21 17:00	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		05/24/21 17:00	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		05/24/21 17:00	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		05/24/21 17:00	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 17:00	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		05/24/21 17:00	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 17:00	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		05/24/21 17:00	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		05/24/21 17:00	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 17:00	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		05/24/21 17:00	1
1,2-Dichloroethene, Total	**43**		2.0	2.0	0.74	ug/L		05/24/21 17:00	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		05/24/21 17:00	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		05/24/21 17:00	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		05/24/21 17:00	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		05/24/21 17:00	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		05/24/21 17:00	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 17:00	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		05/24/21 17:00	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		05/24/21 17:00	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		05/24/21 17:00	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		05/24/21 17:00	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		05/24/21 17:00	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		05/24/21 17:00	1
Acetone	25	U	25	25	7.0	ug/L		05/24/21 17:00	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		05/24/21 17:00	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		05/24/21 17:00	1
Bromoform	1.0	U M	1.0	1.0	0.43	ug/L		05/24/21 17:00	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 17:00	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		05/24/21 17:00	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		05/24/21 17:00	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		05/24/21 17:00	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		05/24/21 17:00	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		05/24/21 17:00	1
Chloroethane	5.0	U Q	5.0	5.0	2.5	ug/L		05/24/21 17:00	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		05/24/21 17:00	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		05/24/21 17:00	1
cis-1,2-Dichloroethene	**42**		1.0	1.0	0.41	ug/L		05/24/21 17:00	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		05/24/21 17:00	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		05/24/21 17:00	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		05/24/21 17:00	1
Dichlorodifluoromethane	2.0	U Q	2.0	2.0	0.60	ug/L		05/24/21 17:00	1
Ethylbenzene	1.0	U M	1.0	1.0	0.33	ug/L		05/24/21 17:00	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		05/24/21 17:00	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 17:00	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		05/24/21 17:00	1

Client Sample ID: G6M-13-05X-SPR21
Lab Sample ID: 680-198842-3

Date Collected: 05/11/21 13:30
Matrix: Water
Date Received: 05/13/21 09:30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		05/24/21 17:00	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 17:00	1
m-Xylene & p-Xylene	**0.58**	**J**	1.0	1.0	0.35	ug/L		05/24/21 17:00	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 17:00	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		05/24/21 17:00	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		05/24/21 17:00	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		05/24/21 17:00	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		05/24/21 17:00	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		05/24/21 17:00	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		05/24/21 17:00	1
Tetrachloroethene	**50**		2.0	2.0	0.74	ug/L		05/24/21 17:00	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		05/24/21 17:00	1
trans-1,2-Dichloroethene	**1.0**		1.0	1.0	0.37	ug/L		05/24/21 17:00	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		05/24/21 17:00	1
Trichloroethene	**18**		1.0	1.0	0.48	ug/L		05/24/21 17:00	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		05/24/21 17:00	1
Vinyl acetate	2.0	U Q	2.0	2.0	0.81	ug/L		05/24/21 17:00	1
Vinyl chloride	**29**		1.0	1.0	0.50	ug/L		05/24/21 17:00	1
Xylenes, Total	**0.58**	**J**	2.0	2.0	0.23	ug/L		05/24/21 17:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*85 - 114*		*05/24/21 17:00*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 119*		*05/24/21 17:00*	*1*
Toluene-d8 (Surr)	*99*		*89 - 112*		*05/24/21 17:00*	*1*
1,2-Dichloroethane-d4 (Surr)	*88*		*81 - 118*		*05/24/21 17:00*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Ethane	**45**		1.1	0.76	0.30	ug/L		05/19/21 23:07	1
Ethylene	**77**		1.0	0.71	0.31	ug/L		05/19/21 23:07	1
Methane (TCD)	**17000**		390	77	39	ug/L		05/19/21 23:07	1

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Sulfate	**0.59**	**J M**	1.0	1.0	0.40	mg/L		05/20/21 23:37	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	**53000**		50	50	17	ug/L		05/15/21 01:28	1
Manganese	**6400**		10	3.0	1.0	ug/L		05/15/21 01:28	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**120**		3.0	3.0	1.5	ug/L		05/14/21 15:50	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate/Nitrite-N	**0.028**	**J**	0.10	0.050	0.019	mg/L		05/20/21 12:41	1
Sulfide	0.81	U	0.81	0.81	0.81	mg/L		05/14/21 10:04	1
Total Organic Carbon - Duplicates	**4.4**		1.0	0.80	0.35	mg/L		05/25/21 07:36	1
Alkalinity	**71**		10	6.4	3.1	mg/L		05/17/21 13:27	1

Client: Seres Engineering & Services LLC
Project/Site: Fort Devens, LTM, AOC 50, Spring 2021

Job ID: 680-198842-1

Client Sample ID: G6M-97-05B-SPR21
Date Collected: 05/11/21 14:20
Date Received: 05/13/21 09:30

Lab Sample ID: 680-198842-4
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 17:23	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 17:23	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		05/24/21 17:23	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		05/24/21 17:23	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		05/24/21 17:23	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		05/24/21 17:23	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		05/24/21 17:23	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 17:23	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		05/24/21 17:23	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 17:23	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		05/24/21 17:23	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		05/24/21 17:23	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 17:23	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		05/24/21 17:23	1
1,2-Dichloroethene, Total	**32**		2.0	2.0	0.74	ug/L		05/24/21 17:23	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		05/24/21 17:23	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		05/24/21 17:23	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		05/24/21 17:23	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		05/24/21 17:23	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		05/24/21 17:23	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 17:23	1
2-Butanone (MEK)	**40**		10	10	3.4	ug/L		05/24/21 17:23	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		05/24/21 17:23	1
2-Hexanone	**2.4**	**J**	10	5.0	2.0	ug/L		05/24/21 17:23	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		05/24/21 17:23	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		05/24/21 17:23	1
4-Methyl-2-pentanone (MIBK)	5.0	U M	10	5.0	2.1	ug/L		05/24/21 17:23	1
Acetone	**18**	**J**	25	25	7.0	ug/L		05/24/21 17:23	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		05/24/21 17:23	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		05/24/21 17:23	1
Bromoform	1.0	U M	1.0	1.0	0.43	ug/L		05/24/21 17:23	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 17:23	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		05/24/21 17:23	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		05/24/21 17:23	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		05/24/21 17:23	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		05/24/21 17:23	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		05/24/21 17:23	1
Chloroethane	5.0	U Q	5.0	5.0	2.5	ug/L		05/24/21 17:23	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		05/24/21 17:23	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		05/24/21 17:23	1
cis-1,2-Dichloroethene	**32**		1.0	1.0	0.41	ug/L		05/24/21 17:23	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		05/24/21 17:23	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		05/24/21 17:23	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		05/24/21 17:23	1
Dichlorodifluoromethane	2.0	U Q	2.0	2.0	0.60	ug/L		05/24/21 17:23	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		05/24/21 17:23	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		05/24/21 17:23	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 17:23	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		05/24/21 17:23	1

Client Sample ID: G6M-97-05B-SPR21
Lab Sample ID: 680-198842-4

Date Collected: 05/11/21 14:20
Matrix: Water
Date Received: 05/13/21 09:30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		05/24/21 17:23	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 17:23	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		05/24/21 17:23	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 17:23	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		05/24/21 17:23	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		05/24/21 17:23	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		05/24/21 17:23	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		05/24/21 17:23	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		05/24/21 17:23	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		05/24/21 17:23	1
Tetrachloroethene	**1.9**	**J**	2.0	2.0	0.74	ug/L		05/24/21 17:23	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		05/24/21 17:23	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 17:23	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		05/24/21 17:23	1
Trichloroethene	**3.4**		1.0	1.0	0.48	ug/L		05/24/21 17:23	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		05/24/21 17:23	1
Vinyl acetate	2.0	U Q	2.0	2.0	0.81	ug/L		05/24/21 17:23	1
Vinyl chloride	**10**		1.0	1.0	0.50	ug/L		05/24/21 17:23	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		05/24/21 17:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*85 - 114*		*05/24/21 17:23*	*1*
Dibromofluoromethane (Surr)	*100*		*80 - 119*		*05/24/21 17:23*	*1*
Toluene-d8 (Surr)	*98*		*89 - 112*		*05/24/21 17:23*	*1*
1,2-Dichloroethane-d4 (Surr)	*87*		*81 - 118*		*05/24/21 17:23*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Ethane	**5.7**		1.1	0.76	0.30	ug/L		05/19/21 23:20	1
Ethylene	**24**		1.0	0.71	0.31	ug/L		05/19/21 23:20	1
Methane (TCD)	**27000**		390	77	39	ug/L		05/19/21 23:20	1

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Sulfate	1.0	U M	1.0	1.0	0.40	mg/L		05/20/21 23:49	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	**74000**		50	50	17	ug/L		05/15/21 01:33	1
Manganese	**13000**		10	3.0	1.0	ug/L		05/15/21 01:33	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**250**		3.0	3.0	1.5	ug/L		05/14/21 15:52	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate/Nitrite-N	**0.046**	**J**	0.10	0.050	0.019	mg/L		05/20/21 12:44	1
Sulfide	0.81	U	0.81	0.81	0.81	mg/L		05/14/21 10:04	1
Total Organic Carbon - Duplicates	**67**		2.0	1.6	0.69	mg/L		05/25/21 19:54	2
Alkalinity	**170**		10	6.4	3.1	mg/L		05/17/21 13:33	1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-669818/10
Matrix: Water
Analysis Batch: 669818

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 14:28	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 14:28	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		05/24/21 14:28	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		05/24/21 14:28	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		05/24/21 14:28	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		05/24/21 14:28	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		05/24/21 14:28	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 14:28	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		05/24/21 14:28	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 14:28	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		05/24/21 14:28	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		05/24/21 14:28	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 14:28	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		05/24/21 14:28	1
1,2-Dichloroethene, Total	2.0	U	2.0	2.0	0.74	ug/L		05/24/21 14:28	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		05/24/21 14:28	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		05/24/21 14:28	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		05/24/21 14:28	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		05/24/21 14:28	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		05/24/21 14:28	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 14:28	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		05/24/21 14:28	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		05/24/21 14:28	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		05/24/21 14:28	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		05/24/21 14:28	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		05/24/21 14:28	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		05/24/21 14:28	1
Acetone	25	U	25	25	7.0	ug/L		05/24/21 14:28	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		05/24/21 14:28	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		05/24/21 14:28	1
Bromoform	1.0	U M	1.0	1.0	0.43	ug/L		05/24/21 14:28	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 14:28	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		05/24/21 14:28	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		05/24/21 14:28	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		05/24/21 14:28	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		05/24/21 14:28	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		05/24/21 14:28	1
Chloroethane	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 14:28	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		05/24/21 14:28	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		05/24/21 14:28	1
cis-1,2-Dichloroethene	1.0	U	1.0	1.0	0.41	ug/L		05/24/21 14:28	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		05/24/21 14:28	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		05/24/21 14:28	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		05/24/21 14:28	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		05/24/21 14:28	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		05/24/21 14:28	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		05/24/21 14:28	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 14:28	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-669818/10
Matrix: Water
Analysis Batch: 669818

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		05/24/21 14:28	1
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		05/24/21 14:28	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 14:28	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		05/24/21 14:28	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		05/24/21 14:28	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		05/24/21 14:28	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		05/24/21 14:28	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		05/24/21 14:28	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		05/24/21 14:28	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		05/24/21 14:28	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		05/24/21 14:28	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		05/24/21 14:28	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		05/24/21 14:28	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		05/24/21 14:28	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		05/24/21 14:28	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		05/24/21 14:28	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		05/24/21 14:28	1
Vinyl acetate	2.0	U	2.0	2.0	0.81	ug/L		05/24/21 14:28	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		05/24/21 14:28	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		05/24/21 14:28	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*85 - 114*		*05/24/21 14:28*	*1*
Dibromofluoromethane (Surr)	*97*		*80 - 119*		*05/24/21 14:28*	*1*
Toluene-d8 (Surr)	*100*		*89 - 112*		*05/24/21 14:28*	*1*
1,2-Dichloroethane-d4 (Surr)	*92*		*81 - 118*		*05/24/21 14:28*	*1*

Lab Sample ID: LCS 680-669818/5
Matrix: Water
Analysis Batch: 669818

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	50.0	51.5		ug/L		103	78 - 124
1,1,1-Trichloroethane	50.0	47.4		ug/L		95	74 - 131
1,1,2,2-Tetrachloroethane	50.0	53.0		ug/L		106	71 - 121
1,1,2-Trichloroethane	50.0	47.9		ug/L		96	80 - 119
1,1-Dichloroethane	50.0	46.8		ug/L		94	77 - 125
1,1-Dichloroethene	50.0	43.5		ug/L		87	71 - 131
1,1-Dichloropropene	50.0	46.4		ug/L		93	79 - 125
1,2,3-Trichlorobenzene	50.0	48.9		ug/L		98	69 - 129
1,2,3-Trichloropropane	50.0	52.8		ug/L		106	73 - 122
1,2,4-Trichlorobenzene	50.0	48.4		ug/L		97	69 - 130
1,2,4-Trimethylbenzene	50.0	50.4		ug/L		101	76 - 124
1,2-Dibromo-3-Chloropropane	50.0	50.5		ug/L		101	62 - 128
1,2-Dichlorobenzene	50.0	51.6		ug/L		103	80 - 119
1,2-Dichloroethane	50.0	49.3		ug/L		99	73 - 128
1,2-Dichloroethene, Total	100	92.6		ug/L		93	79 - 121
1,2-Dichloropropane	50.0	50.2		ug/L		100	78 - 122

Client: Seres Engineering & Services LLC
Project/Site: Fort Devens, LTM, AOC 50, Spring 2021

Job ID: 680-198842-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-669818/5
Matrix: Water
Analysis Batch: 669818

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3,5-Trimethylbenzene	50.0	50.3		ug/L		101	75 - 124
1,3-Dichlorobenzene	50.0	53.5		ug/L		107	80 - 119
1,3-Dichloropropane	50.0	52.5		ug/L		105	80 - 119
1,4-Dichlorobenzene	50.0	51.6		ug/L		103	79 - 118
2,2-Dichloropropane	50.0	53.4		ug/L		107	60 - 139
2-Butanone (MEK)	250	265		ug/L		106	56 - 143
2-Chlorotoluene	50.0	50.0		ug/L		100	79 - 122
2-Hexanone	250	243		ug/L		97	57 - 139
4-Chlorotoluene	50.0	50.4		ug/L		101	78 - 122
4-Isopropyltoluene	50.0	49.8		ug/L		100	77 - 127
4-Methyl-2-pentanone (MIBK)	250	244		ug/L		98	67 - 130
Acetone	250	256		ug/L		102	39 - 160
Benzene	50.0	51.4		ug/L		103	79 - 120
Bromobenzene	50.0	54.8		ug/L		110	80 - 120
Bromoform	50.0	49.8		ug/L		100	66 - 130
Bromomethane	50.0	54.8		ug/L		110	53 - 141
Carbon disulfide	50.0	44.6		ug/L		89	64 - 133
Carbon tetrachloride	50.0	47.9		ug/L		96	72 - 136
Chlorobenzene	50.0	53.1		ug/L		106	82 - 118
Chlorobromomethane	50.0	47.2		ug/L		94	78 - 123
Chlorodibromomethane	50.0	49.0		ug/L		98	74 - 126
Chloroethane	50.0	77.1	Q	ug/L		154	60 - 138
Chloroform	50.0	47.0		ug/L		94	79 - 124
Chloromethane	50.0	46.6		ug/L		93	50 - 139
cis-1,2-Dichloroethene	50.0	46.1		ug/L		92	78 - 123
cis-1,3-Dichloropropene	50.0	50.2		ug/L		100	75 - 124
Dibromomethane	50.0	46.1		ug/L		92	79 - 123
Dichlorobromomethane	50.0	51.7		ug/L		103	79 - 125
Dichlorodifluoromethane	50.0	65.0		ug/L		130	32 - 152
Ethylbenzene	50.0	50.3		ug/L		101	79 - 121
Ethylene Dibromide	50.0	54.0		ug/L		108	75 - 127
Hexachlorobutadiene	50.0	46.9		ug/L		94	66 - 134
Isopropylbenzene	50.0	50.2		ug/L		100	72 - 131
Methyl tert-butyl ether	50.0	49.6		ug/L		99	71 - 124
Methylene Chloride	50.0	45.5		ug/L		91	74 - 124
m-Xylene & p-Xylene	50.0	50.7		ug/L		101	80 - 121
Naphthalene	50.0	52.0		ug/L		104	61 - 128
n-Butylbenzene	50.0	49.6		ug/L		99	75 - 128
N-Propylbenzene	50.0	51.1		ug/L		102	76 - 126
o-Xylene	50.0	49.4		ug/L		99	78 - 122
sec-Butylbenzene	50.0	50.9		ug/L		102	77 - 126
Styrene	50.0	52.8		ug/L		106	78 - 123
tert-Butylbenzene	50.0	50.8		ug/L		102	78 - 124
Tetrachloroethene	50.0	48.7		ug/L		97	74 - 129
Toluene	50.0	54.5		ug/L		109	80 - 121
trans-1,2-Dichloroethene	50.0	46.5		ug/L		93	75 - 124
trans-1,3-Dichloropropene	50.0	50.8		ug/L		102	73 - 127
Trichloroethene	50.0	46.0		ug/L		92	79 - 123
Trichlorofluoromethane	50.0	58.1		ug/L		116	65 - 141

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-669818/5
Matrix: Water
Analysis Batch: 669818

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Vinyl acetate	100	129		ug/L		129	54 - 146
Vinyl chloride	50.0	46.1		ug/L		92	58 - 137
Xylenes, Total	100	100		ug/L		100	79 - 121

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*94*		*85 - 114*
Dibromofluoromethane (Surr)	*97*		*80 - 119*
Toluene-d8 (Surr)	*100*		*89 - 112*
1,2-Dichloroethane-d4 (Surr)	*93*		*81 - 118*

Lab Sample ID: LCSD 680-669818/6
Matrix: Water
Analysis Batch: 669818

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	50.0	51.6		ug/L		103	78 - 124	0	20
1,1,1-Trichloroethane	50.0	47.8		ug/L		96	74 - 131	1	20
1,1,2,2-Tetrachloroethane	50.0	52.0		ug/L		104	71 - 121	2	20
1,1,2-Trichloroethane	50.0	47.8		ug/L		96	80 - 119	0	20
1,1-Dichloroethane	50.0	46.9		ug/L		94	77 - 125	0	20
1,1-Dichloroethene	50.0	44.3		ug/L		89	71 - 131	2	20
1,1-Dichloropropene	50.0	47.6		ug/L		95	79 - 125	2	20
1,2,3-Trichlorobenzene	50.0	50.7		ug/L		101	69 - 129	4	20
1,2,3-Trichloropropane	50.0	52.1		ug/L		104	73 - 122	1	20
1,2,4-Trichlorobenzene	50.0	48.9		ug/L		98	69 - 130	1	20
1,2,4-Trimethylbenzene	50.0	50.2		ug/L		100	76 - 124	0	20
1,2-Dibromo-3-Chloropropane	50.0	51.5		ug/L		103	62 - 128	2	20
1,2-Dichlorobenzene	50.0	51.4		ug/L		103	80 - 119	0	20
1,2-Dichloroethane	50.0	48.9		ug/L		98	73 - 128	1	20
1,2-Dichloroethene, Total	100	92.9		ug/L		93	79 - 121	0	20
1,2-Dichloropropane	50.0	50.6		ug/L		101	78 - 122	1	20
1,3,5-Trimethylbenzene	50.0	50.7		ug/L		101	75 - 124	1	20
1,3-Dichlorobenzene	50.0	53.6		ug/L		107	80 - 119	0	20
1,3-Dichloropropane	50.0	50.8		ug/L		102	80 - 119	3	20
1,4-Dichlorobenzene	50.0	51.3		ug/L		103	79 - 118	1	20
2,2-Dichloropropane	50.0	54.2		ug/L		108	60 - 139	2	20
2-Butanone (MEK)	250	257		ug/L		103	56 - 143	3	20
2-Chlorotoluene	50.0	50.1		ug/L		100	79 - 122	0	20
2-Hexanone	250	237		ug/L		95	57 - 139	3	20
4-Chlorotoluene	50.0	49.9		ug/L		100	78 - 122	1	20
4-Isopropyltoluene	50.0	49.5		ug/L		99	77 - 127	1	20
4-Methyl-2-pentanone (MIBK)	250	241		ug/L		96	67 - 130	1	20
Acetone	250	249		ug/L		99	39 - 160	3	20
Benzene	50.0	51.1		ug/L		102	79 - 120	1	20
Bromobenzene	50.0	54.0		ug/L		108	80 - 120	1	20
Bromoform	50.0	49.6		ug/L		99	66 - 130	1	20
Bromomethane	50.0	55.0		ug/L		110	53 - 141	0	20
Carbon disulfide	50.0	44.0		ug/L		88	64 - 133	1	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 680-669818/6
Matrix: Water
Analysis Batch: 669818

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Carbon tetrachloride			50.0	48.2		ug/L		96	72 - 136	1	20
Chlorobenzene			50.0	53.4		ug/L		107	82 - 118	0	20
Chlorobromomethane			50.0	47.1		ug/L		94	78 - 123	0	20
Chlorodibromomethane			50.0	48.8		ug/L		98	74 - 126	0	20
Chloroethane			50.0	79.1	Q	ug/L		158	60 - 138	3	20
Chloroform			50.0	47.4		ug/L		95	79 - 124	1	20
Chloromethane			50.0	47.0		ug/L		94	50 - 139	1	20
cis-1,2-Dichloroethene			50.0	45.9		ug/L		92	78 - 123	0	20
cis-1,3-Dichloropropene			50.0	50.6		ug/L		101	75 - 124	1	20
Dibromomethane			50.0	46.4		ug/L		93	79 - 123	1	20
Dichlorobromomethane			50.0	51.5		ug/L		103	79 - 125	0	20
Dichlorodifluoromethane			50.0	64.5		ug/L		129	32 - 152	1	20
Ethylbenzene			50.0	50.6		ug/L		101	79 - 121	1	20
Ethylene Dibromide			50.0	53.0		ug/L		106	75 - 127	2	20
Hexachlorobutadiene			50.0	47.6		ug/L		95	66 - 134	2	20
Isopropylbenzene			50.0	50.7		ug/L		101	72 - 131	1	20
Methyl tert-butyl ether			50.0	49.0		ug/L		98	71 - 124	1	20
Methylene Chloride			50.0	44.7		ug/L		89	74 - 124	2	20
m-Xylene & p-Xylene			50.0	50.5		ug/L		101	80 - 121	1	20
Naphthalene			50.0	53.4		ug/L		107	61 - 128	3	20
n-Butylbenzene			50.0	49.9		ug/L		100	75 - 128	1	20
N-Propylbenzene			50.0	51.7		ug/L		103	76 - 126	1	20
o-Xylene			50.0	49.1		ug/L		98	78 - 122	1	20
sec-Butylbenzene			50.0	51.1		ug/L		102	77 - 126	0	20
Styrene			50.0	52.6		ug/L		105	78 - 123	0	20
tert-Butylbenzene			50.0	50.2		ug/L		100	78 - 124	1	20
Tetrachloroethene			50.0	49.5		ug/L		99	74 - 129	2	20
Toluene			50.0	54.5		ug/L		109	80 - 121	0	20
trans-1,2-Dichloroethene			50.0	47.0		ug/L		94	75 - 124	1	20
trans-1,3-Dichloropropene			50.0	49.8		ug/L		100	73 - 127	2	20
Trichloroethene			50.0	46.2		ug/L		92	79 - 123	0	20
Trichlorofluoromethane			50.0	57.3		ug/L		115	65 - 141	1	20
Vinyl acetate			100	128		ug/L		128	54 - 146	1	20
Vinyl chloride			50.0	46.8		ug/L		94	58 - 137	1	20
Xylenes, Total			100	99.6		ug/L		100	79 - 121	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*93*		*85 - 114*
Dibromofluoromethane (Surr)	*96*		*80 - 119*
Toluene-d8 (Surr)	*99*		*89 - 112*
1,2-Dichloroethane-d4 (Surr)	*92*		*81 - 118*

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 680-669301/36
Matrix: Water
Analysis Batch: 669301

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Ethane	0.76	U	1.1	0.76	0.30	ug/L		05/19/21 20:19	1
Ethylene	0.71	U	1.0	0.71	0.31	ug/L		05/19/21 20:19	1
Methane	1.2	U	1.2	1.2	0.57	ug/L		05/19/21 20:19	1
Methane (TCD)	77	U	390	77	39	ug/L		05/19/21 20:19	1

Lab Sample ID: LCS 680-669301/32
Matrix: Water
Analysis Batch: 669301

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methane (TCD)	1920	1980		ug/L		103	73 - 125

Lab Sample ID: LCS 680-669301/34
Matrix: Water
Analysis Batch: 669301

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane	288	318		ug/L		110	74 - 131
Ethylene	269	286		ug/L		106	72 - 133
Methane	154	163		ug/L		106	73 - 125

Lab Sample ID: LCSD 680-669301/33
Matrix: Water
Analysis Batch: 669301

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methane (TCD)	1920	1990		ug/L		103	73 - 125	0	30

Lab Sample ID: LCSD 680-669301/35
Matrix: Water
Analysis Batch: 669301

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane	288	318		ug/L		110	74 - 131	0	30
Ethylene	269	288		ug/L		107	72 - 133	1	30
Methane	154	164		ug/L		107	73 - 125	1	30

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 680-669400/35
Matrix: Water
Analysis Batch: 669400

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Sulfate	1.0	U	1.0	1.0	0.40	mg/L		05/20/21 19:11	1

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 680-669400/36
Matrix: Water
Analysis Batch: 669400

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			10.0	9.81		mg/L		98	87 - 112		

Lab Sample ID: LCSD 680-669400/37
Matrix: Water
Analysis Batch: 669400

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate			10.0	9.94		mg/L		99	87 - 112	1	15

Lab Sample ID: 680-198842-1 MS
Matrix: Water
Analysis Batch: 669400

Client Sample ID: G6M-04-03X-SPR21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate	4.2	M	10.0	14.4		mg/L		102	87 - 112		

Lab Sample ID: 680-198842-1 MSD
Matrix: Water
Analysis Batch: 669400

Client Sample ID: G6M-04-03X-SPR21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	4.2	M	10.0	14.5		mg/L		103	87 - 112	1	15

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-668620/1-A
Matrix: Water
Analysis Batch: 668792

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 668620

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	50	U	50	50	17	ug/L		05/15/21 00:52	1
Manganese	3.0	U	10	3.0	1.0	ug/L		05/15/21 00:52	1

Lab Sample ID: LCS 680-668620/2-A
Matrix: Water
Analysis Batch: 668792

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 668620

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Iron			2000	1950		ug/L		98	87 - 115		
Manganese			400	389		ug/L		97	90 - 114		

Lab Sample ID: 680-198842-1 MS
Matrix: Water
Analysis Batch: 668792

Client Sample ID: G6M-04-03X-SPR21
Prep Type: Dissolved
Prep Batch: 668620

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Iron	44000	J1	2000	43200	4	ug/L		-25	87 - 115		
Manganese	5200	J1	400	5290	4	ug/L		25	90 - 114		

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 680-198842-1 MSD — **Client Sample ID: G6M-04-03X-SPR21**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 668792 — **Prep Batch: 668620**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	44000	J1	2000	44400	4	ug/L		34	87 - 115	3	20
Manganese	5200	J1	400	5420	4	ug/L		57	90 - 114	2	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 680-668619/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 668823 — **Prep Batch: 668619**

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	3.0	U	3.0	3.0	1.5	ug/L		05/14/21 15:29	1

Lab Sample ID: LCS 680-668619/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 668823 — **Prep Batch: 668619**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	100	107		ug/L		107	84 - 116

Lab Sample ID: 680-198842-1 MS — **Client Sample ID: G6M-04-03X-SPR21**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 668823 — **Prep Batch: 668619**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	190		100	290		ug/L		103	84 - 116

Lab Sample ID: 680-198842-1 MSD — **Client Sample ID: G6M-04-03X-SPR21**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 668823 — **Prep Batch: 668619**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	190		100	283		ug/L		96	84 - 116	2	20

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 280-536880/22 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 536880

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate/Nitrite-N	0.050	U	0.10	0.050	0.019	mg/L		05/20/21 11:31	1

Lab Sample ID: LCS 280-536880/21 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 536880

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate/Nitrite-N	5.00	4.85		mg/L		97	90 - 110

Method: 9034 - Sulfide, Acid Soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 680-668605/1
Matrix: Water
Analysis Batch: 668605

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Sulfide	1.0	U	1.0	1.0	1.0	mg/L		05/14/21 10:04	1

Lab Sample ID: LCS 680-668605/2
Matrix: Water
Analysis Batch: 668605

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	10.0	11.0		mg/L		110	75 - 125

Lab Sample ID: LCSD 680-668605/3
Matrix: Water
Analysis Batch: 668605

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfide	10.0	10.3		mg/L		103	75 - 125	6	30

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 280-537420/35
Matrix: Water
Analysis Batch: 537420

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	0.375	J	1.0	0.80	0.35	mg/L		05/25/21 03:20	1

Lab Sample ID: MB 280-537420/4
Matrix: Water
Analysis Batch: 537420

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	0.80	U	1.0	0.80	0.35	mg/L		05/24/21 17:32	1

Lab Sample ID: LCS 280-537420/34
Matrix: Water
Analysis Batch: 537420

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	25.0	24.2		mg/L		97	88 - 112

Lab Sample ID: 680-198842-1 MS
Matrix: Water
Analysis Batch: 537420

Client Sample ID: G6M-04-03X-SPR21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	6.7	J1	25.0	29.6		mg/L		91	88 - 112

Method: 9060A - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: 680-198842-1 MSD
Matrix: Water
Analysis Batch: 537420

Client Sample ID: G6M-04-03X-SPR21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Duplicates	6.7	J1	25.0	28.6	J1	mg/L		87	88 - 112	3	15

Lab Sample ID: MB 280-537457/4
Matrix: Water
Analysis Batch: 537457

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	0.80	U	1.0	0.80	0.35	mg/L		05/25/21 19:25	1

Lab Sample ID: LCS 280-537457/3
Matrix: Water
Analysis Batch: 537457

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	25.0	24.8		mg/L		99	88 - 112

Lab Sample ID: 680-198842-4 MS
Matrix: Water
Analysis Batch: 537457

Client Sample ID: G6M-97-05B-SPR21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	67		50.1	118		mg/L		102	88 - 112

Lab Sample ID: 680-198842-4 MSD
Matrix: Water
Analysis Batch: 537457

Client Sample ID: G6M-97-05B-SPR21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Duplicates	67		50.1	118		mg/L		102	88 - 112	0	15

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 280-536502/5
Matrix: Water
Analysis Batch: 536502

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	6.4	U	10	6.4	3.1	mg/L		05/17/21 12:49	1

Lab Sample ID: LCS 280-536502/4
Matrix: Water
Analysis Batch: 536502

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	200	198		mg/L		99	89 - 109

Client: Seres Engineering & Services LLC
Project/Site: Fort Devens, LTM, AOC 50, Spring 2021

Job ID: 680-198842-1

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: MB 280-536676/31
Matrix: Water
Analysis Batch: 536676

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	6.4	U	10	6.4	3.1	mg/L		05/18/21 17:46	1

Lab Sample ID: LCS 280-536676/30
Matrix: Water
Analysis Batch: 536676

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Alkalinity			200	196		mg/L		98	89 - 109		

GC/MS VOA

Analysis Batch: 669818

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-198842-1	G6M-04-03X-SPR21	Total/NA	Water	8260B	
680-198842-2	G6M-13-01X-SPR21	Total/NA	Water	8260B	
680-198842-3	G6M-13-05X-SPR21	Total/NA	Water	8260B	
680-198842-4	G6M-97-05B-SPR21	Total/NA	Water	8260B	
MB 680-669818/10	Method Blank	Total/NA	Water	8260B	
LCS 680-669818/5	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-669818/6	Lab Control Sample Dup	Total/NA	Water	8260B	

GC VOA

Analysis Batch: 669301

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-198842-1	G6M-04-03X-SPR21	Total/NA	Water	RSK-175	
680-198842-2	G6M-13-01X-SPR21	Total/NA	Water	RSK-175	
680-198842-3	G6M-13-05X-SPR21	Total/NA	Water	RSK-175	
680-198842-4	G6M-97-05B-SPR21	Total/NA	Water	RSK-175	
MB 680-669301/36	Method Blank	Total/NA	Water	RSK-175	
LCS 680-669301/32	Lab Control Sample	Total/NA	Water	RSK-175	
LCS 680-669301/34	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 680-669301/33	Lab Control Sample Dup	Total/NA	Water	RSK-175	
LCSD 680-669301/35	Lab Control Sample Dup	Total/NA	Water	RSK-175	

HPLC/IC

Analysis Batch: 669400

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-198842-1	G6M-04-03X-SPR21	Total/NA	Water	9056A	
680-198842-2	G6M-13-01X-SPR21	Total/NA	Water	9056A	
680-198842-3	G6M-13-05X-SPR21	Total/NA	Water	9056A	
680-198842-4	G6M-97-05B-SPR21	Total/NA	Water	9056A	
MB 680-669400/35	Method Blank	Total/NA	Water	9056A	
LCS 680-669400/36	Lab Control Sample	Total/NA	Water	9056A	
LCSD 680-669400/37	Lab Control Sample Dup	Total/NA	Water	9056A	
680-198842-1 MS	G6M-04-03X-SPR21	Total/NA	Water	9056A	
680-198842-1 MSD	G6M-04-03X-SPR21	Total/NA	Water	9056A	

Metals

Prep Batch: 668619

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-198842-1	G6M-04-03X-SPR21	Dissolved	Water	3005A	
680-198842-2	G6M-13-01X-SPR21	Dissolved	Water	3005A	
680-198842-3	G6M-13-05X-SPR21	Dissolved	Water	3005A	
680-198842-4	G6M-97-05B-SPR21	Dissolved	Water	3005A	
MB 680-668619/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 680-668619/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
680-198842-1 MS	G6M-04-03X-SPR21	Dissolved	Water	3005A	
680-198842-1 MSD	G6M-04-03X-SPR21	Dissolved	Water	3005A	

Prep Batch: 668620

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-198842-1	G6M-04-03X-SPR21	Dissolved	Water	3005A	

Metals (Continued)

Prep Batch: 668620 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-198842-2	G6M-13-01X-SPR21	Dissolved	Water	3005A	
680-198842-3	G6M-13-05X-SPR21	Dissolved	Water	3005A	
680-198842-4	G6M-97-05B-SPR21	Dissolved	Water	3005A	
MB 680-668620/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 680-668620/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
680-198842-1 MS	G6M-04-03X-SPR21	Dissolved	Water	3005A	
680-198842-1 MSD	G6M-04-03X-SPR21	Dissolved	Water	3005A	

Analysis Batch: 668792

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-198842-1	G6M-04-03X-SPR21	Dissolved	Water	6010C	668620
680-198842-2	G6M-13-01X-SPR21	Dissolved	Water	6010C	668620
680-198842-3	G6M-13-05X-SPR21	Dissolved	Water	6010C	668620
680-198842-4	G6M-97-05B-SPR21	Dissolved	Water	6010C	668620
MB 680-668620/1-A	Method Blank	Total Recoverable	Water	6010C	668620
LCS 680-668620/2-A	Lab Control Sample	Total Recoverable	Water	6010C	668620
680-198842-1 MS	G6M-04-03X-SPR21	Dissolved	Water	6010C	668620
680-198842-1 MSD	G6M-04-03X-SPR21	Dissolved	Water	6010C	668620

Analysis Batch: 668823

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-198842-1	G6M-04-03X-SPR21	Dissolved	Water	6020A	668619
680-198842-2	G6M-13-01X-SPR21	Dissolved	Water	6020A	668619
680-198842-3	G6M-13-05X-SPR21	Dissolved	Water	6020A	668619
680-198842-4	G6M-97-05B-SPR21	Dissolved	Water	6020A	668619
MB 680-668619/1-A	Method Blank	Total Recoverable	Water	6020A	668619
LCS 680-668619/2-A	Lab Control Sample	Total Recoverable	Water	6020A	668619
680-198842-1 MS	G6M-04-03X-SPR21	Dissolved	Water	6020A	668619
680-198842-1 MSD	G6M-04-03X-SPR21	Dissolved	Water	6020A	668619

General Chemistry

Analysis Batch: 536502

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-198842-2	G6M-13-01X-SPR21	Total/NA	Water	SM 2320B	
680-198842-3	G6M-13-05X-SPR21	Total/NA	Water	SM 2320B	
680-198842-4	G6M-97-05B-SPR21	Total/NA	Water	SM 2320B	
MB 280-536502/5	Method Blank	Total/NA	Water	SM 2320B	
LCS 280-536502/4	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 536676

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-198842-1	G6M-04-03X-SPR21	Total/NA	Water	SM 2320B	
MB 280-536676/31	Method Blank	Total/NA	Water	SM 2320B	
LCS 280-536676/30	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 536880

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-198842-1	G6M-04-03X-SPR21	Total/NA	Water	353.2	
680-198842-2	G6M-13-01X-SPR21	Total/NA	Water	353.2	
680-198842-3	G6M-13-05X-SPR21	Total/NA	Water	353.2	

General Chemistry (Continued)

Analysis Batch: 536880 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-198842-4	G6M-97-05B-SPR21	Total/NA	Water	353.2	
MB 280-536880/22	Method Blank	Total/NA	Water	353.2	
LCS 280-536880/21	Lab Control Sample	Total/NA	Water	353.2	

Analysis Batch: 537420

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-198842-1	G6M-04-03X-SPR21	Total/NA	Water	9060A	
680-198842-2	G6M-13-01X-SPR21	Total/NA	Water	9060A	
680-198842-3	G6M-13-05X-SPR21	Total/NA	Water	9060A	
MB 280-537420/35	Method Blank	Total/NA	Water	9060A	
MB 280-537420/4	Method Blank	Total/NA	Water	9060A	
LCS 280-537420/34	Lab Control Sample	Total/NA	Water	9060A	
680-198842-1 MS	G6M-04-03X-SPR21	Total/NA	Water	9060A	
680-198842-1 MSD	G6M-04-03X-SPR21	Total/NA	Water	9060A	

Analysis Batch: 537457

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-198842-4	G6M-97-05B-SPR21	Total/NA	Water	9060A	
MB 280-537457/4	Method Blank	Total/NA	Water	9060A	
LCS 280-537457/3	Lab Control Sample	Total/NA	Water	9060A	
680-198842-4 MS	G6M-97-05B-SPR21	Total/NA	Water	9060A	
680-198842-4 MSD	G6M-97-05B-SPR21	Total/NA	Water	9060A	

Analysis Batch: 668605

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-198842-1	G6M-04-03X-SPR21	Total/NA	Water	9034	
680-198842-2	G6M-13-01X-SPR21	Total/NA	Water	9034	
680-198842-3	G6M-13-05X-SPR21	Total/NA	Water	9034	
680-198842-4	G6M-97-05B-SPR21	Total/NA	Water	9034	
MB 680-668605/1	Method Blank	Total/NA	Water	9034	
LCS 680-668605/2	Lab Control Sample	Total/NA	Water	9034	
LCSD 680-668605/3	Lab Control Sample Dup	Total/NA	Water	9034	

Lab Chronicle

Client: Seres Engineering & Services LLC
Job ID: 680-198842-1
Project/Site: Fort Devens, LTM, AOC 50, Spring 2021

Client Sample ID: G6M-04-03X-SPR21
Lab Sample ID: 680-198842-1
Date Collected: 05/11/21 16:20
Matrix: Water
Date Received: 05/13/21 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	669818	05/24/21 16:14	UI	TAL SAV
	Instrument ID: CMSO2									
Total/NA	Analysis	RSK-175		1	17 mL	17 mL	669301	05/19/21 22:15	JCK	TAL SAV
	Instrument ID: CVGU									
Total/NA	Analysis	9056A		1	5 mL	5 mL	669400	05/20/21 22:46	UI	TAL SAV
	Instrument ID: CICK									
Dissolved	Prep	3005A			50 mL	50 mL	668620	05/14/21 10:37	BJB	TAL SAV
Dissolved	Analysis	6010C		1			668792	05/15/21 01:01	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	668619	05/14/21 10:37	BJB	TAL SAV
Dissolved	Analysis	6020A		1			668823	05/14/21 15:34	BWR	TAL SAV
	Instrument ID: ICPMSD									
Total/NA	Analysis	353.2		1	100 mL	100 mL	536880	05/20/21 12:37	ZPM	TAL DEN
	Instrument ID: WC_Alp 2									
Total/NA	Analysis	9034		1	310 mL	310 mL	668605	05/14/21 10:04	NVF	TAL SAV
	Instrument ID: NOEQUIP									
Total/NA	Analysis	9060A		1	20 mL	20 mL	537420	05/25/21 06:12	RAF	TAL DEN
	Instrument ID: WC_SHI2									
Total/NA	Analysis	SM 2320B		1			536676	05/18/21 18:10	QJB	TAL DEN
	Instrument ID: WC_AT4									

Client Sample ID: G6M-13-01X-SPR21
Lab Sample ID: 680-198842-2
Date Collected: 05/11/21 14:10
Matrix: Water
Date Received: 05/13/21 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	669818	05/24/21 16:37	UI	TAL SAV
	Instrument ID: CMSO2									
Total/NA	Analysis	RSK-175		1	17 mL	17 mL	669301	05/19/21 22:28	JCK	TAL SAV
	Instrument ID: CVGU									
Total/NA	Analysis	9056A		1	5 mL	5 mL	669400	05/20/21 23:24	UI	TAL SAV
	Instrument ID: CICK									
Dissolved	Prep	3005A			50 mL	50 mL	668620	05/14/21 10:37	BJB	TAL SAV
Dissolved	Analysis	6010C		1			668792	05/15/21 01:24	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	668619	05/14/21 10:37	BJB	TAL SAV
Dissolved	Analysis	6020A		1			668823	05/14/21 15:47	BWR	TAL SAV
	Instrument ID: ICPMSD									
Total/NA	Analysis	353.2		1	100 mL	100 mL	536880	05/20/21 12:39	ZPM	TAL DEN
	Instrument ID: WC_Alp 2									
Total/NA	Analysis	9034		1	310 mL	310 mL	668605	05/14/21 10:04	NVF	TAL SAV
	Instrument ID: NOEQUIP									
Total/NA	Analysis	9060A		1	20 mL	20 mL	537420	05/25/21 07:21	RAF	TAL DEN
	Instrument ID: WC_SHI2									

Lab Chronicle

Client: Seres Engineering & Services LLC
Job ID: 680-198842-1
Project/Site: Fort Devens, LTM, AOC 50, Spring 2021

Client Sample ID: G6M-13-01X-SPR21
Lab Sample ID: 680-198842-2
Date Collected: 05/11/21 14:10
Matrix: Water
Date Received: 05/13/21 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2320B		1			536502	05/17/21 13:21	QJB	TAL DEN

Client Sample ID: G6M-13-05X-SPR21
Lab Sample ID: 680-198842-3
Date Collected: 05/11/21 13:30
Matrix: Water
Date Received: 05/13/21 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	669818	05/24/21 17:00	UI	TAL SAV
	Instrument ID: CMSO2									
Total/NA	Analysis	RSK-175		1	17 mL	17 mL	669301	05/19/21 23:07	JCK	TAL SAV
	Instrument ID: CVGU									
Total/NA	Analysis	9056A		1	5 mL	5 mL	669400	05/20/21 23:37	UI	TAL SAV
	Instrument ID: CICK									
Dissolved	Prep	3005A			50 mL	50 mL	668620	05/14/21 10:37	BJB	TAL SAV
Dissolved	Analysis	6010C		1			668792	05/15/21 01:28	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	668619	05/14/21 10:37	BJB	TAL SAV
Dissolved	Analysis	6020A		1			668823	05/14/21 15:50	BWR	TAL SAV
	Instrument ID: ICPMSD									
Total/NA	Analysis	353.2		1	100 mL	100 mL	536880	05/20/21 12:41	ZPM	TAL DEN
	Instrument ID: WC_Alp 2									
Total/NA	Analysis	9034		1	310 mL	310 mL	668605	05/14/21 10:04	NVF	TAL SAV
	Instrument ID: NOEQUIP									
Total/NA	Analysis	9060A		1	20 mL	20 mL	537420	05/25/21 07:36	RAF	TAL DEN
	Instrument ID: WC_SHI2									
Total/NA	Analysis	SM 2320B		1			536502	05/17/21 13:27	QJB	TAL DEN
	Instrument ID: WC_AT4									

Client Sample ID: G6M-97-05B-SPR21
Lab Sample ID: 680-198842-4
Date Collected: 05/11/21 14:20
Matrix: Water
Date Received: 05/13/21 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	669818	05/24/21 17:23	UI	TAL SAV
	Instrument ID: CMSO2									
Total/NA	Analysis	RSK-175		1	17 mL	17 mL	669301	05/19/21 23:20	JCK	TAL SAV
	Instrument ID: CVGU									
Total/NA	Analysis	9056A		1	5 mL	5 mL	669400	05/20/21 23:49	UI	TAL SAV
	Instrument ID: CICK									
Dissolved	Prep	3005A			50 mL	50 mL	668620	05/14/21 10:37	BJB	TAL SAV
Dissolved	Analysis	6010C		1			668792	05/15/21 01:33	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	668619	05/14/21 10:37	BJB	TAL SAV
Dissolved	Analysis	6020A		1			668823	05/14/21 15:52	BWR	TAL SAV
	Instrument ID: ICPMSD									

Lab Chronicle

Client: Seres Engineering & Services LLC
Job ID: 680-198842-1
Project/Site: Fort Devens, LTM, AOC 50, Spring 2021

Client Sample ID: G6M-97-05B-SPR21
Lab Sample ID: 680-198842-4

Date Collected: 05/11/21 14:20
Matrix: Water
Date Received: 05/13/21 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	353.2		1	100 mL	100 mL	536880	05/20/21 12:44	ZPM	TAL DEN
Total/NA	Analysis	9034		1	310 mL	310 mL	668605	05/14/21 10:04	NVF	TAL SAV
	Instrument ID: NOEQUIP									
Total/NA	Analysis	9060A		2	20 mL	20 mL	537457	05/25/21 19:54	RAF	TAL DEN
	Instrument ID: WC_SHI3									
Total/NA	Analysis	SM 2320B		1			536502	05/17/21 13:33	QJB	TAL DEN
	Instrument ID: WC_AT4									

Laboratory References:

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SAV = Eurofins TestAmerica, Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Accreditation/Certification Summary

Client: Seres Engineering & Services LLC
Job ID: 680-198842-1
Project/Site: Fort Devens, LTM, AOC 50, Spring 2021

Laboratory: Eurofins TestAmerica, Savannah

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
ANAB	Dept. of Defense ELAP	L2463	09-18-22

Laboratory: Eurofins TestAmerica, Denver

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	06-30-21

Method Summary

Client: Seres Engineering & Services LLC
Job ID: 680-198842-1
Project/Site: Fort Devens, LTM, AOC 50, Spring 2021

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
RSK-175	Dissolved Gases (GC)	RSK	TAL SAV
9056A	Anions, Ion Chromatography	SW846	TAL SAV
6010C	Metals (ICP)	SW846	TAL SAV
6020A	Metals (ICP/MS)	SW846	TAL SAV
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL DEN
9034	Sulfide, Acid Soluble and Insoluble (Titrimetric)	SW846	TAL SAV
9060A	Organic Carbon, Total (TOC)	SW846	TAL DEN
SM 2320B	Alkalinity	SM	TAL DEN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL SAV
5030B	Purge and Trap	SW846	TAL SAV

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SAV = Eurofins TestAmerica, Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

CHAIN-OF-CUSTODY RECORD

Seres-Arcadis JV
Nathan Mullens
669 Marina Drive, Suite B7, Charleston, SC 29492
(843) 478.0336, jennifer.singer@arcadis.com

COC # AOC50_SPR21

Boston #215

Project Name: Former Fort Devens, Long Term Monitoring	Laboratory: Eurofins TestAmerica, Savannah	Event: Seres-Arcadis JV, Long Term Monitoring, AOC 50, Spring 2021
Project Number: DEVNS-LTM	POC: Jerry Lanier, 912-250-0281, jerry.lanier@eurofinset.com	
WBS Code:	Ship to: Eurofins TestAmerica, 5102 LaRoche Avenue, Savannah, GA 31404	

Comments:
A2320B (A) = Alkalinity
E353.2 (A) = Nitrite Nitrate as N
RSK175 (A) = Dissolved Gases
SW6010C/FLDFLT (B) = Fe Mn
SW6020A/FLDFLT (B) = As
SW9034 (A) = Sulfide

Equipment:

Code	Matrix
WG	Ground Water

Code	Container/Preservative
5	1x 125mL plastic, Cool < 6degC
7	2x 250mL plastic, ZnAc/NaOH Cool < 6degC
8	3x 40mL glass VOA Vials, HCl, pH < 2, Cool < 6degC
9	1x 250mL, plastic, HNO3, pH < 2, Cool < 6degC
10	1x 250mL, plastic, HNO3, pH < 2, Cool < 6degC
29	3x 40mL glass VOA Vials, HCl, pH < 2, Cool < 6degC
46	1x 250mL, plastic, Cool < 6degC
47	1x 500mL, amber glass, H2SO4, Cool < 6degC

Event: Seres-Arcadis JV, Long Term Monitoring, AOC 50, Spring 2021

						Analytical Test Method	A2320B (A)	E353.2 (A)	RSK175 (A)	SW6010C/FLDFLT (B)	SW6020A/FLDFLT (B)	SW8260B - VOCs	SW9034 (A)	SW9056A - SO4	SW9060A - TOC			Sample	Depth (ft bgs)			
	Sample ID	Matrix	Date	Time	Samp Init.		46	47	8	9	9	29	7	5	10		Location ID	Type	Top	Bottom	Cooler	Comments
1	G6M-02-01X-SPR21	WG					X	X	X	X	X	X	X	X	X		G6M-02-01X	N1	80.00	95.00	1	
2	G6M-03-07X-SPR21	WG					X	X	X	X	X	X	X	X	X		G6M-03-07X	N1	80.00	90.00	1	
3	G6M-04-02X-SPR21	WG					X	X	X	X	X	X	X	X	X		G6M-04-02X	N1	80.00	90.00	1	
4	G6M-04-03X-SPR21	WG	5-11-21	1620	DC		X	X	X	X	X	X	X	X	X		G6M-04-03X	N1	85.00	95.00	1	
5	G6M-04-07X-SPR21	WG					X	X	X	X	X	X	X	X	X		G6M-04-07X	N1	120.00	130.00	1	
6	G6M-04-09X-SPR21	WG					X	X	X	X	X	X	X	X	X		G6M-04-09X	N1	55.00	65.00	1	
7	G6M-04-10A-SPR21	WG					X	X	X	X	X	X	X	X	X		G6M-04-10A	MS1	30.00	40.00	1	
8	G6M-04-10A-SPR21	WG					X	X	X	X	X	X	X	X	X		G6M-04-10A	N1	30.00	40.00	1	
9	G6M-04-10A-SPR21	WG					X	X	X	X	X	X	X	X	X		G6M-04-10A	SD1	30.00	40.00	1	
10	G6M-07-01X-SPR21	WG					X	X	X	X	X	X	X	X	X		G6M-07-01X	N1	78.00	89.00	1	
11	G6M-07-02X-SPR21	WG					X	X	X	X	X	X	X	X	X		G6M-07-02X	N1	22.50	27.50	1	
12	AOC50-DUP01-SPR21	WG					X	X	X	X	X	X	X	X	X		G6M-07-02X	FD1	22.50	27.50	1	
13	G6M-13-01X-SPR21	WG	5-11-21	1410	BK		X	X	X	X	X	X	X	X	X		G6M-13-01X	N1	125.00	135.00	1	
14	G6M-13-02X-SPR21	WG					X	X	X	X	X	X	X	X	X		G6M-13-02X	N1	115.00	125.00	1	
15	G6M-13-05X-SPR21	WG	5-11-21	1336	DC		X	X	X	X	X	X	X	X	X		G6M-13-05X	N1	45.00	55.00	1	
16	G6M-97-05B-SPR21	WG	5-11-21	1420	SG		X	X	X	X	X	X	X	X	X		G6M-97-05B	N1	130.00	135.00	1	
17	XSA-12-96X-SPR21	WG								X	X	X					XSA-12-96X	N1	120.00	130.00	1	

680-198842 Chain of Custody

Relinquished by: *(Signature)* [signature]
Date 5/11/21
Time 1740
Received by: *(Signature)* [signature]

Date 5/12/21
Time 1722
Shipping Date:
Received by Laboratory: ***(Signature, Date, Time)*** & conditio [signature]

MTJ 5/13/21 930
3.8 (3.9)

Devens eCOCs_Spring 2021

Eurofins TestAmerica, Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Phone: 912-354-7858 Fax: 912-352-0165

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler	Lab PM: Lanier, Jerry A	Carrier Tracking No(s)	COC No: 680-653772 1
Client Contact: Shipping/Receiving	Phone	E-Mail: Jerry.Lanier@Eurofinset.com	State of Origin: Massachusetts	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): Dept. of Defense ELAP - A2LA, DoD - ANAB		Job #: 680-198842-1
Address: 4955 Yarrow Street,	Due Date Requested: 5/26/2021			
City: Arvada	TAT Requested (days):			
State, Zip: CO, 80002				
Phone: 303-736-0100(Tel) 303-431-7171(Fax)	PO #			
Email:	WO #			
Project Name: Fort Devens, LTM, AOC 50, Spring 202	Project #: 68023801			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2320B/ Alkalinity	353.2_Pres	9060A/ (MOD) Waters - TOC Duplicates	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
G6M-04-03X-SPR21 (680-198842-1)	5/11/21	16:20 Eastern		Water			X	X	X	1	
G6M-13-01X-SPR21 (680-198842-2)	5/11/21	14:10 Eastern		Water			X	X	X	2	
G6M-13-05X-SPR21 (680-198842-3)	5/11/21	13:30 Eastern		Water			X	X	X	2	
G6M-97-05B-SPR21 (680-198842-4)	5/11/21	14:20 Eastern		Water			X	X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 11/01/2020

12/28/2021 (Rev. 1)

Eurofins TestAmerica, Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Phone: 912-354-7858 Fax: 912-352-0165

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler	Lab PM: Lanier, Jerry A	Carrier Tracking No(s):	COC No: 680-653772.1
Client Contact: Shipping/Receiving	Phone	E-Mail: Jerry.Lanier@Eurofinset.com	State of Origin: Massachusetts	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): Dept. of Defense ELAP - A2LA; DoD - ANAB		Job #: 680-198842-1
Address: 4955 Yarrow Street,	Due Date Requested: 5/26/2021			
City: Arvada	TAT Requested (days):			
State, Zip: CO, 80002				
Phone: 303-736-0100(Tel) 303-431-7171(Fax)	PO #			
Email:	WO #			
Project Name: Fort Devens, LTM, AOC 50, Spring 202	Project #: 68023801			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2320B/ Alkalinity	353.2_Pres	9060A/ (MOD) Waters - TOC Duplicates	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
G6M-04-03X-SPR21 (680-198842-1)	5/11/21	16:20 Eastern		Water			X	X	X	1	
G6M-13-01X-SPR21 (680-198842-2)	5/11/21	14:10 Eastern		Water			X	X	X	2	
G6M-13-05X-SPR21 (680-198842-3)	5/11/21	13:30 Eastern		Water			X	X	X	2	
G6M-97-05B-SPR21 (680-198842-4)	5/11/21	14:20 Eastern		Water			X	X	X	2	

680-198842 Chain of Custody

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification: Unconfirmed	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1		5/14/21/1524			5/15/21 0935	EtAlpn
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 2.5 C.I. #11, #04 IR

Ver: 11/01/2020

12/28/2021 (Rev. 1)

Login Sample Receipt Checklist

Client: Seres Engineering & Services LLC

Job Number: 680-198842-1

Login Number: 198842
List Number: 1
Creator: Tyler, Matthew M

List Source: Eurofins TestAmerica, Savannah

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Seres Engineering & Services LLC

Job Number: 680-198842-1

Login Number: 198842
List Number: 2
Creator: Cavalli, Haden G

List Source: Eurofins TestAmerica, Denver
List Creation: 05/15/21 01:32 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	False	2 bottles received for sample 1, when COC has only 1 bottle
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

SERES ENGINEERING & SERVICES, LLC
FORT DEVENS 2021 LTM
SO3743

KATAHDIN ANALYTICAL SERVICES
600 TECHNOLOGY WAY
SCARBOROUGH, ME 04074

TABLE OF CONTENTS

Total number of pages: 748

SAMPLE DATA PACKAGE

NARRATIVE
KATAHDIN ANALYTICAL SERVICES
SERES ENGINEERING & SERVICES, LLC
FORT DEVENS 2021 LTM
SO3743

Sample Receipt

The following samples were received on June 18, 2021 and were logged in under Katahdin Analytical Services work order number SO3743 for a hardcopy due date of July 07, 2021.

KATAHDIN Sample No.	SERES Sample Identification
SO3743-1	AOC50-TRIPBLANK-SPR21
SO3743-2	G6M-04-02X-SPR21
SO3743-3	AOC50-FB-SPR21
SO3743-5	G6M-04-10A-SPR21

The samples were logged in for the analyses specified on the chain of custody form. All problems encountered and resolved during sample receipt have been documented on the applicable chain of custody forms.

We certify that the test results provided in this report meet all the requirements of the NELAC standards unless otherwise noted in this narrative or in the Report of Analysis.

We certify that the test results provided in this report are accredited under the laboratory's ISO/IEC 17025:2017 and DoD-ELAP accreditation issued by the ANSI-ASQ National Accreditation Board. Refer to certificate and scope of accreditation L2223.

Analytes which are reported but not listed on our ANAB scope of accreditation will be "^" flagged and the following language will be included in the case narrative for all DoD compliant work: "^" Indicates this analyte is not included on Katahdin Analytical Services DoD-ELAP Scope of Accreditation.

Sample analyses have been performed by the methods as noted herein.

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact your Katahdin Analytical Services Project Manager, **Ms. Heather Manz**. This narrative is an integral part of the Report of Analysis.

Organics Analysis

The samples of Work Order SO3743 were analyzed in accordance with "Analysis of Dissolved Methane, Ethane, and Ethylene in Ground Water by a Standard Gas Chromatographic Technique", EPA Method RSK175, Revision 0, 8/11/94, and/or for the specific methods listed below or on the Report of Analysis.

Sample SO3743-5 was used for the matrix spike (MS) and matrix spike duplicate (MSD) per the clients request.

RSK SOP 175 Analysis

Samples SO3743-2 and 5 were manually integrated for the target analyte methane. The specific reasons for the manual integrations are indicated on the raw data by the manual integration codes (M1-M11). These codes are further explained in the attachment following this narrative.

The MS WG301388-3 had a low recovery for the target analyte methane that was outside of the DoD QSM acceptance limits. Since the associated LCS was acceptable, no further action was taken. The concentrations of the analyte in the MS and MSD were high and outside of the calibration range. The laboratory policy is not to reanalyze MS/MSD's for dilutions.

8260B Analysis

Samples SO3743-2DL and 5 were manually integrated for the target analytes 2-butanone and vinyl chloride, respectively. The specific reasons for the manual integrations are indicated on the raw data by the manual integration codes (M1-M11). These codes are further explained in the attachment following this narrative.

The target analytes carbon disulfide was detected below ½ of the LOQ in the method blank WG301327-2. According to the DoD QSM, a method blank is considered to be contaminated if the concentration of any target analyte in the blank exceeds ½ the reporting limit and is greater than 1/10 the amount measured in any associated sample or 1/10 the regulatory limit (whichever is greater). Since the method blank was acceptable, no further action was taken.

The reported percent recovery acceptance limits for the Laboratory Control Samples (LCSs) are statistically derived for the full list of spiked compounds. The recoveries of the spiked analytes in the LCS, Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are compared to these acceptance limits. Katahdin standard operating procedure is to take corrective action only if the number of spiked analytes in the LCS that are outside of the QC limits is greater than ten percent of the client compound list. If the associated MS/MSD has greater than the allowable number of exceedances, no corrective action is taken, as long the LCS is acceptable.

The independent check standard (file S0345A) associated with the initial calibration (ICAL) analyzed on 06/22/2021 had high concentrations for the target analytes acetone and vinyl acetate. The independent check standard (file T2389A) associated with the initial calibration on 06/24/2021 had high concentrations for the target analytes carbon disulfide, acetone, and vinyl acetate. These concentrations exceeded the DoD QSM acceptance limit of ±20% of the expected value from the ICAL. The Independent Check Report consists of the full list of spiked analytes, but only the client's list of target analytes are evaluated.

There were no other protocol deviations or observations noted by the organics laboratory staff.

Metals Analysis

The samples associated with Katahdin Work Order SO3743 were prepared and analyzed for metals in accordance with "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA publication SW846, Third Edition, Final Updates I (1993), II (1995), IIA (1994), IIB (1995), III (1997), IIIA (1999), IIIB (2005), IV (2008), and V (2015), Office of Solid Waste and Emergency Response, U.S. EPA.

Inductively-Coupled Plasma Mass Spectrometric Analysis (ICP-MS)

Aqueous-matrix Katahdin Sample Numbers SO3743-(2-3,5) were digested for ICP-MS analysis on 06/21/21 (QC Batch OF21IMW2) in accordance with USEPA Method 3010A. Per client request, Katahdin Sample Number SO3743-5 was prepared with duplicate matrix spiked aliquots.

ICP-MS analyses of Katahdin Work Order SO3743 sample digestates were performed using an Agilent 7800 ICP-MS spectrometer in accordance with USEPA Method 6020A. Results for all standards and samples are reported using the mean of 3 replicate measurements. All sample digestates were diluted by a factor of 5 during analysis to reduce mass interferences from chlorine, which is present in the digestates from the hydrochloric acid used in digesting the samples. All samples were analyzed within holding times and all analytical run QC criteria were met.

Internal standard recoveries for ICP-MS analyses can be found in the raw data section of the accompanying data package. The following table indicates which analytes are associated with each internal standard element.

Internal Standard Element	**Associated Analytes**
Lithium	Beryllium, Boron
Scandium	Sodium, Magnesium, Aluminum, Potassium, Calcium
Germanium or Yttrium	Vanadium, Chromium, Manganese, Iron, Cobalt, Nickel, Copper, Zinc, Arsenic, Selenium, Silver, Cadmium, Strontium, Molybdenum
Terbium	Antimony, Barium, Tin, Tungsten
Bismuth	Lead, Thallium, Thorium, Uranium

Instrument tuning information can also be found in the raw data section in the reports labeled "USEPA Method Tune Report". For Method 6020A, the relative standard deviation was determined from 5 replicate measurements and the peak width was measured at 10% of the peak height.

Inductively-Coupled Plasma (ICP) Atomic Emission Spectroscopic Analysis

Aqueous-matrix Katahdin Sample Numbers SO3743-(2-3,5) were digested for ICP analysis on 06/21/21 (QC Batch OF21CW2) in accordance USEPA Method 3010A. Per client request, Katahdin Sample Number SO3743-5 was prepared with duplicate matrix spiked aliquots.

ICP analyses of Katahdin Work Order SO3743 samples were performed using a Thermo iCAP 6500 ICP spectrometer in accordance with USEPA Method 6010C. All samples were analyzed within holding times and all applicable analytical run QC criteria were met.

Matrix QC Summary

The measured recoveries of iron and manganese in one or both of the matrix-spiked aliquots of Katahdin Sample Number SO3743-5 are outside laboratory acceptance criteria. For iron, this may be attributable to the sample concentration being significantly higher than the spike amount. Because the laboratory control sample was acceptable, no corrective action was taken.

The relative percent difference between the duplicate analyses of Katahdin Sample Number SO3743-5 are within project acceptance criteria (<20% relative difference between duplicate sample aliquots) for all analytes.

The measured recoveries in the post-digestion spiked aliquot of Katahdin Sample Number SO3743-5 are outside laboratory acceptance criteria (80%-120% recovery of the added element) for arsenic. This may be attributable to the sample concentration being significantly higher than the spike amount. Because the serial dilution was acceptable, no corrective action was taken.

The serial dilution analysis of Katahdin Sample Number SO3743-5 is within laboratory acceptance criteria (<10% relative percent difference, if the concentration in the original sample is greater than 50 times the LOD) for all analytes.

Reporting of Metals Results

Per client request, analytical results for client samples on Form I, preparation blanks on Form IIIP, and matrix QC samples on Forms VA, VD, and VI have been reported using the laboratory's Practical Quantitation Limits (PQL). All results were evaluated down to the laboratory's method detection limits (MDLs). Results that are less than the PQL are flagged with "U" in the C-qualifier column, and the PQL is listed in the concentration column. Results that fall between the MDL and the PQL are flagged with "J" in the C-qualifier column, and the measured concentration appears in the concentration column. These PQLs and MDLs have been adjusted for each sample based on the sample amounts used in preparation and analysis.

Analytical results on Forms VB and IX for client samples, analysis QC samples (serial dilutions and post-digestion spikes) have been reported down to the laboratory's method detection limits (MDLs). Analytical results that are below the MDLs are flagged with "U" in the C-qualifier column, and the adjusted MDL is listed in the concentration column.

Analytical results for instrument run QC samples (ICVs, ICBs, etc.) have been reported down to the laboratory's instrument detection limits (IDLs).

IDLs, MDLs, and PQLs are listed on Form 10 of the accompanying data package.

Wet Chemistry Analysis

The samples of SO3743 were analyzed in accordance with the specific methods listed on the Report of Analysis.

Analyses for alkalinity were performed according to "Standard Methods for the Examination of Water and Wastewater", 15th, 16th, 17th, 18th, 19th, and 20th editions, 1980, 1985, 1989, 1992, 1995, 1999. APHA-AWWA-WPCF.

Analyses for nitrate + nitrite were performed according to "Methods for the Determination of Inorganic Substances in Environmental Samples", EPA 600/R-93/100, August 1993.

Analyses for sulfate, sulfide, and total organic carbon were performed according to "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA publication SW-846, Third Edition, Final

Updates I (1993), II (1995), IIA (1994), IIB (1995), III (1997), IIIA (1999), IIIB (2005), IV (2008), and V (2015).

All Wet Chemistry results were evaluated to Katahdin Analytical Services' Method Detection Limits (MDL). Measured concentrations that fall between the MDL and Katahdin's Limit of Quantitation (LOQ) are flagged "J". Measured concentrations that are below the MDL are flagged "U" and reported as "U LOD", where "LOD" is the numerical value of the Limit of Detection.

All analyses were performed within analytical holding times. All quality control criteria were met, with the following exceptions:

The alkalinity recoveries in the matrix spike (70%) and matrix spike duplicate (41%) aliquots of Katahdin Sample No. SO3743-5 are outside the laboratory's acceptance limits of 75% - 125%.

The sulfate recovery (84.7%) in the matrix spike aliquot of Katahdin Sample No. SO3743-5 is outside the laboratory's acceptance limits of 90% - 110%.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Quality Assurance Officer, or their designee, as verified by the following signature.

Leslie Dimond
070921

Leslie Dimond
Quality Assurance Officer

Katahdin Analytical Services, Inc.

Manual Integration Codes For GC/MS, GC, HPLC and/or IC

M1	Peak splitting.
M2	Well defined peaks on the shoulders of the other peaks.
M3	There is additional area due to a coeluting interferant.
M4	There are negative spikes in the baseline.
M5	There are rising or falling baselines.
M6	The software has failed to detect a peak or misidentified a peak.
M7	Excessive peak tailing.
M8	Analysis such as GRO, DRO and TPH require a baseline hold.
M9	Peak was not completely integrated as in GC/MS.
M10	Primary ion was correctly integrated, but secondary or tertiary ion needed manual integration as in GC/MS.
M11	For GC analysis, when a sample is diluted by 1:10 or more, the surrogate is set to undetected and then the area under the surrogate is manually integrated.
M12	Manual integration saved in method due to TurboChrom floating point error.

Katahdin Analytical Services, LLC. **Sample Receipt Condition Report**

Client:	Arcadis/SERES	KAS PM:	HHM	Sampled By:	Client
Project:		KIMS Entry By:	JCB	Delivered By:	KAS
KAS Work Order#:	503742/3743	KIMS Review By:	HHM	Received By:	JCB
		Labeled By:	JCB		
SDG #:		Cooler: 1 of 2		Date/Time Rec.:	6/18/21 1440

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?		✓			
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 3.9 — Thermometer ID: IR-1
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals (except Hg soil) analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals (except Hg soil) analysis.
6. Volatiles: **Aqueous:** No bubble larger than a pea?	✓				
Soil/Sediment: Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
7. Trip Blank present in cooler?	✓				
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2	✓				
Sulfide - >9	✓				
Cyanide – pH >12				✓	
11. Bottleware Prepped on:					

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

Katahdin Analytical Services, LLC. — Sample Receipt Condition Report

Client: Arcadis/SERES	KAS PM: HHM	Sampled By: Client	
Project:	KIMS Entry By: JCB	Delivered By: KAS	
KAS Work Order#: 503742/3743	KIMS Review By: HHM	Received By: JCB	
	Labeled By: JCB		
SDG #:	Cooler: 2 of 2	Date/Time Rec.: 6/18/21 1440	

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?		/			
2. Chain of Custody present in cooler?	/				
3. Chain of Custody signed by client?	/				
4. Chain of Custody matches samples?	/				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	/				Temp (°C): 4.3 — Thermometer ID: IR-1
Samples received at <6 °C w/o freezing?	/				Note: Not required for metals (except Hg soil) analysis.
Ice packs or ice present?	/				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	/				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				/	Note: No cooling process required for metals (except Hg soil) analysis.
6. Volatiles:					
Aqueous: No bubble larger than a pea?				/	
Soil/Sediment:					
Received in airtight container?				/	
Received in methanol?				/	
Methanol covering soil?				/	
D.I. Water - Received within 48 hour HT?				/	
7. Trip Blank present in cooler?				/	
8. Proper sample containers and volume?	/				
9. Samples within hold time upon receipt?	/				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2	/				
Sulfide - >9				/	
Cyanide – pH >12				/	
11. Bottleware Prepped on:					

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

Heather Manz

From: Martz, Ian <Ian.Martz@arcadis.com>
Sent: Tuesday, June 22, 2021 9:02 AM
To: Heather Manz; halevesque@seres-es.com; Singer, Jennifer
Cc: Leslie Dimond; Greg Lull
Subject: RE: Fort Devens, SO3742 & SO3743 logins
Attachments: SO3743_logdetail_rev.pdf; SO3742_logdetail_rev.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Thanks Heather – please see attached comments, there are some samples/parameters that can be canceled.

From: Heather Manz <hmanz@katahdinlab.com>
Sent: Monday, June 21, 2021 5:29 PM
To: halevesque@seres-es.com; Martz, Ian <Ian.Martz@arcadis.com>; Singer, Jennifer <Jennifer.Singer@arcadis.com>
Cc: Leslie Dimond <ldimond@katahdinlab.com>; Greg Lull <glull@katahdinlab.com>
Subject: Fort Devens, SO3742 & SO3743 logins

Good Evening,

Attached are the logins for samples received on Friday.

Do the samples in SO3743 require the longer list of VOA compounds (list A in the eQAPP) or the short three compound list (list B in the eQAPP)?
Our detection limit for MEE (dissolved gases) by RSK175 is 10ug/L. This is above the RLs listed in the eQAPP.

Thank You,
Heather Manz

Project Manager
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600 Technology Way
Scarborough, ME 04074
Tel: (207) 874-2400
Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND PRINT LEGIBLY IN PEN

Client	Arcadis / Seres	Contact	Ian Martz	Phone #	(978)9379999
Fax #	(978)937-7555				
Address	1 Executive Dr Suite 303	City	Chelmsford	State	MA
Zip Code	01824				
Purchase Order #	FT Devens	Proj. Name / No.	30087304	Katahdin Quote #	
Bill (if different than above)		Address			
Sampler (Print / Sign)	DC / DB / NB	Copies To:	Heather Levesque		

LAB USE ONLY — WORK ORDER #: 503743

KATAHDIN PROJECT NUMBER

REMARKS: AOC 50

SHIPPING INFO: ☐ FED EX ☐ UPS ☐ CLIENT

AIRBILL NO: Lab pick up

TEMP°C ____ ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

★	Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	Filt.	Alkalinity	Filt.	Nitrate/Nitrite	Filt.	DBS Gases MEE	Filt.	Fe, Mn, As (FF)	Filt.	VOC 8260B	Filt.	Sulfide	Filt.	SO4	Filt.	TOC	Filt.	Filt.
	AOC 50-Trip Blank SPR21	-/-	Lab water	2										2								
	G6M-04-02X-SPR21	6/17/21 / 1215	GW	13	1		1		3		1		3		1		1		2			
	AOC 50-FB-SPR21	6/17/21 / 1245	Lab water	13	1		1		3		1		3		1		1		2			
	G6M-07-01X-SPR21	6/17/21 / 1430	GW	13	1		1		3		1		3		1		1		2			
	G6M-04-10A-SPR21	6/17/21 / 1030	GW	13	1		1		3		1		3		1		1		2			
	G6M-04-10A-SPR21-MS	6/17/21 / 1030	GW	13	1		1		3		1		3		1		1		2			
	G6M-04-10A-SPR21-MSD	6/17/21 / 1030	GW	13	1		1		3		1		3		1		1		2			

COMMENTS

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
[signature]	6/18/21 1010	[signature]	[signature]	6/18/21 1435	[signature]
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

Login Number: SO3743

Account: SERES001
SERES Engineering & Services, LLC

Project: SERES-FT-DEVENS
Former Fort Devens - Annual LTM

Primary Report Address:

Heather Levesque, PMP
SERES Engineering & Services, LLC
669 Marina Drive
Suite B-7
Charleston,SC 29492
USA
halevesque@seres-es.com

Primary Invoice Address:

Mary Tunstall
SERES Engineering & Services, LLC
669 Marina Drive
Suite B-7
Charleston,SC 29492
USA

Report CC Addresses:

Invoice CC Addresses:

Quote/Incoming: SERES-FT-DEVENS

Login Information:

ANALYSIS INSTRUCTIONS	:	DOD 5.3, ND to LOQ w/ J flags, include LOD on ROAs. Anions list is for Cl & SO4, check sample comments for what to report.
CHECK NO.	:	
CLIENT PO#	:	Project # JV2008 04.03
CLIENT PROJECT MANAGE	:	Heather Levesque
CONTRACT	:	W912WJ-19D-0014
COOLER TEMPERATURE	:	3.9, 4.3
DELIVERY SERVICES	:	KAS
EDD FORMAT	:	ECC-091317-TXT
LOGIN INITIALS	:	JCB
PM	:	HHM
PROJECT NAME	:	Fort Devens 2021 LTM
QC LEVEL	:	IV
REPORT INSTRUCTIONS	:	Upload EDD to Ft. Devens Database. Upload to SDS. Email reports to halevesque@seres-es.com; Ian.Martz@arcadis.com; Jennifer.Singer@arcadis.com. Email invoices to METunstall@seres-es.com & HALevesque@seres-es.com.
SDG ID	:	
SDG STATUS	:	
VERBAL TAT	:	

HHM

11:28 am, Jun 22, 2021

Login Number: SO3743

Quote/Incoming: SERES-FT-DEVENS

Account: SERES001
SERES Engineering & Services, LLC

Project: SERES-FT-DEVENS
Former Fort Devens - Annual LTM

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SO3743-1	AOC50-TRIPBLANK-SPR21	17-JUN-21 00:00	18-JUN-21			07-JUL-21	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW8260-S	01-JUL-21	40mL Vial+HCl		

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SO3743-2	G6M-04-02X-SPR21	17-JUN-21 12:15	18-JUN-21			07-JUL-21	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	E353.2-NOX	15-JUL-21	125mL Plastic+H2SO4		**Anions = SO4, client cancelled TOC on 06/22/2021.**
Aqueous	S	RSKSOP175-MEE	01-JUL-21	40mL Vial+HCl		
Aqueous	S	SM2320B-ALKALINITY	01-JUL-21	250mL Plastic		
Aqueous	S	SW3010-PREP	14-DEC-21	250mL Plastic+HNO3		
Aqueous	S	SW3010MS-PREP	14-DEC-21	250mL Plastic+HNO3		
Aqueous	S	SW6010-IRON-DIS	14-DEC-21	250mL Plastic+HNO3		
Aqueous	S	SW6010-MANGANESE-DIS	14-DEC-21	250mL Plastic+HNO3		
Aqueous	S	SW6020-ARSENIC-DIS	14-DEC-21	250mL Plastic+HNO3		
Aqueous	S	SW8260-S	01-JUL-21	40mL Vial+HCl		
Aqueous	S	SW9034-SULFIDE	24-JUN-21	500mL P+ZnAc/NaOH		
Aqueous	S	SW9056-ANIONS	16-JUL-21	250mL Plastic		

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SO3743-3	AOC50-FB-SPR21	17-JUN-21 12:45	18-JUN-21			07-JUL-21	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW3010-PREP	14-DEC-21	250mL Plastic+HNO3		**Client cancelled all wet chem on 06/22/2021.**
Aqueous	S	SW3010MS-PREP	14-DEC-21	250mL Plastic+HNO3		
Aqueous	S	SW6010-IRON-DIS	14-DEC-21	250mL Plastic+HNO3		
Aqueous	S	SW6010-MANGANESE-DIS	14-DEC-21	250mL Plastic+HNO3		
Aqueous	S	SW6020-ARSENIC-DIS	14-DEC-21	250mL Plastic+HNO3		
Aqueous	S	SW8260-S	01-JUL-21	40mL Vial+HCl		

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SO3743-4	G6M-07-01X-SPR21	17-JUN-21 14:30	18-JUN-21			07-JUL-21	

Matrix	Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
					Client cancelled sample on 06/22/2021.

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SO3743-5	G6M-04-10A-SPR21	17-JUN-21 10:30	18-JUN-21			07-JUL-21	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	E353.2-NOX	15-JUL-21	125mL Plastic+H2SO4		**MS/MSD Anions = SO4**
Aqueous	S	RSKSOP175-MEE	01-JUL-21	40mL Vial+HCl		
Aqueous	S	SM2320B-ALKALINITY	01-JUL-21	250mL Plastic		
Aqueous	S	SW3010-PREP	14-DEC-21	250mL Plastic+HNO3		
Aqueous	S	SW3010MS-PREP	14-DEC-21	250mL Plastic+HNO3		
Aqueous	S	SW6010-IRON-DIS	14-DEC-21	250mL Plastic+HNO3		
Aqueous	S	SW6010-MANGANESE-DIS	14-DEC-21	250mL Plastic+HNO3		
Aqueous	S	SW6020-ARSENIC-DIS	14-DEC-21	250mL Plastic+HNO3		
Aqueous	S	SW8260-S	01-JUL-21	40mL Vial+HCl		
Aqueous	S	SW9034-SULFIDE	24-JUN-21	500mL P+ZnAc/NaOH		
Aqueous	S	SW9056-ANIONS	16-JUL-21	250mL Plastic		
Aqueous	S	SW9060-TOC(1)	15-JUL-21	40 mL Vial+H2SO4		

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SO3743-6	MS CHARGE G6M-04-10A-SPR21	17-JUN-21 10:30	18-JUN-21			07-JUL-21	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	E353.2-NOX	15-JUL-21	125mL Plastic+H2SO4		**Not a sample, MS charge for SO3743-5.**
Aqueous	S	RSKSOP175-MEE	01-JUL-21	40mL Vial+HCl		
Aqueous	S	SM2320B-ALKALINITY	01-JUL-21	250mL Plastic		
Aqueous	S	SW6010-IRON-DIS	14-DEC-21	250mL Plastic+HNO3		
Aqueous	S	SW8260-S	01-JUL-21	40mL Vial+HCl		
Aqueous	S	SW9034-SULFIDE	24-JUN-21	500mL P+ZnAc/NaOH		
Aqueous	S	SW9056-ANIONS	16-JUL-21	250mL Plastic	***11:28 am, Jun 22, 2021***	
Aqueous	S	SW9060-TOC(1)	15-JUL-21	40 mL Vial+H2SO4		

Login Number: SO3743

Quote/Incoming: SERES-FT-DEVENS

Account: SERES001
SERES Engineering & Services, LLC

Project: SERES-FT-DEVENS
Former Fort Devens - Annual LTM

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SO3743-7	MSD CHARGE G6M-04-10A-SPR21	17-JUN-21 10:30	18-JUN-21			07-JUL-21	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	E353.2-NOX	15-JUL-21	125mL Plastic+H2SO4		**Not a sample, MSD charge for SO3743-5.**
Aqueous	S	RSKSOP175-MEE	01-JUL-21	40mL Vial+HCl		
Aqueous	S	SM2320B-ALKALINITY	01-JUL-21	250mL Plastic		
Aqueous	S	SW6010-IRON-DIS	14-DEC-21	250mL Plastic+HNO3		
Aqueous	S	SW8260-S	01-JUL-21	40mL Vial+HCl		
Aqueous	S	SW9034-SULFIDE	24-JUN-21	500mL P+ZnAc/NaOH		
Aqueous	S	SW9056-ANIONS	16-JUL-21	250mL Plastic		
Aqueous	S	SW9060-TOC(1)	15-JUL-21	40 mL Vial+H2SO4		

Total Samples: 6 ***Total Analyses: 46***

11:28 am, Jun 22, 2021

SAMPLE DATA SUMMARY PACKAGE

KATAHDIN ANALYTICAL SERVICES - ORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.

* Compound recovery or percent RPD (relative percent difference) was outside of quality control limits.

D Indicates the result was obtained from analysis of a diluted sample. Surrogate recoveries may not be calculable.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

or

J Used for Pesticides, PCBs, Herbicides, Formaldehyde, Explosives and Method 504.1 analytes when there is a greater than 40% difference for detected concentrations between the two GC columns.

B Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.

C Indicates that the flagged compound did not meet DoD criteria in the corresponding daily calibration verification (CV).

L Indicates that the flagged compound did not meet DoD criteria in the corresponding Laboratory Control Sample (LCS) and/or Laboratory Control Sample Duplicate (LCSD) prepared and/or analyzed concurrently with the sample.

M Indicates that the flagged compound did not meet DoD criteria in the Matrix Spike and/or Matrix Spike Duplicate prepared and/or analyzed concurrently with the native sample.

N Presumptive evidence of a compound based on a mass spectral library search.

A Indicates that a tentatively identified compound is a suspected aldol-condensation product.

P Used for Pesticide/Aroclor analyte when there is a greater than 25% difference for detected concentrations between the two GC columns. (for CLP methods only).

METALS SAMPLE FLAGGING

FLAG	SPECIFIED MEANING
E	The reported value is estimated because of the presence of interference (as indicated by serial dilution).
N	The pre-digestion spiked sample recovery is not within control limits.
*	The duplicate sample analysis relative percent difference (RPD) is not within control limits.
B	Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.
A	The post-digestion spiked sample recovery is not within control limits.
•	Analytical run QC sample (e.g. ICV, CCV, ICB, CCB, ICSA, ICSAB) not within control limits.
U	The analyte was not detected above the specified level. This level may be the Limit of Quantitation (LOQ) (previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client. Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.
J	The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ) (previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).
Q	One or more quality control criteria failed (e.g., LCS recovery, surrogate spike recovery or CCV).

KATAHDIN ANALYTICAL SERVICES – INORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL "U" LOQ or "U" LOD, where the rate of false negatives is <1%.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), but above the Method Detection Limit (MDL).

I-7 The laboratory's Practical Quantitation Level (PQL) or LOQ could not be achieved for this parameter due to sample composition, matrix effects, sample volume, or quantity used for analysis.

A-4 Please refer to cover letter or narrative for further information.

H_ Please note that the regulatory holding time for _____ is "analyze immediately". Ideally, this analysis must be performed in the field at the time of sample collection. _____ for this sample was not performed at the time of sample collection. The analysis was performed as soon as possible after receipt by the laboratory.

H1 - pH H2 - DO H3 - sulfite H4 - residual chlorine

T1 The client did not provide the full volume of at least one liter for analysis of TSS. Therefore, the PQL of 2.5 mg/L could not be achieved.

T2 The client provided the required volume of at least one liter for analysis of TSS, but the laboratory could not filter the full one liter volume due to the sample matrix. Therefore, the PQL of 2.5 mg/L could not be achieved.

M1 The matrix spike and/or matrix spike duplicate recovery performed on this sample was outside of the laboratory acceptance criteria. Sample matrix is suspected. The laboratory criteria was met for the Laboratory Control Sample (LCS) analyzed concurrently with this sample.

M2 The matrix spike and/or matrix spike duplicate recovery was outside of the laboratory acceptance criteria. The native sample concentration is greater than four times the spike added concentration so the spike added could not be distinguished from the native sample concentration.

R1 The relative percent difference (RPD) between the duplicate analyses performed on this sample was outside of the laboratory acceptance criteria (when both values are greater than ten times the PQL).

MCL	Maximum Contaminant Level	NL	No limit
NFL	No Free Liquid Present	FLP	Free Liquid Present
NOD	No Odor Detected	TON	Threshold Odor Number

D-1 As required by Method 5210B, APHA Standard Methods for the Examination of Water and Wastewater (21st edition), the BOD value reported for this sample is 'qualified' because the check standard run concurrently with the sample analysis did not meet the criteria specified in the method (198 +/- 30.5 mg/L). These results may not be reportable for compliance purposes.

D-2 The measured final dissolved oxygen concentrations of all dilutions were less than the method-specified limit of 1 mg/L. The reported BOD result was calculated assuming a final oxygen concentration equal to 1 mg/L. The reported value should be considered a minimum value.

D-3 The dilution water used to prepare this sample did not meet the method and/or regulatory criteria of less than 0.2 or 0.4 mg/L dissolved oxygen (DO) uptake over the five day period of incubation. These results may not be reportable for compliance purposes.

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: SERES Engineering & Services, LLC
Lab ID: SO3743-1
Client ID: AOC50-TRIPBLANK-SPR21
Project: Fort Devens 2021 LTM
SDG: SO3743
Lab File ID: S0364.D

Sample Date: 17-JUN-21
Received Date: 18-JUN-21
Extract Date: 23-JUN-21
Extracted By: CR
Extraction Method: SW846 5030C
Lab Prep Batch: WG301245

Analysis Date: 23-JUN-21
Analyst: CR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 01-JUL-21

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	2.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	2.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	2.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	U	2.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	2.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25	0.50
Methylene Chloride	J	4.2	ug/L	1	5	5.0	1.1	2.5
Acetone	U	5.0	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	1.0	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21	0.50
Vinyl Acetate	UL	1.0	ug/L	1	1	1.0	0.40	0.50
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21	0.50
1,2-Dichloroethylene (Total)	U	2.0	ug/L	1	2	2.0	0.21	1.0
2,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25	0.50
Bromochloromethane	U	1.0	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	1.0	ug/L	1	1	1.0	0.32	0.50
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22	0.50
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20	0.50
1,1-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.21	0.50
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3	2.5
Benzene	U	1.0	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28	0.50
Dibromomethane	U	1.0	ug/L	1	1	1.0	0.46	0.50
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19	0.50
Toluene	U	1.0	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3	2.5
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40	0.50
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33	0.50

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Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: SERES Engineering & Services, LLC
Lab ID: SO3743-1
Client ID: AOC50-TRIPBLANK-SPR21
Project: Fort Devens 2021 LTM
SDG: SO3743
Lab File ID: S0364.D

Sample Date: 17-JUN-21
Received Date: 18-JUN-21
Extract Date: 23-JUN-21
Extracted By: CR
Extraction Method: SW846 5030C
Lab Prep Batch: WG301245

Analysis Date: 23-JUN-21
Analyst: CR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 01-JUL-21

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30	0.50
1,3-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromoethane	U	1.0	ug/L	1	1	1.0	0.22	0.50
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21	0.50
1,1,1,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.19	0.50
Xylenes (Total)	U	3.0	ug/L	1	3	3.0	0.25	1.5
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59	1.0
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25	0.50
Styrene	U	1.0	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	1.0	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	1.0	ug/L	1	1	1.0	0.23	0.50
Bromobenzene	U	1.0	ug/L	1	1	1.0	0.24	0.50
N-Propylbenzene	U	1.0	ug/L	1	1	1.0	0.26	0.50
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38	0.50
1,3,5-Trimethylbenzene	U	1.0	ug/L	1	1	1.0	0.20	0.50
2-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.20	0.50
1,2,3-Trichloropropane	U	1.0	ug/L	1	1	1.0	0.19	0.50
4-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.26	0.50
tert-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.31	0.50
1,2,4-Trimethylbenzene	U	1.0	ug/L	1	1	1.0	0.19	0.50
P-Isopropyltoluene	U	1.0	ug/L	1	1	1.0	0.25	0.50
1,3-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.24	0.50
N-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.23	0.50
sec-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.21	0.50
1,2-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.15	0.50
1,2-Dibromo-3-Chloropropane	U	1.0	ug/L	1	1	1.0	0.50	0.75
Hexachlorobutadiene	U	1.0	ug/L	1	1	1.0	0.52	0.75
1,2,4-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.37	0.50
Naphthalene	U	1.0	ug/L	1	1	1.0	0.30	0.50
1,2,3-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.27	0.50
P-Bromofluorobenzene		94.6	%					
Toluene-d8		99.6	%					

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Client ID: AOC50-TRIPBLANK-SPR21
Project: Fort Devens 2021 LTM
SDG: SO3743
Lab File ID: S0364.D

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Extraction Method: SW846 5030C
Lab Prep Batch: WG301245

Analysis Date: 23-JUN-21
Analyst: CR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 01-JUL-21

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,2-Dichloroethane-d4		105.	%					
Dibromofluoromethane		105.	%					

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Report of Analytical Results

Client: SERES Engineering & Services, LLC
Lab ID: SO3743-2
Client ID: G6M-04-02X-SPR21
Project: Fort Devens 2021 LTM
SDG: SO3743
Lab File ID: S0374.D

Sample Date: 17-JUN-21
Received Date: 18-JUN-21
Extract Date: 23-JUN-21
Extracted By: CR
Extraction Method: SW846 5030C
Lab Prep Batch: WG301245

Analysis Date: 23-JUN-21
Analyst: CR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 01-JUL-21

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	2.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	2.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride		32	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	U	2.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	2.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	J	0.63	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25	0.50
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1	2.5
Acetone		12	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	J	0.94	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	1.0	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21	0.50
Vinyl Acetate	UL	1.0	ug/L	1	1	1.0	0.40	0.50
cis-1,2-Dichloroethene	E	210	ug/L	1	1	1.0	0.21	0.50
1,2-Dichloroethylene (Total)		210	ug/L	1	2	2.0	0.21	1.0
2,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25	0.50
Bromochloromethane	U	1.0	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	1.0	ug/L	1	1	1.0	0.32	0.50
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22	0.50
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20	0.50
1,1-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.21	0.50
2-Butanone		10	ug/L	1	5	5.0	1.3	2.5
Benzene	U	1.0	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20	0.50
Trichloroethene		3.7	ug/L	1	1	1.0	0.28	0.50
Dibromomethane	U	1.0	ug/L	1	1	1.0	0.46	0.50
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19	0.50
Toluene	U	1.0	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3	2.5
Tetrachloroethene		4.2	ug/L	1	1	1.0	0.40	0.50
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33	0.50

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Project: Fort Devens 2021 LTM
SDG: SO3743
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Analysis Date: 23-JUN-21
Analyst: CR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 01-JUL-21

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30	0.50
1,3-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromoethane	U	1.0	ug/L	1	1	1.0	0.22	0.50
2-Hexanone	J	4.8	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21	0.50
1,1,1,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.19	0.50
Xylenes (Total)	U	3.0	ug/L	1	3	3.0	0.25	1.5
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59	1.0
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25	0.50
Styrene	U	1.0	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	1.0	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	1.0	ug/L	1	1	1.0	0.23	0.50
Bromobenzene	U	1.0	ug/L	1	1	1.0	0.24	0.50
N-Propylbenzene	U	1.0	ug/L	1	1	1.0	0.26	0.50
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38	0.50
1,3,5-Trimethylbenzene	U	1.0	ug/L	1	1	1.0	0.20	0.50
2-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.20	0.50
1,2,3-Trichloropropane	U	1.0	ug/L	1	1	1.0	0.19	0.50
4-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.26	0.50
tert-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.31	0.50
1,2,4-Trimethylbenzene	U	1.0	ug/L	1	1	1.0	0.19	0.50
P-Isopropyltoluene	U	1.0	ug/L	1	1	1.0	0.25	0.50
1,3-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.24	0.50
N-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.23	0.50
sec-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.21	0.50
1,2-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.15	0.50
1,2-Dibromo-3-Chloropropane	U	1.0	ug/L	1	1	1.0	0.50	0.75
Hexachlorobutadiene	U	1.0	ug/L	1	1	1.0	0.52	0.75
1,2,4-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.37	0.50
Naphthalene	U	1.0	ug/L	1	1	1.0	0.30	0.50
1,2,3-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.27	0.50
P-Bromofluorobenzene		101.	%					
Toluene-d8		103.	%					

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ANALYTICAL SERVICES

Report of Analytical Results

Client: SERES Engineering & Services, LLC
Lab ID: SO3743-2
Client ID: G6M-04-02X-SPR21
Project: Fort Devens 2021 LTM
SDG: SO3743
Lab File ID: S0374.D

Sample Date: 17-JUN-21
Received Date: 18-JUN-21
Extract Date: 23-JUN-21
Extracted By: CR
Extraction Method: SW846 5030C
Lab Prep Batch: WG301245

Analysis Date: 23-JUN-21
Analyst: CR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 01-JUL-21

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,2-Dichloroethane-d4		113.	%					
Dibromofluoromethane		109.	%					

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ANALYTICAL SERVICES

Report of Analytical Results

Client: SERES Engineering & Services, LLC
Lab ID: SO3743-2DL
Client ID: G6M-04-02X-SPR21
Project: Fort Devens 2021 LTM
SDG: SO3743
Lab File ID: T2393.D

Sample Date: 17-JUN-21
Received Date: 18-JUN-21
Extract Date: 24-JUN-21
Extracted By: CR
Extraction Method: SW846 5030
Lab Prep Batch: WG301327

Analysis Date: 24-JUN-21
Analyst: CR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 01-JUL-21

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	4.0	ug/L	2	2	4.0	0.48	2.0
Chloromethane	U	4.0	ug/L	2	2	4.0	0.72	2.0
Vinyl Chloride		20	ug/L	2	2	4.0	0.50	2.0
Bromomethane	U	4.0	ug/L	2	2	4.0	0.98	2.0
Chloroethane	U	4.0	ug/L	2	2	4.0	1.1	2.0
Trichlorofluoromethane	U	4.0	ug/L	2	2	4.0	0.48	2.0
1,1-Dichloroethene	U	2.0	ug/L	2	1	2.0	0.70	1.0
Carbon Disulfide	U	2.0	ug/L	2	1	2.0	0.50	1.0
Methylene Chloride	U	10	ug/L	2	5	10.	2.3	5.0
Acetone		13	ug/L	2	5	10.	4.4	5.0
trans-1,2-Dichloroethene	J	0.86	ug/L	2	1	2.0	0.50	1.0
Methyl tert-butyl Ether	U	2.0	ug/L	2	1	2.0	0.72	1.0
1,1-Dichloroethane	U	2.0	ug/L	2	1	2.0	0.42	1.0
Vinyl Acetate	UL	2.0	ug/L	2	1	2.0	0.80	1.0
cis-1,2-Dichloroethene		170	ug/L	2	1	2.0	0.42	1.0
1,2-Dichloroethylene (Total)		170	ug/L	2	2	4.0	0.42	2.0
2,2-Dichloropropane	U	2.0	ug/L	2	1	2.0	0.50	1.0
Bromochloromethane	U	2.0	ug/L	2	1	2.0	0.42	1.0
Chloroform	U	2.0	ug/L	2	1	2.0	0.64	1.0
Carbon Tetrachloride	U	2.0	ug/L	2	1	2.0	0.44	1.0
1,1,1-Trichloroethane	U	2.0	ug/L	2	1	2.0	0.40	1.0
1,1-Dichloropropene	U	2.0	ug/L	2	1	2.0	0.42	1.0
2-Butanone	J	8.5	ug/L	2	5	10.	2.6	5.0
Benzene	U	2.0	ug/L	2	1	2.0	0.52	1.0
1,2-Dichloroethane	U	2.0	ug/L	2	1	2.0	0.40	1.0
Trichloroethene		4.1	ug/L	2	1	2.0	0.56	1.0
Dibromomethane	U	2.0	ug/L	2	1	2.0	0.92	1.0
1,2-Dichloropropane	U	2.0	ug/L	2	1	2.0	0.50	1.0
Bromodichloromethane	U	2.0	ug/L	2	1	2.0	0.66	1.0
cis-1,3-Dichloropropene	U	2.0	ug/L	2	1	2.0	0.38	1.0
Toluene	U	2.0	ug/L	2	1	2.0	0.54	1.0
4-Methyl-2-Pentanone	U	10	ug/L	2	5	10.	2.6	5.0
Tetrachloroethene		3.5	ug/L	2	1	2.0	0.80	1.0
trans-1,3-Dichloropropene	U	2.0	ug/L	2	1	2.0	0.40	1.0
1,1,2-Trichloroethane	U	2.0	ug/L	2	1	2.0	0.66	1.0

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ANALYTICAL SERVICES

Report of Analytical Results

Client: SERES Engineering & Services, LLC
Lab ID: SO3743-2DL
Client ID: G6M-04-02X-SPR21
Project: Fort Devens 2021 LTM
SDG: SO3743
Lab File ID: T2393.D

Sample Date: 17-JUN-21
Received Date: 18-JUN-21
Extract Date: 24-JUN-21
Extracted By: CR
Extraction Method: SW846 5030
Lab Prep Batch: WG301327

Analysis Date: 24-JUN-21
Analyst: CR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 01-JUL-21

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dibromochloromethane	U	2.0	ug/L	2	1	2.0	0.60	1.0
1,3-Dichloropropane	U	2.0	ug/L	2	1	2.0	0.44	1.0
1,2-Dibromoethane	U	2.0	ug/L	2	1	2.0	0.44	1.0
2-Hexanone	J	4.8	ug/L	2	5	10.	3.4	5.0
Chlorobenzene	U	2.0	ug/L	2	1	2.0	0.44	1.0
Ethylbenzene	U	2.0	ug/L	2	1	2.0	0.42	1.0
1,1,1,2-Tetrachloroethane	U	2.0	ug/L	2	1	2.0	0.38	1.0
Xylenes (Total)	U	6.0	ug/L	2	3	6.0	0.50	3.0
m+p-Xylenes	U	4.0	ug/L	2	2	4.0	1.2	2.0
o-Xylene	U	2.0	ug/L	2	1	2.0	0.50	1.0
Styrene	U	2.0	ug/L	2	1	2.0	0.46	1.0
Bromoform	U	2.0	ug/L	2	1	2.0	0.46	1.0
Isopropylbenzene	U	2.0	ug/L	2	1	2.0	0.46	1.0
Bromobenzene	U	2.0	ug/L	2	1	2.0	0.48	1.0
N-Propylbenzene	U	2.0	ug/L	2	1	2.0	0.52	1.0
1,1,2,2-Tetrachloroethane	U	2.0	ug/L	2	1	2.0	0.76	1.0
1,3,5-Trimethylbenzene	U	2.0	ug/L	2	1	2.0	0.40	1.0
2-Chlorotoluene	U	2.0	ug/L	2	1	2.0	0.40	1.0
1,2,3-Trichloropropane	U	2.0	ug/L	2	1	2.0	0.38	1.0
4-Chlorotoluene	U	2.0	ug/L	2	1	2.0	0.52	1.0
tert-Butylbenzene	U	2.0	ug/L	2	1	2.0	0.62	1.0
1,2,4-Trimethylbenzene	U	2.0	ug/L	2	1	2.0	0.38	1.0
P-Isopropyltoluene	U	2.0	ug/L	2	1	2.0	0.50	1.0
1,3-Dichlorobenzene	U	2.0	ug/L	2	1	2.0	0.52	1.0
1,4-Dichlorobenzene	U	2.0	ug/L	2	1	2.0	0.48	1.0
N-Butylbenzene	U	2.0	ug/L	2	1	2.0	0.46	1.0
sec-Butylbenzene	U	2.0	ug/L	2	1	2.0	0.42	1.0
1,2-Dichlorobenzene	U	2.0	ug/L	2	1	2.0	0.30	1.0
1,2-Dibromo-3-Chloropropane	U	2.0	ug/L	2	1	2.0	1.0	1.5
Hexachlorobutadiene	U	2.0	ug/L	2	1	2.0	1.0	1.5
1,2,4-Trichlorobenzene	U	2.0	ug/L	2	1	2.0	0.74	1.0
Naphthalene	U	2.0	ug/L	2	1	2.0	0.60	1.0
1,2,3-Trichlorobenzene	U	2.0	ug/L	2	1	2.0	0.54	1.0
P-Bromofluorobenzene		103.	%					
Toluene-d8		100.	%					

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ANALYTICAL SERVICES

Report of Analytical Results

Client: SERES Engineering & Services, LLC
Lab ID: SO3743-2DL
Client ID: G6M-04-02X-SPR21
Project: Fort Devens 2021 LTM
SDG: SO3743
Lab File ID: T2393.D

Sample Date: 17-JUN-21
Received Date: 18-JUN-21
Extract Date: 24-JUN-21
Extracted By: CR
Extraction Method: SW846 5030
Lab Prep Batch: WG301327

Analysis Date: 24-JUN-21
Analyst: CR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 01-JUL-21

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,2-Dichloroethane-d4		102.	%					
Dibromofluoromethane		99.5	%					

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Report of Analytical Results

Client: SERES Engineering & Services, LLC
Lab ID: SO3743-3
Client ID: AOC50-FB-SPR21
Project: Fort Devens 2021 LTM
SDG: SO3743
Lab File ID: S0365.D

Sample Date: 17-JUN-21
Received Date: 18-JUN-21
Extract Date: 23-JUN-21
Extracted By: CR
Extraction Method: SW846 5030C
Lab Prep Batch: WG301245

Analysis Date: 23-JUN-21
Analyst: CR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 01-JUL-21

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	2.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	2.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	2.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	U	2.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	2.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25	0.50
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1	2.5
Acetone	U	5.0	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	1.0	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21	0.50
Vinyl Acetate	UL	1.0	ug/L	1	1	1.0	0.40	0.50
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21	0.50
1,2-Dichloroethylene (Total)	U	2.0	ug/L	1	2	2.0	0.21	1.0
2,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25	0.50
Bromochloromethane	U	1.0	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	1.0	ug/L	1	1	1.0	0.32	0.50
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22	0.50
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20	0.50
1,1-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.21	0.50
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3	2.5
Benzene	U	1.0	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28	0.50
Dibromomethane	U	1.0	ug/L	1	1	1.0	0.46	0.50
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19	0.50
Toluene	U	1.0	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3	2.5
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40	0.50
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33	0.50

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ANALYTICAL SERVICES

Report of Analytical Results

Client: SERES Engineering & Services, LLC
Lab ID: SO3743-3
Client ID: AOC50-FB-SPR21
Project: Fort Devens 2021 LTM
SDG: SO3743
Lab File ID: S0365.D

Sample Date: 17-JUN-21
Received Date: 18-JUN-21
Extract Date: 23-JUN-21
Extracted By: CR
Extraction Method: SW846 5030C
Lab Prep Batch: WG301245

Analysis Date: 23-JUN-21
Analyst: CR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 01-JUL-21

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30	0.50
1,3-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromoethane	U	1.0	ug/L	1	1	1.0	0.22	0.50
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21	0.50
1,1,1,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.19	0.50
Xylenes (Total)	U	3.0	ug/L	1	3	3.0	0.25	1.5
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59	1.0
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25	0.50
Styrene	U	1.0	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	1.0	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	1.0	ug/L	1	1	1.0	0.23	0.50
Bromobenzene	U	1.0	ug/L	1	1	1.0	0.24	0.50
N-Propylbenzene	U	1.0	ug/L	1	1	1.0	0.26	0.50
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38	0.50
1,3,5-Trimethylbenzene	U	1.0	ug/L	1	1	1.0	0.20	0.50
2-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.20	0.50
1,2,3-Trichloropropane	U	1.0	ug/L	1	1	1.0	0.19	0.50
4-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.26	0.50
tert-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.31	0.50
1,2,4-Trimethylbenzene	U	1.0	ug/L	1	1	1.0	0.19	0.50
P-Isopropyltoluene	U	1.0	ug/L	1	1	1.0	0.25	0.50
1,3-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.24	0.50
N-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.23	0.50
sec-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.21	0.50
1,2-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.15	0.50
1,2-Dibromo-3-Chloropropane	U	1.0	ug/L	1	1	1.0	0.50	0.75
Hexachlorobutadiene	U	1.0	ug/L	1	1	1.0	0.52	0.75
1,2,4-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.37	0.50
Naphthalene	U	1.0	ug/L	1	1	1.0	0.30	0.50
1,2,3-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.27	0.50
P-Bromofluorobenzene		96.0	%					
Toluene-d8		100.	%					

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ANALYTICAL SERVICES

Report of Analytical Results

Client: SERES Engineering & Services, LLC
Lab ID: SO3743-3
Client ID: AOC50-FB-SPR21
Project: Fort Devens 2021 LTM
SDG: SO3743
Lab File ID: S0365.D

Sample Date: 17-JUN-21
Received Date: 18-JUN-21
Extract Date: 23-JUN-21
Extracted By: CR
Extraction Method: SW846 5030C
Lab Prep Batch: WG301245

Analysis Date: 23-JUN-21
Analyst: CR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 01-JUL-21

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,2-Dichloroethane-d4		111.	%					
Dibromofluoromethane		108.	%					

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ANALYTICAL SERVICES

Report of Analytical Results

Client: SERES Engineering & Services, LLC
Lab ID: SO3743-5
Client ID: G6M-04-10A-SPR21
Project: Fort Devens 2021 LTM
SDG: SO3743
Lab File ID: S0375.D

Sample Date: 17-JUN-21
Received Date: 18-JUN-21
Extract Date: 23-JUN-21
Extracted By: CR
Extraction Method: SW846 5030C
Lab Prep Batch: WG301245

Analysis Date: 23-JUN-21
Analyst: CR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 01-JUL-21

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	2.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	J	0.72	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	J	1.5	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	U	2.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	2.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25	0.50
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1	2.5
Acetone	U	5.0	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	J	0.62	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	1.0	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21	0.50
Vinyl Acetate	UL	1.0	ug/L	1	1	1.0	0.40	0.50
cis-1,2-Dichloroethene		4.7	ug/L	1	1	1.0	0.21	0.50
1,2-Dichloroethylene (Total)		5.3	ug/L	1	2	2.0	0.21	1.0
2,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25	0.50
Bromochloromethane	U	1.0	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	1.0	ug/L	1	1	1.0	0.32	0.50
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22	0.50
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20	0.50
1,1-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.21	0.50
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3	2.5
Benzene	U	1.0	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28	0.50
Dibromomethane	U	1.0	ug/L	1	1	1.0	0.46	0.50
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19	0.50
Toluene	U	1.0	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3	2.5
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40	0.50
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33	0.50

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ANALYTICAL SERVICES

Report of Analytical Results

Client: SERES Engineering & Services, LLC
Lab ID: SO3743-5
Client ID: G6M-04-10A-SPR21
Project: Fort Devens 2021 LTM
SDG: SO3743
Lab File ID: S0375.D

Sample Date: 17-JUN-21
Received Date: 18-JUN-21
Extract Date: 23-JUN-21
Extracted By: CR
Extraction Method: SW846 5030C
Lab Prep Batch: WG301245

Analysis Date: 23-JUN-21
Analyst: CR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 01-JUL-21

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30	0.50
1,3-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromoethane	U	1.0	ug/L	1	1	1.0	0.22	0.50
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21	0.50
1,1,1,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.19	0.50
Xylenes (Total)	U	3.0	ug/L	1	3	3.0	0.25	1.5
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59	1.0
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25	0.50
Styrene	U	1.0	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	1.0	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	1.0	ug/L	1	1	1.0	0.23	0.50
Bromobenzene	U	1.0	ug/L	1	1	1.0	0.24	0.50
N-Propylbenzene	U	1.0	ug/L	1	1	1.0	0.26	0.50
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38	0.50
1,3,5-Trimethylbenzene	J	0.81	ug/L	1	1	1.0	0.20	0.50
2-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.20	0.50
1,2,3-Trichloropropane	U	1.0	ug/L	1	1	1.0	0.19	0.50
4-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.26	0.50
tert-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.31	0.50
1,2,4-Trimethylbenzene	J	0.81	ug/L	1	1	1.0	0.19	0.50
P-Isopropyltoluene	U	1.0	ug/L	1	1	1.0	0.25	0.50
1,3-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.24	0.50
N-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.23	0.50
sec-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.21	0.50
1,2-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.15	0.50
1,2-Dibromo-3-Chloropropane	U	1.0	ug/L	1	1	1.0	0.50	0.75
Hexachlorobutadiene	U	1.0	ug/L	1	1	1.0	0.52	0.75
1,2,4-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.37	0.50
Naphthalene	U	1.0	ug/L	1	1	1.0	0.30	0.50
1,2,3-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.27	0.50
P-Bromofluorobenzene		99.5	%					
Toluene-d8		103.	%					

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ANALYTICAL SERVICES

Report of Analytical Results

Client: SERES Engineering & Services, LLC
Lab ID: SO3743-5
Client ID: G6M-04-10A-SPR21
Project: Fort Devens 2021 LTM
SDG: SO3743
Lab File ID: S0375.D

Sample Date: 17-JUN-21
Received Date: 18-JUN-21
Extract Date: 23-JUN-21
Extracted By: CR
Extraction Method: SW846 5030C
Lab Prep Batch: WG301245

Analysis Date: 23-JUN-21
Analyst: CR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 01-JUL-21

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,2-Dichloroethane-d4		112.	%					
Dibromofluoromethane		108.	%					

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Report of Analytical Results

Client: SERES Engineering & Services, LLC
Lab ID: SO3743-2
Client ID: G6M-04-02X-SPR21
Project: Fort Devens 2021 LTM
SDG: SO3743
Lab File ID: 5OF2104.D

Sample Date: 17-JUN-21
Received Date: 18-JUN-21
Extract Date: 25-JUN-21
Extracted By: DL
Extraction Method: RSK SOP 175
Lab Prep Batch: WG301388

Analysis Date: 25-JUN-21
Analyst: DL
Analysis Method: RSK SOP 175
Matrix: AQ
% Solids: NA
Report Date: 30-JUN-21

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Methane	E	6200	ug/L	1	10	10.	1.9	5.0
Ethane	U	10.	ug/L	1	10	10.	2.2	5.0
Ethene		33.	ug/L	1	10	10.	2.0	5.0

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Report of Analytical Results

Client: SERES Engineering & Services, LLC
Lab ID: SO3743-2DL
Client ID: G6M-04-02X-SPR21
Project: Fort Devens 2021 LTM
SDG: SO3743
Lab File ID: 5OF2116.D

Sample Date: 17-JUN-21
Received Date: 18-JUN-21
Extract Date: 25-JUN-21
Extracted By: DL
Extraction Method: RSK SOP 175
Lab Prep Batch: WG301388

Analysis Date: 25-JUN-21
Analyst: DL
Analysis Method: RSK SOP 175
Matrix: AQ
% Solids: NA
Report Date: 30-JUN-21

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Methane		20000	ug/L	20	10	200	39.	100
Ethane	U	200	ug/L	20	10	200	44.	100
Ethene	U	200	ug/L	20	10	200	39.	100

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Report of Analytical Results

Client: SERES Engineering & Services, LLC
Lab ID: SO3743-5
Client ID: G6M-04-10A-SPR21
Project: Fort Devens 2021 LTM
SDG: SO3743
Lab File ID: 5OF2105.D

Sample Date: 17-JUN-21
Received Date: 18-JUN-21
Extract Date: 25-JUN-21
Extracted By: DL
Extraction Method: RSK SOP 175
Lab Prep Batch: WG301388

Analysis Date: 25-JUN-21
Analyst: DL
Analysis Method: RSK SOP 175
Matrix: AQ
% Solids: NA
Report Date: 30-JUN-21

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Methane	EM	5900	ug/L	1	10	10.	1.9	5.0
Ethane	U	10.	ug/L	1	10	10.	2.2	5.0
Ethene	U	10.	ug/L	1	10	10.	2.0	5.0

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Report of Analytical Results

Client: SERES Engineering & Services, LLC
Lab ID: SO3743-5DL
Client ID: G6M-04-10A-SPR21
Project: Fort Devens 2021 LTM
SDG: SO3743
Lab File ID: 5OF2117.D

Sample Date: 17-JUN-21
Received Date: 18-JUN-21
Extract Date: 25-JUN-21
Extracted By: DL
Extraction Method: RSK SOP 175
Lab Prep Batch: WG301388

Analysis Date: 25-JUN-21
Analyst: DL
Analysis Method: RSK SOP 175
Matrix: AQ
% Solids: NA
Report Date: 30-JUN-21

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Methane	M	17000	ug/L	20	10	200	39.	100
Ethane	U	200	ug/L	20	10	200	44.	100
Ethene	U	200	ug/L	20	10	200	39.	100

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INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** G6M-04-02X-SPR21

Matrix: WATER **SDG Name:** SO3743

Percent Solids: 0.00 **Lab Sample ID:** SO3743-002

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7440-38-2	ARSENIC, DISSOLVED	50.3			MS	5	5.0	2.3	4.0
7439-89-6	IRON, DISSOLVED	28300			P	1	100	5.4	80
7439-96-5	MANGANESE, DISSOLVED	7860			P	1	5.0	1.1	4.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** AOC50-FB-SPR21

Matrix: WATER **SDG Name:** SO3743

Percent Solids: 0.00 **Lab Sample ID:** SO3743-003

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7440-38-2	ARSENIC, DISSOLVED	5.0	U		MS	5	5.0	2.3	4.0
7439-89-6	IRON, DISSOLVED	16	J		P	1	100	5.4	80
7439-96-5	MANGANESE, DISSOLVED	1.7	J		P	1	5.0	1.1	4.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** G6M-04-10A-SPR21

Matrix: WATER **SDG Name:** SO3743

Percent Solids: 0.00 **Lab Sample ID:** SO3743-005

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7440-38-2	ARSENIC, DISSOLVED	310		A	MS	5	5.0	2.3	4.0
7439-89-6	IRON, DISSOLVED	85100		N	P	1	100	5.4	80
7439-96-5	MANGANESE, DISSOLVED	1150		N	P	1	5.0	1.1	4.0

Comments:

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ANALYTICAL SERVICES

Report of Analytical Results

Client: Heather Levesque, PMP
SERES Engineering & Services, LLC
669 Marina Drive
Charleston,SC 29492

Lab Sample ID: SO3743-2
Report Date: 06-JUL-21
Project: Fort Devens 2021 LTM
SDG: SO3743

Sample Description	Matrix	Date Sampled	Date Received
G6M-04-02X-SPR21	AQ	17-JUN-21 12:15:00	18-JUN-21

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Alkalinity	120 mg/L	5.0	0.23	4.0	STDM 2320B	WG301194	21-JUN-21 12:45:29	N/A	N/A	
Nitrate+Nitrite As N	U0.12 mg/L	0.25	0.076	0.12	EPA 353.2	WG301299	23-JUN-21 12:01:31	N/A	N/A	I-7
Sulfate	1.1 mg/L	1.0	0.064	0.50	SW846 9056A	WG301594	28-JUN-21 23:19:00	N/A	N/A	
Sulfide-Iodometric	J0.89 mg/L	1.0	0.69	0.80	SW846 9034 MOD	WG301289	23-JUN-21 13:40:00	N/A	N/A	

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ANALYTICAL SERVICES

Report of Analytical Results

Client: Heather Levesque, PMP
SERES Engineering & Services, LLC
669 Marina Drive
Charleston,SC 29492

Lab Sample ID: SO3743-5
Report Date: 06-JUL-21
Project: Fort Devens 2021 LTM
SDG: SO3743

Sample Description	Matrix	Date Sampled	Date Received
G6M-04-10A-SPR21	AQ	17-JUN-21 10:30:00	18-JUN-21

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Alkalinity	220 mg/L	5.0	0.23	4.0	STDM 2320B	WG301194	21-JUN-21 12:53:52	N/A	N/A	
Nitrate+Nitrite As N	U0.025 mg/L	0.050	.0152	0.025	EPA 353.2	WG301653	29-JUN-21 14:15:24	N/A	N/A	
Sulfate	13 mg/L	1.0	0.064	0.50	SW846 9056A	WG301594	28-JUN-21 23:34:00	N/A	N/A	
Sulfide-Iodometric	U0.80 mg/L	1.0	0.69	0.80	SW846 9034 MOD	WG301289	23-JUN-21 13:40:00	N/A	N/A	
Total Organic Carbon (1)	17. mg/L	1.0	0.10	0.50	SW846 9060A	WG301562	28-JUN-21 16:55:08	N/A	N/A	

VOLATILES DATA

QC Summary Section

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** Fort Devens 2021 LTM **Matrix:** AQ
Lab Code: KAS **SDG:** SO3743

Client Sample ID	Lab Sample ID	Col. ID	BFB	#	DBF	#	DCA	#	TOL	#
AOC50-TRIPBLANK-SPR2	SO3743-1		94.6		105.		105.		99.6	
G6M-04-02X-SPR21	SO3743-2		101.		109.		113.		103.	
G6M-04-02X-SPR21	SO3743-2DL		103.		99.5		102.		100.	
AOC50-FB-SPR21	SO3743-3		96.0		108.		111.		100.	
G6M-04-10A-SPR21	SO3743-5		99.5		108.		112.		103.	
Laboratory Control S	WG301245-1		100.		96.3		92.1		99.6	
Method Blank Sample	WG301245-2		94.1		101.		101.		98.7	
Matrix Spike	WG301245-8		102.		95.9		92.3		99.6	
Matrix Spike Duplica	WG301245-9		101.		95.2		91.5		98.4	
Laboratory Control S	WG301327-1		101.		98.7		97.5		100.	
Method Blank Sample	WG301327-2		101.		100.		103.		99.2	

		QC Limits
BFB	P-BROMOFLUOROBENZENE	85-114
DBF	DIBROMOFLUOROMETHANE	80-119
DCA	1,2-DICHLOROETHANE-D4	81-118
TOL	TOLUENE-D8	89-112

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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Form 4
Method Blank Summary - VOA

Lab Name : Katahdin Analytical Services
Project : Fort Devens 2021 LTM
Lab File ID : S0363.D
Instrument ID : GCMS-S
Heated Purge : No

SDG : SO3743
Lab Sample ID : WG301245-2
Date Analyzed : 23-JUN-21
Time Analyzed : 11:57

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG301245-1	S0361.D	06/23/21	10:50
AOC50-TRIPBLANK-SPR21	SO3743-1	S0364.D	06/23/21	12:27
AOC50-FB-SPR21	SO3743-3	S0365.D	06/23/21	12:56
G6M-04-02X-SPR21	SO3743-2	S0374.D	06/23/21	17:24
G6M-04-10A-SPR21	SO3743-5	S0375.D	06/23/21	17:53
Matrix Spike	WG301245-8	S0379.D	06/23/21	19:53
Matrix Spike Duplica	WG301245-9	S0380.D	06/23/21	20:22

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Form 4
Method Blank Summary - VOA

Lab Name : Katahdin Analytical Services
Project : Fort Devens 2021 LTM
Lab File ID : T2391.D
Instrument ID : GCMS-T
Heated Purge : No

SDG : SO3743
Lab Sample ID : WG301327-2
Date Analyzed : 24-JUN-21
Time Analyzed : 12:56

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG301327-1	T2389.D	06/24/21	11:24
G6M-04-02X-SPR21	SO3743-2DL	T2393.D	06/24/21	14:02

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ANALYTICAL SERVICES

Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Fort Devens 2021 LTM
Lab File ID : SB572A.D
Instrument ID : GCMS-S

SDG : SO3743
Date Analyzed : 22-JUN-21
Time Analyzed : 10:13
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	15.5		
75	30.0 - 60.0% of mass 95	44.4		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	7.7		
173	Less than 2.0% of mass 174	0.1	0.17	1
174	Greater than 50.0% of mass 95	71.0		
175	5.0 - 9.0% of mass 174	5.4	7.58	1
176	95.0 - 101.0% of mass 174	70.7	99.60	1
177	5.0 - 9.0% of mass 176	4.9	6.87	2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Initial Calibration	WG301173-7	S0338.D	06/22/21	11:04
Initial Calibration	WG301173-4	S0339.D	06/22/21	11:34
Initial Calibration	WG301173-3	S0340.D	06/22/21	12:04
Initial Calibration	WG301173-2	S0341.D	06/22/21	12:33
Initial Calibration	WG301173-1	S0342.D	06/22/21	13:03
Initial Calibration	WG301173-6	S0343.D	06/22/21	13:33
Initial Calibration	WG301173-5	S0344.D	06/22/21	14:02
Independent Source	WG301173-8	S0345A.D	06/22/21	14:56

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Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Fort Devens 2021 LTM
Lab File ID : SB573A.D
Instrument ID : GCMS-S

SDG : SO3743
Date Analyzed : 23-JUN-21
Time Analyzed : 09:52
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	15.2		
75	30.0 - 60.0% of mass 95	46.3		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	7.6		
173	Less than 2.0% of mass 174	0.5	0.63	1
174	Greater than 50.0% of mass 95	81.0		
175	5.0 - 9.0% of mass 174	5.7	7.00	1
176	95.0 - 101.0% of mass 174	79.2	97.78	1
177	5.0 - 9.0% of mass 176	5.3	6.71	2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG301245-4	S0360.D	06/23/21	10:13
Laboratory Control S	WG301245-1	S0361.D	06/23/21	10:50
Method Blank Sample	WG301245-2	S0363.D	06/23/21	11:57
AOC50-TRIPBLANK-SPR21	SO3743-1	S0364.D	06/23/21	12:27
AOC50-FB-SPR21	SO3743-3	S0365.D	06/23/21	12:56
G6M-04-02X-SPR21	SO3743-2	S0374.D	06/23/21	17:24
G6M-04-10A-SPR21	SO3743-5	S0375.D	06/23/21	17:53
Matrix Spike	WG301245-8	S0379.D	06/23/21	19:53
Matrix Spike Duplica	WG301245-9	S0380.D	06/23/21	20:22
Continuing Calibrati	WG301245-5	S0381.D	06/23/21	20:52

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Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Fort Devens 2021 LTM
Lab File ID : TB518B.D
Instrument ID : GCMS-T

SDG : SO3743
Date Analyzed : 23-JUN-21
Time Analyzed : 08:47
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	18.4		
75	30.0 - 60.0% of mass 95	48.0		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	6.0		
173	Less than 2.0% of mass 174	0.0	0.0	1
174	Greater than 50.0% of mass 95	74.3		
175	5.0 - 9.0% of mass 174	5.1	6.87	1
176	95.0 - 101.0% of mass 174	71.2	95.74	1
177	5.0 - 9.0% of mass 176	4.2	5.92	2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Initial Calibration	WG301244-6	T2377.D	06/23/21	09:10
Initial Calibration	WG301244-5	T2378.D	06/23/21	09:43
Initial Calibration	WG301244-7	T2379.D	06/23/21	10:16
Initial Calibration	WG301244-4	T2380.D	06/23/21	10:48
Initial Calibration	WG301244-3	T2381.D	06/23/21	11:21
Initial Calibration	WG301244-2	T2382.D	06/23/21	11:54
Initial Calibration	WG301244-1	T2383.D	06/23/21	12:27

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Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : Fort Devens 2021 LTM
Lab File ID : TB519A.D
Instrument ID : GCMS-T

SDG : SO3743
Date Analyzed : 24-JUN-21
Time Analyzed : 10:00
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	19.8		
75	30.0 - 60.0% of mass 95	46.7		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	7.3		
173	Less than 2.0% of mass 174	0.0	0.0	1
174	Greater than 50.0% of mass 95	77.2		
175	5.0 - 9.0% of mass 174	5.8	7.51	1
176	95.0 - 101.0% of mass 174	75.8	98.17	1
177	5.0 - 9.0% of mass 176	5.4	7.15	2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG301327-4	T2388.D	06/24/21	10:21
Laboratory Control S	WG301327-1	T2389.D	06/24/21	11:24
Independent Source	WG301327-6	T2389A.D	06/24/21	11:24
Method Blank Sample	WG301327-2	T2391.D	06/24/21	12:56
G6M-04-02X-SPR21	SO3743-2DL	T2393.D	06/24/21	14:02
Continuing Calibrati	WG301327-5	T2396.D	06/24/21	15:41

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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Fort Devens 2021 LTM
Lab ID : WG301173-4
Lab File ID : S0339.D

SDG: SO3743
Analytical Date: 06/22/21 11:34
Instrument ID: GCMS-S

		PENTAFLUOROBENZENE			1,4-DIFLUOROBENZENE			CHLOROBENZENE-D5		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	471669		4.90		921183		5.78		889572		10.23	
	Upper Limit	943338		5.07		1842366		5.94		1779144		10.40	
	Lower Limit	235834.5		4.74		460591.5		5.61		444786		10.07	
Client Sample ID	Lab Sample ID												
Continuing Calibrati	WG301245-4	489331		4.89		951379		5.77		923279		10.23	
Laboratory Control S	WG301245-1	504477		4.90		953665		5.77		925735		10.23	
Method Blank Sample	WG301245-2	425088		4.90		866856		5.78		815598		10.23	
AOC50-TRIPBLANK-	SO3743-1	402726		4.90		836419		5.78		786290		10.23	
AOC50-FB-SPR21	SO3743-3	380185		4.90		804039		5.78		762368		10.23	
G6M-04-02X-SPR21	SO3743-2	344530		4.90		728243		5.78		714018		10.23	
G6M-04-10A-SPR21	SO3743-5	349723		4.90		729806		5.78		702048		10.23	
Matrix Spike	WG301245-8	475018		4.90		898084		5.77		869086		10.23	
Matrix Spike Duplica	WG301245-9	487236		4.89		922068		5.77		884713		10.23	
Continuing Calibrati	WG301245-5	501498		4.89		942200		5.77		902435		10.22	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 10 seconds of internal standard RT
RT Lower Limit = - 10 seconds of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

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ANALYTICAL SERVICES

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Fort Devens 2021 LTM
Lab ID : WG301173-4
Lab File ID : S0339.D

SDG: SO3743
Analytical Date: 06/22/21 11:34
Instrument ID: GCMS-S

		1,4-DICHLOROBENZENE-D4			
		Area	#	RT	#
	Std .	465074		13.51	
	Upper Limit	930148		13.68	
	Lower Limit	232537		13.35	
Client Sample ID	Lab Sample ID				
Continuing Calibrati	WG301245-4	496351		13.51	
Laboratory Control S	WG301245-1	495563		13.51	
Method Blank Sample	WG301245-2	388165		13.51	
AOC50-TRIPBLANK-	SO3743-1	378601		13.52	
AOC50-FB-SPR21	SO3743-3	362505		13.51	
G6M-04-02X-SPR21	SO3743-2	351060		13.51	
G6M-04-10A-SPR21	SO3743-5	346319		13.51	
Matrix Spike	WG301245-8	471661		13.51	
Matrix Spike Duplica	WG301245-9	477351		13.51	
Continuing Calibrati	WG301245-5	489183		13.51	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 10 seconds of internal standard RT
RT Lower Limit = - 10 seconds of internal standard RT

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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Fort Devens 2021 LTM
Lab ID : WG301244-4
Lab File ID : T2380.D

SDG: SO3743
Analytical Date: 06/23/21 10:48
Instrument ID: GCMS-T

		PENTAFLUOROBENZENE			1,4-DIFLUOROBENZENE			CHLOROBENZENE-D5		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	420487		5.30		735391		6.14		693580		10.27	
	Upper Limit	840974		5.47		1470782		6.31		1387160		10.44	
	Lower Limit	210243.5		5.14		367695.5		5.97		346790		10.11	
Client Sample ID	Lab Sample ID												
Continuing Calibrati	WG301327-4	415333		5.30		721379		6.14		692867		10.28	
Laboratory Control S	WG301327-1	417644		5.30		731699		6.13		701252		10.27	
Method Blank Sample	WG301327-2	409484		5.30		727151		6.13		688027		10.27	
G6M-04-02X-SPR21	SO3743-2DL	397574		5.30		703591		6.13		671296		10.28	
Continuing Calibrati	WG301327-5	401409		5.30		719120		6.14		692795		10.28	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 10 seconds of internal standard RT
RT Lower Limit = - 10 seconds of internal standard RT

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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : Fort Devens 2021 LTM
Lab ID : WG301244-4
Lab File ID : T2380.D

SDG: SO3743
Analytical Date: 06/23/21 10:48
Instrument ID: GCMS-T

		1,4-DICHLOROBENZENE-D4			
		Area	#	RT	#
	Std .	333748		13.34	
	Upper Limit	667496		13.51	
	Lower Limit	166874		13.17	
Client Sample ID	Lab Sample ID				
Continuing Calibrati	WG301327-4	339059		13.34	
Laboratory Control S	WG301327-1	337053		13.34	
Method Blank Sample	WG301327-2	325774		13.34	
G6M-04-02X-SPR21	SO3743-2DL	319413		13.34	
Continuing Calibrati	WG301327-5	337659		13.34	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 10 seconds of internal standard RT
RT Lower Limit = - 10 seconds of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

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Sample Data Section

KATAHDIN ANALYTICAL SERVICES - ORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.

* Compound recovery or percent RPD (relative percent difference) was outside of quality control limits.

D Indicates the result was obtained from analysis of a diluted sample. Surrogate recoveries may not be calculable.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

or

J Used for Pesticides, PCBs, Herbicides, Formaldehyde, Explosives and Method 504.1 analytes when there is a greater than 40% difference for detected concentrations between the two GC columns.

B Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.

C Indicates that the flagged compound did not meet DoD criteria in the corresponding daily calibration verification (CV).

L Indicates that the flagged compound did not meet DoD criteria in the corresponding Laboratory Control Sample (LCS) and/or Laboratory Control Sample Duplicate (LCSD) prepared and/or analyzed concurrently with the sample.

M Indicates that the flagged compound did not meet DoD criteria in the Matrix Spike and/or Matrix Spike Duplicate prepared and/or analyzed concurrently with the native sample.

N Presumptive evidence of a compound based on a mass spectral library search.

A Indicates that a tentatively identified compound is a suspected aldol-condensation product.

P Used for Pesticide/Aroclor analyte when there is a greater than 25% difference for detected concentrations between the two GC columns. (for CLP methods only).

Katahdin Analytical Services, Inc.

Manual Integration Codes For GC/MS, GC, HPLC and/or IC

M1	Peak splitting.
M2	Well defined peaks on the shoulders of the other peaks.
M3	There is additional area due to a coeluting interferant.
M4	There are negative spikes in the baseline.
M5	There are rising or falling baselines.
M6	The software has failed to detect a peak or misidentified a peak.
M7	Excessive peak tailing.
M8	Analysis such as GRO, DRO and TPH require a baseline hold.
M9	Peak was not completely integrated as in GC/MS.
M10	Primary ion was correctly integrated, but secondary or tertiary ion needed manual integration as in GC/MS.
M11	For GC analysis, when a sample is diluted by 1:10 or more, the surrogate is set to undetected and then the area under the surrogate is manually integrated.
M12	Manual integration saved in method due to TurboChrom floating point error.

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ANALYTICAL SERVICES

Report of Analytical Results

Client: SERES Engineering & Services, LLC
Lab ID: SO3743-1
Client ID: AOC50-TRIPBLANK-SPR21
Project: Fort Devens 2021 LTM
SDG: SO3743
Lab File ID: S0364.D

Sample Date: 17-JUN-21
Received Date: 18-JUN-21
Extract Date: 23-JUN-21
Extracted By: CR
Extraction Method: SW846 5030C
Lab Prep Batch: WG301245

Analysis Date: 23-JUN-21
Analyst: CR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 01-JUL-21

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	2.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	2.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	2.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	U	2.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	2.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25	0.50
Methylene Chloride	J	4.2	ug/L	1	5	5.0	1.1	2.5
Acetone	U	5.0	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	1.0	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21	0.50
Vinyl Acetate	UL	1.0	ug/L	1	1	1.0	0.40	0.50
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21	0.50
1,2-Dichloroethylene (Total)	U	2.0	ug/L	1	2	2.0	0.21	1.0
2,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25	0.50
Bromochloromethane	U	1.0	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	1.0	ug/L	1	1	1.0	0.32	0.50
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22	0.50
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20	0.50
1,1-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.21	0.50
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3	2.5
Benzene	U	1.0	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28	0.50
Dibromomethane	U	1.0	ug/L	1	1	1.0	0.46	0.50
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19	0.50
Toluene	U	1.0	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3	2.5
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40	0.50
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33	0.50

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ANALYTICAL SERVICES

Report of Analytical Results

Client: SERES Engineering & Services, LLC
Lab ID: SO3743-1
Client ID: AOC50-TRIPBLANK-SPR21
Project: Fort Devens 2021 LTM
SDG: SO3743
Lab File ID: S0364.D

Sample Date: 17-JUN-21
Received Date: 18-JUN-21
Extract Date: 23-JUN-21
Extracted By: CR
Extraction Method: SW846 5030C
Lab Prep Batch: WG301245

Analysis Date: 23-JUN-21
Analyst: CR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 01-JUL-21

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30	0.50
1,3-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromoethane	U	1.0	ug/L	1	1	1.0	0.22	0.50
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21	0.50
1,1,1,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.19	0.50
Xylenes (Total)	U	3.0	ug/L	1	3	3.0	0.25	1.5
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59	1.0
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25	0.50
Styrene	U	1.0	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	1.0	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	1.0	ug/L	1	1	1.0	0.23	0.50
Bromobenzene	U	1.0	ug/L	1	1	1.0	0.24	0.50
N-Propylbenzene	U	1.0	ug/L	1	1	1.0	0.26	0.50
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38	0.50
1,3,5-Trimethylbenzene	U	1.0	ug/L	1	1	1.0	0.20	0.50
2-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.20	0.50
1,2,3-Trichloropropane	U	1.0	ug/L	1	1	1.0	0.19	0.50
4-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.26	0.50
tert-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.31	0.50
1,2,4-Trimethylbenzene	U	1.0	ug/L	1	1	1.0	0.19	0.50
P-Isopropyltoluene	U	1.0	ug/L	1	1	1.0	0.25	0.50
1,3-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.24	0.50
N-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.23	0.50
sec-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.21	0.50
1,2-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.15	0.50
1,2-Dibromo-3-Chloropropane	U	1.0	ug/L	1	1	1.0	0.50	0.75
Hexachlorobutadiene	U	1.0	ug/L	1	1	1.0	0.52	0.75
1,2,4-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.37	0.50
Naphthalene	U	1.0	ug/L	1	1	1.0	0.30	0.50
1,2,3-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.27	0.50
P-Bromofluorobenzene		94.6	%					
Toluene-d8		99.6	%					

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ANALYTICAL SERVICES

Report of Analytical Results

Client: SERES Engineering & Services, LLC
Lab ID: SO3743-1
Client ID: AOC50-TRIPBLANK-SPR21
Project: Fort Devens 2021 LTM
SDG: SO3743
Lab File ID: S0364.D

Sample Date: 17-JUN-21
Received Date: 18-JUN-21
Extract Date: 23-JUN-21
Extracted By: CR
Extraction Method: SW846 5030C
Lab Prep Batch: WG301245

Analysis Date: 23-JUN-21
Analyst: CR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 01-JUL-21

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,2-Dichloroethane-d4		105.	%					
Dibromofluoromethane		105.	%					

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P.O. Box 540, Scarborough, ME 04070
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Data File: \\target_server\gg\chem\gcms-s.i\S062321.b\S0364.D
Report Date: 01-Jul-2021 12:49

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-s.i\S062321.b\S0364.D
Lab Smp Id: SO3743-1
Inj Date : 23-JUN-2021 12:27
Operator : CR   Inst ID: gcms-s.i
Smp Info : SO3743-1
Misc Info : WG301245,WG301173-4
Comment   : SW846 5030C
Method   : \\target_server\gg\chem\gcms-s.i\S062321.b\S8A05(14)D.m
Meth Date : 01-Jul-2021 08:43 croy   Quant Type: ISTD
Cal Date : 22-JUN-2021 11:34   Cal File: S0339.D
Als bottle: 5
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: all.sub
Target Version: 4.12
Processing Host: VOA-WS

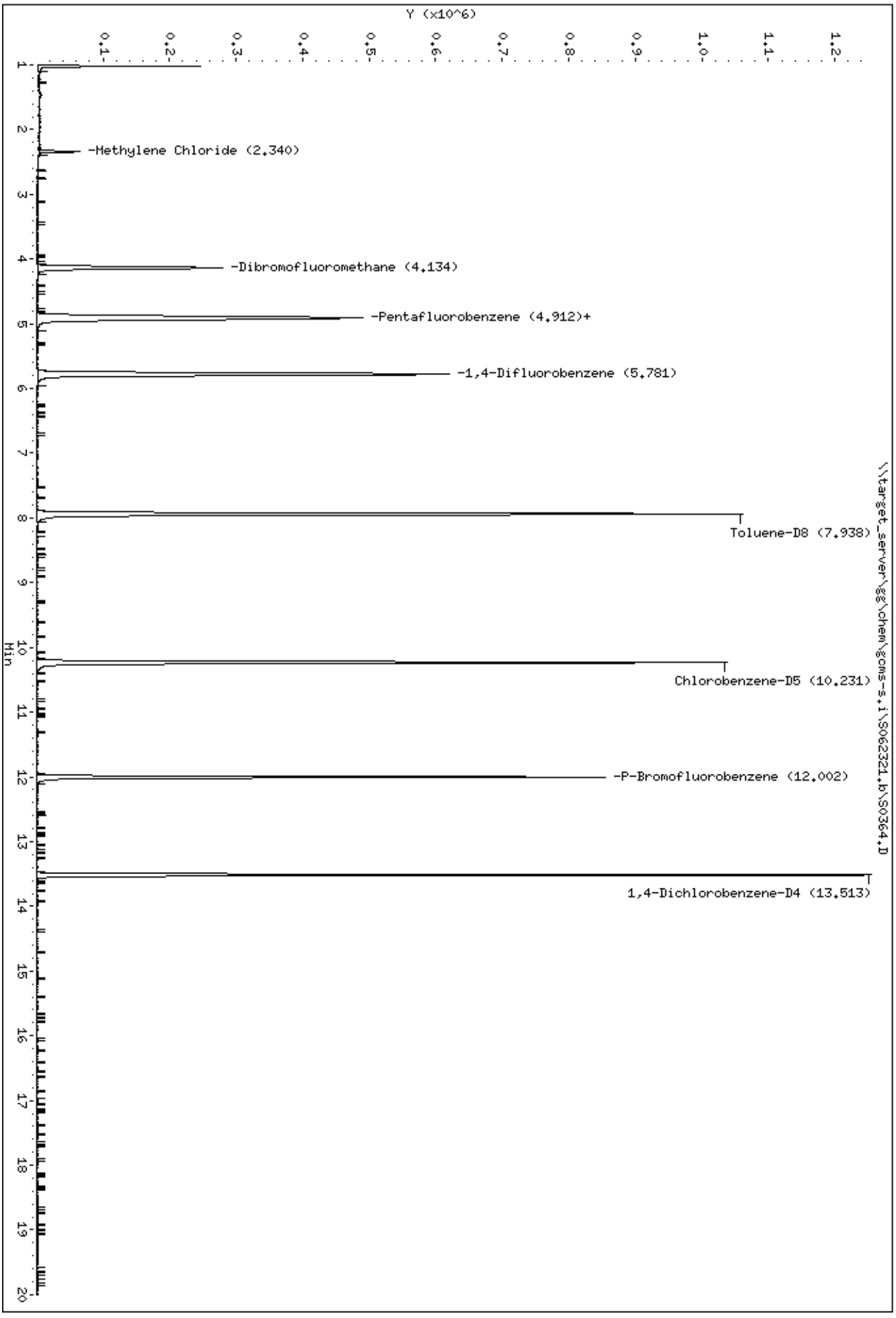
Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution 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)	REVIEW CODE
	14 Methylene Chloride	84	2.336	2.340	(0.477)	27252	4.21947	4.2(a)	
$	34 Dibromofluoromethane	113	4.134	4.134	(0.843)	240129	52.3723	52.4	
*	41 Pentafluorobenzene	168	4.902	4.903	(1.000)	402726	50.0000		
$	42 1,2-Dichloroethane-D4	65	4.925	4.922	(1.005)	250098	52.4069	52.4	
*	48 1,4-Difluorobenzene	114	5.780	5.777	(1.000)	836419	50.0000		
$	58 Toluene-D8	98	7.938	7.938	(1.373)	980151	49.7876	49.8	
*	68 Chlorobenzene-D5	117	10.230	10.234	(1.000)	786290	50.0000		
$	78 P-Bromofluorobenzene	95	12.002	12.002	(2.076)	352102	47.3134	47.3	
*	94 1,4-Dichlorobenzene-D4	152	13.516	13.513	(1.000)	378601	50.0000		

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).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Date : 23-JUN-2021 12:27
Client ID:
Sample Info: S03743-1
Instrument: gcms-s.i
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
Min
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
-Methylene Chloride (2.340)
-Dibromofluoromethane (4.134)
-Pentafluorobenzene (4.912)+
-1,4-Difluorobenzene (5.781)
Toluene-D8 (7.938)
Chlorobenzene-D5 (10.231)
-P-Bromofluorobenzene (12.002)
1,4-Dichlorobenzene-D4 (13.513)
\\target_server\gg\chem\gcms-s.i\S062321.b\S0364.D

Data File: \\target_server\gg\chem\gcms-s.i\S062321.b\S0364.D

Date : 23-JUN-2021 12:27

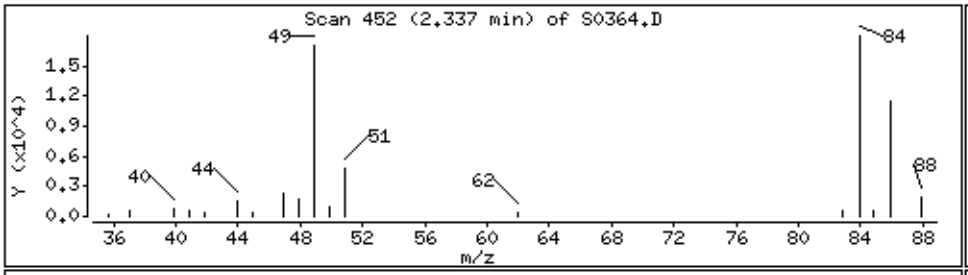
Client ID:

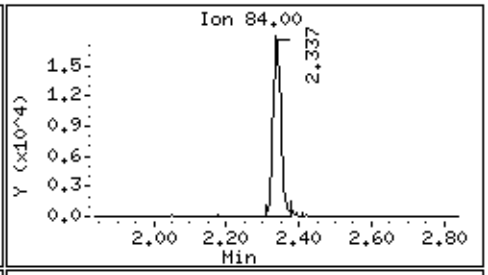
Instrument: gcms-s.i

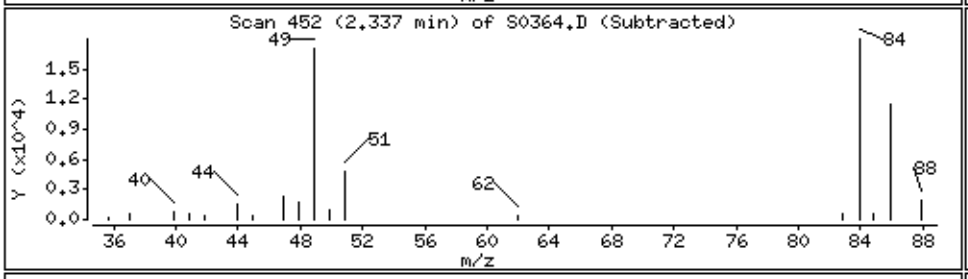
Sample Info: S03743-1

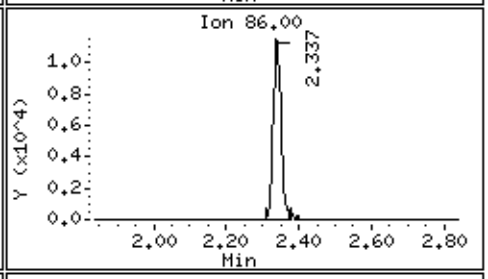
14 Methylene Chloride

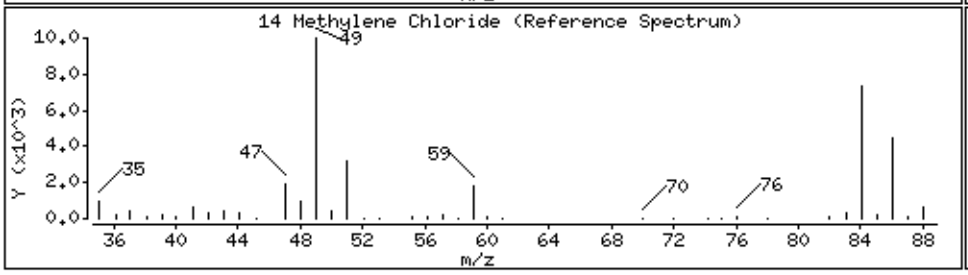
Concentration: 4.2 ug/l

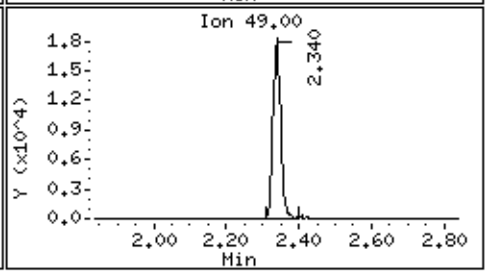












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ANALYTICAL SERVICES

Report of Analytical Results

Client: SERES Engineering & Services, LLC
Lab ID: SO3743-2
Client ID: G6M-04-02X-SPR21
Project: Fort Devens 2021 LTM
SDG: SO3743
Lab File ID: S0374.D

Sample Date: 17-JUN-21
Received Date: 18-JUN-21
Extract Date: 23-JUN-21
Extracted By: CR
Extraction Method: SW846 5030C
Lab Prep Batch: WG301245

Analysis Date: 23-JUN-21
Analyst: CR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 01-JUL-21

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	2.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	2.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride		32	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	U	2.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	2.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	J	0.63	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25	0.50
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1	2.5
Acetone		12	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	J	0.94	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	1.0	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21	0.50
Vinyl Acetate	UL	1.0	ug/L	1	1	1.0	0.40	0.50
cis-1,2-Dichloroethene	E	210	ug/L	1	1	1.0	0.21	0.50
1,2-Dichloroethylene (Total)		210	ug/L	1	2	2.0	0.21	1.0
2,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25	0.50
Bromochloromethane	U	1.0	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	1.0	ug/L	1	1	1.0	0.32	0.50
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22	0.50
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20	0.50
1,1-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.21	0.50
2-Butanone		10	ug/L	1	5	5.0	1.3	2.5
Benzene	U	1.0	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20	0.50
Trichloroethene		3.7	ug/L	1	1	1.0	0.28	0.50
Dibromomethane	U	1.0	ug/L	1	1	1.0	0.46	0.50
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19	0.50
Toluene	U	1.0	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3	2.5
Tetrachloroethene		4.2	ug/L	1	1	1.0	0.40	0.50
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33	0.50

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ANALYTICAL SERVICES

Report of Analytical Results

Client: SERES Engineering & Services, LLC
Lab ID: SO3743-2
Client ID: G6M-04-02X-SPR21
Project: Fort Devens 2021 LTM
SDG: SO3743
Lab File ID: S0374.D

Sample Date: 17-JUN-21
Received Date: 18-JUN-21
Extract Date: 23-JUN-21
Extracted By: CR
Extraction Method: SW846 5030C
Lab Prep Batch: WG301245

Analysis Date: 23-JUN-21
Analyst: CR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 01-JUL-21

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30	0.50
1,3-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromoethane	U	1.0	ug/L	1	1	1.0	0.22	0.50
2-Hexanone	J	4.8	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21	0.50
1,1,1,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.19	0.50
Xylenes (Total)	U	3.0	ug/L	1	3	3.0	0.25	1.5
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59	1.0
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25	0.50
Styrene	U	1.0	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	1.0	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	1.0	ug/L	1	1	1.0	0.23	0.50
Bromobenzene	U	1.0	ug/L	1	1	1.0	0.24	0.50
N-Propylbenzene	U	1.0	ug/L	1	1	1.0	0.26	0.50
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38	0.50
1,3,5-Trimethylbenzene	U	1.0	ug/L	1	1	1.0	0.20	0.50
2-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.20	0.50
1,2,3-Trichloropropane	U	1.0	ug/L	1	1	1.0	0.19	0.50
4-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.26	0.50
tert-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.31	0.50
1,2,4-Trimethylbenzene	U	1.0	ug/L	1	1	1.0	0.19	0.50
P-Isopropyltoluene	U	1.0	ug/L	1	1	1.0	0.25	0.50
1,3-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.24	0.50
N-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.23	0.50
sec-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.21	0.50
1,2-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.15	0.50
1,2-Dibromo-3-Chloropropane	U	1.0	ug/L	1	1	1.0	0.50	0.75
Hexachlorobutadiene	U	1.0	ug/L	1	1	1.0	0.52	0.75
1,2,4-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.37	0.50
Naphthalene	U	1.0	ug/L	1	1	1.0	0.30	0.50
1,2,3-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.27	0.50
P-Bromofluorobenzene		101.	%					
Toluene-d8		103.	%					

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ANALYTICAL SERVICES

Report of Analytical Results

Client: SERES Engineering & Services, LLC
Lab ID: SO3743-2
Client ID: G6M-04-02X-SPR21
Project: Fort Devens 2021 LTM
SDG: SO3743
Lab File ID: S0374.D

Sample Date: 17-JUN-21
Received Date: 18-JUN-21
Extract Date: 23-JUN-21
Extracted By: CR
Extraction Method: SW846 5030C
Lab Prep Batch: WG301245

Analysis Date: 23-JUN-21
Analyst: CR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 01-JUL-21

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,2-Dichloroethane-d4		113.	%					
Dibromofluoromethane		109.	%					

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Data File: \\target_server\gg\chem\gcms-s.i\S062321.b\S0374.D
Report Date: 01-Jul-2021 12:49

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-s.i\S062321.b\S0374.D
Lab Smp Id: SO3743-2
Inj Date : 23-JUN-2021 17:24
Operator : CR   Inst ID: gcms-s.i
Smp Info : SO3743-2
Misc Info : WG301245,WG301173-4
Comment   : SW846 5030C
Method   : \\target_server\gg\chem\gcms-s.i\S062321.b\S8A05(14)D.m
Meth Date : 01-Jul-2021 08:43 croy   Quant Type: ISTD
Cal Date : 22-JUN-2021 11:34   Cal File: S0339.D
Als bottle: 15
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: all.sub
Target Version: 4.12
Processing Host: VOA-WS

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

		QUANT SIG					CONCENTRATIONS ON-COLUMN	FINAL	
Compounds		MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)	REVIEW CODE
3	Vinyl chloride	62	1.269	1.269	(0.259)	120111	32.4014	32.4	
8	1,1-Dichloroethene	96	1.931	1.932	(0.395)	1980	0.62924	0.63(a)	
15	Acetone	43	2.388	2.385	(0.488)	12997	11.7156	11.7	
16	trans-1,2-Dichloroethene	96	2.455	2.459	(0.502)	5091	0.93743	0.94(a)	
27	cis-1,2-Dichloroethene	96	3.555	3.555	(0.726)	1231483	211.082	211(A)	
$ 34	Dibromofluoromethane	113	4.134	4.134	(0.844)	213221	54.3587	54.4	
36	2-Butanone	43	4.333	4.330	(0.885)	16476	9.96555	10	
* 41	Pentafluorobenzene	168	4.896	4.903	(1.000)	344530	50.0000		
$ 42	1,2-Dichloroethane-D4	65	4.922	4.922	(1.005)	230212	56.3883	56.4	
47	Trichloroethene	95	5.684	5.678	(0.984)	21046	3.70283	3.7	
* 48	1,4-Difluorobenzene	114	5.777	5.777	(1.000)	728243	50.0000		
$ 58	Toluene-D8	98	7.937	7.938	(1.374)	885059	51.6354	51.6	
60	Tetrachloroethene	164	8.568	8.564	(0.838)	18623	4.20804	4.2	
67	2-Hexanone	43	9.928	9.941	(0.971)	10703	4.78368	4.8(a)	
* 68	Chlorobenzene-D5	117	10.227	10.234	(1.000)	714018	50.0000		
$ 78	P-Bromofluorobenzene	95	12.002	12.002	(2.077)	326075	50.3247	50.3	
* 94	1,4-Dichlorobenzene-D4	152	13.513	13.513	(1.000)	351060	50.0000		
M 98	1,2-Dichloroethylene (total)	96				1236574	212.019	212	

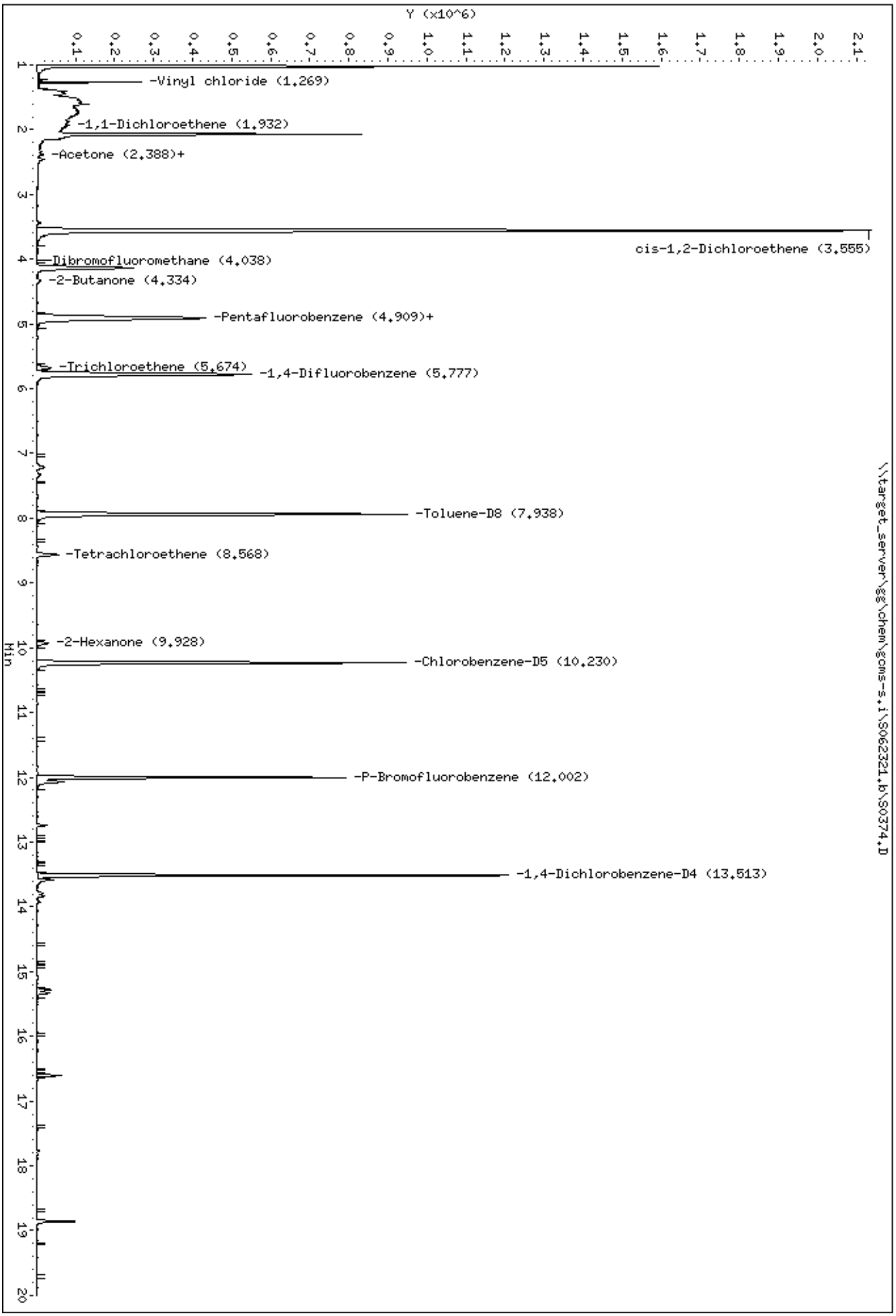
QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

Data File: \\target_server\gg\chem\gcms-s.i\S062321.b\S0374.D
Report Date: 01-Jul-2021 12:49

QC Flag Legend

A - Target compound detected but, quantitated amount
    exceeded maximum amount.



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Date : 23-JUN-2021 17:24
Client ID:
Sample Info: S03743-2

Instrument: gcms-s.i

Data File: \\target_server\gg\chem\gcms-s.i\S062321.b\S0374.D

Date : 23-JUN-2021 17:24

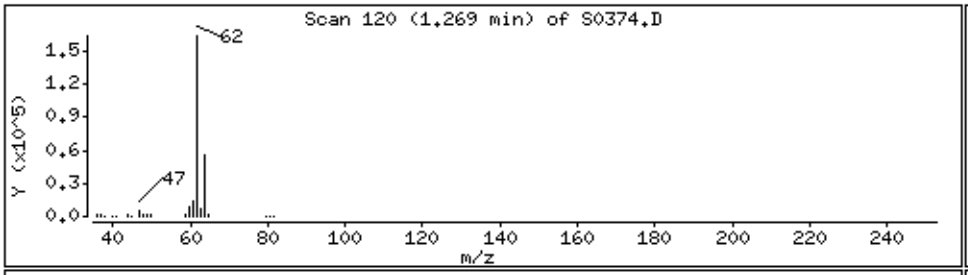
Client ID:

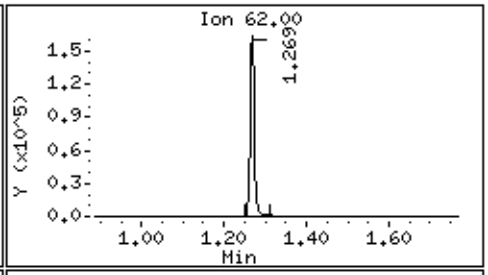
Instrument: gcms-s.i

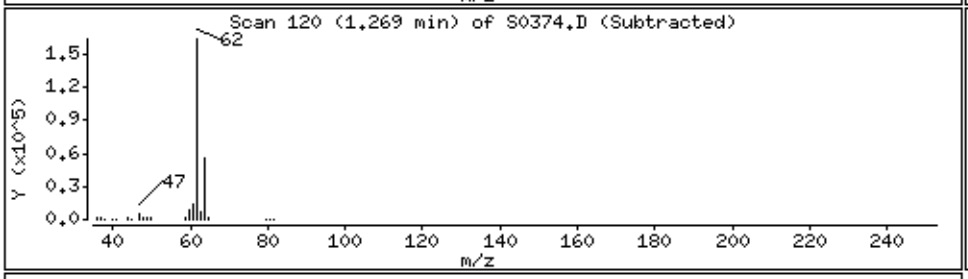
Sample Info: S03743-2

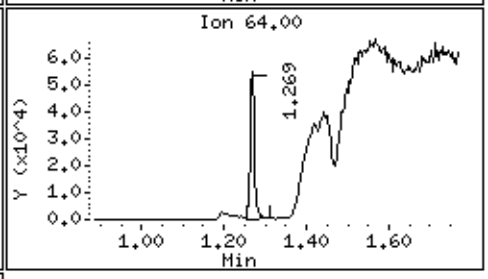
3 Vinyl chloride

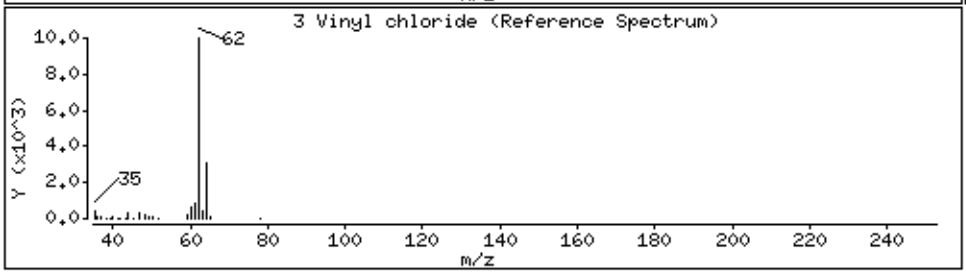
Concentration: 32.4 ug/l





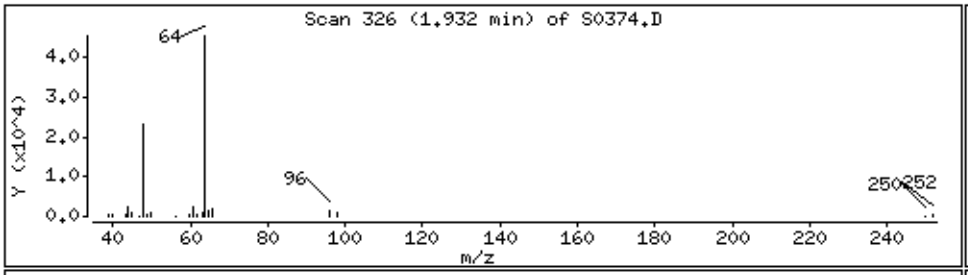


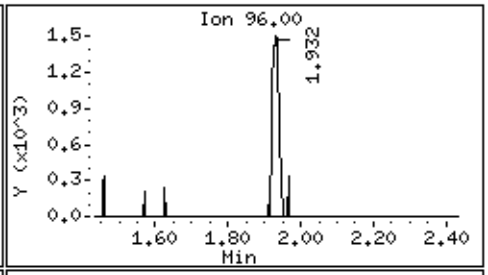


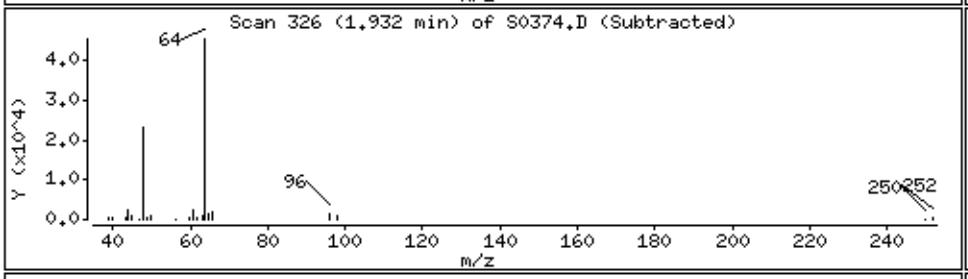


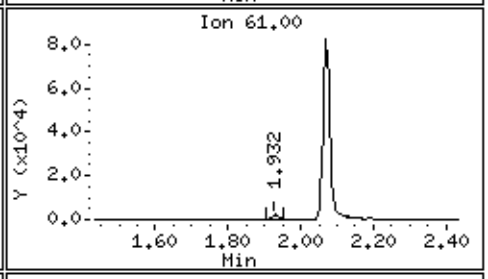
8 1,1-Dichloroethene

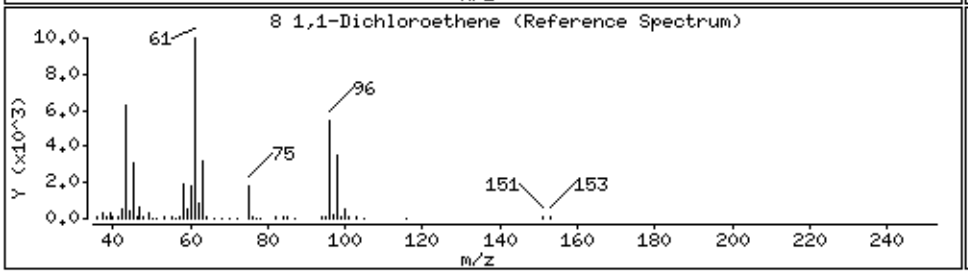
Concentration: 0.63 ug/l

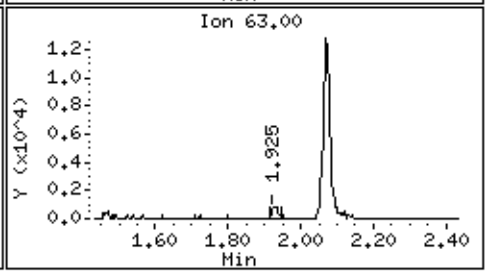












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Date : 23-JUN-2021 17:24

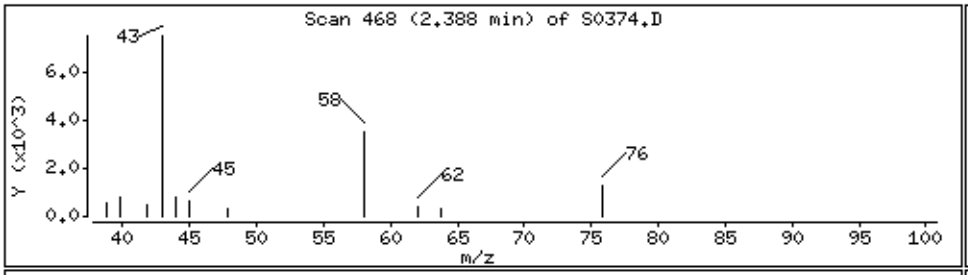
Client ID:

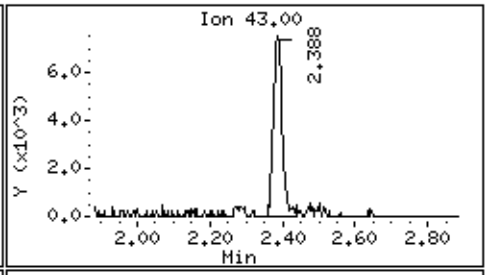
Instrument: gcms-s.i

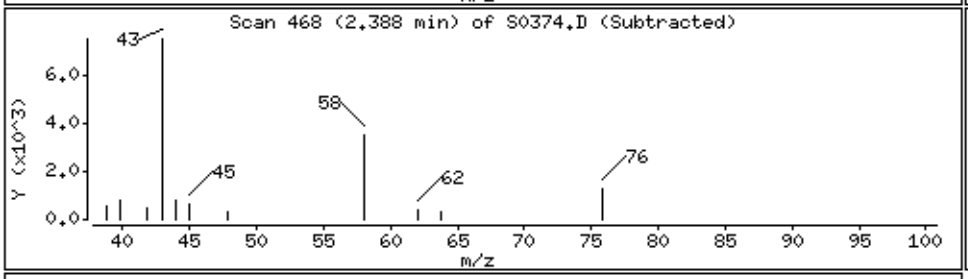
Sample Info: S03743-2

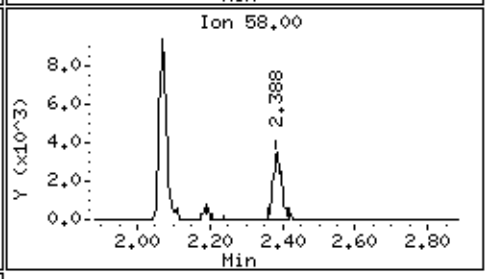
15 Acetone

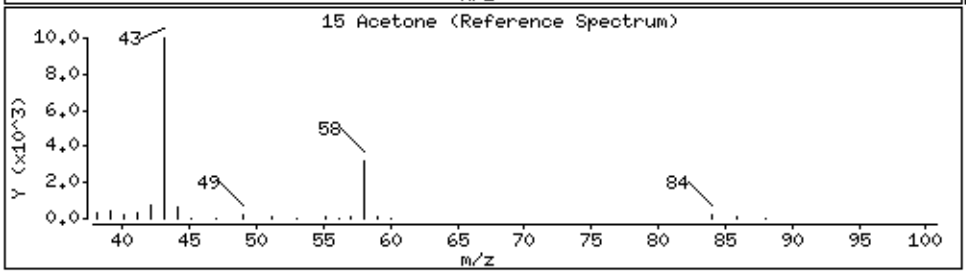
Concentration: 11.7 ug/l





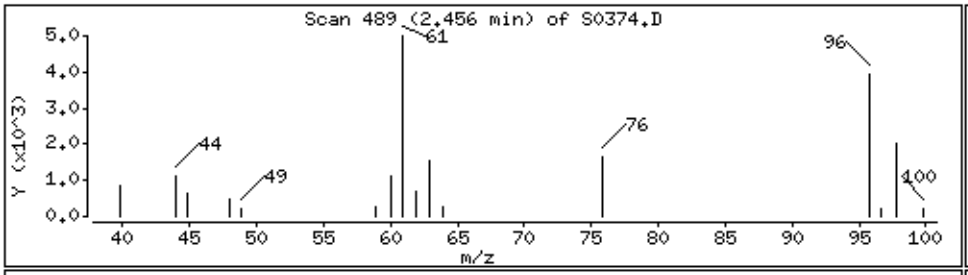


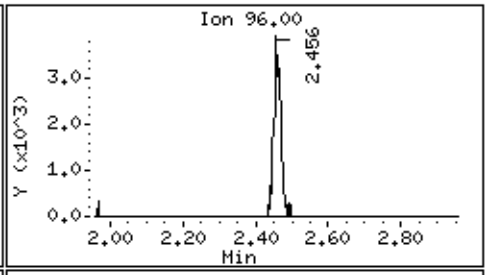


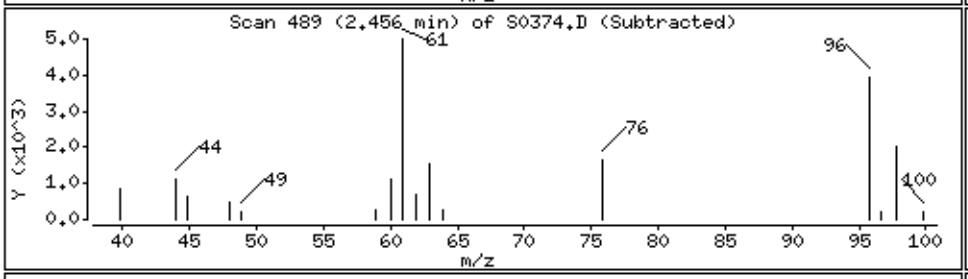


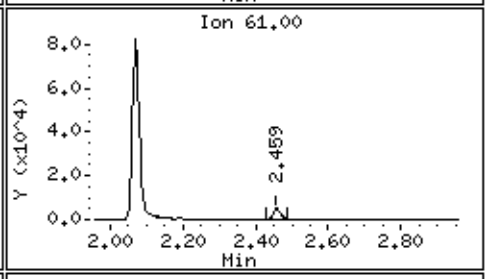
16 trans-1,2-Dichloroethene

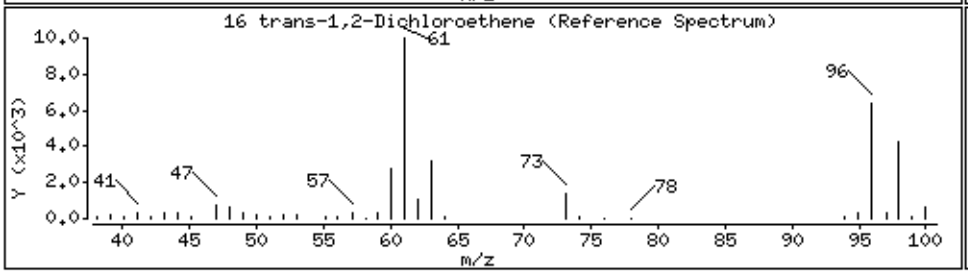
Concentration: 0.94 ug/l

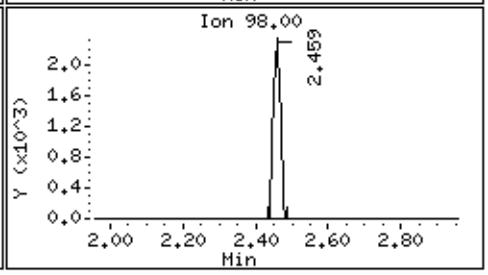












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Date : 23-JUN-2021 17:24

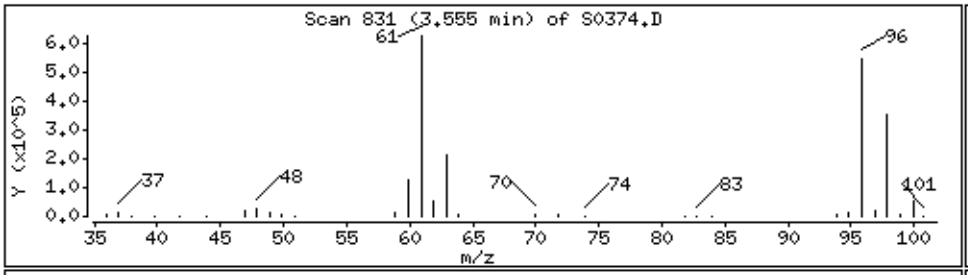
Client ID:

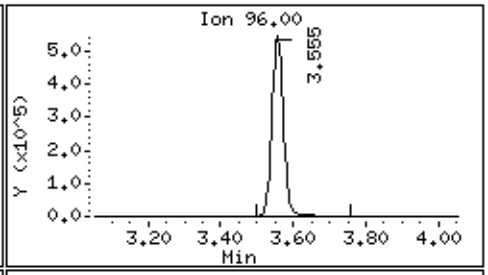
Instrument: gcms-s.i

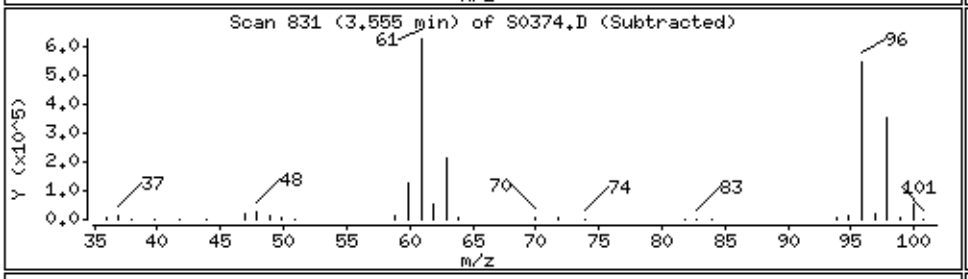
Sample Info: S03743-2

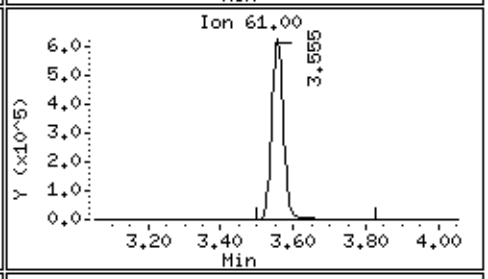
27 cis-1,2-Dichloroethene

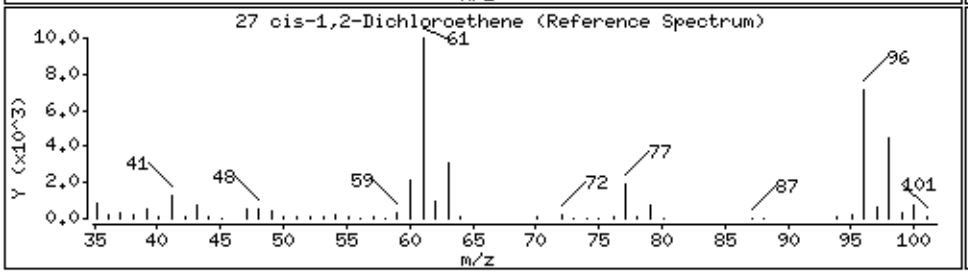
Concentration: 211 ug/l

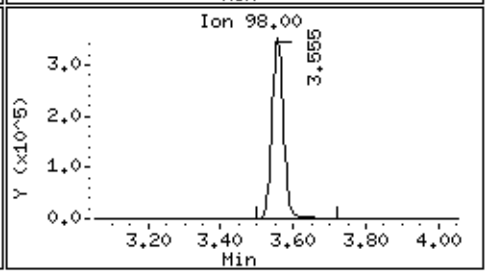






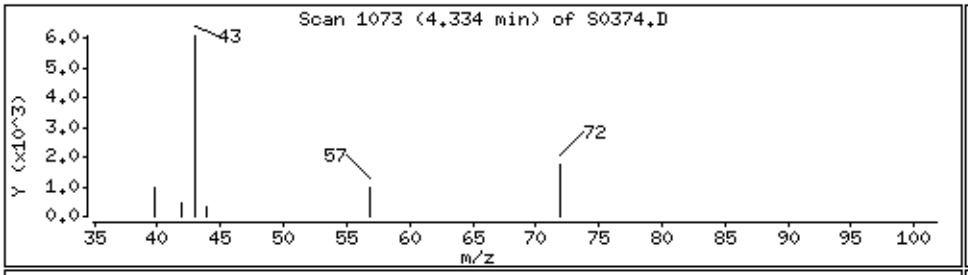


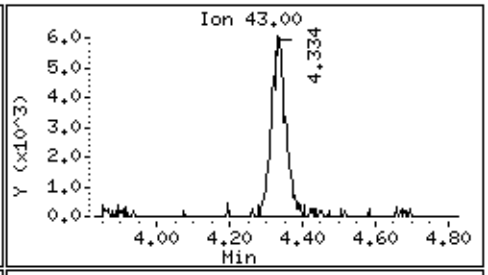


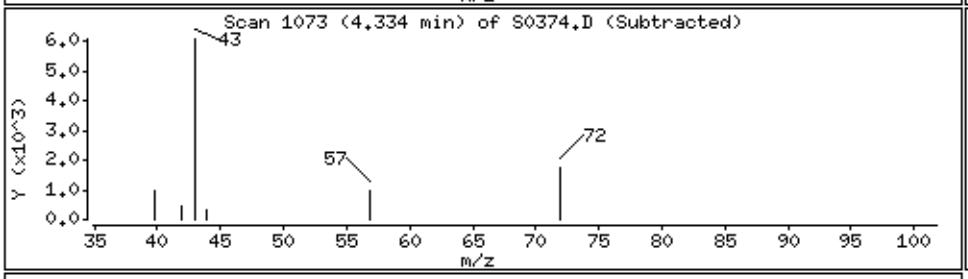


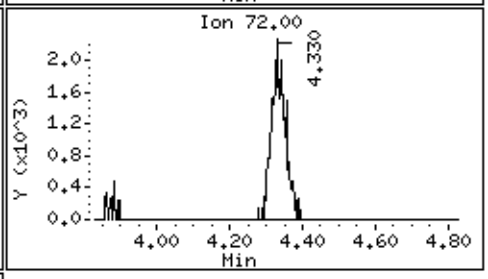
36 2-Butanone

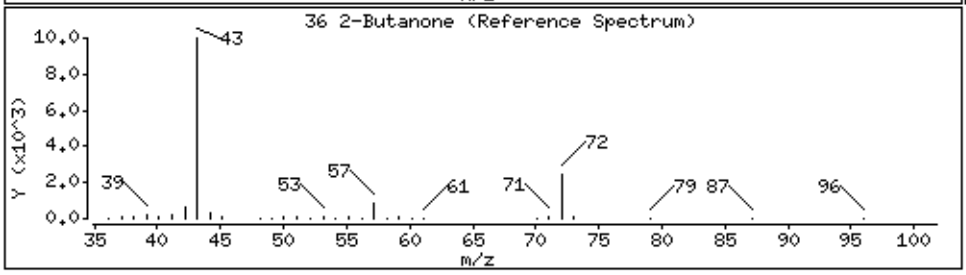
Concentration: 10 ug/l











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Date : 23-JUN-2021 17:24

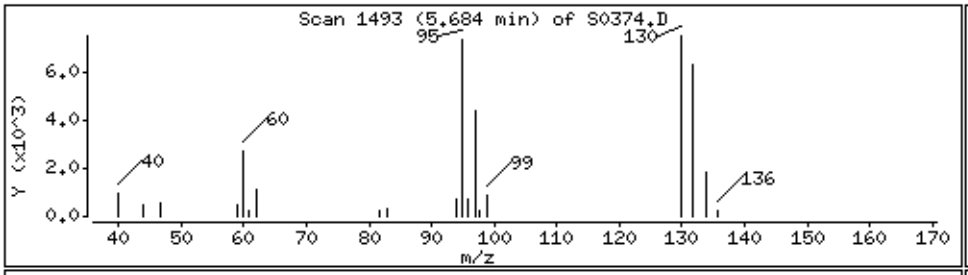
Client ID:

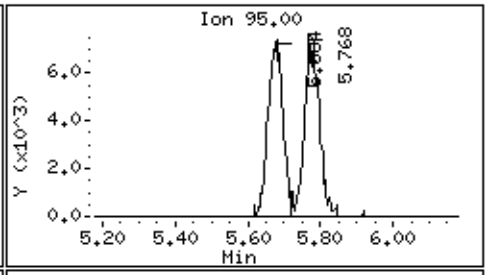
Instrument: gcms-s.i

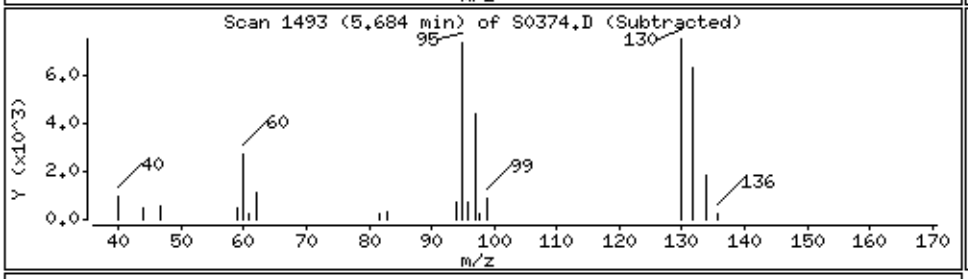
Sample Info: S03743-2

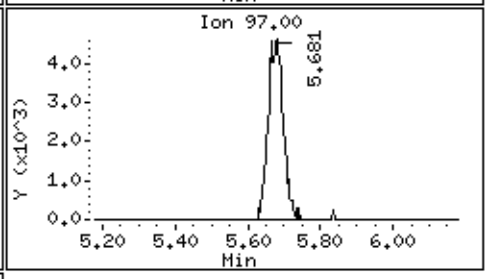
47 Trichloroethene

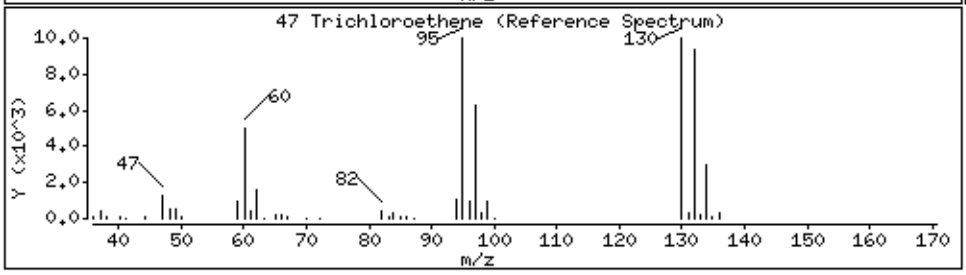
Concentration: 3.7 ug/l





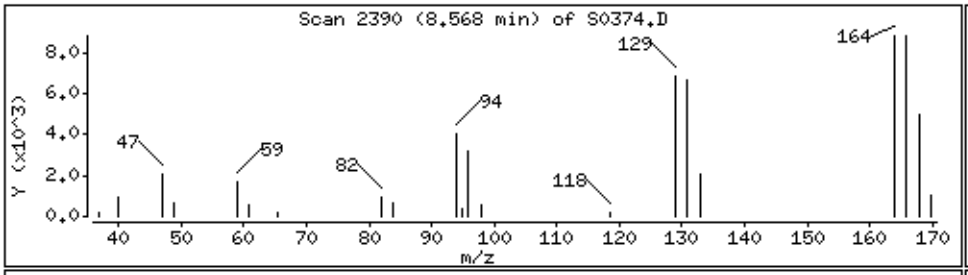


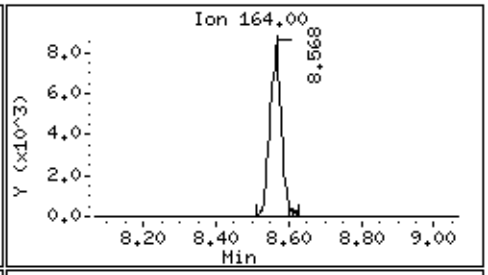


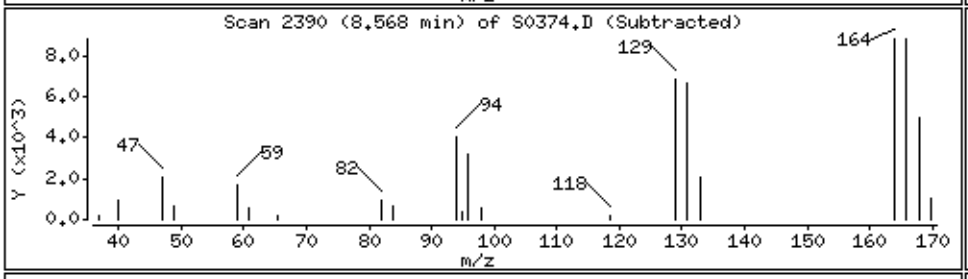


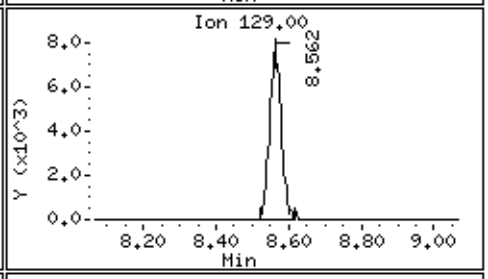
60 Tetrachloroethene

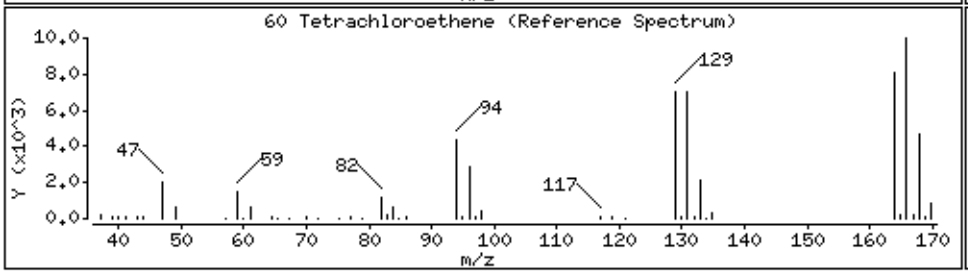
Concentration: 4.2 ug/l

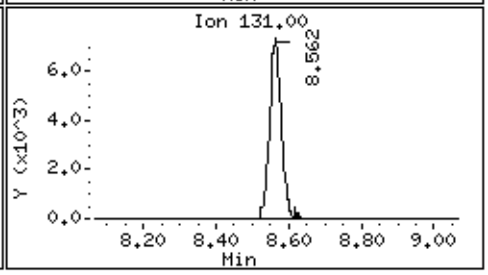












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Date : 23-JUN-2021 17:24

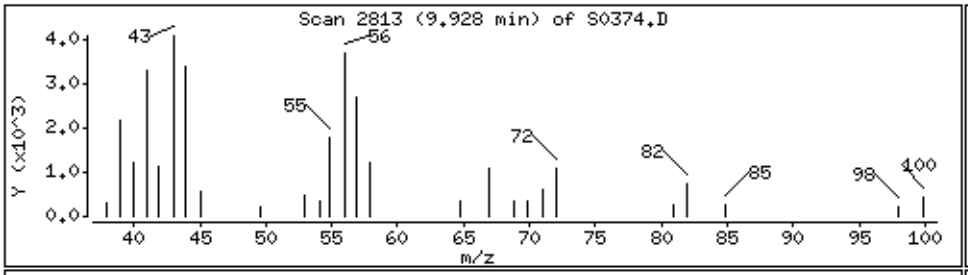
Client ID:

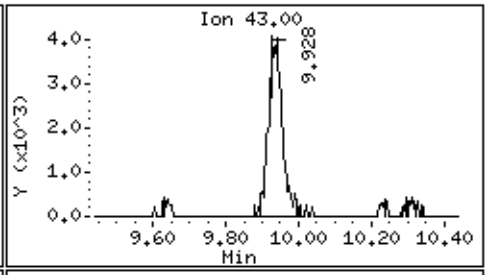
Instrument: gcms-s.i

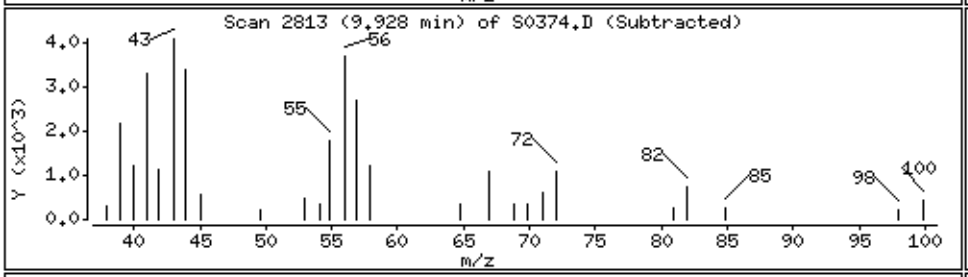
Sample Info: S03743-2

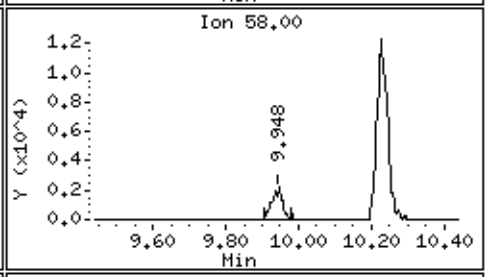
67 2-Hexanone

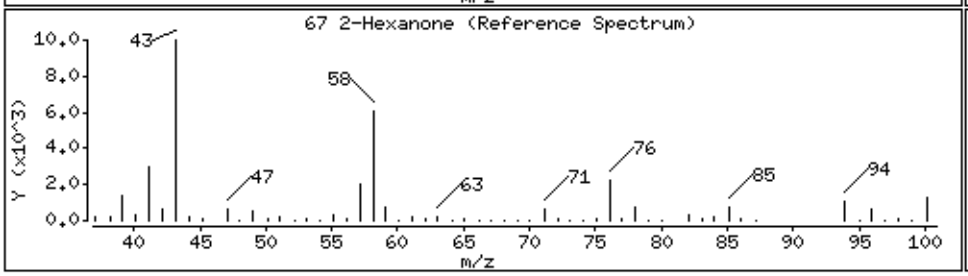
Concentration: 4.8 ug/l

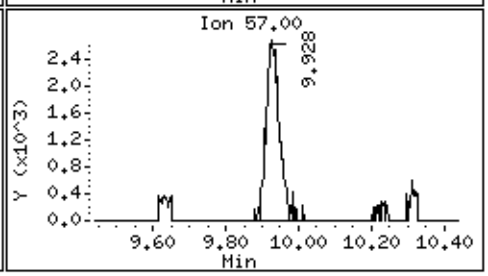












Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: SERES Engineering & Services, LLC
Lab ID: SO3743-2DL
Client ID: G6M-04-02X-SPR21
Project: Fort Devens 2021 LTM
SDG: SO3743
Lab File ID: T2393.D

Sample Date: 17-JUN-21
Received Date: 18-JUN-21
Extract Date: 24-JUN-21
Extracted By: CR
Extraction Method: SW846 5030
Lab Prep Batch: WG301327

Analysis Date: 24-JUN-21
Analyst: CR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 01-JUL-21

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	4.0	ug/L	2	2	4.0	0.48	2.0
Chloromethane	U	4.0	ug/L	2	2	4.0	0.72	2.0
Vinyl Chloride		20	ug/L	2	2	4.0	0.50	2.0
Bromomethane	U	4.0	ug/L	2	2	4.0	0.98	2.0
Chloroethane	U	4.0	ug/L	2	2	4.0	1.1	2.0
Trichlorofluoromethane	U	4.0	ug/L	2	2	4.0	0.48	2.0
1,1-Dichloroethene	U	2.0	ug/L	2	1	2.0	0.70	1.0
Carbon Disulfide	U	2.0	ug/L	2	1	2.0	0.50	1.0
Methylene Chloride	U	10	ug/L	2	5	10.	2.3	5.0
Acetone		13	ug/L	2	5	10.	4.4	5.0
trans-1,2-Dichloroethene	J	0.86	ug/L	2	1	2.0	0.50	1.0
Methyl tert-butyl Ether	U	2.0	ug/L	2	1	2.0	0.72	1.0
1,1-Dichloroethane	U	2.0	ug/L	2	1	2.0	0.42	1.0
Vinyl Acetate	UL	2.0	ug/L	2	1	2.0	0.80	1.0
cis-1,2-Dichloroethene		170	ug/L	2	1	2.0	0.42	1.0
1,2-Dichloroethylene (Total)		170	ug/L	2	2	4.0	0.42	2.0
2,2-Dichloropropane	U	2.0	ug/L	2	1	2.0	0.50	1.0
Bromochloromethane	U	2.0	ug/L	2	1	2.0	0.42	1.0
Chloroform	U	2.0	ug/L	2	1	2.0	0.64	1.0
Carbon Tetrachloride	U	2.0	ug/L	2	1	2.0	0.44	1.0
1,1,1-Trichloroethane	U	2.0	ug/L	2	1	2.0	0.40	1.0
1,1-Dichloropropene	U	2.0	ug/L	2	1	2.0	0.42	1.0
2-Butanone	J	8.5	ug/L	2	5	10.	2.6	5.0
Benzene	U	2.0	ug/L	2	1	2.0	0.52	1.0
1,2-Dichloroethane	U	2.0	ug/L	2	1	2.0	0.40	1.0
Trichloroethene		4.1	ug/L	2	1	2.0	0.56	1.0
Dibromomethane	U	2.0	ug/L	2	1	2.0	0.92	1.0
1,2-Dichloropropane	U	2.0	ug/L	2	1	2.0	0.50	1.0
Bromodichloromethane	U	2.0	ug/L	2	1	2.0	0.66	1.0
cis-1,3-Dichloropropene	U	2.0	ug/L	2	1	2.0	0.38	1.0
Toluene	U	2.0	ug/L	2	1	2.0	0.54	1.0
4-Methyl-2-Pentanone	U	10	ug/L	2	5	10.	2.6	5.0
Tetrachloroethene		3.5	ug/L	2	1	2.0	0.80	1.0
trans-1,3-Dichloropropene	U	2.0	ug/L	2	1	2.0	0.40	1.0
1,1,2-Trichloroethane	U	2.0	ug/L	2	1	2.0	0.66	1.0

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Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: SERES Engineering & Services, LLC
Lab ID: SO3743-2DL
Client ID: G6M-04-02X-SPR21
Project: Fort Devens 2021 LTM
SDG: SO3743
Lab File ID: T2393.D

Sample Date: 17-JUN-21
Received Date: 18-JUN-21
Extract Date: 24-JUN-21
Extracted By: CR
Extraction Method: SW846 5030
Lab Prep Batch: WG301327

Analysis Date: 24-JUN-21
Analyst: CR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 01-JUL-21

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dibromochloromethane	U	2.0	ug/L	2	1	2.0	0.60	1.0
1,3-Dichloropropane	U	2.0	ug/L	2	1	2.0	0.44	1.0
1,2-Dibromoethane	U	2.0	ug/L	2	1	2.0	0.44	1.0
2-Hexanone	J	4.8	ug/L	2	5	10.	3.4	5.0
Chlorobenzene	U	2.0	ug/L	2	1	2.0	0.44	1.0
Ethylbenzene	U	2.0	ug/L	2	1	2.0	0.42	1.0
1,1,1,2-Tetrachloroethane	U	2.0	ug/L	2	1	2.0	0.38	1.0
Xylenes (Total)	U	6.0	ug/L	2	3	6.0	0.50	3.0
m+p-Xylenes	U	4.0	ug/L	2	2	4.0	1.2	2.0
o-Xylene	U	2.0	ug/L	2	1	2.0	0.50	1.0
Styrene	U	2.0	ug/L	2	1	2.0	0.46	1.0
Bromoform	U	2.0	ug/L	2	1	2.0	0.46	1.0
Isopropylbenzene	U	2.0	ug/L	2	1	2.0	0.46	1.0
Bromobenzene	U	2.0	ug/L	2	1	2.0	0.48	1.0
N-Propylbenzene	U	2.0	ug/L	2	1	2.0	0.52	1.0
1,1,2,2-Tetrachloroethane	U	2.0	ug/L	2	1	2.0	0.76	1.0
1,3,5-Trimethylbenzene	U	2.0	ug/L	2	1	2.0	0.40	1.0
2-Chlorotoluene	U	2.0	ug/L	2	1	2.0	0.40	1.0
1,2,3-Trichloropropane	U	2.0	ug/L	2	1	2.0	0.38	1.0
4-Chlorotoluene	U	2.0	ug/L	2	1	2.0	0.52	1.0
tert-Butylbenzene	U	2.0	ug/L	2	1	2.0	0.62	1.0
1,2,4-Trimethylbenzene	U	2.0	ug/L	2	1	2.0	0.38	1.0
P-Isopropyltoluene	U	2.0	ug/L	2	1	2.0	0.50	1.0
1,3-Dichlorobenzene	U	2.0	ug/L	2	1	2.0	0.52	1.0
1,4-Dichlorobenzene	U	2.0	ug/L	2	1	2.0	0.48	1.0
N-Butylbenzene	U	2.0	ug/L	2	1	2.0	0.46	1.0
sec-Butylbenzene	U	2.0	ug/L	2	1	2.0	0.42	1.0
1,2-Dichlorobenzene	U	2.0	ug/L	2	1	2.0	0.30	1.0
1,2-Dibromo-3-Chloropropane	U	2.0	ug/L	2	1	2.0	1.0	1.5
Hexachlorobutadiene	U	2.0	ug/L	2	1	2.0	1.0	1.5
1,2,4-Trichlorobenzene	U	2.0	ug/L	2	1	2.0	0.74	1.0
Naphthalene	U	2.0	ug/L	2	1	2.0	0.60	1.0
1,2,3-Trichlorobenzene	U	2.0	ug/L	2	1	2.0	0.54	1.0
P-Bromofluorobenzene		103.	%					
Toluene-d8		100.	%					

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ANALYTICAL SERVICES

Report of Analytical Results

Client: SERES Engineering & Services, LLC
Lab ID: SO3743-2DL
Client ID: G6M-04-02X-SPR21
Project: Fort Devens 2021 LTM
SDG: SO3743
Lab File ID: T2393.D

Sample Date: 17-JUN-21
Received Date: 18-JUN-21
Extract Date: 24-JUN-21
Extracted By: CR
Extraction Method: SW846 5030
Lab Prep Batch: WG301327

Analysis Date: 24-JUN-21
Analyst: CR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 01-JUL-21

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,2-Dichloroethane-d4		102.	%					
Dibromofluoromethane		99.5	%					

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Data File: \\target_server\gg\chem\gcms-t.i\T062421.b\T2393.D
Report Date: 01-Jul-2021 12:49

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T062421.b\T2393.D
Lab Smp Id: SO3743-2DL Client Smp ID: G6M-04-02X-SPR21
Inj Date : 24-JUN-2021 14:02
Operator : CR Inst ID: gcms-t.i
Smp Info : SO3743-2DL
Misc Info : WG301327,WG301244-4
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-t.i\T062421.b\T8A05(62)D.m
Meth Date : 01-Jul-2021 08:58 croy Quant Type: ISTD
Cal Date : 23-JUN-2021 12:27 Cal File: T2383.D
Als bottle: 6
Dil Factor: 2.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: T6-O360

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

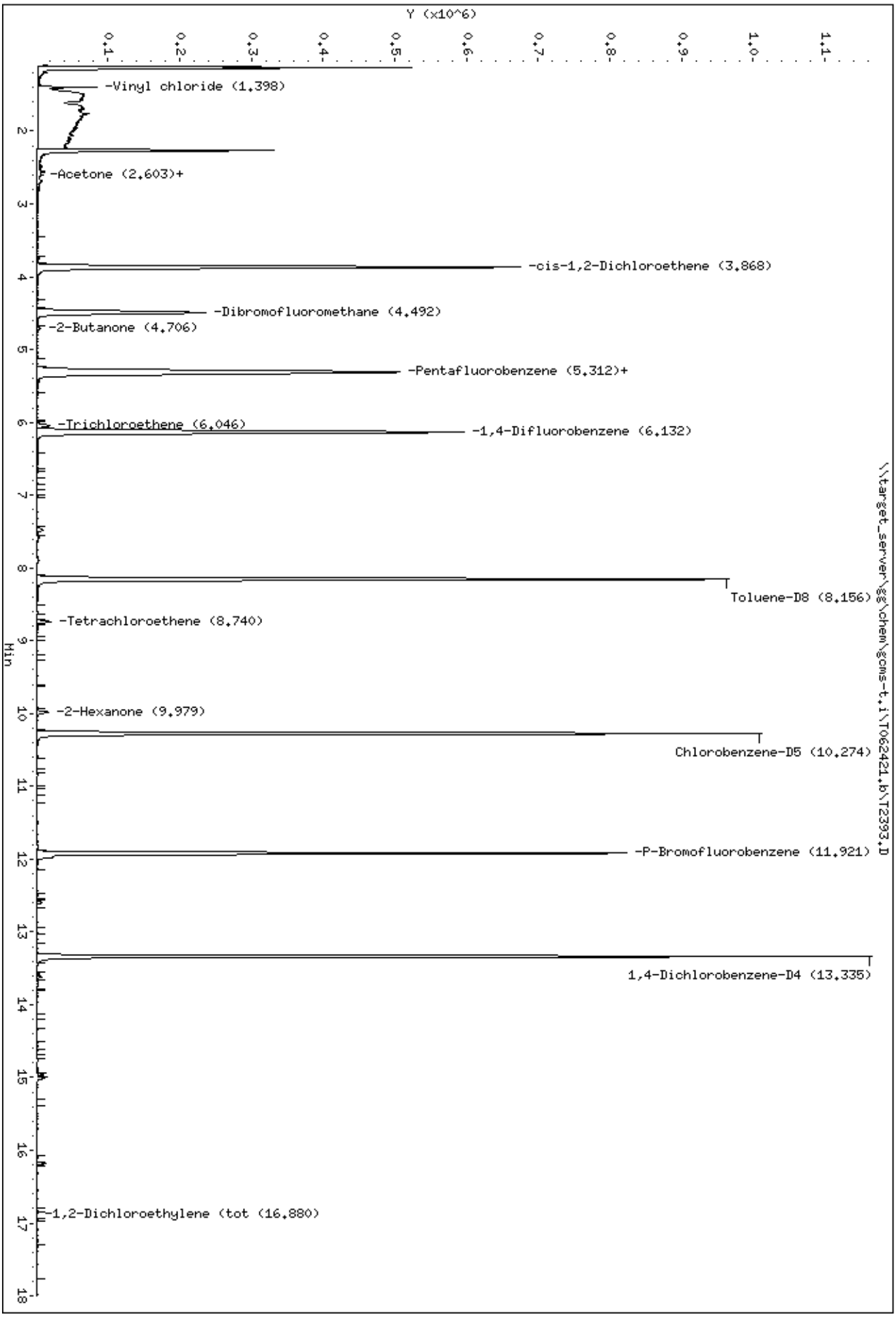
Name	Value	Description
DF	2.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

CR
12:54 pm, Jul 01, 2021

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
3 Vinyl chloride	62	1.397	1.398	(0.263)	44774	9.94756	19.9	
15 Acetone	43	2.602	2.603	(0.491)	5718	6.38627	12.8	
16 trans-1,2-Dichloroethene	96	2.684	2.685	(0.506)	1748	0.43042	0.86(a)	
27 cis-1,2-Dichloroethene	96	3.867	3.871	(0.729)	368807	84.4320	169	
$ 34 Dibromofluoromethane	113	4.496	4.489	(0.848)	218683	49.7407	49.7	
37 2-Butanone	43	4.705	4.702	(0.887)	7857	4.26761	8.5(aM)	M9
* 41 Pentafluorobenzene	168	5.304	5.304	(1.000)	397574	50.0000		
$ 42 1,2-Dichloroethane-D4	65	5.326	5.327	(1.004)	259780	51.2399	51.2	
47 Trichloroethene	95	6.034	6.049	(0.984)	8342	2.07259	4.1	
* 48 1,4-Difluorobenzene	114	6.131	6.139	(1.000)	703591	50.0000		
$ 56 Toluene-D8	98	8.156	8.156	(1.330)	790110	50.0138	50.0	
58 Tetrachloroethene	164	8.747	8.744	(0.851)	5285	1.74076	3.5	
67 2-Hexanone	43	9.986	9.990	(0.972)	5724	2.42708	4.8(a)	
* 68 Chlorobenzene-D5	117	10.277	10.274	(1.000)	671296	50.0000		
$ 77 P-Bromofluorobenzene	95	11.920	11.921	(1.944)	319941	51.5235	51.5	
* 93 1,4-Dichlorobenzene-D4	152	13.339	13.339	(1.000)	319413	50.0000		
M 103 1,2-Dichloroethylene (total)	96				370555	84.8624	170	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.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0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
1.1
Min
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
-Vinyl chloride (1.398)
-Acetone (2.603)+
-cis-1,2-Dichloroethene (3.868)
-Dibromofluoromethane (4.492)
-2-Butanone (4.706)
-Pentafluorobenzene (5.312)+
-Trichloroethene (6.046)
-1,4-Difluorobenzene (6.132)
Toluene-D8 (8.156)
-Tetrachloroethene (8.740)
-2-Hexanone (9.979)
Chlorobenzene-D5 (10.274)
-P-Bromofluorobenzene (11.921)
1,4-Dichlorobenzene-D4 (13.335)
-1,2-Dichloroethylene (tot (16.880)
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Data File: \\target_server\gg\chem\gcms-t.i\T062421.b\T2393.D
Date : 24-JUN-2021 14:02
Client ID: G6M-04-02X-SPR21
Sample Info: S03743-2DL
Instrument: gcms-t.i

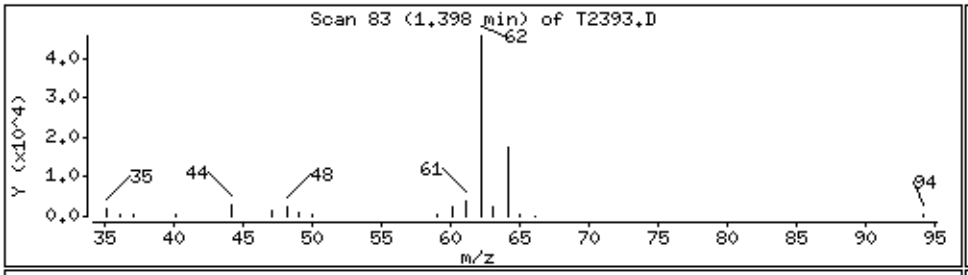
Data File: \\target_server\gg\chem\gcms-t.i\T062421.b\T2393.D

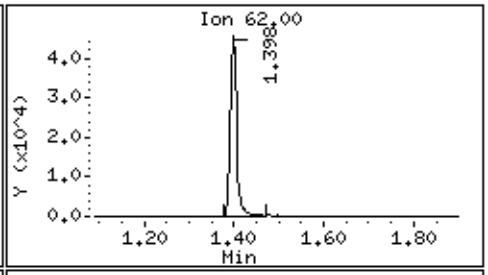
Date : 24-JUN-2021 14:02

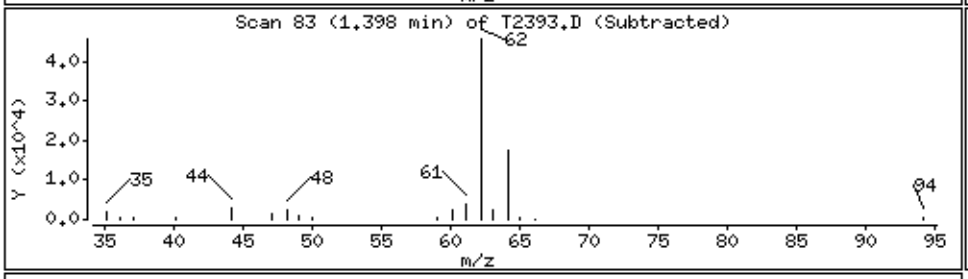
Client ID: G6M-04-02X-SPR21 Instrument: gcms-t.i

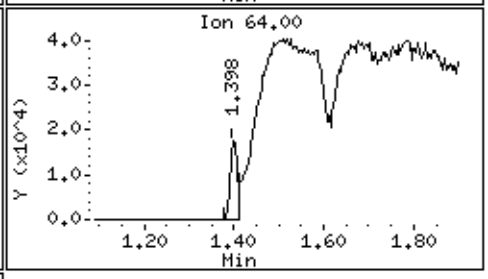
Sample Info: S03743-2DL

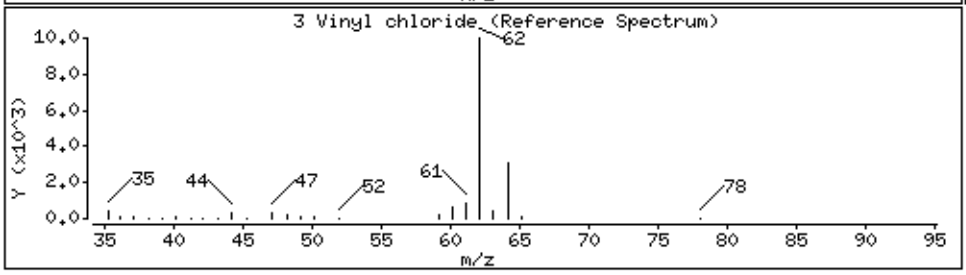
3 Vinyl chloride Concentration: 19.9 ug/l



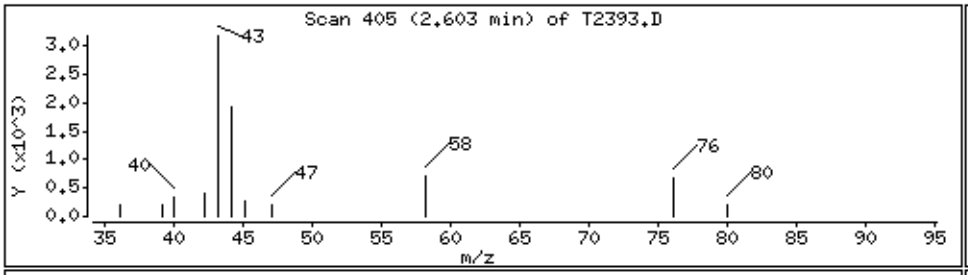


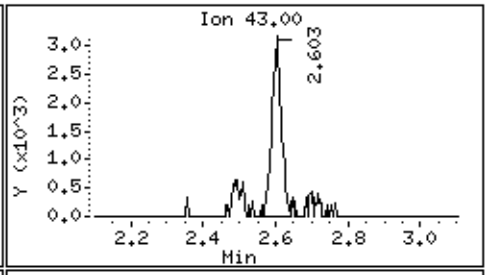


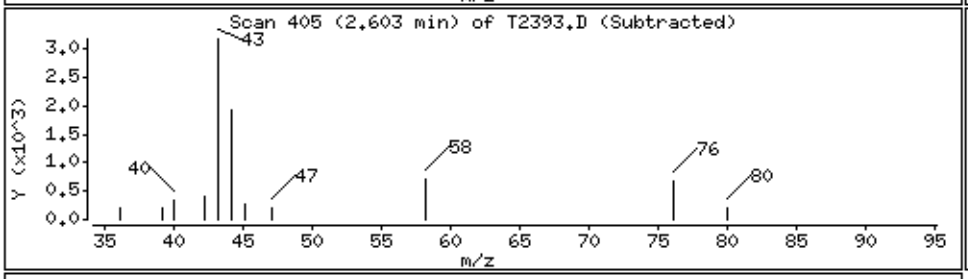


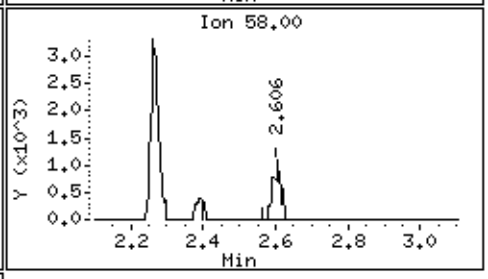


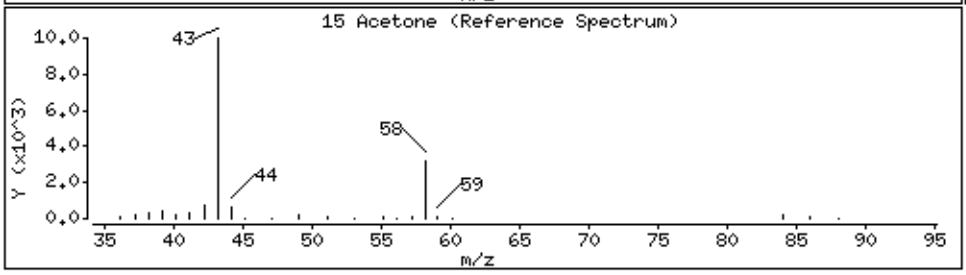
15 Acetone Concentration: 12.8 ug/l











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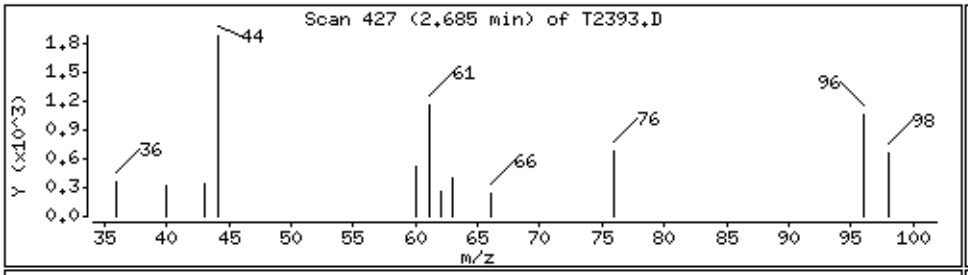
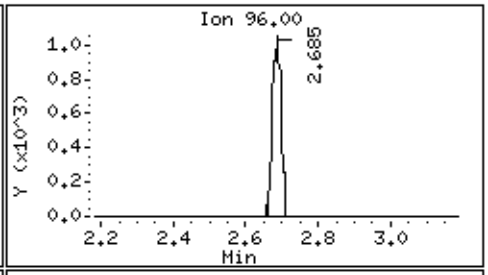
Date : 24-JUN-2021 14:02

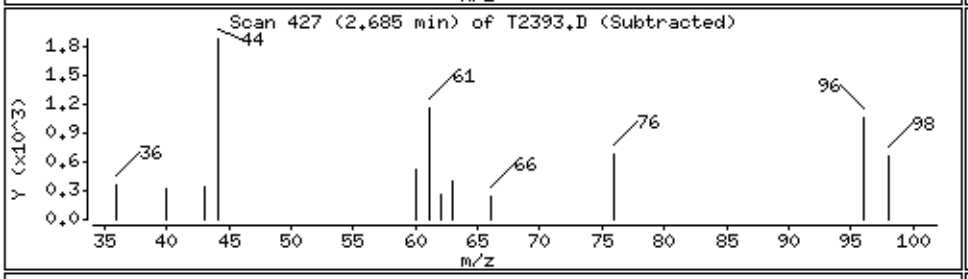
Client ID: G6M-04-02X-SPR21 Instrument: gcms-t.i

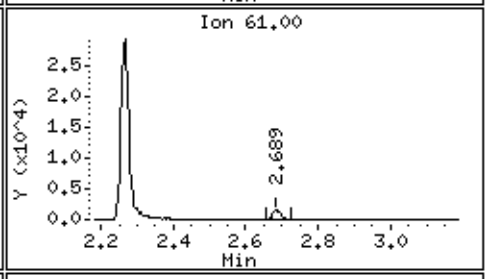
Sample Info: S03743-2DL

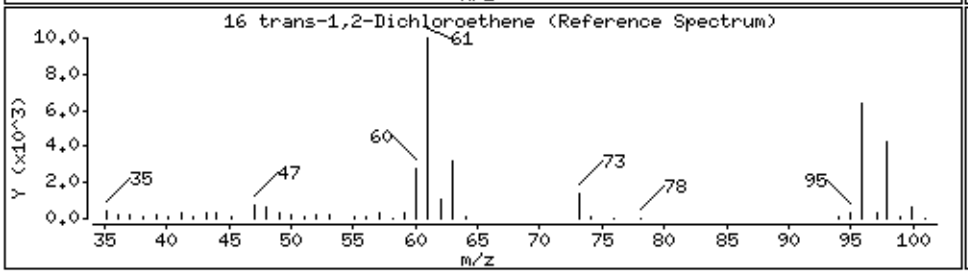
16 trans-1,2-Dichloroethene Concentration: 0.86 ug/l

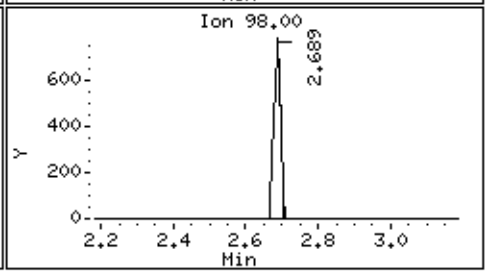




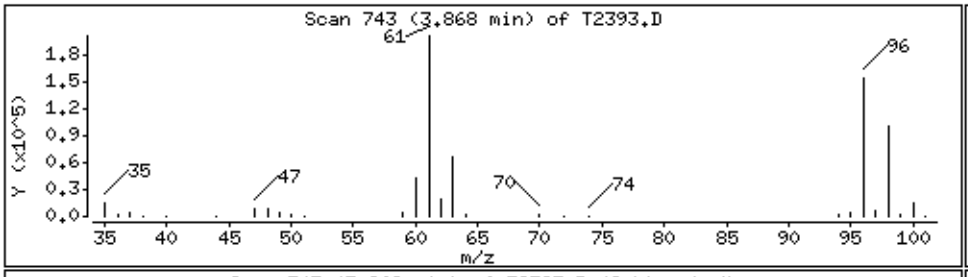


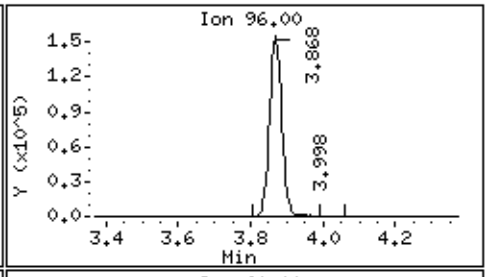


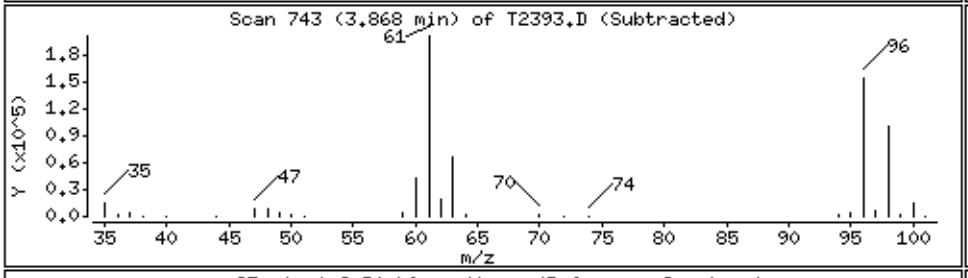


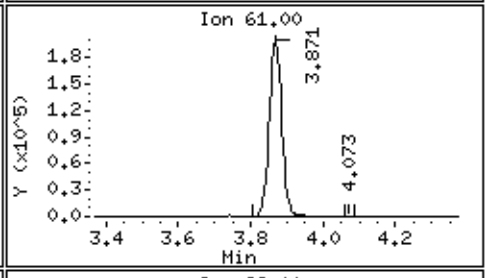


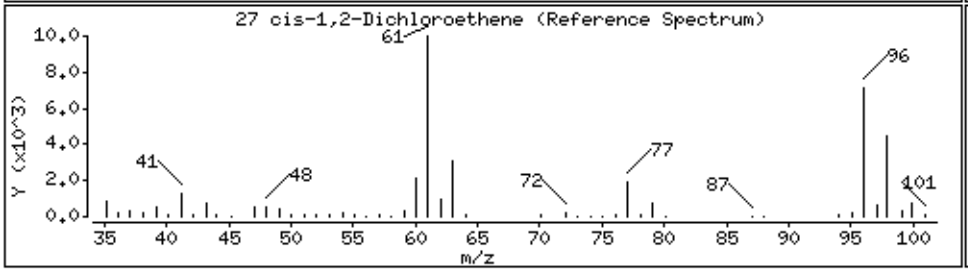
27 cis-1,2-Dichloroethene Concentration: 169 ug/l

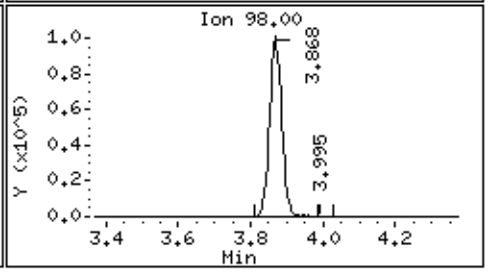












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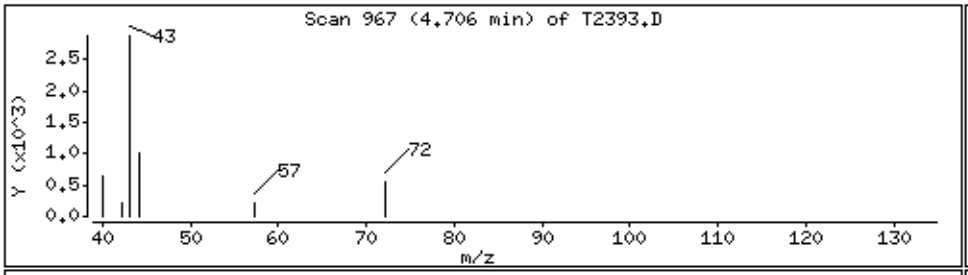
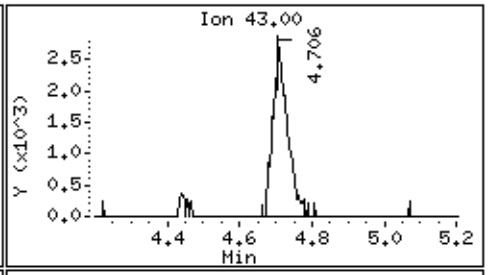
Date : 24-JUN-2021 14:02

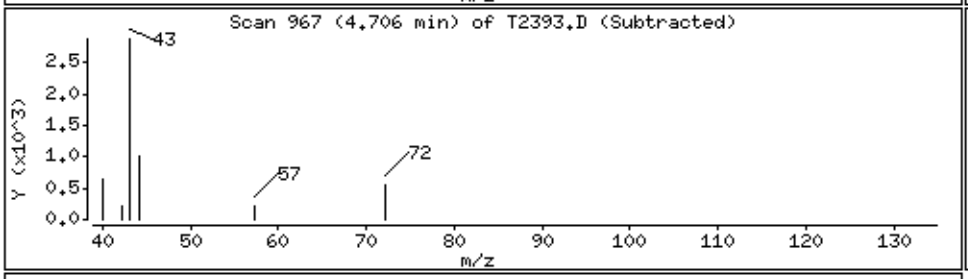
Client ID: G6M-04-02X-SPR21 Instrument: gcms-t.i

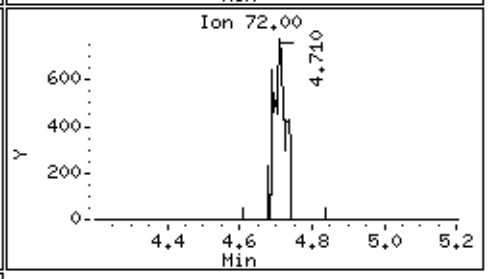
Sample Info: S03743-2DL

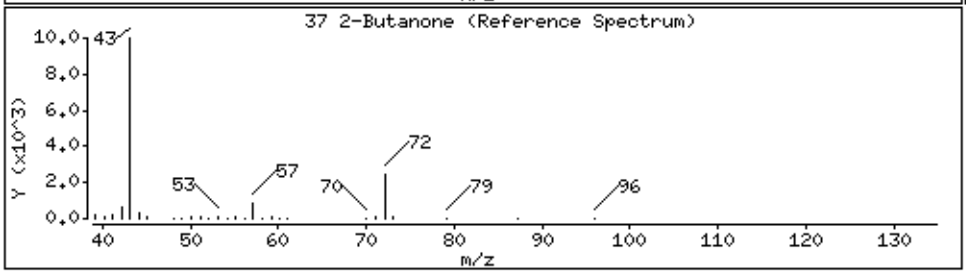
37 2-Butanone Concentration: 8.5 ug/l



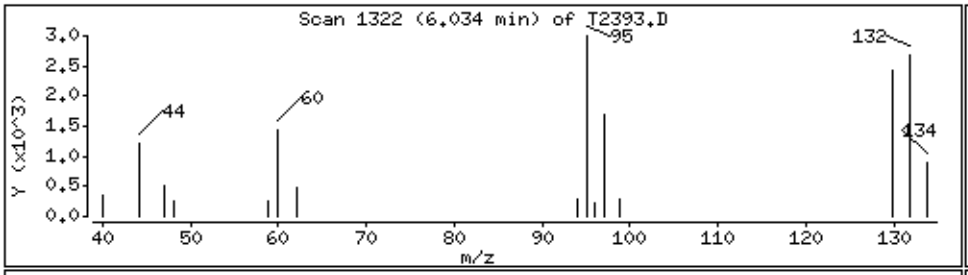


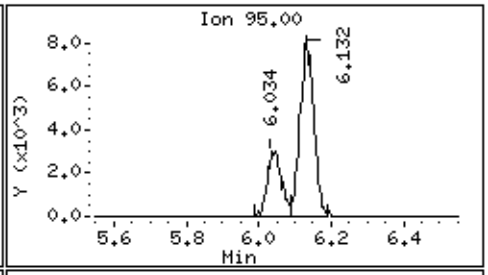


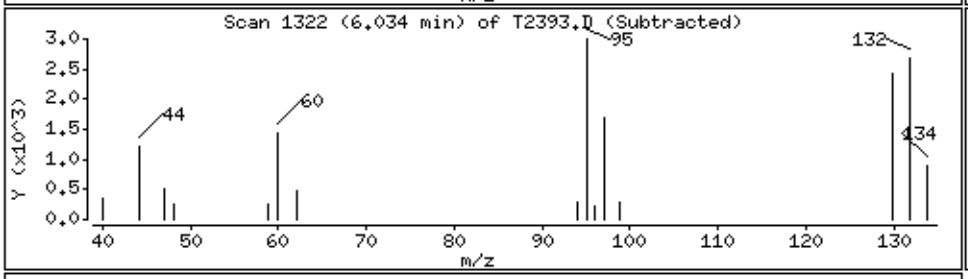


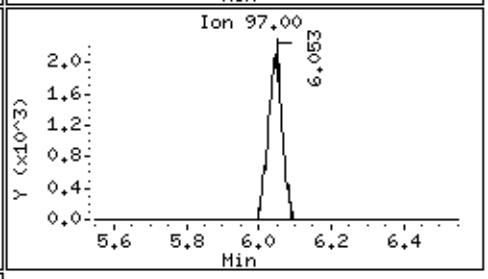


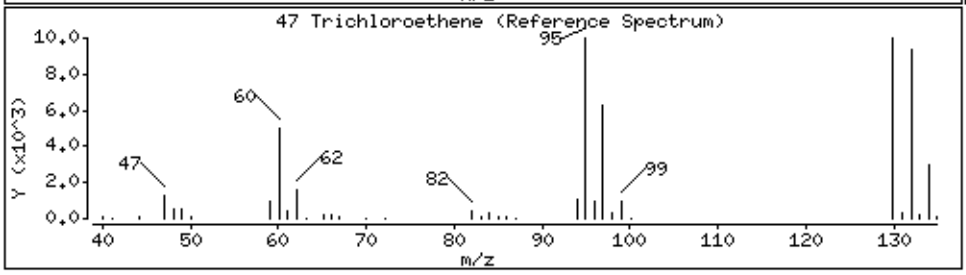
47 Trichloroethene Concentration: 4.1 ug/l











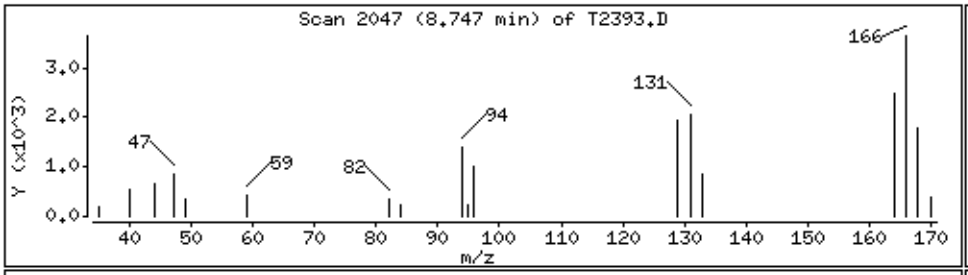
Data File: \\target_server\gg\chem\gcms-t.i\T062421.b\T2393.D

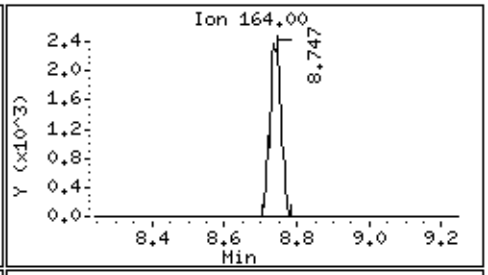
Date : 24-JUN-2021 14:02

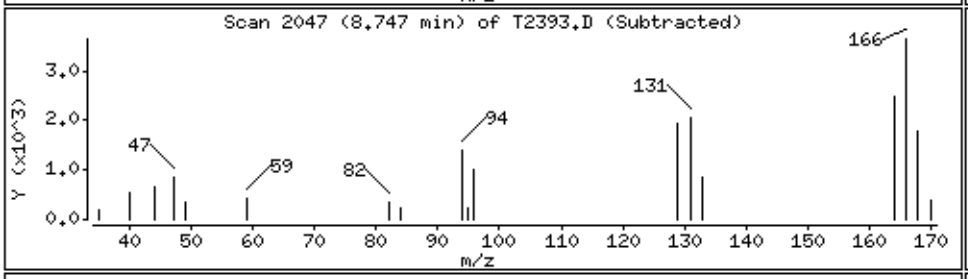
Client ID: G6M-04-02X-SPR21 Instrument: gcms-t.i

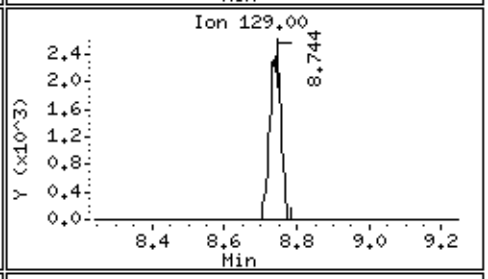
Sample Info: S03743-2DL

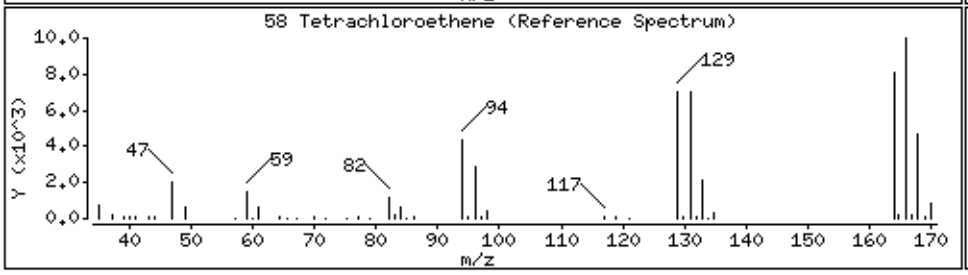
58 Tetrachloroethene Concentration: 3.5 ug/l

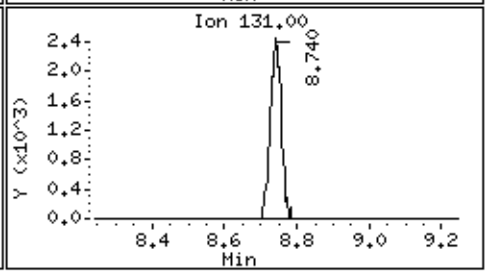




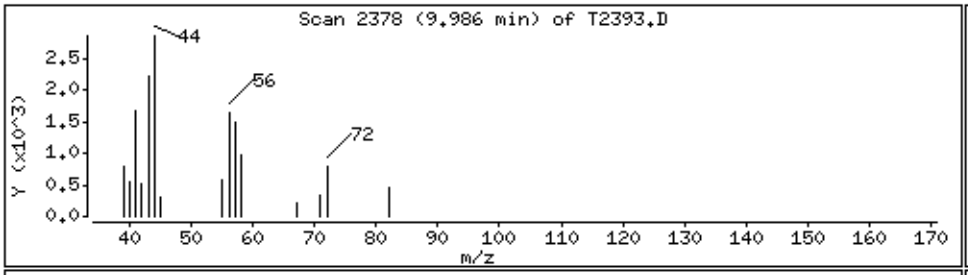


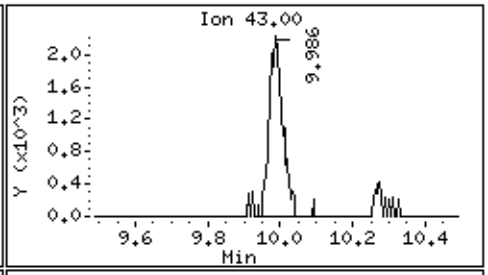


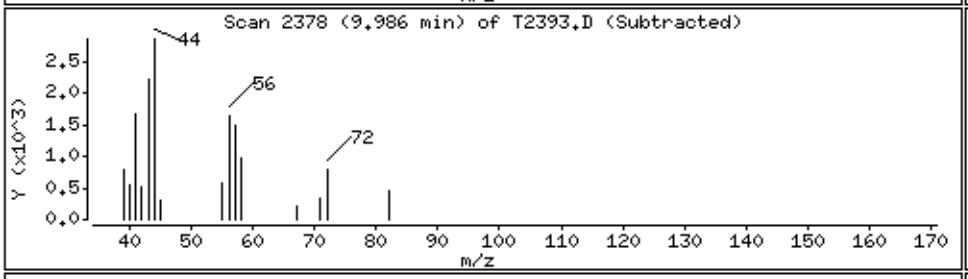


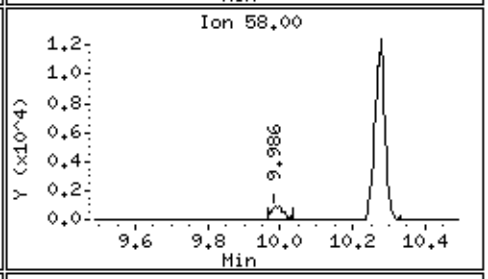


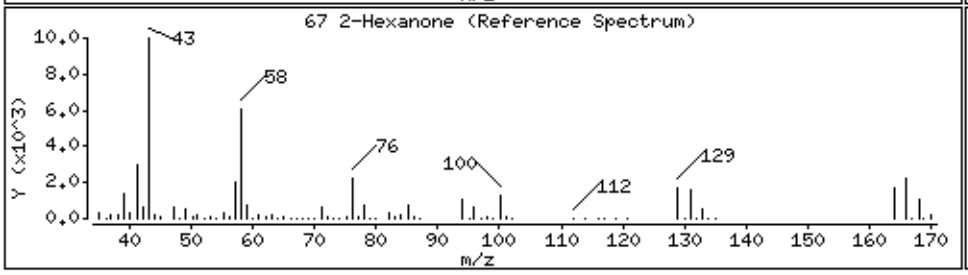
67 2-Hexanone Concentration: 4.8 ug/l

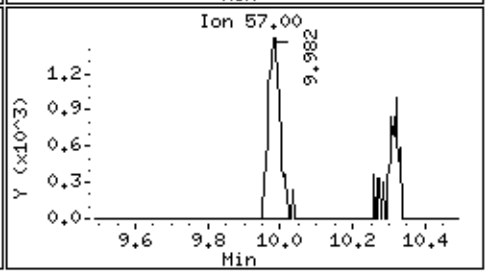








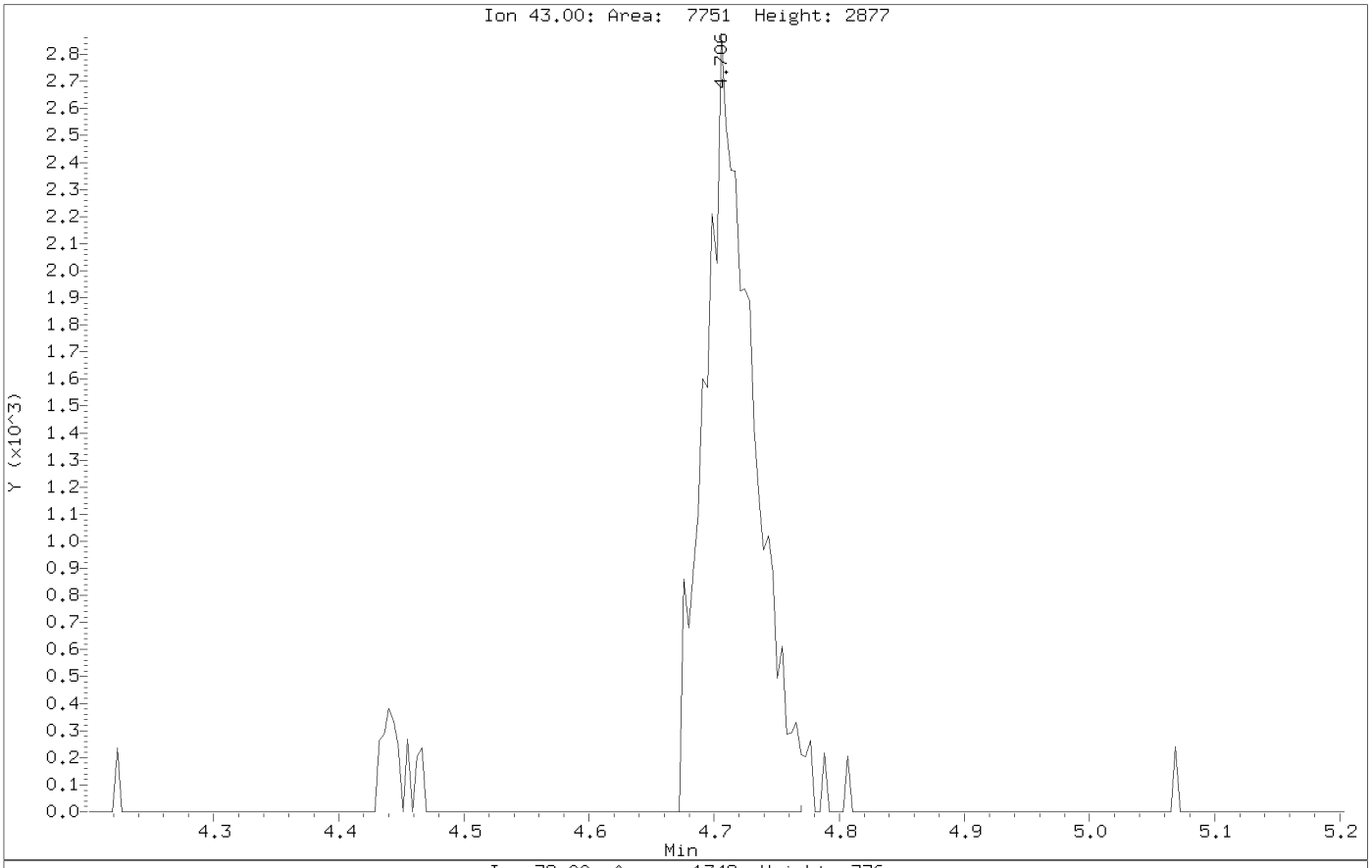


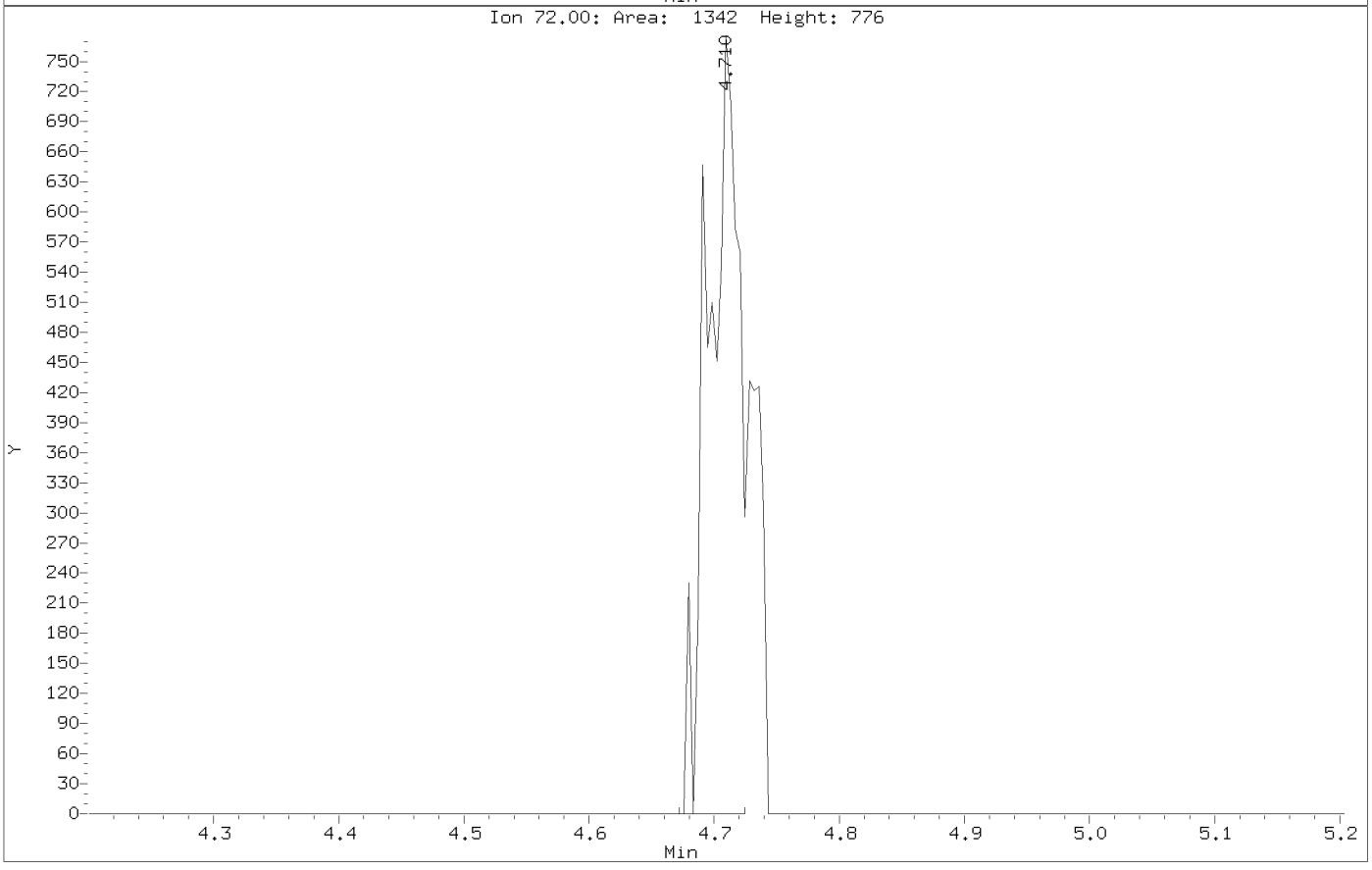


Data File: \\target_server\gg\chem\gcms-t.i\T062421.b\T2393.D
Injection Date: 24-JUN-2021 14:02
Instrument: gcms-t.i
Client Sample ID: G6M-04-02X-SPR21

Compound: 2-Butanone
CAS Number: 78-93-3

BEFORE MANUAL INTEGRATION

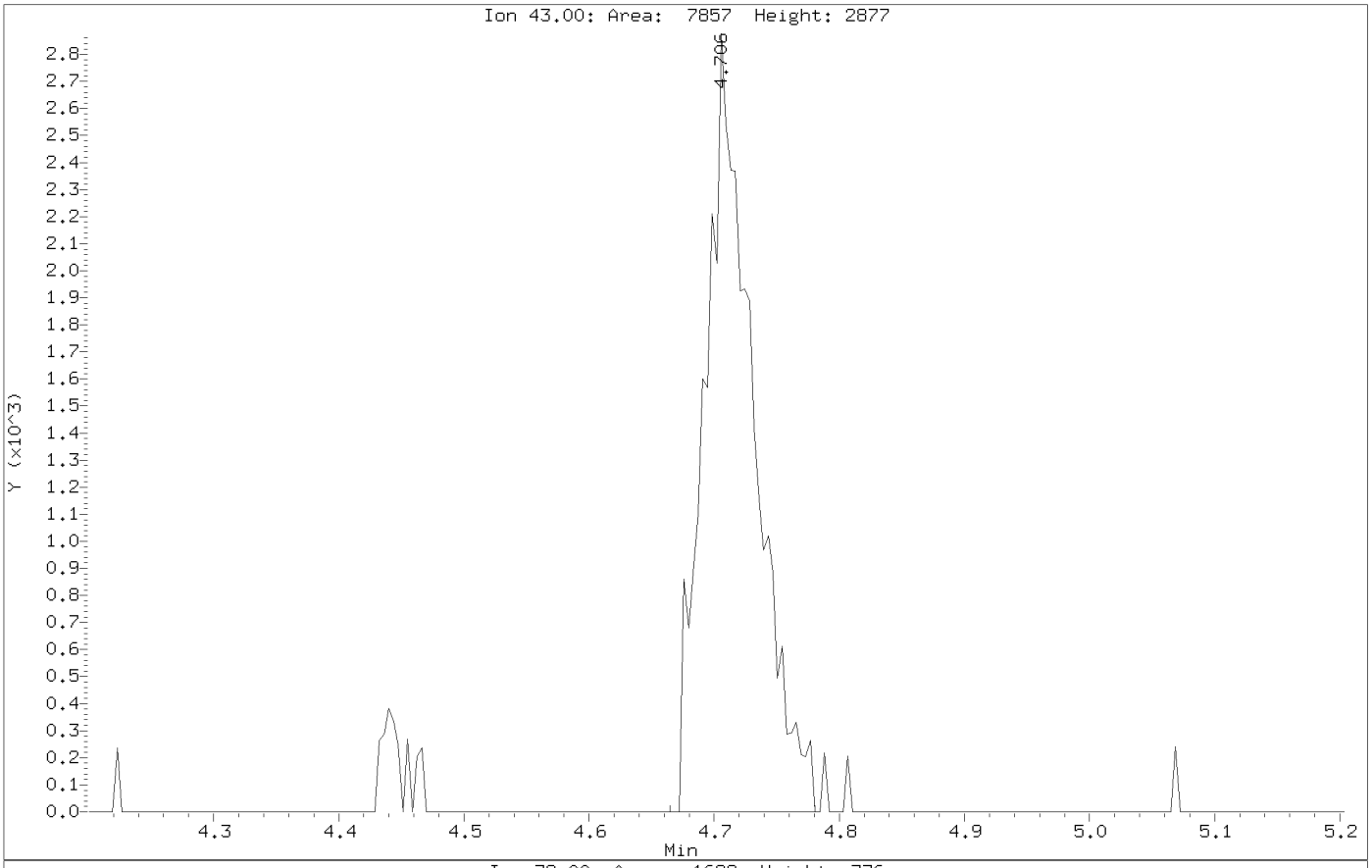


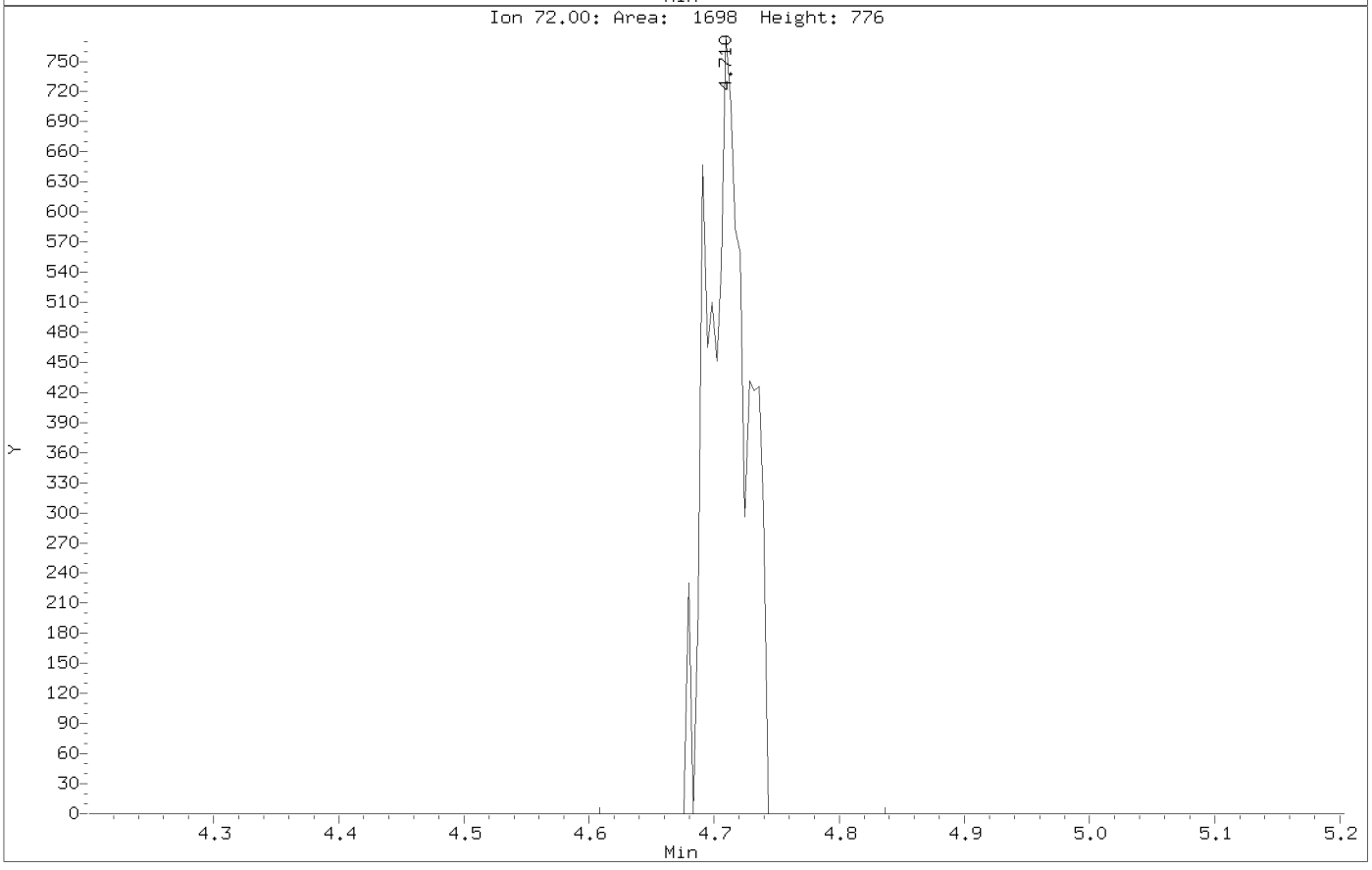


Data File: \\target_server\gg\chem\gcms-t.i\T062421.b\T2393.D
Injection Date: 24-JUN-2021 14:02
Instrument: gcms-t.i
Client Sample ID: G6M-04-02X-SPR21

Compound: 2-Butanone
CAS Number: 78-93-3

AFTER MANUAL INTEGRATION





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ANALYTICAL SERVICES

Report of Analytical Results

Client: SERES Engineering & Services, LLC
Lab ID: SO3743-3
Client ID: AOC50-FB-SPR21
Project: Fort Devens 2021 LTM
SDG: SO3743
Lab File ID: S0365.D

Sample Date: 17-JUN-21
Received Date: 18-JUN-21
Extract Date: 23-JUN-21
Extracted By: CR
Extraction Method: SW846 5030C
Lab Prep Batch: WG301245

Analysis Date: 23-JUN-21
Analyst: CR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 01-JUL-21

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	2.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	2.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	2.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	U	2.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	2.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25	0.50
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1	2.5
Acetone	U	5.0	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	1.0	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21	0.50
Vinyl Acetate	UL	1.0	ug/L	1	1	1.0	0.40	0.50
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21	0.50
1,2-Dichloroethylene (Total)	U	2.0	ug/L	1	2	2.0	0.21	1.0
2,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25	0.50
Bromochloromethane	U	1.0	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	1.0	ug/L	1	1	1.0	0.32	0.50
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22	0.50
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20	0.50
1,1-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.21	0.50
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3	2.5
Benzene	U	1.0	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28	0.50
Dibromomethane	U	1.0	ug/L	1	1	1.0	0.46	0.50
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19	0.50
Toluene	U	1.0	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3	2.5
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40	0.50
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33	0.50

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http://www.katahdinlab.com

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ANALYTICAL SERVICES

Report of Analytical Results

Client: SERES Engineering & Services, LLC
Lab ID: SO3743-3
Client ID: AOC50-FB-SPR21
Project: Fort Devens 2021 LTM
SDG: SO3743
Lab File ID: S0365.D

Sample Date: 17-JUN-21
Received Date: 18-JUN-21
Extract Date: 23-JUN-21
Extracted By: CR
Extraction Method: SW846 5030C
Lab Prep Batch: WG301245

Analysis Date: 23-JUN-21
Analyst: CR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 01-JUL-21

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30	0.50
1,3-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromoethane	U	1.0	ug/L	1	1	1.0	0.22	0.50
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21	0.50
1,1,1,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.19	0.50
Xylenes (Total)	U	3.0	ug/L	1	3	3.0	0.25	1.5
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59	1.0
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25	0.50
Styrene	U	1.0	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	1.0	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	1.0	ug/L	1	1	1.0	0.23	0.50
Bromobenzene	U	1.0	ug/L	1	1	1.0	0.24	0.50
N-Propylbenzene	U	1.0	ug/L	1	1	1.0	0.26	0.50
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38	0.50
1,3,5-Trimethylbenzene	U	1.0	ug/L	1	1	1.0	0.20	0.50
2-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.20	0.50
1,2,3-Trichloropropane	U	1.0	ug/L	1	1	1.0	0.19	0.50
4-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.26	0.50
tert-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.31	0.50
1,2,4-Trimethylbenzene	U	1.0	ug/L	1	1	1.0	0.19	0.50
P-Isopropyltoluene	U	1.0	ug/L	1	1	1.0	0.25	0.50
1,3-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.24	0.50
N-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.23	0.50
sec-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.21	0.50
1,2-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.15	0.50
1,2-Dibromo-3-Chloropropane	U	1.0	ug/L	1	1	1.0	0.50	0.75
Hexachlorobutadiene	U	1.0	ug/L	1	1	1.0	0.52	0.75
1,2,4-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.37	0.50
Naphthalene	U	1.0	ug/L	1	1	1.0	0.30	0.50
1,2,3-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.27	0.50
P-Bromofluorobenzene		96.0	%					
Toluene-d8		100.	%					

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http://www.katahdinlab.com

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ANALYTICAL SERVICES

Report of Analytical Results

Client: SERES Engineering & Services, LLC
Lab ID: SO3743-3
Client ID: AOC50-FB-SPR21
Project: Fort Devens 2021 LTM
SDG: SO3743
Lab File ID: S0365.D

Sample Date: 17-JUN-21
Received Date: 18-JUN-21
Extract Date: 23-JUN-21
Extracted By: CR
Extraction Method: SW846 5030C
Lab Prep Batch: WG301245

Analysis Date: 23-JUN-21
Analyst: CR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 01-JUL-21

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,2-Dichloroethane-d4		111.	%					
Dibromofluoromethane		108.	%					

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Data File: \\target_server\gg\chem\gcms-s.i\S062321.b\S0365.D
Report Date: 01-Jul-2021 12:49

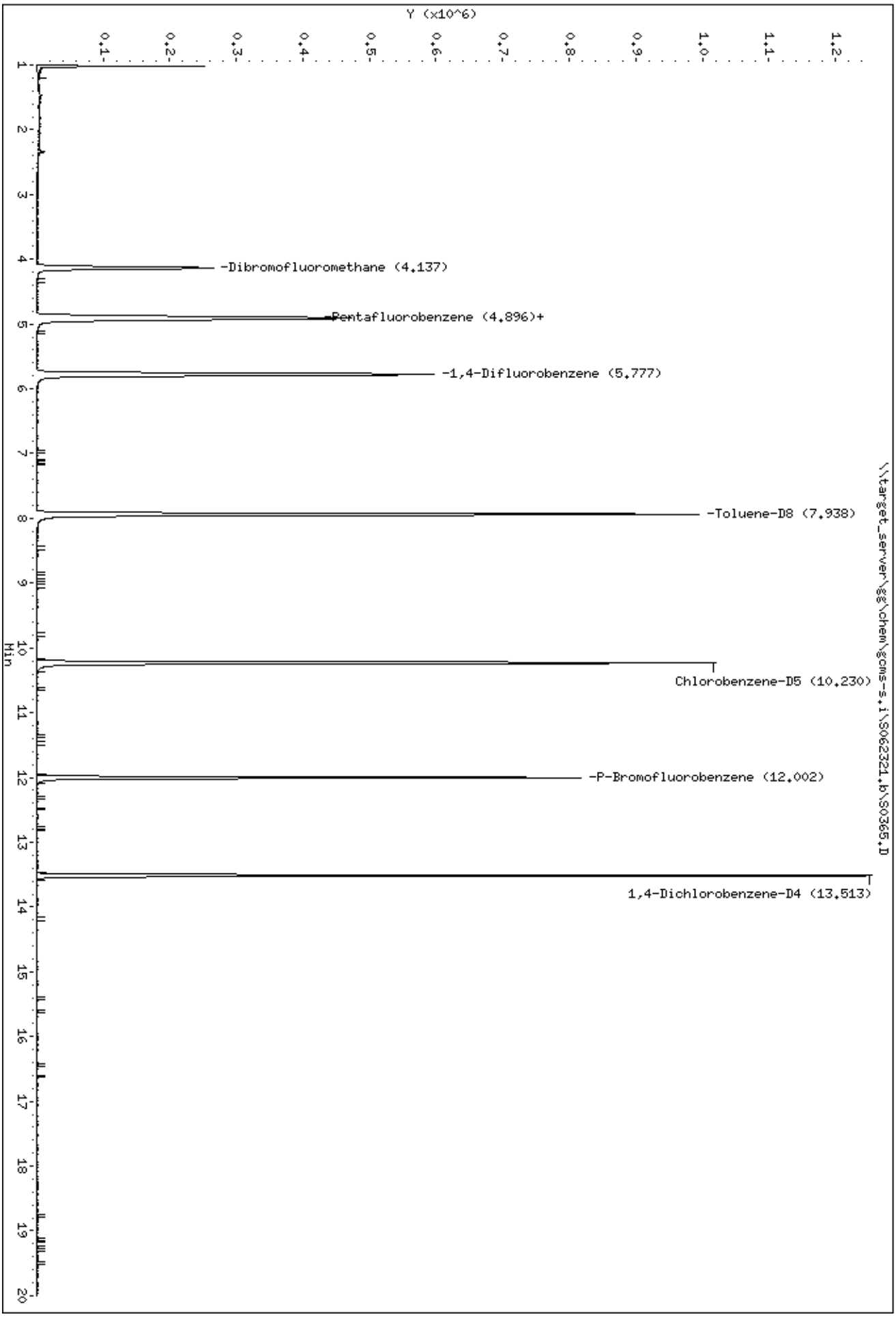
Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-s.i\S062321.b\S0365.D
Lab Smp Id: SO3743-3
Inj Date : 23-JUN-2021 12:56
Operator : CR Inst ID: gcms-s.i
Smp Info : SO3743-3
Misc Info : WG301245,WG301173-4
Comment : SW846 5030C
Method : \\target_server\gg\chem\gcms-s.i\S062321.b\S8A05(14)D.m
Meth Date : 01-Jul-2021 08:43 croy Quant Type: ISTD
Cal Date : 22-JUN-2021 11:34 Cal File: S0339.D
Als bottle: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: VOA-WS

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution 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)	REVIEW CODE
$	34 Dibromofluoromethane	113	4.137	4.134	(0.845)	234146	54.0951	54.1	
*	41 Pentafluorobenzene	168	4.896	4.903	(1.000)	380185	50.0000		
$	42 1,2-Dichloroethane-D4	65	4.921	4.922	(1.005)	250726	55.6535	55.6	
*	48 1,4-Difluorobenzene	114	5.777	5.777	(1.000)	804039	50.0000		
$	58 Toluene-D8	98	7.937	7.938	(1.374)	949850	50.1914	50.2	
*	68 Chlorobenzene-D5	117	10.230	10.234	(1.000)	762368	50.0000		
$	78 P-Bromofluorobenzene	95	12.002	12.002	(2.077)	343403	48.0028	48.0	
*	94 1,4-Dichlorobenzene-D4	152	13.513	13.513	(1.000)	362505	50.0000		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Client ID:
Sample Info: S03743-3
Instrument: gcms-s,i
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Y (x10^6)
Min
-Dibromofluoromethane (4,137)
Pentafluorobenzene (4,896)+
-1,4-Difluorobenzene (5,777)
-Toluene-D8 (7,938)
Chlorobenzene-D5 (10,230)
-P-Bromofluorobenzene (12,002)
1,4-Dichlorobenzene-D4 (13,513)

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ANALYTICAL SERVICES

Report of Analytical Results

Client: SERES Engineering & Services, LLC
Lab ID: SO3743-5
Client ID: G6M-04-10A-SPR21
Project: Fort Devens 2021 LTM
SDG: SO3743
Lab File ID: S0375.D

Sample Date: 17-JUN-21
Received Date: 18-JUN-21
Extract Date: 23-JUN-21
Extracted By: CR
Extraction Method: SW846 5030C
Lab Prep Batch: WG301245

Analysis Date: 23-JUN-21
Analyst: CR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 01-JUL-21

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	2.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	J	0.72	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	J	1.5	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	U	2.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	2.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25	0.50
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1	2.5
Acetone	U	5.0	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	J	0.62	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	1.0	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21	0.50
Vinyl Acetate	UL	1.0	ug/L	1	1	1.0	0.40	0.50
cis-1,2-Dichloroethene		4.7	ug/L	1	1	1.0	0.21	0.50
1,2-Dichloroethylene (Total)		5.3	ug/L	1	2	2.0	0.21	1.0
2,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25	0.50
Bromochloromethane	U	1.0	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	1.0	ug/L	1	1	1.0	0.32	0.50
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22	0.50
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20	0.50
1,1-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.21	0.50
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3	2.5
Benzene	U	1.0	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28	0.50
Dibromomethane	U	1.0	ug/L	1	1	1.0	0.46	0.50
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19	0.50
Toluene	U	1.0	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3	2.5
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40	0.50
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33	0.50

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ANALYTICAL SERVICES

Report of Analytical Results

Client: SERES Engineering & Services, LLC
Lab ID: SO3743-5
Client ID: G6M-04-10A-SPR21
Project: Fort Devens 2021 LTM
SDG: SO3743
Lab File ID: S0375.D

Sample Date: 17-JUN-21
Received Date: 18-JUN-21
Extract Date: 23-JUN-21
Extracted By: CR
Extraction Method: SW846 5030C
Lab Prep Batch: WG301245

Analysis Date: 23-JUN-21
Analyst: CR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 01-JUL-21

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30	0.50
1,3-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromoethane	U	1.0	ug/L	1	1	1.0	0.22	0.50
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21	0.50
1,1,1,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.19	0.50
Xylenes (Total)	U	3.0	ug/L	1	3	3.0	0.25	1.5
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59	1.0
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25	0.50
Styrene	U	1.0	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	1.0	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	1.0	ug/L	1	1	1.0	0.23	0.50
Bromobenzene	U	1.0	ug/L	1	1	1.0	0.24	0.50
N-Propylbenzene	U	1.0	ug/L	1	1	1.0	0.26	0.50
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38	0.50
1,3,5-Trimethylbenzene	J	0.81	ug/L	1	1	1.0	0.20	0.50
2-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.20	0.50
1,2,3-Trichloropropane	U	1.0	ug/L	1	1	1.0	0.19	0.50
4-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.26	0.50
tert-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.31	0.50
1,2,4-Trimethylbenzene	J	0.81	ug/L	1	1	1.0	0.19	0.50
P-Isopropyltoluene	U	1.0	ug/L	1	1	1.0	0.25	0.50
1,3-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.24	0.50
N-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.23	0.50
sec-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.21	0.50
1,2-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.15	0.50
1,2-Dibromo-3-Chloropropane	U	1.0	ug/L	1	1	1.0	0.50	0.75
Hexachlorobutadiene	U	1.0	ug/L	1	1	1.0	0.52	0.75
1,2,4-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.37	0.50
Naphthalene	U	1.0	ug/L	1	1	1.0	0.30	0.50
1,2,3-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.27	0.50
P-Bromofluorobenzene		99.5	%					
Toluene-d8		103.	%					

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ANALYTICAL SERVICES

Report of Analytical Results

Client: SERES Engineering & Services, LLC
Lab ID: SO3743-5
Client ID: G6M-04-10A-SPR21
Project: Fort Devens 2021 LTM
SDG: SO3743
Lab File ID: S0375.D

Sample Date: 17-JUN-21
Received Date: 18-JUN-21
Extract Date: 23-JUN-21
Extracted By: CR
Extraction Method: SW846 5030C
Lab Prep Batch: WG301245

Analysis Date: 23-JUN-21
Analyst: CR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 01-JUL-21

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,2-Dichloroethane-d4		112.	%					
Dibromofluoromethane		108.	%					

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Data File: \\target_server\gg\chem\gcms-s.i\S062321.b\S0375.D
Report Date: 01-Jul-2021 12:49

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-s.i\S062321.b\S0375.D
Lab Smp Id: SO3743-5
Inj Date : 23-JUN-2021 17:53
Operator : CR Inst ID: gcms-s.i
Smp Info : SO3743-5
Misc Info : WG301245,WG301173-4
Comment : SW846 5030C
Method : \\target_server\gg\chem\gcms-s.i\S062321.b\S8A05(14)D.m
Meth Date : 01-Jul-2021 08:43 croy Quant Type: ISTD
Cal Date : 22-JUN-2021 11:34 Cal File: S0339.D
Als bottle: 16
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: VOA-WS

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

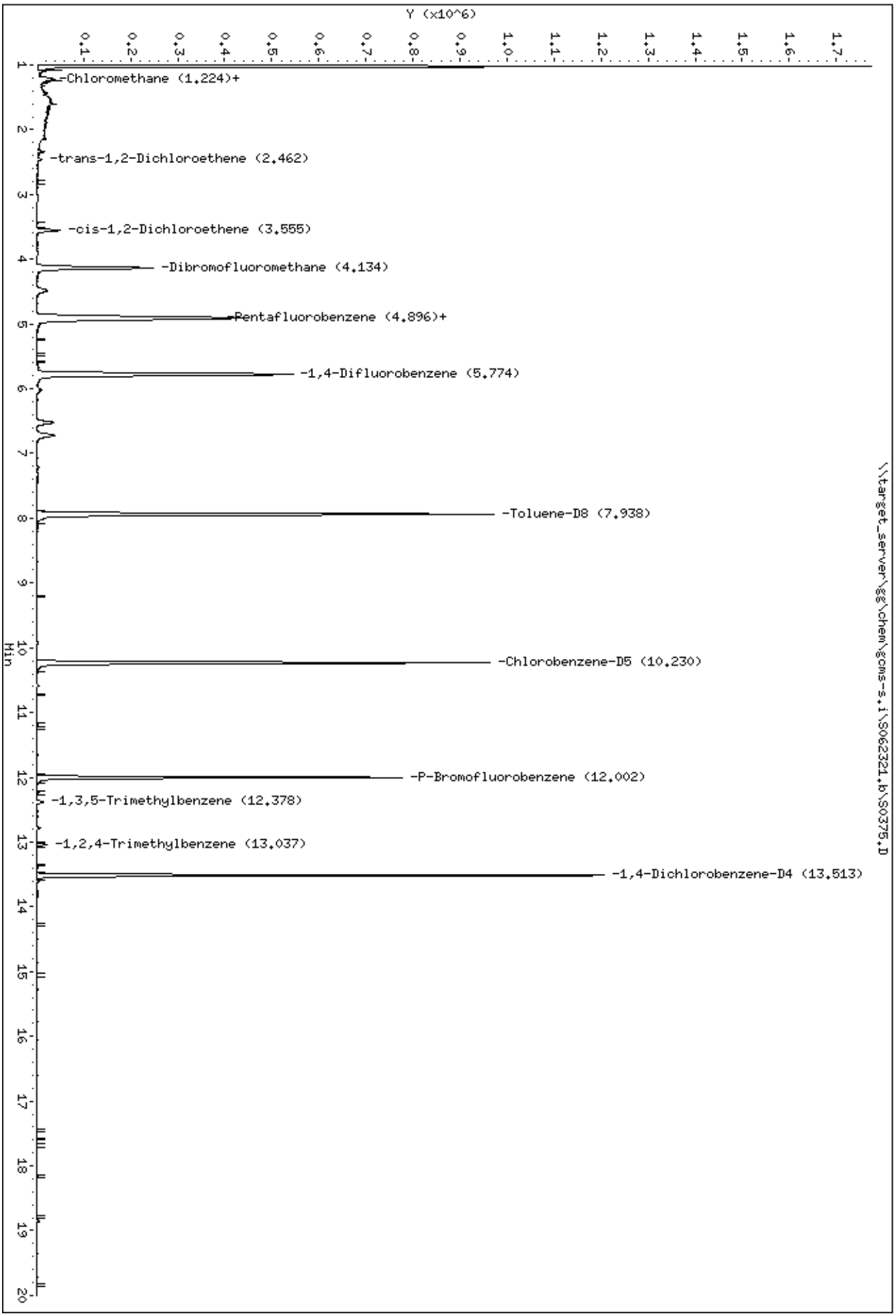
Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

CR
12:54 pm, Jul 01, 2021

		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
	2	Chloromethane	50	1.224	1.224	(0.250)	3698	0.71782	0.72(a)	
	3	Vinyl chloride	62	1.269	1.269	(0.259)	5719	1.51986	1.5(M)	M10
	16	trans-1,2-Dichloroethene	96	2.462	2.459	(0.503)	3422	0.62075	0.62(a)	
	27	cis-1,2-Dichloroethene	96	3.555	3.555	(0.726)	27725	4.68163	4.7	
$	34	Dibromofluoromethane	113	4.134	4.134	(0.844)	214301	53.8228	53.8	
*	41	Pentafluorobenzene	168	4.896	4.903	(1.000)	349723	50.0000		
$	42	1,2-Dichloroethane-D4	65	4.921	4.922	(1.005)	233214	56.2754	56.3	
*	48	1,4-Difluorobenzene	114	5.780	5.777	(1.000)	729806	50.0000		
$	58	Toluene-D8	98	7.937	7.938	(1.373)	882683	51.3865	51.4	
*	68	Chlorobenzene-D5	117	10.230	10.234	(1.000)	702048	50.0000		
$	78	P-Bromofluorobenzene	95	12.002	12.002	(2.076)	322980	49.7402	49.7	
	85	1,3,5-Trimethylbenzene	105	12.378	12.526	(0.916)	15145	0.80811	0.81(a)	
	90	1,2,4-Trimethylbenzene	105	13.037	13.037	(0.965)	15237	0.80954	0.81(a)	
*	94	1,4-Dichlorobenzene-D4	152	13.513	13.513	(1.000)	346319	50.0000		
M	98	1,2-Dichloroethylene (total)	96				31147	5.30238	5.3	
M	55	Total Alkylbenzenes	100				30382	1.61765	1.6(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.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0.4
0.5
0.6
0.7
0.8
0.9
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1.1
1.2
1.3
1.4
1.5
1.6
1.7
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7
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9
10
11
12
13
14
15
16
17
18
19
20
Min
-Chloromethane (1.224)+
-trans-1,2-Dichloroethene (2.462)
-cis-1,2-Dichloroethene (3.555)
-Dibromofluoromethane (4.134)
-Pentafluorobenzene (4.896)+
-1,4-Difluorobenzene (5.774)
-Toluene-D8 (7.938)
-Chlorobenzene-D5 (10.230)
-P-Bromofluorobenzene (12.002)
-1,3,5-Trimethylbenzene (12.378)
-1,2,4-Trimethylbenzene (13.037)
-1,4-Dichlorobenzene-D4 (13.513)
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Client ID:
Sample Info: S03743-5
Instrument: gcms-s.i

Data File: \\target_server\gg\chem\gcms-s.i\S062321.b\S0375.D

Date : 23-JUN-2021 17:53

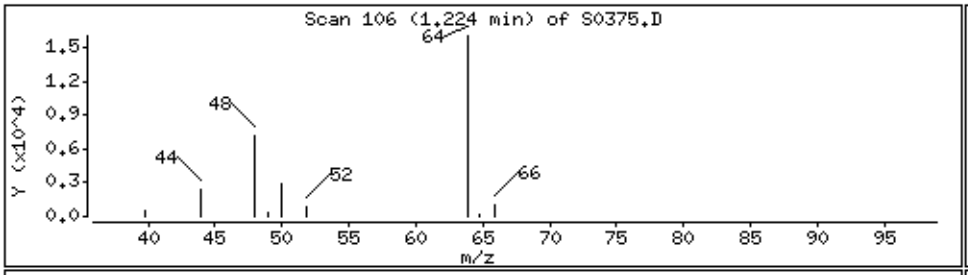
Client ID:

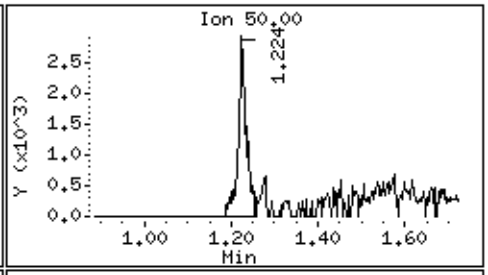
Instrument: gcms-s.i

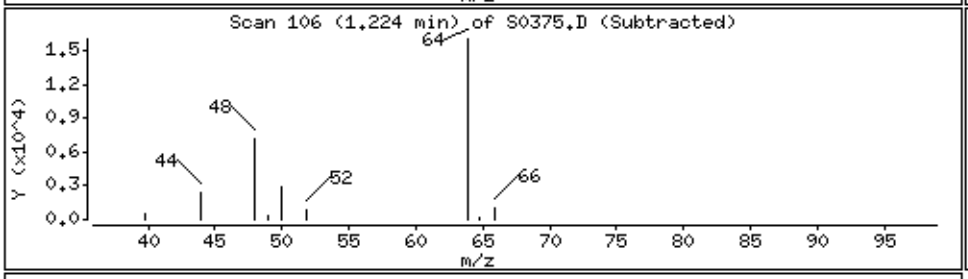
Sample Info: S03743-5

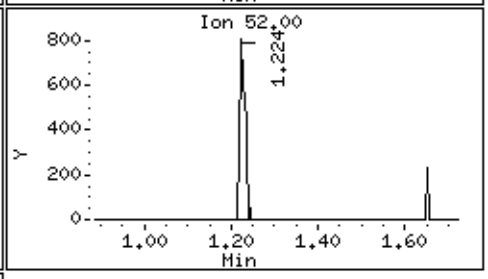
2 Chloromethane

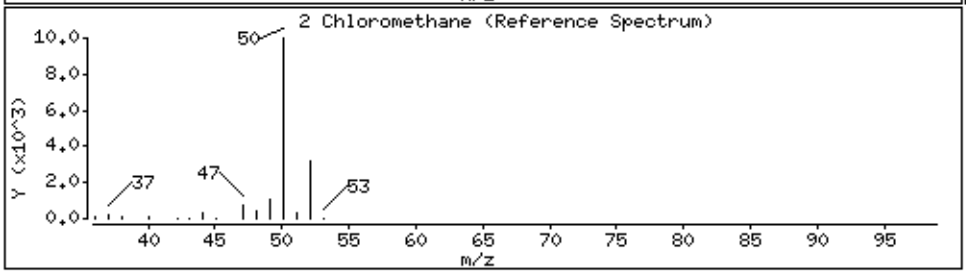
Concentration: 0.72 ug/l





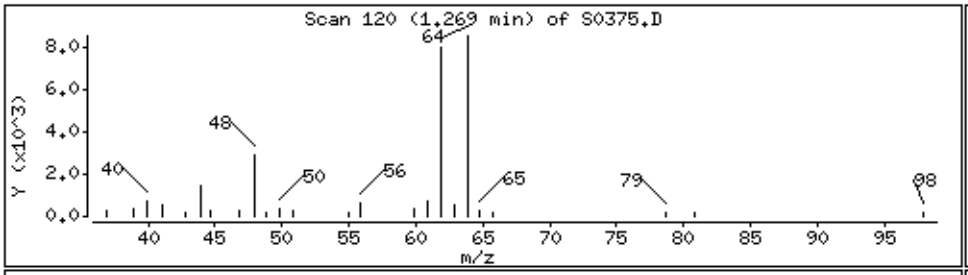


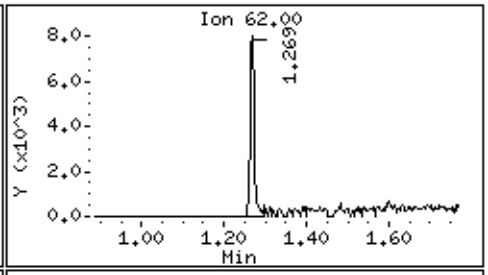


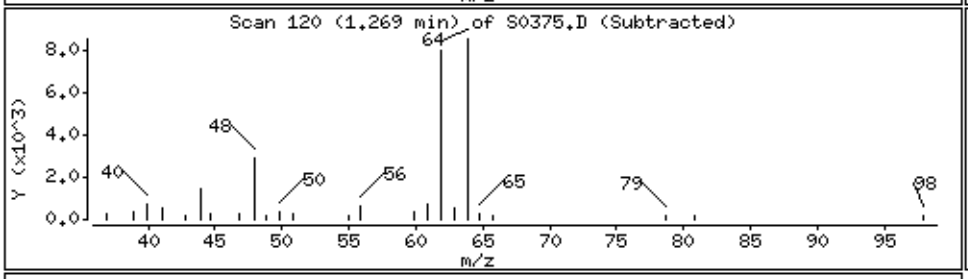


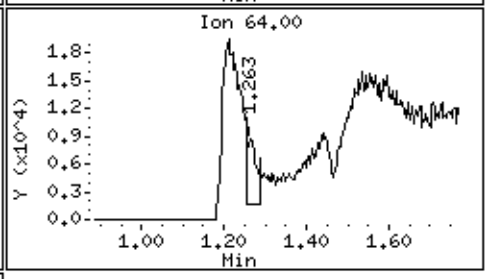
3 Vinyl chloride

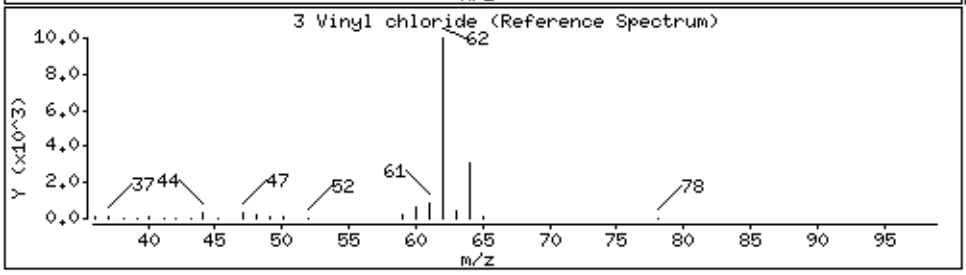
Concentration: 1.5 ug/l











Data File: \\target_server\gg\chem\gcms-s.i\S062321.b\S0375.D

Date : 23-JUN-2021 17:53

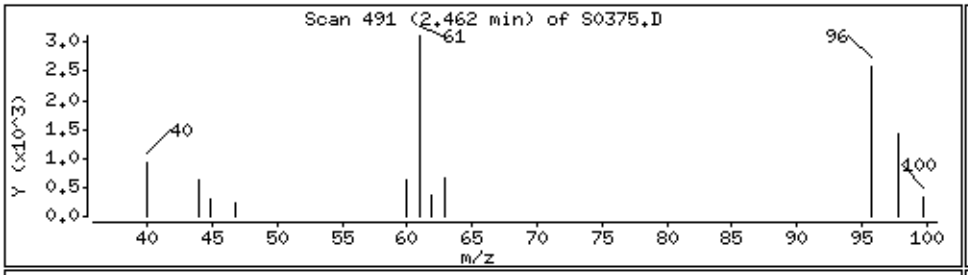
Client ID:

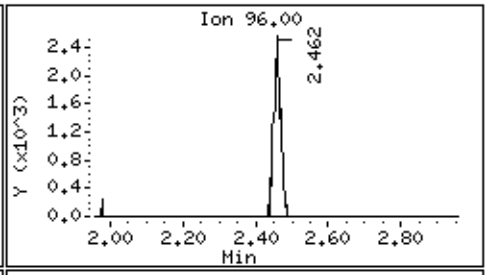
Instrument: gcms-s.i

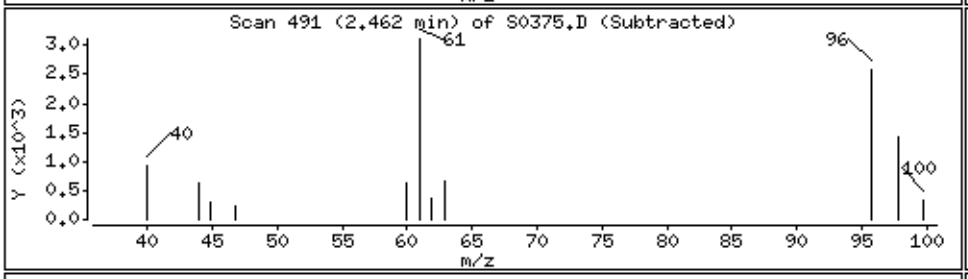
Sample Info: S03743-5

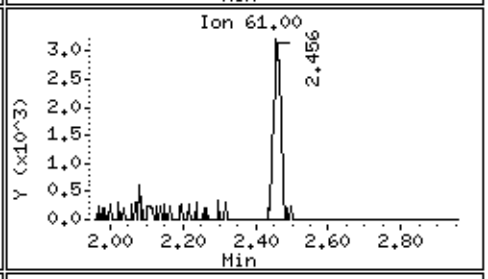
16 trans-1,2-Dichloroethene

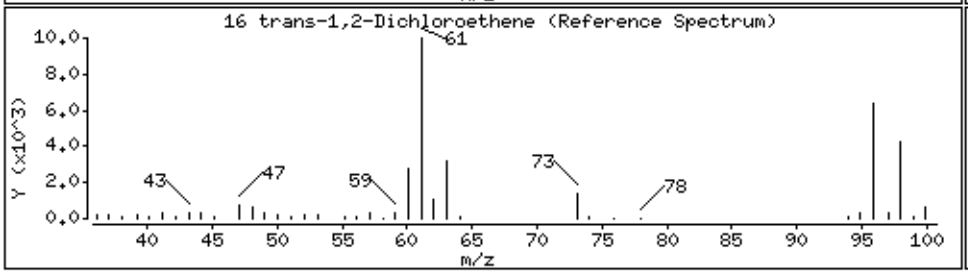
Concentration: 0.62 ug/l

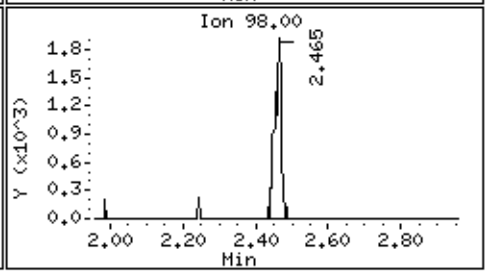






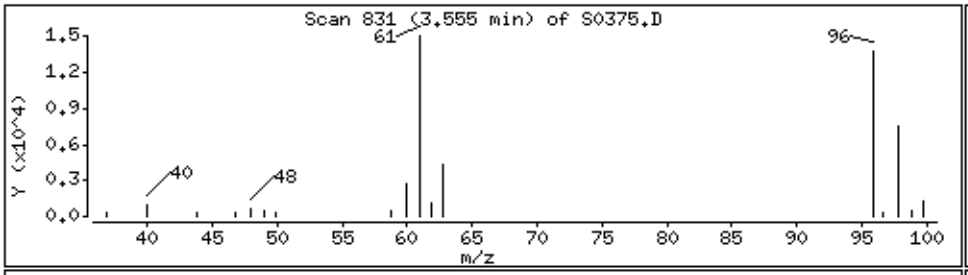


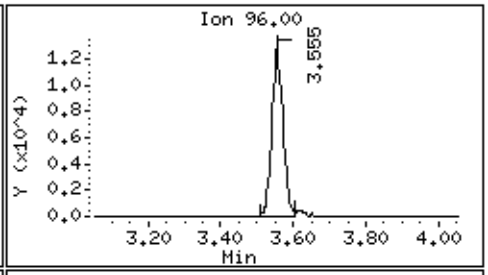


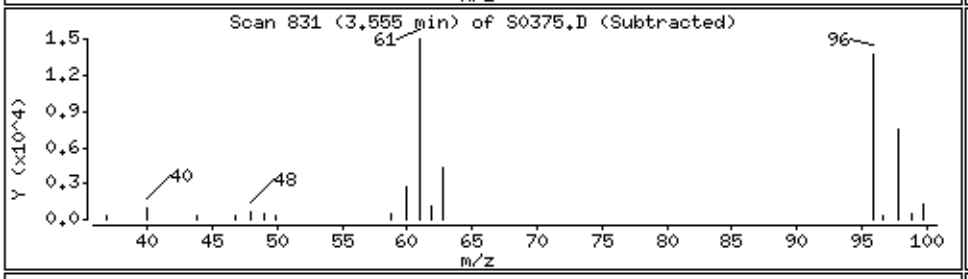


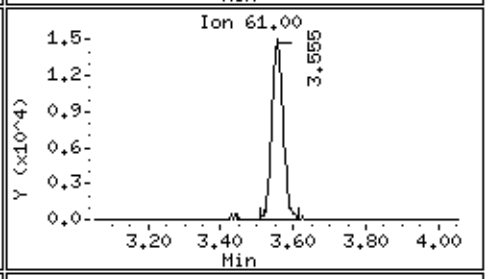
27 cis-1,2-Dichloroethene

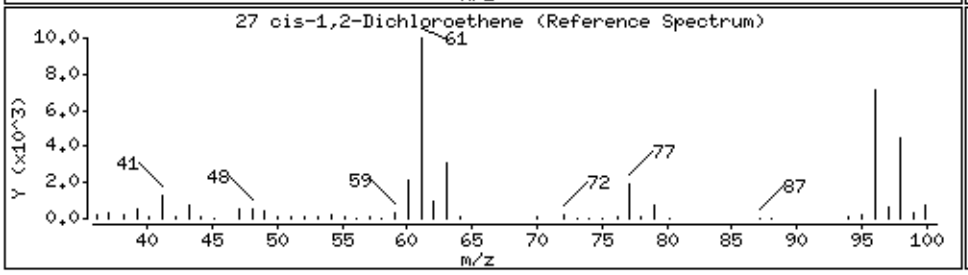
Concentration: 4.7 ug/l

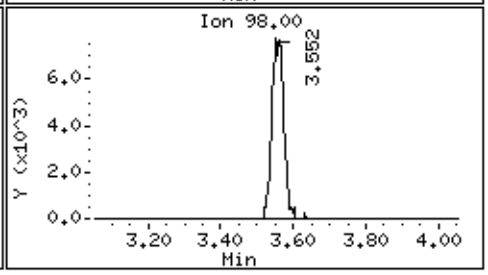












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Date : 23-JUN-2021 17:53

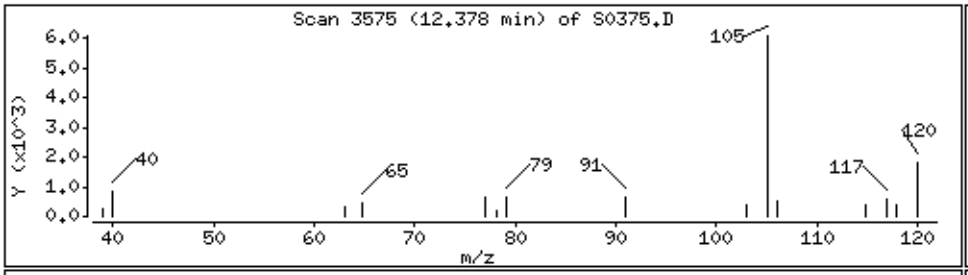
Client ID:

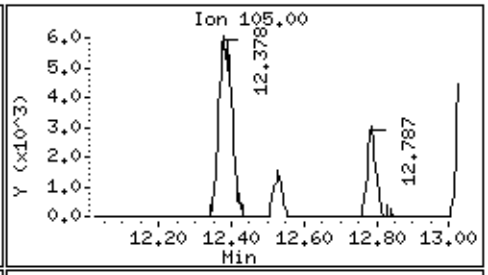
Instrument: gcms-s.i

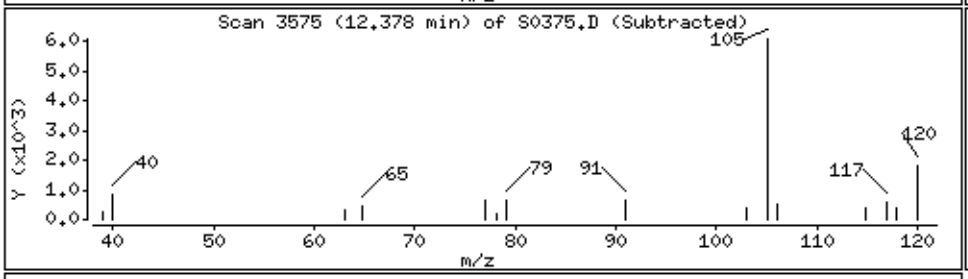
Sample Info: S03743-5

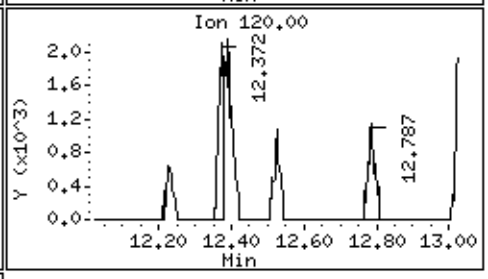
85 1,3,5-Trimethylbenzene

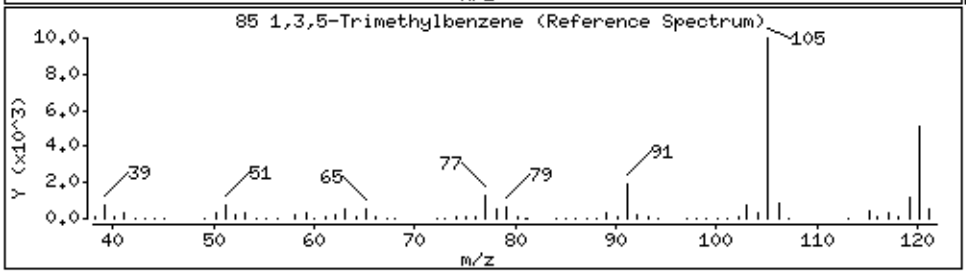
Concentration: 0.81 ug/l





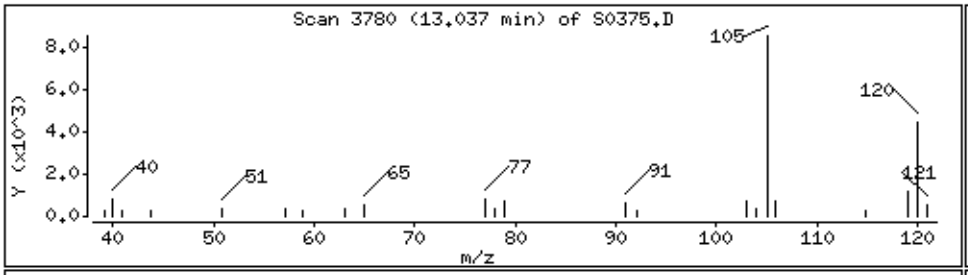


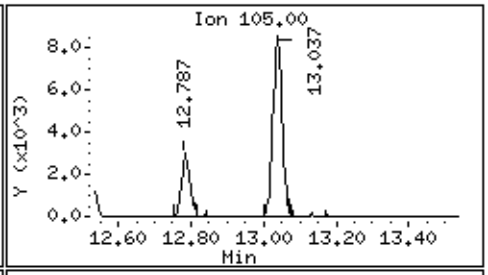


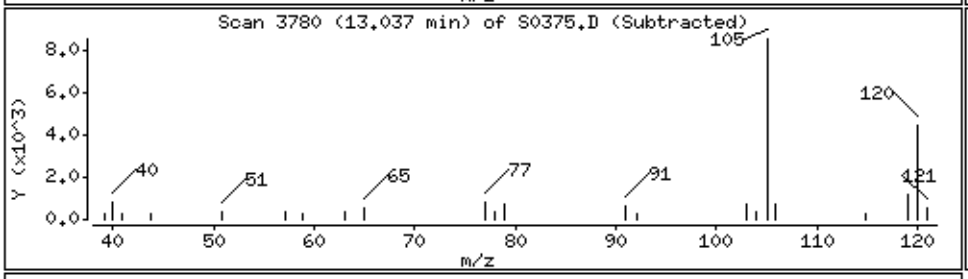


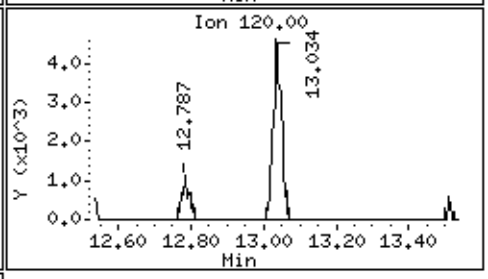
90 1,2,4-Trimethylbenzene

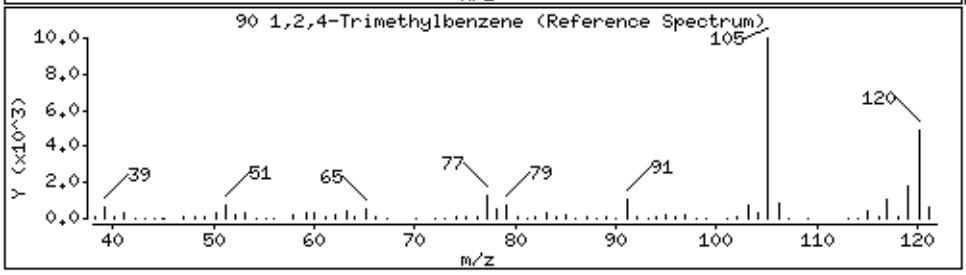
Concentration: 0.81 ug/l







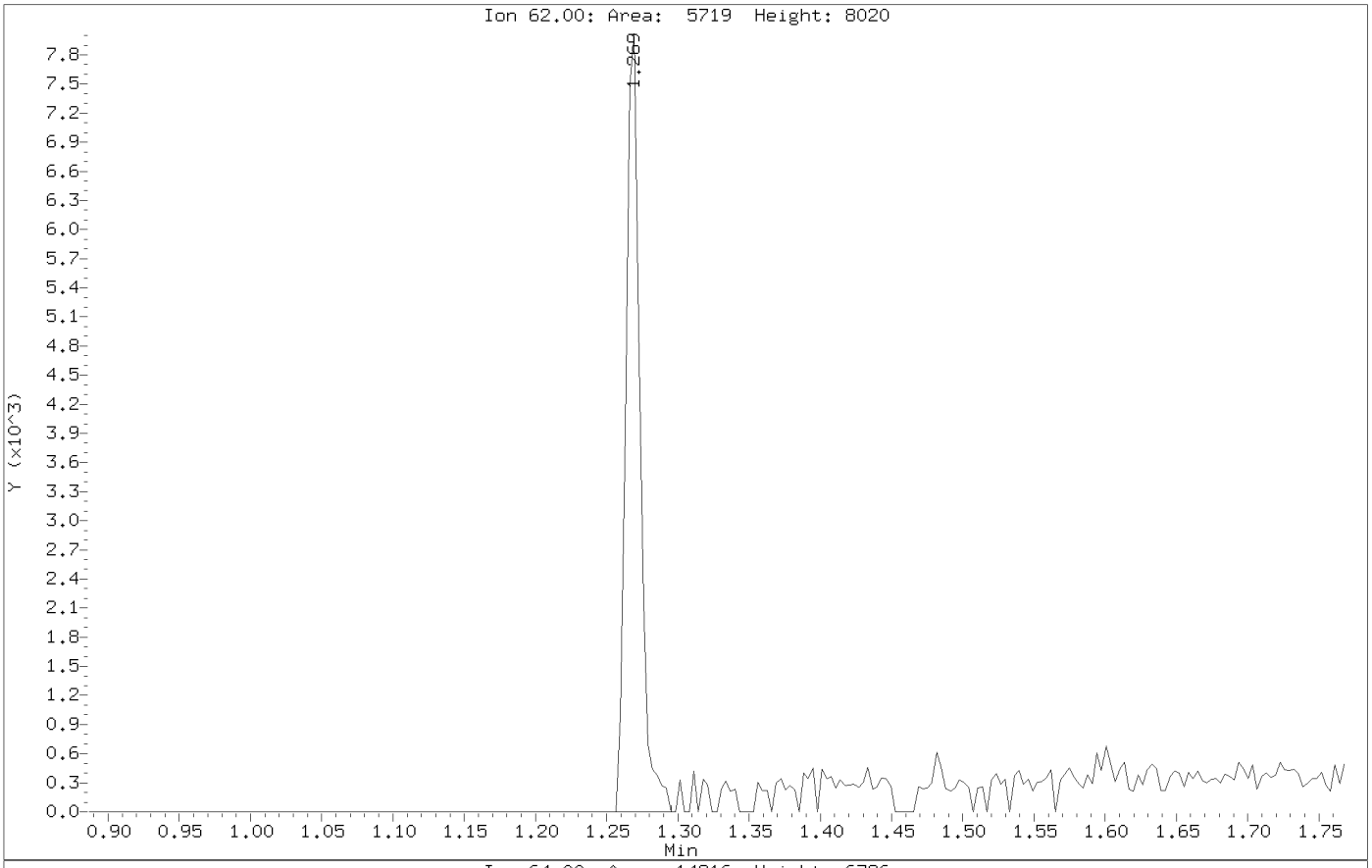


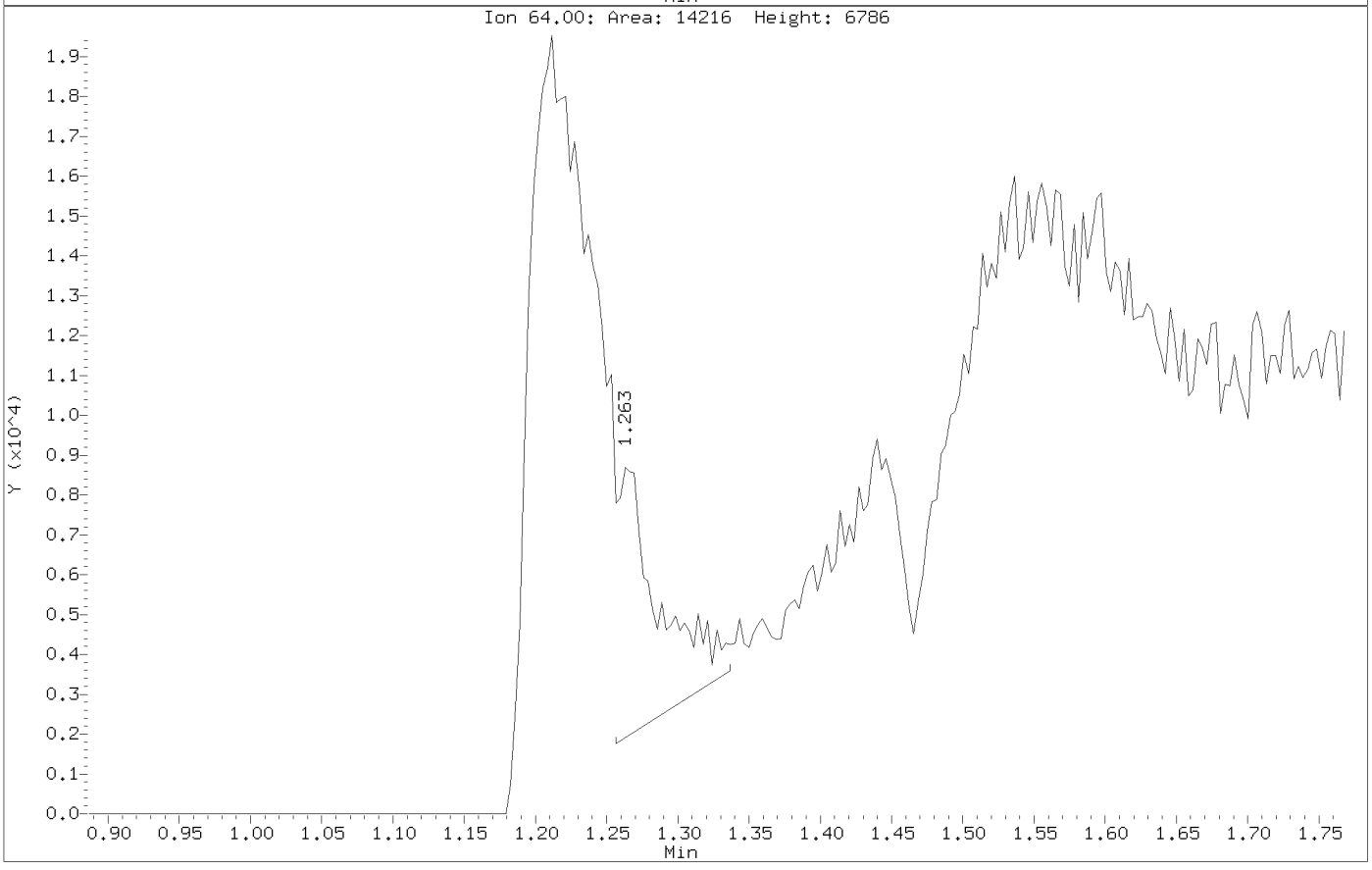


Data File: \\target_server\gg\chem\gcms-s.i\S062321.b\S0375.D
Injection Date: 23-JUN-2021 17:53
Instrument: gcms-s.i
Client Sample ID:

Compound: Vinyl chloride
CAS Number: 75-01-4

BEFORE MANUAL INTEGRATION

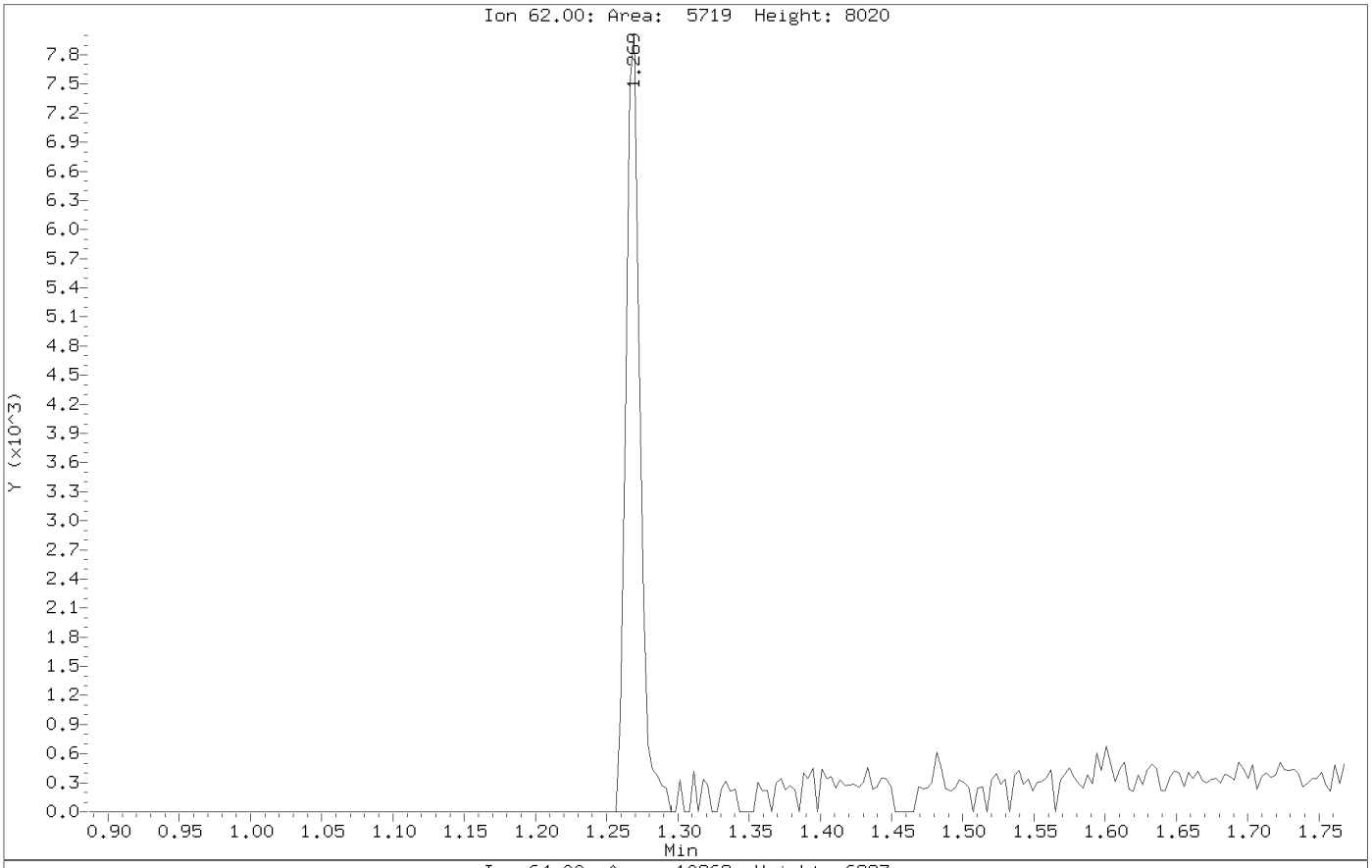


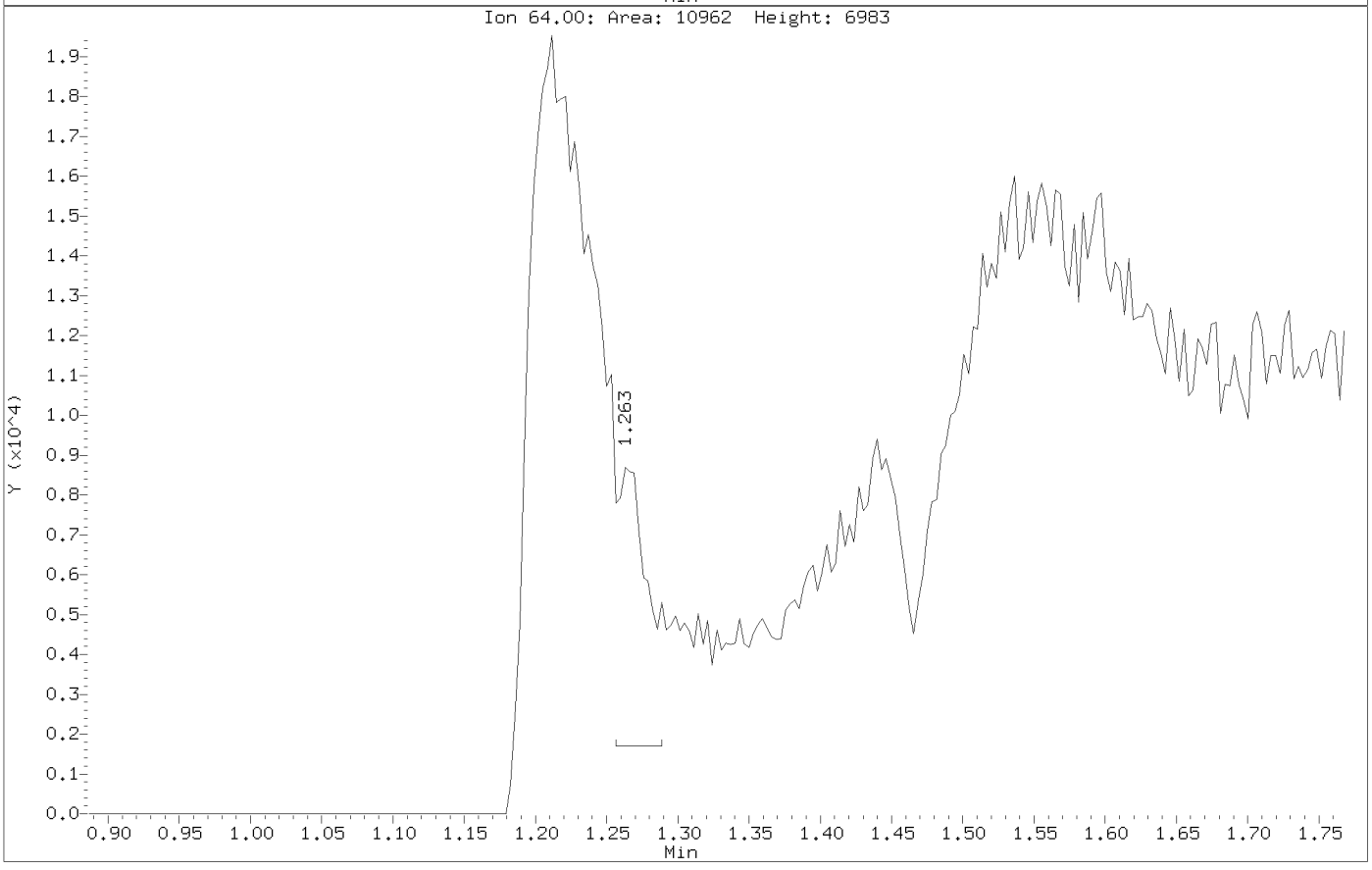


Data File: \\target_server\gg\chem\gcms-s.i\S062321.b\S0375.D
Injection Date: 23-JUN-2021 17:53
Instrument: gcms-s.i
Client Sample ID:

Compound: Vinyl chloride
CAS Number: 75-01-4

AFTER MANUAL INTEGRATION





Standards Data Section

Katahdin
ANALYTICAL SERVICES

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SO3743
Project : Fort Devens 2021 LTM
Instrument ID: GCMS-S
Lab File IDs : S0342.D S0341.D S0340.D S0339.D S0344.D S0343.D S0338.D
Calibration Date(s): 22-JUN-21 11:04 22-JUN-21 14:02

	1.0000 Level 1	5.0000 Level 2	20.0000 Level 3	50.0000 Level 4	100.0000 Level 5	150.0000 Level 6	75.0000 Level 7		Curve Type	b	m1	m2	%RSD	MAX %RSD	
Dichlorodifluoromethane	0.45233	0.63278	0.58923	0.63019	0.59474	0.61178	0.62165		AVG		.5904		10.69	15	O
Chloromethane	0.62442	0.78015	0.74355	0.77727	0.72207	0.72495	0.78339		AVG		.7365		7.584	15	O
Vinyl chloride	0.41432	0.54713	0.52744	0.57407	0.54326	0.57141	0.58819		AVG		.538		10.85	15	O
Bromomethane	0.20883	0.17396	0.15714	0.15913	0.13957	0.14634	0.16042		AVG		.1636		13.89	15	O
Chloroethane	0.22714	0.28559	0.26503	0.24691	+++++	+++++	0.25725		AVG		.2564		8.441	15	O
Trichlorofluoromethane	0.50220	0.64102	0.64377	0.68694	0.57579	0.63758	0.73782		AVG		.6322		11.99	15	O
1,1-Dichloroethene	0.54574	0.46002	0.43721	0.45355	0.40808	0.42231	0.46973		AVG		.4567		9.812	15	O
Carbon Disulfide	1.15104	0.93646	0.89962	0.99312	0.89368	0.93088	1.03712		AVG		.9774		9.42	15	O
Methylene Chloride	14227	45921	160600	391125	822336	1160595	545789		LNR	0	.8019		.9996	.99	O
Acetone	10085	42280	148421	359891	722614	946262	465734		QUA	0	6.182	.7603	.9987	.99	O
trans-1,2-Dichloroethene	0.89844	0.79846	0.74610	0.78126	0.77735	0.76659	0.74882		AVG		.7881		6.596	15	O
Methyl tert-butyl ether	1.94017	1.87592	1.84507	1.95104	1.88883	1.82201	1.84955		AVG		1.882		2.59	15	O
1,1-Dichloroethane	1.41562	1.33912	1.22987	1.28871	1.21961	1.22512	1.26909		AVG		1.284		5.612	15	O
Vinyl Acetate	0.40967	0.41920	0.44351	0.47296	0.44869	0.44558	0.46929		AVG		.4441		5.277	15	O
cis-1,2-Dichloroethene	0.87978	0.84297	0.81209	0.84426	0.86110	0.84958	0.83701		AVG		.8467		2.469	15	O
1,2-Dichloroethylene (total	+++++	+++++	+++++	+++++	+++++	+++++	+++++		AVG		0		0	15	MO
2,2-Dichloropropane	0.85317	0.85912	0.87221	0.95732	0.88390	0.88666	0.95434		AVG		.8952		4.816	15	O
Bromochloromethane	0.38414	0.37139	0.35397	0.36992	0.36030	0.33541	0.34840		AVG		.3605		4.508	15	O
Chloroform	1.48358	1.31854	1.23333	1.29890	1.26879	1.27412	1.28752		AVG		1.309		6.212	15	O
Carbon Tetrachloride	0.42853	0.42842	0.43635	0.47062	0.47914	0.47135	0.46650		AVG		.4544		4.904	15	O
1,1,1-Trichloroethane	1.18145	1.09603	1.05119	1.11944	1.12216	1.12430	1.10541		AVG		1.114		3.494	15	O
1,1-Dichloropropene	0.49329	0.50442	0.49459	0.53558	0.53237	0.52410	0.53524		AVG		.5171		3.693	15	O
2-Butanone	0.25999	0.25785	0.23611	0.24641	0.22817	0.21990	0.23112		AVG		.2399		6.361	15	O
Benzene	1.68759	1.64094	1.58803	1.64713	1.59541	1.53959	1.63218		AVG		1.619		2.981	15	O
1,2-Dichloroethane	0.56781	0.48403	0.42565	0.45541	0.43580	0.43463	0.45136		AVG		.465		10.58	15	O
Trichloroethene	0.41399	0.38556	0.36880	0.38787	0.38908	0.40155	0.38482		AVG		.3902		3.638	15	O
Dibromomethane	0.24426	0.22516	0.22117	0.23358	0.23150	0.23066	0.23285		AVG		.2313		3.14	15	O
1,2-Dichloropropane	0.36650	0.38613	0.37107	0.39590	0.38000	0.38424	0.39262		AVG		.3824		2.807	15	O
Bromodichloromethane	0.42768	0.43132	0.44480	0.48954	0.49625	0.49866	0.49581		AVG		.4692		7.003	15	O
cis-1,3-dichloropropene	0.48658	0.53543	0.59024	0.65167	0.64212	0.64367	0.65960		AVG		.6013		11.16	15	O
Toluene	1.78456	1.72286	1.65591	1.73010	1.65385	1.57213	1.70341		AVG		1.689		4.056	15	O
4-methyl-2-pentanone	0.17567	0.21117	0.23002	0.25457	0.23370	0.22410	0.25042		AVG		.2257		11.78	15	O
Tetrachloroethene	0.30225	0.30605	0.29577	0.31433	0.33230	0.31469	0.30394		AVG		.3099		3.847	15	O
trans-1,3-Dichloropropene	0.39791	0.44927	0.48451	0.54421	0.53810	0.54261	0.54847		AVG		.5007		11.76	15	O
1,1,2-Trichloroethane	0.37746	0.35955	0.34933	0.36885	0.36493	0.36004	0.36165		AVG		.3631		2.402	15	O
Dibromochloromethane	0.31120	0.33325	0.35981	0.40041	0.41403	0.40513	0.39563		AVG		.3742		10.66	15	O

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P.O. Box 540, Scarborough, ME 04070
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http://katahdinlab.com
sales@katahdinlab.com

Katahdin
ANALYTICAL SERVICES

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SO3743
Project : Fort Devens 2021 LTM
Instrument ID: GCMS-S
Lab File IDs : S0342.D S0341.D S0340.D S0339.D S0344.D S0343.D S0338.D
Calibration Date(s): 22-JUN-21 11:04 22-JUN-21 14:02

1,3-Dichloropropane	0.69308	0.69709	0.66966	0.70408	0.67059	0.64948	0.68135		AVG		.6808		2.792	15	O
1,2-Dibromoethane	0.32049	0.33367	0.33850	0.36852	0.37016	0.36219	0.35761		AVG		.3502		5.5	15	O
2-Hexanone	0.11308	0.14626	0.16011	0.17911	0.16734	0.15728	0.17355		AVG		.1567		14.09	15	O
Chlorobenzene	1.18619	1.14151	1.08486	1.12747	1.10632	1.03954	1.09443		AVG		1.111		4.178	15	O
Ethylbenzene	0.58391	0.60085	0.60206	0.64239	0.65300	0.62575	0.63993		AVG		.6211		4.158	15	O
1,1,1,2-Tetrachloroethane	0.30231	0.34854	0.35880	0.39138	0.39844	0.38965	0.38222		AVG		.3673		9.245	15	O
Xylenes (total)	+++++	+++++	+++++	+++++	+++++	+++++	+++++		AVG		0		0	15	MO
m+p-Xylenes	0.59472	0.72191	0.74434	0.78613	0.75400	0.70030	0.76832		AVG		.7242		8.808	15	O
o-Xylene	0.50680	0.60966	0.69182	0.74955	0.74482	0.71658	0.73615		AVG		.6793		13.25	15	O
Styrene	12315	85182	421016	1139278	2424716	3380179	1635474		LNR	0	1.217		.9975	.99	O
Bromoform	2167	14139	71065	209017	500045	729456	306952		LNR	0	.2518		.9962	.99	O
Isopropylbenzene	2.60671	3.22423	3.44496	3.60581	3.34622	3.03771	3.53180		AVG		3.257		10.58	15	O
Bromobenzene	0.93780	0.87934	0.85378	0.88801	0.89528	0.85676	0.86423		AVG		.8822		3.299	15	O
N-Propylbenzene	3.58781	4.03517	4.10368	4.22259	3.81315	3.37907	4.12751		AVG		3.896		8.062	15	O
1,1,2,2-Tetrachloroethane	1.03172	1.01856	0.95400	0.98156	0.92975	0.88194	0.95014		AVG		.964		5.369	15	O
1,3,5-Trimethylbenzene	2.02771	2.60712	2.86371	3.01913	2.84443	2.60614	2.97227		AVG		2.706		12.56	15	O
2-Chlorotoluene	2.27050	2.49623	2.47922	2.52680	2.38881	2.22740	2.49759		AVG		2.412		4.984	15	O
1,2,3-Trichloropropane	0.81547	0.79255	0.76105	0.77163	0.72888	0.69022	0.75356		AVG		.759		5.418	15	O
4-Chlorotoluene	2.31429	2.67933	2.57176	2.65437	2.50121	2.31861	2.60405		AVG		2.52		5.982	15	O
tert-Butylbenzene	1.79062	2.28606	2.44059	2.59411	2.50574	2.32510	2.56659		AVG		2.358		11.69	15	O
1,2,4-Trimethylbenzene	1.95687	2.69390	2.90980	3.02484	2.83852	2.59908	2.99884		AVG		2.717		13.59	15	O
P-Isopropyltoluene	1.98007	2.67333	2.98253	3.25154	3.07451	2.77375	3.21471		AVG		2.85		15.4	15	WO
1,3-Dichlorobenzene	1.51234	1.61710	1.58073	1.66533	1.65887	1.56282	1.63672		AVG		1.605		3.474	15	O
1,4-Dichlorobenzene	1.86704	1.66676	1.60250	1.68297	1.67502	1.57722	1.64820		AVG		1.674		5.589	15	O
N-Butylbenzene	14205	96664	477966	1339316	2853709	3901855	1961350		QUA	0	.3049	.01125	.999	.99	O
sec-Butylbenzene	2.58897	3.44977	3.59945	3.76973	3.49061	3.13221	3.70055		AVG		3.39		12.08	15	O
1,2-Dichlorobenzene	1.51073	1.55808	1.52651	1.59366	1.59223	1.50130	1.56387		AVG		1.549		2.416	15	O
1,2-Dibromo-3-Chloropropane	778	5483	24716	73124	177969	253470	106580		LNR	0	.1652		.997	.99	O
Hexachlorobutadiene	2344	17003	74840	213829	527226	769383	315879		LNR	0	.4959		.9967	.99	O
1,2,4-Trichlorobenzene	5558	30565	155826	467139	1138838	1665722	684147		LNR	0	1.073		.9966	.99	O
Naphthalene	10372	72682	425826	1258603	2758241	3714661	1797781		QUA	0	.3348	.01012	.9982	.99	O
1,2,3-Trichlorobenzene	0.72007	0.77534	0.86119	0.94460	1.01544	0.97208	0.94299		AVG		.8902		12.23	15	O
Dibromofluoromethane	0.58284	0.56691	0.56207	0.56689	0.55997	0.57782	0.56826		AVG		.5692		1.448	15	
1,2-Dichloroethane-D4	0.63148	0.59944	0.57999	0.58807	0.55733	0.59204	0.59909		AVG		.5925		3.789	15	
Toluene-D8	1.16944	1.16833	1.16813	1.17674	1.17210	1.18988	1.19329		AVG		1.177		.8953	15	
P-Bromofluorobenzene	0.42959	0.43508	0.44115	0.44667	0.44649	0.45933	0.45577		AVG		.4449		2.387	15	

Legend: O = Kept Original Curve
Y = Failed Minimum RF

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
Project : Fort Devens 2021 LTM
Lab File IDs : S0342.D S0341.D S0340.D S0339.D S0344.D S0343.D S0338.D

SDG: SO3743
Instrument ID: GCMS-S
Calibration Date(s): 22-JUN-21 11:04 22-JUN-21 14:02

W = Failed %RSD Value

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\gcms-s.i\S062221.b\S0345A.D
Report Date: 29-Jun-2021 12:49

Katahdin Analytical Services

RECOVERY REPORT

Client Name: Client SDG: SDGa02236
Sample Matrix: LIQUID Fraction: VOA
Lab Smp Id: WG301173-8
Level: LOW Operator: CR
Data Type: MS DATA SampleType: LCS
SpikeList File: IND_CHECK.spk Quant Type: ISTD
Sublist File: all.sub
Method File: \\target_server\gg\chem\gcms-s.i\S062221.b\S8A05(14)D.m
Misc Info: WG301173,WG301173-4

	SPIKE	COMPOUND	CONC ADDED ug/l	CONC RECOVERED ug/l	% RECOVERED	LIMITS
	1	Dichlorodifluorome	50.0	55.4	110.85	80-120
	2	Chloromethane	50.0	51.6	103.29	80-120
	3	Vinyl chloride	50.0	52.3	104.61	80-120
	4	Bromomethane	50.0	46.4	92.70	80-120
	5	Chloroethane	50.0	46.0	92.00	80-120
	6	Trichlorofluoromet	50.0	49.8	99.67	80-120
	7	Diethyl Ether	50.0	42.7	85.47	80-120
	19	Tertiary-butyl alc	250	235	93.97	80-120
	8	1,1-Dichloroethene	50.0	42.4	84.71	80-120
	10	Carbon Disulfide	50.0	51.1	102.18	80-120
	9	Freon-113	50.0	44.2	88.33	80-120
	11	Iodomethane	50.0	54.2	108.36	80-120
	12	Acrolein	250	217	87.00	80-120
	14	Methylene Chloride	50.0	50.1	100.25	80-120
	15	Acetone	50.0	70.4	140.76*	80-120
	45	Isobutyl Alcohol	1000	797	79.67*	80-120
	16	trans-1,2-Dichloro	50.0	48.8	97.52	80-120
	13	Allyl Chloride	50.0	56.3	112.61	80-120
	18	Methyl tert-butyl	50.0	49.6	99.27	80-120
	20	Acetonitrile	500	493	98.63	80-120
	21	Di-isopropyl ether	50.0	48.6	97.17	80-120
	22	Chloroprene	50.0	49.5	99.06	80-120
	39	Propionitrile	500	468	93.62	80-120
	40	Methacrylonitrile	500	485	97.01	80-120
	23	1,1-Dichloroethane	50.0	49.3	98.61	80-120
	24	Acrylonitrile	250	236	94.29	80-120
	25	Ethyl tertiary-but	50.0	49.8	99.72	80-120
	26	Vinyl Acetate	50.0	75.7	151.47*	80-120
	27	cis-1,2-Dichloroet	50.0	49.3	98.63	80-120
M	98	1,2-Dichloroethyle	100	98.1	98.08	80-120
	52	Methyl Methacrylat	50.0	47.1	94.24	80-120
	28	2,2-Dichloropropan	50.0	46.3	92.68	80-120
	29	Bromochloromethane	50.0	54.4	108.72	80-120
	31	Chloroform	50.0	48.0	96.11	80-120
	32	Carbon Tetrachlori	50.0	51.3	102.62	80-120
	33	Tetrahydrofuran	50.0	49.0	97.98	80-120
	35	1,1,1-Trichloroeth	50.0	49.3	98.65	80-120
	37	1,1-Dichloropropen	50.0	49.7	99.38	80-120
	36	2-Butanone	50.0	59.5	119.08	80-120
	38	Benzene	50.0	49.3	98.53	80-120

Data File: \\target_server\gg\chem\gcms-s.i\S062221.b\S0345A.D
Report Date: 29-Jun-2021 12:49

	SPIKE COMPOUND	CONC ADDED ug/l	CONC RECOVERED ug/l	% RECOVERED	LIMITS
	30 Cyclohexane	50.0	49.5	98.97	80-120
	53 Ethyl Methacrylate	50.0	46.1	92.22	80-120
	43 Tertiary-amyl meth	50.0	49.8	99.69	80-120
	44 1,2-Dichloroethane	50.0	46.6	93.15	80-120
	47 Trichloroethene	50.0	48.7	97.37	80-120
	49 Dibromomethane	50.0	48.6	97.15	80-120
	50 1,2-Dichloropropan	50.0	48.5	97.08	80-120
	51 Bromodichlorometha	50.0	50.0	100.02	80-120
	57 cis-1,3-dichloropr	50.0	49.0	97.90	80-120
	54 1,4-Dioxane	1000	1010	101.04	80-120
	56 2-Chloroethylvinyl	50.0	49.6	99.18	80-120
	59 Toluene	50.0	49.6	99.26	80-120
	61 4-methyl-2-pentano	50.0	51.0	102.01	80-120
	60 Tetrachloroethene	50.0	52.1	104.17	80-120
	62 trans-1,3-Dichloro	50.0	52.5	105.04	80-120
	63 1,1,2-Trichloroeth	50.0	49.7	99.41	80-120
	64 Dibromochlorometha	50.0	51.3	102.70	80-120
	65 1,3-Dichloropropan	50.0	47.7	95.48	80-120
	66 1,2-Dibromoethane	50.0	50.8	101.55	80-120
	67 2-Hexanone	50.0	53.7	107.45	80-120
	69 Chlorobenzene	50.0	50.8	101.53	80-120
	70 1-Chlorohexane	50.0	0.00	*	80-120
	71 Ethylbenzene	50.0	50.5	100.97	80-120
	72 1,1,1,2-Tetrachlor	50.0	52.2	104.37	80-120
M	106 Xylenes (total)	150	161	107.40	80-120
	73 m+p-Xylenes	100	106	105.91	80-120
	74 o-Xylene	50.0	55.2	110.38	80-120
	75 Styrene	50.0	50.9	101.78	80-120
	76 Bromoform	50.0	47.5	95.04	80-120
	77 Isopropylbenzene	50.0	54.0	108.06	80-120
	79 cis-1,4-Dichloro-2	50.0	49.2	98.39	80-120
	86 trans-1,4-Dichloro	50.0	48.1	96.24	80-120
	80 Bromobenzene	50.0	49.5	99.00	80-120
	81 N-Propylbenzene	50.0	52.3	104.63	80-120
	82 1,1,2,2-Tetrachlor	50.0	46.2	92.44	80-120
	85 1,3,5-Trimethylben	50.0	52.6	105.11	80-120
	83 2-Chlorotoluene	50.0	50.8	101.57	80-120
	84 1,2,3-Trichloropro	50.0	46.5	93.04	80-120
	87 4-Chlorotoluene	50.0	51.1	102.14	80-120
	88 tert-Butylbenzene	50.0	53.8	107.62	80-120
	89 Pentachloroethane	50.0	0.00	*	80-120
	90 1,2,4-Trimethylben	50.0	53.2	106.46	80-120
	92 P-Isopropyltoluene	50.0	55.3	110.65	80-120
	93 1,3-Dichlorobenzen	50.0	51.9	103.74	80-120
	95 1,4-Dichlorobenzen	50.0	49.3	98.67	80-120
	97 N-Butylbenzene	50.0	46.0	92.10	80-120
	91 sec-Butylbenzene	50.0	54.9	109.81	80-120
	99 1,2-Dichlorobenzen	50.0	51.4	102.77	80-120
	100 1,2-Dibromo-3-Chlo	50.0	47.5	95.02	80-120
	101 1,3,5-Trichloroben	50.0	52.3	104.69	80-120
	102 Hexachlorobutadien	50.0	46.0	92.06	80-120
	103 1,2,4-Trichloroben	50.0	46.9	93.88	80-120
	96 1,2,3-Trimethylben	50.0	51.8	103.62	80-120
	104 Naphthalene	50.0	48.2	96.33	80-120

Data File: \\target_server\gg\chem\gcms-s.i\S062221.b\S0345A.D
Report Date: 29-Jun-2021 12:49

	SPIKE COMPOUND	CONC ADDED ug/l	CONC RECOVERED ug/l	% RECOVERED	LIMITS
105	1,2,3-Trichloroben	50.0	53.0	106.09	80-120
17	Methyl Acetate	50.0	37.5	75.08*	80-120
46	Methylcyclohexane	50.0	51.4	102.81	80-120
M 55	Total Alkylbenzene	350	368	105.20	80-120

	SURROGATE COMPOUND	AMOUNT ADDED ug/l	AMOUNT RECOVERED ug/l	% RECOVERED	LIMITS
$ 34	Dibromofluorometha	50.0	49.9	99.88	68-128
$ 42	1,2-Dichloroethane	50.0	47.3	94.66	67-135
$ 58	Toluene-D8	50.0	49.7	99.37	65-128
$ 78	P-Bromofluorobenze	50.0	49.7	99.39	56-133

Data File: \\target_server\gg\chem\gcms-s.i\S062221.b\S0345A.D
Report Date: 29-Jun-2021 12:49

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-s.i\S062221.b\S0345A.D
Lab Smp Id: WG301173-8
Inj Date : 22-JUN-2021 14:56
Operator : CR Inst ID: gcms-s.i
Smp Info : WG301173-8
Misc Info : WG301173,WG301173-4
Comment   : SW846 5030C
Method   : \\target_server\gg\chem\gcms-s.i\S062221.b\S8A05(14)D.m
Meth Date : 29-Jun-2021 12:44 croy Quant Type: ISTD
Cal Date : 22-JUN-2021 11:34 Cal File: S0339.D
Als bottle: 9 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.108	1.109	(0.226)	333402	55.4273	55.4	
2	Chloromethane	50	1.224	1.224	(0.250)	387566	51.6463	51.6	
3	Vinyl chloride	62	1.269	1.269	(0.259)	286686	52.3041	52.3	
4	Bromomethane	94	1.455	1.456	(0.297)	77273	46.3513	46.4	
5	Chloroethane	64	1.526	1.523	(0.312)	120166	46.0024	46.0	
6	Trichlorofluoromethane	101	1.610	1.610	(0.329)	320972	49.8347	49.8	
7	Diethyl Ether	59	1.799	1.800	(0.367)	163301	42.7359	42.7	
8	1,1-Dichloroethene	96	1.928	1.932	(0.394)	197069	42.3559	42.4	
9	Freon-113	151	1.947	1.951	(0.398)	174405	44.1635	44.2	
10	Carbon Disulfide	76	1.954	1.954	(0.399)	508782	51.0908	51.1	
11	Iodomethane	142	2.031	2.031	(0.415)	263401	54.1805	54.2	
12	Acrolein	56	2.166	2.166	(0.442)	127275	217.498	217	
13	Allyl Chloride	41	2.259	2.256	(0.461)	319371	56.3055	56.3	
14	Methylene Chloride	84	2.336	2.340	(0.477)	409494	50.1230	50.1	
15	Acetone	43	2.385	2.385	(0.487)	112902	70.3782	70.4(R)	
16	trans-1,2-Dichloroethene	96	2.459	2.459	(0.502)	391559	48.7620	48.8	
17	Methyl Acetate	43	2.475	2.478	(0.505)	193014	37.5423	37.5(R)	
18	Methyl tert-butyl ether	73	2.549	2.549	(0.520)	951630	49.6347	49.6	
20	Acetonitrile	41	2.770	2.771	(0.566)	367476	493.128	493	
21	Di-isopropyl ether	45	2.877	2.877	(0.587)	886932	48.5862	48.6	
19	Tertiary-butyl alcohol	59	2.639	2.639	(0.539)	147636	234.933	235	
22	Chloroprene	53	2.967	2.967	(0.606)	451982	49.5295	49.5	
23	1,1-Dichloroethane	63	2.992	2.996	(0.611)	644925	49.3033	49.3	
24	Acrylonitrile	52	3.057	3.060	(0.624)	487672	235.726	236	

Data File: \\target_server\gg\chem\gcms-s.i\S062221.b\S0345A.D
Report Date: 29-Jun-2021 12:49

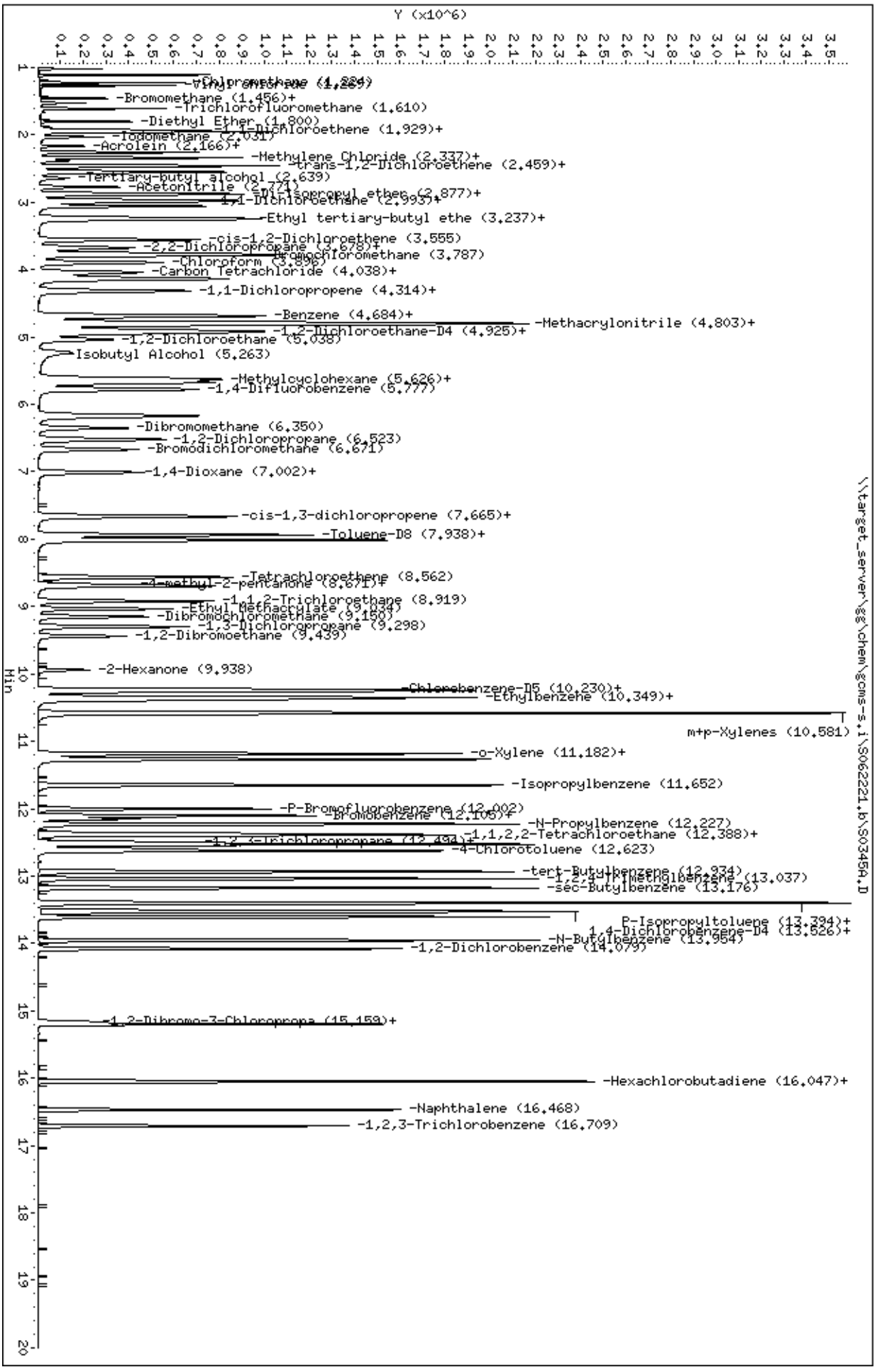
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
	25 Ethyl tertiary-butyl ether	59	3.237	3.240	(0.661)	940277	49.8596	49.8	
	26 Vinyl Acetate	43	3.256	3.260	(0.564)	666904	75.7367	75.7(R)	
	27 cis-1,2-Dichloroethene	96	3.555	3.555	(0.726)	425420	49.3160	49.3	
	28 2,2-Dichloropropane	77	3.677	3.678	(0.751)	422656	46.3378	46.3	
	30 Cyclohexane	56	3.767	3.768	(0.769)	580181	49.4874	49.5	
	29 Bromochloromethane	128	3.786	3.790	(0.773)	199671	54.3617	54.4	
	31 Chloroform	83	3.896	3.893	(0.795)	641014	48.0545	48.0	
	32 Carbon Tetrachloride	117	4.037	4.041	(0.699)	462269	51.3090	51.3	
	33 Tetrahydrofuran	42	4.095	4.089	(0.836)	88365	48.9903	49.0	
$	34 Dibromofluoromethane	113	4.137	4.134	(0.844)	289635	49.9388	49.9	
	35 1,1,1-Trichloroethane	97	4.134	4.136	(0.844)	559984	49.3255	49.3	
	37 1,1-Dichloropropene	75	4.314	4.314	(0.747)	509447	49.6923	49.7	
	36 2-Butanone	43	4.330	4.330	(0.884)	145551	59.5405	59.5	
	38 Benzene	78	4.684	4.687	(0.811)	1581004	49.2627	49.3	
	39 Propionitrile	54	4.774	4.777	(0.974)	489749	468.113	468	
	40 Methacrylonitrile	41	4.802	4.803	(0.980)	1453358	485.067	485	
*	41 Pentafluorobenzene	168	4.899	4.903	(1.000)	509424	50.0000		
$	42 1,2-Dichloroethane-D4	65	4.925	4.922	(1.005)	285714	47.3304	47.3	
	43 Tertiary-amyl methyl ether	73	4.928	4.932	(1.006)	844589	49.8459	49.8	
	44 1,2-Dichloroethane	62	5.037	5.041	(0.872)	429369	46.5769	46.6	
	45 Isobutyl Alcohol	43	5.262	5.237	(1.074)	129470	796.731	797(R)	
	46 Methylcyclohexane	83	5.626	5.629	(1.148)	690043	51.4052	51.4	
	47 Trichloroethene	95	5.674	5.678	(0.982)	376675	48.6842	48.7	
*	48 1,4-Difluorobenzene	114	5.777	5.777	(1.000)	991331	50.0000		
	49 Dibromomethane	93	6.349	6.349	(1.099)	222776	48.5764	48.6	
	50 1,2-Dichloropropane	63	6.523	6.520	(1.129)	367973	48.5404	48.5	
	51 Bromodichloromethane	83	6.671	6.668	(1.155)	465177	50.0101	50.0	
	54 1,4-Dioxane	88	7.002	7.009	(1.212)	110649	1010.39	1010	
	52 Methyl Methacrylate	41	7.011	7.009	(1.214)	212852	47.1204	47.1	
	57 cis-1,3-dichloropropene	75	7.664	7.668	(1.327)	583606	48.9506	49.0	
	56 2-Chloroethylvinylether	63	7.651	7.648	(1.324)	251348	49.5876	49.6	
$	58 Toluene-D8	98	7.937	7.938	(1.374)	1159333	49.6868	49.7	
	59 Toluene	91	8.011	8.012	(1.387)	1661941	49.6299	49.6	
	60 Tetrachloroethene	164	8.558	8.564	(0.837)	308952	52.0850	52.1	
	61 4-methyl-2-pentanone	43	8.670	8.670	(1.501)	228194	51.0025	51.0	
	62 trans-1,3-Dichloropropene	75	8.696	8.696	(1.505)	521407	52.5202	52.5	
	63 1,1,2-Trichloroethane	97	8.918	8.919	(1.544)	357833	49.7036	49.7	
	53 Ethyl Methacrylate	69	9.034	9.034	(1.564)	464686	46.1121	46.1	
	64 Dibromochloromethane	129	9.150	9.153	(0.894)	367776	51.3478	51.3	
	65 1,3-Dichloropropane	76	9.297	9.298	(0.909)	622028	47.7384	47.7	
	66 1,2-Dibromoethane	107	9.439	9.439	(1.634)	352501	50.7740	50.8	
	67 2-Hexanone	43	9.941	9.941	(0.972)	161119	53.7272	53.7	
*	68 Chlorobenzene-D5	117	10.230	10.234	(1.000)	957013	50.0000		
	69 Chlorobenzene	112	10.252	10.253	(1.002)	1079927	50.7629	50.8	
	71 Ethylbenzene	106	10.349	10.349	(1.012)	600166	50.4829	50.5	
	72 1,1,1,2-Tetrachloroethane	131	10.384	10.382	(1.015)	366911	52.1857	52.2	
	73 m+p-Xylenes	106	10.580	10.581	(1.034)	1468124	105.908	106	
	74 o-Xylene	106	11.182	11.182	(1.093)	717593	55.1879	55.2	
	76 Bromoform	173	11.249	11.253	(1.100)	229053	47.5178	47.5	
	75 Styrene	104	11.268	11.266	(1.102)	1185155	50.8923	50.9	
	77 Isopropylbenzene	105	11.651	11.652	(0.862)	1783252	54.0305	54.0	
$	78 P-Bromofluorobenzene	95	12.002	12.002	(2.077)	438338	49.6970	49.7	
	80 Bromobenzene	156	12.104	12.105	(0.896)	442530	49.5000	49.5	
	79 cis-1,4-Dichloro-2-Butene	53	12.153	12.153	(0.899)	104103	49.1961	49.2	

Data File: \\target_server\gg\chem\gcms-s.i\S062221.b\S0345A.D
Report Date: 29-Jun-2021 12:49

			QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
	81	N-Propylbenzene	91	12.227	12.227	(0.905)	2065292	52.3149	52.3	
	82	1,1,2,2-Tetrachloroethane	83	12.362	12.362	(0.915)	451499	46.2186	46.2	
	83	2-Chlorotoluene	91	12.391	12.391	(0.917)	1241577	50.7862	50.8	
	84	1,2,3-Trichloropropane	75	12.493	12.494	(0.925)	357853	46.5209	46.5	
	85	1,3,5-Trimethylbenzene	105	12.526	12.526	(0.927)	1441137	52.5565	52.6	
	86	trans-1,4-Dichloro-2-Butene	53	12.590	12.590	(0.932)	106661	48.1198	48.1	
	87	4-Chlorotoluene	91	12.622	12.626	(0.934)	1304449	51.0684	51.1	
	88	tert-Butylbenzene	119	12.934	12.934	(0.957)	1286083	53.8104	53.8	
	90	1,2,4-Trimethylbenzene	105	13.037	13.037	(0.965)	1465841	53.2288	53.2	
	91	sec-Butylbenzene	105	13.175	13.179	(0.975)	1886358	54.9055	54.9	
	92	P-Isopropyltoluene	119	13.394	13.394	(0.991)	1597882	55.3229	55.3	
	93	1,3-Dichlorobenzene	146	13.403	13.404	(0.992)	843618	51.8714	51.9	
*	94	1,4-Dichlorobenzene-D4	152	13.513	13.513	(1.000)	506705	50.0000		
	95	1,4-Dichlorobenzene	146	13.532	13.533	(1.001)	837048	49.3340	49.3	
	96	1,2,3-Trimethylbenzene	105	13.606	13.606	(1.007)	1494240	51.8111	51.8	
	97	N-Butylbenzene	91	13.953	13.954	(1.033)	1389887	46.0491	46.0	
	99	1,2-Dichlorobenzene	146	14.079	14.079	(1.042)	806857	51.3836	51.4	
	100	1,2-Dibromo-3-Chloropropane	157	15.159	15.159	(1.122)	79556	47.5089	47.5	
	101	1,3,5-Trichlorobenzene	180	15.198	15.198	(1.125)	555546	52.3439	52.3	
	102	Hexachlorobutadiene	225	16.050	16.047	(1.188)	231341	46.0305	46.0	
	103	1,2,4-Trichlorobenzene	180	16.050	16.047	(1.188)	510562	46.9392	46.9	
	104	Naphthalene	128	16.468	16.468	(1.219)	1349097	48.1647	48.2	
	105	1,2,3-Trichlorobenzene	180	16.709	16.709	(1.237)	478542	53.0428	53.0	
M	98	1,2-Dichloroethylene (total)	96				816979	98.0781	98.1	
M	106	Xylenes (total)	106				2185717	161.096	161	
M	55	Total Alkylbenzenes	100				11132480	368.188	368	

QC Flag Legend

R - Spike/Surrogate failed recovery limits.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Client ID:
Sample Info: WG301173-8
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-s.i
Operator: CR
Column diameter: 0.18
\\target_server\gg\chem\gcms-s.i\S062221.b\S0345A.D
Y (x10^6)
Min
-Chloromethane (1.284)
-Vinyl chloride (1.367)
-Bromomethane (1.456)+
-Trichlorofluoromethane (1.610)
-Diethyl Ether (1.800)
-1,1-Dichloroethene (1.929)+
-Iodomethane (2.031)
-Acrolein (2.166)+
-Methylene Chloride (2.337)+
-trans-1,2-Dichloroethene (2.459)+
-Tertiary-butyl alcohol (2.639)
-Acetonitrile (2.771)
-Di-isopropyl ether (2.877)+
-1,1-Dichloroethane (2.993)+
-Ethyl tertiary-butyl ethe (3.237)+
-cis-1,2-Dichloroethene (3.555)
-2,2-Dichloropropane (3.678)+
-Bromochloromethane (3.787)
-Chloroform (3.896)
-Carbon Tetrachloride (4.038)+
-1,1-Dichloropropene (4.314)+
-Benzene (4.684)+
-Methacrylonitrile (4.803)+
-1,2-Dichloroethane-D4 (4.925)+
-1,2-Dichloroethane (5.038)
Isobutyl Alcohol (5.263)
-Methylcyclohexane (5.626)+
-1,4-Difluorobenzene (5.777)
-Dibromomethane (6.350)
-1,2-Dichloropropane (6.523)
-Bromodichloromethane (6.671)
-1,4-Dioxane (7.002)+
-cis-1,3-dichloropropene (7.665)+
-Toluene-D8 (7.938)+
-Tetrachloroethene (8.562)
-4-methyl-2-pentanone (8.671)+
-1,1,2-Trichloroethane (8.919)
-Ethyl Methacrylate (9.034)
-Dibromochloromethane (9.150)
-1,3-Dichloropropane (9.298)
-1,2-Dibromoethane (9.439)
-2-Hexanone (9.938)
-Chlorobenzene-D5 (10.230)+
-Ethylbenzene (10.349)+
m+p-Xylenes (10.581)
-o-Xylene (11.182)+
-Isopropylbenzene (11.652)
-P-Bromofluorobenzene (12.002)
-Bromobenzene (12.105)+
-N-Propylbenzene (12.227)
-1,1,2,2-Tetrachloroethane (12.388)+
-1,2,3-Trichloropropane (12.494)+
-4-Chlorotoluene (12.623)
-tert-Butylbenzene (12.934)
-1,2,4-Trimethylbenzene (13.037)
-sec-Butylbenzene (13.176)
P-Isopropyltoluene (13.394)+
1,4-Dichlorobenzene-D4 (13.526)+
-N-Butylbenzene (13.954)
-1,2-Dichlorobenzene (14.079)
-1,2-Dibromo-3-Chloropropa (15.159)+
-Hexachlorobutadiene (16.047)+
-Naphthalene (16.468)
-1,2,3-Trichlorobenzene (16.709)

Data File: \\target_server\gg\chem\gcms-s.i\S062221.b\S0338.D
Report Date: 29-Jun-2021 12:34

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-s.i\S062221.b\S0338.D
Lab Smp Id: WG301173-7
Inj Date : 22-JUN-2021 11:04
Operator : CR   Inst ID: gcms-s.i
Smp Info : WG301173-7
Misc Info :
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Method   : \\target_server\gg\chem\gcms-s.i\S062221.b\S8A05(14)D.m
Meth Date : 23-Jun-2021 06:48 CROY   Quant Type: ISTD
Cal Date : 22-JUN-2021 11:04   Cal File: S0338.D
Als bottle: 2   Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: all.sub
Target Version: 4.12
Processing Host: T6-O360

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.108	1.109	(0.226)	423747	75.0000	79.7	
2	Chloromethane	50	1.224	1.224	(0.250)	533994	75.0000	79.2	
3	Vinyl chloride	62	1.269	1.269	(0.259)	400940	75.0000	83.2	
4	Bromomethane	94	1.452	1.456	(0.296)	109351	75.0000	70.0	
5	Chloroethane	64	1.523	1.523	(0.311)	175354	75.0000	75.2	
6	Trichlorofluoromethane	101	1.610	1.610	(0.328)	502931	75.0000	86.1	
7	Diethyl Ether	59	1.799	1.800	(0.367)	269234	75.0000	76.6	
8	1,1-Dichloroethene	96	1.928	1.932	(0.393)	320188	75.0000	74.4	
9	Freon-113	151	1.947	1.951	(0.397)	286816	75.0000	79.8	
10	Carbon Disulfide	76	1.954	1.954	(0.399)	706949	75.0000	77.5	
11	Iodomethane	142	2.031	2.031	(0.414)	320486	75.0000	76.3	
12	Acrolein	56	2.166	2.166	(0.442)	199789	375.000	376	
13	Allyl Chloride	41	2.256	2.256	(0.460)	392350	75.0000	76.4	
14	Methylene Chloride	84	2.340	2.340	(0.477)	545789	75.0000	58.8	
15	Acetone	43	2.385	2.385	(0.486)	465734	375.000	298	
16	trans-1,2-Dichloroethene	96	2.459	2.459	(0.502)	510428	75.0000	70.7	
17	Methyl Acetate	43	2.478	2.478	(0.506)	333284	75.0000	70.3	
18	Methyl tert-butyl ether	73	2.549	2.549	(0.520)	1260742	75.0000	73.3	
20	Acetonitrile	41	2.770	2.771	(0.565)	444064	750.000	552	
21	Di-isopropyl ether	45	2.877	2.877	(0.587)	1280768	75.0000	78.4	
19	Tertiary-butyl alcohol	59	2.645	2.639	(0.540)	142570	375.000	235	
22	Chloroprene	53	2.970	2.967	(0.606)	659907	75.0000	82.4	
23	1,1-Dichloroethane	63	2.996	2.996	(0.611)	865072	75.0000	72.7	

Data File: \\target_server\gg\chem\gcms-s.i\S062221.b\S0338.D
Report Date: 29-Jun-2021 12:34

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	24 Acrylonitrile	52	3.057	3.060	(0.624)	691101	375.000	367	
	25 Ethyl tertiary-butyl ether	59	3.237	3.240	(0.660)	1310801	75.0000	78.8	
	26 Vinyl Acetate	43	3.256	3.260	(0.564)	622982	75.0000	79.5	
	27 cis-1,2-Dichloroethene	96	3.555	3.555	(0.725)	570542	75.0000	74.4	
	28 2,2-Dichloropropane	77	3.677	3.678	(0.750)	650520	75.0000	79.6	
	30 Cyclohexane	56	3.764	3.768	(0.768)	828774	75.0000	79.9	
	29 Bromochloromethane	128	3.787	3.790	(0.772)	237487	75.0000	71.5	
	31 Chloroform	83	3.896	3.893	(0.795)	877635	75.0000	72.9	
	32 Carbon Tetrachloride	117	4.037	4.041	(0.699)	619279	75.0000	78.4	
	33 Tetrahydrofuran	42	4.089	4.089	(0.834)	607854	375.000	374	
$	34 Dibromofluoromethane	113	4.134	4.134	(0.843)	258233	50.0000	49.9	
	35 1,1,1-Trichloroethane	97	4.137	4.136	(0.844)	753502	75.0000	74.6	
	37 1,1-Dichloropropene	75	4.314	4.314	(0.747)	710535	75.0000	78.3	
	36 2-Butanone	43	4.327	4.330	(0.883)	787703	375.000	352	
	38 Benzene	78	4.687	4.687	(0.811)	2166732	75.0000	74.7	
	39 Propionitrile	54	4.774	4.777	(0.974)	609817	750.000	620	
	40 Methacrylonitrile	41	4.803	4.803	(0.980)	2103495	750.000	770	
*	41 Pentafluorobenzene	168	4.902	4.903	(1.000)	454431	50.0000		
$	42 1,2-Dichloroethane-D4	65	4.925	4.922	(1.005)	272245	50.0000	50.0	
	43 Tertiary-amyl methyl ether	73	4.934	4.932	(1.007)	1167650	75.0000	78.7	
	44 1,2-Dichloroethane	62	5.037	5.041	(0.872)	599182	75.0000	71.0	
	45 Isobutyl Alcohol	43	5.233	5.237	(1.068)	222097	1500.00	1540	
	46 Methylcyclohexane	83	5.622	5.629	(1.147)	989527	75.0000	86.0	
	47 Trichloroethene	95	5.677	5.678	(0.983)	510851	75.0000	74.3	
*	48 1,4-Difluorobenzene	114	5.777	5.777	(1.000)	885004	50.0000		
	49 Dibromomethane	93	6.352	6.349	(1.100)	309113	75.0000	75.5	
	50 1,2-Dichloropropane	63	6.523	6.520	(1.129)	521211	75.0000	77.0	
	51 Bromodichloromethane	83	6.667	6.668	(1.154)	658195	75.0000	81.2	
	54 1,4-Dioxane	88	7.008	7.009	(1.213)	101249	1500.00	(a)	
	52 Methyl Methacrylate	41	7.011	7.009	(1.214)	307475	75.0000	90.6	
	57 cis-1,3-dichloropropene	75	7.664	7.668	(1.327)	875621	75.0000	84.6	
	56 2-Chloroethylvinylether	63	7.651	7.648	(1.324)	340918	75.0000	91.7	
$	58 Toluene-D8	98	7.937	7.938	(1.374)	1056062	50.0000	50.8	
	59 Toluene	91	8.011	8.012	(1.387)	2261292	75.0000	74.3	
	60 Tetrachloroethene	164	8.564	8.564	(0.837)	396177	75.0000	74.9	
	61 4-methyl-2-pentanone	43	8.671	8.670	(1.501)	1662173	375.000	418	
	62 trans-1,3-Dichloropropene	75	8.700	8.696	(1.506)	728101	75.0000	84.8	
	63 1,1,2-Trichloroethane	97	8.921	8.919	(1.544)	480091	75.0000	74.6	
	53 Ethyl Methacrylate	69	9.034	9.034	(1.564)	675136	75.0000	93.9	
	64 Dibromochloromethane	129	9.150	9.153	(0.894)	515690	75.0000	82.4	
	65 1,3-Dichloropropane	76	9.298	9.298	(0.909)	888110	75.0000	74.2	
	66 1,2-Dibromoethane	107	9.439	9.439	(1.634)	474724	75.0000	78.0	
	67 2-Hexanone	43	9.937	9.941	(0.971)	1131089	375.000	421	
*	68 Chlorobenzene-D5	117	10.233	10.234	(1.000)	868974	50.0000		
	69 Chlorobenzene	112	10.252	10.253	(1.002)	1426548	75.0000	72.8	
	71 Ethylbenzene	106	10.349	10.349	(1.011)	834118	75.0000	78.2	
	72 1,1,1,2-Tetrachloroethane	131	10.381	10.382	(1.014)	498209	75.0000	80.4	
	73 m+p-Xylenes	106	10.580	10.581	(1.034)	2002938	150.000	159	
	74 o-Xylene	106	11.182	11.182	(1.093)	959542	75.0000	83.8	
	76 Bromoform	173	11.252	11.253	(1.100)	306952	75.0000	91.7	
	75 Styrene	104	11.269	11.266	(1.101)	1635474	75.0000	86.5	
	77 Isopropylbenzene	105	11.651	11.652	(0.862)	2392852	75.0000	80.7	
$	78 P-Bromofluorobenzene	95	12.002	12.002	(2.077)	403354	50.0000	51.6	
	80 Bromobenzene	156	12.108	12.105	(0.896)	585527	75.0000	73.3	

Data File: \\target_server\gg\chem\gcms-s.i\S062221.b\S0338.D
Report Date: 29-Jun-2021 12:34

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	79 cis-1,4-Dichloro-2-Butene	53	12.150	12.153	(0.899)	159544	75.0000	85.8	
	81 N-Propylbenzene	91	12.230	12.227	(0.905)	2796449	75.0000	77.1	
	82 1,1,2,2-Tetrachloroethane	83	12.365	12.362	(0.915)	643732	75.0000	72.2	
	83 2-Chlorotoluene	91	12.391	12.391	(0.917)	1692156	75.0000	76.3	
	84 1,2,3-Trichloropropane	75	12.494	12.494	(0.925)	510546	75.0000	72.6	
	85 1,3,5-Trimethylbenzene	105	12.526	12.526	(0.927)	2013761	75.0000	82.6	
	86 trans-1,4-Dichloro-2-Butene	53	12.593	12.590	(0.932)	163181	75.0000	83.2	
	87 4-Chlorotoluene	91	12.625	12.626	(0.934)	1764287	75.0000	76.1	
	88 tert-Butylbenzene	119	12.934	12.934	(0.957)	1738902	75.0000	82.4	
	90 1,2,4-Trimethylbenzene	105	13.037	13.037	(0.965)	2031763	75.0000	82.8	
	91 sec-Butylbenzene	105	13.175	13.179	(0.975)	2507178	75.0000	81.1	
	92 P-Isopropyltoluene	119	13.397	13.394	(0.991)	2178017	75.0000	85.5	
	93 1,3-Dichlorobenzene	146	13.403	13.404	(0.992)	1108902	75.0000	76.6	
*	94 1,4-Dichlorobenzene-D4	152	13.513	13.513	(1.000)	451677	50.0000		
	95 1,4-Dichlorobenzene	146	13.532	13.533	(1.001)	1116684	75.0000	73.0	
	96 1,2,3-Trimethylbenzene	105	13.606	13.606	(1.007)	2078757	75.0000	80.3	
	97 N-Butylbenzene	91	13.953	13.954	(1.033)	1961350	75.0000	87.4	
	99 1,2-Dichlorobenzene	146	14.079	14.079	(1.042)	1059544	75.0000	75.6	
	100 1,2-Dibromo-3-Chloropropane	157	15.156	15.159	(1.122)	106580	75.0000	90.6	
	101 1,3,5-Trichlorobenzene	180	15.198	15.198	(1.125)	760453	75.0000	84.2	
	102 Hexachlorobutadiene	225	16.050	16.047	(1.188)	315879	75.0000	91.4	
	103 1,2,4-Trichlorobenzene	180	16.046	16.047	(1.187)	684147	75.0000	88.6	
	104 Naphthalene	128	16.468	16.468	(1.219)	1797781	75.0000	93.2	
	105 1,2,3-Trichlorobenzene	180	16.709	16.709	(1.237)	638888	75.0000	83.3	
M	98 1,2-Dichloroethylene (total)	96				1080970	0.50000	145	
M	106 Xylenes (total)	106				2962480	300.000	243	
M	55 Total Alkylbenzenes	100				15227420	0.50000	579	

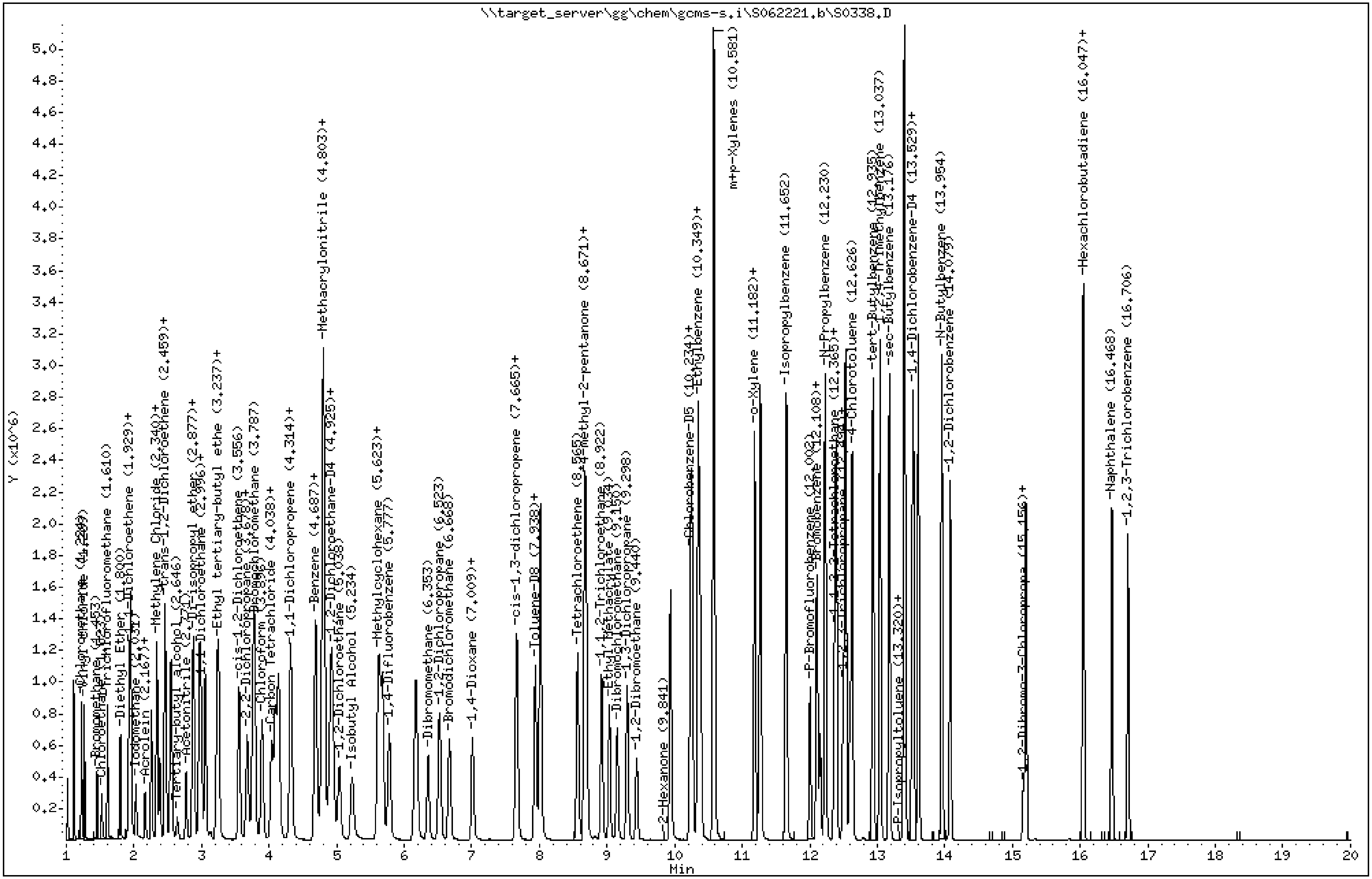
QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Data File: \\target_server\gg\chem\gcms-s.i\S062221.b\S0338.D
Date : 22-JUN-2021 11:04
Client ID:
Sample Info: WG301173-7
Purge Volume: 5.0
Column phase: RTX-VMS

Instrument: gcms-s.i

Operator: CR
Column diameter: 0.18



\\target_server\gg\chem\gcms-s.i\S062221.b\S0338.D
Y (x10^6)
Min
-Chloromethane (1.224)
-Vinyl Chloride (1.289)
-Bromomethane (1.453)
-Trichlorofluoromethane (1.610)
-Diethyl Ether (1.800)
-1,1-Dichloroethene (1.929)+
-Iodomethane (2.031)
-Acrolein (2.167)+
-Methylene Chloride (2.340)+
-trans-1,2-Dichloroethene (2.459)+
-Tertiary-butyl alcohol (2.646)
-Acetonitrile (2.771)
-Di-isopropyl ether (2.877)+
-1,1-Dichloroethane (2.996)+
-Ethyl tertiary-butyl ethe (3.237)+
-cis-1,2-Dichloroethene (3.556)
-2,2-Dichloropropane (3.678)+
-Bromochloromethane (3.787)
-Chloroform (3.896)
-Carbon Tetrachloride (4.038)+
-1,1-Dichloropropene (4.314)+
-Benzene (4.687)+
-Methacrylonitrile (4.803)+
-1,2-Dichloroethane-D4 (4.925)+
-1,2-Dichloroethane (5.038)
-Isobutyl Alcohol (5.234)
-Methylcyclohexane (5.623)+
-1,4-Difluorobenzene (5.777)
-Dibromomethane (6.353)
-1,2-Dichloropropane (6.523)
-Bromodichloromethane (6.668)
-1,4-Dioxane (7.009)+
-cis-1,3-dichloropropene (7.665)+
-Toluene-D8 (7.938)+
-Tetrachloroethene (8.565)
-4-methyl-2-pentanone (8.671)+
-1,1,2-Trichloroethane (8.922)
-Ethyl Methacrylate (9.034)
-Dibromochloromethane (9.150)
-1,3-Dichloropropane (9.298)
-1,2-Dibromoethane (9.440)
-2-Hexanone (9.841)
-Chlorobenzene-D5 (10.234)+
-Ethylbenzene (10.349)+
m+p-Xylenes (10.581)
-o-Xylene (11.182)+
-Isopropylbenzene (11.652)
-P-Bromofluorobenzene (12.002)
-Bromobenzene (12.108)+
-N-Propylbenzene (12.230)
-1,1,2,2-Tetrachloroethane (12.365)+
-4-Chlorotoluene (12.626)
-tert-Butylbenzene (12.935)
-1,2,4-Trimethylbenzene (13.037)
-sec-Butylbenzene (13.176)
-P-Isopropyltoluene (13.320)+
-1,4-Dichlorobenzene-D4 (13.529)+
-N-Butylbenzene (13.954)
-1,2-Dichlorobenzene (14.079)
-1,2-Dibromo-3-Chloropropa (15.156)+
-Hexachlorobutadiene (16.047)+
-Naphthalene (16.468)
-1,2,3-Trichlorobenzene (16.706)

Data File: \\target_server\gg\chem\gcms-s.i\S062221.b\S0339.D
Report Date: 29-Jun-2021 12:34

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-s.i\S062221.b\S0339.D
Lab Smp Id: WG301173-4
Inj Date : 22-JUN-2021 11:34
Operator : CR   Inst ID: gcms-s.i
Smp Info : WG301173-4
Misc Info :
Comment   : SW846 5030C
Method   : \\target_server\gg\chem\gcms-s.i\S062221.b\S8A05(14)D.m
Meth Date : 23-Jun-2021 06:48 CROY   Quant Type: ISTD
Cal Date : 15-JUN-2021 13:38   Cal File: S0289.D
Als bottle: 3   Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

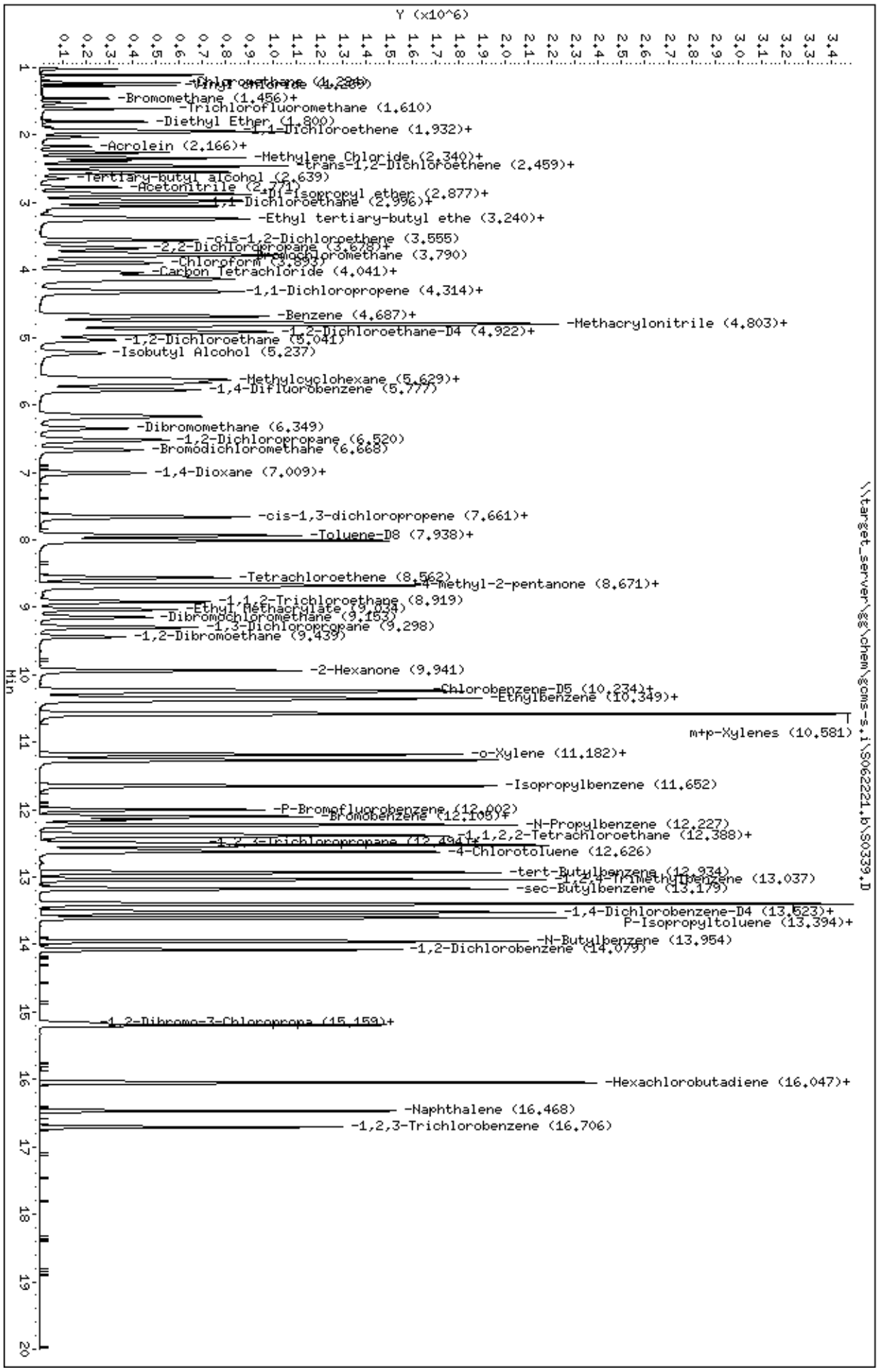
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.108	1.109	(0.226)	297240	50.0000	53.4	
2	Chloromethane	50	1.224	1.224	(0.250)	366615	50.0000	52.8	
3	Vinyl chloride	62	1.269	1.269	(0.259)	270771	50.0000	53.4	
4	Bromomethane	94	1.455	1.456	(0.297)	75057	50.0000	48.6	
5	Chloroethane	64	1.523	1.523	(0.311)	116460	50.0000	48.2	
6	Trichlorofluoromethane	101	1.610	1.610	(0.328)	324006	50.0000	54.3	
7	Diethyl Ether	59	1.799	1.800	(0.367)	179941	50.0000	50.9	
8	1,1-Dichloroethene	96	1.931	1.932	(0.394)	213924	50.0000	49.6	
9	Freon-113	151	1.950	1.951	(0.398)	194809	50.0000	53.3	
10	Carbon Disulfide	76	1.954	1.954	(0.399)	468423	50.0000	50.8	
11	Iodomethane	142	2.031	2.031	(0.414)	229372	50.0000	51.0	
12	Acrolein	56	2.166	2.166	(0.442)	139183	250.000	257	
13	Allyl Chloride	41	2.256	2.256	(0.460)	261364	50.0000	49.8	
14	Methylene Chloride	84	2.340	2.340	(0.477)	391125	50.0000	51.7	
15	Acetone	43	2.385	2.385	(0.486)	359891	250.000	258	
16	trans-1,2-Dichloroethene	96	2.458	2.459	(0.502)	368496	50.0000	49.6	
17	Methyl Acetate	43	2.478	2.478	(0.506)	241446	50.0000	50.7	
18	Methyl tert-butyl ether	73	2.549	2.549	(0.520)	920246	50.0000	51.8	
20	Acetonitrile	41	2.770	2.771	(0.565)	357470	500.000	521	
21	Di-isopropyl ether	45	2.876	2.877	(0.587)	893750	50.0000	52.9	
19	Tertiary-butyl alcohol	59	2.639	2.639	(0.538)	129945	250.000	223	
22	Chloroprene	53	2.967	2.967	(0.605)	458454	50.0000	54.3	
23	1,1-Dichloroethane	63	2.995	2.996	(0.611)	607846	50.0000	50.2	
24	Acrylonitrile	52	3.060	3.060	(0.624)	497755	250.000	260	

Data File: \\target_server\gg\chem\gcms-s.i\S062221.b\S0339.D
Report Date: 29-Jun-2021 12:34

								AMOUNTS		
			QUANT SIG					CAL-AMT	ON-COL	
	Compounds		MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)	REVIEW CODE
	25	Ethyl tertiary-butyl ether	59	3.240	3.240	(0.661)	931349	50.0000	53.3	
	26	Vinyl Acetate	43	3.259	3.260	(0.564)	435680	50.0000	53.2	
	27	cis-1,2-Dichloroethene	96	3.555	3.555	(0.725)	398210	50.0000	49.8	
	28	2,2-Dichloropropane	77	3.677	3.678	(0.750)	451539	50.0000	53.5	
	30	Cyclohexane	56	3.767	3.768	(0.768)	567907	50.0000	52.3	
	29	Bromochloromethane	128	3.790	3.790	(0.773)	174482	50.0000	51.3	
	31	Chloroform	83	3.893	3.893	(0.794)	612652	50.0000	49.6	
	32	Carbon Tetrachloride	117	4.040	4.041	(0.699)	433527	50.0000	51.8	
	33	Tetrahydrofuran	42	4.089	4.089	(0.834)	442843	250.000	265	
$	34	Dibromofluoromethane	113	4.134	4.134	(0.843)	267383	50.0000	49.8	
	35	1,1,1-Trichloroethane	97	4.137	4.136	(0.844)	528003	50.0000	50.2	
	37	1,1-Dichloropropene	75	4.314	4.314	(0.747)	493369	50.0000	51.8	
	36	2-Butanone	43	4.330	4.330	(0.883)	581113	250.000	257	
	38	Benzene	78	4.687	4.687	(0.811)	1517312	50.0000	50.9	
	39	Propionitrile	54	4.777	4.777	(0.974)	477339	500.000	493	
	40	Methacrylonitrile	41	4.802	4.803	(0.980)	1496954	500.000	540	
*	41	Pentafluorobenzene	168	4.902	4.903	(1.000)	471669	50.0000		
$	42	1,2-Dichloroethane-D4	65	4.921	4.922	(1.004)	277374	50.0000	49.6	
	43	Tertiary-amyl methyl ether	73	4.931	4.932	(1.006)	827925	50.0000	52.8	
	44	1,2-Dichloroethane	62	5.040	5.041	(0.873)	419512	50.0000	49.0	
	45	Isobutyl Alcohol	43	5.237	5.237	(1.068)	184435	1000.00	1220	
	46	Methylcyclohexane	83	5.629	5.629	(1.148)	682022	50.0000	54.9	
	47	Trichloroethene	95	5.677	5.678	(0.983)	357299	50.0000	49.7	
*	48	1,4-Difluorobenzene	114	5.777	5.777	(1.000)	921183	50.0000		
	49	Dibromomethane	93	6.349	6.349	(1.099)	215174	50.0000	50.5	
	50	1,2-Dichloropropane	63	6.519	6.520	(1.129)	364693	50.0000	51.8	
	51	Bromodichloromethane	83	6.667	6.668	(1.154)	450953	50.0000	52.2	
	54	1,4-Dioxane	88	7.008	7.009	(1.213)	92666	1000.00	911	
	52	Methyl Methacrylate	41	7.008	7.009	(1.213)	214066	50.0000	51.0	
	57	cis-1,3-dichloropropene	75	7.667	7.668	(1.327)	600304	50.0000	54.2	
	56	2-Chloroethylvinylether	63	7.648	7.648	(1.324)	233699	50.0000	49.6	
$	58	Toluene-D8	98	7.937	7.938	(1.374)	1083989	50.0000	50.0	
	59	Toluene	91	8.011	8.012	(1.387)	1593743	50.0000	51.2	
	60	Tetrachloroethene	164	8.564	8.564	(0.837)	279623	50.0000	50.7	
	61	4-methyl-2-pentanone	43	8.670	8.670	(1.501)	1172532	250.000	282	
	62	trans-1,3-Dichloropropene	75	8.696	8.696	(1.505)	501321	50.0000	54.3	
	63	1,1,2-Trichloroethane	97	8.918	8.919	(1.544)	339775	50.0000	50.8	
	53	Ethyl Methacrylate	69	9.034	9.034	(1.564)	466113	50.0000	49.8	
	64	Dibromochloromethane	129	9.153	9.153	(0.894)	356190	50.0000	53.5	
	65	1,3-Dichloropropane	76	9.297	9.298	(0.909)	626329	50.0000	51.7	
	66	1,2-Dibromoethane	107	9.439	9.439	(1.634)	339473	50.0000	52.6	
	67	2-Hexanone	43	9.941	9.941	(0.971)	796669	250.000	286	
*	68	Chlorobenzene-D5	117	10.233	10.234	(1.000)	889572	50.0000		
	69	Chlorobenzene	112	10.252	10.253	(1.002)	1002967	50.0000	50.7	
	71	Ethylbenzene	106	10.349	10.349	(1.011)	571450	50.0000	51.7	
	72	1,1,1,2-Tetrachloroethane	131	10.381	10.382	(1.014)	348160	50.0000	53.3	
	73	m+p-Xylenes	106	10.580	10.581	(1.034)	1398632	100.000	108	
	74	o-Xylene	106	11.182	11.182	(1.093)	666778	50.0000	55.2	
	76	Bromoform	173	11.252	11.253	(1.100)	209017	50.0000	46.6	
	75	Styrene	104	11.265	11.266	(1.101)	1139278	50.0000	52.6	
	77	Isopropylbenzene	105	11.651	11.652	(0.862)	1676969	50.0000	55.4	
$	78	P-Bromofluorobenzene	95	12.002	12.002	(2.077)	411466	50.0000	50.2	
	80	Bromobenzene	156	12.104	12.105	(0.896)	412989	50.0000	50.3	
	79	cis-1,4-Dichloro-2-Butene	53	12.153	12.153	(0.899)	107675	50.0000	55.4	

Data File: \\target_server\gg\chem\gcms-s.i\S062221.b\S0339.D
Report Date: 29-Jun-2021 12:34

			QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	81	N-Propylbenzene	91	12.227	12.227	(0.905)	1963819	50.0000	54.2	
	82	1,1,2,2-Tetrachloroethane	83	12.362	12.362	(0.915)	456499	50.0000	50.9	
	83	2-Chlorotoluene	91	12.391	12.391	(0.917)	1175151	50.0000	52.4	
	84	1,2,3-Trichloropropane	75	12.493	12.494	(0.925)	358866	50.0000	50.8	
	85	1,3,5-Trimethylbenzene	105	12.526	12.526	(0.927)	1404120	50.0000	55.8	
	86	trans-1,4-Dichloro-2-Butene	53	12.590	12.590	(0.932)	112764	50.0000	55.4	
	87	4-Chlorotoluene	91	12.625	12.626	(0.934)	1234478	50.0000	52.6	
	88	tert-Butylbenzene	119	12.934	12.934	(0.957)	1206453	50.0000	55.0	
	90	1,2,4-Trimethylbenzene	105	13.037	13.037	(0.965)	1406776	50.0000	55.6	
	91	sec-Butylbenzene	105	13.178	13.179	(0.975)	1753202	50.0000	55.6	
	92	P-Isopropyltoluene	119	13.394	13.394	(0.991)	1512208	50.0000	57.0	
	93	1,3-Dichlorobenzene	146	13.403	13.404	(0.992)	774503	50.0000	51.9	
*	94	1,4-Dichlorobenzene-D4	152	13.513	13.513	(1.000)	465074	50.0000		
	95	1,4-Dichlorobenzene	146	13.532	13.533	(1.001)	782705	50.0000	50.3	
	96	1,2,3-Trimethylbenzene	105	13.606	13.606	(1.007)	1462731	50.0000	55.2	
	97	N-Butylbenzene	91	13.953	13.954	(1.033)	1339316	50.0000	48.6	
	99	1,2-Dichlorobenzene	146	14.079	14.079	(1.042)	741169	50.0000	51.4	
	100	1,2-Dibromo-3-Chloropropane	157	15.159	15.159	(1.122)	73124	50.0000	47.6	
	101	1,3,5-Trichlorobenzene	180	15.198	15.198	(1.125)	518944	50.0000	53.3	
	102	Hexachlorobutadiene	225	16.046	16.047	(1.187)	213829	50.0000	46.4	
	103	1,2,4-Trichlorobenzene	180	16.046	16.047	(1.187)	467139	50.0000	46.8	
	104	Naphthalene	128	16.468	16.468	(1.219)	1258603	50.0000	49.0	
	105	1,2,3-Trichlorobenzene	180	16.709	16.709	(1.237)	439309	50.0000	53.0	
M	98	1,2-Dichloroethylene (total)	96				766706	50.0000	99.4	
M	106	Xylenes (total)	106				2065410	150.000	164	
M	55	Total Alkylbenzenes	100				10585894	50.0000	382	


Data File: \\target_server\gg\chem\gcms-s.i\S062221.b\S0339.D
Date : 22-JUN-2021 11:34
Client ID:
Sample Info: WG301173-4
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-s.i
Operator: CR
Column diameter: 0.18
\\target_server\gg\chem\gcms-s.i\S062221.b\S0339.D
Y (x10^6)
Min
-Chloromethane (1.284)
-Vinyl chloride (1.289)
-Bromomethane (1.456)+
-Trichlorofluoromethane (1.610)
-Diethyl Ether (1.800)
-1,1-Dichloroethene (1.932)+
-Acrolein (2.166)+
-Methylene Chloride (2.340)+
-trans-1,2-Dichloroethene (2.459)+
-Tertiary-butyl alcohol (2.639)
-Acetonitrile (2.771)
-Di-Isopropyl ether (2.877)+
-1,1-Dichloroethane (2.996)+
-Ethyl tertiary-butyl ethe (3.240)+
-cis-1,2-Dichloroethene (3.555)
-2,2-Dichloropropane (3.678)+
-Bromochloromethane (3.790)
-Chloroform (3.893)
-Carbon Tetrachloride (4.041)+
-1,1-Dichloropropene (4.314)+
-Benzene (4.687)+
-Methacrylonitrile (4.803)+
-1,2-Dichloroethane-D4 (4.922)+
-1,2-Dichloroethane (5.041)
-Isobutyl Alcohol (5.237)
-Methylcyclohexane (5.629)+
-1,4-Difluorobenzene (5.777)
-Dibromomethane (6.349)
-1,2-Dichloropropane (6.520)
-Bromodichloromethane (6.668)
-1,4-Dioxane (7.009)+
-cis-1,3-dichloropropene (7.661)+
-Toluene-D8 (7.938)+
-Tetrachloroethene (8.562)
-4-methyl-2-pentanone (8.671)+
-1,1,2-Trichloroethane (8.919)
-Ethyl methacrylate (9.034)
-Dibromochloromethane (9.153)
-1,3-Dichloropropane (9.298)
-1,2-Dibromoethane (9.439)
-2-Hexanone (9.941)
-Chlorobenzene-D5 (10.274)+
-Ethylbenzene (10.349)+
m+p-Xylenes (10.581)
-o-Xylene (11.182)+
-Isopropylbenzene (11.652)
-P-Bromofluorobenzene (12.002)
-Bromobenzene (12.106)+
-N-Propylbenzene (12.227)
-1,1,2,2-Tetrachloroethane (12.388)+
-1,2,3-Trichloropropane (12.494)+
-4-Chlorotoluene (12.626)
-tert-Butylbenzene (12.934)
-1,2,4-Trimethylbenzene (13.037)
-sec-Butylbenzene (13.179)
-1,4-Dichlorobenzene-D4 (13.523)+
P-Isopropyltoluene (13.394)+
-N-Butylbenzene (13.954)
-1,2-Dichlorobenzene (14.079)
-1,2-Dibromo-3-Chloropropa (15.159)+
-Hexachlorobutadiene (16.047)+
-Naphthalene (16.468)
-1,2,3-Trichlorobenzene (16.706)

Data File: \\target_server\gg\chem\gcms-s.i\S062221.b\S0340.D
Report Date: 29-Jun-2021 12:34

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-s.i\S062221.b\S0340.D
Lab Smp Id: WG301173-3
Inj Date : 22-JUN-2021 12:04
Operator : CR   Inst ID: gcms-s.i
Smp Info : WG301173-3
Misc Info :
Comment   : SW846 5030C
Method   : \\target_server\gg\chem\gcms-s.i\S062221.b\S8A05(14)D.m
Meth Date : 23-Jun-2021 06:48 CROY   Quant Type: ISTD
Cal Date : 22-JUN-2021 12:04   Cal File: S0340.D
Als bottle: 4   Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: all.sub
Target Version: 4.12
Processing Host: T6-O360

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.108	1.109	(0.226)	113786	20.0000	20.1	
2	Chloromethane	50	1.224	1.224	(0.250)	143587	20.0000	20.0	
3	Vinyl chloride	62	1.269	1.269	(0.259)	101854	20.0000	19.9	
4	Bromomethane	94	1.456	1.456	(0.297)	30345	20.0000	18.3	
5	Chloroethane	64	1.529	1.523	(0.312)	51179	20.0000	20.7	
6	Trichlorofluoromethane	101	1.610	1.610	(0.328)	124318	20.0000	20.0	
7	Diethyl Ether	59	1.800	1.800	(0.367)	70443	20.0000	18.8	
8	1,1-Dichloroethene	96	1.931	1.932	(0.394)	84429	20.0000	18.5	
9	Freon-113	151	1.954	1.951	(0.399)	70335	20.0000	18.4	
10	Carbon Disulfide	76	1.954	1.954	(0.399)	173725	20.0000	17.9	
11	Iodomethane	142	2.031	2.031	(0.414)	87989	20.0000	19.7	
12	Acrolein	56	2.166	2.166	(0.442)	52424	100.000	92.9	
13	Allyl Chloride	41	2.256	2.256	(0.460)	100344	20.0000	18.4	
14	Methylene Chloride	84	2.340	2.340	(0.477)	160600	20.0000	16.3	
15	Acetone	43	2.385	2.385	(0.487)	148421	100.000	89.4	
16	trans-1,2-Dichloroethene	96	2.459	2.459	(0.502)	144079	20.0000	18.8	
17	Methyl Acetate	43	2.478	2.478	(0.506)	96158	20.0000	19.1	
18	Methyl tert-butyl ether	73	2.549	2.549	(0.520)	356301	20.0000	19.5	
20	Acetonitrile	41	2.771	2.771	(0.565)	153286	200.000	179	
21	Di-isopropyl ether	45	2.877	2.877	(0.587)	338435	20.0000	19.5	
19	Tertiary-butyl alcohol	59	2.642	2.639	(0.539)	56562	100.000	87.9	
22	Chloroprene	53	2.973	2.967	(0.607)	168700	20.0000	19.8	
23	1,1-Dichloroethane	63	2.996	2.996	(0.611)	237501	20.0000	18.8	

Data File: \\target_server\gg\chem\gcms-s.i\S062221.b\S0340.D
Report Date: 29-Jun-2021 12:34

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	24 Acrylonitrile	52	3.057	3.060	(0.624)	193734	100.000	96.9	
	25 Ethyl tertiary-butyl ether	59	3.240	3.240	(0.661)	352856	20.0000	20.0	
	26 Vinyl Acetate	43	3.259	3.260	(0.565)	167049	20.0000	20.0	
	27 cis-1,2-Dichloroethene	96	3.555	3.555	(0.725)	156822	20.0000	19.3	
	28 2,2-Dichloropropane	77	3.681	3.678	(0.751)	168433	20.0000	19.4	
	30 Cyclohexane	56	3.767	3.768	(0.769)	217960	20.0000	19.8	
	29 Bromochloromethane	128	3.787	3.790	(0.772)	68356	20.0000	19.4	
	31 Chloroform	83	3.896	3.893	(0.795)	238168	20.0000	18.6	
	32 Carbon Tetrachloride	117	4.044	4.041	(0.700)	164350	20.0000	19.6	
	33 Tetrahydrofuran	42	4.092	4.089	(0.835)	168925	100.000	97.7	
$	34 Dibromofluoromethane	113	4.131	4.134	(0.843)	271355	50.0000	49.4	
	35 1,1,1-Trichloroethane	97	4.144	4.136	(0.845)	202995	20.0000	18.9	
	37 1,1-Dichloropropene	75	4.314	4.314	(0.747)	186286	20.0000	19.3	
	36 2-Butanone	43	4.327	4.330	(0.883)	227975	100.000	95.9	
	38 Benzene	78	4.687	4.687	(0.812)	598133	20.0000	19.4	
	39 Propionitrile	54	4.774	4.777	(0.974)	199595	200.000	191	
	40 Methacrylonitrile	41	4.803	4.803	(0.980)	585583	200.000	202	
*	41 Pentafluorobenzene	168	4.902	4.903	(1.000)	482775	50.0000		
$	42 1,2-Dichloroethane-D4	65	4.925	4.922	(1.005)	280003	50.0000	48.4	
	43 Tertiary-amyl methyl ether	73	4.928	4.932	(1.005)	306895	20.0000	19.5	
	44 1,2-Dichloroethane	62	5.041	5.041	(0.873)	160320	20.0000	17.8	
	45 Isobutyl Alcohol	43	5.246	5.237	(1.070)	59761	400.000	391	
	46 Methylcyclohexane	83	5.626	5.629	(1.148)	245039	20.0000	20.0	
	47 Trichloroethene	95	5.677	5.678	(0.983)	138909	20.0000	19.0	
*	48 1,4-Difluorobenzene	114	5.774	5.777	(1.000)	941626	50.0000		
	49 Dibromomethane	93	6.352	6.349	(1.100)	83302	20.0000	19.1	
	50 1,2-Dichloropropane	63	6.516	6.520	(1.129)	139763	20.0000	19.4	
	51 Bromodichloromethane	83	6.664	6.668	(1.154)	167534	20.0000	19.4	
	54 1,4-Dioxane	88	7.008	7.009	(1.214)	40002	400.000	(a)	
	52 Methyl Methacrylate	41	7.012	7.009	(1.214)	73618	20.0000	20.4	
	57 cis-1,3-dichloropropene	75	7.667	7.668	(1.328)	222313	20.0000	20.2	
	56 2-Chloroethylvinylether	63	7.648	7.648	(1.325)	81655	20.0000	20.6	
$	58 Toluene-D8	98	7.938	7.938	(1.375)	1099943	50.0000	49.7	
	59 Toluene	91	8.008	8.012	(1.387)	623701	20.0000	19.3	
	60 Tetrachloroethene	164	8.561	8.564	(0.837)	106548	20.0000	19.4	
	61 4-methyl-2-pentanone	43	8.671	8.670	(1.502)	433195	100.000	102	
	62 trans-1,3-Dichloropropene	75	8.696	8.696	(1.506)	182492	20.0000	20.0	
	63 1,1,2-Trichloroethane	97	8.918	8.919	(1.545)	131575	20.0000	19.2	
	53 Ethyl Methacrylate	69	9.034	9.034	(1.565)	161134	20.0000	21.0	
	64 Dibromochloromethane	129	9.150	9.153	(0.894)	129615	20.0000	20.0	
	65 1,3-Dichloropropane	76	9.301	9.298	(0.909)	241234	20.0000	19.4	
	66 1,2-Dibromoethane	107	9.442	9.439	(1.635)	127496	20.0000	19.7	
	67 2-Hexanone	43	9.937	9.941	(0.971)	288383	100.000	104	
*	68 Chlorobenzene-D5	117	10.230	10.234	(1.000)	900587	50.0000		
	69 Chlorobenzene	112	10.253	10.253	(1.002)	390805	20.0000	19.2	
	71 Ethylbenzene	106	10.349	10.349	(1.012)	216882	20.0000	19.6	
	72 1,1,1,2-Tetrachloroethane	131	10.381	10.382	(1.015)	129252	20.0000	20.1	
	73 m+p-Xylenes	106	10.577	10.581	(1.034)	536277	40.0000	41.2	
	74 o-Xylene	106	11.182	11.182	(1.093)	249219	20.0000	21.0	
	76 Bromoform	173	11.253	11.253	(1.100)	71065	20.0000	20.5	
	75 Styrene	104	11.269	11.266	(1.102)	421016	20.0000	21.5	
	77 Isopropylbenzene	105	11.651	11.652	(0.862)	631376	20.0000	21.0	
$	78 P-Bromofluorobenzene	95	12.002	12.002	(2.079)	415398	50.0000	49.9	
	80 Bromobenzene	156	12.105	12.105	(0.896)	156477	20.0000	19.3	

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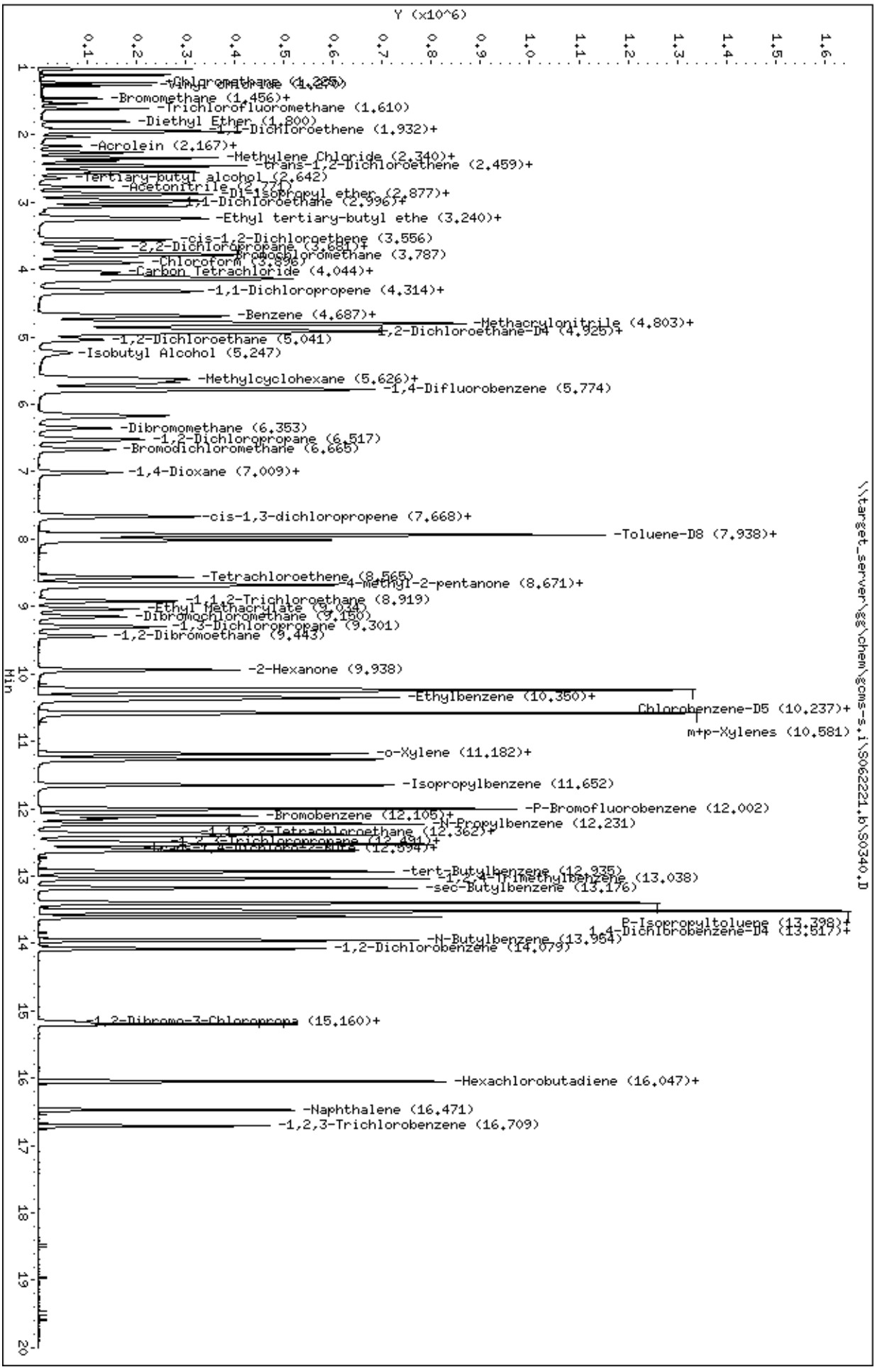
Report Date: 29-Jun-2021 12:34

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	79	cis-1,4-Dichloro-2-Butene	53	12.156	12.153	(0.900)	38231	20.0000	20.3	
	81	N-Propylbenzene	91	12.230	12.227	(0.905)	752102	20.0000	20.4	
	82	1,1,2,2-Tetrachloroethane	83	12.362	12.362	(0.915)	174844	20.0000	19.3	
	83	2-Chlorotoluene	91	12.388	12.391	(0.917)	454380	20.0000	20.2	
	84	1,2,3-Trichloropropane	75	12.490	12.494	(0.924)	139481	20.0000	19.5	
	85	1,3,5-Trimethylbenzene	105	12.529	12.526	(0.927)	524847	20.0000	21.2	
	86	trans-1,4-Dichloro-2-Butene	53	12.593	12.590	(0.932)	42484	20.0000	21.3	
	87	4-Chlorotoluene	91	12.625	12.626	(0.934)	471340	20.0000	20.0	
	88	tert-Butylbenzene	119	12.937	12.934	(0.957)	447300	20.0000	20.9	
	90	1,2,4-Trimethylbenzene	105	13.037	13.037	(0.965)	533294	20.0000	21.4	
	91	sec-Butylbenzene	105	13.175	13.179	(0.975)	659690	20.0000	21.0	
	92	P-Isopropyltoluene	119	13.397	13.394	(0.991)	546624	20.0000	21.1	
	93	1,3-Dichlorobenzene	146	13.404	13.404	(0.992)	289708	20.0000	19.7	
*	94	1,4-Dichlorobenzene-D4	152	13.513	13.513	(1.000)	458188	50.0000		
	95	1,4-Dichlorobenzene	146	13.532	13.533	(1.001)	293698	20.0000	18.9	
	96	1,2,3-Trimethylbenzene	105	13.606	13.606	(1.007)	553559	20.0000	21.1	
	97	N-Butylbenzene	91	13.953	13.954	(1.033)	477966	20.0000	21.0	
	99	1,2-Dichlorobenzene	146	14.079	14.079	(1.042)	279772	20.0000	19.7	
	100	1,2-Dibromo-3-Chloropropane	157	15.159	15.159	(1.122)	24716	20.0000	20.7	
	101	1,3,5-Trichlorobenzene	180	15.198	15.198	(1.125)	180968	20.0000	19.8	
	102	Hexachlorobutadiene	225	16.047	16.047	(1.187)	74840	20.0000	21.4	
	103	1,2,4-Trichlorobenzene	180	16.047	16.047	(1.187)	155826	20.0000	19.9	
	104	Naphthalene	128	16.471	16.468	(1.219)	425826	20.0000	21.8	
	105	1,2,3-Trichlorobenzene	180	16.706	16.709	(1.236)	157834	20.0000	20.3	
M	98	1,2-Dichloroethylene (total)	96				300901	20.0000	38.0	
M	106	Xylenes (total)	106				785496	60.0000	62.2	
M	55	Total Alkylbenzenes	100				3941823	20.0000	147	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).



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Purge Volume: 5.0
Column phase: RTX-VMS

Instrument: gcms-s.i
Operator: CR
Column diameter: 0.18

Data File: \\target_server\gg\chem\gcms-s.i\S062221.b\S0341.D
Report Date: 29-Jun-2021 12:34

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-s.i\S062221.b\S0341.D
Lab Smp Id: WG301173-2
Inj Date : 22-JUN-2021 12:33
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Smp Info : WG301173-2
Misc Info :
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Meth Date : 23-Jun-2021 06:48 CROY   Quant Type: ISTD
Cal Date : 22-JUN-2021 12:33   Cal File: S0341.D
Als bottle: 5   Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: all.sub
Target Version: 4.12
Processing Host: T6-O360

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution 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)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.108	1.109	(0.226)	28961	5.00000	5.4	
2	Chloromethane	50	1.224	1.224	(0.250)	35706	5.00000	5.2	
3	Vinyl chloride	62	1.269	1.269	(0.259)	25041	5.00000	5.2	
4	Bromomethane	94	1.456	1.456	(0.297)	7962	5.00000	5.1	
5	Chloroethane	64	1.533	1.523	(0.313)	13071	5.00000	5.6	
6	Trichlorofluoromethane	101	1.610	1.610	(0.328)	29338	5.00000	5.0	
7	Diethyl Ether	59	1.800	1.800	(0.367)	17715	5.00000	5.0	
8	1,1-Dichloroethene	96	1.931	1.932	(0.394)	21054	5.00000	4.9	
9	Freon-113	151	1.951	1.951	(0.398)	18446	5.00000	5.1	
10	Carbon Disulfide	76	1.954	1.954	(0.399)	42860	5.00000	4.7	
11	Iodomethane	142	2.034	2.031	(0.415)	20765	5.00000	4.9	
12	Acrolein	56	2.166	2.166	(0.442)	13688	25.0000	25.6	
13	Allyl Chloride	41	2.259	2.256	(0.461)	27567	5.00000	5.3	
14	Methylene Chloride	84	2.337	2.340	(0.477)	45921	5.00000	4.9(a)	
15	Acetone	43	2.385	2.385	(0.487)	42280	25.0000	26.8	
16	trans-1,2-Dichloroethene	96	2.459	2.459	(0.502)	36544	5.00000	5.0	
17	Methyl Acetate	43	2.475	2.478	(0.505)	24986	5.00000	5.2	
18	Methyl tert-butyl ether	73	2.552	2.549	(0.521)	85857	5.00000	5.0	
20	Acetonitrile	41	2.774	2.771	(0.566)	46500	50.0000	57.4	
21	Di-isopropyl ether	45	2.877	2.877	(0.587)	80615	5.00000	4.9	
19	Tertiary-butyl alcohol	59	2.639	2.639	(0.538)	17535	25.0000	28.8	
22	Chloroprene	53	2.970	2.967	(0.606)	39241	5.00000	4.9	
23	1,1-Dichloroethane	63	2.996	2.996	(0.611)	61289	5.00000	5.1	

Data File: \\target_server\gg\chem\gcms-s.i\S062221.b\S0341.D
Report Date: 29-Jun-2021 12:34

							AMOUNTS		
		QUANT SIG					CAL-AMT	ON-COL	
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)	REVIEW CODE
	24 Acrylonitrile	52	3.057	3.060	(0.624)	49373	25.0000	26.0	
	25 Ethyl tertiary-butyl ether	59	3.240	3.240	(0.661)	82568	5.00000	4.9	
	26 Vinyl Acetate	43	3.256	3.260	(0.564)	37892	5.00000	4.7	
	27 cis-1,2-Dichloroethene	96	3.555	3.555	(0.725)	38581	5.00000	5.0	
	28 2,2-Dichloropropane	77	3.674	3.678	(0.749)	39320	5.00000	4.8	
	30 Cyclohexane	56	3.767	3.768	(0.768)	50775	5.00000	4.9	
	29 Bromochloromethane	128	3.793	3.790	(0.774)	16998	5.00000	5.1	
	31 Chloroform	83	3.896	3.893	(0.795)	60347	5.00000	5.0	
	32 Carbon Tetrachloride	117	4.041	4.041	(0.699)	38725	5.00000	4.8	
	33 Tetrahydrofuran	42	4.095	4.089	(0.835)	40483	25.0000	24.7	
$	34 Dibromofluoromethane	113	4.134	4.134	(0.843)	259462	50.0000	49.8	
	35 1,1,1-Trichloroethane	97	4.134	4.136	(0.843)	50163	5.00000	4.9	
	37 1,1-Dichloropropene	75	4.314	4.314	(0.747)	45595	5.00000	4.9	
	36 2-Butanone	43	4.333	4.330	(0.884)	59007	25.0000	26.2	
	38 Benzene	78	4.690	4.687	(0.812)	148326	5.00000	5.0	
	39 Propionitrile	54	4.774	4.777	(0.974)	55364	50.0000	55.9	
	40 Methacrylonitrile	41	4.799	4.803	(0.979)	141819	50.0000	51.6	
*	41 Pentafluorobenzene	168	4.902	4.903	(1.000)	457680	50.0000		
$	42 1,2-Dichloroethane-D4	65	4.925	4.922	(1.005)	274353	50.0000	50.0	
	43 Tertiary-amyl methyl ether	73	4.935	4.932	(1.007)	73246	5.00000	4.9	
	44 1,2-Dichloroethane	62	5.037	5.041	(0.872)	43752	5.00000	5.1	
	45 Isobutyl Alcohol	43	5.266	5.237	(1.074)	10917	100.000	75.4	
	46 Methylcyclohexane	83	5.626	5.629	(1.148)	55312	5.00000	4.8	
	47 Trichloroethene	95	5.677	5.678	(0.983)	34851	5.00000	5.0	
*	48 1,4-Difluorobenzene	114	5.777	5.777	(1.000)	903909	50.0000		
	49 Dibromomethane	93	6.346	6.349	(1.099)	20352	5.00000	4.9	
	50 1,2-Dichloropropane	63	6.523	6.520	(1.129)	34903	5.00000	5.0	
	51 Bromodichloromethane	83	6.668	6.668	(1.154)	38987	5.00000	4.7	
	54 1,4-Dioxane	88	7.012	7.009	(1.214)	11986	100.000	(a)	
	52 Methyl Methacrylate	41	7.008	7.009	(1.213)	15427	5.00000	4.4	
	57 cis-1,3-dichloropropene	75	7.671	7.668	(1.328)	48398	5.00000	4.6	
	56 2-Chloroethylvinylether	63	7.655	7.648	(1.325)	15261	5.00000	4.0	
$	58 Toluene-D8	98	7.934	7.938	(1.373)	1056063	50.0000	49.7	
	59 Toluene	91	8.012	8.012	(1.387)	155731	5.00000	5.0	
	60 Tetrachloroethene	164	8.561	8.564	(0.837)	26211	5.00000	5.0	
	61 4-methyl-2-pentanone	43	8.677	8.670	(1.502)	95439	25.0000	23.5	
	62 trans-1,3-Dichloropropene	75	8.700	8.696	(1.506)	40610	5.00000	4.6	
	63 1,1,2-Trichloroethane	97	8.921	8.919	(1.544)	32500	5.00000	4.9	
	53 Ethyl Methacrylate	69	9.034	9.034	(1.564)	31797	5.00000	4.3	
	64 Dibromochloromethane	129	9.156	9.153	(0.895)	28541	5.00000	4.6	
	65 1,3-Dichloropropane	76	9.298	9.298	(0.909)	59701	5.00000	5.0	
	66 1,2-Dibromoethane	107	9.436	9.439	(1.633)	30161	5.00000	4.8	
	67 2-Hexanone	43	9.938	9.941	(0.971)	62631	25.0000	23.7	
*	68 Chlorobenzene-D5	117	10.230	10.234	(1.000)	856433	50.0000		
	69 Chlorobenzene	112	10.249	10.253	(1.002)	97763	5.00000	5.1	
	71 Ethylbenzene	106	10.349	10.349	(1.012)	51459	5.00000	4.9	
	72 1,1,1,2-Tetrachloroethane	131	10.378	10.382	(1.014)	29850	5.00000	4.9	
	73 m+p-Xylenes	106	10.581	10.581	(1.034)	123653	10.0000	10	
	74 o-Xylene	106	11.185	11.182	(1.093)	52213	5.00000	4.6	
	76 Bromoform	173	11.249	11.253	(1.100)	14139	5.00000	4.3	
	75 Styrene	104	11.272	11.266	(1.102)	85182	5.00000	4.6	
	77 Isopropylbenzene	105	11.648	11.652	(0.862)	137122	5.00000	4.9	
$	78 P-Bromofluorobenzene	95	11.999	12.002	(2.077)	393272	50.0000	49.2	
	80 Bromobenzene	156	12.105	12.105	(0.896)	37397	5.00000	5.0	

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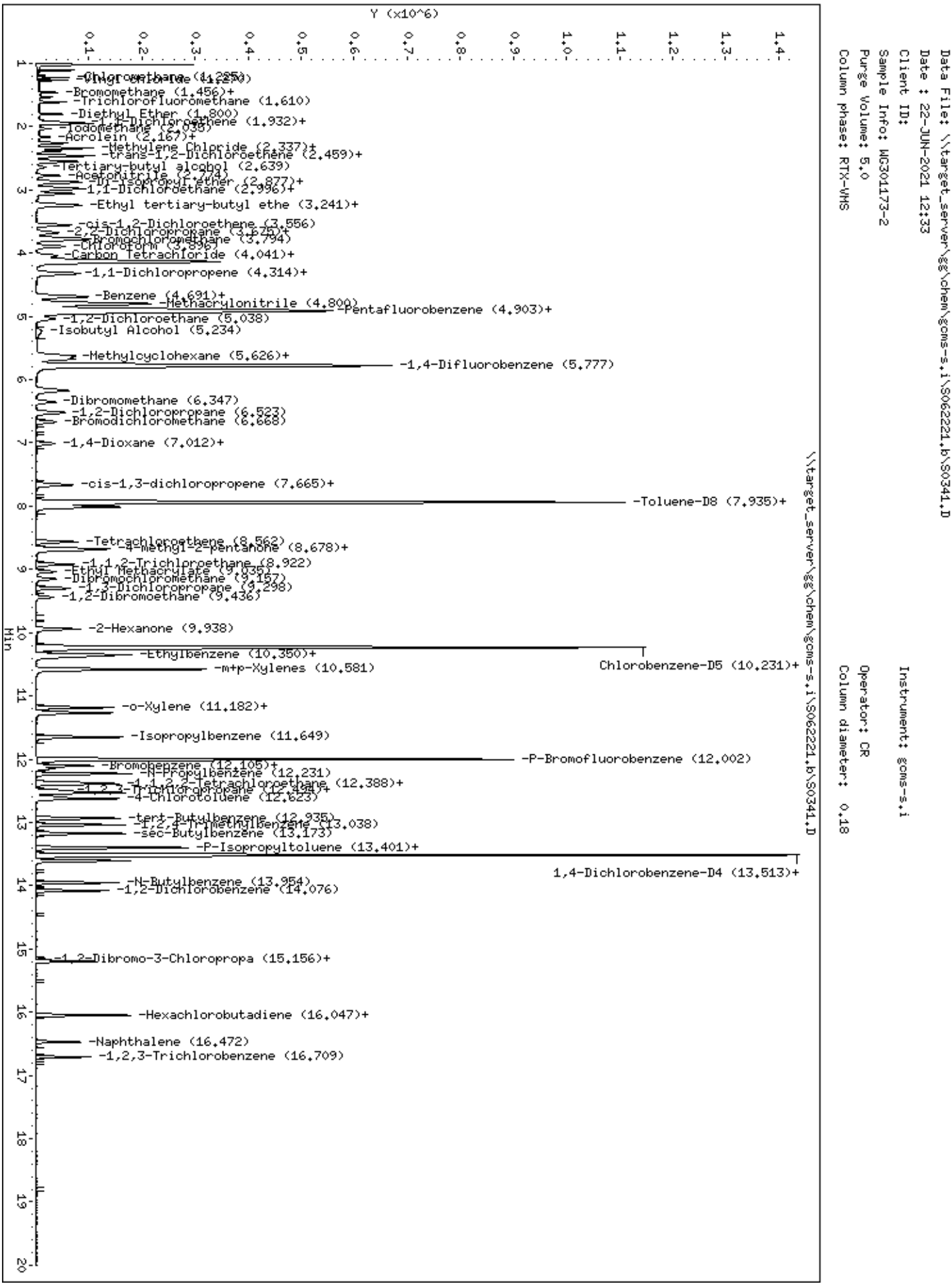
Report Date: 29-Jun-2021 12:34

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
	79 cis-1,4-Dichloro-2-Butene	53	12.156	12.153	(0.900)	8390	5.00000	4.8	
	81 N-Propylbenzene	91	12.227	12.227	(0.905)	171610	5.00000	5.0	
	82 1,1,2,2-Tetrachloroethane	83	12.365	12.362	(0.915)	43318	5.00000	5.2	
	83 2-Chlorotoluene	91	12.391	12.391	(0.917)	106161	5.00000	5.1	
	84 1,2,3-Trichloropropane	75	12.494	12.494	(0.925)	33706	5.00000	5.1	
	85 1,3,5-Trimethylbenzene	105	12.529	12.526	(0.927)	110877	5.00000	4.8	
	86 trans-1,4-Dichloro-2-Butene	53	12.587	12.590	(0.931)	9005	5.00000	4.9	
	87 4-Chlorotoluene	91	12.622	12.626	(0.934)	113948	5.00000	5.2	
	88 tert-Butylbenzene	119	12.934	12.934	(0.957)	97223	5.00000	4.9	
	90 1,2,4-Trimethylbenzene	105	13.040	13.037	(0.965)	114568	5.00000	5.0	
	91 sec-Butylbenzene	105	13.175	13.179	(0.975)	146714	5.00000	5.0	
	92 P-Isopropyltoluene	119	13.397	13.394	(0.991)	113693	5.00000	4.7	
	93 1,3-Dichlorobenzene	146	13.407	13.404	(0.992)	68773	5.00000	5.0	
*	94 1,4-Dichlorobenzene-D4	152	13.513	13.513	(1.000)	425286	50.0000		
	95 1,4-Dichlorobenzene	146	13.532	13.533	(1.001)	70885	5.00000	4.9	
	96 1,2,3-Trimethylbenzene	105	13.606	13.606	(1.007)	123165	5.00000	5.0	
	97 N-Butylbenzene	91	13.953	13.954	(1.033)	96664	5.00000	4.6	
	99 1,2-Dichlorobenzene	146	14.079	14.079	(1.042)	66263	5.00000	5.0	
	100 1,2-Dibromo-3-Chloropropane	157	15.159	15.159	(1.122)	5483	5.00000	4.9	
	101 1,3,5-Trichlorobenzene	180	15.198	15.198	(1.125)	39679	5.00000	4.7	
	102 Hexachlorobutadiene	225	16.050	16.047	(1.188)	17003	5.00000	5.2	
	103 1,2,4-Trichlorobenzene	180	16.047	16.047	(1.187)	30565	5.00000	4.2	
	104 Naphthalene	128	16.468	16.468	(1.219)	72682	5.00000	4.0	
	105 1,2,3-Trichlorobenzene	180	16.709	16.709	(1.237)	32974	5.00000	4.6	
M	98 1,2-Dichloroethylene (total)	96				75125	5.00000	10.0	
M	106 Xylenes (total)	106				175866	15.0000	14.6	
M	55 Total Alkylbenzenes	100				851349	5.00000	34.1	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).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Instrument: gcms-s.i
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-Vinyl Chloride (1.327)
-Bromomethane (1.456)+
-Trichlorofluoromethane (1.610)
-Diethyl Ether (1.800)
-1,1-Dichloroethene (1.932)+
-Iodomethane (2.035)
-Acrolein (2.167)+
-Methylene Chloride (2.337)+
-trans-1,2-Dichloroethene (2.459)+
-Tertiary-butyl alcohol (2.639)
-Acetonitrile (2.774)
-Di-isopropyl ether (2.877)+
-1,1-Dichloroethane (2.996)+
-Ethyl tertiary-butyl ethe (3.241)+
-cis-1,2-Dichloroethene (3.556)
-2,2-Dichloropropane (3.625)+
-Bromochloromethane (3.794)
-Chloroform (3.896)
-Carbon Tetrachloride (4.041)+
-1,1-Dichloropropene (4.314)+
-Benzene (4.691)+
-Methacrylonitrile (4.800)
-Pentafluorobenzene (4.903)+
-1,2-Dichloroethane (5.038)
-Isobutyl Alcohol (5.234)
-Methylcyclohexane (5.626)+
-1,4-Difluorobenzene (5.777)
-Dibromomethane (6.347)
-1,2-Dichloropropane (6.523)
-Bromodichloromethane (6.668)
-1,4-Dioxane (7.012)+
-cis-1,3-dichloropropene (7.665)+
-Toluene-D8 (7.935)+
-Tetrachloroethene (8.562)
-4-Methyl-2-pentanone (8.678)+
-1,1,2-Trichloroethane (8.922)
-Ethyl Methacrylate (9.036)
-Dibromochloromethane (9.167)
-1,3-Dichloropropane (9.298)
-1,2-Dibromoethane (9.436)
-2-Hexanone (9.938)
-Ethylbenzene (10.350)+
Chlorobenzene-D5 (10.231)+
-m+p-Xylenes (10.581)
-o-Xylene (11.182)+
-Isopropylbenzene (11.649)
-P-Bromofluorobenzene (12.002)
-Bromobenzene (12.105)+
-N-Propylbenzene (12.231)
-1,1,2,2-Tetrachloroethane (12.388)+
-1,2,3-Trichloropropane (12.454)+
-4-Chlorotoluene (12.623)
-tert-Butylbenzene (12.935)
-1,2,4-Trimethylbenzene (13.038)
-sec-Butylbenzene (13.173)
-P-Isopropyltoluene (13.401)+
1,4-Dichlorobenzene-D4 (13.513)+
-N-Butylbenzene (13.954)
-1,2-Dichlorobenzene (14.076)
-1,2-Dibromo-3-Chloropropa (15.156)+
-Hexachlorobutadiene (16.047)+
-Naphthalene (16.472)
-1,2,3-Trichlorobenzene (16.709)

Data File: \\target_server\gg\chem\gcms-s.i\S062221.b\S0342.D
Report Date: 29-Jun-2021 12:34

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-s.i\S062221.b\S0342.D
Lab Smp Id: WG301173-1
Inj Date : 22-JUN-2021 13:03
Operator : CR   Inst ID: gcms-s.i
Smp Info : WG301173-1
Misc Info :
Comment   : SW846 5030C
Method   : \\target_server\gg\chem\gcms-s.i\S062221.b\S8A05(14)D.m
Meth Date : 23-Jun-2021 06:48 CROY   Quant Type: ISTD
Cal Date : 22-JUN-2021 13:03   Cal File: S0342.D
Als bottle: 6   Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: all.sub
Target Version: 4.12
Processing Host: T6-O360

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.108	1.109	(0.226)	3927	1.00000	0.77(a)	
2	Chloromethane	50	1.221	1.224	(0.249)	5421	1.00000	0.84(a)	
3	Vinyl chloride	62	1.266	1.269	(0.258)	3597	1.00000	0.78(a)	
4	Bromomethane	94	1.455	1.456	(0.297)	1813	1.00000	1.2	
5	Chloroethane	64	1.529	1.523	(0.312)	1972	1.00000	0.88(a)	
6	Trichlorofluoromethane	101	1.610	1.610	(0.329)	4360	1.00000	0.78(a)	
7	Diethyl Ether	59	1.799	1.800	(0.367)	3528	1.00000	1.0	
8	1,1-Dichloroethene	96	1.931	1.932	(0.394)	4738	1.00000	1.2	
9	Freon-113	151	1.947	1.951	(0.398)	3263	1.00000	0.95(a)	
10	Carbon Disulfide	76	1.954	1.954	(0.399)	9993	1.00000	1.1	
11	Iodomethane	142	2.028	2.031	(0.414)	3867	1.00000	0.96(a)	
12	Acrolein	56	2.169	2.166	(0.443)	2619	5.00000	5.2	
13	Allyl Chloride	41	2.253	2.256	(0.460)	4965	1.00000	1.0	
14	Methylene Chloride	84	2.336	2.340	(0.477)	14227	1.00000	1.6(a)	
15	Acetone	43	2.385	2.385	(0.487)	10085	5.00000	6.8	
16	trans-1,2-Dichloroethene	96	2.459	2.459	(0.502)	7800	1.00000	1.1	
17	Methyl Acetate	43	2.475	2.478	(0.505)	4884	1.00000	1.1	
18	Methyl tert-butyl ether	73	2.549	2.549	(0.520)	16844	1.00000	1.0	
20	Acetonitrile	41	2.771	2.771	(0.566)	10499	10.0000	13.6(a)	
21	Di-isopropyl ether	45	2.873	2.877	(0.587)	14699	1.00000	0.94(a)	
19	Tertiary-butyl alcohol	59	2.645	2.639	(0.540)	4385	5.00000	7.6	
22	Chloroprene	53	2.963	2.967	(0.605)	6396	1.00000	0.84(a)	
23	1,1-Dichloroethane	63	2.999	2.996	(0.612)	12290	1.00000	1.1	

Data File: \\target_server\gg\chem\gcms-s.i\S062221.b\S0342.D
Report Date: 29-Jun-2021 12:34

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	24 Acrylonitrile	52	3.057	3.060	(0.624)	8903	5.00000	5.0	
	25 Ethyl tertiary-butyl ether	59	3.234	3.240	(0.660)	14033	1.00000	0.88(a)	
	26 Vinyl Acetate	43	3.250	3.260	(0.563)	7212	1.00000	0.92(a)	
	27 cis-1,2-Dichloroethene	96	3.552	3.555	(0.725)	7638	1.00000	1.0	
	28 2,2-Dichloropropane	77	3.677	3.678	(0.751)	7407	1.00000	0.95(a)	
	30 Cyclohexane	56	3.770	3.768	(0.770)	9097	1.00000	0.92(a)	
	29 Bromochloromethane	128	3.796	3.790	(0.775)	3335	1.00000	1.0	
	31 Chloroform	83	3.896	3.893	(0.795)	12880	1.00000	1.1	
	32 Carbon Tetrachloride	117	4.034	4.041	(0.698)	7544	1.00000	0.96(a)	
	33 Tetrahydrofuran	42	4.095	4.089	(0.836)	7686	5.00000	4.9(a)	
$	34 Dibromofluoromethane	113	4.131	4.134	(0.843)	253002	50.0000	51.2	
	35 1,1,1-Trichloroethane	97	4.137	4.136	(0.844)	10257	1.00000	1.1	
	37 1,1-Dichloropropene	75	4.320	4.314	(0.748)	8684	1.00000	0.96(a)	
	36 2-Butanone	43	4.323	4.330	(0.883)	11286	5.00000	5.3	
	38 Benzene	78	4.684	4.687	(0.811)	29709	1.00000	1.0	
	39 Propionitrile	54	4.777	4.777	(0.975)	10954	10.0000	11.6	
	40 Methacrylonitrile	41	4.806	4.803	(0.981)	22816	10.0000	8.7(a)	
*	41 Pentafluorobenzene	168	4.899	4.903	(1.000)	434086	50.0000		
$	42 1,2-Dichloroethane-D4	65	4.922	4.922	(1.005)	274115	50.0000	52.6	
	43 Tertiary-amyl methyl ether	73	4.928	4.932	(1.006)	13089	1.00000	0.92(a)	
	44 1,2-Dichloroethane	62	5.037	5.041	(0.872)	9996	1.00000	1.2	
	46 Methylcyclohexane	83	5.639	5.629	(1.151)	8312	1.00000	0.76(a)	
	47 Trichloroethene	95	5.677	5.678	(0.983)	7288	1.00000	1.1	
*	48 1,4-Difluorobenzene	114	5.777	5.777	(1.000)	880218	50.0000		
	49 Dibromomethane	93	6.346	6.349	(1.099)	4300	1.00000	1.0	
	50 1,2-Dichloropropane	63	6.516	6.520	(1.128)	6452	1.00000	0.96(Ta)	
	51 Bromodichloromethane	83	6.680	6.668	(1.156)	7529	1.00000	0.93(a)	
	54 1,4-Dioxane	88	6.999	7.009	(1.211)	2406	20.0000	(a)	
	52 Methyl Methacrylate	41	7.024	7.009	(1.216)	2272	1.00000	0.67(a)	
	57 cis-1,3-dichloropropene	75	7.671	7.668	(1.328)	8566	1.00000	0.83(a)	
	56 2-Chloroethylvinylether	63	7.638	7.648	(1.322)	2704	1.00000	0.73(a)	
$	58 Toluene-D8	98	7.937	7.938	(1.374)	1029358	50.0000	49.8	
	59 Toluene	91	8.011	8.012	(1.387)	31416	1.00000	1.0	
	60 Tetrachloroethene	164	8.568	8.564	(0.838)	5033	1.00000	0.99(a)	
	61 4-methyl-2-pentanone	43	8.674	8.670	(1.501)	15463	5.00000	3.9(a)	
	62 trans-1,3-Dichloropropene	75	8.693	8.696	(1.505)	7005	1.00000	0.82(a)	
	63 1,1,2-Trichloroethane	97	8.918	8.919	(1.544)	6645	1.00000	1.0	
	53 Ethyl Methacrylate	69	9.027	9.034	(1.563)	4181	1.00000	0.58(a)	
	64 Dibromochloromethane	129	9.146	9.153	(0.894)	5182	1.00000	0.86(a)	
	65 1,3-Dichloropropane	76	9.298	9.298	(0.909)	11541	1.00000	1.0	
	66 1,2-Dibromoethane	107	9.436	9.439	(1.633)	5642	1.00000	0.93(Ta)	
	67 2-Hexanone	43	9.941	9.941	(0.972)	9415	5.00000	3.7(a)	
*	68 Chlorobenzene-D5	117	10.230	10.234	(1.000)	832583	50.0000		
	69 Chlorobenzene	112	10.249	10.253	(1.002)	19752	1.00000	1.0	
	71 Ethylbenzene	106	10.346	10.349	(1.011)	9723	1.00000	0.95(a)	
	72 1,1,1,2-Tetrachloroethane	131	10.384	10.382	(1.015)	5034	1.00000	0.85(a)	
	73 m+p-Xylenes	106	10.577	10.581	(1.034)	19806	2.00000	1.6(a)	
	74 o-Xylene	106	11.188	11.182	(1.094)	8439	1.00000	0.77(a)	
	76 Bromoform	173	11.246	11.253	(1.099)	2167	1.00000	0.68(a)	
	75 Styrene	104	11.269	11.266	(1.102)	12315	1.00000	0.68(a)	
	77 Isopropylbenzene	105	11.651	11.652	(0.862)	21011	1.00000	0.79(a)	
$	78 P-Bromofluorobenzene	95	12.002	12.002	(2.077)	378132	50.0000	48.6	
	80 Bromobenzene	156	12.105	12.105	(0.896)	7559	1.00000	1.1	
	79 cis-1,4-Dichloro-2-Butene	53	12.150	12.153	(0.899)	1256	1.00000	0.76(a)	

Data File: \\target_server\gg\chem\gcms-s.i\S062221.b\S0342.D
Report Date: 29-Jun-2021 12:34

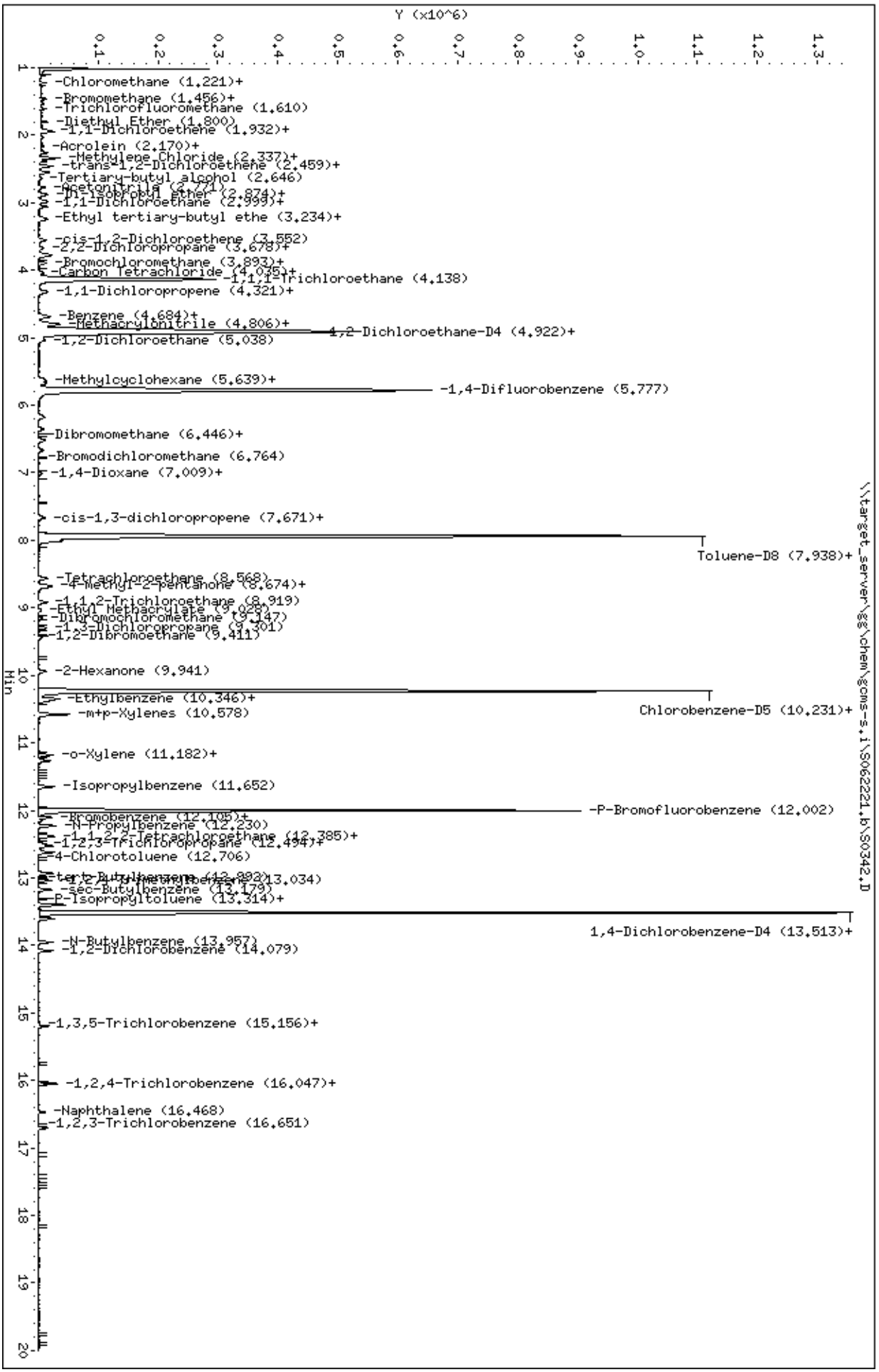
CR

9:24 am, Jul 01, 2021

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	81 N-Propylbenzene	91	12.230	12.227	(0.905)	28919	1.00000	0.89(a)	
	82 1,1,2,2-Tetrachloroethane	83	12.365	12.362	(0.915)	8316	1.00000	1.0	
	83 2-Chlorotoluene	91	12.391	12.391	(0.917)	18301	1.00000	0.92(a)	
	84 1,2,3-Trichloropropane	75	12.494	12.494	(0.925)	6573	1.00000	1.0	
	85 1,3,5-Trimethylbenzene	105	12.523	12.526	(0.927)	16344	1.00000	0.75(a)	
	86 trans-1,4-Dichloro-2-Butene	53	12.587	12.590	(0.931)	1282	1.00000	0.73(a)	
	87 4-Chlorotoluene	91	12.622	12.626	(0.934)	18654	1.00000	0.90(a)	
	88 tert-Butylbenzene	119	12.934	12.934	(0.957)	14433	1.00000	0.77(a)	
	90 1,2,4-Trimethylbenzene	105	13.034	13.037	(0.965)	15773	1.00000	0.72(a)	
	91 sec-Butylbenzene	105	13.178	13.179	(0.975)	20868	1.00000	0.76(a)	
	92 P-Isopropyltoluene	119	13.394	13.394	(0.991)	15960	1.00000	0.70(a)	
	93 1,3-Dichlorobenzene	146	13.407	13.404	(0.992)	12190	1.00000	0.94(a)	
*	94 1,4-Dichlorobenzene-D4	152	13.513	13.513	(1.000)	403017	50.0000		
	95 1,4-Dichlorobenzene	146	13.535	13.533	(1.002)	15049	1.00000	1.1	
	96 1,2,3-Trimethylbenzene	105	13.609	13.606	(1.007)	17761	1.00000	0.77(a)	
	97 N-Butylbenzene	91	13.957	13.954	(1.033)	14205	1.00000	0.71(a)	
	99 1,2-Dichlorobenzene	146	14.079	14.079	(1.042)	12177	1.00000	0.97(a)	
	100 1,2-Dibromo-3-Chloropropane	157	15.156	15.159	(1.122)	778	1.00000	0.72(aM)	M9
	101 1,3,5-Trichlorobenzene	180	15.191	15.198	(1.124)	6754	1.00000	0.84(a)	
	102 Hexachlorobutadiene	225	16.056	16.047	(1.188)	2344	1.00000	0.72(aM)	M9
	103 1,2,4-Trichlorobenzene	180	16.040	16.047	(1.187)	5558	1.00000	0.81(a)	
	104 Naphthalene	128	16.468	16.468	(1.219)	10372	1.00000	0.60(a)	
	105 1,2,3-Trichlorobenzene	180	16.702	16.709	(1.236)	5804	1.00000	0.85(a)	
M	98 1,2-Dichloroethylene (total)	96				15438	1.00000	2.2	
M	106 Xylenes (total)	106				28245	5.00000	2.4(a)	
M	55 Total Alkylbenzenes	100				126502	1.00000	5.3(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.


Data File: \\target_server\gg\chem\gcms-s.i\S062221.b\S0342.D
Date : 22-JUN-2021 13:03
Client ID:
Sample Info: WG301173-1
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-s.i
Operator: CR
Column diameter: 0.18
\\target_server\gg\chem\gcms-s.i\S062221.b\S0342.D
Y (x10^6)
Min
-Chloromethane (1.221)+
-Bromomethane (1.456)+
-Trichlorofluoromethane (1.610)
-Diethyl Ether (1.800)
-1,1-Dichloroethene (1.932)+
-Acrolein (2.170)+
-Methylene Chloride (2.337)+
-trans-1,2-Dichloroethene (2.459)+
-Tertiary-butyl alcohol (2.646)
-Acetonitrile (2.771)
-Di-isopropyl ether (2.874)+
-1,1-Dichloroethane (2.999)+
-Ethyl tertiary-butyl ethe (3.234)+
-cis-1,2-Dichloroethene (3.552)
-2,2-Dichloropropane (3.678)+
-Bromochloromethane (3.893)+
-Carbon Tetrachloride (4.045)+
-1,1,1-Trichloroethane (4.138)
-1,1-Dichloropropene (4.321)+
-Benzene (4.684)+
-Methacrylonitrile (4.806)+
-1,2-Dichloroethane-D4 (4.922)+
-1,2-Dichloroethane (5.038)
-Methylcyclohexane (5.639)+
-1,4-Difluorobenzene (5.777)
-Dibromomethane (6.446)+
-Bromodichloromethane (6.764)
-1,4-Dioxane (7.009)+
-cis-1,3-dichloropropene (7.671)+
Toluene-D8 (7.938)+
-Tetrachloroethane (8.568)
-4-Methyl-2-pentanone (8.674)+
-1,1,2-Trichloroethane (8.919)
-Ethyl Methacrylate (9.020)
-Dibromochloromethane (9.147)
-1,3-Dichloropropane (9.301)
-1,2-Dibromoethane (9.411)
-2-Hexanone (9.941)
-Ethylbenzene (10.346)+
-m+p-Xylenes (10.578)
Chlorobenzene-D5 (10.231)+
-o-Xylene (11.182)+
-Isopropylbenzene (11.652)
-P-Bromofluorobenzene (12.002)
-Bromobenzene (12.105)+
-N-Propylbenzene (12.230)
-1,1,2,2-Tetrachloroethane (12.385)+
-1,2,3-Trichloropropane (12.494)+
-4-Chlorotoluene (12.706)
-tert-Butylbenzene (12.892)
-1,2,4-Trimethylbenzene (13.034)
-sec-Butylbenzene (13.179)
-P-Isopropyltoluene (13.314)+
1,4-Dichlorobenzene-D4 (13.513)+
-N-Butylbenzene (13.957)
-1,2-Dichlorobenzene (14.079)
-1,3,5-Trichlorobenzene (15.156)+
-1,2,4-Trichlorobenzene (16.047)+
-Naphthalene (16.468)
-1,2,3-Trichlorobenzene (16.651)

Data File: \\target_server\gg\chem\gcms-s.i\S062221.b\S0343.D
Report Date: 29-Jun-2021 12:34

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-s.i\S062221.b\S0343.D
Lab Smp Id: WG301173-6
Inj Date : 22-JUN-2021 13:33
Operator : CR Inst ID: gcms-s.i
Smp Info : WG301173-6
Misc Info :
Comment : SW846 5030C
Method : \\target_server\gg\chem\gcms-s.i\S062221.b\S8A05(14)D.m
Meth Date : 23-Jun-2021 06:48 CROY Quant Type: ISTD
Cal Date : 22-JUN-2021 13:33 Cal File: S0343.D
Als bottle: 7 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: T6-O360

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution 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)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.108	1.109	(0.226)	891070	150.000	156(A)	
2	Chloromethane	50	1.221	1.224	(0.249)	1055901	150.000	147	
3	Vinyl chloride	62	1.269	1.269	(0.259)	832277	150.000	160(A)	
4	Bromomethane	94	1.452	1.456	(0.297)	213149	150.000	131	
5	Chloroethane	64	1.513	1.523	(0.309)	158285	150.000	63.6	
6	Trichlorofluoromethane	101	1.603	1.610	(0.327)	928646	150.000	149	
7	Diethyl Ether	59	1.800	1.800	(0.367)	515886	150.000	139	
8	1,1-Dichloroethene	96	1.928	1.932	(0.394)	615106	150.000	136	
9	Freon-113	151	1.947	1.951	(0.398)	554677	150.000	145	
10	Carbon Disulfide	76	1.951	1.954	(0.398)	1355856	150.000	141	
11	Iodomethane	142	2.028	2.031	(0.414)	762774	150.000	166(A)	
12	Acrolein	56	2.166	2.166	(0.442)	402652	750.000	716	
13	Allyl Chloride	41	2.256	2.256	(0.461)	811838	150.000	148	
14	Methylene Chloride	84	2.337	2.340	(0.477)	1160595	150.000	122	
15	Acetone	43	2.385	2.385	(0.487)	946262	750.000	591	
16	trans-1,2-Dichloroethene	96	2.455	2.459	(0.501)	1116560	150.000	146	
17	Methyl Acetate	43	2.475	2.478	(0.505)	671510	150.000	135	
18	Methyl tert-butyl ether	73	2.549	2.549	(0.520)	2653797	150.000	145	
20	Acetonitrile	41	2.774	2.771	(0.566)	909647	1500.00	1110	
21	Di-isopropyl ether	45	2.877	2.877	(0.587)	2607581	150.000	150	
19	Tertiary-butyl alcohol	59	2.645	2.639	(0.540)	320401	750.000	525	
22	Chloroprene	53	2.967	2.967	(0.606)	1367722	150.000	158(A)	
23	1,1-Dichloroethane	63	2.992	2.996	(0.611)	1784422	150.000	142	

Data File: \\target_server\gg\chem\gcms-s.i\S062221.b\S0343.D
Report Date: 29-Jun-2021 12:34

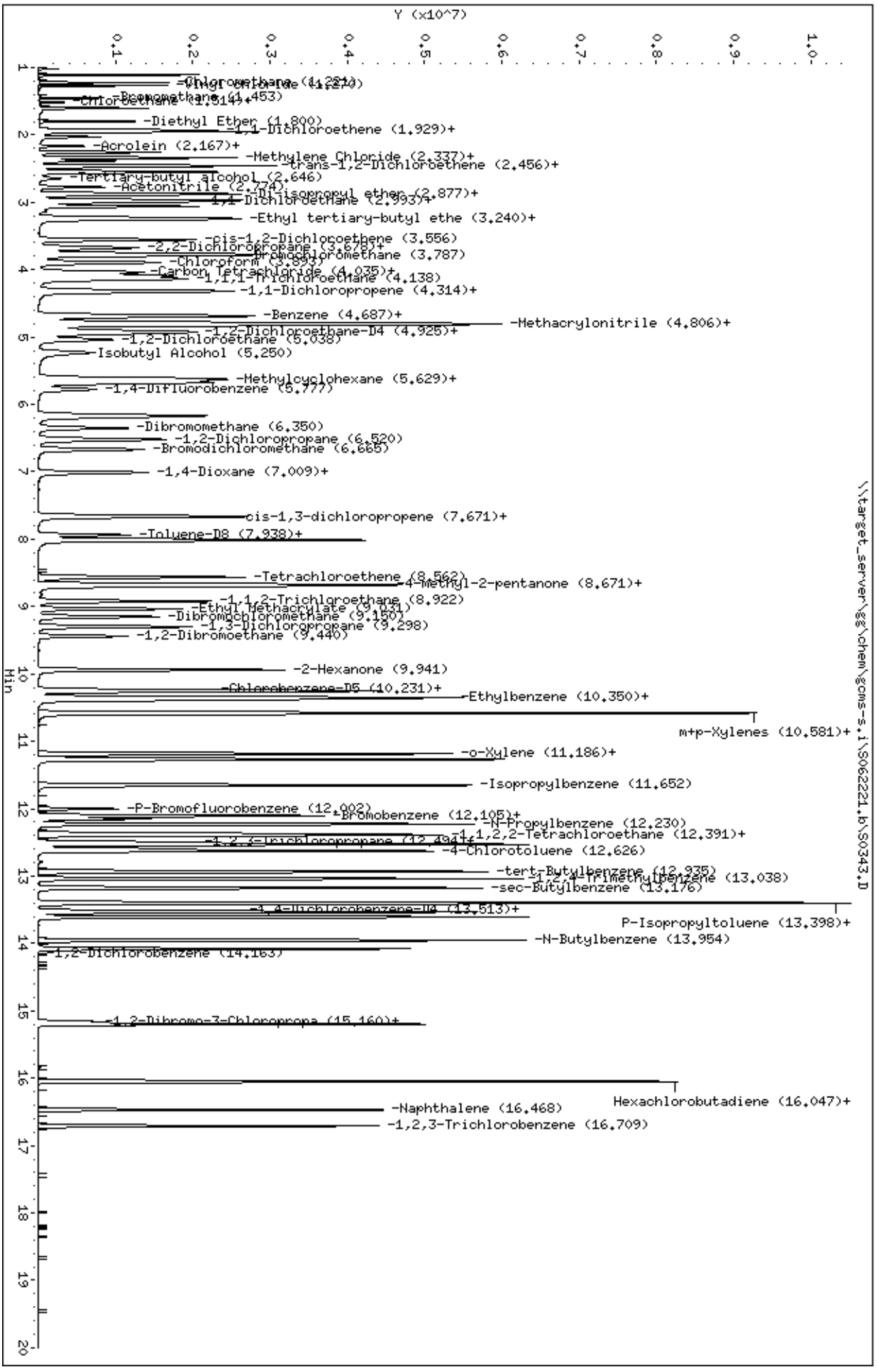
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	24 Acrylonitrile	52	3.057	3.060	(0.624)	1398179	750.000	704	
	25 Ethyl tertiary-butyl ether	59	3.240	3.240	(0.661)	2768957	150.000	155(A)	
	26 Vinyl Acetate	43	3.256	3.260	(0.564)	1285590	150.000	151(A)	
	27 cis-1,2-Dichloroethene	96	3.555	3.555	(0.726)	1237432	150.000	151(A)	
	28 2,2-Dichloropropane	77	3.677	3.678	(0.751)	1291438	150.000	148	
	30 Cyclohexane	56	3.764	3.768	(0.768)	1730772	150.000	155(A)	
	29 Bromochloromethane	128	3.787	3.790	(0.773)	488528	150.000	140	
	31 Chloroform	83	3.893	3.893	(0.795)	1855789	150.000	145	
	32 Carbon Tetrachloride	117	4.034	4.041	(0.698)	1359936	150.000	157(A)	
	33 Tetrahydrofuran	42	4.089	4.089	(0.835)	1239123	750.000	719	
$	34 Dibromofluoromethane	113	4.131	4.134	(0.843)	280538	50.0000	50.6	
	35 1,1,1-Trichloroethane	97	4.137	4.136	(0.844)	1637563	150.000	152(A)	
	37 1,1-Dichloropropene	75	4.314	4.314	(0.747)	1512137	150.000	153(A)	
	36 2-Butanone	43	4.327	4.330	(0.883)	1601417	750.000	682	
	38 Benzene	78	4.687	4.687	(0.811)	4442024	150.000	142	
	39 Propionitrile	54	4.777	4.777	(0.975)	1234484	1500.00	1220	
	40 Methacrylonitrile	41	4.806	4.803	(0.981)	3996520	1500.00	1390	
*	41 Pentafluorobenzene	168	4.899	4.903	(1.000)	485508	50.0000		
$	42 1,2-Dichloroethane-D4	65	4.925	4.922	(1.005)	287442	50.0000	49.5	
	43 Tertiary-amyl methyl ether	73	4.931	4.932	(1.007)	2528964	150.000	158(A)	
	44 1,2-Dichloroethane	62	5.037	5.041	(0.872)	1254002	150.000	139	
	45 Isobutyl Alcohol	43	5.250	5.237	(1.072)	446482	3000.00	2930	
	46 Methylcyclohexane	83	5.629	5.629	(1.149)	2154614	150.000	170(A)	
	47 Trichloroethene	95	5.674	5.678	(0.982)	1158536	150.000	154(A)	
*	48 1,4-Difluorobenzene	114	5.777	5.777	(1.000)	961731	50.0000		
	49 Dibromomethane	93	6.349	6.349	(1.099)	665487	150.000	150	
	50 1,2-Dichloropropane	63	6.520	6.520	(1.129)	1108606	150.000	150(A)	
	51 Bromodichloromethane	83	6.664	6.668	(1.154)	1438722	150.000	161(A)	
	54 1,4-Dioxane	88	7.008	7.009	(1.213)	223774	3000.00	(a)	
	52 Methyl Methacrylate	41	7.008	7.009	(1.213)	653284	150.000	172(A)	
	57 cis-1,3-dichloropropene	75	7.671	7.668	(1.328)	1857116	150.000	162(A)	
	56 2-Chloroethylvinylether	63	7.651	7.648	(1.324)	738284	150.000	176(A)	
$	58 Toluene-D8	98	7.938	7.938	(1.374)	1144346	50.0000	50.5	
	59 Toluene	91	8.012	8.012	(1.387)	4535886	150.000	139	
	60 Tetrachloroethene	164	8.561	8.564	(0.837)	900859	150.000	154(A)	
	61 4-methyl-2-pentanone	43	8.671	8.670	(1.501)	3232799	750.000	749	
	62 trans-1,3-Dichloropropene	75	8.700	8.696	(1.506)	1565535	150.000	164(A)	
	63 1,1,2-Trichloroethane	97	8.921	8.919	(1.544)	1038777	150.000	149	
	53 Ethyl Methacrylate	69	9.031	9.034	(1.563)	1466961	150.000	180(A)	
	64 Dibromochloromethane	129	9.150	9.153	(0.894)	1159753	150.000	165(A)	
	65 1,3-Dichloropropane	76	9.298	9.298	(0.909)	1859240	150.000	143	
	66 1,2-Dibromoethane	107	9.439	9.439	(1.634)	1044997	150.000	157(A)	
	67 2-Hexanone	43	9.941	9.941	(0.972)	2251179	750.000	762(A)	
*	68 Chlorobenzene-D5	117	10.230	10.234	(1.000)	954227	50.0000		
	69 Chlorobenzene	112	10.253	10.253	(1.002)	2975883	150.000	140	
	71 Ethylbenzene	106	10.349	10.349	(1.012)	1791324	150.000	152(A)	
	72 1,1,1,2-Tetrachloroethane	131	10.384	10.382	(1.015)	1115437	150.000	161(A)	
	73 m+p-Xylenes	106	10.581	10.581	(1.034)	4009448	300.000	292	
	70 1-Chlorohexane	91	10.581	10.581	(1.034)	6474060	150.000	(a)	
	74 o-Xylene	106	11.185	11.182	(1.093)	2051339	150.000	161(A)	
	76 Bromoform	173	11.249	11.253	(1.100)	729456	150.000	188(A)	
	75 Styrene	104	11.269	11.266	(1.102)	3380179	150.000	160(A)	
	77 Isopropylbenzene	105	11.651	11.652	(0.862)	4668704	150.000	140	
$	78 P-Bromofluorobenzene	95	12.002	12.002	(2.077)	441750	50.0000	51.6	

Data File: \\target_server\gg\chem\gcms-s.i\S062221.b\S0343.D
Report Date: 29-Jun-2021 12:34

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	80 Bromobenzene	156	12.105	12.105	(0.896)	1316774	150.000	146	
	79 cis-1,4-Dichloro-2-Butene	53	12.153	12.153	(0.899)	328234	150.000	155(A)	
	81 N-Propylbenzene	91	12.230	12.227	(0.905)	5193357	150.000	130	
	82 1,1,2,2-Tetrachloroethane	83	12.365	12.362	(0.915)	1355470	150.000	136	
	83 2-Chlorotoluene	91	12.391	12.391	(0.917)	3423333	150.000	138	
	84 1,2,3-Trichloropropane	75	12.494	12.494	(0.925)	1060810	150.000	136	
	85 1,3,5-Trimethylbenzene	105	12.529	12.526	(0.927)	4005429	150.000	146	
	86 trans-1,4-Dichloro-2-Butene	53	12.593	12.590	(0.932)	338545	150.000	152(A)	
	87 4-Chlorotoluene	91	12.625	12.626	(0.934)	3563512	150.000	138	
	88 tert-Butylbenzene	119	12.934	12.934	(0.957)	3573492	150.000	149	
	90 1,2,4-Trimethylbenzene	105	13.037	13.037	(0.965)	3994579	150.000	144	
	91 sec-Butylbenzene	105	13.175	13.179	(0.975)	4813954	150.000	139	
	92 P-Isopropyltoluene	119	13.397	13.394	(0.991)	4263027	150.000	148	
	93 1,3-Dichlorobenzene	146	13.404	13.404	(0.992)	2401919	150.000	147	
*	94 1,4-Dichlorobenzene-D4	152	13.513	13.513	(1.000)	512306	50.0000		
	95 1,4-Dichlorobenzene	146	13.532	13.533	(1.001)	2424058	150.000	141	
	96 1,2,3-Trimethylbenzene	105	13.609	13.606	(1.007)	4080847	150.000	141	
	97 N-Butylbenzene	91	13.953	13.954	(1.033)	3901855	150.000	153(A)	
	99 1,2-Dichlorobenzene	146	14.079	14.079	(1.042)	2307375	150.000	146	
	100 1,2-Dibromo-3-Chloropropane	157	15.159	15.159	(1.122)	253470	150.000	177(A)	
	101 1,3,5-Trichlorobenzene	180	15.198	15.198	(1.125)	1754813	150.000	167(A)	
	102 Hexachlorobutadiene	225	16.050	16.047	(1.188)	769383	150.000	178(A)	
	103 1,2,4-Trichlorobenzene	180	16.047	16.047	(1.187)	1665722	150.000	182(A)	
	104 Naphthalene	128	16.471	16.468	(1.219)	3714661	150.000	166(A)	
	105 1,2,3-Trichlorobenzene	180	16.709	16.709	(1.237)	1494007	150.000	168(A)	
M	98 1,2-Dichloroethylene (total)	96				2353992	150.000	296	
M	106 Xylenes (total)	106				6060787	150.000	453	
M	55 Total Alkylbenzenes	100				29745693	150.000	1010	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount
exceeded maximum amount.


Data File: \\target_server\gg\chem\gcms-s.i\S062221.b\S0343.D
Date : 22-JUN-2021 13:33
Client ID:
Sample Info: WG301173-6
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-s.i
Operator: CR
Column diameter: 0.18
\\target_server\gg\chem\gcms-s.i\S062221.b\S0343.D
Y (x10^7)
Min
-Chloroethane (1.281)
-Vinyl Chloride (1.270)
-Bromomethane (1.453)
-Chloroethane (1.514)+
-Diethyl Ether (1.800)
-1,1-Dichloroethene (1.929)+
-Acrolein (2.167)+
-Methylene Chloride (2.337)+
-trans-1,2-Dichlorbethene (2.456)+
-Tertiary-butyl alcohol (2.646)
-Acetonitrile (2.774)
-Di-isopropyl ether (2.877)+
-1,1-Dichlorethane (2.993)+
-Ethyl tertiary-butyl ethe (3.240)+
-cis-1,2-Dichloroethene (3.556)
-2,2-Dichloropropane (3.678)+
-Bromochloromethane (3.787)
-Chloroform (3.893)
-Carbon Tetrachloride (4.035)+
-1,1,1-Trichloroethane (4.138)
-1,1-Dichloropropene (4.314)+
-Benzene (4.687)+
-Methacrylonitrile (4.806)+
-1,2-Dichloroethane-D4 (4.925)+
-1,2-Dichloroethane (5.038)
-Isobutyl Alcohol (5.250)
-Methylcyclohexane (5.629)+
-1,4-Difluorobenzene (5.777)
-Dibromomethane (6.350)
-1,2-Dichloropropane (6.520)
-Bromodichloromethane (6.665)
-1,4-Dioxane (7.009)+
cis-1,3-dichloropropene (7.671)+
-Toluene-D8 (7.938)+
-Tetrachloroethene (8.562)
-4-Methyl-2-pentanone (8.671)+
-1,1,2-Trichloroethane (8.922)
-Ethyl Methacrylate (9.131)
-Dibromochloromethane (9.150)
-1,3-Dichloropropane (9.298)
-1,2-Dibromoethane (9.440)
-2-Hexanone (9.941)
-Chlorobenzene-D5 (10.231)+
-Ethylbenzene (10.350)+
m+p-Xylenes (10.581)+
-o-Xylene (11.186)+
-Isopropylbenzene (11.652)
-P-Bromofluorobenzene (12.002)
-Bromobenzene (12.105)+
-N-Propylbenzene (12.230)
-1,1,2,2-Tetrachloroethane (12.391)+
-1,2,3-Trichloropropane (12.494)+
-4-Chlorotoluene (12.626)
-tert-Butylbenzene (12.935)
-1,2,4-Trimethylbenzene (13.038)
-sec-Butylbenzene (13.176)
-1,4-Dichlorobenzene-D4 (13.513)+
P-Isopropyltoluene (13.398)+
-N-Butylbenzene (13.954)
-1,2-Dichlorobenzene (14.163)
-1,2-Dibromo-3-Chloropropa (15.160)+
Hexachlorobutadiene (16.047)+
-Naphthalene (16.468)
-1,2,3-Trichlorobenzene (16.709)

Data File: \\target_server\gg\chem\gcms-s.i\S062221.b\S0344.D
Report Date: 29-Jun-2021 12:34

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-s.i\S062221.b\S0344.D
Lab Smp Id: WG301173-5
Inj Date : 22-JUN-2021 14:02
Operator : CR Inst ID: gcms-s.i
Smp Info : WG301173-5
Misc Info :
Comment : SW846 5030C
Method : \\target_server\gg\chem\gcms-s.i\S062221.b\S8A05(14)D.m
Meth Date : 23-Jun-2021 06:48 CROY Quant Type: ISTD
Cal Date : 22-JUN-2021 14:02 Cal File: S0344.D
Als bottle: 8 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: T6-O360

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution 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)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.108	1.109	(0.226)	607797	100.000	101	
2	Chloromethane	50	1.221	1.224	(0.249)	737922	100.000	98.0	
3	Vinyl chloride	62	1.266	1.269	(0.258)	555184	100.000	101	
4	Bromomethane	94	1.452	1.456	(0.297)	142631	100.000	85.3	
5	Chloroethane	64	1.517	1.523	(0.310)	145999	100.000	55.7	
6	Trichlorofluoromethane	101	1.603	1.610	(0.327)	588435	100.000	91.1	
7	Diethyl Ether	59	1.796	1.800	(0.367)	343843	100.000	89.7	
8	1,1-Dichloroethene	96	1.925	1.932	(0.393)	417045	100.000	89.4	
9	Freon-113	151	1.947	1.951	(0.398)	363305	100.000	91.7	
10	Carbon Disulfide	76	1.951	1.954	(0.398)	913303	100.000	91.4	
11	Iodomethane	142	2.028	2.031	(0.414)	516301	100.000	106	
12	Acrolein	56	2.166	2.166	(0.442)	279393	500.000	476	
13	Allyl Chloride	41	2.253	2.256	(0.460)	527428	100.000	92.7	
14	Methylene Chloride	84	2.336	2.340	(0.477)	822336	100.000	84.0	
15	Acetone	43	2.385	2.385	(0.487)	722614	500.000	437	
16	trans-1,2-Dichloroethene	96	2.455	2.459	(0.501)	794414	100.000	98.6	
17	Methyl Acetate	43	2.475	2.478	(0.505)	474170	100.000	91.9	
18	Methyl tert-butyl ether	73	2.549	2.549	(0.520)	1930304	100.000	100	
20	Acetonitrile	41	2.770	2.771	(0.566)	711581	1000.00	848	
21	Di-isopropyl ether	45	2.877	2.877	(0.587)	1809756	100.000	98.8	
19	Tertiary-butyl alcohol	59	2.642	2.639	(0.539)	279020	500.000	443	
22	Chloroprene	53	2.967	2.967	(0.606)	943120	100.000	103	
23	1,1-Dichloroethane	63	2.989	2.996	(0.610)	1246388	100.000	95.0	

Data File: \\target_server\gg\chem\gcms-s.i\S062221.b\S0344.D
Report Date: 29-Jun-2021 12:34

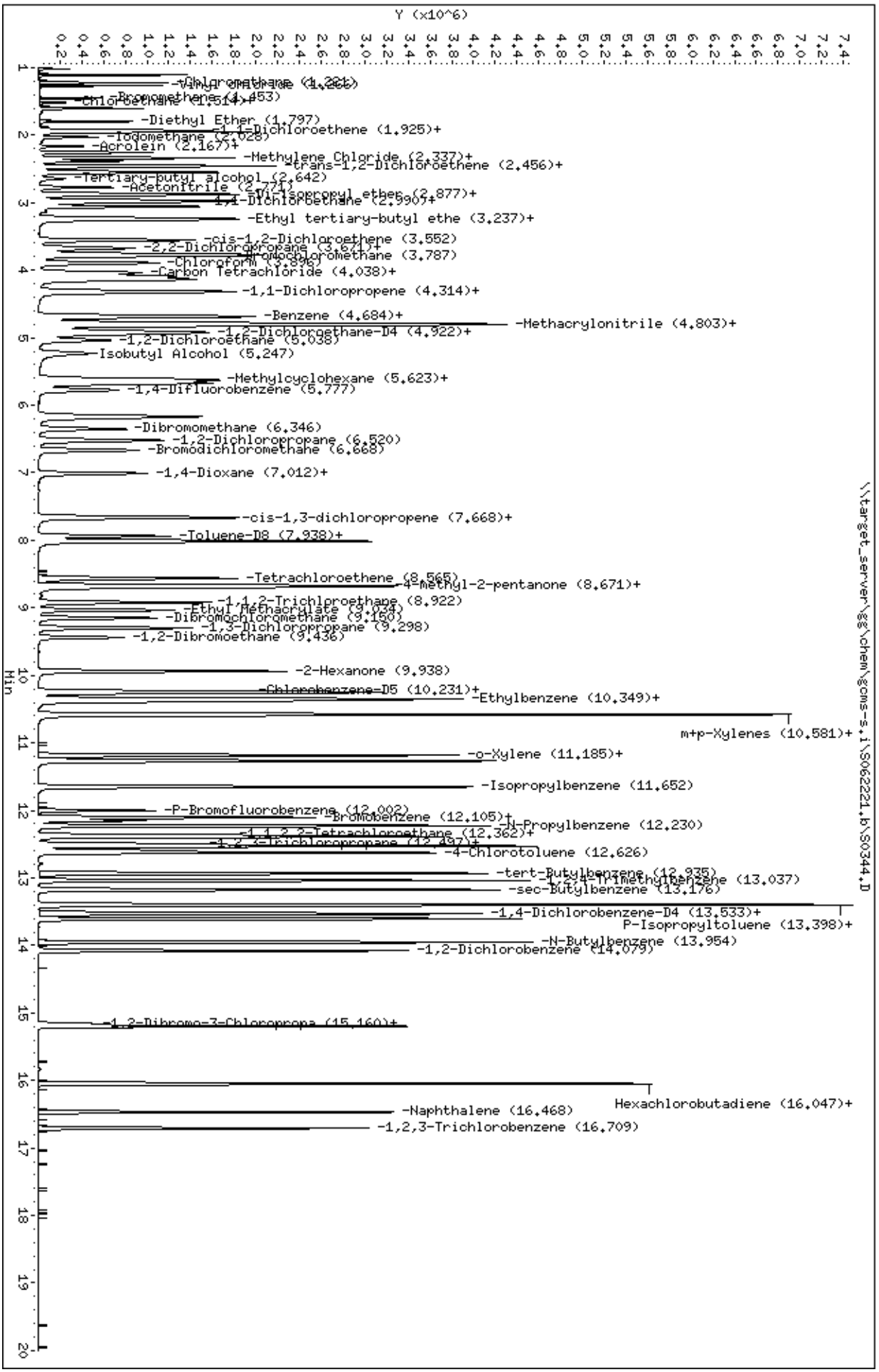
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	24 Acrylonitrile	52	3.057	3.060	(0.624)	991567	500.000	478	
	25 Ethyl tertiary-butyl ether	59	3.237	3.240	(0.661)	1952369	100.000	103	
	26 Vinyl Acetate	43	3.256	3.260	(0.564)	891945	100.000	101	
	27 cis-1,2-Dichloroethene	96	3.552	3.555	(0.725)	880007	100.000	102	
	28 2,2-Dichloropropane	77	3.671	3.678	(0.749)	903309	100.000	98.7	
	30 Cyclohexane	56	3.764	3.768	(0.768)	1186258	100.000	101	
	29 Bromochloromethane	128	3.787	3.790	(0.773)	368212	100.000	99.9	
	31 Chloroform	83	3.896	3.893	(0.795)	1296647	100.000	96.9	
	32 Carbon Tetrachloride	117	4.037	4.041	(0.699)	952486	100.000	105	
	33 Tetrahydrofuran	42	4.086	4.089	(0.834)	889388	500.000	492	
$	34 Dibromofluoromethane	113	4.131	4.134	(0.843)	286133	50.0000	49.2	
	35 1,1,1-Trichloroethane	97	4.137	4.136	(0.844)	1146797	100.000	101	
	37 1,1-Dichloropropene	75	4.314	4.314	(0.747)	1058302	100.000	103	
	36 2-Butanone	43	4.327	4.330	(0.883)	1165888	500.000	475	
	38 Benzene	78	4.684	4.687	(0.811)	3171532	100.000	98.6	
	39 Propionitrile	54	4.777	4.777	(0.975)	949278	1000.00	904	
	40 Methacrylonitrile	41	4.803	4.803	(0.980)	2884779	1000.00	960	
*	41 Pentafluorobenzene	168	4.899	4.903	(1.000)	510979	50.0000		
$	42 1,2-Dichloroethane-D4	65	4.922	4.922	(1.005)	284783	50.0000	47.0	
	43 Tertiary-amyl methyl ether	73	4.931	4.932	(1.007)	1777736	100.000	104	
	44 1,2-Dichloroethane	62	5.037	5.041	(0.872)	866331	100.000	93.7	
	45 Isobutyl Alcohol	43	5.246	5.237	(1.071)	350081	2000.00	2150	
	46 Methylcyclohexane	83	5.622	5.629	(1.148)	1441888	100.000	107	
	47 Trichloroethene	95	5.674	5.678	(0.982)	773463	100.000	99.7	
*	48 1,4-Difluorobenzene	114	5.777	5.777	(1.000)	993953	50.0000		
	49 Dibromomethane	93	6.346	6.349	(1.099)	460200	100.000	100	
	50 1,2-Dichloropropane	63	6.520	6.520	(1.129)	755409	100.000	99.4	
	51 Bromodichloromethane	83	6.667	6.668	(1.154)	986495	100.000	106	
	54 1,4-Dioxane	88	7.011	7.009	(1.214)	199044	2000.00	(a)	
	52 Methyl Methacrylate	41	7.008	7.009	(1.213)	454990	100.000	113	
	57 cis-1,3-dichloropropene	75	7.667	7.668	(1.327)	1276483	100.000	107	
	56 2-Chloroethylvinylether	63	7.648	7.648	(1.324)	509758	100.000	115	
$	58 Toluene-D8	98	7.937	7.938	(1.374)	1165009	50.0000	49.8	
	59 Toluene	91	8.011	8.012	(1.387)	3287694	100.000	97.9	
	60 Tetrachloroethene	164	8.564	8.564	(0.837)	640931	100.000	107	
	61 4-methyl-2-pentanone	43	8.671	8.670	(1.501)	2322868	500.000	518	
	62 trans-1,3-Dichloropropene	75	8.696	8.696	(1.505)	1069691	100.000	107	
	63 1,1,2-Trichloroethane	97	8.921	8.919	(1.544)	725444	100.000	100	
	53 Ethyl Methacrylate	69	9.034	9.034	(1.564)	1016324	100.000	117	
	64 Dibromochloromethane	129	9.150	9.153	(0.894)	798564	100.000	111	
	65 1,3-Dichloropropane	76	9.298	9.298	(0.909)	1293395	100.000	98.5	
	66 1,2-Dibromoethane	107	9.436	9.439	(1.633)	735852	100.000	106	
	67 2-Hexanone	43	9.937	9.941	(0.971)	1613836	500.000	534	
*	68 Chlorobenzene-D5	117	10.230	10.234	(1.000)	964377	50.0000		
	69 Chlorobenzene	112	10.256	10.253	(1.002)	2133825	100.000	99.5	
	71 Ethylbenzene	106	10.349	10.349	(1.012)	1259478	100.000	105	
	72 1,1,1,2-Tetrachloroethane	131	10.378	10.382	(1.014)	768495	100.000	108	
	73 m+p-Xylenes	106	10.580	10.581	(1.034)	2908543	200.000	208	
	70 1-Chlorohexane	91	10.580	10.581	(1.034)	5020279	100.000	(a)	
	74 o-Xylene	106	11.185	11.182	(1.093)	1436576	100.000	110	
	76 Bromoform	173	11.249	11.253	(1.100)	500045	100.000	123	
	75 Styrene	104	11.269	11.266	(1.102)	2424716	100.000	112	
	77 Isopropylbenzene	105	11.651	11.652	(0.862)	3445850	100.000	103	
$	78 P-Bromofluorobenzene	95	12.002	12.002	(2.077)	443788	50.0000	50.2	

Data File: \\target_server\gg\chem\gcms-s.i\S062221.b\S0344.D
Report Date: 29-Jun-2021 12:34

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	80	Bromobenzene	156	12.105	12.105	(0.896)	921931	100.000	101	
	79	cis-1,4-Dichloro-2-Butene	53	12.150	12.153	(0.899)	225914	100.000	105	
	81	N-Propylbenzene	91	12.230	12.227	(0.905)	3926682	100.000	97.9	
	82	1,1,2,2-Tetrachloroethane	83	12.362	12.362	(0.915)	957428	100.000	96.4	
	83	2-Chlorotoluene	91	12.391	12.391	(0.917)	2459933	100.000	99.0	
	84	1,2,3-Trichloropropane	75	12.497	12.494	(0.925)	750585	100.000	96.0	
	85	1,3,5-Trimethylbenzene	105	12.529	12.526	(0.927)	2929125	100.000	105	
	86	trans-1,4-Dichloro-2-Butene	53	12.590	12.590	(0.931)	231577	100.000	103	
	87	4-Chlorotoluene	91	12.625	12.626	(0.934)	2575678	100.000	99.2	
	88	tert-Butylbenzene	119	12.934	12.934	(0.957)	2580342	100.000	106	
	90	1,2,4-Trimethylbenzene	105	13.037	13.037	(0.965)	2923030	100.000	104	
	91	sec-Butylbenzene	105	13.175	13.179	(0.975)	3594536	100.000	103	
	92	P-Isopropyltoluene	119	13.397	13.394	(0.991)	3166055	100.000	108	
	93	1,3-Dichlorobenzene	146	13.404	13.404	(0.992)	1708266	100.000	103	
*	94	1,4-Dichlorobenzene-D4	152	13.516	13.513	(1.000)	514887	50.0000		
	95	1,4-Dichlorobenzene	146	13.532	13.533	(1.001)	1724891	100.000	100	
	96	1,2,3-Trimethylbenzene	105	13.606	13.606	(1.007)	3019781	100.000	103	
	97	N-Butylbenzene	91	13.953	13.954	(1.032)	2853709	100.000	109	
	99	1,2-Dichlorobenzene	146	14.079	14.079	(1.042)	1639639	100.000	103	
	100	1,2-Dibromo-3-Chloropropane	157	15.159	15.159	(1.122)	177969	100.000	119	
	101	1,3,5-Trichlorobenzene	180	15.198	15.198	(1.124)	1228215	100.000	114	
	102	Hexachlorobutadiene	225	16.046	16.047	(1.187)	527226	100.000	118	
	103	1,2,4-Trichlorobenzene	180	16.046	16.047	(1.187)	1138838	100.000	120	
	104	Naphthalene	128	16.468	16.468	(1.218)	2758241	100.000	119	
	105	1,2,3-Trichlorobenzene	180	16.709	16.709	(1.236)	1045669	100.000	114	
M	98	1,2-Dichloroethylene (total)	96				1674421	100.000	200	
M	106	Xylenes (total)	106				4345119	100.000	318	
M	55	Total Alkylbenzenes	100				21973479	100.000	734	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).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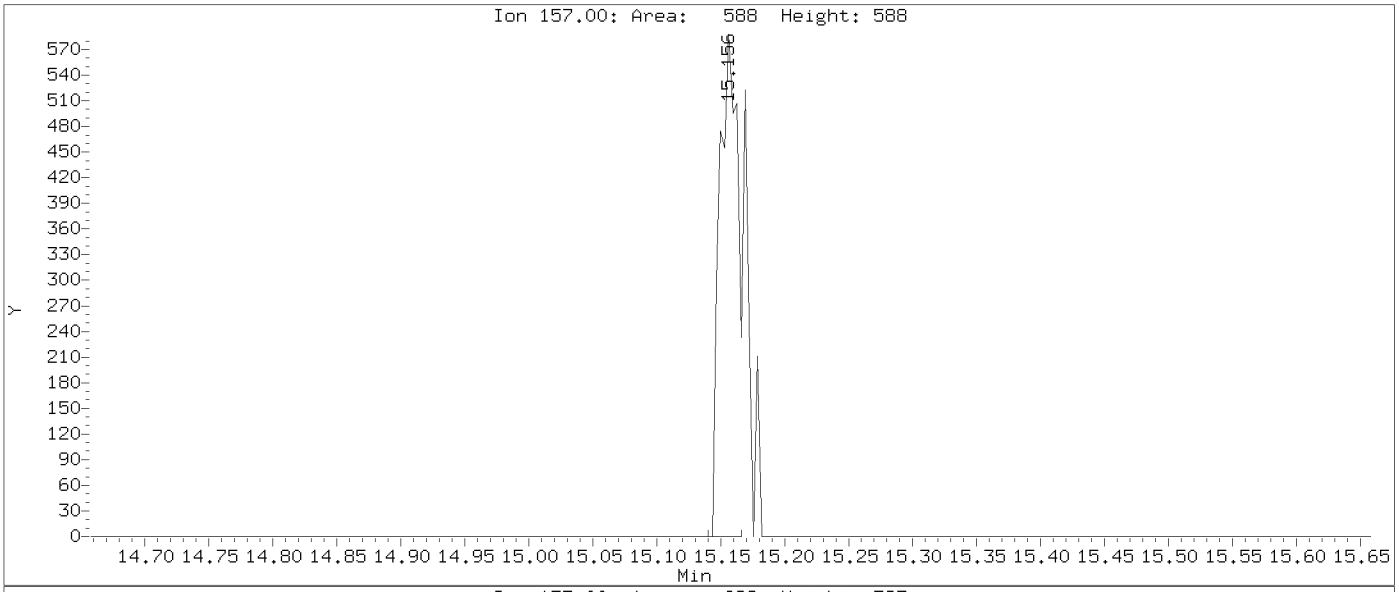
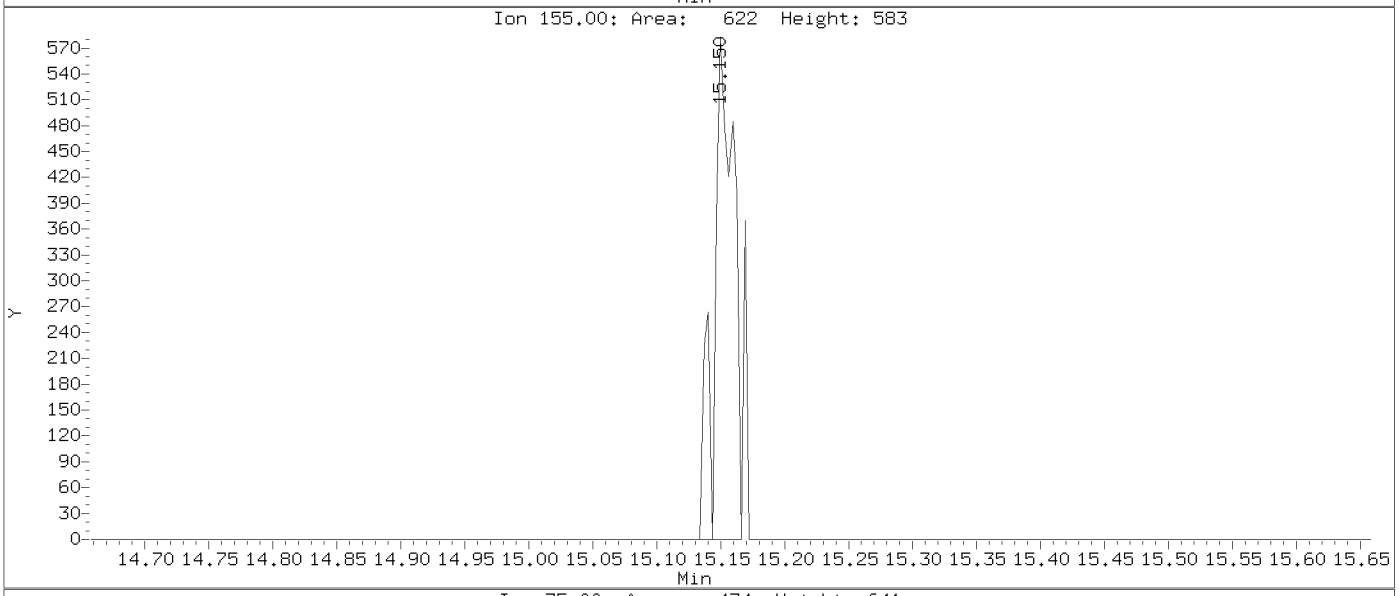
Date : 22-JUN-2021 14:02
Client ID:
Sample Info: WG301173-5
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-s.i
Operator: CR
Column diameter: 0.18
\\target_server\gg\chem\gcms-s.i\S062221.b\S0344.D
Y (x10^6)
Min
-Chloromethane (1.261)
-Vinyl Chloride (1.286)
-Bromomethane (1.453)
-Chloroethane (1.514)+
-Diethyl Ether (1.797)
-1,1-Dichloroethene (1.925)+
-Iodomethane (2.028)
-Acrolein (2.167)+
-Methylene Chloride (2.337)+
-trans-1,2-Dichloroethene (2.456)+
-Tertiary-butyl alcohol (2.642)
-Acetonitrile (2.771)
-Di-isopropyl ether (2.877)+
-1,1-Dichloroethane (2.990)+
-Ethyl tertiary-butyl ethe (3.237)+
-cis-1,2-Dichloroethene (3.552)
-2,2-Dichloropropane (3.671)+
-Bromochloromethane (3.787)
-Chloroform (3.896)
-Carbon Tetrachloride (4.038)+
-1,1-Dichloropropene (4.314)+
-Benzene (4.684)+
-Methacrylonitrile (4.803)+
-1,2-Dichloroethane-D4 (4.922)+
-1,2-Dichloroethane (5.038)
-Isobutyl Alcohol (5.247)
-Methylcyclohexane (5.623)+
-1,4-Difluorobenzene (5.777)
-Dibromomethane (6.346)
-1,2-Dichloropropane (6.520)
-Bromodichloromethane (6.668)
-1,4-Dioxane (7.012)+
-cis-1,3-dichloropropene (7.668)+
-Toluene-D8 (7.938)+
-Tetrachloroethene (8.565)
-4-methyl-2-pentanone (8.671)+
-1,1,2-Trichloroethane (8.922)
-Ethyl Methacrylate (9.054)
-Dibromochloromethane (9.160)
-1,3-Dichloropropane (9.298)
-1,2-Dibromoethane (9.436)
-2-Hexanone (9.938)
-Chlorobenzene-D5 (10.231)+
-Ethylbenzene (10.349)+
m+p-Xylenes (10.581)+
-o-Xylene (11.185)+
-Isopropylbenzene (11.652)
-P-Bromofluorobenzene (12.002)
-Bromobenzene (12.105)+
-N-Propylbenzene (12.230)
-1,1,2,2-Tetrachloroethane (12.362)+
-1,2,3-Trichloropropane (12.497)+
-4-Chlorotoluene (12.626)
-tert-Butylbenzene (12.935)
-1,2,4-Trimethylbenzene (13.037)
-sec-Butylbenzene (13.176)
-1,4-Dichlorobenzene-D4 (13.533)+
P-Isopropyltoluene (13.398)+
-N-Butylbenzene (13.954)
-1,2-Dichlorobenzene (14.079)
-1,2-Dibromo-3-Chloropropa (15.160)+
Hexachlorobutadiene (16.047)+
-Naphthalene (16.468)
-1,2,3-Trichlorobenzene (16.709)

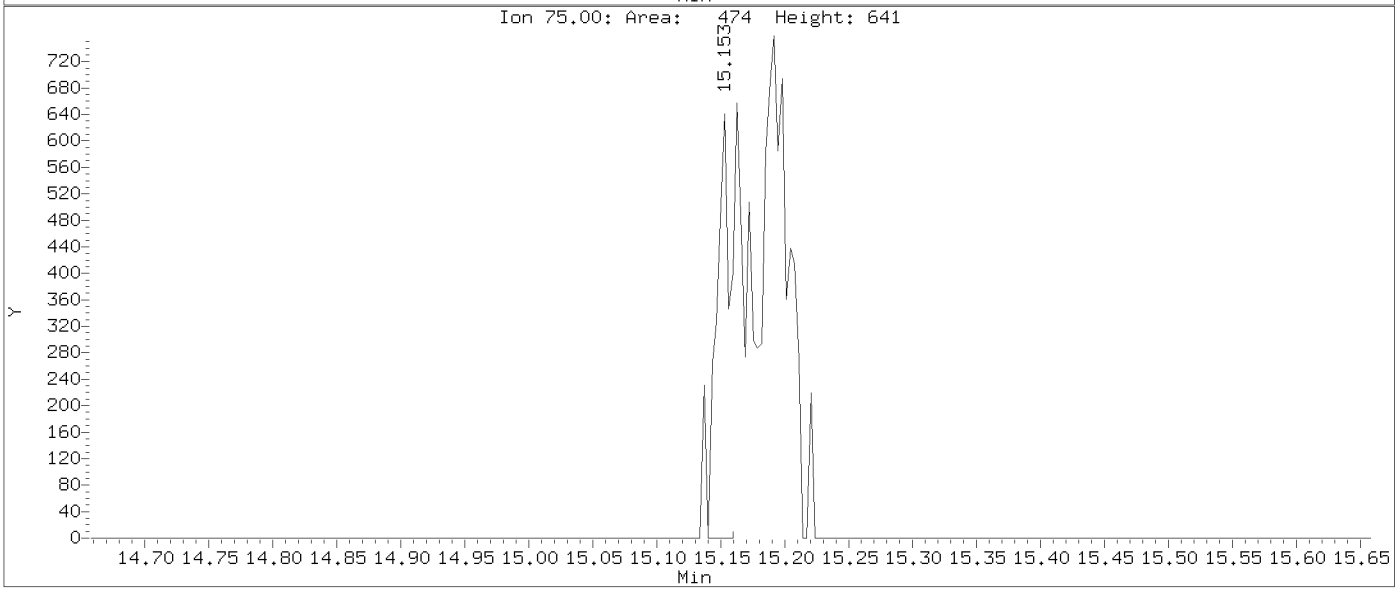
Data File: \\target_server\gg\chem\gcms-s.i\S062221.b\S0342.D
Injection Date: 22-JUN-2021 13:03
Instrument: gcms-s.i
Client Sample ID:

Compound: 1,2-Dibromo-3-Chloropropane
CAS Number: 96-12-8

BEFORE MANUAL INTEGRATION







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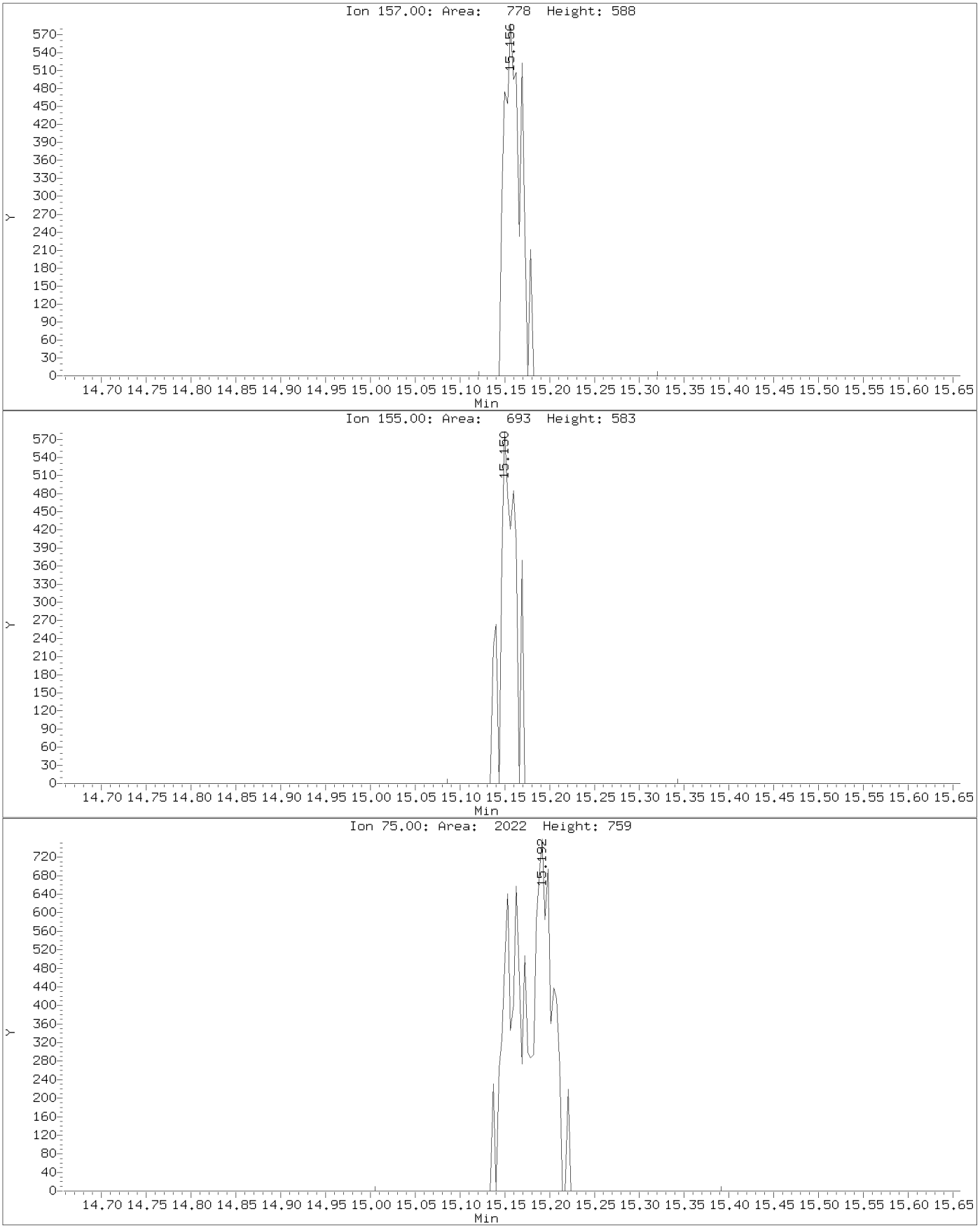
Injection Date: 22-JUN-2021 13:03
Instrument: gcms-s.i
Client Sample ID:

Compound: 1,2-Dibromo-3-Chloropropane
CAS Number: 96-12-8



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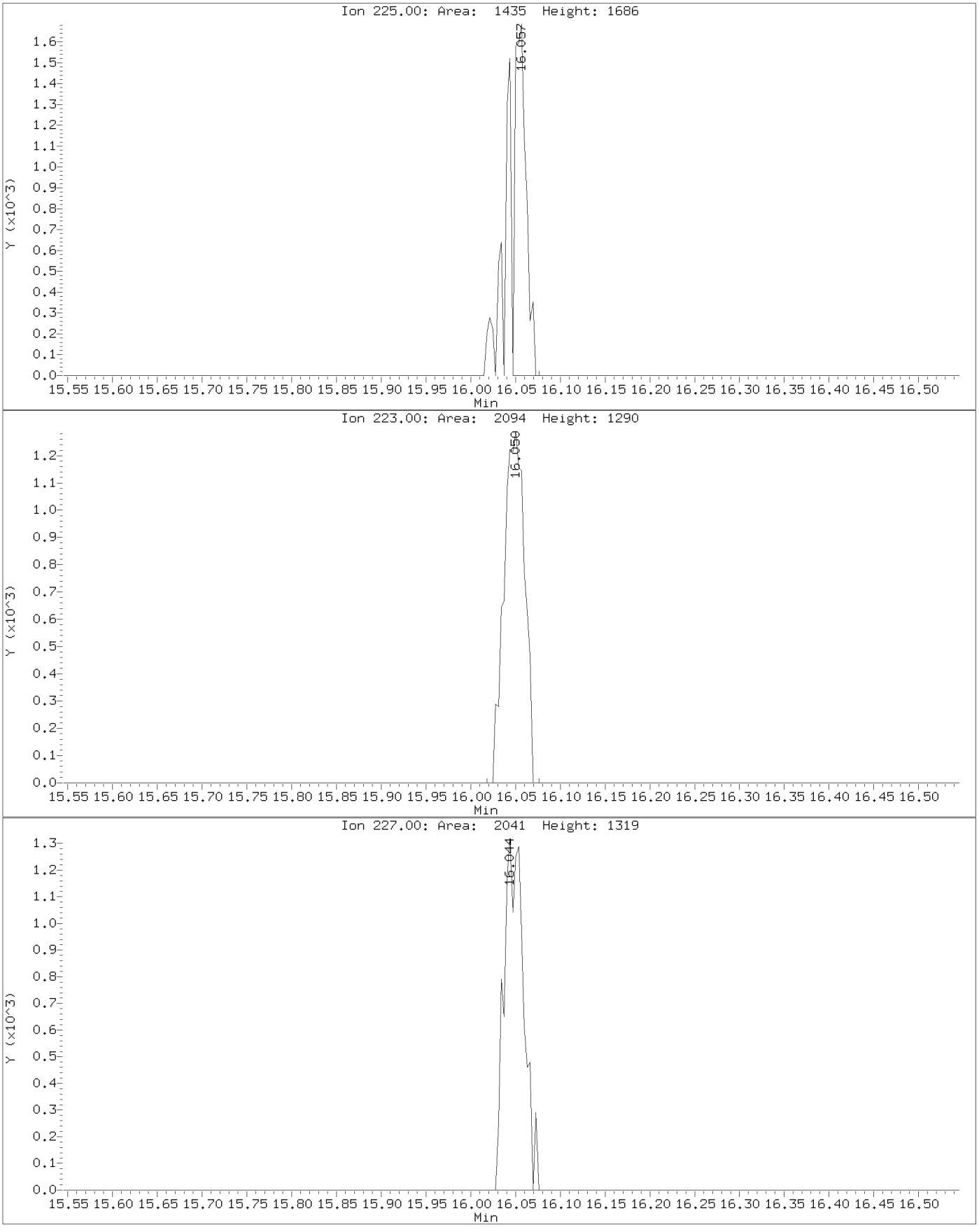
Injection Date: 22-JUN-2021 13:03
Instrument: gcms-s.i
Client Sample ID:

Compound: Hexachlorobutadiene
CAS Number: 87-68-3

BEFORE MANUAL INTEGRATION



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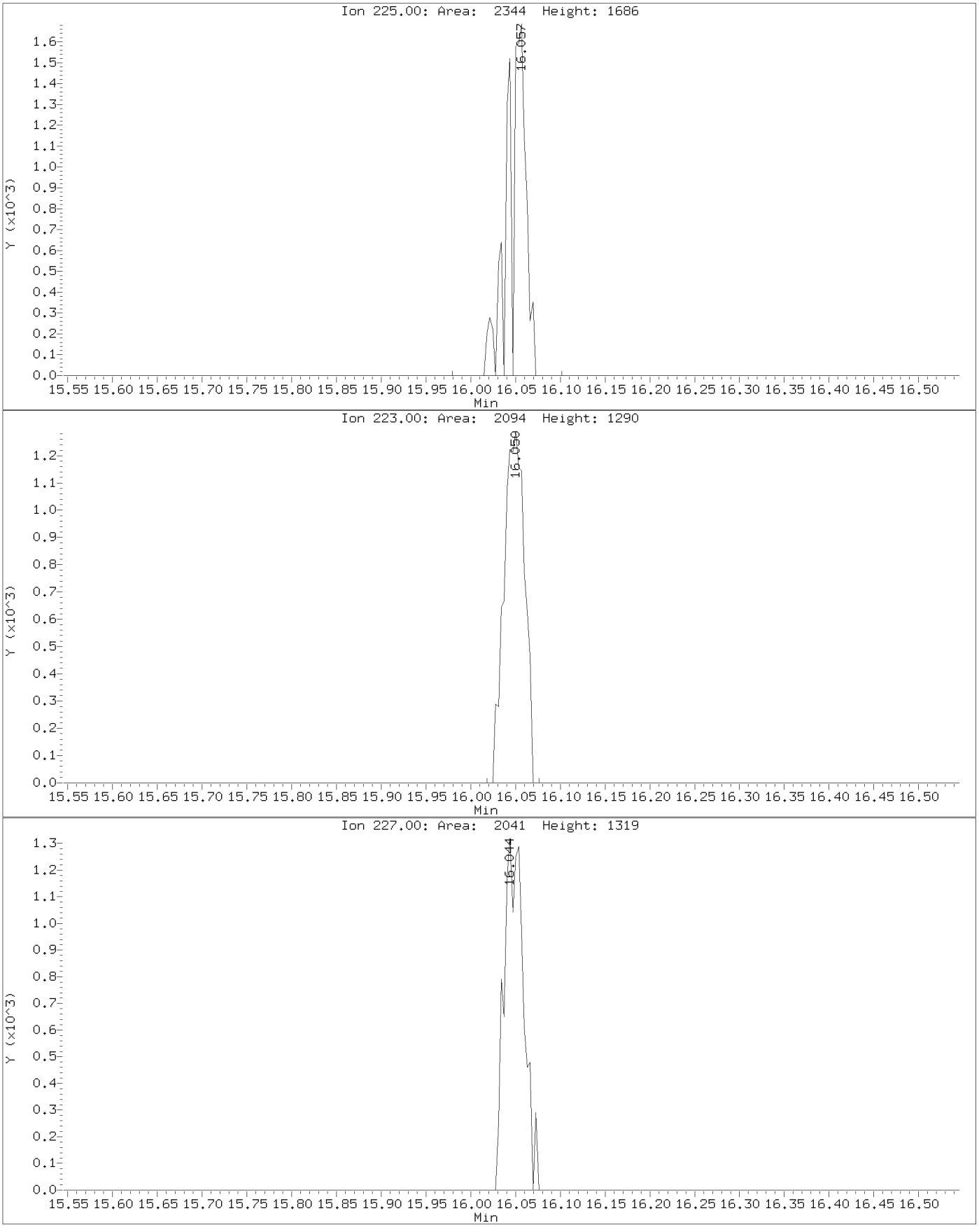
Injection Date: 22-JUN-2021 13:03
Instrument: gcms-s.i
Client Sample ID:

Compound: Hexachlorobutadiene
CAS Number: 87-68-3

AFTER MANUAL INTEGRATION



Katahdin
ANALYTICAL SERVICES

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SO3743
Project : Fort Devens 2021 LTM
Instrument ID: GCMS-T
Lab File IDs : T2383.D T2382.D T2381.D T2380.D T2378.D T2377.D T2379.D
Calibration Date(s): 23-JUN-21 09:10 23-JUN-21 12:27

	1.0000 Level 1	5.0000 Level 2	20.0000 Level 3	50.0000 Level 4	100.0000 Level 5	150.0000 Level 6	75.0000 Level 7		Curve Type	b	m1	m2	%RSD	MAX %RSD	
Dichlorodifluoromethane	0.61136	0.65016	0.68260	0.65285	0.65051	0.65704	0.68444		AVG		.6556		3.728	15	O
Chloromethane	0.65602	0.65752	0.67023	0.61961	0.59993	0.58415	0.65806		AVG		.6351		5.291	15	O
Vinyl chloride	0.55070	0.54733	0.59658	0.55320	0.55568	0.54124	0.61767		AVG		.5661		5.136	15	O
Bromomethane	3022	11019	37327	83539	157138	230214	124510		LNR	0	.1901		.9951	.99	O
Chloroethane	0.27045	0.27752	0.28871	0.22321	+++++	+++++	0.21936		AVG		.2558		12.6	15	O
Trichlorofluoromethane	0.67512	0.70129	0.76533	0.68529	0.61237	0.55042	0.75196		AVG		.6774		11.16	15	O
1,1-Dichloroethene	0.36216	0.42898	0.46032	0.43288	0.43142	0.42200	0.46269		AVG		.4286		7.769	15	O
Carbon Disulfide	1.19430	1.05742	1.10472	1.04112	1.01637	0.97945	1.12738		AVG		1.074		6.784	15	O
Methylene Chloride	6492	23172	84183	201586	386254	567427	309312		LNR	0	.4676		.9956	.99	O
Acetone	6706	28639	90767	240153	473931	710471	315874		LNR	0	.1126		.9983	.99	O
trans-1,2-Dichloroethene	0.54043	0.51821	0.51637	0.50024	0.48527	0.49339	0.52125		AVG		.5107		3.697	15	O
Methyl tert-butyl ether	1.18200	1.42189	1.29440	1.31378	1.43225	1.39353	1.33422		AVG		1.339		6.528	15	O
1,1-Dichloroethane	0.84707	0.94971	0.93959	0.89708	0.89021	0.86284	0.93427		AVG		.903		4.392	15	O
Vinyl Acetate	0.41841	0.46827	0.45595	0.48554	0.47454	0.46920	0.47046		AVG		.4632		4.664	15	O
cis-1,2-Dichloroethene	0.50676	0.57907	0.56361	0.54608	0.54543	0.53770	0.56677		AVG		.5493		4.311	15	O
1,2-Dichloroethylene (total	+++++	+++++	+++++	+++++	+++++	+++++	+++++		AVG		0		0	15	MO
2,2-Dichloropropane	0.52061	0.68389	0.72490	0.73745	0.77264	0.78468	0.80108		AVG		.7179		13.32	15	O
Bromochloromethane	0.22126	0.24721	0.23911	0.22741	0.21613	0.21690	0.24097		AVG		.2299		5.464	15	O
Chloroform	0.97734	1.00449	0.97328	0.93662	0.93308	0.91749	0.98158		AVG		.9606		3.292	15	O
Carbon Tetrachloride	0.27695	0.36502	0.38824	0.39360	0.40064	0.40188	0.41114		AVG		.3768		12.31	15	O
1,1,1-Trichloroethane	0.66832	0.86177	0.86139	0.82662	0.84607	0.83648	0.87772		AVG		.8255		8.649	15	O
1,1-Dichloropropene	0.36633	0.41810	0.42061	0.40817	0.40852	0.40398	0.42841		AVG		.4077		4.935	15	O
2-Butanone	0.24316	0.25403	0.21217	0.24033	0.24186	0.22295	0.20628		AVG		.2315		7.71	15	O
Benzene	1.12501	1.22719	1.18725	1.16343	1.12651	1.10953	1.18422		AVG		1.16		3.647	15	O
1,2-Dichloroethane	0.45742	0.43709	0.40348	0.39582	0.38694	0.38437	0.39944		AVG		.4092		6.708	15	O
Trichloroethene	0.26789	0.28968	0.29083	0.28939	0.28354	0.28229	0.29857		AVG		.286		3.36	15	O
Dibromomethane	0.17905	0.18918	0.17898	0.18163	0.18052	0.18210	0.18585		AVG		.1825		2.062	15	O
1,2-Dichloropropane	0.25918	0.29065	0.28065	0.27941	0.27819	0.27378	0.29243		AVG		.2792		3.977	15	O
Bromodichloromethane	0.30316	0.39053	0.39952	0.40425	0.41122	0.41569	0.42582		AVG		.3929		10.48	15	O
cis-1,3-dichloropropene	0.37035	0.45828	0.48867	0.49425	0.49974	0.49902	0.52403		AVG		.4763		10.62	15	O
Toluene	0.62272	0.73138	0.71667	0.70204	0.70203	0.68883	0.72797		AVG		.6988		5.271	15	O
4-methyl-2-pentanone	0.20049	0.25208	0.22921	0.26626	0.25530	0.24204	0.23134		AVG		.2395		9.058	15	O
Tetrachloroethene	0.19942	0.22092	0.22932	0.23090	0.23119	0.23217	0.23901		AVG		.2261		5.714	15	O
trans-1,3-Dichloropropene	0.33284	0.39424	0.40395	0.42904	0.43661	0.43896	0.44354		AVG		.4113		9.551	15	O
1,1,2-Trichloroethane	0.19940	0.22639	0.21374	0.21881	0.21998	0.21676	0.22276		AVG		.2168		4.01	15	O
Dibromochloromethane	0.22020	0.28941	0.31080	0.32423	0.33336	0.33321	0.33348		AVG		.3064		13.48	15	O

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P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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sales@katahdinlab.com

Katahdin
ANALYTICAL SERVICES

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SO3743
Project : Fort Devens 2021 LTM
Instrument ID: GCMS-T
Lab File IDs : T2383.D T2382.D T2381.D T2380.D T2378.D T2377.D T2379.D
Calibration Date(s): 23-JUN-21 09:10 23-JUN-21 12:27

1,3-Dichloropropane	0.47336	0.50505	0.49409	0.50628	0.49654	0.48787	0.50394		AVG		.4953		2.374	15	O
1,2-Dibromoethane	0.25700	0.27853	0.26570	0.27854	0.27849	0.27727	0.27781		AVG		.2733		3.137	15	O
2-Hexanone	0.14428	0.18243	0.16442	0.19693	0.19375	0.17989	0.16791		AVG		.1757		10.43	15	O
Chlorobenzene	0.74962	0.78444	0.77172	0.75862	0.74492	0.73422	0.77676		AVG		.76		2.412	15	O
Ethylbenzene	1.22009	1.40816	1.40902	1.39165	1.35956	1.31927	1.42423		AVG		1.362		5.284	15	O
1,1,1,2-Tetrachloroethane	0.23628	0.27305	0.28484	0.28860	0.29260	0.28983	0.30129		AVG		.2809		7.633	15	O
Xylenes (total)	+++++	+++++	+++++	+++++	+++++	+++++	+++++		AVG		0		0	15	MO
m+p-Xylenes	0.86769	1.05376	1.05990	1.03908	0.99845	0.94961	1.05796		AVG		1.004		7.197	15	O
o-Xylene	0.80207	1.05128	1.05561	1.04507	1.03124	1.00009	1.07432		AVG		1.008		9.312	15	O
Styrene	0.59609	0.80253	0.83576	0.84996	0.85050	0.83487	0.88034		AVG		.8072		11.89	15	O
Bromoform	1669	10732	45636	133824	280873	420228	192074		LNR	0	.1992		.9983	.99	O
Isopropylbenzene	2.06613	2.69660	2.75878	2.67578	2.63422	2.49519	2.76808		AVG		2.585		9.53	15	O
Bromobenzene	0.61847	0.66586	0.65602	0.65507	0.64984	0.63260	0.66888		AVG		.6495		2.786	15	O
N-Propylbenzene	2.59637	3.15100	3.23567	3.13971	3.07726	2.88722	3.24603		AVG		3.048		7.626	15	O
1,1,2,2-Tetrachloroethane	0.69071	0.77243	0.70125	0.77093	0.76226	0.72613	0.72098		AVG		.735		4.584	15	O
1,3,5-Trimethylbenzene	1.68373	2.11576	2.19214	2.15734	2.15286	2.05489	2.23737		AVG		2.085		8.918	15	O
2-Chlorotoluene	1.63040	1.90355	1.89821	1.84629	1.82274	1.73467	1.91911		AVG		1.822		5.791	15	O
1,2,3-Trichloropropane	0.62247	0.63075	0.57881	0.62568	0.61639	0.58634	0.58533		AVG		.6065		3.643	15	O
4-Chlorotoluene	1.80392	2.03239	1.95531	1.94460	1.89104	1.81422	1.97718		AVG		1.917		4.426	15	O
tert-Butylbenzene	1.35175	1.74041	1.85263	1.82123	1.83249	1.73980	1.89630		AVG		1.748		10.51	15	O
1,2,4-Trimethylbenzene	1.60842	2.10846	2.17676	2.13903	2.12994	2.01663	2.22359		AVG		2.058		10.11	15	O
P-Isopropyltoluene	1.61472	2.09891	2.27498	2.26766	2.30910	2.19172	2.37265		AVG		2.161		11.86	15	O
1,3-Dichlorobenzene	1.19360	1.19531	1.15873	1.13870	1.14154	1.10826	1.18913		AVG		1.161		2.877	15	O
1,4-Dichlorobenzene	1.28013	1.23669	1.18563	1.16311	1.16956	1.13409	1.21378		AVG		1.198		4.141	15	O
N-Butylbenzene	1.50990	1.87386	2.04308	2.08103	2.11092	2.01671	2.18175		AVG		1.974		11.43	15	O
sec-Butylbenzene	2.10286	2.57276	2.73226	2.65285	2.64193	2.49601	2.75361		AVG		2.565		8.654	15	O
1,2-Dichlorobenzene	1.03898	1.09697	1.07202	1.07650	1.07003	1.04238	1.11035		AVG		1.072		2.433	15	O
1,2-Dibromo-3-Chloropropane	478	3514	13889	44215	98580	140176	58433		QUA	0	7.955	-2.099	.9935	.99	O
Hexachlorobutadiene	0.28756	0.27972	0.28411	0.28615	0.31405	0.31033	0.31020		AVG		.296		4.987	15	O
1,2,4-Trichlorobenzene	0.63599	0.58907	0.60250	0.66355	0.70659	0.70321	0.69104		AVG		.656		7.315	15	O
Naphthalene	7329	48976	202040	617788	1292365	1869431	834078		LNR	0	1.85		.9969	.99	O
1,2,3-Trichlorobenzene	0.55069	0.55851	0.54264	0.58839	0.62333	0.61331	0.59697		AVG		.582		5.449	15	O
Dibromofluoromethane	0.54585	0.54775	0.56092	0.54885	0.55014	0.55840	0.55848		AVG		.5529		1.11	15	
1,2-Dichloroethane-D4	0.65238	0.63619	0.64102	0.62991	0.63611	0.64074	0.62687		AVG		.6376		1.31	15	
Toluene-D8	1.11388	1.12850	1.11836	1.12782	1.12262	1.11813	1.12930		AVG		1.123		.5403	15	
P-Bromofluorobenzene	0.44445	0.44849	0.44500	0.44396	0.43581	0.43336	0.43788		AVG		.4413		1.266	15	

Legend: O = Kept Original Curve
Y = Failed Minimum RF

600 Technology Way
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Katahdin
ANALYTICAL SERVICES

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
Project : Fort Devens 2021 LTM
Lab File IDs : T2383.D T2382.D T2381.D T2380.D T2378.D T2377.D T2379.D

SDG: SO3743
Instrument ID: GCMS-T
Calibration Date(s): 23-JUN-21 09:10 23-JUN-21 12:27

W = Failed %RSD Value

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P.O. Box 540, Scarborough, ME 04070
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http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\gcms-t.i\T062421.b\T2389A.D
Report Date: 01-Jul-2021 09:30

Katahdin Analytical Services

RECOVERY REPORT

Client Name: Client SDG: SDGa02236
Sample Matrix: LIQUID Fraction: VOA
Lab Smp Id: WG301327-6
Level: LOW Operator: CR
Data Type: MS DATA SampleType: LCS
SpikeList File: IND_CHECK.spk Quant Type: ISTD
Sublist File: all.sub
Method File: \\target_server\gg\chem\gcms-t.i\T062421.b\T8A05(62)D.m
Misc Info: WG301327,WG301244-4

SPIKE	COMPOUND	CONC ADDED ug/l	CONC RECOVERED ug/l	% RECOVERED	LIMITS
1	Dichlorodifluorome	50.0	54.6	109.20	80-120
2	Chloromethane	50.0	54.2	108.31	80-120
3	Vinyl chloride	50.0	55.2	110.46	80-120
4	Bromomethane	50.0	56.7	113.41	80-120
5	Chloroethane	50.0	53.1	106.28	80-120
6	Trichlorofluoromet	50.0	58.0	116.10	80-120
7	Diethyl Ether	50.0	49.0	97.91	80-120
19	Tertiary-butyl alc	250	191	76.41*	80-120
8	1,1-Dichloroethene	50.0	52.2	104.34	80-120
10	Carbon Disulfide	50.0	61.6	123.32*	80-120
9	Freon-113	50.0	50.1	100.17	80-120
11	Iodomethane	50.0	60.6	121.20*	80-120
12	Acrolein	250	229	91.58	80-120
14	Methylene Chloride	50.0	51.7	103.49	80-120
15	Acetone	50.0	60.4	120.74*	80-120
45	Isobutyl Alcohol	1000	882	88.22	80-120
16	trans-1,2-Dichloro	50.0	49.2	98.31	80-120
13	Allyl Chloride	50.0	51.8	103.66	80-120
18	Methyl tert-butyl	50.0	51.0	102.03	80-120
20	Acetonitrile	500	442	88.44	80-120
21	Di-isopropyl ether	50.0	51.1	102.15	80-120
22	Chloroprene	50.0	51.2	102.47	80-120
39	Propionitrile	500	434	86.83	80-120
40	Methacrylonitrile	500	474	94.84	80-120
23	1,1-Dichloroethane	50.0	52.8	105.68	80-120
24	Acrylonitrile	250	228	91.42	80-120
25	Ethyl tertiary-but	50.0	49.7	99.47	80-120
26	Vinyl Acetate	50.0	75.7	151.36*	80-120
27	cis-1,2-Dichloroet	50.0	50.7	101.43	80-120
M 103	1,2-Dichloroethyle	100	99.9	99.87	80-120
52	Methyl Methacrylat	50.0	49.8	99.59	80-120
28	2,2-Dichloropropan	50.0	57.4	114.86	80-120
30	Bromochloromethane	50.0	54.2	108.34	80-120
31	Chloroform	50.0	50.2	100.44	80-120
32	Carbon Tetrachlori	50.0	52.8	105.60	80-120
33	Tetrahydrofuran	50.0	45.4	90.88	80-120
35	1,1,1-Trichloroeth	50.0	52.5	105.07	80-120
36	1,1-Dichloropropen	50.0	51.2	102.40	80-120
37	2-Butanone	50.0	52.8	105.67	80-120
38	Benzene	50.0	50.5	100.97	80-120

Data File: \\target_server\gg\chem\gcms-t.i\T062421.b\T2389A.D
Report Date: 01-Jul-2021 09:30

SPIKE	COMPOUND	CONC ADDED ug/l	CONC RECOVERED ug/l	% RECOVERED	LIMITS
29	Cyclohexane	50.0	51.8	103.60	80-120
62	Ethyl Methacrylate	50.0	46.2	92.42	80-120
43	Tertiary-amyl meth	50.0	50.6	101.29	80-120
44	1,2-Dichloroethane	50.0	47.3	94.66	80-120
47	Trichloroethene	50.0	50.8	101.60	80-120
49	Dibromomethane	50.0	47.7	95.49	80-120
50	1,2-Dichloropropan	50.0	50.6	101.32	80-120
51	Bromodichlorometha	50.0	51.9	103.74	80-120
55	cis-1,3-dichloropr	50.0	50.5	100.92	80-120
53	1,4-Dioxane	1000	720	72.00*	80-120
54	2-Chloroethylvinyl	50.0	55.6	111.13	80-120
57	Toluene	50.0	50.9	101.77	80-120
59	4-methyl-2-pentano	50.0	51.0	102.04	80-120
58	Tetrachloroethene	50.0	50.3	100.56	80-120
60	trans-1,3-Dichloro	50.0	53.9	107.73	80-120
61	1,1,2-Trichloroeth	50.0	49.2	98.49	80-120
63	Dibromochlorometha	50.0	50.4	100.79	80-120
64	1,3-Dichloropropan	50.0	47.7	95.37	80-120
65	1,2-Dibromoethane	50.0	48.6	97.26	80-120
67	2-Hexanone	50.0	52.5	105.04	80-120
69	Chlorobenzene	50.0	50.5	100.98	80-120
70	Ethylbenzene	50.0	50.6	101.19	80-120
71	1,1,1,2-Tetrachlor	50.0	51.1	102.17	80-120
M 105	Xylenes (total)	150	157	104.52	80-120
72	m+p-Xylenes	100	104	104.11	80-120
73	o-Xylene	50.0	52.7	105.34	80-120
74	Styrene	50.0	51.7	103.42	80-120
75	Bromoform	50.0	45.8	91.58	80-120
76	Isopropylbenzene	50.0	52.4	104.88	80-120
79	cis-1,4-Dichloro-2	50.0	49.5	99.07	80-120
85	trans-1,4-Dichloro	50.0	48.5	96.93	80-120
78	Bromobenzene	50.0	48.7	97.40	80-120
80	N-Propylbenzene	50.0	52.3	104.54	80-120
81	1,1,2,2-Tetrachlor	50.0	46.3	92.58	80-120
84	1,3,5-Trimethylben	50.0	51.0	101.99	80-120
82	2-Chlorotoluene	50.0	51.9	103.89	80-120
83	1,2,3-Trichloropro	50.0	45.1	90.16	80-120
86	4-Chlorotoluene	50.0	51.8	103.56	80-120
87	tert-Butylbenzene	50.0	52.4	104.71	80-120
88	Pentachloroethane	50.0	0.00	*	80-120
89	1,2,4-Trimethylben	50.0	52.4	104.83	80-120
91	P-Isopropyltoluene	50.0	53.5	106.98	80-120
92	1,3-Dichlorobenzen	50.0	49.4	98.79	80-120
94	1,4-Dichlorobenzen	50.0	48.6	97.25	80-120
96	N-Butylbenzene	50.0	52.7	105.32	80-120
90	sec-Butylbenzene	50.0	53.6	107.16	80-120
97	1,2-Dichlorobenzen	50.0	49.9	99.87	80-120
98	1,2-Dibromo-3-Chlo	50.0	46.2	92.31	80-120
99	1,3,5-Trichloroben	50.0	49.9	99.77	80-120
100	Hexachlorobutadien	50.0	48.0	95.97	80-120
101	1,2,4-Trichloroben	50.0	48.2	96.37	80-120
95	1,2,3-Trimethylben	50.0	50.4	100.89	80-120
102	Naphthalene	50.0	44.0	88.00	80-120
104	1,2,3-Trichloroben	50.0	47.3	94.63	80-120

Data File: \\target_server\gg\chem\gcms-t.i\T062421.b\T2389A.D
Report Date: 01-Jul-2021 09:30

	SPIKE COMPOUND	CONC ADDED ug/l	CONC RECOVERED ug/l	% RECOVERED	LIMITS
	17 Methyl Acetate	50.0	36.3	72.70*	80-120
	46 Methylcyclohexane	50.0	51.9	103.85	80-120
M	66 Total Alkylbenzene	350	368	105.07	80-120

	SURROGATE COMPOUND	AMOUNT ADDED ug/l	AMOUNT RECOVERED ug/l	% RECOVERED	LIMITS
$	34 Dibromofluorometha	50.0	49.3	98.69	68-128
$	42 1,2-Dichloroethane	50.0	48.8	97.53	67-135
$	56 Toluene-D8	50.0	50.0	100.07	65-128
$	77 P-Bromofluorobenze	50.0	50.6	101.11	56-133

Data File: \\target_server\gg\chem\gcms-t.i\T062421.b\T2389A.D
Report Date: 01-Jul-2021 09:30

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T062421.b\T2389A.D
Lab Smp Id: WG301327-6
Inj Date : 24-JUN-2021 11:24
Operator : CR   Inst ID: gcms-t.i
Smp Info : WG301327-6
Misc Info : WG301327,WG301244-4
Comment   : SW846 5030
Method   : \\target_server\gg\chem\gcms-t.i\T062421.b\T8A05(62)D.m
Meth Date : 01-Jul-2021 08:58 croy   Quant Type: ISTD
Cal Date : 23-JUN-2021 12:27   Cal File: T2383.D
Als bottle: 2   QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.225	1.225	(0.231)	298993	54.6020	54.6	
2	Chloromethane	50	1.352	1.356	(0.255)	287268	54.1537	54.2	
3	Vinyl chloride	62	1.397	1.398	(0.264)	261134	55.2288	55.2	
4	Bromomethane	94	1.599	1.600	(0.302)	90046	56.7059	56.7	
5	Chloroethane	64	1.678	1.675	(0.317)	113570	53.1419	53.1	
6	Trichlorofluoromethane	101	1.768	1.764	(0.334)	328466	58.0512	58.0	
7	Diethyl Ether	59	1.970	1.970	(0.372)	140724	48.9536	49.0	
8	1,1-Dichloroethene	96	2.116	2.112	(0.399)	186790	52.1708	52.2	
9	Freon-113	151	2.138	2.134	(0.403)	139077	50.0860	50.1	
10	Carbon Disulfide	76	2.142	2.142	(0.404)	553350	61.6595	61.6(R)	
11	Iodomethane	142	2.224	2.225	(0.420)	225766	60.5991	60.6(R)	
12	Acrolein	56	2.366	2.367	(0.447)	157425	228.945	229	
13	Allyl Chloride	41	2.467	2.468	(0.466)	223618	51.8280	51.8	
14	Methylene Chloride	84	2.553	2.554	(0.482)	202101	51.7466	51.7	
15	Acetone	43	2.602	2.603	(0.491)	56781	60.3696	60.4(R)	
16	trans-1,2-Dichloroethene	96	2.684	2.685	(0.507)	209694	49.1533	49.2	
17	Methyl Acetate	43	2.699	2.700	(0.509)	115192	36.3500	36.3(R)	
18	Methyl tert-butyl ether	73	2.778	2.782	(0.524)	570538	51.0166	51.0	
19	Tertiary-butyl alcohol	59	2.875	2.876	(0.543)	93798	191.032	191(R)	
20	Acetonitrile	41	3.017	3.018	(0.569)	247518	442.177	442	
21	Di-isopropyl ether	45	3.133	3.134	(0.591)	670958	51.0765	51.1	
22	Chloroprene	53	3.235	3.239	(0.610)	341378	51.2329	51.2	
23	1,1-Dichloroethane	63	3.261	3.261	(0.615)	398549	52.8413	52.8	
24	Acrylonitrile	52	3.328	3.329	(0.628)	306167	228.538	228	

Data File: \\target_server\gg\chem\gcms-t.i\T062421.b\T2389A.D
Report Date: 01-Jul-2021 09:30

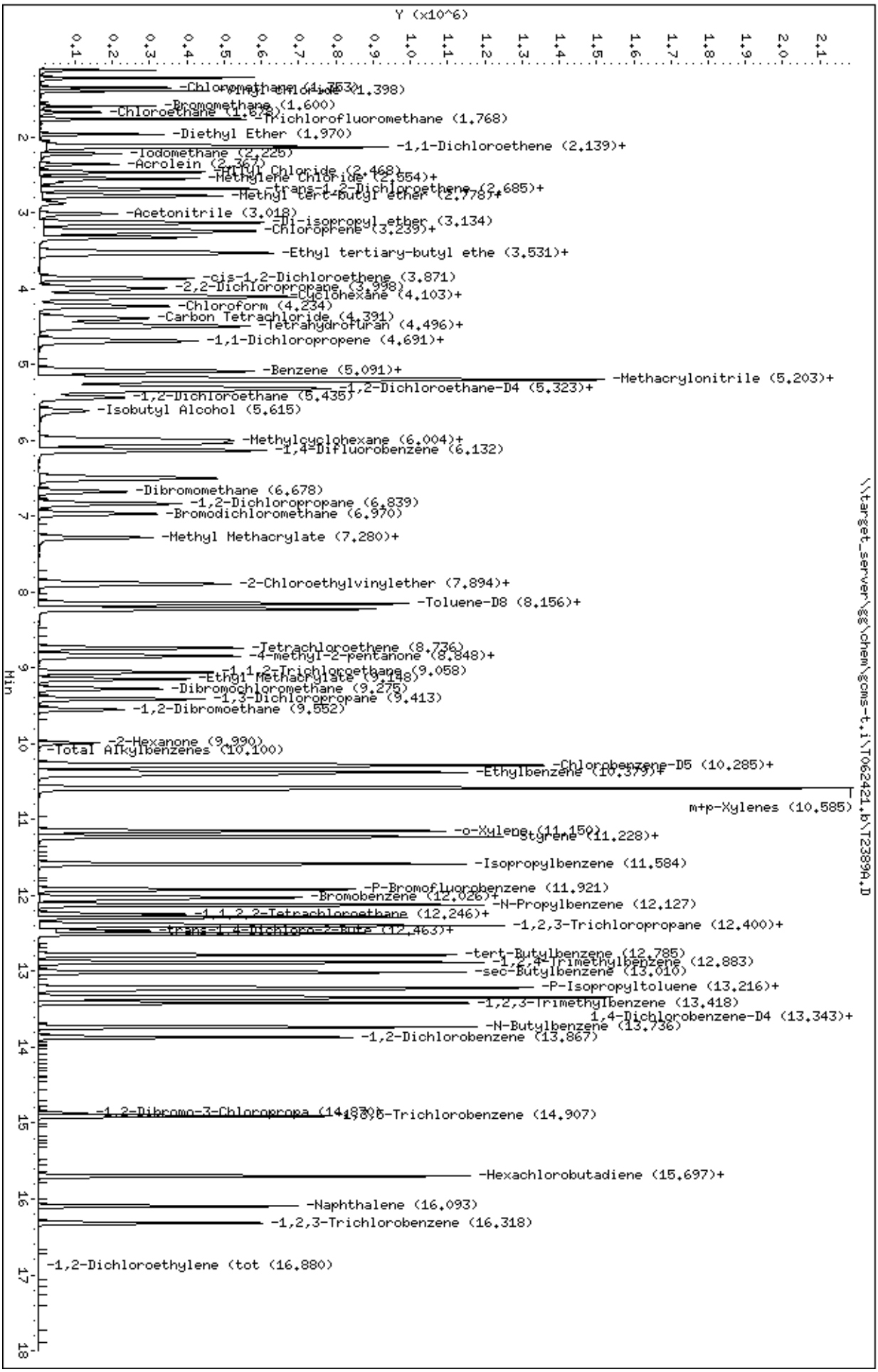
		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
	25	Ethyl tertiary-butyl ether	59	3.523	3.523	(0.665)	611801	49.7360	49.7	
	26	Vinyl Acetate	43	3.541	3.546	(0.578)	512972	75.6776	75.7(R)	
	27	cis-1,2-Dichloroethene	96	3.871	3.871	(0.730)	232702	50.7130	50.7	
	28	2,2-Dichloropropane	77	3.998	4.002	(0.754)	344373	57.4293	57.4	
	29	Cyclohexane	56	4.103	4.103	(0.774)	339822	51.8014	51.8	
	30	Bromochloromethane	128	4.121	4.118	(0.778)	104008	54.1719	54.2	
	31	Chloroform	83	4.234	4.234	(0.799)	402939	50.2205	50.2	
	32	Carbon Tetrachloride	117	4.391	4.395	(0.716)	291136	52.8011	52.8	
	33	Tetrahydrofuran	42	4.451	4.448	(0.840)	63409	45.4378	45.4	
$	34	Dibromofluoromethane	113	4.488	4.489	(0.847)	227891	49.3442	49.3	
	35	1,1,1-Trichloroethane	97	4.499	4.496	(0.849)	362243	52.5360	52.5	
	36	1,1-Dichloropropene	75	4.690	4.687	(0.765)	305495	51.1998	51.2	
	37	2-Butanone	43	4.709	4.702	(0.888)	102185	52.8356	52.8	
	38	Benzene	78	5.091	5.091	(0.830)	857317	50.4839	50.5	
	39	Propionitrile	54	5.177	5.177	(0.977)	275245	434.170	434	
	40	Methacrylonitrile	41	5.203	5.207	(0.982)	1160342	474.219	474	
*	41	Pentafluorobenzene	168	5.300	5.304	(1.000)	417644	50.0000		
$	42	1,2-Dichloroethane-D4	65	5.323	5.327	(1.004)	259726	48.7674	48.8	
	43	Tertiary-amyl methyl ether	73	5.341	5.338	(1.008)	524264	50.6467	50.6	
	44	1,2-Dichloroethane	62	5.435	5.439	(0.886)	283451	47.3318	47.3	
	45	Isobutyl Alcohol	43	5.615	5.615	(1.059)	147721	882.160	882	
	46	Methylcyclohexane	83	6.000	5.997	(1.132)	354812	51.9268	51.9	
	47	Trichloroethene	95	6.045	6.049	(0.986)	212635	50.8003	50.8	
*	48	1,4-Difluorobenzene	114	6.131	6.139	(1.000)	731699	50.0000		
	49	Dibromomethane	93	6.677	6.678	(1.089)	127491	47.7439	47.7	
	50	1,2-Dichloropropane	63	6.838	6.839	(1.115)	206971	50.6589	50.6	
	51	Bromodichloromethane	83	6.973	6.970	(1.137)	298213	51.8678	51.9	
	52	Methyl Methacrylate	41	7.280	7.280	(1.187)	170453	49.7949	49.8	
	53	1,4-Dioxane	88	7.284	7.292	(1.188)	43470	719.989	720(R)	
	54	2-Chloroethylvinylether	63	7.875	7.872	(1.284)	128424	55.5642	55.6	
	55	cis-1,3-dichloropropene	75	7.901	7.902	(1.289)	351756	50.4622	50.5	
$	56	Toluene-D8	98	8.156	8.156	(1.330)	822015	50.0345	50.0	
	57	Toluene	92	8.223	8.223	(1.341)	520382	50.8867	50.9	
	58	Tetrachloroethene	164	8.736	8.744	(0.850)	159467	50.2811	50.3	
	59	4-methyl-2-pentanone	43	8.825	8.822	(1.439)	178843	51.0212	51.0	
	60	trans-1,3-Dichloropropene	75	8.848	8.852	(1.443)	324227	53.8664	53.9	
	61	1,1,2-Trichloroethane	83	9.057	9.058	(1.477)	156256	49.2429	49.2	
	62	Ethyl Methacrylate	69	9.147	9.152	(1.492)	258299	46.2120	46.2	
	63	Dibromochloromethane	129	9.274	9.275	(0.903)	216560	50.3971	50.4	
	64	1,3-Dichloropropane	76	9.413	9.410	(0.916)	331238	47.6831	47.7	
	65	1,2-Dibromoethane	107	9.551	9.552	(1.558)	194509	48.6278	48.6	
M	66	Total Alkylbenzenes	100				5540638	367.759	368	
	67	2-Hexanone	43	9.989	9.990	(0.972)	129394	52.5217	52.5	
*	68	Chlorobenzene-D5	117	10.274	10.274	(1.000)	701252	50.0000		
	69	Chlorobenzene	112	10.296	10.297	(1.002)	538208	50.4903	50.5	
	70	Ethylbenzene	91	10.375	10.379	(1.010)	966290	50.5963	50.6	
	71	1,1,1,2-Tetrachloroethane	131	10.408	10.409	(1.013)	201269	51.0833	51.1	
	72	m+p-Xylenes	91	10.584	10.585	(1.030)	1465674	104.111	104	
	73	o-Xylene	91	11.149	11.150	(1.085)	744966	52.6677	52.7	
	74	Styrene	104	11.228	11.232	(1.093)	585390	51.7115	51.7	
	75	Bromoform	173	11.220	11.221	(1.092)	127938	45.7880	45.8	
	76	Isopropylbenzene	105	11.583	11.584	(0.868)	913794	52.4403	52.4	
$	77	P-Bromofluorobenzene	95	11.920	11.921	(1.944)	326466	50.5547	50.6	
	78	Bromobenzene	156	12.025	12.022	(0.902)	213246	48.7024	48.7	

Data File: \\target_server\gg\chem\gcms-t.i\T062421.b\T2389A.D
Report Date: 01-Jul-2021 09:30

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
	79 cis-1,4-Dichloro-2-Butene	53	12.051	12.052	(0.903)	69535	49.5362	49.5	
	80 N-Propylbenzene	91	12.126	12.127	(0.909)	1073811	52.2685	52.3	
	81 1,1,2,2-Tetrachloroethane	83	12.246	12.246	(0.918)	229346	46.2915	46.3	
	82 2-Chlorotoluene	91	12.283	12.284	(0.921)	638043	51.9446	51.9	
	83 1,2,3-Trichloropropane	75	12.377	12.377	(0.928)	184327	45.0819	45.1	
	84 1,3,5-Trimethylbenzene	105	12.399	12.400	(0.930)	716680	50.9939	51.0	
	85 trans-1,4-Dichloro-2-Butene	53	12.463	12.463	(0.934)	71593	48.4646	48.5	
	86 4-Chlorotoluene	91	12.504	12.505	(0.937)	669104	51.7790	51.8	
	87 tert-Butylbenzene	119	12.785	12.785	(0.958)	616849	52.3551	52.4	
	89 1,2,4-Trimethylbenzene	105	12.882	12.883	(0.966)	726978	52.4135	52.4	
	90 sec-Butylbenzene	105	13.013	13.010	(0.976)	926263	53.5777	53.6	
	91 P-Isopropyltoluene	119	13.211	13.212	(0.990)	779323	53.4880	53.5	
	92 1,3-Dichlorobenzene	146	13.238	13.238	(0.992)	386520	49.3974	49.4	
*	93 1,4-Dichlorobenzene-D4	152	13.339	13.339	(1.000)	337053	50.0000		
	94 1,4-Dichlorobenzene	146	13.354	13.354	(1.001)	392539	48.6243	48.6	
	95 1,2,3-Trimethylbenzene	105	13.417	13.418	(1.006)	721592	50.4455	50.4	
	96 N-Butylbenzene	91	13.735	13.736	(1.030)	700734	52.6624	52.7	
	97 1,2-Dichlorobenzene	146	13.866	13.871	(1.040)	360993	49.9331	49.9	
	98 1,2-Dibromo-3-Chloropropane	157	14.869	14.873	(1.115)	40391	46.1553	46.2	
	99 1,3,5-Trichlorobenzene	180	14.910	14.911	(1.118)	247239	49.8868	49.9	
	100 Hexachlorobutadiene	225	15.696	15.693	(1.177)	95753	47.9852	48.0	
	101 1,2,4-Trichlorobenzene	180	15.700	15.700	(1.177)	213084	48.1864	48.2	
	102 Naphthalene	128	16.093	16.093	(1.206)	548881	44.0020	44.0	
M	103 1,2-Dichloroethylene (total)	96				442396	99.8663	99.9	
	104 1,2,3-Trichlorobenzene	180	16.317	16.318	(1.223)	185619	47.3141	47.3	
M	105 Xylenes (total)	91				2210640	156.778	157	

QC Flag Legend

R - Spike/Surrogate failed recovery limits.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Client ID:
Sample Info: WG301327-6
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-t.i
Operator: CR
Column diameter: 0.18
\\target_server\gg\chem\gcms-t.i\T062421.b\T2389A.D
Y (x10^6)
Min
-Chloromethane (1.753)
-Vinyl Chloride (1.398)
-Bromomethane (1.600)
-Chloroethane (1.678)
-Trichlorofluoromethane (1.768)
-Diethyl Ether (1.970)
-1,1-Dichloroethene (2.139)+
-Iodomethane (2.225)
-Acrolein (2.367)
-Ethyl Chloride (2.468)
-Methylene Chloride (2.554)+
-trans-1,2-Dichloroethene (2.685)+
-Methyl tert-butyl ether (2.778)+
-Acetonitrile (3.018)
-Di-isopropyl ether (3.134)
-Chloroprene (3.239)+
-Ethyl tertiary-butyl ethe (3.531)+
-cis-1,2-Dichloroethene (3.871)
-2,2-Dichloropropane (3.998)
-Cyclohexane (4.103)+
-Chloroform (4.234)
-Carbon Tetrachloride (4.391)
-Tetrahydrofuran (4.496)+
-1,1-Dichloropropene (4.691)+
-Benzene (5.091)+
-Methacrylonitrile (5.203)+
-1,2-Dichloroethane-D4 (5.323)+
-1,2-Dichloroethane (5.435)
-Isobutyl Alcohol (5.615)
-Methylcyclohexane (6.004)+
-1,4-Difluorobenzene (6.132)
-Dibromomethane (6.678)
-1,2-Dichloropropane (6.839)
-Bromodichloromethane (6.970)
-Methyl Methacrylate (7.280)+
-2-Chloroethylvinylether (7.894)+
-Toluene-D8 (8.156)+
-Tetrachloroethene (8.736)
-4-methyl-2-pentanone (8.848)+
-1,1,2-Trichloroethane (9.058)
-Ethyl Methacrylate (9.148)
-Dibromochloromethane (9.275)
-1,3-Dichloropropane (9.413)
-1,2-Dibromoethane (9.552)
-2-Hexanone (9.990)
-Total Alkylbenzenes (10.100)
-Chlorobenzene-D5 (10.285)+
-Ethylbenzene (10.379)+
m+p-Xylenes (10.585)
-o-Xylene (11.150)
-Styrene (11.228)+
-Isopropylbenzene (11.584)
-P-Bromofluorobenzene (11.921)
-Bromobenzene (12.026)+
-N-Propylbenzene (12.127)
-1,1,2,2-Tetrachloroethane (12.246)+
-1,2,3-Trichloropropane (12.400)+
-trans-1,4-Dichloro-2-Bute (12.463)+
-tert-Butylbenzene (12.785)
-1,2,4-Trimethylbenzene (12.883)
-sec-Butylbenzene (13.010)
-P-Isopropyltoluene (13.216)+
-1,2,3-Trimethylbenzene (13.418)
1,4-Dichlorobenzene-D4 (13.343)+
-N-Butylbenzene (13.736)
-1,2-Dichlorobenzene (13.867)
-1,2-Dibromo-3-Chloropropa (14.870)+
-1,3,5-Trichlorobenzene (14.907)
-Hexachlorobutadiene (15.697)+
-Naphthalene (16.093)
-1,2,3-Trichlorobenzene (16.318)
-1,2-Dichloroethylene (tot (16.880)

Data File: \\target_server\gg\chem\gcms-t.i\T062321.b\T2377.D
Report Date: 29-Jun-2021 13:54

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T062321.b\T2377.D
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Inj Date : 23-JUN-2021 09:10
Operator : CR Inst ID: gcms-t.i
Smp Info : WG301244-6
Misc Info :
Comment : SW846 5030
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Meth Date : 24-Jun-2021 09:26 hgould Quant Type: ISTD
Cal Date : 23-JUN-2021 09:10 Cal File: T2377.D
Als bottle: 1 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: ORGANICS2

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.225	1.225	(0.231)	819688	150.000	149	
2	Chloromethane	50	1.352	1.356	(0.255)	728751	150.000	142	
3	Vinyl chloride	62	1.397	1.398	(0.263)	675222	150.000	143	
4	Bromomethane	94	1.596	1.600	(0.301)	230214	150.000	146	
5	Chloroethane	64	1.663	1.675	(0.314)	82415	150.000	44.8	
6	Trichlorofluoromethane	101	1.756	1.764	(0.331)	686670	150.000	127	
7	Diethyl Ether	59	1.970	1.970	(0.371)	395765	150.000	141	
8	1,1-Dichloroethene	96	2.108	2.112	(0.398)	526464	150.000	145	
9	Freon-113	151	2.131	2.134	(0.402)	402332	150.000	144	
10	Carbon Disulfide	76	2.134	2.142	(0.402)	1221902	150.000	141	
11	Iodomethane	142	2.221	2.225	(0.419)	542865	150.000	148	
12	Acrolein	56	2.366	2.367	(0.446)	493818	750.000	723	
13	Allyl Chloride	41	2.464	2.468	(0.465)	562730	150.000	133	
14	Methylene Chloride	84	2.554	2.554	(0.481)	567427	150.000	146	
15	Acetone	43	2.606	2.603	(0.491)	710471	750.000	758(A)	
16	trans-1,2-Dichloroethene	96	2.681	2.685	(0.505)	615530	150.000	148	
17	Methyl Acetate	43	2.700	2.700	(0.509)	589382	150.000	167(A)	
18	Methyl tert-butyl ether	73	2.778	2.782	(0.524)	1738486	150.000	153(A)	
19	Tertiary-butyl alcohol	59	2.887	2.876	(0.544)	299373	750.000	683	
20	Acetonitrile	41	3.018	3.018	(0.569)	698443	1500.00	1460	
21	Di-isopropyl ether	45	3.134	3.134	(0.591)	1880784	150.000	144	
22	Chloroprene	53	3.231	3.239	(0.609)	968419	150.000	146	
23	1,1-Dichloroethane	63	3.261	3.261	(0.615)	1076428	150.000	144	

Data File: \\target_server\gg\chem\gcms-t.i\T062321.b\T2377.D
Report Date: 29-Jun-2021 13:54

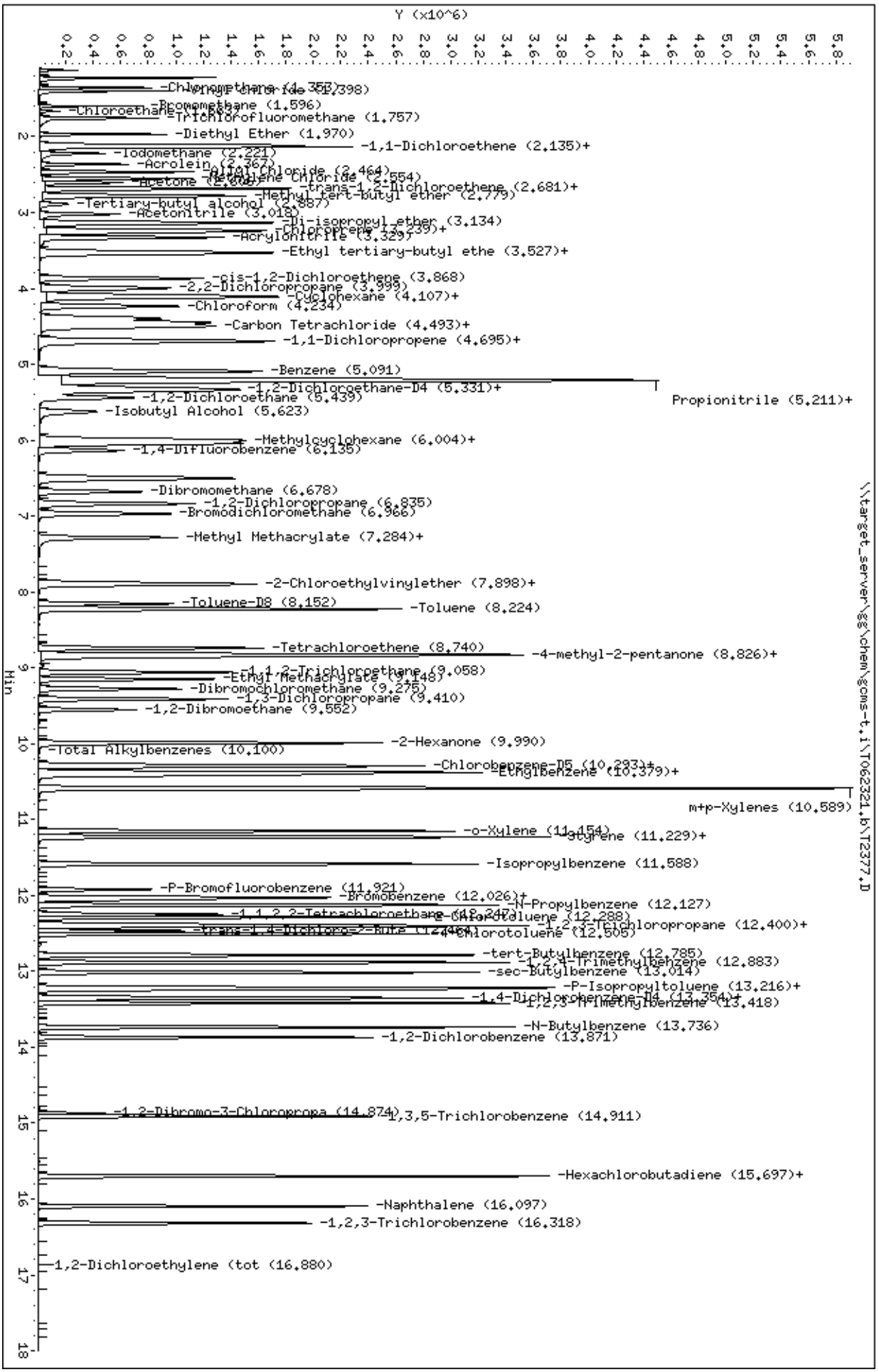
							AMOUNTS		
		QUANT SIG					CAL-AMT	ON-COL	
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)	REVIEW CODE
	24 Acrylonitrile	52	3.328	3.329	(0.628)	961099	750.000	729	
	25 Ethyl tertiary-butyl ether	59	3.527	3.523	(0.665)	1818998	150.000	146	
	26 Vinyl Acetate	43	3.542	3.546	(0.577)	1025774	150.000	148	
	27 cis-1,2-Dichloroethene	96	3.867	3.871	(0.729)	670803	150.000	147	
	28 2,2-Dichloropropane	77	3.998	4.002	(0.754)	978921	150.000	152(A)	
	29 Cyclohexane	56	4.103	4.103	(0.774)	965096	150.000	146	
	30 Bromochloromethane	128	4.122	4.118	(0.777)	270596	150.000	150(A)	
	31 Chloroform	83	4.234	4.234	(0.798)	1144615	150.000	148	
	32 Carbon Tetrachloride	117	4.395	4.395	(0.716)	878600	150.000	150(A)	
	33 Tetrahydrofuran	42	4.443	4.448	(0.838)	1033470	750.000	740	
$	34 Dibromofluoromethane	113	4.492	4.489	(0.847)	232208	50.0000	50.4	
	35 1,1,1-Trichloroethane	97	4.500	4.496	(0.848)	1043550	150.000	148	
	36 1,1-Dichloropropene	75	4.687	4.687	(0.764)	883194	150.000	147	
	37 2-Butanone	43	4.702	4.702	(0.886)	1390708	750.000	734	
	38 Benzene	78	5.087	5.091	(0.829)	2425682	150.000	145	
	39 Propionitrile	54	5.188	5.177	(0.978)	824931	1500.00	1440	
	40 Methacrylonitrile	41	5.211	5.207	(0.982)	3397772	1500.00	1430	
*	41 Pentafluorobenzene	168	5.304	5.304	(1.000)	415848	50.0000		
$	42 1,2-Dichloroethane-D4	65	5.330	5.327	(1.005)	266451	50.0000	50.6	
	43 Tertiary-amyl methyl ether	73	5.342	5.338	(1.007)	1614396	150.000	150(A)	
	44 1,2-Dichloroethane	62	5.439	5.439	(0.887)	840326	150.000	149	
	45 Isobutyl Alcohol	43	5.622	5.615	(1.060)	463918	3000.00	2710	
	46 Methylcyclohexane	83	6.000	5.997	(1.131)	1033098	150.000	147	
	47 Trichloroethene	95	6.045	6.049	(0.985)	617146	150.000	147	
*	48 1,4-Difluorobenzene	114	6.135	6.139	(1.000)	728741	50.0000		
	49 Dibromomethane	93	6.678	6.678	(1.088)	398113	150.000	150	
	50 1,2-Dichloropropane	63	6.838	6.839	(1.115)	598545	150.000	146	
	51 Bromodichloromethane	83	6.966	6.970	(1.135)	908794	150.000	150(A)	
	52 Methyl Methacrylate	41	7.280	7.280	(1.187)	560803	150.000	152(A)	
	53 1,4-Dioxane	88	7.291	7.292	(1.188)	141478	3000.00	2580	
	54 2-Chloroethylvinylether	63	7.875	7.872	(1.284)	365752	150.000	150	
	55 cis-1,3-dichloropropene	75	7.901	7.902	(1.288)	1090974	150.000	148	
$	56 Toluene-D8	98	8.152	8.156	(1.329)	814830	50.0000	49.7	
	57 Toluene	92	8.223	8.223	(1.340)	1505927	150.000	146	
	58 Tetrachloroethene	164	8.743	8.744	(0.851)	483191	150.000	149	
	59 4-methyl-2-pentanone	43	8.826	8.822	(1.439)	2645716	750.000	730	
	60 trans-1,3-Dichloropropene	75	8.852	8.852	(1.443)	959656	150.000	151(A)	
	61 1,1,2-Trichloroethane	83	9.058	9.058	(1.476)	473885	150.000	148	
	62 Ethyl Methacrylate	69	9.147	9.152	(1.491)	839973	150.000	151(A)	
	63 Dibromochloromethane	129	9.278	9.275	(0.903)	693499	150.000	151(A)	
	64 1,3-Dichloropropane	76	9.409	9.410	(0.916)	1015375	150.000	147	
	65 1,2-Dibromoethane	107	9.552	9.552	(1.557)	606168	150.000	150	
M	66 Total Alkylbenzenes	100				15597091	150.000	999	
	67 2-Hexanone	43	9.989	9.990	(0.972)	1872012	750.000	731	
*	68 Chlorobenzene-D5	117	10.278	10.274	(1.000)	693746	50.0000		
	69 Chlorobenzene	112	10.296	10.297	(1.002)	1528080	150.000	146	
	70 Ethylbenzene	91	10.379	10.379	(1.010)	2745705	150.000	144	
	71 1,1,1,2-Tetrachloroethane	131	10.412	10.409	(1.013)	603200	150.000	148	
	72 m+p-Xylenes	91	10.588	10.585	(1.030)	3952715	300.000	282	
	73 o-Xylene	91	11.153	11.150	(1.085)	2081435	150.000	144	
	74 Styrene	104	11.232	11.232	(1.093)	1737555	150.000	147	
	75 Bromoform	173	11.224	11.221	(1.092)	420228	150.000	154(A)	
	76 Isopropylbenzene	105	11.587	11.584	(0.869)	2526639	150.000	142	
$	77 P-Bromofluorobenzene	95	11.920	11.921	(1.943)	315804	50.0000	49.5	

Data File: \\target_server\gg\chem\gcms-t.i\T062321.b\T2377.D
Report Date: 29-Jun-2021 13:54

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	78 Bromobenzene	156	12.025	12.022	(0.902)	640571	150.000	146	
	79 cis-1,4-Dichloro-2-Butene	53	12.051	12.052	(0.903)	234274	150.000	152(A)	
	80 N-Propylbenzene	91	12.126	12.127	(0.909)	2923608	150.000	140	
	81 1,1,2,2-Tetrachloroethane	83	12.246	12.246	(0.918)	735277	150.000	146	
	82 2-Chlorotoluene	91	12.287	12.284	(0.921)	1756534	150.000	142	
	83 1,2,3-Trichloropropane	75	12.377	12.377	(0.928)	593732	150.000	146	
	84 1,3,5-Trimethylbenzene	105	12.403	12.400	(0.930)	2080788	150.000	143	
	85 trans-1,4-Dichloro-2-Butene	53	12.463	12.463	(0.934)	237160	150.000	153(A)	
	86 4-Chlorotoluene	91	12.508	12.505	(0.938)	1837085	150.000	143	
	87 tert-Butylbenzene	119	12.789	12.785	(0.959)	1761724	150.000	143	
	89 1,2,4-Trimethylbenzene	105	12.882	12.883	(0.966)	2042041	150.000	142	
	90 sec-Butylbenzene	105	13.013	13.010	(0.976)	2527469	150.000	142	
	91 P-Isopropyltoluene	119	13.215	13.212	(0.991)	2219337	150.000	144	
	92 1,3-Dichlorobenzene	146	13.238	13.238	(0.992)	1122230	150.000	145	
*	93 1,4-Dichlorobenzene-D4	152	13.339	13.339	(1.000)	337534	50.0000		
	94 1,4-Dichlorobenzene	146	13.357	13.354	(1.001)	1148381	150.000	145	
	95 1,2,3-Trimethylbenzene	105	13.417	13.418	(1.006)	2066771	150.000	143	
	96 N-Butylbenzene	91	13.735	13.736	(1.030)	2042124	150.000	144	
	97 1,2-Dichlorobenzene	146	13.866	13.871	(1.040)	1055521	150.000	145	
	98 1,2-Dibromo-3-Chloropropane	157	14.869	14.873	(1.115)	140176	150.000	154(A)	
	99 1,3,5-Trichlorobenzene	180	14.910	14.911	(1.118)	764077	150.000	149	
	100 Hexachlorobutadiene	225	15.696	15.693	(1.177)	314240	150.000	152(A)	
	101 1,2,4-Trichlorobenzene	180	15.700	15.700	(1.177)	712069	150.000	153(A)	
	102 Naphthalene	128	16.097	16.093	(1.207)	1869431	150.000	149	
M	103 1,2-Dichloroethylene (total)	96				1286333	150.000	295	
	104 1,2,3-Trichlorobenzene	180	16.318	16.318	(1.223)	621034	150.000	152(A)	
M	105 Xylenes (total)	91				6034150	150.000	426	

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.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Client ID:
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Column phase: RTX-VMS
Instrument: gcms-t.i
Operator: CR
Column diameter: 0.18
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-Chloromethane (1.353)
-Vinyl Chloride (1.398)
-Bromomethane (1.596)
-Chloroethane (1.683)
-Trichlorofluoromethane (1.757)
-Diethyl Ether (1.970)
-1,1-Dichloroethene (2.135)+
-Iodomethane (2.221)
-Acrolein (2.367)
-Allyl Chloride (2.464)
-Methylene Chloride (2.554)
-Acetone (2.608)
-trans-1,2-Dichloroethene (2.681)+
-Methyl tert-butyl ether (2.779)
-Tertiary-butyl alcohol (2.887)
-Acetonitrile (3.018)
-Di-isopropyl ether (3.134)
-Chloroprene (3.239)+
-Acrylonitrile (3.329)
-Ethyl tertiary-butyl ethe (3.527)+
-cis-1,2-Dichloroethene (3.868)
-2,2-Dichloropropane (3.999)
-Cyclohexane (4.107)+
-Chloroform (4.234)
-Carbon Tetrachloride (4.493)+
-1,1-Dichloropropene (4.695)+
-Benzene (5.091)
-1,2-Dichloroethane-D4 (5.331)+
-1,2-Dichloroethane (5.439)
Propionitrile (5.211)+
-Isobutyl Alcohol (5.623)
-Methylcyclohexane (6.004)+
-1,4-Difluorobenzene (6.135)
-Dibromomethane (6.678)
-1,2-Dichloropropane (6.835)
-Bromodichloromethane (6.966)
-Methyl Methacrylate (7.284)+
-2-Chloroethylvinylether (7.898)+
-Toluene-D8 (8.152)
-Toluene (8.224)
-Tetrachloroethene (8.740)
-4-methyl-2-pentanone (8.826)+
-1,1,2-Trichloroethane (9.058)
-Ethyl Methacrylate (9.148)
-Dibromochloromethane (9.276)
-1,3-Dichloropropane (9.410)
-1,2-Dibromoethane (9.552)
-2-Hexanone (9.990)
-Total Alkylbenzenes (10.100)
-Chlorobenzene-D5 (10.293)+
-Ethylbenzene (10.379)+
m+p-Xylenes (10.589)
-o-Xylene (11.154)
-Styrene (11.229)+
-Isopropylbenzene (11.588)
-P-Bromofluorobenzene (11.921)
-Bromobenzene (12.026)+
-N-Propylbenzene (12.127)
-1,1,2,2-Tetrachloroethane (12.247)
-2-Chlorotoluene (12.288)
-1,2,3-Trichloropropane (12.400)+
-trans-1,4-Dichloro-2-bute (12.446)
-4-Chlorotoluene (12.505)
-tert-Butylbenzene (12.785)
-1,2,4-Trimethylbenzene (12.883)
-sec-Butylbenzene (13.014)
-P-Isopropyltoluene (13.216)+
-1,4-Dichlorobenzene-D4 (13.254)+
1,2,3-Trimethylbenzene (13.418)
-N-Butylbenzene (13.736)
-1,2-Dichlorobenzene (13.871)
-1,2-Dibromo-3-Chloropropa (14.874)
1,3,5-Trichlorobenzene (14.911)
-Hexachlorobutadiene (15.697)+
-Naphthalene (16.097)
-1,2,3-Trichlorobenzene (16.318)
1,2-Dichloroethylene (tot (16.880)

Data File: \\target_server\gg\chem\gcms-t.i\T062321.b\T2378.D
Report Date: 29-Jun-2021 13:54

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T062321.b\T2378.D
Lab Smp Id: WG301244-5
Inj Date : 23-JUN-2021 09:43
Operator : CR Inst ID: gcms-t.i
Smp Info : WG301244-5
Misc Info :
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-t.i\T062321.b\T8A05(62)D.m
Meth Date : 24-Jun-2021 09:26 hgould Quant Type: ISTD
Cal Date : 23-JUN-2021 09:43 Cal File: T2378.D
Als bottle: 2 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: ORGANICS2

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

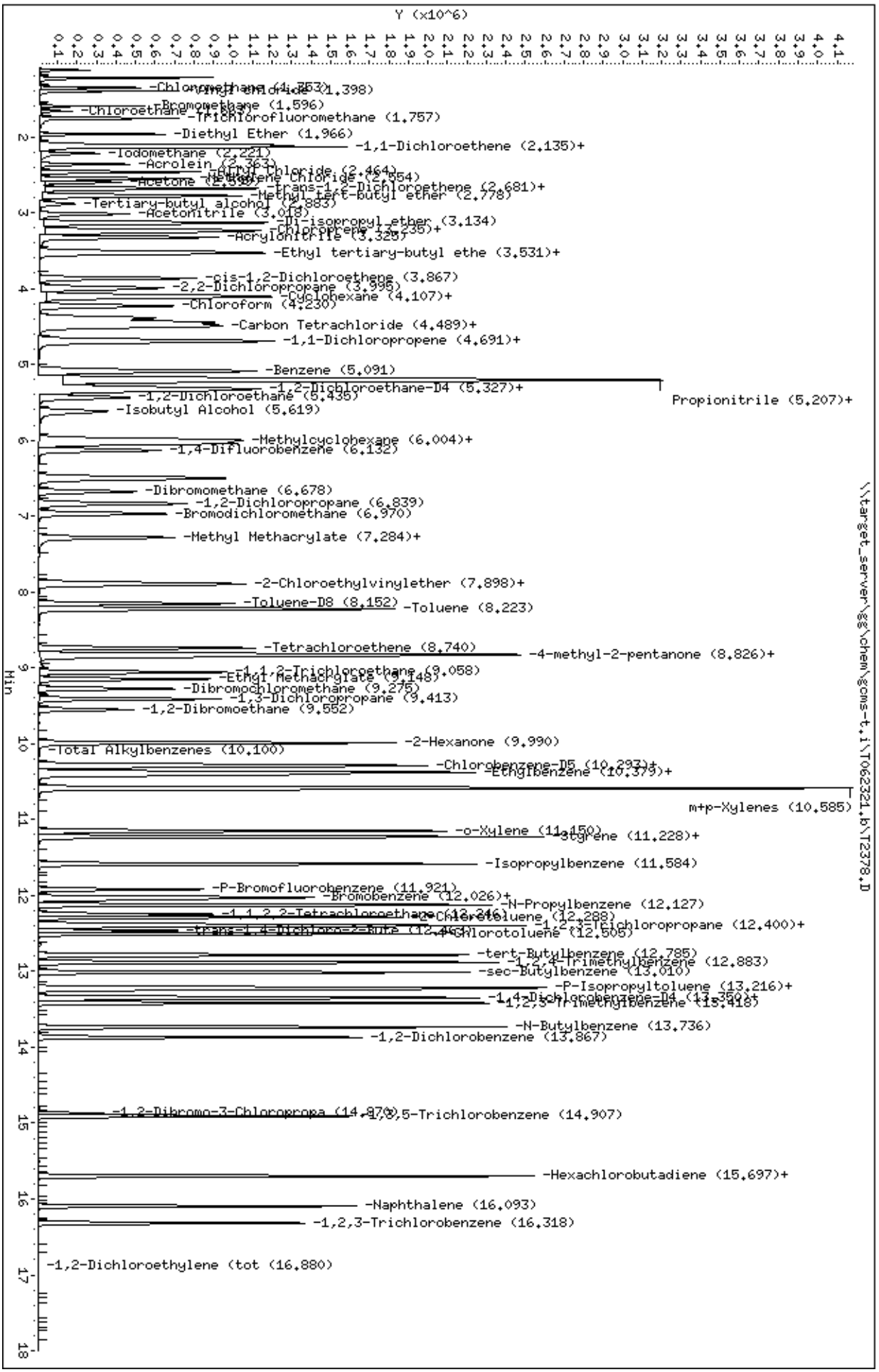
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.221	1.225	(0.230)	544322	100.000	98.4	
2	Chloromethane	50	1.352	1.356	(0.255)	502001	100.000	97.5	
3	Vinyl chloride	62	1.397	1.398	(0.264)	464977	100.000	98.0	
4	Bromomethane	94	1.595	1.600	(0.301)	157138	100.000	99.0	
5	Chloroethane	64	1.663	1.675	(0.314)	85528	100.000	46.2	
6	Trichlorofluoromethane	101	1.756	1.764	(0.331)	512408	100.000	94.2	
7	Diethyl Ether	59	1.966	1.970	(0.371)	277805	100.000	98.2	
8	1,1-Dichloroethene	96	2.108	2.112	(0.398)	361001	100.000	98.7	
9	Freon-113	151	2.131	2.134	(0.402)	282773	100.000	100	
10	Carbon Disulfide	76	2.138	2.142	(0.403)	850470	100.000	97.6	
11	Iodomethane	142	2.217	2.225	(0.418)	354687	100.000	96.0	
12	Acrolein	56	2.363	2.367	(0.446)	348839	500.000	508	
13	Allyl Chloride	41	2.464	2.468	(0.465)	407968	100.000	95.9	
14	Methylene Chloride	84	2.553	2.554	(0.482)	386254	100.000	98.8	
15	Acetone	43	2.602	2.603	(0.491)	473931	500.000	503	
16	trans-1,2-Dichloroethene	96	2.681	2.685	(0.506)	406058	100.000	97.0	
17	Methyl Acetate	43	2.699	2.700	(0.509)	287394	100.000	81.0	
18	Methyl tert-butyl ether	73	2.778	2.782	(0.524)	1198460	100.000	105	
19	Tertiary-butyl alcohol	59	2.883	2.876	(0.544)	250950	500.000	569	
20	Acetonitrile	41	3.017	3.018	(0.569)	548024	1000.00	1080	
21	Di-isopropyl ether	45	3.133	3.134	(0.591)	1299846	100.000	99.2	
22	Chloroprene	53	3.231	3.239	(0.610)	666746	100.000	99.6	
23	1,1-Dichloroethane	63	3.257	3.261	(0.615)	744900	100.000	99.3	

Data File: \\target_server\gg\chem\gcms-t.i\T062321.b\T2378.D
Report Date: 29-Jun-2021 13:54

		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
	24	Acrylonitrile	52	3.328	3.329	(0.628)	688118	500.000	519	
	25	Ethyl tertiary-butyl ether	59	3.523	3.523	(0.665)	1235129	100.000	98.9	
	26	Vinyl Acetate	43	3.541	3.546	(0.577)	701249	100.000	99.9	
	27	cis-1,2-Dichloroethene	96	3.863	3.871	(0.729)	456396	100.000	99.4	
	28	2,2-Dichloropropane	77	3.994	4.002	(0.754)	646523	100.000	99.8	
	29	Cyclohexane	56	4.099	4.103	(0.773)	659127	100.000	99.3	
	30	Bromochloromethane	128	4.118	4.118	(0.777)	180850	100.000	96.2	
	31	Chloroform	83	4.234	4.234	(0.799)	780768	100.000	100	
	32	Carbon Tetrachloride	117	4.391	4.395	(0.716)	592047	100.000	99.7	
	33	Tetrahydrofuran	42	4.443	4.448	(0.838)	745945	500.000	531	
$	34	Dibromofluoromethane	113	4.484	4.489	(0.846)	230169	50.0000	49.6	
	35	1,1,1-Trichloroethane	97	4.499	4.496	(0.849)	707966	100.000	99.9	
	36	1,1-Dichloropropene	75	4.687	4.687	(0.764)	603688	100.000	99.1	
	37	2-Butanone	43	4.701	4.702	(0.887)	1011910	500.000	531	
	38	Benzene	78	5.091	5.091	(0.830)	1664703	100.000	98.3	
	39	Propionitrile	54	5.180	5.177	(0.977)	619515	1000.00	1080	
	40	Methacrylonitrile	41	5.210	5.207	(0.983)	2436028	1000.00	1020	
*	41	Pentafluorobenzene	168	5.300	5.304	(1.000)	418384	50.0000		
$	42	1,2-Dichloroethane-D4	65	5.326	5.327	(1.005)	266137	50.0000	50.2	
	43	Tertiary-amyl methyl ether	73	5.341	5.338	(1.008)	1090440	100.000	101	
	44	1,2-Dichloroethane	62	5.439	5.439	(0.887)	571809	100.000	99.8	
	45	Isobutyl Alcohol	43	5.622	5.615	(1.061)	388143	2000.00	2250	
	46	Methylcyclohexane	83	5.996	5.997	(1.131)	713507	100.000	101	
	47	Trichloroethene	95	6.041	6.049	(0.985)	419003	100.000	98.3	
*	48	1,4-Difluorobenzene	114	6.135	6.139	(1.000)	738879	50.0000		
	49	Dibromomethane	93	6.677	6.678	(1.088)	266766	100.000	98.9	
	50	1,2-Dichloropropane	63	6.835	6.839	(1.114)	411099	100.000	99.0	
	51	Bromodichloromethane	83	6.969	6.970	(1.136)	607685	100.000	99.3	
	52	Methyl Methacrylate	41	7.280	7.280	(1.187)	385400	100.000	103	
	53	1,4-Dioxane	88	7.287	7.292	(1.188)	123569	2000.00	2220	
	54	2-Chloroethylvinylether	63	7.875	7.872	(1.284)	243452	100.000	102	
	55	cis-1,3-dichloropropene	75	7.901	7.902	(1.288)	738493	100.000	99.1	
$	56	Toluene-D8	98	8.156	8.156	(1.329)	829479	50.0000	49.9	
	57	Toluene	92	8.223	8.223	(1.340)	1037430	100.000	99.5	
	58	Tetrachloroethene	164	8.739	8.744	(0.851)	323907	100.000	99.1	
	59	4-methyl-2-pentanone	43	8.822	8.822	(1.438)	1886334	500.000	513	
	60	trans-1,3-Dichloropropene	75	8.848	8.852	(1.442)	645198	100.000	99.9	
	61	1,1,2-Trichloroethane	83	9.057	9.058	(1.476)	325080	100.000	100	
	62	Ethyl Methacrylate	69	9.147	9.152	(1.491)	568605	100.000	101	
	63	Dibromochloromethane	129	9.278	9.275	(0.903)	467054	100.000	101	
	64	1,3-Dichloropropane	76	9.413	9.410	(0.916)	695666	100.000	99.6	
	65	1,2-Dibromoethane	107	9.548	9.552	(1.556)	411536	100.000	100	
M	66	Total Alkylbenzenes	100				10878741	100.000	702	
	67	2-Hexanone	43	9.989	9.990	(0.972)	1357225	500.000	525	
*	68	Chlorobenzene-D5	117	10.274	10.274	(1.000)	700517	50.0000		
	69	Chlorobenzene	112	10.296	10.297	(1.002)	1043663	100.000	98.8	
	70	Ethylbenzene	91	10.378	10.379	(1.010)	1904789	100.000	99.0	
	71	1,1,1,2-Tetrachloroethane	131	10.408	10.409	(1.013)	409948	100.000	99.8	
	72	m+p-Xylenes	91	10.588	10.585	(1.031)	2797723	200.000	197	
	73	o-Xylene	91	11.149	11.150	(1.085)	1444802	100.000	99.4	
	74	Styrene	104	11.228	11.232	(1.093)	1191583	100.000	99.6	
	75	Bromoform	173	11.220	11.221	(1.092)	280873	100.000	102	
	76	Isopropylbenzene	105	11.583	11.584	(0.868)	1763023	100.000	99.6	
$	77	P-Bromofluorobenzene	95	11.920	11.921	(1.943)	322014	50.0000	49.8	

Data File: \\target_server\gg\chem\gcms-t.i\T062321.b\T2378.D
Report Date: 29-Jun-2021 13:54

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	78 Bromobenzene	156	12.021	12.022	(0.901)	434925	100.000	99.7	
	79 cis-1,4-Dichloro-2-Butene	53	12.051	12.052	(0.903)	158542	100.000	104	
	80 N-Propylbenzene	91	12.126	12.127	(0.909)	2059536	100.000	99.7	
	81 1,1,2,2-Tetrachloroethane	83	12.242	12.246	(0.918)	510162	100.000	102	
	82 2-Chlorotoluene	91	12.283	12.284	(0.921)	1219913	100.000	99.6	
	83 1,2,3-Trichloropropane	75	12.377	12.377	(0.928)	412537	100.000	102	
	84 1,3,5-Trimethylbenzene	105	12.399	12.400	(0.930)	1440856	100.000	100	
	85 trans-1,4-Dichloro-2-Butene	53	12.463	12.463	(0.934)	161089	100.000	104	
	86 4-Chlorotoluene	91	12.504	12.505	(0.937)	1265631	100.000	99.2	
	87 tert-Butylbenzene	119	12.785	12.785	(0.958)	1226440	100.000	100	
	89 1,2,4-Trimethylbenzene	105	12.882	12.883	(0.966)	1425518	100.000	100	
	90 sec-Butylbenzene	105	13.009	13.010	(0.975)	1768179	100.000	100	
	91 P-Isopropyltoluene	119	13.211	13.212	(0.990)	1545422	100.000	101	
	92 1,3-Dichlorobenzene	146	13.238	13.238	(0.992)	764005	100.000	99.7	
*	93 1,4-Dichlorobenzene-D4	152	13.339	13.339	(1.000)	334638	50.0000		
	94 1,4-Dichlorobenzene	146	13.357	13.354	(1.001)	782759	100.000	100	
	95 1,2,3-Trimethylbenzene	105	13.417	13.418	(1.006)	1429906	100.000	100	
	96 N-Butylbenzene	91	13.735	13.736	(1.030)	1412790	100.000	101	
	97 1,2-Dichlorobenzene	146	13.866	13.871	(1.040)	716146	100.000	99.6	
	98 1,2-Dibromo-3-Chloropropane	157	14.869	14.873	(1.115)	98580	100.000	109	
	99 1,3,5-Trichlorobenzene	180	14.907	14.911	(1.118)	520299	100.000	102	
	100 Hexachlorobutadiene	225	15.696	15.693	(1.177)	210187	100.000	103	
	101 1,2,4-Trichlorobenzene	180	15.700	15.700	(1.177)	472902	100.000	102	
	102 Naphthalene	128	16.093	16.093	(1.206)	1292365	100.000	104	
M	103 1,2-Dichloroethylene (total)	96				862454	100.000	196	
	104 1,2,3-Trichlorobenzene	180	16.317	16.318	(1.223)	417177	100.000	103	
M	105 Xylenes (total)	91				4242525	100.000	297	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Client ID:
Sample Info: WG301244-5
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-t.i
Operator: CR
Column diameter: 0.18
\\target_server\gg\chem\gcms-t.i\T062321.b\T2378.D
Y (x10^6)
Min
Vinyl Chloride (1.398)
Bromomethane (1.596)
Trichlorofluoromethane (1.757)
Diethyl Ether (1.966)
1,1-Dichloroethene (2.135)+
Iodomethane (2.221)
Acrolein (2.363)
Methylene Chloride (2.554)
trans-1,2-Dichloroethene (2.681)+
Methyl tert-butyl ether (2.778)
Tertiary-butyl alcohol (2.883)
Acetonitrile (3.018)
Di-isopropyl ether (3.134)
Acrylonitrile (3.325)
Ethyl tertiary-butyl ethe (3.531)+
cis-1,2-Dichloroethene (3.867)
2,2-Dichloropropane (3.996)
Cyclohexane (4.107)+
Chloroform (4.230)
Carbon Tetrachloride (4.489)+
1,1-Dichloropropene (4.691)+
Benzene (5.091)
1,2-Dichloroethane-D4 (5.327)+
1,2-Dichloroethane (5.435)
Propionitrile (5.207)+
Isobutyl Alcohol (5.619)
Methylcyclohexane (6.004)+
1,4-Difluorobenzene (6.132)
Dibromomethane (6.678)
1,2-Dichloropropane (6.839)
Bromodichloromethane (6.970)
Methyl Methacrylate (7.284)+
2-Chloroethylvinylether (7.898)+
Toluene-D8 (8.152)
Toluene (8.223)
Tetrachloroethene (8.740)
4-methyl-2-pentanone (8.826)+
1,1,2-Trichloroethane (9.058)
Ethyl Methacrylate (9.248)
Dibromochloromethane (9.275)
1,3-Dichloropropane (9.413)
1,2-Dibromoethane (9.552)
2-Hexanone (9.990)
Total Alkylbenzenes (10.100)
Chlorobenzene-D5 (10.293)+
Ethylbenzene (10.379)+
m+p-Xylenes (10.585)
o-Xylene (11.150)
Styrene (11.228)+
Isopropylbenzene (11.584)
P-Bromofluorobenzene (11.921)
Bromobenzene (12.026)+
N-Propylbenzene (12.127)
1,1,2,2-Tetrachloroethane (12.246)
2-Chlorotoluene (12.288)
1,2,3-Trichloropropane (12.400)+
trans-1,4-Dichloro-2-Bute (12.446)
4-Chlorotoluene (12.505)
tert-Butylbenzene (12.785)
1,2,4-Trimethylbenzene (12.883)
sec-Butylbenzene (13.010)
P-Isopropyltoluene (13.216)+
1,4-Dichlorobenzene-D4 (13.260)+
1,2,3-Trimethylbenzene (13.418)
N-Butylbenzene (13.736)
1,2-Dichlorobenzene (13.867)
1,2-Dibromo-3-Chloropropa (14.870)
1,2,5-Trichlorobenzene (14.907)
Hexachlorobutadiene (15.697)+
Naphthalene (16.093)
1,2,3-Trichlorobenzene (16.318)
1,2-Dichloroethylene (tot (16.880)

Data File: \\target_server\gg\chem\gcms-t.i\T062321.b\T2379.D
Report Date: 29-Jun-2021 13:54

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T062321.b\T2379.D
Lab Smp Id: WG301244-7
Inj Date : 23-JUN-2021 10:16
Operator : CR Inst ID: gcms-t.i
Smp Info : WG301244-7
Misc Info :
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-t.i\T062321.b\T8A05(62)D.m
Meth Date : 24-Jun-2021 09:26 hgould Quant Type: ISTD
Cal Date : 23-JUN-2021 10:16 Cal File: T2379.D
Als bottle: 3 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: ORGANICS2

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

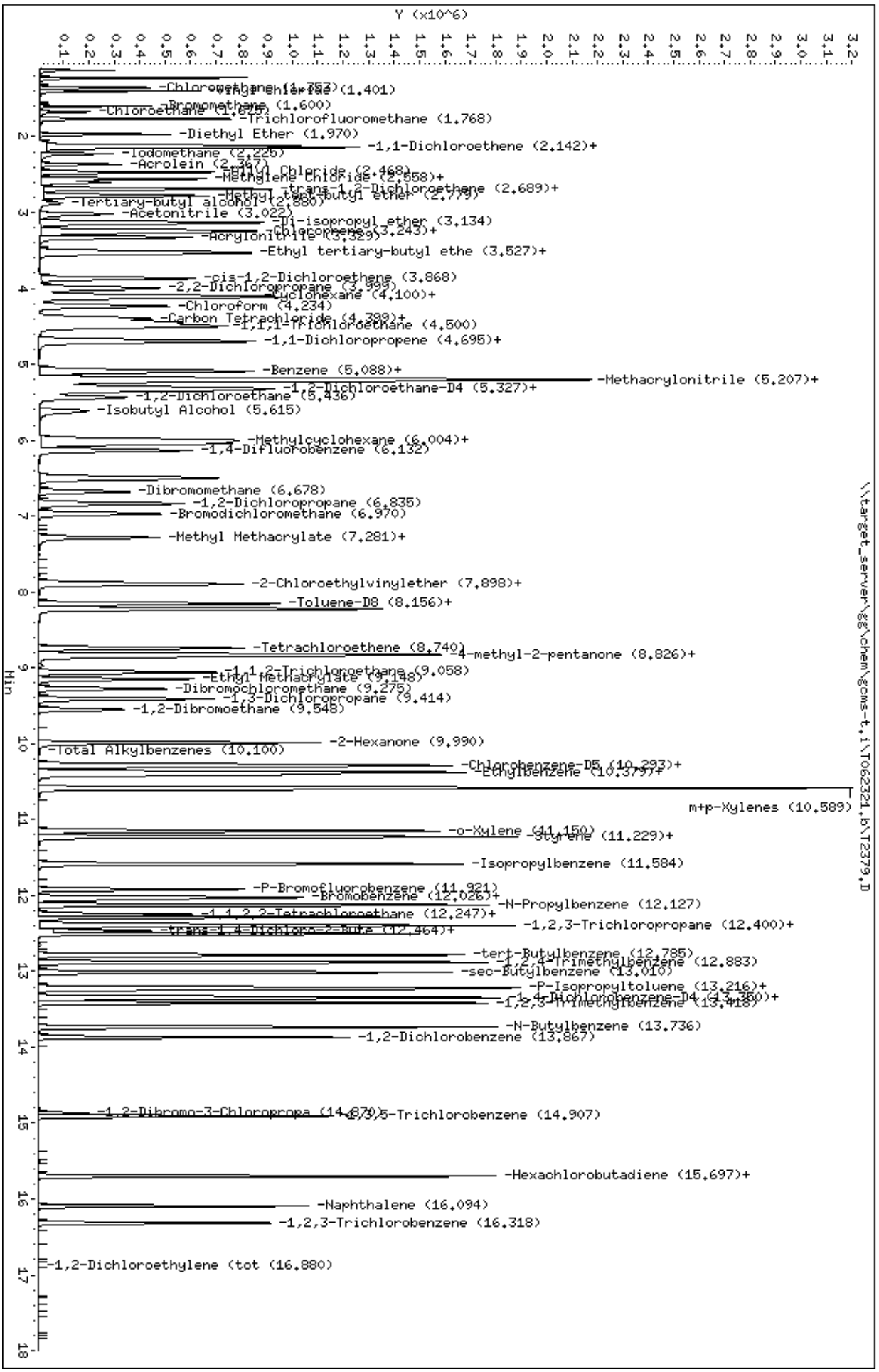
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.225	1.225	(0.231)	411942	75.0000	77.6	
2	Chloromethane	50	1.352	1.356	(0.255)	396062	75.0000	80.2	
3	Vinyl chloride	62	1.401	1.398	(0.264)	371756	75.0000	81.7	
4	Bromomethane	94	1.599	1.600	(0.302)	124510	75.0000	81.8	
5	Chloroethane	64	1.674	1.675	(0.316)	132028	75.0000	74.3	
6	Trichlorofluoromethane	101	1.768	1.764	(0.333)	452578	75.0000	86.8	
7	Diethyl Ether	59	1.970	1.970	(0.371)	217542	75.0000	80.1	
8	1,1-Dichloroethene	96	2.116	2.112	(0.399)	278479	75.0000	79.4	
9	Freon-113	151	2.138	2.134	(0.403)	212388	75.0000	78.7	
10	Carbon Disulfide	76	2.142	2.142	(0.404)	678529	75.0000	81.2	
11	Iodomethane	142	2.224	2.225	(0.419)	295570	75.0000	83.4	
12	Acrolein	56	2.366	2.367	(0.446)	244194	375.000	371	
13	Allyl Chloride	41	2.468	2.468	(0.465)	346602	75.0000	85.0	
14	Methylene Chloride	84	2.557	2.554	(0.482)	309312	75.0000	82.5	
15	Acetone	43	2.602	2.603	(0.491)	315874	375.000	350	
16	trans-1,2-Dichloroethene	96	2.685	2.685	(0.506)	313723	75.0000	78.2	
17	Methyl Acetate	43	2.700	2.700	(0.509)	201573	75.0000	59.2	
18	Methyl tert-butyl ether	73	2.778	2.782	(0.524)	803021	75.0000	73.1	
19	Tertiary-butyl alcohol	59	2.879	2.876	(0.543)	136092	375.000	322	
20	Acetonitrile	41	3.021	3.018	(0.570)	358431	750.000	696	
21	Di-isopropyl ether	45	3.134	3.134	(0.591)	984606	75.0000	78.4	
22	Chloroprene	53	3.235	3.239	(0.610)	501107	75.0000	78.1	
23	1,1-Dichloroethane	63	3.261	3.261	(0.615)	562307	75.0000	78.2	

Data File: \\target_server\gg\chem\gcms-t.i\T062321.b\T2379.D
Report Date: 29-Jun-2021 13:54

		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	24	Acrylonitrile	52	3.328	3.329	(0.628)	452298	375.000	356	
	25	Ethyl tertiary-butyl ether	59	3.523	3.523	(0.664)	919977	75.0000	76.8	
	26	Vinyl Acetate	43	3.542	3.546	(0.578)	499059	75.0000	74.3	
	27	cis-1,2-Dichloroethene	96	3.867	3.871	(0.729)	341119	75.0000	77.4	
	28	2,2-Dichloropropane	77	3.998	4.002	(0.754)	482142	75.0000	77.6	
	29	Cyclohexane	56	4.099	4.103	(0.773)	493338	75.0000	77.5	
	30	Bromochloromethane	128	4.122	4.118	(0.777)	145032	75.0000	79.5	
	31	Chloroform	83	4.234	4.234	(0.798)	590781	75.0000	79.0	
	32	Carbon Tetrachloride	117	4.399	4.395	(0.717)	436138	75.0000	76.7	
	33	Tetrahydrofuran	42	4.447	4.448	(0.838)	454386	375.000	337	
$	34	Dibromofluoromethane	113	4.492	4.489	(0.847)	224085	50.0000	50.4	
	35	1,1,1-Trichloroethane	97	4.500	4.496	(0.848)	528268	75.0000	77.7	
	36	1,1-Dichloropropene	75	4.687	4.687	(0.764)	454455	75.0000	77.9	
	37	2-Butanone	43	4.698	4.702	(0.886)	620750	375.000	339	
	38	Benzene	78	5.091	5.091	(0.830)	1256207	75.0000	77.5	
	39	Propionitrile	54	5.173	5.177	(0.975)	393107	750.000	712	
	40	Methacrylonitrile	41	5.207	5.207	(0.982)	1660810	750.000	725	
*	41	Pentafluorobenzene	168	5.304	5.304	(1.000)	401244	50.0000		
$	42	1,2-Dichloroethane-D4	65	5.327	5.327	(1.004)	251526	50.0000	49.5	
	43	Tertiary-amyl methyl ether	73	5.342	5.338	(1.007)	778428	75.0000	75.0	
	44	1,2-Dichloroethane	62	5.435	5.439	(0.886)	423720	75.0000	77.2	
	45	Isobutyl Alcohol	43	5.615	5.615	(1.059)	222249	1500.00	1340	
	46	Methylcyclohexane	83	6.004	5.997	(1.132)	526391	75.0000	77.4	
	47	Trichloroethene	95	6.041	6.049	(0.985)	316717	75.0000	77.6	
*	48	1,4-Difluorobenzene	114	6.131	6.139	(1.000)	707195	50.0000		
	49	Dibromomethane	93	6.674	6.678	(1.088)	197148	75.0000	76.4	
	50	1,2-Dichloropropane	63	6.835	6.839	(1.115)	310209	75.0000	78.1	
	51	Bromodichloromethane	83	6.966	6.970	(1.136)	451706	75.0000	77.1	
	52	Methyl Methacrylate	41	7.280	7.280	(1.187)	249825	75.0000	69.8	
	53	1,4-Dioxane	88	7.288	7.292	(1.189)	75392	1500.00	1420	
	54	2-Chloroethylvinylether	63	7.875	7.872	(1.284)	151091	75.0000	67.2	
	55	cis-1,3-dichloropropene	75	7.898	7.902	(1.288)	555891	75.0000	77.9	
$	56	Toluene-D8	98	8.156	8.156	(1.330)	798632	50.0000	50.2	
	57	Toluene	92	8.223	8.223	(1.341)	772227	75.0000	77.4	
	58	Tetrachloroethene	164	8.740	8.744	(0.851)	240864	75.0000	76.8	
	59	4-methyl-2-pentanone	43	8.822	8.822	(1.439)	1227005	375.000	349	
	60	trans-1,3-Dichloropropene	75	8.852	8.852	(1.444)	470501	75.0000	76.1	
	61	1,1,2-Trichloroethane	83	9.058	9.058	(1.477)	236305	75.0000	76.1	
	62	Ethyl Methacrylate	69	9.147	9.152	(1.492)	392529	75.0000	72.9	
	63	Dibromochloromethane	129	9.275	9.275	(0.903)	336066	75.0000	75.5	
	64	1,3-Dichloropropane	76	9.413	9.410	(0.916)	507847	75.0000	75.8	
	65	1,2-Dibromoethane	107	9.548	9.552	(1.557)	294695	75.0000	74.9	
M	66	Total Alkylbenzenes	100				8154565	75.0000	548	
	67	2-Hexanone	43	9.989	9.990	(0.972)	846079	375.000	341	
*	68	Chlorobenzene-D5	117	10.274	10.274	(1.000)	671834	50.0000		
	69	Chlorobenzene	112	10.296	10.297	(1.002)	782781	75.0000	77.3	
	70	Ethylbenzene	91	10.375	10.379	(1.010)	1435268	75.0000	77.8	
	71	1,1,1,2-Tetrachloroethane	131	10.409	10.409	(1.013)	303622	75.0000	77.1	
	72	m+p-Xylenes	91	10.588	10.585	(1.031)	2132313	150.000	157	
	73	o-Xylene	91	11.150	11.150	(1.085)	1082649	75.0000	77.6	
	74	Styrene	104	11.228	11.232	(1.093)	887165	75.0000	77.3	
	75	Bromoform	173	11.221	11.221	(1.092)	192074	75.0000	72.8	
	76	Isopropylbenzene	105	11.584	11.584	(0.868)	1334757	75.0000	78.5	
$	77	P-Bromofluorobenzene	95	11.920	11.921	(1.944)	309667	50.0000	50.0	

Data File: \\target_server\gg\chem\gcms-t.i\T062321.b\T2379.D
Report Date: 29-Jun-2021 13:54

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	78 Bromobenzene	156	12.025	12.022	(0.902)	322530	75.0000	77.0	
	79 cis-1,4-Dichloro-2-Butene	53	12.051	12.052	(0.903)	103405	75.0000	70.5	
	80 N-Propylbenzene	91	12.126	12.127	(0.909)	1565223	75.0000	78.8	
	81 1,1,2,2-Tetrachloroethane	83	12.242	12.246	(0.918)	347655	75.0000	72.6	
	82 2-Chlorotoluene	91	12.287	12.284	(0.921)	925385	75.0000	78.6	
	83 1,2,3-Trichloropropane	75	12.377	12.377	(0.928)	282242	75.0000	72.7	
	84 1,3,5-Trimethylbenzene	105	12.399	12.400	(0.930)	1078851	75.0000	78.0	
	85 trans-1,4-Dichloro-2-Butene	53	12.459	12.463	(0.934)	103169	75.0000	69.7	
	86 4-Chlorotoluene	91	12.504	12.505	(0.937)	953387	75.0000	77.8	
	87 tert-Butylbenzene	119	12.785	12.785	(0.958)	914387	75.0000	78.0	
	89 1,2,4-Trimethylbenzene	105	12.882	12.883	(0.966)	1072208	75.0000	78.4	
	90 sec-Butylbenzene	105	13.013	13.010	(0.976)	1327782	75.0000	78.3	
	91 P-Isopropyltoluene	119	13.212	13.212	(0.990)	1144082	75.0000	77.9	
	92 1,3-Dichlorobenzene	146	13.238	13.238	(0.992)	573393	75.0000	77.9	
*	93 1,4-Dichlorobenzene-D4	152	13.339	13.339	(1.000)	321464	50.0000		
	94 1,4-Dichlorobenzene	146	13.357	13.354	(1.001)	585280	75.0000	77.8	
	95 1,2,3-Trimethylbenzene	105	13.417	13.418	(1.006)	1067798	75.0000	77.8	
	96 N-Butylbenzene	91	13.735	13.736	(1.030)	1052032	75.0000	78.0	
	97 1,2-Dichlorobenzene	146	13.866	13.871	(1.040)	535407	75.0000	77.5	
	98 1,2-Dibromo-3-Chloropropane	157	14.869	14.873	(1.115)	58433	75.0000	67.4	
	99 1,3,5-Trichlorobenzene	180	14.910	14.911	(1.118)	376865	75.0000	77.0	
	100 Hexachlorobutadiene	225	15.696	15.693	(1.177)	149578	75.0000	76.2	
	101 1,2,4-Trichlorobenzene	180	15.700	15.700	(1.177)	333215	75.0000	75.0	
	102 Naphthalene	128	16.093	16.093	(1.206)	834078	75.0000	70.6	
M	103 1,2-Dichloroethylene (total)	96				654842	75.0000	156	
	104 1,2,3-Trichlorobenzene	180	16.318	16.318	(1.223)	287855	75.0000	73.9	
M	105 Xylenes (total)	91				3214962	75.0000	234	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Sample Info: WG301244-7
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-t.i
Operator: CR
Column diameter: 0.18
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Y (x10^6)
Min
-Vinyl Chloride (1.401)
-Chloroethane (1.575)
-Bromomethane (1.600)
-Trichlorofluoromethane (1.768)
-Diethyl Ether (1.970)
-1,1-Dichloroethene (2.142)+
-Iodomethane (2.225)
-Acrolein (2.397)
-Methylene Chloride (2.558)+
-trans-1,2-Dichloroethene (2.689)+
-Methyl tert-butyl ether (2.779)
-Tertiary-butyl alcohol (2.880)
-Acetonitrile (3.022)
-Di-isopropyl ether (3.134)
-Cyclohexane (3.243)+
-Acrylonitrile (3.329)
-Ethyl tertiary-butyl ethe (3.527)+
-cis-1,2-Dichloroethene (3.868)
-2,2-Dichloropropane (3.999)
-Cyclohexane (4.100)+
-Chloroform (4.234)
-Carbon Tetrachloride (4.399)+
-1,1,1-Trichloroethane (4.500)
-1,1-Dichloropropene (4.695)+
-Benzene (5.088)+
-Methacrylonitrile (5.207)+
-1,2-Dichloroethane-D4 (5.327)+
-1,2-Dichloroethane (5.436)
-Isobutyl Alcohol (5.615)
-Methylcyclohexane (6.004)+
-1,4-Difluorobenzene (6.132)
-Dibromomethane (6.678)
-1,2-Dichloropropane (6.835)
-Bromodichloromethane (6.970)
-Methyl Methacrylate (7.281)+
-2-Chloroethylvinylether (7.898)+
-Toluene-D8 (8.156)+
-Tetrachloroethene (8.740)
-4-methyl-2-pentanone (8.826)+
-1,1,2-Trichloroethane (9.058)
-Ethyl Methacrylate (9.148)
-Dibromochloromethane (9.275)
-1,3-Dichloropropane (9.414)
-1,2-Dibromoethane (9.548)
-2-Hexanone (9.990)
-Total Alkylbenzenes (10.100)
-Chlorobenzene-D5 (10.293)+
-Ethylbenzene (10.379)+
m+p-Xylenes (10.589)
-o-Xylene (11.150)
-Styrene (11.229)+
-Isopropylbenzene (11.584)
-P-Bromofluorobenzene (11.921)
-Bromobenzene (12.026)+
-N-Propylbenzene (12.127)
-1,1,2,2-Tetrachloroethane (12.247)+
-1,2,3-Trichloropropane (12.400)+
-trans-1,4-Dichloro-2-Bute (12.464)+
-tert-Butylbenzene (12.785)
-1,2,4-Trimethylbenzene (12.883)
-sec-Butylbenzene (13.010)
-P-Isopropyltoluene (13.216)+
-1,4-Dichlorobenzene-D4 (13.360)+
-1,3,5-Trimethylbenzene (13.418)
-N-Butylbenzene (13.736)
-1,2-Dichlorobenzene (13.867)
-1,2-Dibromo-3-Chloropropa (14.670)
-1,2,4-Trichlorobenzene (14.907)
-Hexachlorobutadiene (15.697)+
-Naphthalene (16.094)
-1,2,3-Trichlorobenzene (16.318)
-1,2-Dichloroethylene (tot (16.880)

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Report Date: 29-Jun-2021 13:54

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T062321.b\T2380.D
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Inj Date : 23-JUN-2021 10:48
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Smp Info : WG301244-4
Misc Info :
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Method   : \\target_server\gg\chem\gcms-t.i\T062321.b\T8A05(62)D.m
Meth Date : 24-Jun-2021 09:26 hgould   Quant Type: ISTD
Cal Date : 02-JUN-2021 12:15   Cal File: T2079.D
Als bottle: 4   Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.225	1.225	(0.231)	274517	50.0000	(a)	
2	Chloromethane	50	1.356	1.356	(0.256)	260536	50.0000	(a)	
3	Vinyl chloride	62	1.397	1.398	(0.263)	232615	50.0000	(a)	
4	Bromomethane	94	1.599	1.600	(0.302)	83539	50.0000	(a)	
5	Chloroethane	64	1.674	1.675	(0.316)	93859	50.0000	(a)	
6	Trichlorofluoromethane	101	1.764	1.764	(0.333)	288156	50.0000	(a)	
7	Diethyl Ether	59	1.970	1.970	(0.371)	143929	50.0000	(aH)	
8	1,1-Dichloroethene	96	2.112	2.112	(0.398)	182021	50.0000	(a)	
9	Freon-113	151	2.134	2.134	(0.402)	139772	50.0000	(a)	
10	Carbon Disulfide	76	2.142	2.142	(0.404)	437779	50.0000	(a)	
11	Iodomethane	142	2.224	2.225	(0.419)	174874	50.0000	(a)	
12	Acrolein	56	2.366	2.367	(0.446)	177829	250.000	(a)	
13	Allyl Chloride	41	2.467	2.468	(0.465)	218064	50.0000	(a)	
14	Methylene Chloride	84	2.553	2.554	(0.481)	201586	50.0000	(a)	
15	Acetone	43	2.602	2.603	(0.491)	240153	250.000	(a)	
16	trans-1,2-Dichloroethene	96	2.684	2.685	(0.506)	210345	50.0000	(a)	
17	Methyl Acetate	43	2.699	2.700	(0.509)	144976	50.0000	(a)	
18	Methyl tert-butyl ether	73	2.782	2.782	(0.525)	552427	50.0000	(a)	
19	Tertiary-butyl alcohol	59	2.875	2.876	(0.542)	121239	250.000	(a)	
20	Acetonitrile	41	3.017	3.018	(0.569)	276852	500.000	(a)	
21	Di-isopropyl ether	45	3.133	3.134	(0.591)	658401	50.0000	(a)	
22	Chloroprene	53	3.238	3.239	(0.611)	333837	50.0000	(a)	
23	1,1-Dichloroethane	63	3.261	3.261	(0.615)	377212	50.0000	(a)	
24	Acrylonitrile	52	3.328	3.329	(0.628)	346781	250.000	(a)	

Data File: \\target_server\gg\chem\gcms-t.i\T062321.b\T2380.D
Report Date: 29-Jun-2021 13:54

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	25	Ethyl tertiary-butyl ether	59	3.523	3.523	(0.664)	633064	50.0000	(a)	
	26	Vinyl Acetate	43	3.545	3.546	(0.578)	357061	50.0000	(a)	
	27	cis-1,2-Dichloroethene	96	3.871	3.871	(0.730)	229618	50.0000	(a)	
	28	2,2-Dichloropropane	77	4.002	4.002	(0.754)	310087	50.0000	(a)	
	29	Cyclohexane	56	4.103	4.103	(0.774)	332661	50.0000	(a)	
	30	Bromochloromethane	128	4.118	4.118	(0.776)	95625	50.0000	(a)	
	31	Chloroform	83	4.234	4.234	(0.798)	393837	50.0000	(a)	
	32	Carbon Tetrachloride	117	4.395	4.395	(0.716)	289452	50.0000	(a)	
	33	Tetrahydrofuran	42	4.447	4.448	(0.838)	371689	250.000	(a)	
$	34	Dibromofluoromethane	113	4.488	4.489	(0.846)	230786	50.0000	(a)	
	35	1,1,1-Trichloroethane	97	4.496	4.496	(0.848)	347585	50.0000	(a)	
	36	1,1-Dichloropropene	75	4.687	4.687	(0.763)	300161	50.0000	(a)	
	37	2-Butanone	43	4.701	4.702	(0.886)	505277	250.000	(a)	
	38	Benzene	78	5.091	5.091	(0.829)	855579	50.0000	(a)	
	39	Propionitrile	54	5.177	5.177	(0.976)	317157	500.000	(a)	
	40	Methacrylonitrile	41	5.207	5.207	(0.982)	1270929	500.000	(a)	
*	41	Pentafluorobenzene	168	5.304	5.304	(1.000)	420487	50.0000		
$	42	1,2-Dichloroethane-D4	65	5.326	5.327	(1.004)	264871	50.0000	(a)	
	43	Tertiary-amyl methyl ether	73	5.338	5.338	(1.006)	540070	50.0000	(a)	
	44	1,2-Dichloroethane	62	5.439	5.439	(0.886)	291086	50.0000	(a)	
	45	Isobutyl Alcohol	43	5.615	5.615	(1.059)	185536	1000.00	(a)	
	46	Methylcyclohexane	83	5.996	5.997	(1.131)	350007	50.0000	(a)	
	47	Trichloroethene	95	6.049	6.049	(0.985)	212816	50.0000	(a)	
*	48	1,4-Difluorobenzene	114	6.139	6.139	(1.000)	735391	50.0000		
	49	Dibromomethane	93	6.677	6.678	(1.088)	133568	50.0000	(a)	
	50	1,2-Dichloropropane	63	6.838	6.839	(1.114)	205477	50.0000	(a)	
	51	Bromodichloromethane	83	6.969	6.970	(1.135)	297283	50.0000	(a)	
	52	Methyl Methacrylate	41	7.280	7.280	(1.186)	190535	50.0000	(a)	
	53	1,4-Dioxane	88	7.291	7.292	(1.188)	59830	1000.00	(a)	
	54	2-Chloroethylvinylether	63	7.871	7.872	(1.282)	131756	50.0000	(a)	
	55	cis-1,3-dichloropropene	75	7.901	7.902	(1.287)	363464	50.0000	(a)	
$	56	Toluene-D8	98	8.156	8.156	(1.329)	829386	50.0000	(a)	
	57	Toluene	92	8.223	8.223	(1.340)	516273	50.0000	(a)	
	58	Tetrachloroethene	164	8.743	8.744	(0.851)	160150	50.0000	(a)	
	59	4-methyl-2-pentanone	43	8.822	8.822	(1.437)	979021	250.000	(a)	
	60	trans-1,3-Dichloropropene	75	8.852	8.852	(1.442)	315509	50.0000	(a)	
	61	1,1,2-Trichloroethane	83	9.057	9.058	(1.475)	160914	50.0000	(a)	
	62	Ethyl Methacrylate	69	9.151	9.152	(1.491)	281556	50.0000	(a)	
	63	Dibromochloromethane	129	9.275	9.275	(0.903)	224879	50.0000	(a)	
	64	1,3-Dichloropropane	76	9.409	9.410	(0.916)	351143	50.0000	(a)	
	65	1,2-Dibromoethane	107	9.551	9.552	(1.556)	204837	50.0000	(a)	
M	66	Total Alkylbenzenes	100				5426361	50.0000	(a)	
	67	2-Hexanone	43	9.989	9.990	(0.972)	682939	250.000	(a)	
*	68	Chlorobenzene-D5	117	10.274	10.274	(1.000)	693580	50.0000		
	69	Chlorobenzene	112	10.296	10.297	(1.002)	526163	50.0000	(a)	
	70	Ethylbenzene	91	10.378	10.379	(1.010)	965218	50.0000	(a)	
	71	1,1,1,2-Tetrachloroethane	131	10.408	10.409	(1.013)	200164	50.0000	(a)	
	72	m+p-Xylenes	91	10.584	10.585	(1.030)	1441373	100.000	(a)	
	73	o-Xylene	91	11.149	11.150	(1.085)	724843	50.0000	(a)	
	74	Styrene	104	11.232	11.232	(1.093)	589518	50.0000	(a)	
	75	Bromoform	173	11.220	11.221	(1.092)	133824	50.0000	(a)	
	76	Isopropylbenzene	105	11.583	11.584	(0.868)	893036	50.0000	(a)	
$	77	P-Bromofluorobenzene	95	11.920	11.921	(1.942)	326486	50.0000	(a)	
	78	Bromobenzene	156	12.021	12.022	(0.901)	218628	50.0000	(a)	

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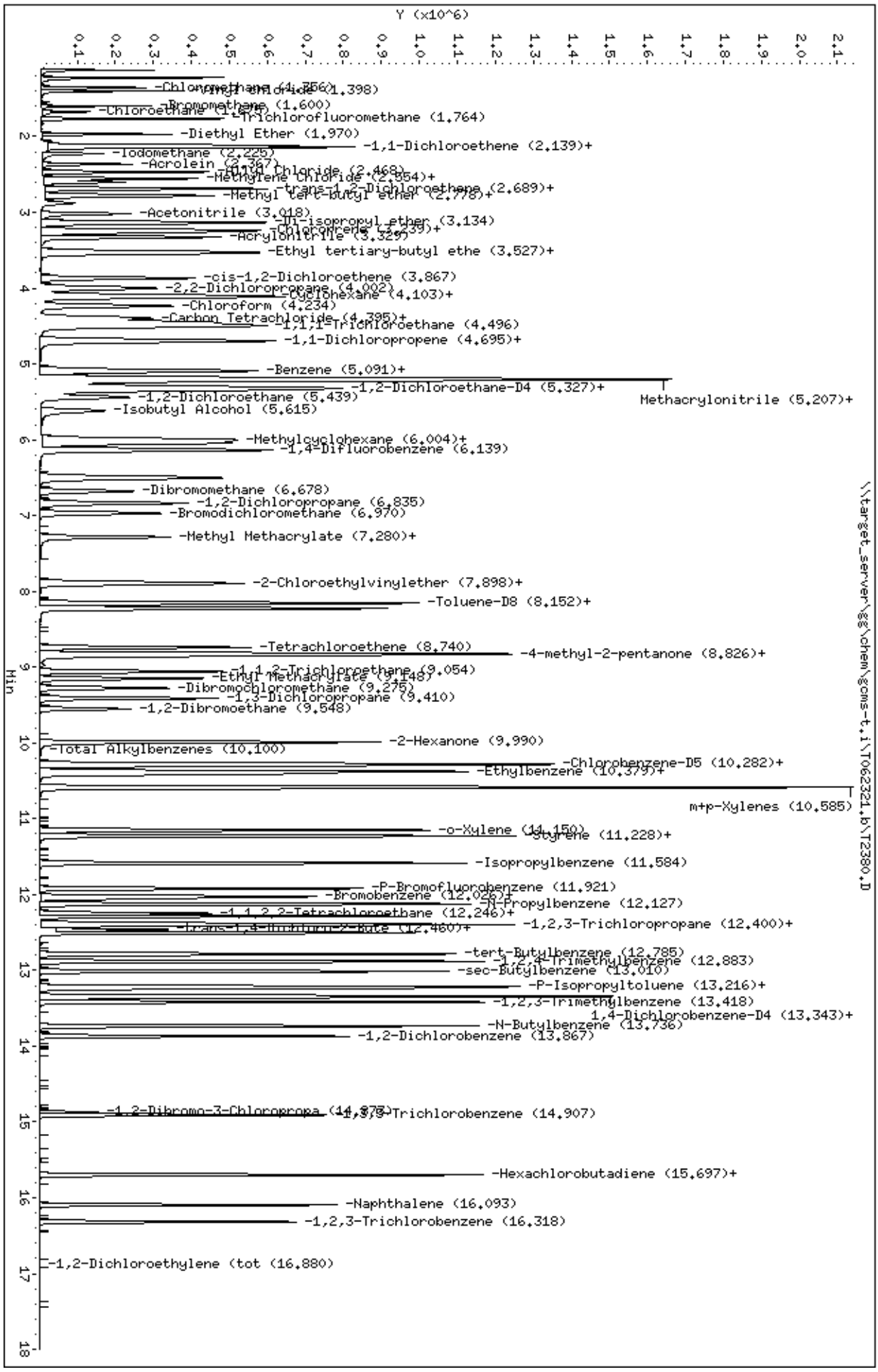
Report Date: 29-Jun-2021 13:54

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	79 cis-1,4-Dichloro-2-Butene	53	12.051	12.052	(0.903)	76495	50.0000	(a)	
	80 N-Propylbenzene	91	12.126	12.127	(0.909)	1047872	50.0000	(a)	
	81 1,1,2,2-Tetrachloroethane	83	12.246	12.246	(0.918)	257298	50.0000	(a)	
	82 2-Chlorotoluene	91	12.283	12.284	(0.921)	616195	50.0000	(a)	
	83 1,2,3-Trichloropropane	75	12.377	12.377	(0.928)	208819	50.0000	(a)	
	84 1,3,5-Trimethylbenzene	105	12.399	12.400	(0.930)	720008	50.0000	(a)	
	85 trans-1,4-Dichloro-2-Butene	53	12.463	12.463	(0.934)	77299	50.0000	(a)	
	86 4-Chlorotoluene	91	12.504	12.505	(0.937)	649008	50.0000	(a)	
	87 tert-Butylbenzene	119	12.785	12.785	(0.958)	607832	50.0000	(a)	
	89 1,2,4-Trimethylbenzene	105	12.882	12.883	(0.966)	713896	50.0000	(a)	
	90 sec-Butylbenzene	105	13.009	13.010	(0.975)	885385	50.0000	(a)	
	91 P-Isopropyltoluene	119	13.211	13.212	(0.990)	756827	50.0000	(a)	
	92 1,3-Dichlorobenzene	146	13.238	13.238	(0.992)	380038	50.0000	(a)	
*	93 1,4-Dichlorobenzene-D4	152	13.339	13.339	(1.000)	333748	50.0000		
	94 1,4-Dichlorobenzene	146	13.354	13.354	(1.001)	388187	50.0000	(a)	
	95 1,2,3-Trimethylbenzene	105	13.417	13.418	(1.006)	717519	50.0000	(a)	
	96 N-Butylbenzene	91	13.735	13.736	(1.030)	694541	50.0000	(a)	
	97 1,2-Dichlorobenzene	146	13.870	13.871	(1.040)	359279	50.0000	(a)	
	98 1,2-Dibromo-3-Chloropropane	157	14.873	14.873	(1.115)	44215	50.0000	(a)	
	99 1,3,5-Trichlorobenzene	180	14.910	14.911	(1.118)	244002	50.0000	(a)	
	100 Hexachlorobutadiene	225	15.692	15.693	(1.176)	95501	50.0000	(a)	
	101 1,2,4-Trichlorobenzene	180	15.700	15.700	(1.177)	221460	50.0000	(a)	
	102 Naphthalene	128	16.093	16.093	(1.206)	617788	50.0000	(a)	
M	103 1,2-Dichloroethylene (total)	96				439963	50.0000	(a)	
	104 1,2,3-Trichlorobenzene	180	16.317	16.318	(1.223)	196375	50.0000	(a)	
M	105 Xylenes (total)	91				2166216	150.000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
H - Operator selected an alternate compound hit.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Column phase: RTX-VMS
Instrument: gcms-t.i
Operator: CR
Column diameter: 0.18
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Y (x10^6)
Min
-Chloromethane (1.356)
-Vinyl chloride (1.398)
-Bromomethane (1.600)
-Chloroethane (1.674)
-Trichlorofluoromethane (1.764)
-Diethyl Ether (1.970)
-1,1-Dichloroethene (2.139)+
-Iodomethane (2.225)
-Acrolein (2.367)
-Allyl chloride (2.468)
-Methylene chloride (2.554)+
-trans-1,2-Dichloroethene (2.689)+
-Methyl tert-butyl ether (2.778)+
-Acetonitrile (3.018)
-Di-isopropyl ether (3.134)
-Chloroprene (3.239)+
-Acrylonitrile (3.329)
-Ethyl tertiary-butyl ethe (3.527)+
-cis-1,2-Dichloroethene (3.867)
-2,2-Dichloropropane (4.002)
-Cyclohexane (4.103)+
-Chloroform (4.234)
-Carbon Tetrachloride (4.395)+
-1,1,1-Trichloroethane (4.496)
-1,1-Dichloropropene (4.695)+
-Benzene (5.091)+
-1,2-Dichloroethane-D4 (5.327)+
-1,2-Dichloroethane (5.439)
Methacrylonitrile (5.207)+
-Isobutyl Alcohol (5.615)
-Methylcyclohexane (6.004)+
-1,4-Difluorobenzene (6.139)
-Dibromomethane (6.678)
-1,2-Dichloropropane (6.835)
-Bromodichloromethane (6.970)
-Methyl Methacrylate (7.280)+
-2-Chloroethylvinylether (7.898)+
-Toluene-D8 (8.152)+
-Tetrachloroethene (8.740)
-4-methyl-2-pentanone (8.826)+
-1,1,2-Trichloroethane (9.054)
-Ethyl Methacrylate (9.148)
-Dibromochloromethane (9.275)
-1,3-Dichloropropane (9.410)
-1,2-Dibromoethane (9.548)
-2-Hexanone (9.990)
-Total Alkylbenzenes (10.100)
-Chlorobenzene-D5 (10.282)+
-Ethylbenzene (10.379)+
m+p-Xylenes (10.585)
-o-Xylene (11.150)
-Styrene (11.228)+
-Isopropylbenzene (11.584)
-P-Bromofluorobenzene (11.921)
-Bromobenzene (12.026)+
-N-Propylbenzene (12.127)
-1,1,2,2-Tetrachloroethane (12.246)+
-trans-1,4-Dichloro-2-Bute (12.460)+
-1,2,3-Trichloropropane (12.400)+
-tert-Butylbenzene (12.785)
-1,2,4-Trimethylbenzene (12.883)
-sec-Butylbenzene (13.010)
-P-Isopropyltoluene (13.216)+
-1,2,3-Trimethylbenzene (13.418)
1,4-Dichlorobenzene-D4 (13.343)+
-N-Butylbenzene (13.736)
-1,2-Dichlorobenzene (13.867)
-1,2-Dibromo-3-Chloropropa (14.875)
-1,3,5-Trichlorobenzene (14.907)
-Hexachlorobutadiene (15.697)+
-Naphthalene (16.093)
-1,2,3-Trichlorobenzene (16.318)
-1,2-Dichloroethylene (tot (16.880)

Data File: \\target_server\gg\chem\gcms-t.i\T062321.b\T2381.D
Report Date: 29-Jun-2021 13:54

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T062321.b\T2381.D
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Inj Date : 23-JUN-2021 11:21
Operator : CR Inst ID: gcms-t.i
Smp Info : WG301244-3
Misc Info :
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-t.i\T062321.b\T8A05(62)D.m
Meth Date : 24-Jun-2021 09:26 hgould Quant Type: ISTD
Cal Date : 23-JUN-2021 11:21 Cal File: T2381.D
Als bottle: 5 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: ORGANICS2

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

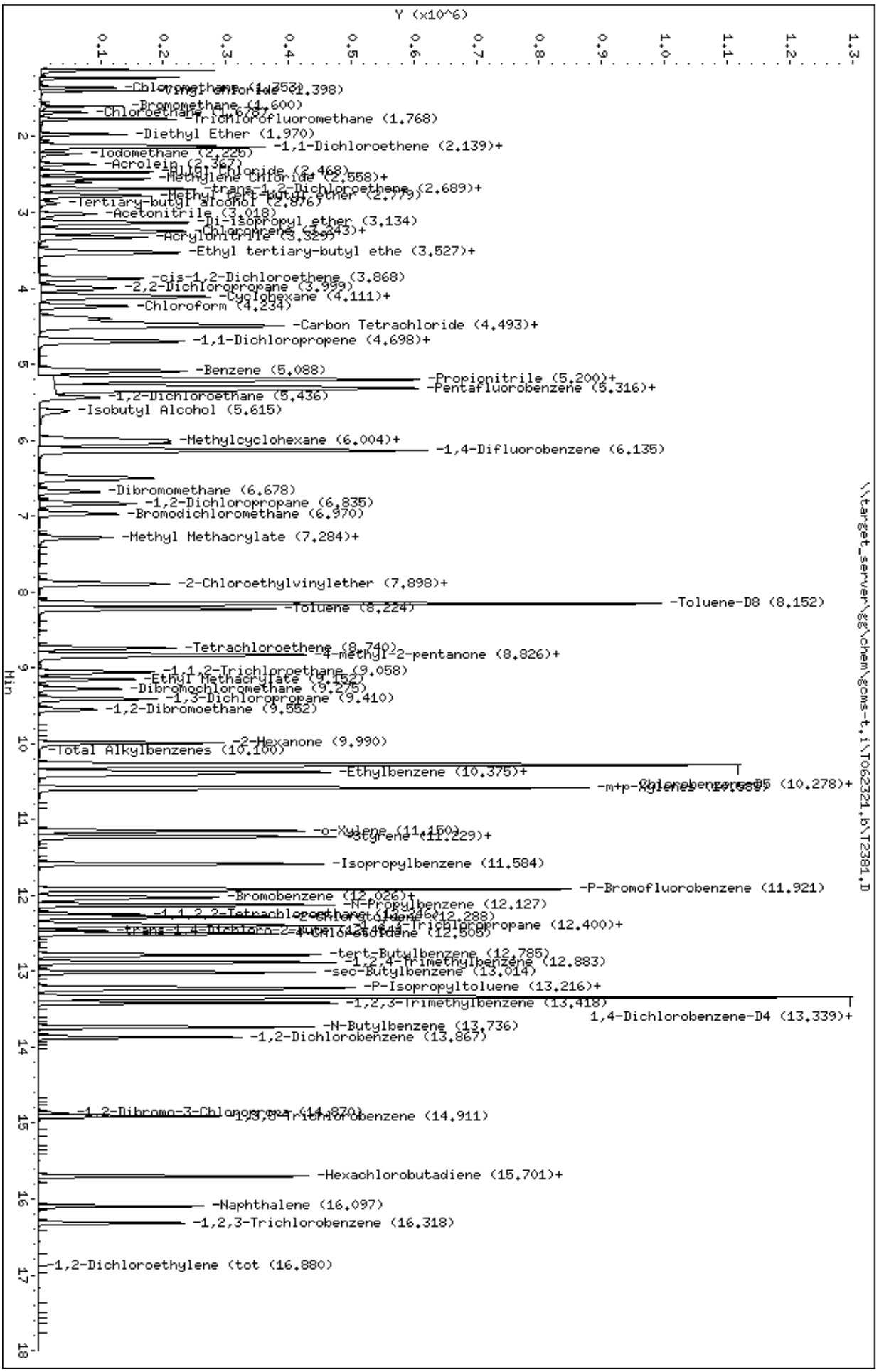
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.225	1.225	(0.231)	112944	20.0000	20.5	
2	Chloromethane	50	1.352	1.356	(0.255)	110898	20.0000	21.4	
3	Vinyl chloride	62	1.397	1.398	(0.263)	98711	20.0000	20.8	
4	Bromomethane	94	1.599	1.600	(0.302)	37327	20.0000	22.5	
5	Chloroethane	64	1.678	1.675	(0.316)	47770	20.0000	23.7	
6	Trichlorofluoromethane	101	1.768	1.764	(0.333)	126634	20.0000	22.7	
7	Diethyl Ether	59	1.970	1.970	(0.371)	57906	20.0000	20.6	
8	1,1-Dichloroethene	96	2.116	2.112	(0.399)	76166	20.0000	20.8	
9	Freon-113	151	2.138	2.134	(0.403)	57656	20.0000	20.6	
10	Carbon Disulfide	76	2.142	2.142	(0.404)	182790	20.0000	21.0	
11	Iodomethane	142	2.224	2.225	(0.419)	66674	20.0000	18.6	
12	Acrolein	56	2.366	2.367	(0.446)	65362	100.000	97.0	
13	Allyl Chloride	41	2.467	2.468	(0.465)	89972	20.0000	21.1	
14	Methylene Chloride	84	2.557	2.554	(0.482)	84183	20.0000	21.0	
15	Acetone	43	2.602	2.603	(0.491)	90767	100.000	98.6	
16	trans-1,2-Dichloroethene	96	2.685	2.685	(0.506)	85439	20.0000	20.5	
17	Methyl Acetate	43	2.700	2.700	(0.509)	53408	20.0000	17.8	
18	Methyl tert-butyl ether	73	2.778	2.782	(0.524)	214174	20.0000	19.1	
19	Tertiary-butyl alcohol	59	2.872	2.876	(0.541)	43534	100.000	99.8	
20	Acetonitrile	41	3.018	3.018	(0.569)	110962	200.000	214	
21	Di-isopropyl ether	45	3.134	3.134	(0.591)	268473	20.0000	20.6	
22	Chloroprene	53	3.235	3.239	(0.610)	135522	20.0000	20.4	
23	1,1-Dichloroethane	63	3.261	3.261	(0.615)	155466	20.0000	20.8	

Data File: \\target_server\gg\chem\gcms-t.i\T062321.b\T2381.D
Report Date: 29-Jun-2021 13:54

		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
	24	Acrylonitrile	52	3.328	3.329	(0.628)	123909	100.000	95.6	
	25	Ethyl tertiary-butyl ether	59	3.523	3.523	(0.664)	243354	20.0000	19.8	
	26	Vinyl Acetate	43	3.542	3.546	(0.577)	133911	20.0000	19.4	
	27	cis-1,2-Dichloroethene	96	3.867	3.871	(0.729)	93256	20.0000	20.4	
	28	2,2-Dichloropropane	77	3.998	4.002	(0.754)	119944	20.0000	19.0	
	29	Cyclohexane	56	4.103	4.103	(0.774)	138077	20.0000	20.8	
	30	Bromochloromethane	128	4.122	4.118	(0.777)	39563	20.0000	21.0	
	31	Chloroform	83	4.234	4.234	(0.798)	161042	20.0000	20.5	
	32	Carbon Tetrachloride	117	4.395	4.395	(0.716)	114025	20.0000	19.4	
	33	Tetrahydrofuran	42	4.455	4.448	(0.840)	129084	100.000	94.2	
$	34	Dibromofluoromethane	113	4.488	4.489	(0.846)	232027	50.0000	50.5	
	35	1,1,1-Trichloroethane	97	4.500	4.496	(0.848)	142527	20.0000	20.3	
	36	1,1-Dichloropropene	75	4.690	4.687	(0.765)	123531	20.0000	20.3	
	37	2-Butanone	43	4.698	4.702	(0.886)	175528	100.000	94.4	
	38	Benzene	78	5.087	5.091	(0.829)	348692	20.0000	20.6	
	39	Propionitrile	54	5.177	5.177	(0.976)	119073	200.000	204	
	40	Methacrylonitrile	41	5.199	5.207	(0.980)	468482	200.000	199	
*	41	Pentafluorobenzene	168	5.304	5.304	(1.000)	413656	50.0000		
$	42	1,2-Dichloroethane-D4	65	5.327	5.327	(1.004)	265160	50.0000	50.5	
	43	Tertiary-amyl methyl ether	73	5.334	5.338	(1.006)	200439	20.0000	19.0	
	44	1,2-Dichloroethane	62	5.435	5.439	(0.886)	118502	20.0000	20.5	
	45	Isobutyl Alcohol	43	5.618	5.615	(1.059)	58562	400.000	354	
	46	Methylcyclohexane	83	6.000	5.997	(1.131)	139998	20.0000	20.0	
	47	Trichloroethene	95	6.045	6.049	(0.985)	85415	20.0000	20.1	
*	48	1,4-Difluorobenzene	114	6.135	6.139	(1.000)	734241	50.0000		
	49	Dibromomethane	93	6.674	6.678	(1.088)	52567	20.0000	19.7	
	50	1,2-Dichloropropane	63	6.835	6.839	(1.114)	82427	20.0000	20.0	
	51	Bromodichloromethane	83	6.969	6.970	(1.136)	117339	20.0000	19.4	
	52	Methyl Methacrylate	41	7.284	7.280	(1.187)	64365	20.0000	17.8	
	53	1,4-Dioxane	88	7.295	7.292	(1.189)	24206	400.000	430	
	54	2-Chloroethylvinylether	63	7.875	7.872	(1.284)	45536	20.0000	19.2	
	55	cis-1,3-dichloropropene	75	7.897	7.902	(1.287)	143522	20.0000	19.5	
$	56	Toluene-D8	98	8.156	8.156	(1.329)	821144	50.0000	49.8	
	57	Toluene	92	8.223	8.223	(1.340)	210484	20.0000	20.2	
	58	Tetrachloroethene	164	8.739	8.744	(0.851)	63374	20.0000	19.7	
	59	4-methyl-2-pentanone	43	8.826	8.822	(1.439)	336584	100.000	93.6	
	60	trans-1,3-Dichloropropene	75	8.844	8.852	(1.442)	118639	20.0000	18.8	
	61	1,1,2-Trichloroethane	83	9.061	9.058	(1.477)	62774	20.0000	19.6	
	62	Ethyl Methacrylate	69	9.151	9.152	(1.492)	99177	20.0000	18.2	
	63	Dibromochloromethane	129	9.275	9.275	(0.903)	85893	20.0000	19.0	
	64	1,3-Dichloropropane	76	9.409	9.410	(0.916)	136545	20.0000	19.8	
	65	1,2-Dibromoethane	107	9.552	9.552	(1.557)	78036	20.0000	19.3	
M	66	Total Alkylbenzenes	100				2165033	20.0000	142	
	67	2-Hexanone	43	9.989	9.990	(0.972)	227192	100.000	91.0	
*	68	Chlorobenzene-D5	117	10.274	10.274	(1.000)	690892	50.0000		
	69	Chlorobenzene	112	10.293	10.297	(1.002)	213271	20.0000	20.4	
	70	Ethylbenzene	91	10.375	10.379	(1.010)	389392	20.0000	20.4	
	71	1,1,1,2-Tetrachloroethane	131	10.409	10.409	(1.013)	78717	20.0000	19.5	
	72	m+p-Xylenes	91	10.584	10.585	(1.030)	585821	40.0000	41.5	
	73	o-Xylene	91	11.150	11.150	(1.085)	291726	20.0000	20.3	
	74	Styrene	104	11.228	11.232	(1.093)	230968	20.0000	19.6	
	75	Bromoform	173	11.221	11.221	(1.092)	45636	20.0000	17.4	
	76	Isopropylbenzene	105	11.587	11.584	(0.869)	361826	20.0000	20.7	
$	77	P-Bromofluorobenzene	95	11.920	11.921	(1.943)	326738	50.0000	50.7	

Data File: \\target_server\gg\chem\gcms-t.i\T062321.b\T2381.D
Report Date: 29-Jun-2021 13:54

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	78 Bromobenzene	156	12.025	12.022	(0.902)	86040	20.0000	20.1	
	79 cis-1,4-Dichloro-2-Butene	53	12.051	12.052	(0.903)	24703	20.0000	17.1	
	80 N-Propylbenzene	91	12.126	12.127	(0.909)	424372	20.0000	20.8	
	81 1,1,2,2-Tetrachloroethane	83	12.246	12.246	(0.918)	91972	20.0000	19.0	
	82 2-Chlorotoluene	91	12.283	12.284	(0.921)	248958	20.0000	20.6	
	83 1,2,3-Trichloropropane	75	12.377	12.377	(0.928)	75914	20.0000	19.3	
	84 1,3,5-Trimethylbenzene	105	12.399	12.400	(0.930)	287509	20.0000	20.3	
	85 trans-1,4-Dichloro-2-Butene	53	12.463	12.463	(0.934)	25797	20.0000	17.6	
	86 4-Chlorotoluene	91	12.504	12.505	(0.937)	256448	20.0000	20.4	
	87 tert-Butylbenzene	119	12.785	12.785	(0.958)	242980	20.0000	20.3	
	89 1,2,4-Trimethylbenzene	105	12.882	12.883	(0.966)	285491	20.0000	20.4	
	90 sec-Butylbenzene	105	13.013	13.010	(0.976)	358348	20.0000	20.6	
	91 P-Isopropyltoluene	119	13.211	13.212	(0.990)	298374	20.0000	19.9	
	92 1,3-Dichlorobenzene	146	13.238	13.238	(0.992)	151973	20.0000	20.2	
*	93 1,4-Dichlorobenzene-D4	152	13.339	13.339	(1.000)	327886	50.0000		
	94 1,4-Dichlorobenzene	146	13.354	13.354	(1.001)	155500	20.0000	20.2	
	95 1,2,3-Trimethylbenzene	105	13.417	13.418	(1.006)	281546	20.0000	20.1	
	96 N-Butylbenzene	91	13.732	13.736	(1.029)	267959	20.0000	19.6	
	97 1,2-Dichlorobenzene	146	13.866	13.871	(1.040)	140600	20.0000	20.0	
	98 1,2-Dibromo-3-Chloropropane	157	14.869	14.873	(1.115)	13889	20.0000	16.4	
	99 1,3,5-Trichlorobenzene	180	14.910	14.911	(1.118)	92149	20.0000	18.7	
	100 Hexachlorobutadiene	225	15.693	15.693	(1.176)	37262	20.0000	18.9	
	101 1,2,4-Trichlorobenzene	180	15.700	15.700	(1.177)	79020	20.0000	17.9	
	102 Naphthalene	128	16.097	16.093	(1.207)	202040	20.0000	17.3	
M	103 1,2-Dichloroethylene (total)	96				178695	20.0000	40.9	
	104 1,2,3-Trichlorobenzene	180	16.318	16.318	(1.223)	71169	20.0000	18.3	
M	105 Xylenes (total)	91				877547	60.0000	61.8	



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Client ID:
Sample Info: WG301244-3
Purge Volume: 5.0
Column phase: RTX-VMS

Instrument: gcms-t.i
Operator: CR
Column diameter: 0.18

Data File: \\target_server\gg\chem\gcms-t.i\T062321.b\T2382.D
Report Date: 29-Jun-2021 13:54

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T062321.b\T2382.D
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Inj Date : 23-JUN-2021 11:54
Operator : CR Inst ID: gcms-t.i
Smp Info : WG301244-2
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Meth Date : 24-Jun-2021 09:26 hgould Quant Type: ISTD
Cal Date : 23-JUN-2021 11:54 Cal File: T2382.D
Als bottle: 6 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: ORGANICS2

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

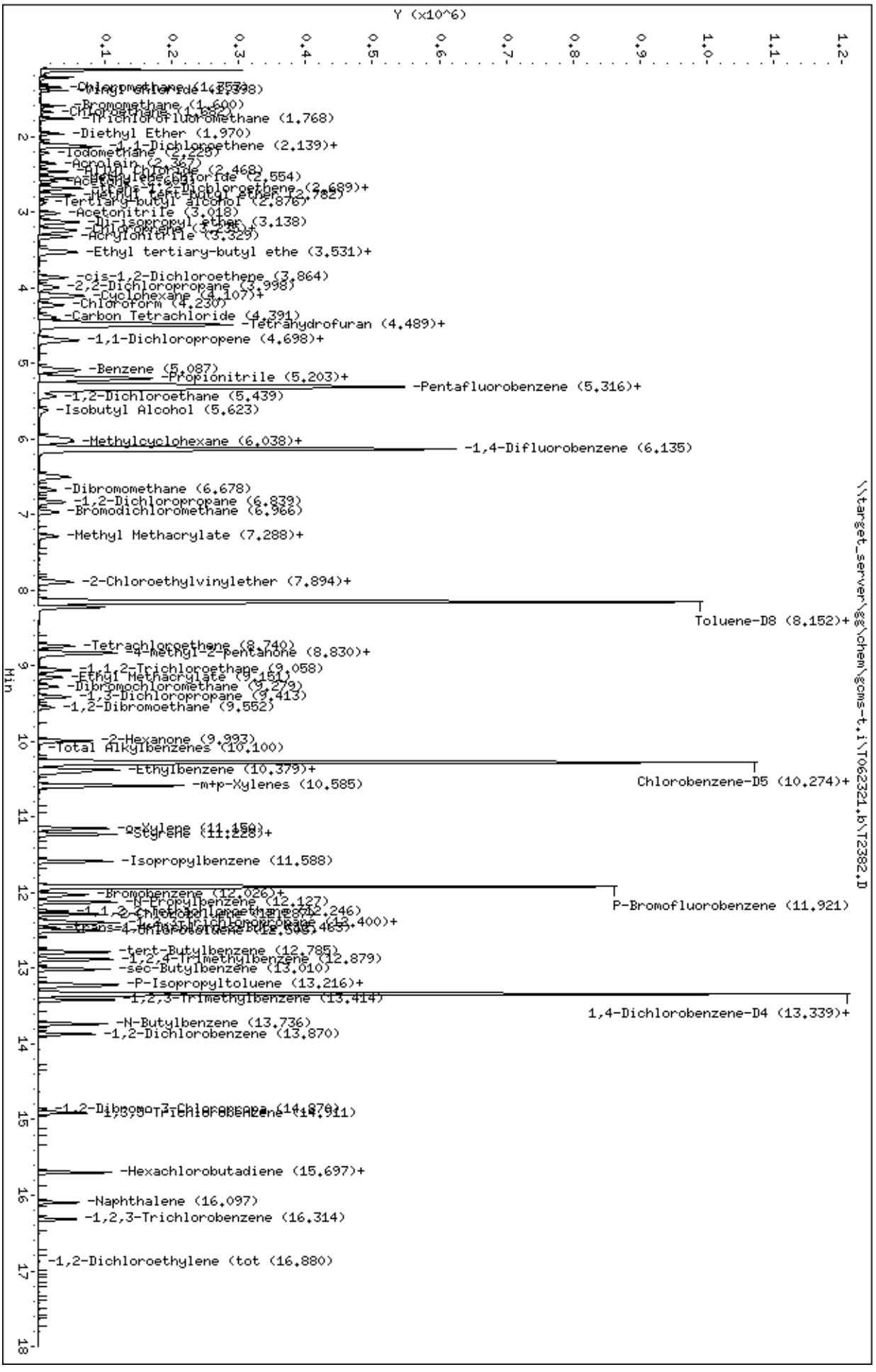
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.225	1.225	(0.231)	27391	5.00000	4.9	
2	Chloromethane	50	1.352	1.356	(0.255)	27701	5.00000	5.2	
3	Vinyl chloride	62	1.397	1.398	(0.264)	23059	5.00000	4.8	
4	Bromomethane	94	1.599	1.600	(0.302)	11019	5.00000	6.2	
5	Chloroethane	64	1.678	1.675	(0.317)	11692	5.00000	5.5	
6	Trichlorofluoromethane	101	1.768	1.764	(0.334)	29545	5.00000	5.2	
7	Diethyl Ether	59	1.966	1.970	(0.371)	14556	5.00000	5.1	
8	1,1-Dichloroethene	96	2.116	2.112	(0.399)	18073	5.00000	4.9	
9	Freon-113	151	2.138	2.134	(0.404)	13517	5.00000	4.8	
10	Carbon Disulfide	76	2.142	2.142	(0.404)	44549	5.00000	5.0	
11	Iodomethane	142	2.224	2.225	(0.420)	12777	5.00000	3.7	
12	Acrolein	56	2.366	2.367	(0.447)	17844	25.0000	25.8	
13	Allyl Chloride	41	2.467	2.468	(0.466)	21696	5.00000	5.0	
14	Methylene Chloride	84	2.553	2.554	(0.482)	23172	5.00000	5.6	
15	Acetone	43	2.602	2.603	(0.491)	28639	25.0000	29.5	
16	trans-1,2-Dichloroethene	96	2.684	2.685	(0.507)	21832	5.00000	5.1	
17	Methyl Acetate	43	2.703	2.700	(0.510)	18490	5.00000	5.8	
18	Methyl tert-butyl ether	73	2.782	2.782	(0.525)	59904	5.00000	5.2	
19	Tertiary-butyl alcohol	59	2.875	2.876	(0.543)	14202	25.0000	30.6	
20	Acetonitrile	41	3.021	3.018	(0.570)	37472	50.0000	66.2	
21	Di-isopropyl ether	45	3.137	3.134	(0.592)	67605	5.00000	5.1	
22	Chloroprene	53	3.234	3.239	(0.611)	33176	5.00000	4.9	
23	1,1-Dichloroethane	63	3.261	3.261	(0.616)	40011	5.00000	5.2	

Data File: \\target_server\gg\chem\gcms-t.i\T062321.b\T2382.D
Report Date: 29-Jun-2021 13:54

		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
	24	Acrylonitrile	52	3.324	3.329	(0.628)	35162	25.0000	26.3	
	25	Ethyl tertiary-butyl ether	59	3.526	3.523	(0.666)	61739	5.00000	4.9	
	26	Vinyl Acetate	43	3.545	3.546	(0.578)	34470	5.00000	5.0	
	27	cis-1,2-Dichloroethene	96	3.871	3.871	(0.731)	24396	5.00000	5.2	
	28	2,2-Dichloropropane	77	3.998	4.002	(0.755)	28812	5.00000	4.6	
	29	Cyclohexane	56	4.106	4.103	(0.775)	33758	5.00000	5.0	
	30	Bromochloromethane	128	4.114	4.118	(0.777)	10415	5.00000	5.3	
	31	Chloroform	83	4.230	4.234	(0.799)	42319	5.00000	5.2	
	32	Carbon Tetrachloride	117	4.391	4.395	(0.716)	26870	5.00000	4.6	
	33	Tetrahydrofuran	42	4.462	4.448	(0.842)	38471	25.0000	27.1	
$	34	Dibromofluoromethane	113	4.488	4.489	(0.847)	230765	50.0000	49.4	
	35	1,1,1-Trichloroethane	97	4.492	4.496	(0.848)	36306	5.00000	5.0	
	36	1,1-Dichloropropene	75	4.683	4.687	(0.763)	30777	5.00000	5.0	
	37	2-Butanone	43	4.709	4.702	(0.889)	53511	25.0000	27.6	
	38	Benzene	78	5.091	5.091	(0.830)	90336	5.00000	5.3	
	39	Propionitrile	54	5.173	5.177	(0.977)	38180	50.0000	61.3	
	40	Methacrylonitrile	41	5.203	5.207	(0.982)	134652	50.0000	55.0	
*	41	Pentafluorobenzene	168	5.296	5.304	(1.000)	421298	50.0000		
$	42	1,2-Dichloroethane-D4	65	5.323	5.327	(1.005)	268024	50.0000	50.1	
	43	Tertiary-amyl methyl ether	73	5.341	5.338	(1.008)	49986	5.00000	4.7	
	44	1,2-Dichloroethane	62	5.439	5.439	(0.887)	32175	5.00000	5.4	
	45	Isobutyl Alcohol	43	5.618	5.615	(1.061)	17230	100.000	102	
	46	Methylcyclohexane	83	6.004	5.997	(1.134)	33051	5.00000	4.7	
	47	Trichloroethene	95	6.037	6.049	(0.984)	21324	5.00000	5.0	
*	48	1,4-Difluorobenzene	114	6.135	6.139	(1.000)	736120	50.0000		
	49	Dibromomethane	93	6.677	6.678	(1.088)	13926	5.00000	5.2	
	50	1,2-Dichloropropane	63	6.835	6.839	(1.114)	21395	5.00000	5.1	
	51	Bromodichloromethane	83	6.969	6.970	(1.136)	28748	5.00000	4.8	
	52	Methyl Methacrylate	41	7.284	7.280	(1.187)	16009	5.00000	4.5	
	53	1,4-Dioxane	88	7.287	7.292	(1.188)	7386	100.000	124	
	54	2-Chloroethylvinylether	63	7.871	7.872	(1.283)	12894	5.00000	5.3	
	55	cis-1,3-dichloropropene	75	7.897	7.902	(1.287)	33735	5.00000	4.6	
$	56	Toluene-D8	98	8.152	8.156	(1.329)	830713	50.0000	50.2	
	57	Toluene	92	8.223	8.223	(1.340)	53838	5.00000	5.1	
	58	Tetrachloroethene	164	8.747	8.744	(0.851)	15436	5.00000	4.8	
	59	4-methyl-2-pentanone	43	8.825	8.822	(1.439)	92780	25.0000	25.6	
	60	trans-1,3-Dichloropropene	75	8.848	8.852	(1.442)	29021	5.00000	4.6	
	61	1,1,2-Trichloroethane	83	9.057	9.058	(1.476)	16665	5.00000	5.2	
	62	Ethyl Methacrylate	69	9.151	9.152	(1.492)	23490	5.00000	4.4	
	63	Dibromochloromethane	129	9.274	9.275	(0.903)	20222	5.00000	4.5	
	64	1,3-Dichloropropane	76	9.413	9.410	(0.916)	35289	5.00000	5.1	
	65	1,2-Dibromoethane	107	9.555	9.552	(1.558)	20503	5.00000	5.0	
M	66	Total Alkylbenzenes	100				519631	5.00000	33.8	
	67	2-Hexanone	43	9.989	9.990	(0.972)	63734	25.0000	25.2	
*	68	Chlorobenzene-D5	117	10.274	10.274	(1.000)	698728	50.0000		
	69	Chlorobenzene	112	10.296	10.297	(1.002)	54811	5.00000	5.1	
	70	Ethylbenzene	91	10.375	10.379	(1.010)	98392	5.00000	5.1	
	71	1,1,1,2-Tetrachloroethane	131	10.412	10.409	(1.013)	19079	5.00000	4.7	
	72	m+p-Xylenes	91	10.584	10.585	(1.030)	147259	10.0000	10.3	
	73	o-Xylene	91	11.149	11.150	(1.085)	73456	5.00000	5.0	
	74	Styrene	104	11.228	11.232	(1.093)	56075	5.00000	4.8	
	75	Bromoform	173	11.217	11.221	(1.092)	10732	5.00000	4.2	
	76	Isopropylbenzene	105	11.587	11.584	(0.869)	89472	5.00000	5.0	
$	77	P-Bromofluorobenzene	95	11.920	11.921	(1.943)	330144	50.0000	50.9	

Data File: \\target_server\gg\chem\gcms-t.i\T062321.b\T2382.D
Report Date: 29-Jun-2021 13:54

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
	78 Bromobenzene	156	12.025	12.022	(0.902)	22093	5.00000	5.1	
	79 cis-1,4-Dichloro-2-Butene	53	12.055	12.052	(0.904)	6203	5.00000	4.4	
	80 N-Propylbenzene	91	12.126	12.127	(0.909)	104549	5.00000	5.0	
	81 1,1,2,2-Tetrachloroethane	83	12.242	12.246	(0.918)	25629	5.00000	5.2	
	82 2-Chlorotoluene	91	12.287	12.284	(0.921)	63159	5.00000	5.1	
	83 1,2,3-Trichloropropane	75	12.377	12.377	(0.928)	20928	5.00000	5.2	
	84 1,3,5-Trimethylbenzene	105	12.403	12.400	(0.930)	70200	5.00000	4.9	
	85 trans-1,4-Dichloro-2-Butene	53	12.463	12.463	(0.934)	6629	5.00000	4.6	
	86 4-Chlorotoluene	91	12.504	12.505	(0.937)	67434	5.00000	5.2	
	87 tert-Butylbenzene	119	12.785	12.785	(0.958)	57746	5.00000	4.8	
	89 1,2,4-Trimethylbenzene	105	12.878	12.883	(0.965)	69958	5.00000	4.9	
	90 sec-Butylbenzene	105	13.009	13.010	(0.975)	85363	5.00000	4.9	
	91 P-Isopropyltoluene	119	13.211	13.212	(0.990)	69641	5.00000	4.6	
	92 1,3-Dichlorobenzene	146	13.234	13.238	(0.992)	39660	5.00000	5.2	
*	93 1,4-Dichlorobenzene-D4	152	13.339	13.339	(1.000)	331796	50.0000		
	94 1,4-Dichlorobenzene	146	13.354	13.354	(1.001)	41033	5.00000	5.2	
	95 1,2,3-Trimethylbenzene	105	13.417	13.418	(1.006)	71776	5.00000	5.0	
	96 N-Butylbenzene	91	13.735	13.736	(1.030)	62174	5.00000	4.6	
	97 1,2-Dichlorobenzene	146	13.870	13.871	(1.040)	36397	5.00000	5.1	
	98 1,2-Dibromo-3-Chloropropane	157	14.869	14.873	(1.115)	3514	5.00000	4.2	
	99 1,3,5-Trichlorobenzene	180	14.907	14.911	(1.118)	22603	5.00000	4.6	
	100 Hexachlorobutadiene	225	15.696	15.693	(1.177)	9281	5.00000	4.7	
	101 1,2,4-Trichlorobenzene	180	15.704	15.700	(1.177)	19545	5.00000	4.5	
	102 Naphthalene	128	16.097	16.093	(1.207)	48976	5.00000	4.3	
M	103 1,2-Dichloroethylene (total)	96				46228	5.00000	10.3	
	104 1,2,3-Trichlorobenzene	180	16.317	16.318	(1.223)	18531	5.00000	4.8	
M	105 Xylenes (total)	91				220715	15.0000	15.3	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Column phase: RTX-VMS
Instrument: gcms-t.i
Operator: CR
Column diameter: 0.18
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Y (x10^6)
Min
-Chloromethane (1.553)
-Vinyl Chloride (1.598)
-Bromomethane (1.600)
-Chloroethane (1.686)
-Trichlorofluoromethane (1.768)
-Diethyl Ether (1.970)
-1,1-Dichloroethene (2.139)+
-Iodomethane (2.225)
-Acrolein (2.367)
-Allyl Chloride (2.468)
-Methylene Chloride (2.554)
-trans-1,2-Dichloroethene (2.689)+
-Methyl tert-butyl ether (2.782)
-Tertiary-butyl alcohol (2.876)
-Acetonitrile (3.018)
-Diisopropyl ether (3.138)
-Acrylonitrile (3.329)
-Ethyl tertiary-butyl ethe (3.531)+
-cis-1,2-Dichloroethene (3.864)
-2,2-Dichloropropane (3.998)
-Cyclohexane (4.107)+
-Chloroform (4.230)
-Carbon Tetrachloride (4.391)
-Tetrahydrofuran (4.489)+
-1,1-Dichloropropene (4.698)+
-Benzene (5.087)
-Propionitrile (5.203)+
-Pentafluorobenzene (5.316)+
-1,2-Dichloroethane (5.439)
-Isobutyl Alcohol (5.623)
-Methylcyclohexane (6.038)+
-1,4-Difluorobenzene (6.135)
-Dibromomethane (6.678)
-1,2-Dichloropropane (6.839)
-Bromodichloromethane (6.966)
-Methyl Methacrylate (7.288)+
-2-Chloroethylvinylether (7.894)+
Toluene-D8 (8.152)+
-Tetrachloroethene (8.740)
-4-Methyl-2-Pentanone (8.830)+
-1,1,2-Trichloroethane (9.058)
-Ethyl Methacrylate (9.151)
-Dibromochloromethane (9.279)
-1,3-Dichloropropane (9.413)
-1,2-Dibromoethane (9.552)
-2-Hexanone (9.993)
-Total Alkylbenzenes (10.100)
-Ethylbenzene (10.379)+
-m+p-Xylenes (10.585)
Chlorobenzene-D5 (10.274)+
-oXylene (11.450)
-Styrene (11.228)+
-Isopropylbenzene (11.588)
-Bromobenzene (12.026)+
-N-Propylbenzene (12.127)
P-Bromofluorobenzene (11.921)
-1,1,2,2-Tetrachloroethane (12.246)
-1,2,3-Trichloropropane (12.400)+
-trans-1,4-Dichloro-2-Butene (12.465)
-4-Chlorotoluene (12.508)
-tert-Butylbenzene (12.785)
-1,2,4-Trimethylbenzene (12.879)
-sec-Butylbenzene (13.010)
-P-Isopropyltoluene (13.216)+
-1,2,3-Trimethylbenzene (13.414)
1,4-Dichlorobenzene-D4 (13.339)+
-N-Butylbenzene (13.736)
-1,2-Dichlorobenzene (13.870)
-1,2-Dibromo-3-Chloropropa (14.870)
1,2,3-Trichlorobenzene (14.911)
-Hexachlorobutadiene (15.697)+
-Naphthalene (16.097)
-1,2,3-Trichlorobenzene (16.314)
-1,2-Dichloroethylene (tot (16.880)

Data File: \\target_server\gg\chem\gcms-t.i\T062321.b\T2383.D
Report Date: 29-Jun-2021 13:54

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T062321.b\T2383.D
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Inj Date : 23-JUN-2021 12:27
Operator : CR Inst ID: gcms-t.i
Smp Info : WG301244-1
Misc Info :
Comment : SW846 5030
Method : \\target_server\gg\chem\gcms-t.i\T062321.b\T8A05(62)D.m
Meth Date : 24-Jun-2021 09:26 hgould Quant Type: ISTD
Cal Date : 23-JUN-2021 12:27 Cal File: T2383.D
Als bottle: 7 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: ORGANICS2

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

CR
9:29 am, Jul 01, 2021

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.225	1.225	(0.231)	5120	1.00000	0.93(a)	
2	Chloromethane	50	1.353	1.356	(0.255)	5494	1.00000	1.0	
3	Vinyl chloride	62	1.397	1.398	(0.263)	4612	1.00000	0.97(a)	
4	Bromomethane	94	1.600	1.600	(0.301)	3022	1.00000	1.6	
5	Chloroethane	64	1.682	1.675	(0.317)	2265	1.00000	1.0	
6	Trichlorofluoromethane	101	1.768	1.764	(0.333)	5654	1.00000	1.00	
7	Diethyl Ether	59	1.970	1.970	(0.371)	3020	1.00000	1.0	
8	1,1-Dichloroethene	96	2.116	2.112	(0.399)	3033	1.00000	0.84(a)	
9	Freon-113	151	2.142	2.134	(0.404)	2613	1.00000	0.94(a)	
10	Carbon Disulfide	76	2.142	2.142	(0.404)	10002	1.00000	1.1	
11	Iodomethane	142	2.225	2.225	(0.419)	2249	1.00000	0.68(a)	
12	Acrolein	56	2.363	2.367	(0.445)	3528	5.00000	5.1	
13	Allyl Chloride	41	2.468	2.468	(0.465)	4388	1.00000	1.0	
14	Methylene Chloride	84	2.558	2.554	(0.482)	6492	1.00000	1.4(a)	
15	Acetone	43	2.599	2.603	(0.490)	6706	5.00000	6.6	
16	trans-1,2-Dichloroethene	96	2.685	2.685	(0.506)	4526	1.00000	1.0	
17	Methyl Acetate	43	2.707	2.700	(0.510)	3337	1.00000	1.0(M)	M9
18	Methyl tert-butyl ether	73	2.782	2.782	(0.524)	9899	1.00000	0.88(a)	
19	Tertiary-butyl alcohol	59	2.876	2.876	(0.542)	3374	5.00000	6.8	
20	Acetonitrile	41	3.018	3.018	(0.569)	8823	10.0000	14.5(a)	
21	Di-isopropyl ether	45	3.134	3.134	(0.590)	12719	1.00000	0.96(a)	
22	Chloroprene	53	3.235	3.239	(0.609)	6515	1.00000	0.98(a)	
23	1,1-Dichloroethane	63	3.257	3.261	(0.614)	7094	1.00000	0.94(a)	

Data File: \\target_server\gg\chem\gcms-t.i\T062321.b\T2383.D
Report Date: 29-Jun-2021 13:54

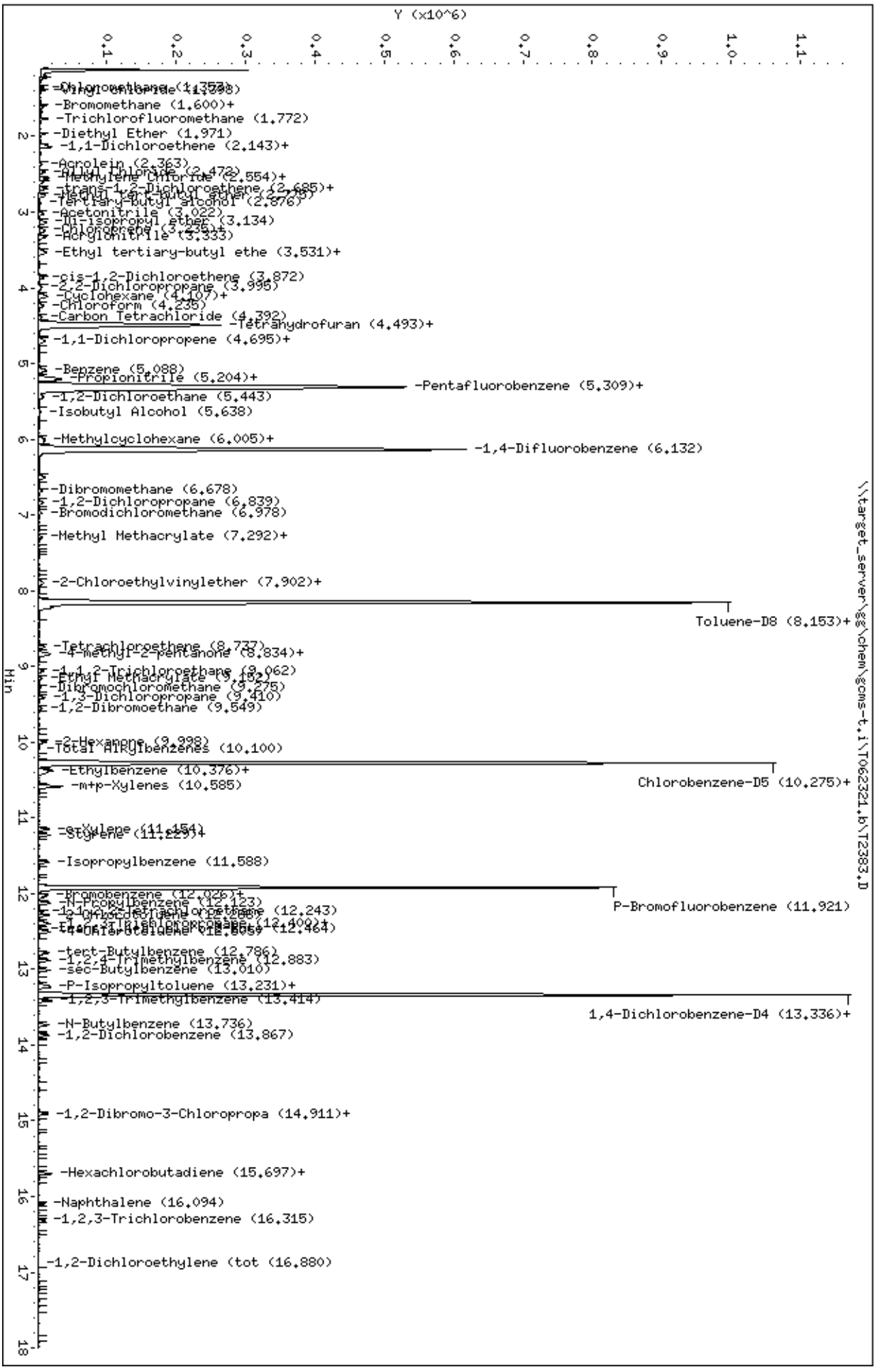
		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
	24	Acrylonitrile	52	3.332	3.329	(0.628)	7211	5.00000	5.4	
	25	Ethyl tertiary-butyl ether	59	3.516	3.523	(0.662)	11760	1.00000	0.95(a)	
	26	Vinyl Acetate	43	3.538	3.546	(0.577)	6146	1.00000	0.90(a)	
	27	cis-1,2-Dichloroethene	96	3.867	3.871	(0.729)	4244	1.00000	0.92(a)	
	28	2,2-Dichloropropane	77	3.995	4.002	(0.753)	4360	1.00000	0.72(a)	
	29	Cyclohexane	56	4.096	4.103	(0.772)	5776	1.00000	0.88(a)	
	30	Bromochloromethane	128	4.126	4.118	(0.777)	1853	1.00000	0.96(a)	
	31	Chloroform	83	4.238	4.234	(0.798)	8185	1.00000	1.0	
	32	Carbon Tetrachloride	117	4.391	4.395	(0.716)	4068	1.00000	0.74(a)	
	33	Tetrahydrofuran	42	4.474	4.448	(0.843)	6661	5.00000	4.8(a)	
$	34	Dibromofluoromethane	113	4.492	4.489	(0.846)	228567	50.0000	49.4	
	35	1,1,1-Trichloroethane	97	4.511	4.496	(0.850)	5597	1.00000	0.81(a)	
	36	1,1-Dichloropropene	75	4.687	4.687	(0.764)	5381	1.00000	0.90(a)	
	37	2-Butanone	43	4.709	4.702	(0.887)	10182	5.00000	5.2	
	38	Benzene	78	5.095	5.091	(0.831)	16525	1.00000	0.97(a)	
	39	Propionitrile	54	5.181	5.177	(0.976)	7352	10.0000	11.6	
	40	Methacrylonitrile	41	5.207	5.207	(0.981)	25637	10.0000	10.4	
*	41	Pentafluorobenzene	168	5.308	5.304	(1.000)	418739	50.0000		
$	42	1,2-Dichloroethane-D4	65	5.327	5.327	(1.004)	273177	50.0000	51.2	
	43	Tertiary-amyl methyl ether	73	5.334	5.338	(1.005)	9229	1.00000	0.89(a)	
	44	1,2-Dichloroethane	62	5.443	5.439	(0.888)	6719	1.00000	1.1	
	45	Isobutyl Alcohol	43	5.637	5.615	(1.062)	3329	20.0000	19.8(Ta)	
	46	Methylcyclohexane	83	6.004	5.997	(1.131)	5928	1.00000	0.86(a)	
	47	Trichloroethene	95	6.042	6.049	(0.985)	3935	1.00000	0.94(a)	
*	48	1,4-Difluorobenzene	114	6.131	6.139	(1.000)	734440	50.0000		
	49	Dibromomethane	93	6.674	6.678	(1.088)	2630	1.00000	0.98(a)	
	50	1,2-Dichloropropane	63	6.835	6.839	(1.115)	3807	1.00000	0.93(Ta)	
	51	Bromodichloromethane	83	6.970	6.970	(1.137)	4453	1.00000	0.77(Ta)	
	52	Methyl Methacrylate	41	7.292	7.280	(1.189)	2774	1.00000	0.81(a)	
	53	1,4-Dioxane	88	7.306	7.292	(1.192)	1382	20.0000	22.8	
	54	2-Chloroethylvinylether	63	7.875	7.872	(1.284)	1788	1.00000	0.77(Ta)	
	55	cis-1,3-dichloropropene	75	7.902	7.902	(1.289)	5440	1.00000	0.78(a)	
$	56	Toluene-D8	98	8.152	8.156	(1.330)	818081	50.0000	49.6	
	57	Toluene	92	8.227	8.223	(1.342)	9147	1.00000	0.89(a)	
	58	Tetrachloroethene	164	8.744	8.744	(0.851)	2764	1.00000	0.88(a)	
	59	4-methyl-2-pentanone	43	8.833	8.822	(1.441)	14725	5.00000	4.2(a)	
	60	trans-1,3-Dichloropropene	75	8.845	8.852	(1.442)	4889	1.00000	0.81(a)	
	61	1,1,2-Trichloroethane	83	9.058	9.058	(1.477)	2929	1.00000	0.92(a)	
	62	Ethyl Methacrylate	69	9.151	9.152	(1.493)	3417	1.00000	0.68(a)	
	63	Dibromochloromethane	129	9.279	9.275	(0.903)	3052	1.00000	0.72(a)	
	64	1,3-Dichloropropane	76	9.413	9.410	(0.916)	6561	1.00000	0.96(a)	
	65	1,2-Dibromoethane	107	9.548	9.552	(1.557)	3775	1.00000	0.94(Ta)	
M	66	Total Alkylbenzenes	100				81120	1.00000	5.5(a)	
	67	2-Hexanone	43	10.001	9.990	(0.973)	9999	5.00000	4.1(a)	
*	68	Chlorobenzene-D5	117	10.274	10.274	(1.000)	693020	50.0000		
	69	Chlorobenzene	112	10.297	10.297	(1.002)	10390	1.00000	0.99(a)	
	70	Ethylbenzene	91	10.375	10.379	(1.010)	16911	1.00000	0.90(a)	
	71	1,1,1,2-Tetrachloroethane	131	10.413	10.409	(1.013)	3275	1.00000	0.84(a)	
	72	m+p-Xylenes	91	10.588	10.585	(1.031)	24053	2.00000	1.7(a)	
	73	o-Xylene	91	11.157	11.150	(1.086)	11117	1.00000	0.80(a)	
	74	Styrene	104	11.225	11.232	(1.093)	8262	1.00000	0.74(a)	
	75	Bromoform	173	11.221	11.221	(1.092)	1669	1.00000	0.69(a)	
	76	Isopropylbenzene	105	11.588	11.584	(0.869)	13443	1.00000	0.80(a)	
$	77	P-Bromofluorobenzene	95	11.917	11.921	(1.944)	326424	50.0000	50.4	

Data File: \\target_server\gg\chem\gcms-t.i\T062321.b\T2383.D
Report Date: 29-Jun-2021 13:54

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	78 Bromobenzene	156	12.029	12.022	(0.902)	4024	1.00000	0.95(a)	
	79 cis-1,4-Dichloro-2-Butene	53	12.052	12.052	(0.904)	1109	1.00000	0.82(a)	
	80 N-Propylbenzene	91	12.123	12.127	(0.909)	16893	1.00000	0.85(a)	
	81 1,1,2,2-Tetrachloroethane	83	12.246	12.246	(0.918)	4494	1.00000	0.94(a)	
	82 2-Chlorotoluene	91	12.284	12.284	(0.921)	10608	1.00000	0.89(a)	
	83 1,2,3-Trichloropropane	75	12.381	12.377	(0.928)	4050	1.00000	1.0	
	84 1,3,5-Trimethylbenzene	105	12.403	12.400	(0.930)	10955	1.00000	0.81(a)	
	85 trans-1,4-Dichloro-2-Butene	53	12.467	12.463	(0.935)	1412	1.00000	0.99(a)	
	86 4-Chlorotoluene	91	12.504	12.505	(0.938)	11737	1.00000	0.94(a)	
	87 tert-Butylbenzene	119	12.781	12.785	(0.958)	8795	1.00000	0.77(a)	
	89 1,2,4-Trimethylbenzene	105	12.879	12.883	(0.966)	10465	1.00000	0.78(a)	
	90 sec-Butylbenzene	105	13.010	13.010	(0.976)	13682	1.00000	0.82(a)	
	91 P-Isopropyltoluene	119	13.215	13.212	(0.991)	10506	1.00000	0.75(a)	
	92 1,3-Dichlorobenzene	146	13.238	13.238	(0.993)	7766	1.00000	1.0	
*	93 1,4-Dichlorobenzene-D4	152	13.335	13.339	(1.000)	325319	50.0000		
	94 1,4-Dichlorobenzene	146	13.358	13.354	(1.002)	8329	1.00000	1.1	
	95 1,2,3-Trimethylbenzene	105	13.418	13.418	(1.006)	13026	1.00000	0.94(a)	
	96 N-Butylbenzene	91	13.736	13.736	(1.030)	9824	1.00000	0.76(a)	
	97 1,2-Dichlorobenzene	146	13.867	13.871	(1.040)	6760	1.00000	0.97(a)	
	98 1,2-Dibromo-3-Chloropropane	157	14.870	14.873	(1.115)	478	1.00000	0.62(a)	
	99 1,3,5-Trichlorobenzene	180	14.911	14.911	(1.118)	4671	1.00000	0.98(a)	
	100 Hexachlorobutadiene	225	15.689	15.693	(1.177)	1871	1.00000	0.97(a)	
	101 1,2,4-Trichlorobenzene	180	15.704	15.700	(1.178)	4138	1.00000	0.97(a)	
	102 Naphthalene	128	16.093	16.093	(1.207)	7329	1.00000	0.68(a)	
M	103 1,2-Dichloroethylene (total)	96				8770	1.00000	2.0	
	104 1,2,3-Trichlorobenzene	180	16.318	16.318	(1.224)	3583	1.00000	0.95(a)	
M	105 Xylenes (total)	91				35170	5.00000	2.5(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.


Data File: \\target_server\gg\chem\gcms-t.i\T062321.b\T2383.D
Date : 23-JUN-2021 12:27
Client ID:
Sample Info: WG301244-1
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-t.i
Operator: CR
Column diameter: 0.18
\\target_server\gg\chem\gcms-t.i\T062321.b\T2383.D
Y (x10^6)
Min
-Chloromethane (1.353)
-Vinyl Chloride (1.398)
-Bromomethane (1.600)+
-Trichlorofluoromethane (1.772)
-Diethyl Ether (1.971)
-1,1-Dichloroethene (2.143)+
-Acrolein (2.363)
-Methylene Chloride (2.554)+
-trans-1,2-Dichloroethene (2.685)+
-Methyl tert-butyl ether (2.776)
-Tertiary-butyl alcohol (2.876)
-Acetonitrile (3.022)
-Di-isopropyl ether (3.134)
-Chloroprene (3.234)+
-Acrylonitrile (3.333)
-Ethyl tertiary-butyl ethe (3.531)+
-cis-1,2-Dichloroethene (3.872)
-2,2-Dichloropropane (3.995)
-Cyclohexane (4.107)+
-Chloroform (4.235)
-Carbon Tetrachloride (4.392)
-Tetrahydrofuran (4.493)+
-1,1-Dichloropropene (4.695)+
-Benzene (5.088)
-Propionitrile (5.204)+
-Pentafluorobenzene (5.309)+
-1,2-Dichloroethane (5.443)
-Isobutyl Alcohol (5.638)
-Methylcyclohexane (6.005)+
-1,4-Difluorobenzene (6.132)
-Dibromomethane (6.678)
-1,2-Dichloropropane (6.839)
-Bromodichloromethane (6.978)
-Methyl Methacrylate (7.292)+
-2-Chloroethylvinylether (7.902)+
Toluene-D8 (8.153)+
-Tetrachloroethene (8.737)
-4-methyl-2-pentanone (8.834)+
-1,1,2-Trichloroethane (9.062)
-Ethyl Methacrylate (9.152)
-Dibromochloromethane (9.275)
-1,3-Dichloropropane (9.410)
-1,2-Dibromoethane (9.549)
-2-Hexanone (9.998)
-Total Alkylbenzenes (10.100)
-Ethylbenzene (10.376)+
-m+p-Xylenes (10.585)
Chlorobenzene-D5 (10.275)+
-o-Xylene (11.454)
-Styrene (11.229)+
-Isopropylbenzene (11.588)
-Bromobenzene (12.026)+
-N-Propylbenzene (12.123)
-1,1,2,2-Tetrachloroethane (12.243)
-1,2,3-Trichloropropane (12.400)+
-trans-1,4-Dichlorobutene (12.464)
P-Bromofluorobenzene (11.921)
-tert-Butylbenzene (12.786)
-1,2,4-Trimethylbenzene (12.883)
-sec-Butylbenzene (13.010)
-P-Isopropyltoluene (13.231)+
-1,2,3-Trimethylbenzene (13.414)
1,4-Dichlorobenzene-D4 (13.336)+
-N-Butylbenzene (13.736)
-1,2-Dichlorobenzene (13.867)
-1,2-Dibromo-3-Chloropropa (14.911)+
-Hexachlorobutadiene (15.697)+
-Naphthalene (16.094)
-1,2,3-Trichlorobenzene (16.315)
-1,2-Dichloroethylene (tot (16.880)

Katahdin
ANALYTICAL SERVICES

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Fort Devens 2021 LTM **SDG:** SO3743
Lab ID : WG301245-4 **Analytical Date:** 06/23/21 10:13
Lab File ID : S0360.D **Instrument ID:** GCMS-S
Initial Calibration Date(s): 06/22/21 11:04 06/22/21 14:02 **Column ID:**

	Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	Dichlorodifluoromethane	0.59038	0.58754	0.58754	0.100	-0.48168	20.00000	Averaged
2	Chloromethane	0.73654	0.71127	0.71127	0.100	-3.43096	20.00000	Averaged
3	Vinyl chloride	0.53797	0.50169	0.50169	0.100	-6.74441	20.00000	Averaged
4	Bromomethane	0.16363	0.14241	0.14241	0.100	-12.96646	20.00000	Averaged
5	Chloroethane	0.25638	0.21389	0.21389	0.100	-16.57374	20.00000	Averaged
6	Trichlorofluoromethane	0.63216	0.58012	0.58012	0.100	-8.23210	20.00000	Averaged
8	1,1-Dichloroethene	0.45666	0.38162	0.38162	0.100	-16.43256	20.00000	Averaged
10	Carbon Disulfide	0.97742	0.84299	0.84299	0.100	-13.75313	20.00000	Averaged
14	Methylene Chloride	50.00000	53.00614	0.85007	0.100	6.01228	20.00000	Linear
15	Acetone	250	237	0.14126	0.100	-5.07936	20.00000	Quadratic
16	trans-1,2-Dichloroethene	0.78814	0.78965	0.78965	0.100	0.19146	20.00000	Averaged
18	Methyl tert-butyl ether	1.88180	1.94190	1.94190	0.100	3.19398	20.00000	Averaged
23	1,1-Dichloroethane	1.28388	1.24381	1.24381	0.200	-3.12073	20.00000	Averaged
26	Vinyl Acetate	0.44413	0.46143	0.46143	0.010	3.89550	20.00000	Averaged
27	cis-1,2-Dichloroethene	0.84668	0.84705	0.84705	0.100	0.04324	20.00000	Averaged
28	2,2-Dichloropropane	0.89525	0.92784	0.92784	0.010	3.64046	20.00000	Averaged
29	Bromochloromethane	0.36051	0.36879	0.36879	0.010	2.29816	20.00000	Averaged
31	Chloroform	1.30925	1.29044	1.29044	0.200	-1.43707	20.00000	Averaged
32	Carbon Tetrachloride	0.45441	0.46823	0.46823	0.100	3.03954	20.00000	Averaged
35	1,1,1-Trichloroethane	1.11428	1.10991	1.10991	0.100	-0.39233	20.00000	Averaged
36	2-Butanone	0.23993	0.23797	0.23797	0.100	-0.82054	20.00000	Averaged
37	1,1-Dichloropropene	0.51708	0.53348	0.53348	0.010	3.17051	20.00000	Averaged
38	Benzene	1.61870	1.65876	1.65876	0.500	2.47516	20.00000	Averaged
44	1,2-Dichloroethane	0.46496	0.44888	0.44888	0.100	-3.45773	20.00000	Averaged
47	Trichloroethene	0.39024	0.39214	0.39214	0.200	0.48633	20.00000	Averaged
49	Dibromomethane	0.23131	0.23487	0.23487	0.010	1.53882	20.00000	Averaged
50	1,2-Dichloropropane	0.38235	0.38853	0.38853	0.100	1.61512	20.00000	Averaged
51	Bromodichloromethane	0.46915	0.48434	0.48434	0.200	3.23693	20.00000	Averaged
57	cis-1,3-dichloropropene	0.60133	0.64733	0.64733	0.200	7.64946	20.00000	Averaged
59	Toluene	1.68898	1.74170	1.74170	0.400	3.12178	20.00000	Averaged
60	Tetrachloroethene	0.30991	0.32448	0.32448	0.200	4.70168	20.00000	Averaged
61	4-methyl-2-pentanone	0.22566	0.25514	0.25514	0.100	13.06350	20.00000	Averaged
62	trans-1,3-Dichloropropene	0.50073	0.54038	0.54038	0.100	7.91933	20.00000	Averaged
63	1,1,2-Trichloroethane	0.36311	0.37869	0.37869	0.100	4.28798	20.00000	Averaged
64	Dibromochloromethane	0.37421	0.40756	0.40756	0.100	8.91214	20.00000	Averaged
65	1,3-Dichloropropane	0.68076	0.69568	0.69568	0.010	2.19191	20.00000	Averaged
66	1,2-Dibromoethane	0.35016	0.37578	0.37578	0.100	7.31468	20.00000	Averaged
67	2-Hexanone	0.15668	0.17955	0.17955	0.100	14.59654	20.00000	Averaged
69	Chlorobenzene	1.11148	1.13397	1.13397	0.500	2.02342	20.00000	Averaged
71	Ethylbenzene	0.62113	0.65393	0.65393	0.100	5.28093	20.00000	Averaged
72	1,1,1,2-Tetrachloroethane	0.36733	0.39127	0.39127	0.010	6.51661	20.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Fort Devens 2021 LTM **SDG:** SO3743
Lab ID : WG301245-4 **Analytical Date:** 06/23/21 10:13
Lab File ID : S0360.D **Instrument ID:** GCMS-S
Initial Calibration Date(s): 06/22/21 11:04 06/22/21 14:02 **Column ID:**

	Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
73	m+p-Xylenes	0.72424	0.79499	0.79499	0.100	9.76851	20.00000	Averaged	
74	o-Xylene	0.67934	0.75436	0.75436	0.300	11.04385	20.00000	Averaged	
75	Styrene	50.00000	53.40217	1.29946	0.300	6.80433	20.00000	Linear	
76	Bromoform	50.00000	47.75090	0.24052	0.100	-4.49820	20.00000	Linear	
77	Isopropylbenzene	3.25678	3.51563	3.51563	0.100	7.94795	20.00000	Averaged	
80	Bromobenzene	0.88217	0.88664	0.88664	0.010	0.50720	20.00000	Averaged	
81	N-Propylbenzene	3.89557	4.15977	4.15977	0.010	6.78211	20.00000	Averaged	
82	1,1,2,2-Tetrachloroethane	0.96395	0.97744	0.97744	0.300	1.39963	20.00000	Averaged	
83	2-Chlorotoluene	2.41236	2.46696	2.46696	0.010	2.26322	20.00000	Averaged	
84	1,2,3-Trichloropropane	0.75905	0.76321	0.76321	0.010	0.54811	20.00000	Averaged	
85	1,3,5-Trimethylbenzene	2.70579	2.96654	2.96654	0.010	9.63689	20.00000	Averaged	
87	4-Chlorotoluene	2.52052	2.59660	2.59660	0.010	3.01862	20.00000	Averaged	
88	tert-Butylbenzene	2.35840	2.55271	2.55271	0.010	8.23891	20.00000	Averaged	
90	1,2,4-Trimethylbenzene	2.71741	2.97437	2.97437	0.010	9.45610	20.00000	Averaged	
91	sec-Butylbenzene	3.39018	3.71985	3.71985	0.010	9.72399	20.00000	Averaged	
92	P-Isopropyltoluene	2.85006	3.22118	3.22118	0.010	13.02127	20.00000	Averaged	
93	1,3-Dichlorobenzene	1.60484	1.66629	1.66629	0.600	3.82867	20.00000	Averaged	
95	1,4-Dichlorobenzene	1.67424	1.68095	1.68095	0.500	0.40023	20.00000	Averaged	
97	N-Butylbenzene	50.00000	49.09458	2.90829	0.010	-1.81084	20.00000	Quadratic	
98	1,2-Dichloroethylene (total	++++	1.63670	1.63670	0.010	++++	20.00000	Averaged	*
99	1,2-Dichlorobenzene	1.54948	1.60254	1.60254	0.400	3.42439	20.00000	Averaged	
100	1,2-Dibromo-3-Chloropropane	50.00000	49.39243	0.16323	0.050	-1.21514	20.00000	Linear	
102	Hexachlorobutadiene	50.00000	49.32420	0.48923	0.010	-1.35159	20.00000	Linear	
103	1,2,4-Trichlorobenzene	50.00000	49.27908	1.05784	0.200	-1.44185	20.00000	Linear	
104	Naphthalene	50.00000	51.33824	2.82507	0.010	2.67648	20.00000	Quadratic	
105	1,2,3-Trichlorobenzene	0.89024	0.99812	0.99812	0.010	12.11832	20.00000	Averaged	
106	Xylenes (total)	++++	0.78145	0.78145	0.010	++++	20.00000	Averaged	*
34	Dibromofluoromethane	0.56925	0.56510	0.56510	0.010	-0.72843	20.00000	Averaged	
42	1,2-Dichloroethane-D4	0.59249	0.55852	0.55852	0.010	-5.73398	20.00000	Averaged	
58	Toluene-D8	1.17684	1.16857	1.16857	0.010	-0.70272	20.00000	Averaged	
78	P-Bromofluorobenzene	0.44487	0.44937	0.44937	0.010	1.01307	20.00000	Averaged	

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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Fort Devens 2021 LTM
SDG: SO3743
Lab ID : WG301245-4
Analytical Date: 06/23/21 10:13
Lab File ID : S0360.D
Instrument ID: GCMS-S
Initial Calibration Date(s): 06/22/21 11:04 06/22/21 14:02
Column ID:

*** = Compound out of QC criteria**

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Data File: \\target_server\gg\chem\gcms-s.i\S062321.b\S0360.D
Report Date: 01-Jul-2021 09:22

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-s.i\S062321.b\S0360.D
Lab Smp Id: WG301245-4
Inj Date : 23-JUN-2021 10:13
Operator : CR Inst ID: gcms-s.i
Smp Info : WG301245-4,SO3743
Misc Info : WG301245,WG301173-4,SO3743-5
Comment : SW846 5030C
Method : \\target_server\gg\chem\gcms-s.i\S062321.b\S8A05(14)D.m
Meth Date : 01-Jul-2021 08:43 croy Quant Type: ISTD
Cal Date : 22-JUN-2021 11:34 Cal File: S0339.D
Als bottle: 1 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: VOA-WS

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution 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)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.108	1.109	(0.227)	287502	50.0000	49.8	
2	Chloromethane	50	1.221	1.224	(0.250)	348047	50.0000	48.3	
3	Vinyl chloride	62	1.266	1.269	(0.259)	245493	50.0000	46.6	
4	Bromomethane	94	1.452	1.456	(0.297)	69686	50.0000	43.5	
5	Chloroethane	64	1.520	1.523	(0.311)	104664	50.0000	41.7	
6	Trichlorofluoromethane	101	1.606	1.610	(0.328)	283870	50.0000	45.9	
7	Diethyl Ether	59	1.796	1.800	(0.367)	161878	50.0000	44.1	
8	1,1-Dichloroethene	96	1.925	1.932	(0.393)	186739	50.0000	41.8	
9	Freon-113	151	1.944	1.951	(0.397)	172863	50.0000	45.6	
10	Carbon Disulfide	76	1.950	1.954	(0.399)	412502	50.0000	43.1	
11	Iodomethane	142	2.028	2.031	(0.414)	230681	50.0000	49.4	
12	Acrolein	56	2.163	2.166	(0.442)	128927	250.000	229	
13	Allyl Chloride	41	2.256	2.256	(0.461)	282785	50.0000	51.9	
14	Methylene Chloride	84	2.333	2.340	(0.477)	415968	50.0000	53.0	
15	Acetone	43	2.381	2.385	(0.487)	345615	250.000	237	
16	trans-1,2-Dichloroethene	96	2.452	2.459	(0.501)	386402	50.0000	50.1	
17	Methyl Acetate	43	2.474	2.478	(0.506)	243712	50.0000	49.3	
18	Methyl tert-butyl ether	73	2.545	2.549	(0.520)	950233	50.0000	51.6	
20	Acetonitrile	41	2.770	2.771	(0.566)	317975	500.000	440	
21	Di-isopropyl ether	45	2.873	2.877	(0.587)	870687	50.0000	49.6	
19	Tertiary-butyl alcohol	59	2.642	2.639	(0.540)	121499	250.000	201	
22	Chloroprene	53	2.963	2.967	(0.606)	446541	50.0000	50.9	
23	1,1-Dichloroethane	63	2.989	2.996	(0.611)	608636	50.0000	48.4	

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Report Date: 01-Jul-2021 09:22

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	24	Acrylonitrile	52	3.056	3.060	(0.625)	494182	250.000	249	
	25	Ethyl tertiary-butyl ether	59	3.237	3.240	(0.662)	927624	50.0000	51.2	
	26	Vinyl Acetate	43	3.253	3.260	(0.563)	438994	50.0000	51.9	
	27	cis-1,2-Dichloroethene	96	3.548	3.555	(0.725)	414487	50.0000	50.0	
	28	2,2-Dichloropropane	77	3.671	3.678	(0.750)	454019	50.0000	51.8	
	30	Cyclohexane	56	3.764	3.768	(0.769)	575867	50.0000	51.1	
	29	Bromochloromethane	128	3.780	3.790	(0.773)	180461	50.0000	51.1	
	31	Chloroform	83	3.889	3.893	(0.795)	631452	50.0000	49.3	
	32	Carbon Tetrachloride	117	4.031	4.041	(0.698)	445461	50.0000	51.5	
	33	Tetrahydrofuran	42	4.085	4.089	(0.835)	450650	250.000	260	
$	34	Dibromofluoromethane	113	4.130	4.134	(0.844)	276523	50.0000	49.6	
	35	1,1,1-Trichloroethane	97	4.134	4.136	(0.845)	543113	50.0000	49.8	
	37	1,1-Dichloropropene	75	4.307	4.314	(0.746)	507540	50.0000	51.6	
	36	2-Butanone	43	4.323	4.330	(0.884)	582221	250.000	248	
	38	Benzene	78	4.680	4.687	(0.811)	1578113	50.0000	51.2	
	39	Propionitrile	54	4.773	4.777	(0.976)	452880	500.000	451	
	40	Methacrylonitrile	41	4.796	4.803	(0.980)	1508820	500.000	524	
*	41	Pentafluorobenzene	168	4.892	4.903	(1.000)	489331	50.0000		
$	42	1,2-Dichloroethane-D4	65	4.918	4.922	(1.005)	273300	50.0000	47.1	
	43	Tertiary-amyl methyl ether	73	4.925	4.932	(1.007)	846495	50.0000	52.0	
	44	1,2-Dichloroethane	62	5.034	5.041	(0.872)	427054	50.0000	48.3	
	45	Isobutyl Alcohol	43	5.233	5.237	(1.070)	171936	1000.00	1100	
	46	Methylcyclohexane	83	5.619	5.629	(1.149)	689936	50.0000	53.5	
	47	Trichloroethene	95	5.671	5.678	(0.982)	373070	50.0000	50.2	
*	48	1,4-Difluorobenzene	114	5.773	5.777	(1.000)	951379	50.0000		
	49	Dibromomethane	93	6.349	6.349	(1.100)	223450	50.0000	50.8	
	50	1,2-Dichloropropane	63	6.516	6.520	(1.129)	369637	50.0000	50.8	
	51	Bromodichloromethane	83	6.661	6.668	(1.154)	460787	50.0000	51.6	
	54	1,4-Dioxane	88	7.008	7.009	(1.214)	82410	1000.00	784	
	52	Methyl Methacrylate	41	7.008	7.009	(1.214)	215701	50.0000	49.8	
	57	cis-1,3-dichloropropene	75	7.661	7.668	(1.327)	615855	50.0000	53.8	
	56	2-Chloroethylvinylether	63	7.641	7.648	(1.324)	229479	50.0000	47.2	
$	58	Toluene-D8	98	7.931	7.938	(1.374)	1111755	50.0000	49.6	
	59	Toluene	91	8.008	8.012	(1.387)	1657018	50.0000	51.6	
	60	Tetrachloroethene	164	8.558	8.564	(0.837)	299583	50.0000	52.4	
	61	4-methyl-2-pentanone	43	8.667	8.670	(1.501)	1213696	250.000	283	
	62	trans-1,3-Dichloropropene	75	8.693	8.696	(1.506)	514108	50.0000	54.0	
	63	1,1,2-Trichloroethane	97	8.915	8.919	(1.544)	360273	50.0000	52.1	
	53	Ethyl Methacrylate	69	9.031	9.034	(1.564)	485563	50.0000	50.2	
	64	Dibromochloromethane	129	9.146	9.153	(0.894)	376290	50.0000	54.4	
	65	1,3-Dichloropropane	76	9.294	9.298	(0.909)	642308	50.0000	51.1	
	66	1,2-Dibromoethane	107	9.432	9.439	(1.634)	357506	50.0000	53.6	
	67	2-Hexanone	43	9.934	9.941	(0.971)	828856	250.000	286	
*	68	Chlorobenzene-D5	117	10.227	10.234	(1.000)	923279	50.0000		
	69	Chlorobenzene	112	10.249	10.253	(1.002)	1046967	50.0000	51.0	
	71	Ethylbenzene	106	10.346	10.349	(1.012)	603757	50.0000	52.6	
	72	1,1,1,2-Tetrachloroethane	131	10.381	10.382	(1.015)	361253	50.0000	53.2	
	73	m+p-Xylenes	106	10.577	10.581	(1.034)	1467996	100.000	110	
	74	o-Xylene	106	11.182	11.182	(1.093)	696489	50.0000	55.5	
	76	Bromoform	173	11.249	11.253	(1.100)	222063	50.0000	47.8	
	75	Styrene	104	11.265	11.266	(1.102)	1199768	50.0000	53.4	
	77	Isopropylbenzene	105	11.648	11.652	(0.862)	1744984	50.0000	54.0	
$	78	P-Bromofluorobenzene	95	11.998	12.002	(2.078)	427525	50.0000	50.5	
	80	Bromobenzene	156	12.101	12.105	(0.896)	440087	50.0000	50.2	

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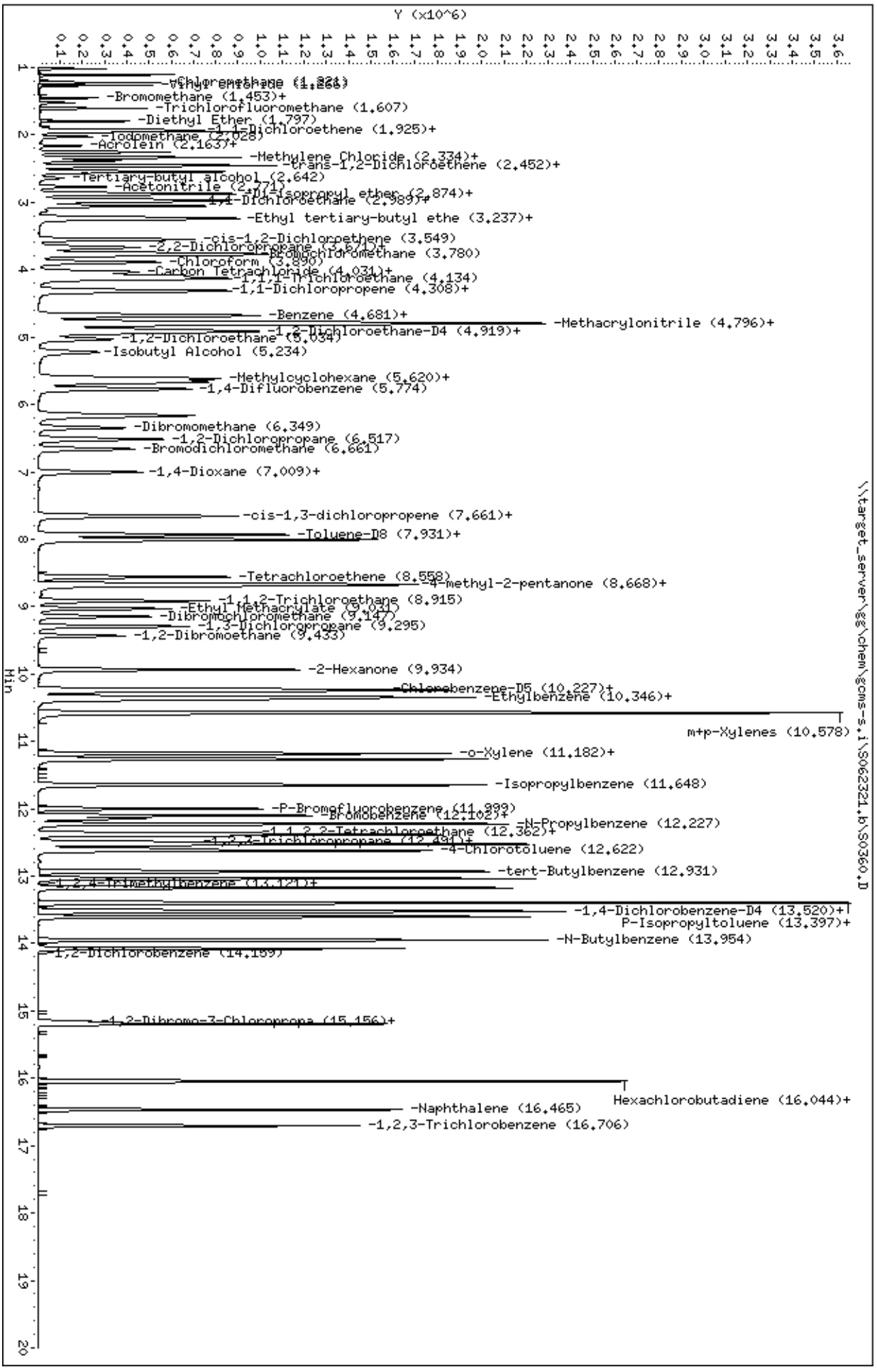
Report Date: 01-Jul-2021 09:22

			QUANT SIG					AMOUNTS		
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	79	cis-1,4-Dichloro-2-Butene	53	12.149	12.153	(0.899)	110463	50.0000	53.3	
	81	N-Propylbenzene	91	12.227	12.227	(0.905)	2064706	50.0000	53.4	
	82	1,1,2,2-Tetrachloroethane	83	12.362	12.362	(0.915)	485155	50.0000	50.7	
	83	2-Chlorotoluene	91	12.387	12.391	(0.917)	1224479	50.0000	51.1	
	84	1,2,3-Trichloropropane	75	12.490	12.494	(0.924)	378821	50.0000	50.3	
	85	1,3,5-Trimethylbenzene	105	12.526	12.526	(0.927)	1472446	50.0000	54.8	
	86	trans-1,4-Dichloro-2-Butene	53	12.590	12.590	(0.932)	115390	50.0000	53.1	
	87	4-Chlorotoluene	91	12.622	12.626	(0.934)	1288826	50.0000	51.5	
	88	tert-Butylbenzene	119	12.931	12.934	(0.957)	1267039	50.0000	54.1	
	90	1,2,4-Trimethylbenzene	105	13.037	13.037	(0.965)	1476331	50.0000	54.7	
	91	sec-Butylbenzene	105	13.175	13.179	(0.975)	1846349	50.0000	54.9	
	92	P-Isopropyltoluene	119	13.394	13.394	(0.991)	1598835	50.0000	56.5	
	93	1,3-Dichlorobenzene	146	13.403	13.404	(0.992)	827064	50.0000	51.9	
*	94	1,4-Dichlorobenzene-D4	152	13.513	13.513	(1.000)	496351	50.0000		
	95	1,4-Dichlorobenzene	146	13.532	13.533	(1.001)	834339	50.0000	50.2	
	96	1,2,3-Trimethylbenzene	105	13.603	13.606	(1.007)	1503297	50.0000	53.2	
	97	N-Butylbenzene	91	13.953	13.954	(1.033)	1443532	50.0000	49.1	
	99	1,2-Dichlorobenzene	146	14.075	14.079	(1.042)	795424	50.0000	51.7	
	100	1,2-Dibromo-3-Chloropropane	157	15.156	15.159	(1.122)	81020	50.0000	49.4	
	101	1,3,5-Trichlorobenzene	180	15.194	15.198	(1.124)	569677	50.0000	54.8	
	102	Hexachlorobutadiene	225	16.046	16.047	(1.187)	242829	50.0000	49.3	
	103	1,2,4-Trichlorobenzene	180	16.043	16.047	(1.187)	525060	50.0000	49.3	
	104	Naphthalene	128	16.468	16.468	(1.219)	1402225	50.0000	51.3	
	105	1,2,3-Trichlorobenzene	180	16.705	16.709	(1.236)	495420	50.0000	56.0	
M	98	1,2-Dichloroethylene (total)	96				800889	50.0000	100	
M	106	Xylenes (total)	106				2164485	150.000	165	
M	55	Total Alkylbenzenes	100				11169238	50.0000	378	



Data File: \\target_server\gg\chem\gcms-s.i\S062321.b\S0360.D
Date : 23-JUN-2021 10:13
Client ID:
Sample Info: WG301245-4,S03743
Purge Volume: 5.0
Column phase: RTX-VMS

Instrument: gcms-s.i
Operator: CR
Column diameter: 0.18

Katahdin
ANALYTICAL SERVICES

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Fort Devens 2021 LTM **SDG:** SO3743
Lab ID : WG301245-5 **Analytical Date:** 06/23/21 20:52
Lab File ID : S0381.D **Instrument ID:** GCMS-S
Initial Calibration Date(s): 06/22/21 11:04 06/22/21 14:02 **Column ID:**

	Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	Dichlorodifluoromethane	0.59038	0.84594	0.84594	0.100	43.28615	50.00000	Averaged
2	Chloromethane	0.73654	0.78710	0.78710	0.100	6.86374	50.00000	Averaged
3	Vinyl chloride	0.53797	0.59098	0.59098	0.100	9.85273	50.00000	Averaged
4	Bromomethane	0.16363	0.13473	0.13473	0.100	-17.66030	50.00000	Averaged
5	Chloroethane	0.25638	0.24147	0.24147	0.100	-5.81859	50.00000	Averaged
6	Trichlorofluoromethane	0.63216	0.65962	0.65962	0.100	4.34342	50.00000	Averaged
8	1,1-Dichloroethene	0.45666	0.40931	0.40931	0.100	-10.36885	50.00000	Averaged
10	Carbon Disulfide	0.97742	0.92466	0.92466	0.100	-5.39744	50.00000	Averaged
14	Methylene Chloride	50.00000	51.50156	0.82595	0.100	3.00312	50.00000	Linear
15	Acetone	250	216	0.12971	0.100	-13.40771	50.00000	Quadratic
16	trans-1,2-Dichloroethene	0.78814	0.78235	0.78235	0.100	-0.73497	50.00000	Averaged
18	Methyl tert-butyl ether	1.88180	1.83793	1.83793	0.100	-2.33109	50.00000	Averaged
23	1,1-Dichloroethane	1.28388	1.23272	1.23272	0.200	-3.98450	50.00000	Averaged
26	Vinyl Acetate	0.44413	0.44886	0.44886	0.010	1.06641	50.00000	Averaged
27	cis-1,2-Dichloroethene	0.84668	0.85633	0.85633	0.100	1.13906	50.00000	Averaged
28	2,2-Dichloropropane	0.89525	0.84215	0.84215	0.010	-5.93069	50.00000	Averaged
29	Bromochloromethane	0.36051	0.38422	0.38422	0.010	6.57870	50.00000	Averaged
31	Chloroform	1.30925	1.27599	1.27599	0.200	-2.54046	50.00000	Averaged
32	Carbon Tetrachloride	0.45441	0.47660	0.47660	0.100	4.88255	50.00000	Averaged
35	1,1,1-Trichloroethane	1.11428	1.10281	1.10281	0.100	-1.02909	50.00000	Averaged
36	2-Butanone	0.23993	0.21482	0.21482	0.100	-10.46838	50.00000	Averaged
37	1,1-Dichloropropene	0.51708	0.54585	0.54585	0.010	5.56272	50.00000	Averaged
38	Benzene	1.61870	1.68392	1.68392	0.500	4.02897	50.00000	Averaged
44	1,2-Dichloroethane	0.46496	0.45216	0.45216	0.100	-2.75209	50.00000	Averaged
47	Trichloroethene	0.39024	0.40052	0.40052	0.200	2.63367	50.00000	Averaged
49	Dibromomethane	0.23131	0.24293	0.24293	0.010	5.02136	50.00000	Averaged
50	1,2-Dichloropropane	0.38235	0.38601	0.38601	0.100	0.95622	50.00000	Averaged
51	Bromodichloromethane	0.46915	0.49590	0.49590	0.200	5.70229	50.00000	Averaged
57	cis-1,3-dichloropropene	0.60133	0.64524	0.64524	0.200	7.30279	50.00000	Averaged
59	Toluene	1.68898	1.77364	1.77364	0.400	5.01301	50.00000	Averaged
60	Tetrachloroethene	0.30991	0.34123	0.34123	0.200	10.10748	50.00000	Averaged
61	4-methyl-2-pentanone	0.22566	0.23635	0.23635	0.100	4.73516	50.00000	Averaged
62	trans-1,3-Dichloropropene	0.50073	0.53970	0.53970	0.100	7.78329	50.00000	Averaged
63	1,1,2-Trichloroethane	0.36311	0.37614	0.37614	0.100	3.58735	50.00000	Averaged
64	Dibromochloromethane	0.37421	0.41965	0.41965	0.100	12.14287	50.00000	Averaged
65	1,3-Dichloropropane	0.68076	0.71503	0.71503	0.010	5.03459	50.00000	Averaged
66	1,2-Dibromoethane	0.35016	0.37960	0.37960	0.100	8.40591	50.00000	Averaged
67	2-Hexanone	0.15668	0.16639	0.16639	0.100	6.19871	50.00000	Averaged
69	Chlorobenzene	1.11148	1.18953	1.18953	0.500	7.02209	50.00000	Averaged
71	Ethylbenzene	0.62113	0.68167	0.68167	0.100	9.74699	50.00000	Averaged
72	1,1,1,2-Tetrachloroethane	0.36733	0.41021	0.41021	0.010	11.67103	50.00000	Averaged

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Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Fort Devens 2021 LTM **SDG:** SO3743
Lab ID : WG301245-5 **Analytical Date:** 06/23/21 20:52
Lab File ID : S0381.D **Instrument ID:** GCMS-S
Initial Calibration Date(s): 06/22/21 11:04 06/22/21 14:02 **Column ID:**

Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
73 m+p-Xylenes	0.72424	0.81970	0.81970	0.100	13.18052	50.00000	Averaged	
74 o-Xylene	0.67934	0.78848	0.78848	0.300	16.06587	50.00000	Averaged	
75 Styrene	50.00000	55.38601	1.34774	0.300	10.77201	50.00000	Linear	
76 Bromoform	50.00000	49.68279	0.25025	0.100	-0.63443	50.00000	Linear	
77 Isopropylbenzene	3.25678	3.61442	3.61442	0.100	10.98148	50.00000	Averaged	
80 Bromobenzene	0.88217	0.92456	0.92456	0.010	4.80491	50.00000	Averaged	
81 N-Propylbenzene	3.89557	4.23291	4.23291	0.010	8.65959	50.00000	Averaged	
82 1,1,2,2-Tetrachloroethane	0.96395	0.96071	0.96071	0.300	-0.33671	50.00000	Averaged	
83 2-Chlorotoluene	2.41236	2.53069	2.53069	0.010	4.90508	50.00000	Averaged	
84 1,2,3-Trichloropropane	0.75905	0.74714	0.74714	0.010	-1.56985	50.00000	Averaged	
85 1,3,5-Trimethylbenzene	2.70579	3.02834	3.02834	0.010	11.92093	50.00000	Averaged	
87 4-Chlorotoluene	2.52052	2.66550	2.66550	0.010	5.75216	50.00000	Averaged	
88 tert-Butylbenzene	2.35840	2.62085	2.62085	0.010	11.12823	50.00000	Averaged	
90 1,2,4-Trimethylbenzene	2.71741	3.03991	3.03991	0.010	11.86798	50.00000	Averaged	
91 sec-Butylbenzene	3.39018	3.83642	3.83642	0.010	13.16256	50.00000	Averaged	
92 P-Isopropyltoluene	2.85006	3.31645	3.31645	0.010	16.36399	50.00000	Averaged	
93 1,3-Dichlorobenzene	1.60484	1.72945	1.72945	0.600	7.76453	50.00000	Averaged	
95 1,4-Dichlorobenzene	1.67424	1.75667	1.75667	0.500	4.92300	50.00000	Averaged	
97 N-Butylbenzene	50.00000	50.24866	2.97050	0.010	0.49732	50.00000	Quadratic	
98 1,2-Dichloroethylene (total	++++	1.63868	1.63868	0.010	++++	50.00000	Averaged	*
99 1,2-Dichlorobenzene	1.54948	1.64960	1.64960	0.400	6.46154	50.00000	Averaged	
100 1,2-Dibromo-3-Chloropropane	50.00000	48.43863	0.16008	0.050	-3.12274	50.00000	Linear	
102 Hexachlorobutadiene	50.00000	51.66153	0.51241	0.010	3.32307	50.00000	Linear	
103 1,2,4-Trichlorobenzene	50.00000	51.05411	1.09594	0.200	2.10823	50.00000	Linear	
104 Naphthalene	50.00000	50.53487	2.78404	0.010	1.06973	50.00000	Quadratic	
105 1,2,3-Trichlorobenzene	0.89024	1.02332	1.02332	0.010	14.94812	50.00000	Averaged	
106 Xylenes (total)	++++	0.80929	0.80929	0.010	++++	50.00000	Averaged	*
34 Dibromofluoromethane	0.56925	0.53482	0.53482	0.010	-6.04849	50.00000	Averaged	
42 1,2-Dichloroethane-D4	0.59249	0.52324	0.52324	0.010	-11.68770	50.00000	Averaged	
58 Toluene-D8	1.17684	1.15004	1.15004	0.010	-2.27743	50.00000	Averaged	
78 P-Bromofluorobenzene	0.44487	0.44296	0.44296	0.010	-0.42821	50.00000	Averaged	

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ANALYTICAL SERVICES

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Fort Devens 2021 LTM
SDG: SO3743
Lab ID : WG301245-5
Analytical Date: 06/23/21 20:52
Lab File ID : S0381.D
Instrument ID: GCMS-S
Initial Calibration Date(s): 06/22/21 11:04 06/22/21 14:02
Column ID:

*** = Compound out of QC criteria**

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Data File: \\target_server\gg\chem\gcms-s.i\S062321.b\S0381.D
Report Date: 01-Jul-2021 08:43

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-s.i\S062321.b\S0381.D
Lab Smp Id: WG301245-5
Inj Date : 23-JUN-2021 20:52
Operator : CR   Inst ID: gcms-s.i
Smp Info : WG301245-5,SO3743
Misc Info : WG301245,WG301173-4,SO3743-5
Comment   : SW846 5030C
Method   : \\target_server\gg\chem\gcms-s.i\S062321.b\S8A05(14)D.m
Meth Date : 29-Jun-2021 13:03 croy   Quant Type: ISTD
Cal Date : 22-JUN-2021 11:34   Cal File: S0339.D
Als bottle: 22   Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: all.sub
Target Version: 4.12
Processing Host: VOA-WS

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

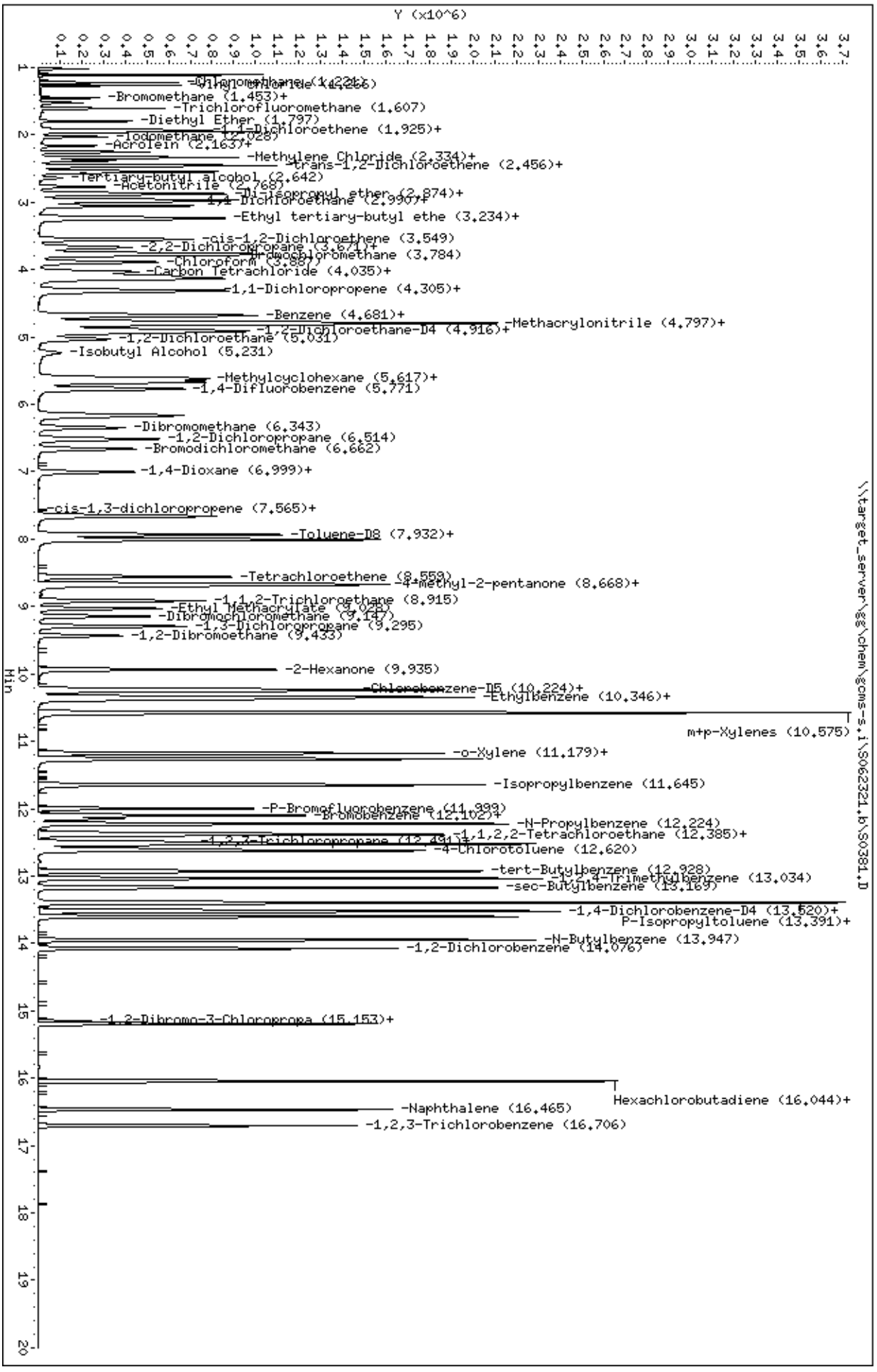
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.108	1.109	(0.227)	424237	50.0000	71.6	
2	Chloromethane	50	1.221	1.224	(0.250)	394727	50.0000	53.4	
3	Vinyl chloride	62	1.266	1.269	(0.259)	296375	50.0000	54.9	
4	Bromomethane	94	1.452	1.456	(0.297)	67567	50.0000	41.2	
5	Chloroethane	64	1.520	1.523	(0.311)	121095	50.0000	47.1	
6	Trichlorofluoromethane	101	1.607	1.610	(0.329)	330796	50.0000	52.2	
7	Diethyl Ether	59	1.796	1.800	(0.367)	165707	50.0000	44.0	
8	1,1-Dichloroethene	96	1.925	1.932	(0.394)	205269	50.0000	44.8	
9	Freon-113	151	1.947	1.951	(0.398)	177991	50.0000	45.8	
10	Carbon Disulfide	76	1.951	1.954	(0.399)	463716	50.0000	47.3	
11	Iodomethane	142	2.028	2.031	(0.415)	286016	50.0000	59.8	
12	Acrolein	56	2.163	2.166	(0.442)	173668	250.000	301	
13	Allyl Chloride	41	2.256	2.256	(0.461)	245257	50.0000	43.9	
14	Methylene Chloride	84	2.333	2.340	(0.477)	414210	50.0000	51.5	
15	Acetone	43	2.381	2.385	(0.487)	325255	250.000	216	
16	trans-1,2-Dichloroethene	96	2.455	2.459	(0.502)	392348	50.0000	49.6	
17	Methyl Acetate	43	2.472	2.478	(0.506)	218241	50.0000	43.1	
18	Methyl tert-butyl ether	73	2.545	2.549	(0.521)	921719	50.0000	48.8	
20	Acetonitrile	41	2.767	2.771	(0.566)	316011	500.000	425	
21	Di-isopropyl ether	45	2.873	2.877	(0.588)	832494	50.0000	46.3	
19	Tertiary-butyl alcohol	59	2.642	2.639	(0.540)	117427	250.000	190	
22	Chloroprene	53	2.963	2.967	(0.606)	461246	50.0000	51.3	
23	1,1-Dichloroethane	63	2.989	2.996	(0.611)	618208	50.0000	48.0	

Data File: \\target_server\gg\chem\gcms-s.i\S062321.b\S0381.D
Report Date: 01-Jul-2021 08:43

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
	24 Acrylonitrile	52	3.053	3.060	(0.625)	468923	250.000	230	
	25 Ethyl tertiary-butyl ether	59	3.234	3.240	(0.661)	878483	50.0000	47.3	
	26 Vinyl Acetate	43	3.250	3.260	(0.563)	422920	50.0000	50.5	
	27 cis-1,2-Dichloroethene	96	3.549	3.555	(0.726)	429446	50.0000	50.6	
	28 2,2-Dichloropropane	77	3.671	3.678	(0.751)	422337	50.0000	47.0	
	30 Cyclohexane	56	3.761	3.768	(0.769)	566308	50.0000	49.1	
	29 Bromochloromethane	128	3.783	3.790	(0.774)	192687	50.0000	53.3	
	31 Chloroform	83	3.886	3.893	(0.795)	639908	50.0000	48.7	
	32 Carbon Tetrachloride	117	4.034	4.041	(0.699)	449054	50.0000	52.4	
	33 Tetrahydrofuran	42	4.086	4.089	(0.836)	411892	250.000	232	
$	34 Dibromofluoromethane	113	4.131	4.134	(0.845)	268211	50.0000	47.0	
	35 1,1,1-Trichloroethane	97	4.134	4.136	(0.845)	553059	50.0000	49.5	
	37 1,1-Dichloropropene	75	4.304	4.314	(0.746)	514298	50.0000	52.8	
	36 2-Butanone	43	4.324	4.330	(0.884)	538653	250.000	224	
	38 Benzene	78	4.680	4.687	(0.811)	1586585	50.0000	52.0	
	39 Propionitrile	54	4.764	4.777	(0.974)	439267	500.000	426	
	40 Methacrylonitrile	41	4.796	4.803	(0.981)	1388461	500.000	471	
*	41 Pentafluorobenzene	168	4.889	4.903	(1.000)	501498	50.0000		
$	42 1,2-Dichloroethane-D4	65	4.915	4.922	(1.005)	262405	50.0000	44.2	
	43 Tertiary-amyl methyl ether	73	4.922	4.932	(1.007)	798587	50.0000	47.9	
	44 1,2-Dichloroethane	62	5.031	5.041	(0.872)	426025	50.0000	48.6	
	45 Isobutyl Alcohol	43	5.230	5.237	(1.070)	141370	1000.00	884	
	46 Methylcyclohexane	83	5.616	5.629	(1.149)	670684	50.0000	50.8	
	47 Trichloroethene	95	5.671	5.678	(0.983)	377366	50.0000	51.3	
*	48 1,4-Difluorobenzene	114	5.770	5.777	(1.000)	942200	50.0000		
	49 Dibromomethane	93	6.343	6.349	(1.099)	228884	50.0000	52.5	
	50 1,2-Dichloropropane	63	6.513	6.520	(1.129)	363697	50.0000	50.5	
	51 Bromodichloromethane	83	6.661	6.668	(1.154)	467239	50.0000	52.8	
	54 1,4-Dioxane	88	6.999	7.009	(1.213)	93471	1000.00	898	
	52 Methyl Methacrylate	41	7.002	7.009	(1.213)	198418	50.0000	46.2	
	57 cis-1,3-dichloropropene	75	7.661	7.668	(1.328)	607949	50.0000	53.6	
	56 2-Chloroethylvinylether	63	7.642	7.648	(1.324)	169408	50.0000	35.2	
$	58 Toluene-D8	98	7.931	7.938	(1.374)	1083568	50.0000	48.9	
	59 Toluene	91	8.005	8.012	(1.387)	1671127	50.0000	52.5	
	60 Tetrachloroethene	164	8.558	8.564	(0.837)	307938	50.0000	55.0	
	61 4-methyl-2-pentanone	43	8.667	8.670	(1.502)	1113447	250.000	262	
	62 trans-1,3-Dichloropropene	75	8.690	8.696	(1.506)	508506	50.0000	53.9	
	63 1,1,2-Trichloroethane	97	8.915	8.919	(1.545)	354400	50.0000	51.8	
	53 Ethyl Methacrylate	69	9.028	9.034	(1.564)	458972	50.0000	47.9	
	64 Dibromochloromethane	129	9.146	9.153	(0.895)	378705	50.0000	56.1	
	65 1,3-Dichloropropane	76	9.294	9.298	(0.909)	645271	50.0000	52.5	
	66 1,2-Dibromoethane	107	9.433	9.439	(1.635)	357657	50.0000	54.2	
	67 2-Hexanone	43	9.934	9.941	(0.972)	750775	250.000	265	
*	68 Chlorobenzene-D5	117	10.224	10.234	(1.000)	902435	50.0000		
	69 Chlorobenzene	112	10.249	10.253	(1.002)	1073469	50.0000	53.5	
	71 Ethylbenzene	106	10.346	10.349	(1.012)	615160	50.0000	54.9	
	72 1,1,1,2-Tetrachloroethane	131	10.375	10.382	(1.015)	370184	50.0000	55.8	
	73 m+p-Xylenes	106	10.574	10.581	(1.034)	1479455	100.000	113	
	74 o-Xylene	106	11.179	11.182	(1.093)	711553	50.0000	58.0	
	76 Bromoform	173	11.246	11.253	(1.100)	225831	50.0000	49.7	
	75 Styrene	104	11.262	11.266	(1.102)	1216246	50.0000	55.4	
	77 Isopropylbenzene	105	11.645	11.652	(0.862)	1768113	50.0000	55.5	
$	78 P-Bromofluorobenzene	95	11.995	12.002	(2.079)	417359	50.0000	49.8	
	80 Bromobenzene	156	12.101	12.105	(0.896)	452278	50.0000	52.4	

Data File: \\target_server\gg\chem\gcms-s.i\S062321.b\S0381.D
Report Date: 01-Jul-2021 08:43

							AMOUNTS		
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	79 cis-1,4-Dichloro-2-Butene	53	12.146	12.153	(0.899)	91530	50.0000	44.8	
	81 N-Propylbenzene	91	12.224	12.227	(0.905)	2070667	50.0000	54.3	
	82 1,1,2,2-Tetrachloroethane	83	12.359	12.362	(0.915)	469961	50.0000	49.8	
	83 2-Chlorotoluene	91	12.384	12.391	(0.917)	1237972	50.0000	52.4	
	84 1,2,3-Trichloropropane	75	12.490	12.494	(0.925)	365486	50.0000	49.2	
	85 1,3,5-Trimethylbenzene	105	12.523	12.526	(0.927)	1481414	50.0000	56.0	
	86 trans-1,4-Dichloro-2-Butene	53	12.587	12.590	(0.932)	99280	50.0000	46.4	
	87 4-Chlorotoluene	91	12.619	12.626	(0.934)	1303918	50.0000	52.9	
	88 tert-Butylbenzene	119	12.931	12.934	(0.957)	1282075	50.0000	55.6	
	90 1,2,4-Trimethylbenzene	105	13.034	13.037	(0.965)	1487072	50.0000	55.9	
	91 sec-Butylbenzene	105	13.169	13.179	(0.975)	1876711	50.0000	56.6	
	92 P-Isopropyltoluene	119	13.391	13.394	(0.991)	1622350	50.0000	58.2	
	93 1,3-Dichlorobenzene	146	13.400	13.404	(0.992)	846019	50.0000	53.9	
*	94 1,4-Dichlorobenzene-D4	152	13.510	13.513	(1.000)	489183	50.0000		
	95 1,4-Dichlorobenzene	146	13.526	13.533	(1.001)	859332	50.0000	52.5	
	96 1,2,3-Trimethylbenzene	105	13.603	13.606	(1.007)	1478588	50.0000	53.1	
	97 N-Butylbenzene	91	13.947	13.954	(1.032)	1453116	50.0000	50.2	
	99 1,2-Dichlorobenzene	146	14.076	14.079	(1.042)	806958	50.0000	53.2	
	100 1,2-Dibromo-3-Chloropropane	157	15.156	15.159	(1.122)	78308	50.0000	48.4	
	101 1,3,5-Trichlorobenzene	180	15.191	15.198	(1.124)	573298	50.0000	56.0	
	102 Hexachlorobutadiene	225	16.043	16.047	(1.188)	250663	50.0000	51.7	
	103 1,2,4-Trichlorobenzene	180	16.043	16.047	(1.188)	536117	50.0000	51.0	
	104 Naphthalene	128	16.465	16.468	(1.219)	1361905	50.0000	50.5	
	105 1,2,3-Trichlorobenzene	180	16.706	16.709	(1.237)	500589	50.0000	57.5	
M	98 1,2-Dichloroethylene (total)	96				821794	50.0000	100	
M	106 Xylenes (total)	106				2191008	150.000	171	
M	55 Total Alkylbenzenes	100				11273405	50.0000	387	


Data File: \\target_server\gg\chem\gcms-s.i\S062321.b\S0381.D
Date : 23-JUN-2021 20:52
Client ID:
Sample Info: WG301245-5,S03743
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-s.i
Operator: CR
Column diameter: 0.18
\\target_server\gg\chem\gcms-s.i\S062321.b\S0381.D
Y (x10^6)
Min
Chloromethane (1.221)+
Vinyl Chloride (1.266)+
Bromomethane (1.453)+
Trichlorofluoromethane (1.607)
Diethyl Ether (1.797)
1,1-Dichloroethene (1.925)+
Iodomethane (2.028)
Acrolein (2.163)+
Methylene Chloride (2.334)+
trans-1,2-Dichloroethene (2.456)+
Tertiary-butyl alcohol (2.642)
Acetonitrile (2.768)
Di-isopropyl ether (2.874)+
1,1-Dichloroethane (2.990)+
Ethyl tertiary-butyl ethe (3.234)+
cis-1,2-Dichloroethene (3.549)
2,2-Dichloropropane (3.671)+
Bromochloromethane (3.784)
Chloroform (3.887)
Carbon Tetrachloride (4.035)+
1,1-Dichloropropene (4.305)+
Benzene (4.681)+
1,2-Dichloroethane-D4 (4.916)+
Methacrylonitrile (4.797)+
1,2-Dichloroethane (5.031)
Isobutyl Alcohol (5.231)
Methylcyclohexane (5.617)+
1,4-Difluorobenzene (5.771)
Dibromomethane (6.343)
1,2-Dichloropropane (6.514)
Bromodichloromethane (6.662)
1,4-Dioxane (6.999)+
cis-1,3-dichloropropene (7.565)+
Toluene-D8 (7.932)+
Tetrachloroethene (8.559)
4-methyl-2-pentanone (8.668)+
1,1,2-Trichloroethane (8.915)
Ethyl Methacrylate (9.057)
Dibromochloromethane (9.147)
1,3-Dichloropropane (9.295)
1,2-Dibromoethane (9.433)
2-Hexanone (9.935)
Chlorobenzene-D5 (10.224)+
Ethylbenzene (10.346)+
m+p-Xylenes (10.575)
o-Xylene (11.179)+
Isopropylbenzene (11.645)
P-Bromofluorobenzene (11.999)
Bromobenzene (12.102)+
N-Propylbenzene (12.224)
1,1,2,2-Tetrachloroethane (12.385)+
1,2,3-Trichloropropane (12.491)+
4-Chlorotoluene (12.620)
tert-Butylbenzene (12.928)
1,2,4-Trimethylbenzene (13.034)
sec-Butylbenzene (13.169)
1,4-Dichlorobenzene-D4 (13.520)+
P-Isopropyltoluene (13.391)+
N-Butylbenzene (13.947)
1,2-Dichlorobenzene (14.076)
1,2-Dibromo-3-Chloropropa (15.153)+
Hexachlorobutadiene (16.044)+
Naphthalene (16.465)
1,2,3-Trichlorobenzene (16.706)

Katahdin
ANALYTICAL SERVICES

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Fort Devens 2021 LTM **SDG:** SO3743
Lab ID : WG301327-4 **Analytical Date:** 06/24/21 10:21
Lab File ID : T2388.D **Instrument ID:** GCMS-T
Initial Calibration Date(s): 06/23/21 09:10 06/23/21 12:27 **Column ID:**

	Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
1	Dichlorodifluoromethane	0.65557	0.64602	0.64602	0.100	-1.45543	20.00000	Averaged	
2	Chloromethane	0.63507	0.64756	0.64756	0.100	1.96640	20.00000	Averaged	
3	Vinyl chloride	0.56606	0.57639	0.57639	0.100	1.82526	20.00000	Averaged	
4	Bromomethane	50.00000	55.18751	0.20983	0.100	10.37502	20.00000	Linear	
5	Chloroethane	0.25585	0.25687	0.25687	0.100	0.39893	20.00000	Averaged	
6	Trichlorofluoromethane	0.67740	0.73046	0.73046	0.100	7.83344	20.00000	Averaged	
8	1,1-Dichloroethene	0.42864	0.45587	0.45587	0.100	6.35280	20.00000	Averaged	
10	Carbon Disulfide	1.07440	1.11365	1.11365	0.100	3.65333	20.00000	Averaged	
14	Methylene Chloride	50.00000	55.88526	0.52261	0.100	11.77052	20.00000	Linear	
15	Acetone	250	210	0.09451	0.100	-16.07141	20.00000	Linear	*
16	trans-1,2-Dichloroethene	0.51074	0.51974	0.51974	0.100	1.76311	20.00000	Averaged	
18	Methyl tert-butyl ether	1.33887	1.40099	1.40099	0.100	4.63997	20.00000	Averaged	
23	1,1-Dichloroethane	0.90297	0.95613	0.95613	0.200	5.88757	20.00000	Averaged	
26	Vinyl Acetate	0.46319	0.47395	0.47395	0.010	2.32210	20.00000	Averaged	
27	cis-1,2-Dichloroethene	0.54934	0.56542	0.56542	0.100	2.92705	20.00000	Averaged	
28	2,2-Dichloropropane	0.71789	0.77882	0.77882	0.010	8.48646	20.00000	Averaged	
30	Bromochloromethane	0.22986	0.25421	0.25421	0.010	10.59533	20.00000	Averaged	
31	Chloroform	0.96056	0.98291	0.98291	0.200	2.32776	20.00000	Averaged	
32	Carbon Tetrachloride	0.37678	0.41082	0.41082	0.100	9.03353	20.00000	Averaged	
35	1,1,1-Trichloroethane	0.82548	0.87760	0.87760	0.100	6.31404	20.00000	Averaged	
36	1,1-Dichloropropene	0.40773	0.42865	0.42865	0.010	5.13139	20.00000	Averaged	
37	2-Butanone	0.23154	0.19204	0.19204	0.100	-17.06047	20.00000	Averaged	
38	Benzene	1.16045	1.22290	1.22290	0.500	5.38201	20.00000	Averaged	
44	1,2-Dichloroethane	0.40923	0.40277	0.40277	0.100	-1.57667	20.00000	Averaged	
47	Trichloroethene	0.28603	0.30001	0.30001	0.200	4.88938	20.00000	Averaged	
49	Dibromomethane	0.18247	0.18572	0.18572	0.010	1.77813	20.00000	Averaged	
50	1,2-Dichloropropane	0.27918	0.29609	0.29609	0.100	6.05429	20.00000	Averaged	
51	Bromodichloromethane	0.39289	0.43296	0.43296	0.200	10.20067	20.00000	Averaged	
55	cis-1,3-dichloropropene	0.47634	0.52541	0.52541	0.200	10.30264	20.00000	Averaged	
57	Toluene	0.69880	0.74179	0.74179	0.400	6.15132	20.00000	Averaged	
58	Tetrachloroethene	0.22613	0.23551	0.23551	0.200	4.14517	20.00000	Averaged	
59	4-methyl-2-pentanone	0.23953	0.22790	0.22790	0.100	-4.85590	20.00000	Averaged	
60	trans-1,3-Dichloropropene	0.41131	0.44537	0.44537	0.100	8.28008	20.00000	Averaged	
61	1,1,2-Trichloroethane	0.21684	0.22304	0.22304	0.100	2.85916	20.00000	Averaged	
63	Dibromochloromethane	0.30639	0.32916	0.32916	0.100	7.43170	20.00000	Averaged	
64	1,3-Dichloropropane	0.49530	0.49803	0.49803	0.010	0.55149	20.00000	Averaged	
65	1,2-Dibromoethane	0.27333	0.27701	0.27701	0.100	1.34360	20.00000	Averaged	
67	2-Hexanone	0.17566	0.16287	0.16287	0.100	-7.27918	20.00000	Averaged	
69	Chlorobenzene	0.76004	0.78234	0.78234	0.500	2.93412	20.00000	Averaged	
70	Ethylbenzene	1.36171	1.43174	1.43174	0.100	5.14305	20.00000	Averaged	
71	1,1,1,2-Tetrachloroethane	0.28093	0.30490	0.30490	0.010	8.53290	20.00000	Averaged	

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sales@katahdinlab.com

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Fort Devens 2021 LTM **SDG:** SO3743
Lab ID : WG301327-4 **Analytical Date:** 06/24/21 10:21
Lab File ID : T2388.D **Instrument ID:** GCMS-T
Initial Calibration Date(s): 06/23/21 09:10 06/23/21 12:27 **Column ID:**

	Compound	RRF/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
72	m+p-Xylenes	1.00378	1.06883	1.06883	0.100	6.48092	20.00000	Averaged	
73	o-Xylene	1.00853	1.08496	1.08496	0.300	7.57858	20.00000	Averaged	
74	Styrene	0.80715	0.88389	0.88389	0.300	9.50730	20.00000	Averaged	
75	Bromoform	50.00000	47.13137	0.18780	0.100	-5.73726	20.00000	Linear	
76	Isopropylbenzene	2.58497	2.71023	2.71023	0.100	4.84567	20.00000	Averaged	
78	Bromobenzene	0.64953	0.66169	0.66169	0.010	1.87145	20.00000	Averaged	
80	N-Propylbenzene	3.04761	3.17654	3.17654	0.010	4.23049	20.00000	Averaged	
81	1,1,2,2-Tetrachloroethane	0.73496	0.69569	0.69569	0.300	-5.34262	20.00000	Averaged	
82	2-Chlorotoluene	1.82214	1.89504	1.89504	0.010	4.00124	20.00000	Averaged	
83	1,2,3-Trichloropropane	0.60654	0.55628	0.55628	0.010	-8.28600	20.00000	Averaged	
84	1,3,5-Trimethylbenzene	2.08487	2.17460	2.17460	0.010	4.30389	20.00000	Averaged	
86	4-Chlorotoluene	1.91695	1.93761	1.93761	0.010	1.07737	20.00000	Averaged	
87	tert-Butylbenzene	1.74780	1.84409	1.84409	0.010	5.50952	20.00000	Averaged	
89	1,2,4-Trimethylbenzene	2.05755	2.18723	2.18723	0.010	6.30279	20.00000	Averaged	
90	sec-Butylbenzene	2.56461	2.68051	2.68051	0.010	4.51899	20.00000	Averaged	
91	P-Isopropyltoluene	2.16139	2.29321	2.29321	0.010	6.09887	20.00000	Averaged	
92	1,3-Dichlorobenzene	1.16075	1.15137	1.15137	0.600	-0.80796	20.00000	Averaged	
94	1,4-Dichlorobenzene	1.19757	1.18824	1.18824	0.500	-0.77921	20.00000	Averaged	
96	N-Butylbenzene	1.97389	2.09766	2.09766	0.010	6.27018	20.00000	Averaged	
97	1,2-Dichlorobenzene	1.07246	1.07990	1.07990	0.400	0.69360	20.00000	Averaged	
98	1,2-Dibromo-3-Chloropropane	50.00000	43.20782	0.11194	0.050	-13.58435	20.00000	Quadratic	
100	Hexachlorobutadiene	0.29602	0.28705	0.28705	0.010	-3.02920	20.00000	Averaged	
101	1,2,4-Trichlorobenzene	0.65599	0.63632	0.63632	0.200	-2.99873	20.00000	Averaged	
102	Naphthalene	50.00000	43.47862	1.60910	0.010	-13.04277	20.00000	Linear	
103	1,2-Dichloroethylene (total	++++	1.08517	1.08517	0.010	++++	20.00000	Averaged	*
104	1,2,3-Trichlorobenzene	0.58197	0.55720	0.55720	0.010	-4.25733	20.00000	Averaged	
105	Xylenes (total)	++++	1.07421	1.07421	0.010	++++	20.00000	Averaged	*
34	Dibromofluoromethane	0.55291	0.54754	0.54754	0.010	-0.97199	20.00000	Averaged	
42	1,2-Dichloroethane-D4	0.63760	0.62999	0.62999	0.010	-1.19364	20.00000	Averaged	
56	Toluene-D8	1.12266	1.12277	1.12277	0.010	0.00987	20.00000	Averaged	
77	P-Bromofluorobenzene	0.44128	0.45269	0.45269	0.010	2.58473	20.00000	Averaged	

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Fort Devens 2021 LTM
SDG: SO3743
Lab ID : WG301327-4
Analytical Date: 06/24/21 10:21
Lab File ID : T2388.D
Instrument ID: GCMS-T
Initial Calibration Date(s): 06/23/21 09:10 06/23/21 12:27
Column ID:

*** = Compound out of QC criteria**

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\gcms-t.i\T062421.b\T2388.D
Report Date: 01-Jul-2021 08:58

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T062421.b\T2388.D
Lab Smp Id: WG301327-4
Inj Date : 24-JUN-2021 10:21
Operator : CR   Inst ID: gcms-t.i
Smp Info : WG301327-4,SO3743
Misc Info : WG301327,WG301244-4,SO3743-2
Comment   : SW846 5030
Method   : \\target_server\gg\chem\gcms-t.i\T062421.b\T8A05(62)D.m
Meth Date : 01-Jul-2021 08:58 croy   Quant Type: ISTD
Cal Date : 23-JUN-2021 12:27   Cal File: T2383.D
Als bottle: 1   Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: all.sub
Target Version: 4.12
Processing Host: T6-O360

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

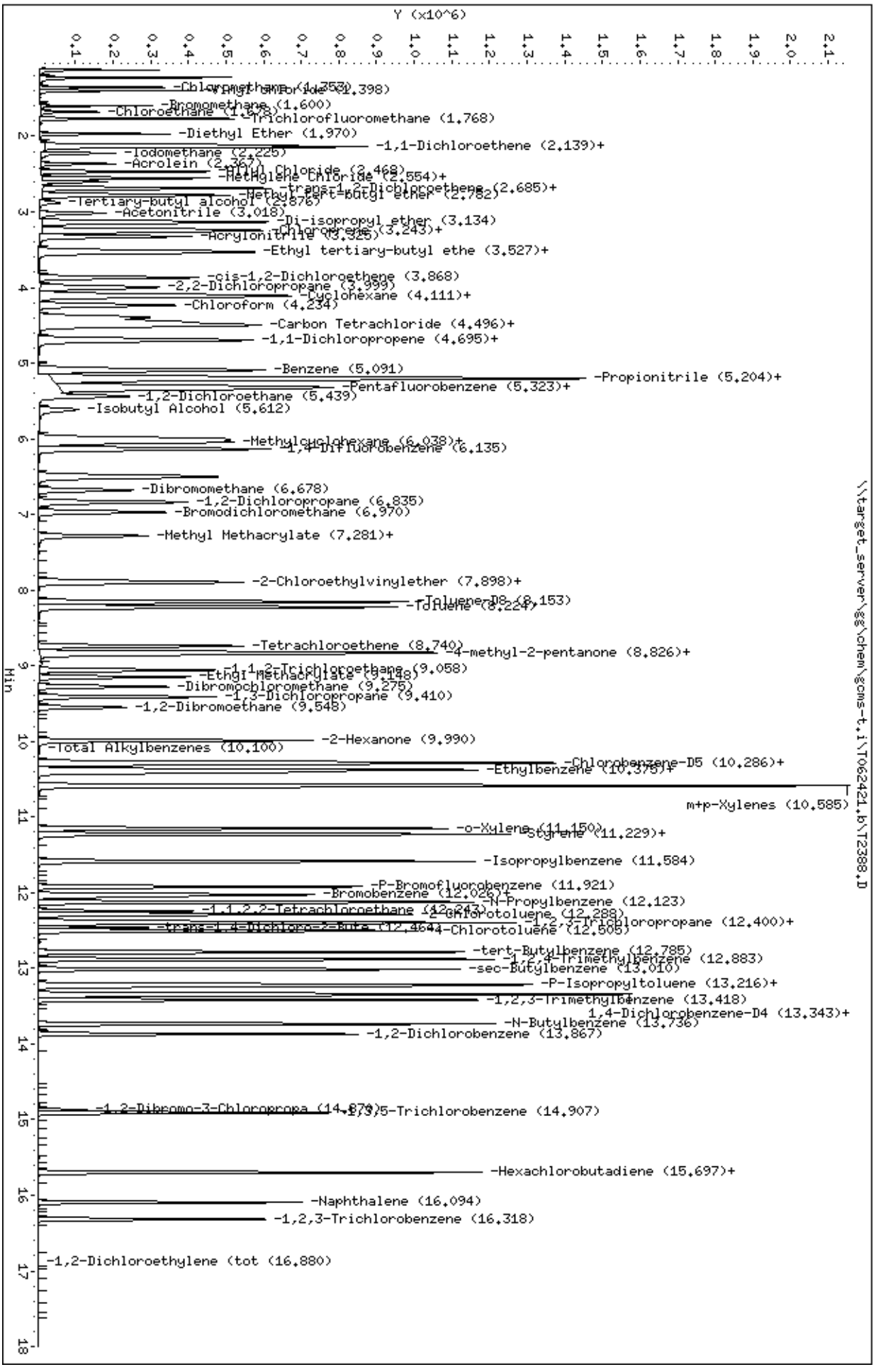
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.225	1.225	(0.231)	268315	50.0000	49.3	
2	Chloromethane	50	1.352	1.356	(0.255)	268953	50.0000	51.0	
3	Vinyl chloride	62	1.397	1.398	(0.263)	239394	50.0000	50.9	
4	Bromomethane	94	1.599	1.600	(0.302)	87150	50.0000	55.2	
5	Chloroethane	64	1.678	1.675	(0.316)	106688	50.0000	50.2	
6	Trichlorofluoromethane	101	1.768	1.764	(0.333)	303384	50.0000	53.9	
7	Diethyl Ether	59	1.970	1.970	(0.371)	143843	50.0000	50.3	
8	1,1-Dichloroethene	96	2.112	2.112	(0.398)	189337	50.0000	53.2	
9	Freon-113	151	2.135	2.134	(0.402)	139672	50.0000	50.6	
10	Carbon Disulfide	76	2.142	2.142	(0.404)	462534	50.0000	51.8	
11	Iodomethane	142	2.224	2.225	(0.419)	204776	50.0000	55.2	
12	Acrolein	56	2.367	2.367	(0.446)	149819	250.000	219	
13	Allyl Chloride	41	2.468	2.468	(0.465)	229898	50.0000	53.6	
14	Methylene Chloride	84	2.554	2.554	(0.481)	217057	50.0000	55.9	
15	Acetone	43	2.599	2.603	(0.490)	196257	250.000	210	
16	trans-1,2-Dichloroethene	96	2.685	2.685	(0.506)	215866	50.0000	50.9	
17	Methyl Acetate	43	2.700	2.700	(0.509)	149850	50.0000	47.5	
18	Methyl tert-butyl ether	73	2.782	2.782	(0.525)	581877	50.0000	52.3	
19	Tertiary-butyl alcohol	59	2.879	2.876	(0.543)	76488	250.000	157	
20	Acetonitrile	41	3.018	3.018	(0.569)	216490	500.000	385	
21	Di-isopropyl ether	45	3.134	3.134	(0.591)	682029	50.0000	52.2	
22	Chloroprene	53	3.235	3.239	(0.610)	338251	50.0000	51.0	
23	1,1-Dichloroethane	63	3.261	3.261	(0.615)	397112	50.0000	52.9	

Data File: \\target_server\gg\chem\gcms-t.i\T062421.b\T2388.D
Report Date: 01-Jul-2021 08:58

		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	24	Acrylonitrile	52	3.325	3.329	(0.627)	292666	250.000	220	
	25	Ethyl tertiary-butyl ether	59	3.527	3.523	(0.665)	631820	50.0000	51.6	
	26	Vinyl Acetate	43	3.542	3.546	(0.577)	341898	50.0000	51.2	
	27	cis-1,2-Dichloroethene	96	3.867	3.871	(0.729)	234839	50.0000	51.5	
	28	2,2-Dichloropropane	77	3.998	4.002	(0.754)	323468	50.0000	54.2	
	29	Cyclohexane	56	4.103	4.103	(0.774)	333896	50.0000	51.2	
	30	Bromochloromethane	128	4.118	4.118	(0.776)	105582	50.0000	55.3	
	31	Chloroform	83	4.234	4.234	(0.798)	408237	50.0000	51.2	
	32	Carbon Tetrachloride	117	4.399	4.395	(0.717)	296356	50.0000	54.5	
	33	Tetrahydrofuran	42	4.447	4.448	(0.838)	300217	250.000	216	
$	34	Dibromofluoromethane	113	4.488	4.489	(0.846)	227410	50.0000	49.5	
	35	1,1,1-Trichloroethane	97	4.503	4.496	(0.849)	364497	50.0000	53.2	
	36	1,1-Dichloropropene	75	4.690	4.687	(0.765)	309221	50.0000	52.6	
	37	2-Butanone	43	4.702	4.702	(0.886)	398797	250.000	207	
	38	Benzene	78	5.091	5.091	(0.830)	882177	50.0000	52.7	
	39	Propionitrile	54	5.173	5.177	(0.975)	244692	500.000	388	
	40	Methacrylonitrile	41	5.203	5.207	(0.981)	1123361	500.000	462	
*	41	Pentafluorobenzene	168	5.304	5.304	(1.000)	415333	50.0000		
$	42	1,2-Dichloroethane-D4	65	5.327	5.327	(1.004)	261656	50.0000	49.4	
	43	Tertiary-amyl methyl ether	73	5.330	5.338	(1.005)	528872	50.0000	51.4	
	44	1,2-Dichloroethane	62	5.439	5.439	(0.887)	290552	50.0000	49.2	
	45	Isobutyl Alcohol	43	5.615	5.615	(1.059)	116038	1000.00	697	
	46	Methylcyclohexane	83	6.000	5.997	(1.131)	337667	50.0000	49.7	
	47	Trichloroethene	95	6.045	6.049	(0.985)	216422	50.0000	52.4	
*	48	1,4-Difluorobenzene	114	6.135	6.139	(1.000)	721379	50.0000		
	49	Dibromomethane	93	6.678	6.678	(1.088)	133973	50.0000	50.9	
	50	1,2-Dichloropropane	63	6.835	6.839	(1.114)	213591	50.0000	53.0	
	51	Bromodichloromethane	83	6.969	6.970	(1.136)	312330	50.0000	55.1	
	52	Methyl Methacrylate	41	7.280	7.280	(1.187)	165590	50.0000	49.1	
	53	1,4-Dioxane	88	7.288	7.292	(1.188)	38106	1000.00	640	
	54	2-Chloroethylvinylether	63	7.871	7.872	(1.283)	108186	50.0000	47.5	
	55	cis-1,3-dichloropropene	75	7.901	7.902	(1.288)	379020	50.0000	55.2	
$	56	Toluene-D8	98	8.152	8.156	(1.329)	809942	50.0000	50.0	
	57	Toluene	92	8.223	8.223	(1.340)	535112	50.0000	53.1	
	58	Tetrachloroethene	164	8.740	8.744	(0.850)	163174	50.0000	52.1	
	59	4-methyl-2-pentanone	43	8.822	8.822	(1.438)	822004	250.000	238	
	60	trans-1,3-Dichloropropene	75	8.848	8.852	(1.442)	321278	50.0000	54.1	
	61	1,1,2-Trichloroethane	83	9.054	9.058	(1.476)	160893	50.0000	51.4	
	62	Ethyl Methacrylate	69	9.147	9.152	(1.491)	257126	50.0000	46.7	
	63	Dibromochloromethane	129	9.275	9.275	(0.902)	228061	50.0000	53.7	
	64	1,3-Dichloropropane	76	9.413	9.410	(0.916)	345072	50.0000	50.3	
	65	1,2-Dibromoethane	107	9.548	9.552	(1.556)	199826	50.0000	50.7	
M	66	Total Alkylbenzenes	100				5578824	50.0000	369	
	67	2-Hexanone	43	9.989	9.990	(0.972)	564246	250.000	232	
*	68	Chlorobenzene-D5	117	10.278	10.274	(1.000)	692867	50.0000		
	69	Chlorobenzene	112	10.296	10.297	(1.002)	542060	50.0000	51.5	
	70	Ethylbenzene	91	10.375	10.379	(1.009)	992008	50.0000	52.6	
	71	1,1,1,2-Tetrachloroethane	131	10.409	10.409	(1.013)	211254	50.0000	54.3	
	72	m+p-Xylenes	91	10.584	10.585	(1.030)	1481117	100.000	106	
	73	o-Xylene	91	11.153	11.150	(1.085)	751733	50.0000	53.8	
	74	Styrene	104	11.232	11.232	(1.093)	612417	50.0000	54.8	
	75	Bromoform	173	11.221	11.221	(1.092)	130117	50.0000	47.1	
	76	Isopropylbenzene	105	11.584	11.584	(0.869)	918927	50.0000	52.4	
$	77	P-Bromofluorobenzene	95	11.920	11.921	(1.943)	326558	50.0000	51.3	

Data File: \\target_server\gg\chem\gcms-t.i\T062421.b\T2388.D
Report Date: 01-Jul-2021 08:58

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	78 Bromobenzene	156	12.025	12.022	(0.902)	224352	50.0000	50.9	
	79 cis-1,4-Dichloro-2-Butene	53	12.048	12.052	(0.903)	66271	50.0000	46.9	
	80 N-Propylbenzene	91	12.123	12.127	(0.909)	1077034	50.0000	52.1	
	81 1,1,2,2-Tetrachloroethane	83	12.242	12.246	(0.918)	235880	50.0000	47.3	
	82 2-Chlorotoluene	91	12.287	12.284	(0.921)	642532	50.0000	52.0	
	83 1,2,3-Trichloropropane	75	12.377	12.377	(0.928)	188612	50.0000	45.8	
	84 1,3,5-Trimethylbenzene	105	12.399	12.400	(0.930)	737318	50.0000	52.2	
	85 trans-1,4-Dichloro-2-Butene	53	12.459	12.463	(0.934)	67586	50.0000	45.5	
	86 4-Chlorotoluene	91	12.504	12.505	(0.938)	656963	50.0000	50.5	
	87 tert-Butylbenzene	119	12.785	12.785	(0.959)	625257	50.0000	52.8	
	89 1,2,4-Trimethylbenzene	105	12.882	12.883	(0.966)	741600	50.0000	53.2	
	90 sec-Butylbenzene	105	13.009	13.010	(0.976)	908850	50.0000	52.2	
	91 P-Isopropyltoluene	119	13.212	13.212	(0.991)	777534	50.0000	53.0	
	92 1,3-Dichlorobenzene	146	13.234	13.238	(0.992)	390384	50.0000	49.6	
*	93 1,4-Dichlorobenzene-D4	152	13.335	13.339	(1.000)	339059	50.0000		
	94 1,4-Dichlorobenzene	146	13.354	13.354	(1.001)	402883	50.0000	49.6	
	95 1,2,3-Trimethylbenzene	105	13.417	13.418	(1.006)	731919	50.0000	50.9	
	96 N-Butylbenzene	91	13.735	13.736	(1.030)	711231	50.0000	53.1	
	97 1,2-Dichlorobenzene	146	13.866	13.871	(1.040)	366150	50.0000	50.3	
	98 1,2-Dibromo-3-Chloropropane	157	14.869	14.873	(1.115)	37955	50.0000	43.2	
	99 1,3,5-Trichlorobenzene	180	14.907	14.911	(1.118)	249363	50.0000	50.0	
	100 Hexachlorobutadiene	225	15.696	15.693	(1.177)	97327	50.0000	48.5	
	101 1,2,4-Trichlorobenzene	180	15.700	15.700	(1.177)	215750	50.0000	48.5	
	102 Naphthalene	128	16.093	16.093	(1.207)	545580	50.0000	43.5	
M	103 1,2-Dichloroethylene (total)	96				450705	50.0000	102	
	104 1,2,3-Trichlorobenzene	180	16.314	16.318	(1.223)	188923	50.0000	47.9	
M	105 Xylenes (total)	91				2232850	150.000	160	


Data File: \\target_server\gg\chem\gcms-t.i\T062421.b\T2388.D
Date : 24-JUN-2021 10:21
Client ID:
Sample Info: WG301327-4,SO3743
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-t.i
Operator: CR
Column diameter: 0.18
\\target_server\gg\chem\gcms-t.i\T062421.b\T2388.D
Y (x10^6)
Min
-Chloromethane (1.353)
-Ethyl Chloride (1.398)
-Bromomethane (1.600)
-Chloroethane (1.678)
-Trichlorofluoromethane (1.768)
-Diethyl Ether (1.970)
-1,1-Dichloroethene (2.139)+
-Iodomethane (2.225)
-Acrolein (2.367)
-Methyl Chloride (2.468)
-Methylene Chloride (2.554)+
-trans-1,2-Dichloroethene (2.685)+
-Methyl tert-butyl ether (2.782)
-Tertiary-butyl alcohol (2.876)
-Acetonitrile (3.018)
-Di-isopropyl ether (3.134)
-Chloroprene (3.243)+
-Acrylonitrile (3.325)+
-Ethyl tertiary-butyl ethe (3.527)+
-cis-1,2-Dichloroethene (3.868)
-2,2-Dichloropropane (3.999)
-Cyclohexane (4.111)+
-Chloroform (4.234)
-Carbon Tetrachloride (4.496)+
-1,1-Dichloropropene (4.695)+
-Benzene (5.091)
-Propionitrile (5.204)+
-Pentafluorobenzene (5.323)+
-1,2-Dichloroethane (5.439)
-Isobutyl Alcohol (5.612)
-Methylcyclohexane (6.038)+
-1,4-Difluorobenzene (6.135)
-Dibromomethane (6.678)
-1,2-Dichloropropane (6.835)
-Bromodichloromethane (6.970)
-Methyl Methacrylate (7.281)+
-2-Chloroethylvinylether (7.898)+
-Toluene-D8 (8.153)
-Toluene (8.224)
-Tetrachloroethene (8.740)
-4-methyl-2-pentanone (8.826)+
-1,1,2-Trichloroethane (9.058)
-Ethyl Methacrylate (9.148)
-Dibromochloromethane (9.275)
-1,3-Dichloropropane (9.410)
-1,2-Dibromoethane (9.548)
-2-Hexanone (9.990)
-Total Alkylbenzenes (10.100)
-Chlorobenzene-D5 (10.286)+
-Ethylbenzene (10.376)+
m+p-Xylenes (10.585)
-o-Xylene (11.150)
-Styrene (11.229)+
-Isopropylbenzene (11.584)
-P-Bromofluorobenzene (11.921)
-Bromobenzene (12.026)+
-N-Propylbenzene (12.123)
-1,1,2,2-Tetrachloroethane (12.243)
2-Chlorotoluene (12.288)
-1,2,3-Trichloropropane (12.400)+
-trans-1,4-Dichloro-2-Bute (12.464
4-Chlorotoluene (12.505)
-tert-Butylbenzene (12.785)
-1,2,4-Trimethylbenzene (12.883)
-sec-Butylbenzene (13.010)
-P-Isopropyltoluene (13.216)+
-1,2,3-Trimethylbenzene (13.418)
1,4-Dichlorobenzene-D4 (13.343)+
-N-Butylbenzene (13.736)
-1,2-Dichlorobenzene (13.867)
-1,2-Dibromo-3-Chloropropa (14.879)
-1,3,5-Trichlorobenzene (14.907)
-Hexachlorobutadiene (15.697)+
-Naphthalene (16.094)
-1,2,3-Trichlorobenzene (16.318)
-1,2-Dichloroethylene (tot (16.880)

Katahdin
ANALYTICAL SERVICES

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Fort Devens 2021 LTM **SDG:** SO3743
Lab ID : WG301327-5 **Analytical Date:** 06/24/21 15:41
Lab File ID : T2396.D **Instrument ID:** GCMS-T
Initial Calibration Date(s): 06/23/21 09:10 06/23/21 12:27 **Column ID:**

	Compound	$\overline{RRF}$/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1	Dichlorodifluoromethane	0.65557	0.61663	0.61663	0.100	-5.93948	50.00000	Averaged
2	Chloromethane	0.63507	0.63627	0.63627	0.100	0.18925	50.00000	Averaged
3	Vinyl chloride	0.56606	0.55666	0.55666	0.100	-1.66004	50.00000	Averaged
4	Bromomethane	50.00000	49.79884	0.18934	0.100	-0.40233	50.00000	Linear
5	Chloroethane	0.25585	0.23460	0.23460	0.100	-8.30522	50.00000	Averaged
6	Trichlorofluoromethane	0.67740	0.69236	0.69236	0.100	2.20845	50.00000	Averaged
8	1,1-Dichloroethene	0.42864	0.42095	0.42095	0.100	-1.79295	50.00000	Averaged
10	Carbon Disulfide	1.07440	1.00086	1.00086	0.100	-6.84437	50.00000	Averaged
14	Methylene Chloride	50.00000	50.88410	0.47584	0.100	1.76820	50.00000	Linear
15	Acetone	250	225	0.10120	0.100	-10.12779	50.00000	Linear
16	trans-1,2-Dichloroethene	0.51074	0.48298	0.48298	0.100	-5.43546	50.00000	Averaged
18	Methyl tert-butyl ether	1.33887	1.29189	1.29189	0.100	-3.50870	50.00000	Averaged
23	1,1-Dichloroethane	0.90297	0.89983	0.89983	0.200	-0.34758	50.00000	Averaged
26	Vinyl Acetate	0.46319	0.47557	0.47557	0.010	2.67115	50.00000	Averaged
27	cis-1,2-Dichloroethene	0.54934	0.53711	0.53711	0.100	-2.22735	50.00000	Averaged
28	2,2-Dichloropropane	0.71789	0.63327	0.63327	0.010	-11.78806	50.00000	Averaged
30	Bromochloromethane	0.22986	0.22582	0.22582	0.010	-1.75518	50.00000	Averaged
31	Chloroform	0.96056	0.93182	0.93182	0.200	-2.99179	50.00000	Averaged
32	Carbon Tetrachloride	0.37678	0.36716	0.36716	0.100	-2.55341	50.00000	Averaged
35	1,1,1-Trichloroethane	0.82548	0.80125	0.80125	0.100	-2.93563	50.00000	Averaged
36	1,1-Dichloropropene	0.40773	0.38560	0.38560	0.010	-5.42657	50.00000	Averaged
37	2-Butanone	0.23154	0.21767	0.21767	0.100	-5.98953	50.00000	Averaged
38	Benzene	1.16045	1.11422	1.11422	0.500	-3.98340	50.00000	Averaged
44	1,2-Dichloroethane	0.40923	0.38079	0.38079	0.100	-6.94776	50.00000	Averaged
47	Trichloroethene	0.28603	0.27007	0.27007	0.200	-5.57712	50.00000	Averaged
49	Dibromomethane	0.18247	0.17470	0.17470	0.010	-4.25940	50.00000	Averaged
50	1,2-Dichloropropane	0.27918	0.27819	0.27819	0.100	-0.35470	50.00000	Averaged
51	Bromodichloromethane	0.39289	0.39527	0.39527	0.200	0.60673	50.00000	Averaged
55	cis-1,3-dichloropropene	0.47634	0.47094	0.47094	0.200	-1.13335	50.00000	Averaged
57	Toluene	0.69880	0.67680	0.67680	0.400	-3.14879	50.00000	Averaged
58	Tetrachloroethene	0.22613	0.20631	0.20631	0.200	-8.76345	50.00000	Averaged
59	4-methyl-2-pentanone	0.23953	0.24521	0.24521	0.100	2.36964	50.00000	Averaged
60	trans-1,3-Dichloropropene	0.41131	0.40024	0.40024	0.100	-2.69051	50.00000	Averaged
61	1,1,2-Trichloroethane	0.21684	0.21465	0.21465	0.100	-1.00612	50.00000	Averaged
63	Dibromochloromethane	0.30639	0.30436	0.30436	0.100	-0.66266	50.00000	Averaged
64	1,3-Dichloropropane	0.49530	0.47958	0.47958	0.010	-3.17411	50.00000	Averaged
65	1,2-Dibromoethane	0.27333	0.26415	0.26415	0.100	-3.36096	50.00000	Averaged
67	2-Hexanone	0.17566	0.17557	0.17557	0.100	-0.05353	50.00000	Averaged
69	Chlorobenzene	0.76004	0.71839	0.71839	0.500	-5.48053	50.00000	Averaged
70	Ethylbenzene	1.36171	1.31177	1.31177	0.100	-3.66712	50.00000	Averaged
71	1,1,1,2-Tetrachloroethane	0.28093	0.27478	0.27478	0.010	-2.18723	50.00000	Averaged

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Fort Devens 2021 LTM **SDG:** SO3743
Lab ID : WG301327-5 **Analytical Date:** 06/24/21 15:41
Lab File ID : T2396.D **Instrument ID:** GCMS-T
Initial Calibration Date(s): 06/23/21 09:10 06/23/21 12:27 **Column ID:**

	Compound	RRF/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
72	m+p-Xylenes	1.00378	0.98391	0.98391	0.100	-1.97889	50.00000	Averaged	
73	o-Xylene	1.00853	0.99831	0.99831	0.300	-1.01290	50.00000	Averaged	
74	Styrene	0.80715	0.81260	0.81260	0.300	0.67570	50.00000	Averaged	
75	Bromoform	50.00000	44.29977	0.17651	0.100	-11.40047	50.00000	Linear	
76	Isopropylbenzene	2.58497	2.48022	2.48022	0.100	-4.05228	50.00000	Averaged	
78	Bromobenzene	0.64953	0.60371	0.60371	0.010	-7.05547	50.00000	Averaged	
80	N-Propylbenzene	3.04761	2.92635	2.92635	0.010	-3.97898	50.00000	Averaged	
81	1,1,2,2-Tetrachloroethane	0.73496	0.70748	0.70748	0.300	-3.73886	50.00000	Averaged	
82	2-Chlorotoluene	1.82214	1.73595	1.73595	0.010	-4.73017	50.00000	Averaged	
83	1,2,3-Trichloropropane	0.60654	0.57436	0.57436	0.010	-5.30568	50.00000	Averaged	
84	1,3,5-Trimethylbenzene	2.08487	2.01746	2.01746	0.010	-3.23352	50.00000	Averaged	
86	4-Chlorotoluene	1.91695	1.84083	1.84083	0.010	-3.97091	50.00000	Averaged	
87	tert-Butylbenzene	1.74780	1.68689	1.68689	0.010	-3.48520	50.00000	Averaged	
89	1,2,4-Trimethylbenzene	2.05755	2.00328	2.00328	0.010	-2.63739	50.00000	Averaged	
90	sec-Butylbenzene	2.56461	2.45698	2.45698	0.010	-4.19665	50.00000	Averaged	
91	P-Isopropyltoluene	2.16139	2.10650	2.10650	0.010	-2.53971	50.00000	Averaged	
92	1,3-Dichlorobenzene	1.16075	1.05474	1.05474	0.600	-9.13275	50.00000	Averaged	
94	1,4-Dichlorobenzene	1.19757	1.08676	1.08676	0.500	-9.25324	50.00000	Averaged	
96	N-Butylbenzene	1.97389	1.89532	1.89532	0.010	-3.98083	50.00000	Averaged	
97	1,2-Dichlorobenzene	1.07246	1.01510	1.01510	0.400	-5.34825	50.00000	Averaged	
98	1,2-Dibromo-3-Chloropropane	50.00000	46.09949	0.11969	0.050	-7.80102	50.00000	Quadratic	
100	Hexachlorobutadiene	0.29602	0.25278	0.25278	0.010	-14.60578	50.00000	Averaged	
101	1,2,4-Trichlorobenzene	0.65599	0.58303	0.58303	0.200	-11.12200	50.00000	Averaged	
102	Naphthalene	50.00000	43.85302	1.62296	0.010	-12.29396	50.00000	Linear	
103	1,2-Dichloroethylene (total	++++	1.02009	1.02009	0.010	++++	50.00000	Averaged	*
104	1,2,3-Trichlorobenzene	0.58197	0.52650	0.52650	0.010	-9.53237	50.00000	Averaged	
105	Xylenes (total)	++++	0.98871	0.98871	0.010	++++	50.00000	Averaged	*
34	Dibromofluoromethane	0.55291	0.56540	0.56540	0.010	2.25897	50.00000	Averaged	
42	1,2-Dichloroethane-D4	0.63760	0.65743	0.65743	0.010	3.10934	50.00000	Averaged	
56	Toluene-D8	1.12266	1.13631	1.13631	0.010	1.21612	50.00000	Averaged	
77	P-Bromofluorobenzene	0.44128	0.45823	0.45823	0.010	3.84133	50.00000	Averaged	

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Fort Devens 2021 LTM
SDG: SO3743
Lab ID : WG301327-5
Analytical Date: 06/24/21 15:41
Lab File ID : T2396.D
Instrument ID: GCMS-T
Initial Calibration Date(s): 06/23/21 09:10 06/23/21 12:27
Column ID:

*** = Compound out of QC criteria**

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P.O. Box 540, Scarborough, ME 04070
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http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\gcms-t.i\T062421.b\T2396.D
Report Date: 01-Jul-2021 08:58

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T062421.b\T2396.D
Lab Smp Id: WG301327-5
Inj Date : 24-JUN-2021 15:41
Operator : CR   Inst ID: gcms-t.i
Smp Info : WG301327-5,SO3743
Misc Info : WG301327,WG301244-4,SO3743-2
Comment   : SW846 5030
Method   : \\target_server\gg\chem\gcms-t.i\T062421.b\T8A05(62)D.m
Meth Date : 29-Jun-2021 14:02 croy   Quant Type: ISTD
Cal Date : 23-JUN-2021 12:27   Cal File: T2383.D
Als bottle: 9   Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: all.sub
Target Version: 4.12
Processing Host: VOA-WS

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.225	1.225	(0.231)	247520	50.0000	47.0	
2	Chloromethane	50	1.352	1.356	(0.255)	255406	50.0000	50.1	
3	Vinyl chloride	62	1.401	1.398	(0.264)	223449	50.0000	49.2	
4	Bromomethane	94	1.599	1.600	(0.302)	76004	50.0000	49.8	
5	Chloroethane	64	1.674	1.675	(0.316)	94172	50.0000	45.8	
6	Trichlorofluoromethane	101	1.768	1.764	(0.333)	277918	50.0000	51.1	
7	Diethyl Ether	59	1.970	1.970	(0.371)	143260	50.0000	51.8	
8	1,1-Dichloroethene	96	2.116	2.112	(0.399)	168974	50.0000	49.1	
9	Freon-113	151	2.138	2.134	(0.403)	127327	50.0000	47.7	
10	Carbon Disulfide	76	2.142	2.142	(0.404)	401754	50.0000	46.6	
11	Iodomethane	142	2.228	2.225	(0.420)	154278	50.0000	42.9	
12	Acrolein	56	2.366	2.367	(0.446)	162394	250.000	246	
13	Allyl Chloride	41	2.467	2.468	(0.465)	212206	50.0000	51.2	
14	Methylene Chloride	84	2.557	2.554	(0.482)	191007	50.0000	50.9	
15	Acetone	43	2.602	2.603	(0.491)	203110	250.000	225	
16	trans-1,2-Dichloroethene	96	2.688	2.685	(0.507)	193871	50.0000	47.3	
17	Methyl Acetate	43	2.699	2.700	(0.509)	140178	50.0000	46.0	
18	Methyl tert-butyl ether	73	2.782	2.782	(0.524)	518576	50.0000	48.2	
19	Tertiary-butyl alcohol	59	2.879	2.876	(0.543)	96214	250.000	204	
20	Acetonitrile	41	3.021	3.018	(0.570)	261104	500.000	490	
21	Di-isopropyl ether	45	3.137	3.134	(0.592)	658972	50.0000	52.2	
22	Chloroprene	53	3.235	3.239	(0.610)	320778	50.0000	50.1	
23	1,1-Dichloroethane	63	3.264	3.261	(0.616)	361199	50.0000	49.8	

Data File: \\target_server\gg\chem\gcms-t.i\T062421.b\T2396.D
Report Date: 01-Jul-2021 08:58

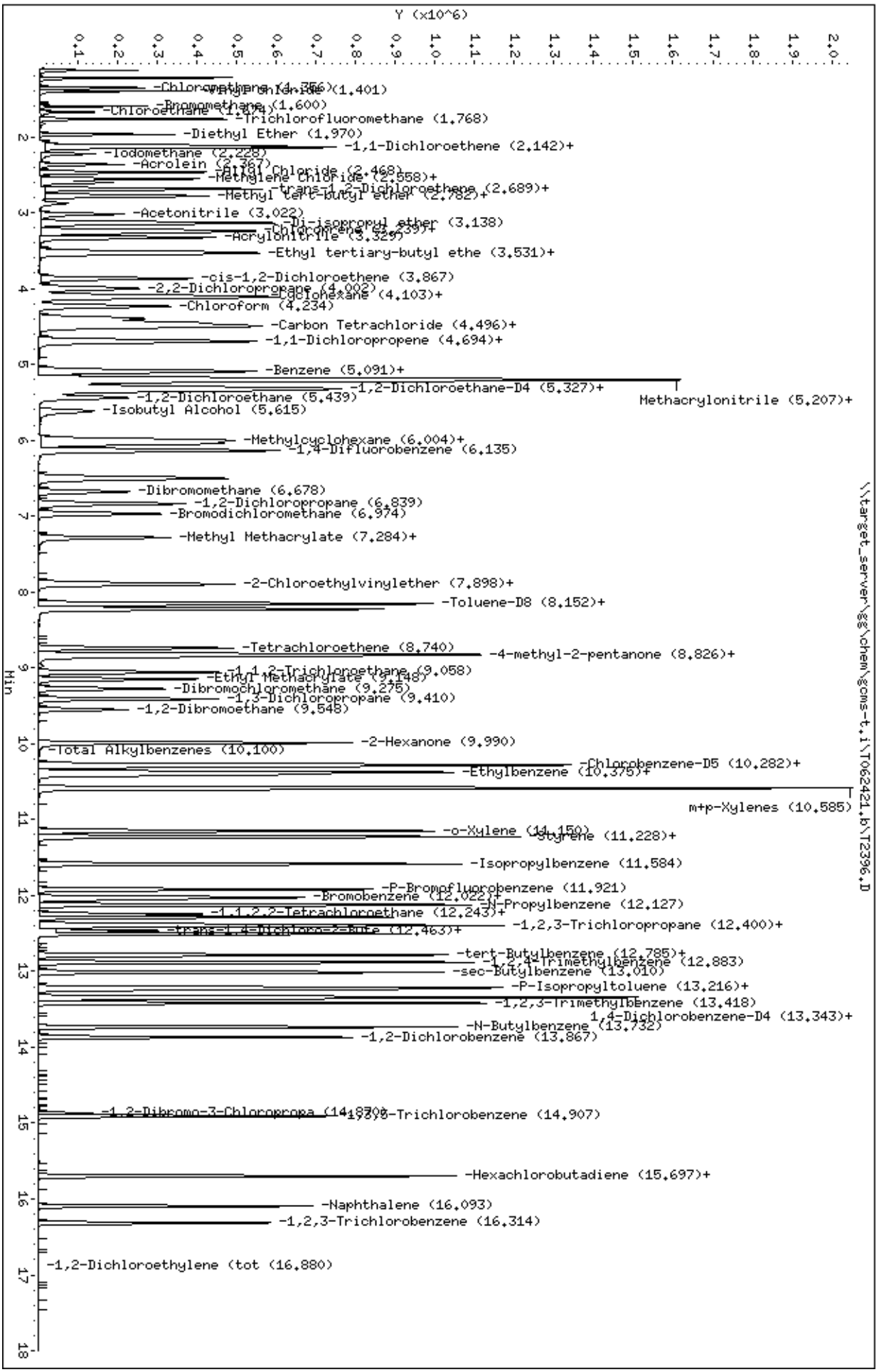
		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	REVIEW CODE
	24	Acrylonitrile	52	3.328	3.329	(0.627)	327250	250.000	254	
	25	Ethyl tertiary-butyl ether	59	3.526	3.523	(0.665)	598630	50.0000	50.6	
	26	Vinyl Acetate	43	3.545	3.546	(0.578)	341990	50.0000	51.3	
	27	cis-1,2-Dichloroethene	96	3.871	3.871	(0.730)	215600	50.0000	48.9	
	28	2,2-Dichloropropane	77	4.002	4.002	(0.754)	254199	50.0000	44.1	
	29	Cyclohexane	56	4.103	4.103	(0.774)	306278	50.0000	48.6	
	30	Bromochloromethane	128	4.118	4.118	(0.776)	90647	50.0000	49.1	
	31	Chloroform	83	4.234	4.234	(0.798)	374040	50.0000	48.5	
	32	Carbon Tetrachloride	117	4.398	4.395	(0.717)	264033	50.0000	48.7	
	33	Tetrahydrofuran	42	4.451	4.448	(0.839)	329511	250.000	246	
$	34	Dibromofluoromethane	113	4.492	4.489	(0.847)	226957	50.0000	51.1	
	35	1,1,1-Trichloroethane	97	4.499	4.496	(0.848)	321628	50.0000	48.5	
	36	1,1-Dichloropropene	75	4.690	4.687	(0.765)	277296	50.0000	47.3	
	37	2-Butanone	43	4.698	4.702	(0.886)	436875	250.000	235	
	38	Benzene	78	5.091	5.091	(0.830)	801260	50.0000	48.0	
	39	Propionitrile	54	5.177	5.177	(0.976)	287683	500.000	472	
	40	Methacrylonitrile	41	5.207	5.207	(0.982)	1250667	500.000	532	
*	41	Pentafluorobenzene	168	5.304	5.304	(1.000)	401409	50.0000		
$	42	1,2-Dichloroethane-D4	65	5.326	5.327	(1.004)	263897	50.0000	51.6	
	43	Tertiary-amyl methyl ether	73	5.341	5.338	(1.007)	512957	50.0000	51.6	
	44	1,2-Dichloroethane	62	5.439	5.439	(0.887)	273836	50.0000	46.5	
	45	Isobutyl Alcohol	43	5.618	5.615	(1.059)	152322	1000.00	946	
	46	Methylcyclohexane	83	6.000	5.997	(1.131)	318537	50.0000	48.5	
	47	Trichloroethene	95	6.045	6.049	(0.985)	194216	50.0000	47.2	
*	48	1,4-Difluorobenzene	114	6.135	6.139	(1.000)	719120	50.0000		
	49	Dibromomethane	93	6.677	6.678	(1.088)	125631	50.0000	47.9	
	50	1,2-Dichloropropane	63	6.835	6.839	(1.114)	200055	50.0000	49.8	
	51	Bromodichloromethane	83	6.973	6.970	(1.137)	284246	50.0000	50.3	
	52	Methyl Methacrylate	41	7.284	7.280	(1.187)	181164	50.0000	53.8	
	53	1,4-Dioxane	88	7.287	7.292	(1.188)	51093	1000.00	861	
	54	2-Chloroethylvinylether	63	7.875	7.872	(1.284)	80089	50.0000	35.2	
	55	cis-1,3-dichloropropene	75	7.897	7.902	(1.287)	338660	50.0000	49.4	
$	56	Toluene-D8	98	8.156	8.156	(1.329)	817144	50.0000	50.6	
	57	Toluene	92	8.223	8.223	(1.340)	486701	50.0000	48.4	
	58	Tetrachloroethene	164	8.739	8.744	(0.850)	142934	50.0000	45.6	
	59	4-methyl-2-pentanone	43	8.822	8.822	(1.438)	881660	250.000	256	
	60	trans-1,3-Dichloropropene	75	8.852	8.852	(1.443)	287823	50.0000	48.6	
	61	1,1,2-Trichloroethane	83	9.057	9.058	(1.476)	154362	50.0000	49.5	
	62	Ethyl Methacrylate	69	9.147	9.152	(1.491)	268103	50.0000	48.8	
	63	Dibromochloromethane	129	9.274	9.275	(0.902)	210856	50.0000	49.7	
	64	1,3-Dichloropropane	76	9.409	9.410	(0.916)	332252	50.0000	48.4	
	65	1,2-Dibromoethane	107	9.548	9.552	(1.556)	189953	50.0000	48.3	
M	66	Total Alkylbenzenes	100				5096209	50.0000	338	
	67	2-Hexanone	43	9.989	9.990	(0.972)	608154	250.000	250	
*	68	Chlorobenzene-D5	117	10.277	10.274	(1.000)	692795	50.0000		
	69	Chlorobenzene	112	10.296	10.297	(1.002)	497696	50.0000	47.2	
	70	Ethylbenzene	91	10.375	10.379	(1.009)	908791	50.0000	48.2	
	71	1,1,1,2-Tetrachloroethane	131	10.408	10.409	(1.013)	190368	50.0000	48.9	
	72	m+p-Xylenes	91	10.584	10.585	(1.030)	1363302	100.000	98.0	
	73	o-Xylene	91	11.149	11.150	(1.085)	691626	50.0000	49.5	
	74	Styrene	104	11.228	11.232	(1.092)	562968	50.0000	50.3	
	75	Bromoform	173	11.220	11.221	(1.092)	122287	50.0000	44.3	
	76	Isopropylbenzene	105	11.583	11.584	(0.869)	837468	50.0000	48.0	
$	77	P-Bromofluorobenzene	95	11.920	11.921	(1.943)	329523	50.0000	51.9	

Data File: \\target_server\gg\chem\gcms-t.i\T062421.b\T2396.D
Report Date: 01-Jul-2021 08:58

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	REVIEW CODE
	78 Bromobenzene	156	12.025	12.022	(0.902)	203847	50.0000	46.5	
	79 cis-1,4-Dichloro-2-Butene	53	12.051	12.052	(0.904)	68938	50.0000	49.0	
	80 N-Propylbenzene	91	12.126	12.127	(0.909)	988107	50.0000	48.0	
	81 1,1,2,2-Tetrachloroethane	83	12.246	12.246	(0.918)	238886	50.0000	48.1	
	82 2-Chlorotoluene	91	12.283	12.284	(0.921)	586158	50.0000	47.6	
	83 1,2,3-Trichloropropane	75	12.377	12.377	(0.928)	193937	50.0000	47.3	
	84 1,3,5-Trimethylbenzene	105	12.399	12.400	(0.930)	681212	50.0000	48.4	
	85 trans-1,4-Dichloro-2-Butene	53	12.459	12.463	(0.934)	72308	50.0000	48.9	
	86 4-Chlorotoluene	91	12.500	12.505	(0.937)	621574	50.0000	48.0	
	87 tert-Butylbenzene	119	12.785	12.785	(0.959)	569592	50.0000	48.2	
	88 Pentachloroethane	165	12.788	12.819	(0.959)	1156	50.0000	(a)	
	89 1,2,4-Trimethylbenzene	105	12.882	12.883	(0.966)	676426	50.0000	48.7	
	90 sec-Butylbenzene	105	13.013	13.010	(0.976)	829623	50.0000	47.9	
	91 P-Isopropyltoluene	119	13.211	13.212	(0.991)	711278	50.0000	48.7	
	92 1,3-Dichlorobenzene	146	13.238	13.238	(0.993)	356144	50.0000	45.4	
*	93 1,4-Dichlorobenzene-D4	152	13.335	13.339	(1.000)	337659	50.0000		
	94 1,4-Dichlorobenzene	146	13.354	13.354	(1.001)	366953	50.0000	45.4	
	95 1,2,3-Trimethylbenzene	105	13.417	13.418	(1.006)	697853	50.0000	48.7	
	96 N-Butylbenzene	91	13.732	13.736	(1.030)	639971	50.0000	48.0	
	97 1,2-Dichlorobenzene	146	13.870	13.871	(1.040)	342759	50.0000	47.3	
	98 1,2-Dibromo-3-Chloropropane	157	14.873	14.873	(1.115)	40413	50.0000	46.1	
	99 1,3,5-Trichlorobenzene	180	14.907	14.911	(1.118)	230669	50.0000	46.4	
	100 Hexachlorobutadiene	225	15.692	15.693	(1.177)	85354	50.0000	42.7	
	101 1,2,4-Trichlorobenzene	180	15.700	15.700	(1.177)	196866	50.0000	44.4	
	102 Naphthalene	128	16.093	16.093	(1.207)	548006	50.0000	43.8	
M	103 1,2-Dichloroethylene (total)	96				409471	50.0000	96.2	
	104 1,2,3-Trichlorobenzene	180	16.314	16.318	(1.223)	177777	50.0000	45.2	
M	105 Xylenes (total)	91				2054928	150.000	148	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).


Data File: \\target_server\gg\chem\gcms-t.i\T062421.b\T2396.D
Date : 24-JUN-2021 15:41
Client ID:
Sample Info: WG301327-5,SO3743
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-t.i
Operator: CR
Column diameter: 0.18
\\target_server\gg\chem\gcms-t.i\T062421.b\T2396.D
Y (x10^6)
Min
Vinyl Chloride (1.401)
Bromomethane (1.600)
Chloroethane (1.674)
Trichlorofluoromethane (1.768)
Diethyl Ether (1.970)
1,1-Dichloroethene (2.142)+
Iodomethane (2.228)
Acrolein (2.367)
Methylene Chloride (2.558)+
trans-1,2-Dichloroethene (2.689)+
Methyl tert-butyl ether (2.782)+
Acetonitrile (3.022)
Di-isopropyl ether (3.138)
Acrylonitrile (3.329)
Ethyl tertiary-butyl ethe (3.531)+
cis-1,2-Dichloroethene (3.867)
2,2-Dichloropropane (4.002)
Cyclohexane (4.103)+
Chloroform (4.234)
Carbon Tetrachloride (4.496)+
1,1-Dichloropropene (4.694)+
Benzene (5.091)+
1,2-Dichloroethane-D4 (5.327)+
Methacrylonitrile (5.207)+
1,2-Dichloroethane (5.439)
Isobutyl Alcohol (5.615)
Methylcyclohexane (6.004)+
1,4-Difluorobenzene (6.135)
Dibromomethane (6.678)
1,2-Dichloropropane (6.839)
Bromodichloromethane (6.974)
Methyl Methacrylate (7.284)+
2-Chloroethylvinylether (7.898)+
Toluene-D8 (8.152)+
Tetrachloroethene (8.740)
4-methyl-2-pentanone (8.826)+
1,1,2-Trichloroethane (9.058)
Ethyl Methacrylate (9.148)
Dibromochloromethane (9.275)
1,3-Dichloropropane (9.410)
1,2-Dibromoethane (9.548)
2-Hexanone (9.990)
Total Alkylbenzenes (10.100)
Chlorobenzene-D5 (10.282)+
Ethylbenzene (10.375)+
m+p-Xylenes (10.585)
o-Xylene (10.750)
Styrene (11.228)+
Isopropylbenzene (11.584)
P-Bromofluorobenzene (11.921)
Bromobenzene (12.022)+
N-Propylbenzene (12.127)
1,1,2,2-Tetrachloroethane (12.243)+
trans-1,4-Dichloro-2-bute (12.463)+
1,2,3-Trichloropropane (12.400)+
tert-Butylbenzene (12.785)+
1,2,4-Trimethylbenzene (12.883)
sec-Butylbenzene (13.010)
P-Isopropyltoluene (13.216)+
1,2,3-Trimethylbenzene (13.418)
1,4-Dichlorobenzene-D4 (13.343)+
N-Butylbenzene (13.732)
1,2-Dichlorobenzene (13.867)
1,2-Dibromo-3-Chloropropa (14.370)
1,2,4-Trichlorobenzene (14.907)
Hexachlorobutadiene (15.697)+
Naphthalene (16.093)
1,2,3-Trichlorobenzene (16.314)
1,2-Dichloroethylene (tot (16.880)

Data File: \\target_server\gg\chem\gcms-s.i\S062221.b\SB572a.D

Date : 22-JUN-2021 10:13

Client ID:

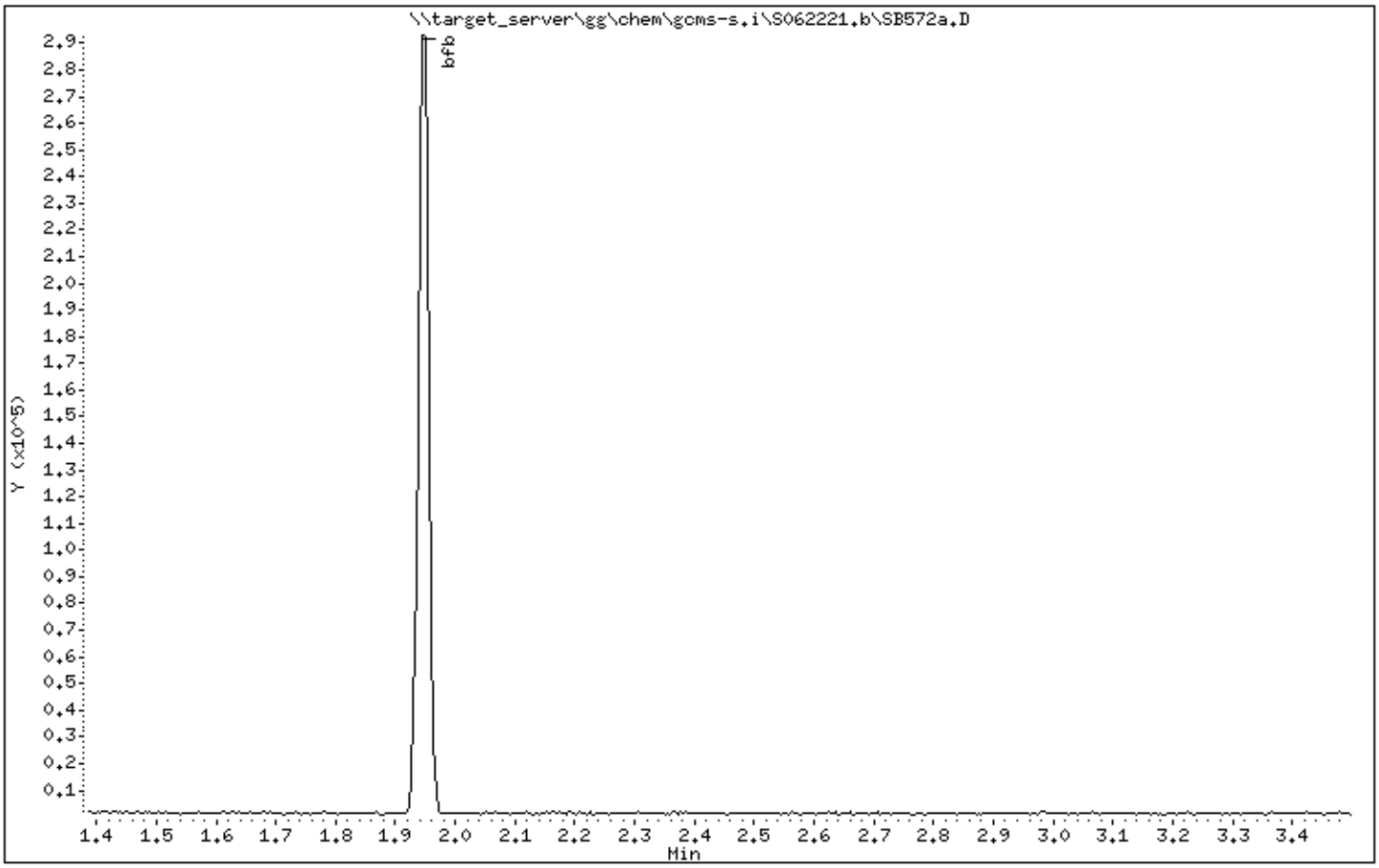
Instrument: gcms-s.i

Sample Info: WG301173-11,S03743

Operator: CR

Column phase: RTX-VMS

Column diameter: 0.18



Data File: \\target_server\gg\chem\gcms-s.i\S062221.b\SB572a.D

Date : 22-JUN-2021 10:13

Client ID:

Instrument: gcms-s.i

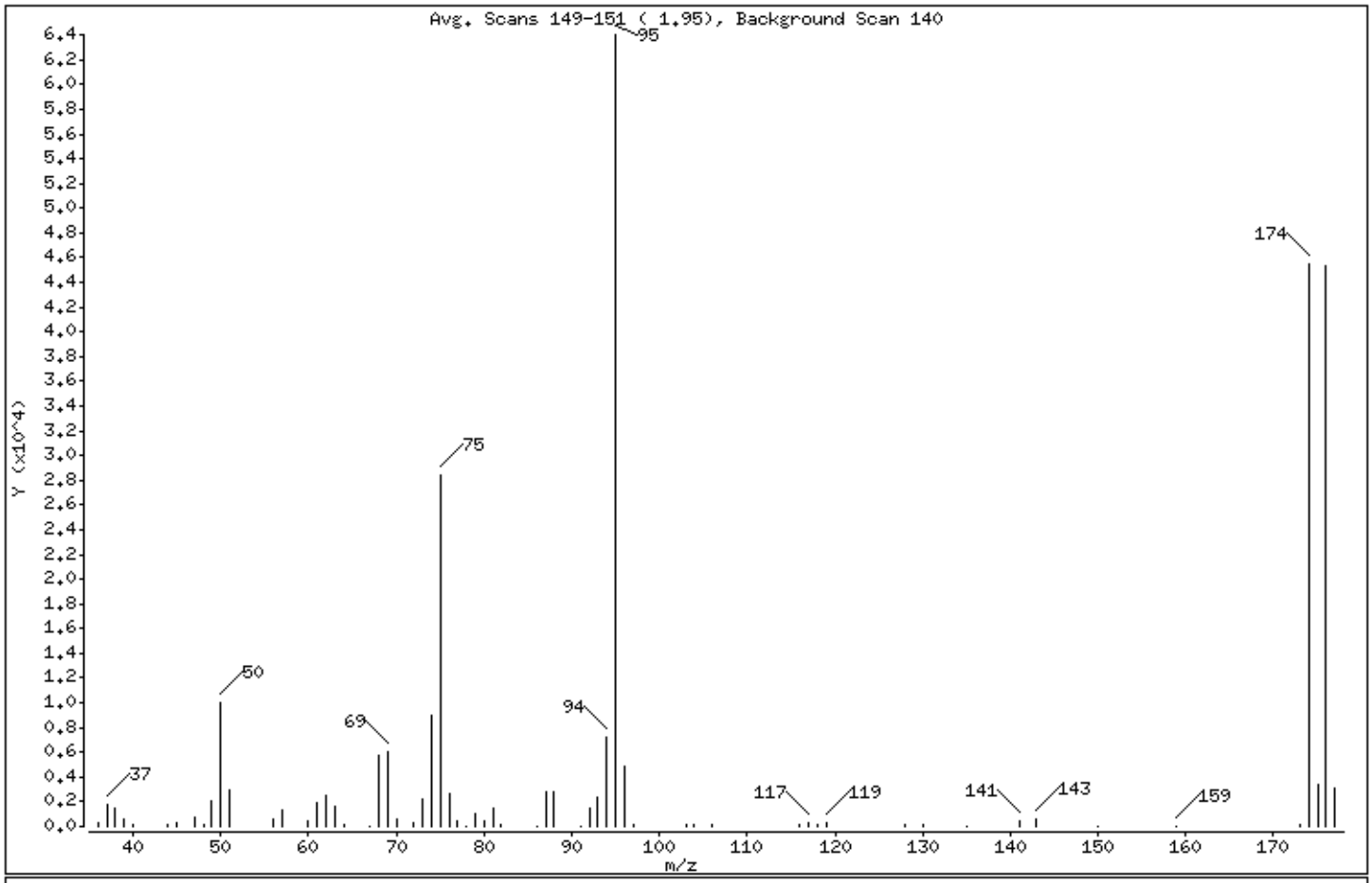
Sample Info: WG301173-11,S03743

Operator: CR

Column phase: RTX-VMS

Column diameter: 0.18

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	15.54
75	30.00 - 60.00% of mass 95	44.42
96	5.00 - 9.00% of mass 95	7.66
173	Less than 2.00% of mass 174	0.12 (0.17)
174	Greater than 50.00% of mass 95	71.01
175	5.00 - 9.00% of mass 174	5.38 (7.58)
176	95.00 - 101.00% of mass 174	70.72 (99.60)
177	5.00 - 9.00% of mass 176	4.86 (6.87)

Date : 22-JUN-2021 10:13

Client ID:

Instrument: gcms-s.i

Sample Info: WG301173-11,S03743

Operator: CR

Column phase: RTX-VMS

Column diameter: 0.18

Data File: SB572a.D
Spectrum: Avg. Scans 149-151 (1.95), Background Scan 140
Location of Maximum: 95.00
Number of points: 63

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	297	62.00	2440	81.00	1475	117.00	365
37.00	1811	63.00	1681	82.00	189	118.00	77
38.00	1545	64.00	113	86.00	66	119.00	358
39.00	652	67.00	69	87.00	2805	128.00	149
40.00	147	68.00	5699	88.00	2733	130.00	92
44.00	197	69.00	6021	91.00	69	135.00	73
45.00	349	70.00	558	92.00	1426	141.00	377
47.00	751	72.00	315	93.00	2317	143.00	518
48.00	214	73.00	2143	94.00	7227	150.00	73
49.00	2031	74.00	8997	95.00	64024	159.00	69
50.00	9948	75.00	28440	96.00	4907	173.00	76
51.00	2921	76.00	2650	97.00	81	174.00	45464
56.00	608	77.00	486	103.00	79	175.00	3447
57.00	1349	78.00	72	104.00	107	176.00	45280
60.00	463	79.00	1034	106.00	190	177.00	3112
61.00	1954	80.00	416	116.00	91		

Data File: \\target_server\gg\chem\gcms-s.i\S062321.b\SB573a.D

Date : 23-JUN-2021 09:52

Client ID:

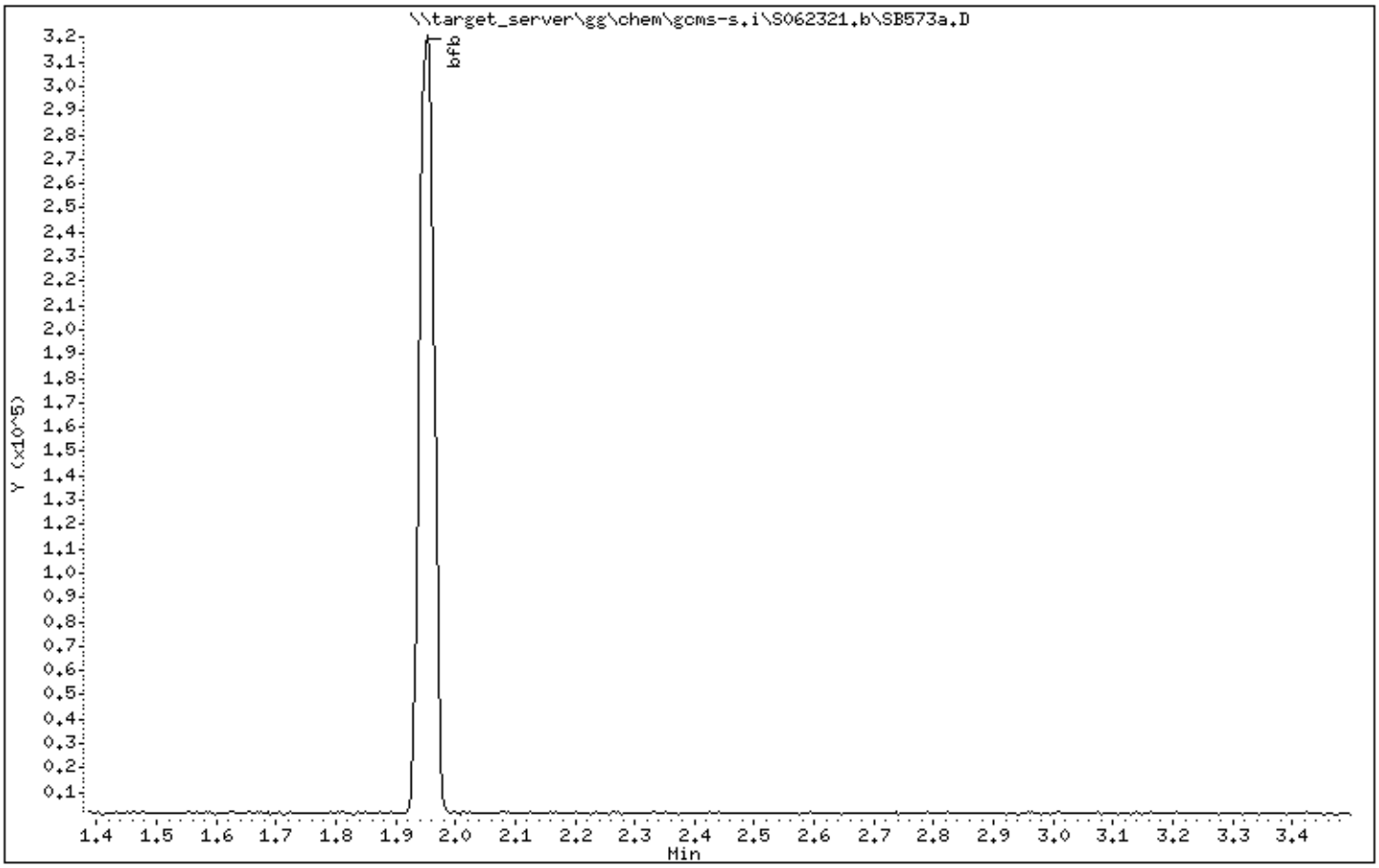
Instrument: gcms-s.i

Sample Info: WG301245-3,S03743

Operator: CR

Column phase: RTX-VMS

Column diameter: 0.18



Data File: \\target_server\gg\chem\gcms-s.i\S062321.b\SB573a.D

Date : 23-JUN-2021 09:52

Client ID:

Instrument: gcms-s.i

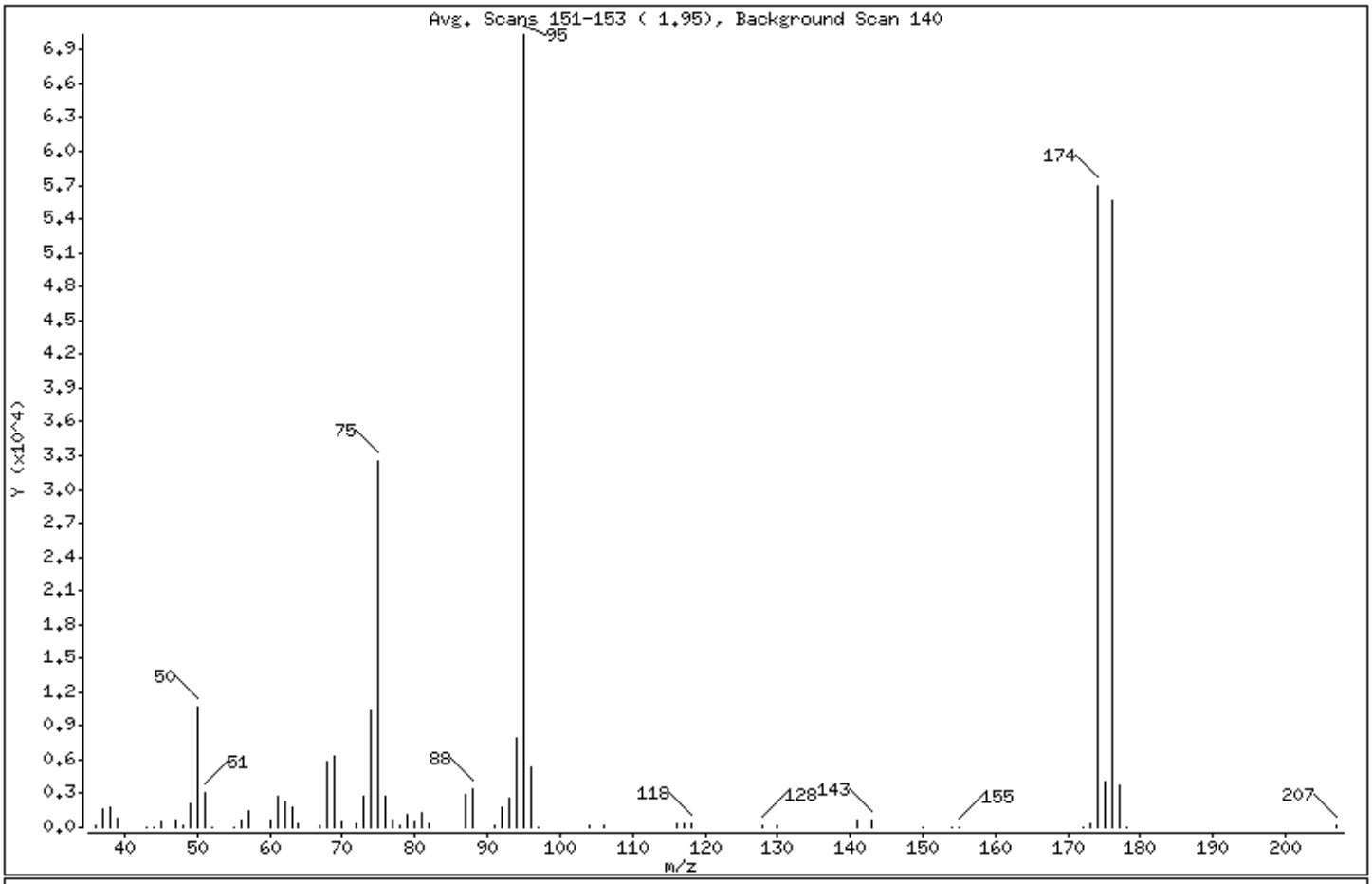
Sample Info: WG301245-3,SO3743

Operator: CR

Column phase: RTX-VMS

Column diameter: 0.18

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	15.19
75	30.00 - 60.00% of mass 95	46.30
96	5.00 - 9.00% of mass 95	7.56
173	Less than 2.00% of mass 174	0.51 (0.63)
174	Greater than 50.00% of mass 95	80.98
175	5.00 - 9.00% of mass 174	5.67 (7.00)
176	95.00 - 101.00% of mass 174	79.18 (97.78)
177	5.00 - 9.00% of mass 176	5.31 (6.71)

Date : 23-JUN-2021 09:52

Client ID: Instrument: gcms-s.i

Sample Info: WG301245-3,S03743

Operator: CR

Column phase: RTX-VMS Column diameter: 0.18

Data File: SB573a.D
Spectrum: Avg. Scans 151-153 (1.95), Background Scan 140
Location of Maximum: 95.00
Number of points: 65

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	182	61.00	2669	81.00	1300	130.00	154
37.00	1628	62.00	2343	82.00	274	141.00	636
38.00	1759	63.00	1764	87.00	2980	143.00	680
39.00	753	64.00	295	88.00	3392	150.00	68
43.00	76	67.00	142	91.00	93	154.00	68
44.00	68	68.00	5878	92.00	1802	155.00	73
45.00	535	69.00	6245	93.00	2584	172.00	76
47.00	673	70.00	412	94.00	7959	173.00	357
48.00	156	72.00	325	95.00	70352	174.00	56968
49.00	2024	73.00	2749	96.00	5320	175.00	3990
50.00	10684	74.00	10419	97.00	77	176.00	55704
51.00	3031	75.00	32576	104.00	203	177.00	3738
52.00	67	76.00	2738	106.00	195	178.00	69
55.00	71	77.00	664	116.00	292	207.00	93
56.00	632	78.00	224	117.00	320		
57.00	1533	79.00	1074	118.00	329		
60.00	600	80.00	415	128.00	172		

Data File: \\target_server\gg\chem\gcms-t.i\T062321.b\TB518b.D

Date : 23-JUN-2021 08:47

Client ID:

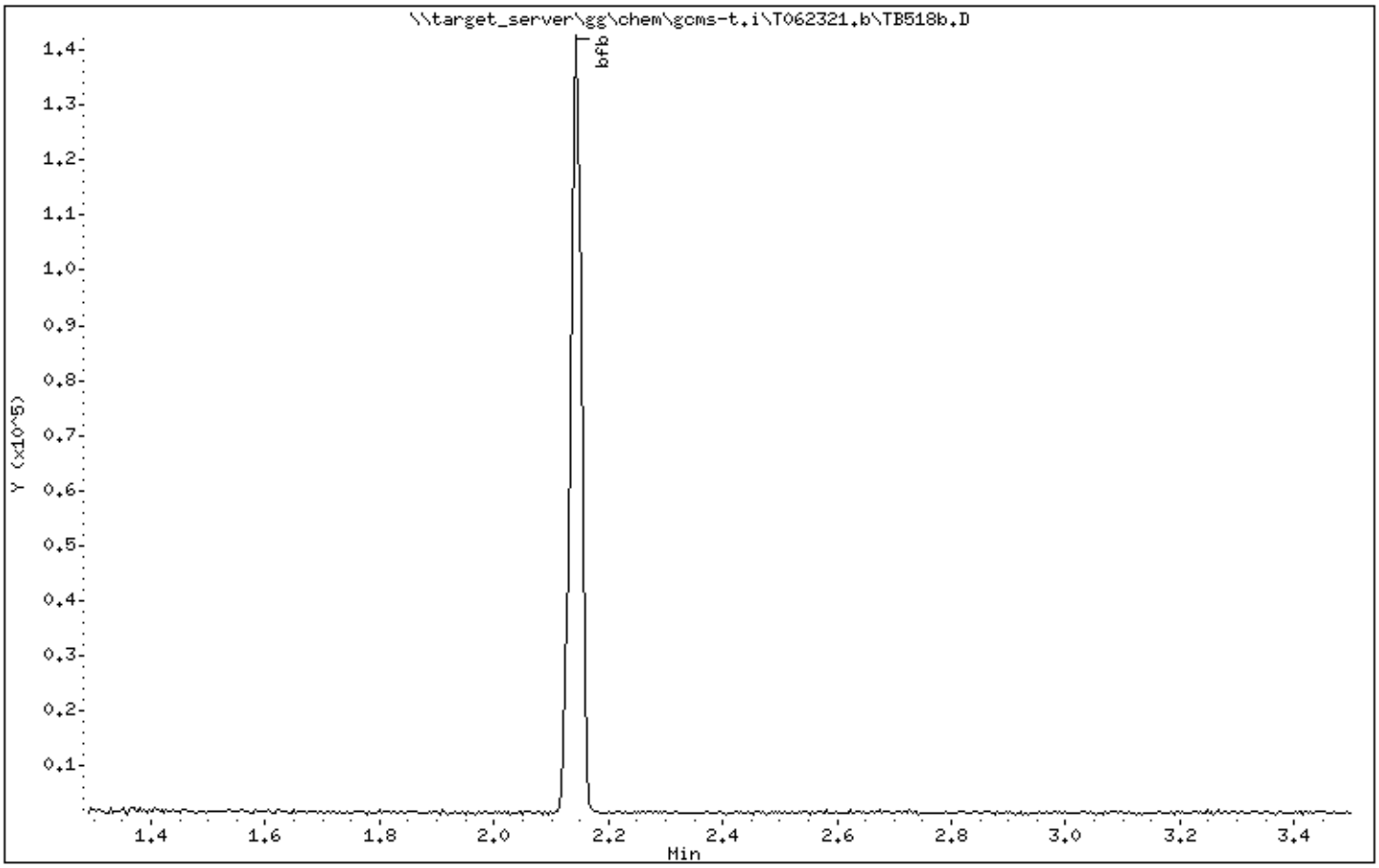
Instrument: gcms-t.i

Sample Info: WG301244-11,SO3743

Operator: CR

Column phase: RTX-VMS

Column diameter: 0.18



Data File: \\target_server\gg\chem\gcms-t.i\T062321.b\TB518b.D

Date : 23-JUN-2021 08:47

Client ID:

Instrument: gcms-t.i

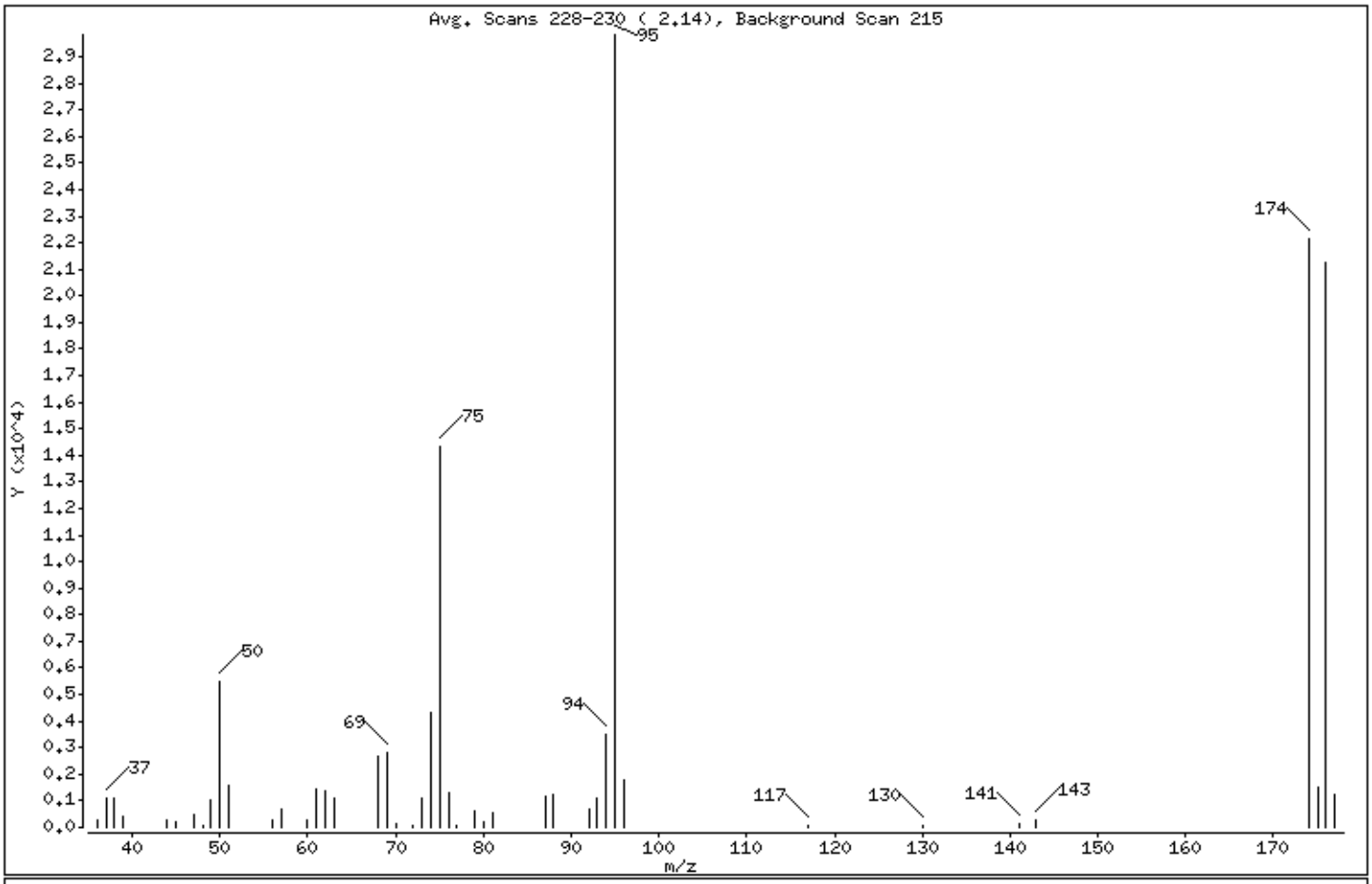
Sample Info: WG301244-11,SO3743

Operator: CR

Column phase: RTX-VMS

Column diameter: 0.18

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	18.42
75	30.00 - 60.00% of mass 95	47.95
96	5.00 - 9.00% of mass 95	5.98
173	Less than 2.00% of mass 174	0.00 (0.00)
174	Greater than 50.00% of mass 95	74.33
175	5.00 - 9.00% of mass 174	5.11 (6.87)
176	95.00 - 101.00% of mass 174	71.16 (95.74)
177	5.00 - 9.00% of mass 176	4.21 (5.92)

Date : 23-JUN-2021 08:47

Client ID: Instrument: gcms-t.i

Sample Info: WG301244-11,SO3743

Operator: CR

Column phase: RTX-VMS Column diameter: 0.18

Data File: TB518b.D
Spectrum: Avg. Scans 228-230 (2.14), Background Scan 215
Location of Maximum: 95.00
Number of points: 44

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	281	57.00	712	76.00	1331	117.00	81
37.00	1118	60.00	272	77.00	72	130.00	77
38.00	1102	61.00	1418	79.00	649	141.00	167
39.00	422	62.00	1355	80.00	172	143.00	304
44.00	246	63.00	1106	81.00	565	174.00	22168
45.00	177	68.00	2645	87.00	1140	175.00	1524
47.00	499	69.00	2798	88.00	1224	176.00	21224
48.00	72	70.00	122	92.00	695	177.00	1257
49.00	1028	72.00	68	93.00	1083		
50.00	5495	73.00	1082	94.00	3530		
51.00	1573	74.00	4348	95.00	29824		
56.00	265	75.00	14301	96.00	1782		

Data File: \\target_server\gg\chem\gcms-t.i\T062421.b\TB519a.D

Date : 24-JUN-2021 10:00

Client ID:

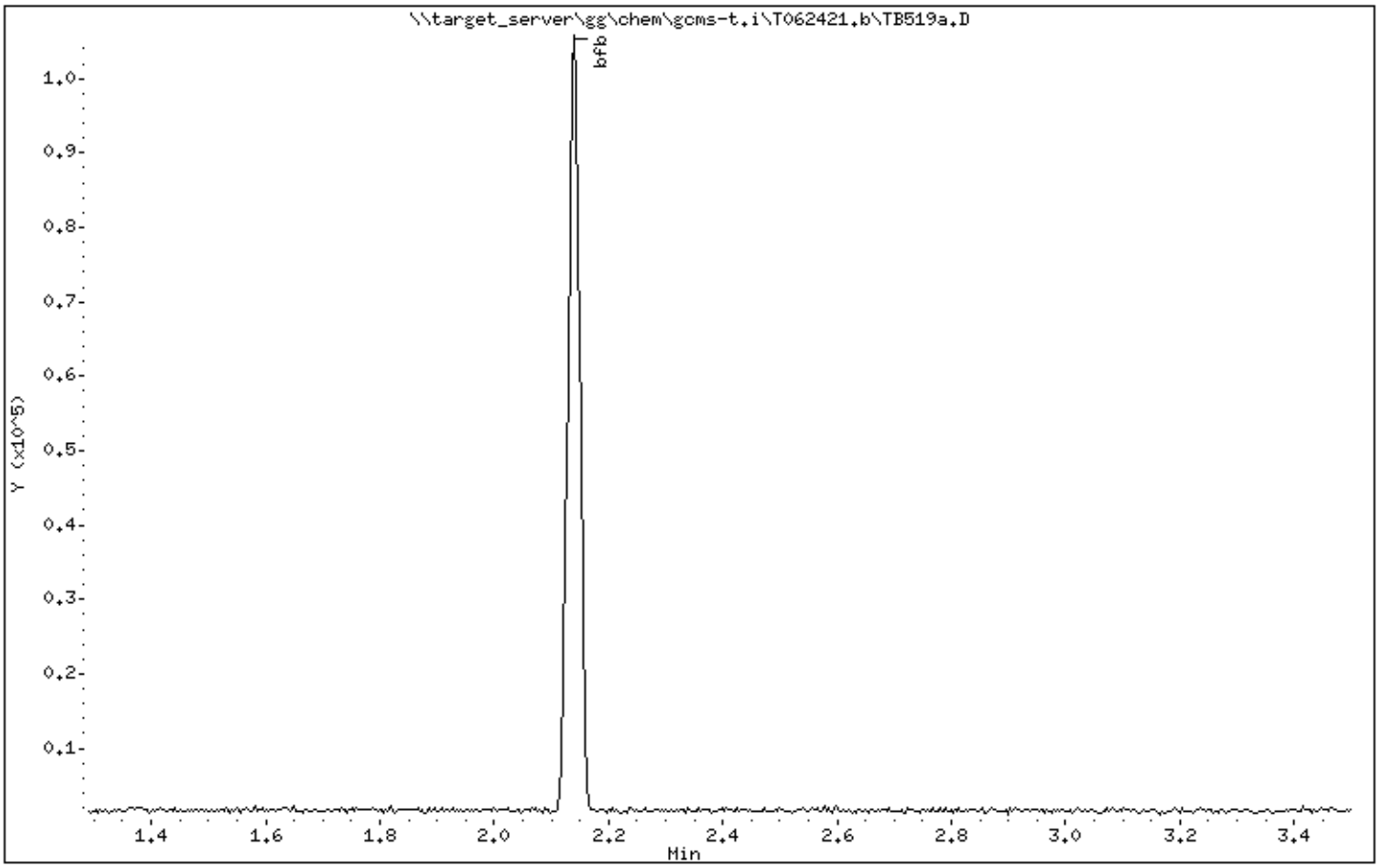
Instrument: gcms-t.i

Sample Info: WG301327-3,SO3743

Operator: CR

Column phase: RTX-VMS

Column diameter: 0.18



Data File: \\target_server\gg\chem\gcms-t.i\T062421.b\TB519a.D

Date : 24-JUN-2021 10:00

Client ID:

Instrument: gcms-t.i

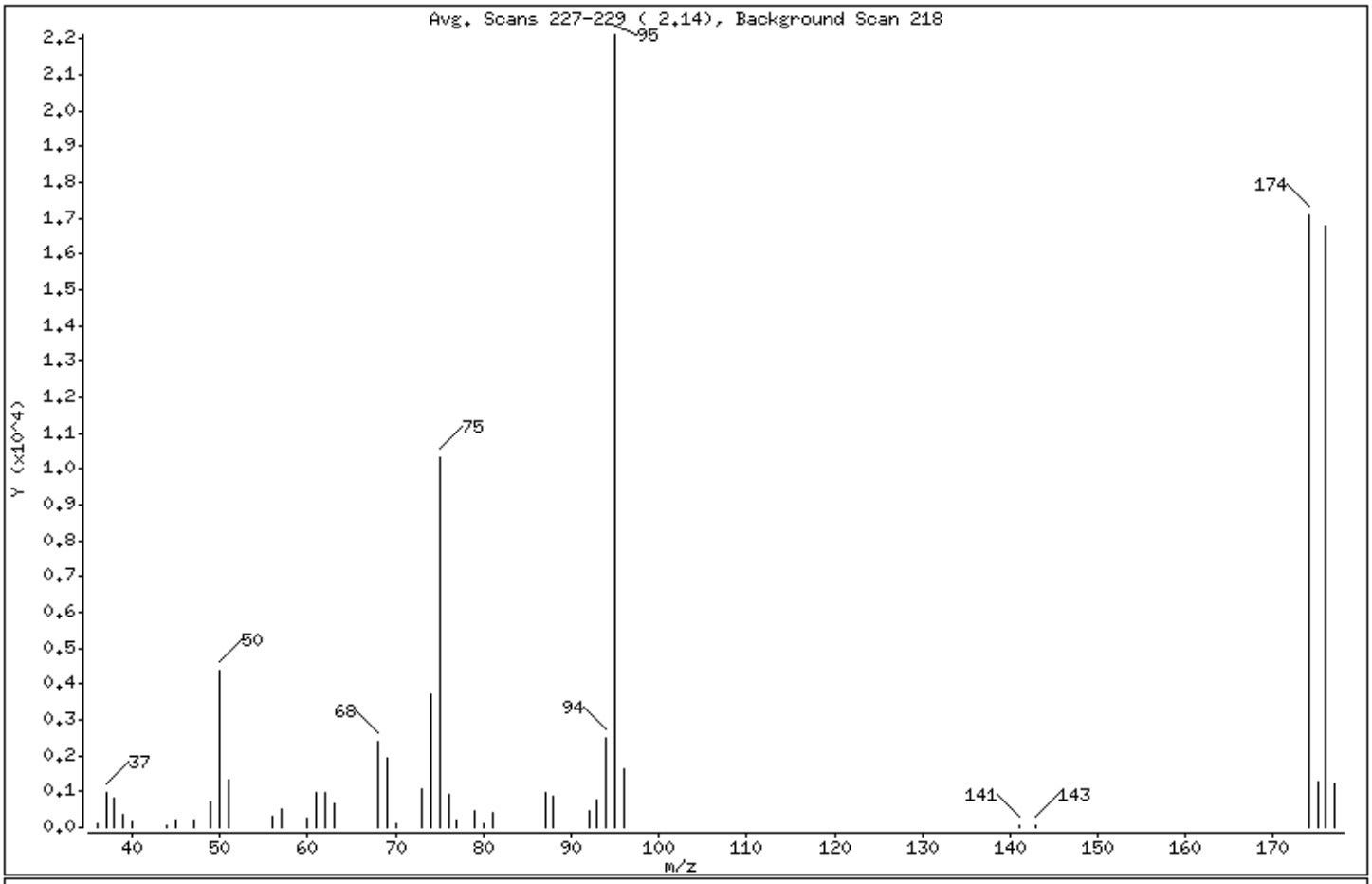
Sample Info: WG301327-3,SO3743

Operator: CR

Column phase: RTX-VMS

Column diameter: 0.18

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	19.79
75	30.00 - 60.00% of mass 95	46.73
96	5.00 - 9.00% of mass 95	7.33
173	Less than 2.00% of mass 174	0.00 (0.00)
174	Greater than 50.00% of mass 95	77.21
175	5.00 - 9.00% of mass 174	5.80 (7.51)
176	95.00 - 101.00% of mass 174	75.80 (98.17)
177	5.00 - 9.00% of mass 176	5.42 (7.15)

Date : 24-JUN-2021 10:00

Client ID: Instrument: gcms-t.i

Sample Info: WG301327-3,SO3743

Operator: CR

Column phase: RTX-VMS Column diameter: 0.18

Data File: TB519a.D
Spectrum: Avg. Scans 227-229 (2.14), Background Scan 218
Location of Maximum: 95.00
Number of points: 41

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	123	56.00	320	75.00	10333	95.00	22112
37.00	956	57.00	502	76.00	937	96.00	1620
38.00	831	60.00	274	77.00	186	141.00	70
39.00	380	61.00	962	79.00	453	143.00	73
40.00	146	62.00	952	80.00	92	174.00	17072
44.00	57	63.00	676	81.00	429	175.00	1282
45.00	185	68.00	2367	87.00	966	176.00	16760
47.00	227	69.00	1955	88.00	859	177.00	1198
49.00	698	70.00	83	92.00	481		
50.00	4376	73.00	1052	93.00	775		
51.00	1301	74.00	3705	94.00	2471		

Raw QC Data Section

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Lab ID: WG301245-2
Client ID: Method Blank Sample
SDG: SO3743
Lab File ID: S0363.D

Extract Date: 23-JUN-21
Extracted By: CR
Extraction Method: SW846 5030C
Lab Prep Batch: WG301245
% Solids: NA

Analysis Date: 23-JUN-21
Analyst: CR
Analysis Method: SW846 8260B
Matrix: AQ
Report Date: 01-JUL-21

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	2.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	2.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	2.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	U	2.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	2.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	U	1.0	ug/L	1	1	1.0	0.25	0.50
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1	2.5
Acetone	U	5.0	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	1.0	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21	0.50
Vinyl Acetate	U	1.0	ug/L	1	1	1.0	0.40	0.50
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21	0.50
1,2-Dichloroethylene (Total)	U	2.0	ug/L	1	2	2.0	0.21	1.0
2,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25	0.50
Bromochloromethane	U	1.0	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	1.0	ug/L	1	1	1.0	0.32	0.50
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22	0.50
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20	0.50
1,1-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.21	0.50
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3	2.5
Benzene	U	1.0	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28	0.50
Dibromomethane	U	1.0	ug/L	1	1	1.0	0.46	0.50
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19	0.50
Toluene	U	1.0	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3	2.5
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40	0.50
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33	0.50
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30	0.50

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://www.katahdinlab.com

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Lab ID: WG301245-2
Client ID: Method Blank Sample
SDG: SO3743
Lab File ID: S0363.D

Extract Date: 23-JUN-21
Extracted By: CR
Extraction Method: SW846 5030C
Lab Prep Batch: WG301245
% Solids: NA

Analysis Date: 23-JUN-21
Analyst: CR
Analysis Method: SW846 8260B
Matrix: AQ
Report Date: 01-JUL-21

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,3-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromoethane	U	1.0	ug/L	1	1	1.0	0.22	0.50
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21	0.50
1,1,1,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.19	0.50
Xylenes (Total)	U	3.0	ug/L	1	3	3.0	0.25	1.5
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59	1.0
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25	0.50
Styrene	U	1.0	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	1.0	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	1.0	ug/L	1	1	1.0	0.23	0.50
Bromobenzene	U	1.0	ug/L	1	1	1.0	0.24	0.50
N-Propylbenzene	U	1.0	ug/L	1	1	1.0	0.26	0.50
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38	0.50
1,3,5-Trimethylbenzene	U	1.0	ug/L	1	1	1.0	0.20	0.50
2-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.20	0.50
1,2,3-Trichloropropane	U	1.0	ug/L	1	1	1.0	0.19	0.50
4-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.26	0.50
tert-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.31	0.50
1,2,4-Trimethylbenzene	U	1.0	ug/L	1	1	1.0	0.19	0.50
P-Isopropyltoluene	U	1.0	ug/L	1	1	1.0	0.25	0.50
1,3-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.24	0.50
N-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.23	0.50
sec-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.21	0.50
1,2-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.15	0.50
1,2-Dibromo-3-Chloropropane	U	1.0	ug/L	1	1	1.0	0.50	0.75
Hexachlorobutadiene	U	1.0	ug/L	1	1	1.0	0.52	0.75
1,2,4-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.37	0.50
Naphthalene	U	1.0	ug/L	1	1	1.0	0.30	0.50
1,2,3-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.27	0.50
P-Bromofluorobenzene		94.1	%					
Toluene-d8		98.7	%					
1,2-Dichloroethane-d4		101.	%					
Dibromofluoromethane		101.	%					

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Data File: \\target_server\gg\chem\gcms-s.i\S062321.b\S0363.D
Report Date: 01-Jul-2021 12:49

Katahdin Analytical Services

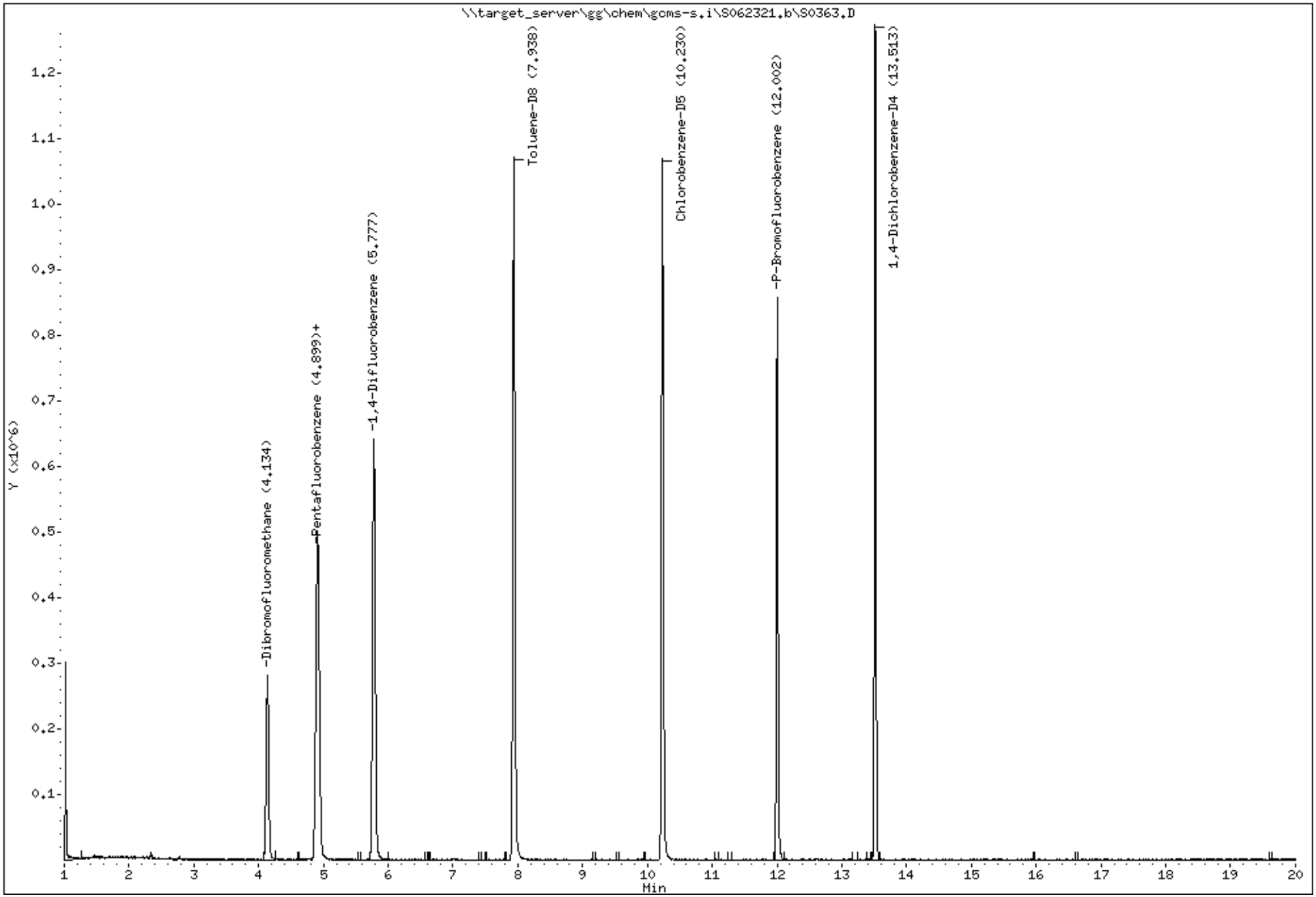
Data file : \\target_server\gg\chem\gcms-s.i\S062321.b\S0363.D
Lab Smp Id: WG301245-2
Inj Date : 23-JUN-2021 11:57
Operator : CR   Inst ID: gcms-s.i
Smp Info : WG301245-2,SO3743
Misc Info : WG301245,WG301173-4,SO3743-5
Comment   : SW846 5030C
Method   : \\target_server\gg\chem\gcms-s.i\S062321.b\S8A05(14)D.m
Meth Date : 01-Jul-2021 08:43 croy   Quant Type: ISTD
Cal Date : 22-JUN-2021 11:34   Cal File: S0339.D
Als bottle: 4
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: all.sub
Target Version: 4.12
Processing Host: T6-O360

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution 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)	REVIEW CODE
$ 34 Dibromofluoromethane	113	4.137	4.134	(0.844)	244567	50.5342	50.5	
* 41 Pentafluorobenzene	168	4.899	4.903	(1.000)	425088	50.0000		
$ 42 1,2-Dichloroethane-D4	65	4.925	4.922	(1.005)	255222	50.6673	50.7	
* 48 1,4-Difluorobenzene	114	5.777	5.777	(1.000)	866856	50.0000		
$ 58 Toluene-D8	98	7.937	7.938	(1.374)	1007245	49.3674	49.4	
* 68 Chlorobenzene-D5	117	10.230	10.234	(1.000)	815598	50.0000		
$ 78 P-Bromofluorobenzene	95	12.002	12.002	(2.077)	362861	47.0471	47.0	
* 94 1,4-Dichlorobenzene-D4	152	13.513	13.513	(1.000)	388165	50.0000		

Data File: \\target_server\gg\chem\gcms-s.i\S062321.b\S0363.D
Date : 23-JUN-2021 11:57
Client ID:
Instrument: gcms-s.i
Sample Info: WG301245-2,S03743



Katahdin Analytical Services 1000185

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ANALYTICAL SERVICES

Report of Analytical Results

Lab ID: WG301327-2
Client ID: Method Blank Sample
SDG: SO3743
Lab File ID: T2391.D

Extract Date: 24-JUN-21
Extracted By: CR
Extraction Method: SW846 5030
Lab Prep Batch: WG301327
% Solids: NA

Analysis Date: 24-JUN-21
Analyst: CR
Analysis Method: SW846 8260B
Matrix: AQ
Report Date: 01-JUL-21

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Dichlorodifluoromethane	U	2.0	ug/L	1	2	2.0	0.24	1.0
Chloromethane	U	2.0	ug/L	1	2	2.0	0.36	1.0
Vinyl Chloride	U	2.0	ug/L	1	2	2.0	0.25	1.0
Bromomethane	U	2.0	ug/L	1	2	2.0	0.49	1.0
Chloroethane	U	2.0	ug/L	1	2	2.0	0.55	1.0
Trichlorofluoromethane	U	2.0	ug/L	1	2	2.0	0.24	1.0
1,1-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.35	0.50
Carbon Disulfide	J	0.33	ug/L	1	1	1.0	0.25	0.50
Methylene Chloride	U	5.0	ug/L	1	5	5.0	1.1	2.5
Acetone	U	5.0	ug/L	1	5	5.0	2.2	2.5
trans-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.25	0.50
Methyl tert-butyl Ether	U	1.0	ug/L	1	1	1.0	0.36	0.50
1,1-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.21	0.50
Vinyl Acetate	U	1.0	ug/L	1	1	1.0	0.40	0.50
cis-1,2-Dichloroethene	U	1.0	ug/L	1	1	1.0	0.21	0.50
1,2-Dichloroethylene (Total)	U	2.0	ug/L	1	2	2.0	0.21	1.0
2,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25	0.50
Bromochloromethane	U	1.0	ug/L	1	1	1.0	0.21	0.50
Chloroform	U	1.0	ug/L	1	1	1.0	0.32	0.50
Carbon Tetrachloride	U	1.0	ug/L	1	1	1.0	0.22	0.50
1,1,1-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.20	0.50
1,1-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.21	0.50
2-Butanone	U	5.0	ug/L	1	5	5.0	1.3	2.5
Benzene	U	1.0	ug/L	1	1	1.0	0.26	0.50
1,2-Dichloroethane	U	1.0	ug/L	1	1	1.0	0.20	0.50
Trichloroethene	U	1.0	ug/L	1	1	1.0	0.28	0.50
Dibromomethane	U	1.0	ug/L	1	1	1.0	0.46	0.50
1,2-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.25	0.50
Bromodichloromethane	U	1.0	ug/L	1	1	1.0	0.33	0.50
cis-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.19	0.50
Toluene	U	1.0	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	5.0	ug/L	1	5	5.0	1.3	2.5
Tetrachloroethene	U	1.0	ug/L	1	1	1.0	0.40	0.50
trans-1,3-Dichloropropene	U	1.0	ug/L	1	1	1.0	0.20	0.50
1,1,2-Trichloroethane	U	1.0	ug/L	1	1	1.0	0.33	0.50
Dibromochloromethane	U	1.0	ug/L	1	1	1.0	0.30	0.50

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Report of Analytical Results

Lab ID: WG301327-2
Client ID: Method Blank Sample
SDG: SO3743
Lab File ID: T2391.D

Extract Date: 24-JUN-21
Extracted By: CR
Extraction Method: SW846 5030
Lab Prep Batch: WG301327
% Solids: NA

Analysis Date: 24-JUN-21
Analyst: CR
Analysis Method: SW846 8260B
Matrix: AQ
Report Date: 01-JUL-21

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,3-Dichloropropane	U	1.0	ug/L	1	1	1.0	0.22	0.50
1,2-Dibromoethane	U	1.0	ug/L	1	1	1.0	0.22	0.50
2-Hexanone	U	5.0	ug/L	1	5	5.0	1.7	2.5
Chlorobenzene	U	1.0	ug/L	1	1	1.0	0.22	0.50
Ethylbenzene	U	1.0	ug/L	1	1	1.0	0.21	0.50
1,1,1,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.19	0.50
Xylenes (Total)	U	3.0	ug/L	1	3	3.0	0.25	1.5
m+p-Xylenes	U	2.0	ug/L	1	2	2.0	0.59	1.0
o-Xylene	U	1.0	ug/L	1	1	1.0	0.25	0.50
Styrene	U	1.0	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	1.0	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	1.0	ug/L	1	1	1.0	0.23	0.50
Bromobenzene	U	1.0	ug/L	1	1	1.0	0.24	0.50
N-Propylbenzene	U	1.0	ug/L	1	1	1.0	0.26	0.50
1,1,2,2-Tetrachloroethane	U	1.0	ug/L	1	1	1.0	0.38	0.50
1,3,5-Trimethylbenzene	U	1.0	ug/L	1	1	1.0	0.20	0.50
2-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.20	0.50
1,2,3-Trichloropropane	U	1.0	ug/L	1	1	1.0	0.19	0.50
4-Chlorotoluene	U	1.0	ug/L	1	1	1.0	0.26	0.50
tert-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.31	0.50
1,2,4-Trimethylbenzene	U	1.0	ug/L	1	1	1.0	0.19	0.50
P-Isopropyltoluene	U	1.0	ug/L	1	1	1.0	0.25	0.50
1,3-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.26	0.50
1,4-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.24	0.50
N-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.23	0.50
sec-Butylbenzene	U	1.0	ug/L	1	1	1.0	0.21	0.50
1,2-Dichlorobenzene	U	1.0	ug/L	1	1	1.0	0.15	0.50
1,2-Dibromo-3-Chloropropane	U	1.0	ug/L	1	1	1.0	0.50	0.75
Hexachlorobutadiene	U	1.0	ug/L	1	1	1.0	0.52	0.75
1,2,4-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.37	0.50
Naphthalene	U	1.0	ug/L	1	1	1.0	0.30	0.50
1,2,3-Trichlorobenzene	U	1.0	ug/L	1	1	1.0	0.27	0.50
P-Bromofluorobenzene		101.	%					
Toluene-d8		99.2	%					
1,2-Dichloroethane-d4		103.	%					
Dibromofluoromethane		100.	%					

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Data File: \\target_server\gg\chem\gcms-t.i\T062421.b\T2391.D
Report Date: 01-Jul-2021 12:49

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T062421.b\T2391.D
Lab Smp Id: WG301327-2
Inj Date : 24-JUN-2021 12:56
Operator : CR   Inst ID: gcms-t.i
Smp Info : WG301327-2,SO3743
Misc Info : WG301327,WG301244-4,SO3743-2
Comment   : SW846 5030
Method   : \\target_server\gg\chem\gcms-t.i\T062421.b\T8A05(62)D.m
Meth Date : 01-Jul-2021 08:58 croy   Quant Type: ISTD
Cal Date : 23-JUN-2021 12:27   Cal File: T2383.D
Als bottle: 4
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: all.sub
Target Version: 4.12
Processing Host: T6-O360

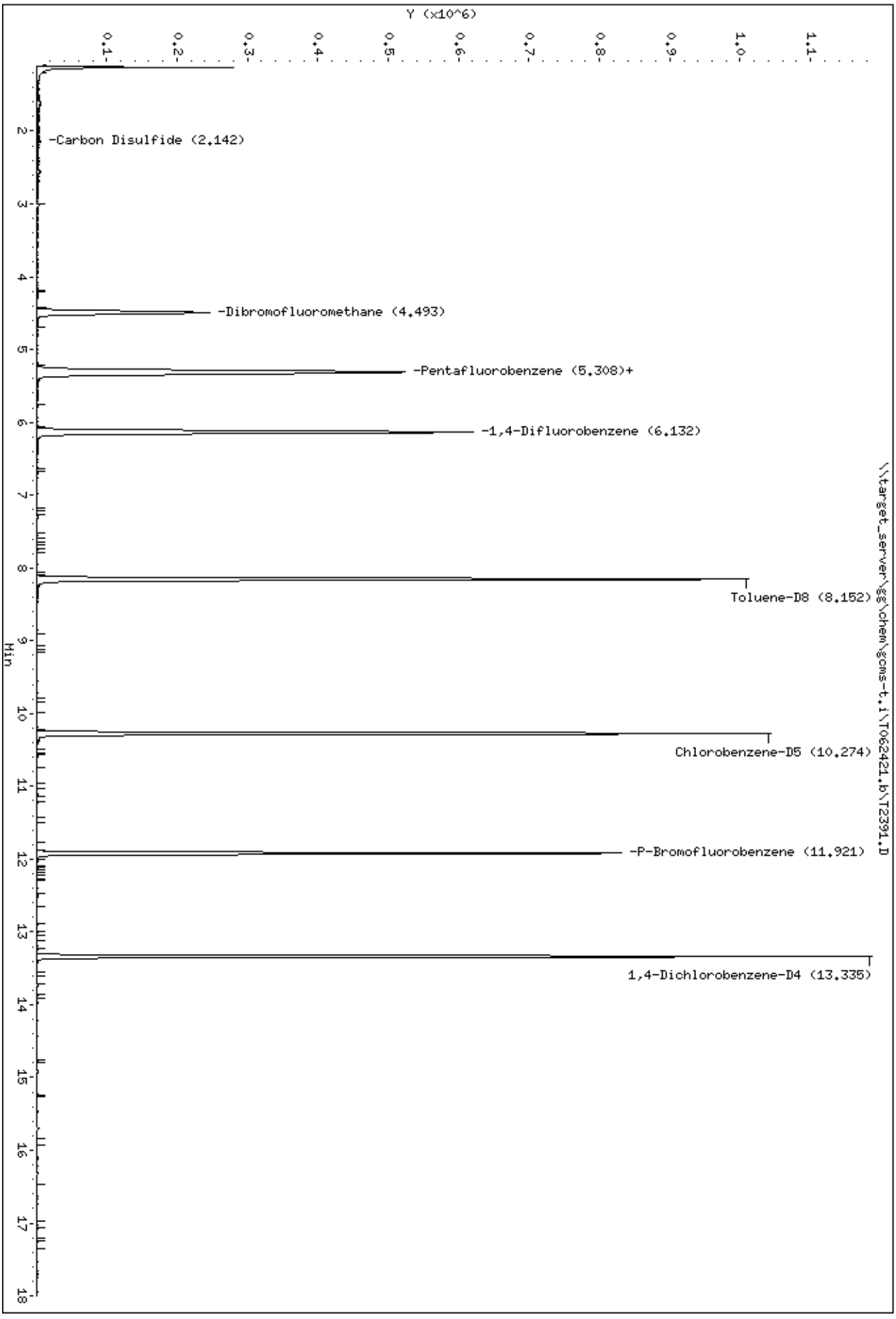
Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution 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)	REVIEW CODE
	10 Carbon Disulfide	76	2.142	2.142	(0.404)	2932	0.33322	0.33(a)	
$	34 Dibromofluoromethane	113	4.492	4.489	(0.847)	226779	50.0819	50.1	
*	41 Pentafluorobenzene	168	5.304	5.304	(1.000)	409484	50.0000		
$	42 1,2-Dichloroethane-D4	65	5.323	5.327	(1.004)	269584	51.6271	51.6	
*	48 1,4-Difluorobenzene	114	6.131	6.139	(1.000)	727151	50.0000		
$	56 Toluene-D8	98	8.152	8.156	(1.330)	809929	49.6072	49.6	
*	68 Chlorobenzene-D5	117	10.274	10.274	(1.000)	688027	50.0000		
$	77 P-Bromofluorobenzene	95	11.920	11.921	(1.944)	324296	50.5327	50.5	
*	93 1,4-Dichlorobenzene-D4	152	13.339	13.339	(1.000)	325774	50.0000		

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).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Date : 24-JUN-2021 12:56
Client ID:
Sample Info: WG301327-2,SQ3743
Instrument: gcms-t.i
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
-Carbon Disulfide (2.142)
-Dibromofluoromethane (4.493)
-Pentafluorobenzene (5.308)+
-1,4-Difluorobenzene (6.132)
Toluene-D8 (8.152)
Chlorobenzene-D5 (10.274)
-P-Bromofluorobenzene (11.921)
1,4-Dichlorobenzene-D4 (13.335)
Min
2
3
4
5
6
7
8
9
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11
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17
18
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Data File: \\target_server\gg\chem\gcms-t.i\T062421.b\T2391.D

Date : 24-JUN-2021 12:56

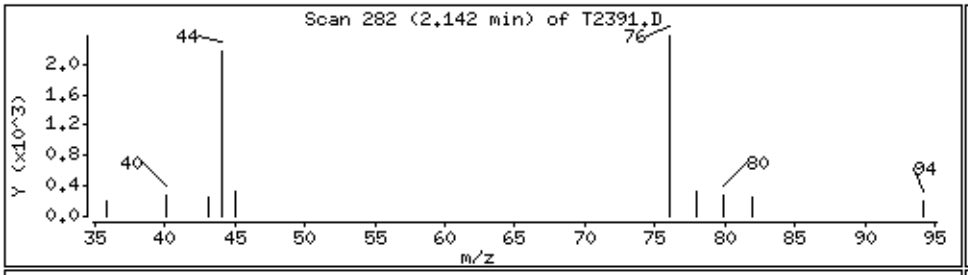
Client ID:

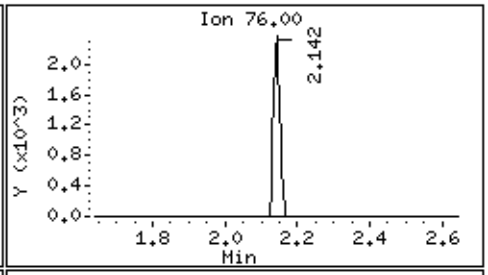
Instrument: gcms-t.i

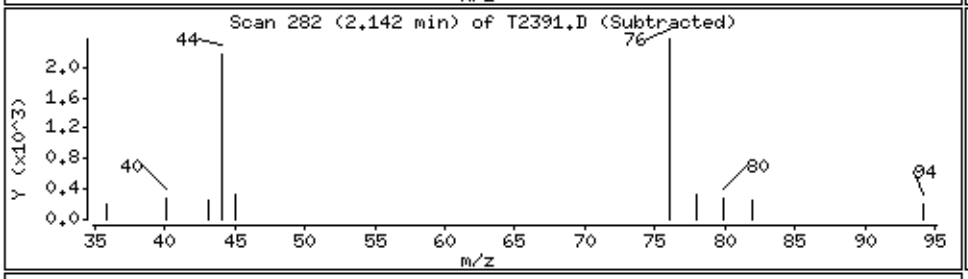
Sample Info: WG301327-2,SO3743

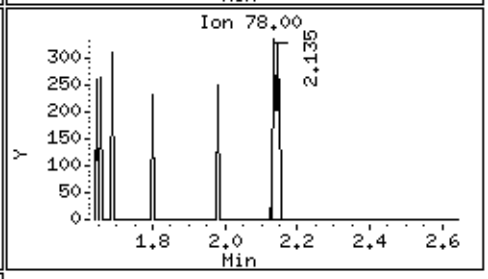
10 Carbon Disulfide

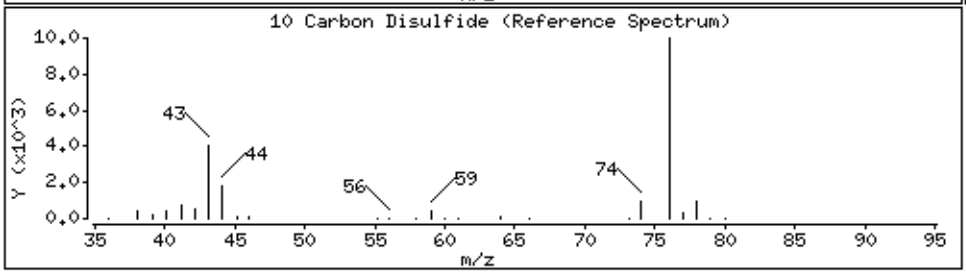
Concentration: 0.33 ug/l











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ANALYTICAL SERVICES

LCS Recovery Report

Lab ID: WG301245-1
Client ID: LCS
SDG: SO3743
LCS File ID: S0361.D
Report Date: 01-JUL-21

Extract Date: 23-JUN-21
Extracted By: CR
Extraction Method: SW846 5030C
Lab Prep Batch: WG301245

Analysis Date: 23-JUN-21
Analyst: CR
Analysis Method: SW846 8260B
Matrix: AQ

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Dichlorodifluoromethane	108.	50.0	53.8	ug/L	32-152
Chloromethane	99.2	50.0	49.6	ug/L	50-139
Vinyl Chloride	104.	50.0	51.9	ug/L	58-137
Bromomethane	88.6	50.0	44.3	ug/L	53-141
Chloroethane	106.	50.0	52.9	ug/L	60-138
Trichlorofluoromethane	111.	50.0	55.3	ug/L	65-141
1,1-Dichloroethene	93.6	50.0	46.8	ug/L	71-131
Carbon Disulfide	112.	50.0	55.8	ug/L	64-133
Methylene Chloride	99.2	50.0	49.6	ug/L	74-124
Acetone	105.	50.0	52.5	ug/L	39-160
trans-1,2-Dichloroethene	96.0	50.0	48.0	ug/L	75-124
Methyl tert-butyl Ether	99.2	50.0	49.6	ug/L	71-124
1,1-Dichloroethane	97.8	50.0	48.9	ug/L	77-125
Vinyl Acetate	* 155.	50.0	77.6	ug/L	54-146
cis-1,2-Dichloroethene	98.4	50.0	49.2	ug/L	78-123
1,2-Dichloroethylene (Total)	97.2	100.	97.2	ug/L	79-121
2,2-Dichloropropane	106.	50.0	52.9	ug/L	60-139
Bromochloromethane	109.	50.0	54.7	ug/L	78-123
Chloroform	96.4	50.0	48.2	ug/L	79-124
Carbon Tetrachloride	102.	50.0	51.1	ug/L	72-136
1,1,1-Trichloroethane	97.6	50.0	48.8	ug/L	74-131
1,1-Dichloropropene	101.	50.0	50.6	ug/L	79-125
2-Butanone	102.	50.0	51.2	ug/L	56-143
Benzene	101.	50.0	50.6	ug/L	79-120
1,2-Dichloroethane	95.8	50.0	47.9	ug/L	73-128
Trichloroethene	99.6	50.0	49.8	ug/L	79-123
Dibromomethane	100.	50.0	50.0	ug/L	79-123
1,2-Dichloropropane	100.	50.0	50.2	ug/L	78-122
Bromodichloromethane	103.	50.0	51.3	ug/L	79-125
cis-1,3-Dichloropropene	103.	50.0	51.5	ug/L	75-124
Toluene	103.	50.0	51.3	ug/L	80-121
4-Methyl-2-Pentanone	106.	50.0	53.1	ug/L	67-130
Tetrachloroethene	105.	50.0	52.4	ug/L	74-129
trans-1,3-Dichloropropene	111.	50.0	55.7	ug/L	73-127
1,1,2-Trichloroethane	104.	50.0	52.0	ug/L	80-119
Dibromochloromethane	107.	50.0	53.4	ug/L	74-126

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Katahdin
ANALYTICAL SERVICES

LCS Recovery Report

Lab ID: WG301245-1
Client ID: LCS
SDG: SO3743
LCS File ID: S0361.D
Report Date: 01-JUL-21

Extract Date: 23-JUN-21
Extracted By: CR
Extraction Method: SW846 5030C
Lab Prep Batch: WG301245

Analysis Date: 23-JUN-21
Analyst: CR
Analysis Method: SW846 8260B
Matrix: AQ

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
1,3-Dichloropropane	99.2	50.0	49.6	ug/L	80-119
1,2-Dibromoethane	108.	50.0	54.0	ug/L	77-121
2-Hexanone	106.	50.0	53.1	ug/L	57-139
Chlorobenzene	105.	50.0	52.5	ug/L	82-118
Ethylbenzene	105.	50.0	52.5	ug/L	79-121
1,1,1,2-Tetrachloroethane	107.	50.0	53.4	ug/L	78-124
Xylenes (Total)	111.	150.	166.	ug/L	79-121
m+p-Xylenes	110.	100.	110.	ug/L	80-121
o-Xylene	113.	50.0	56.7	ug/L	78-122
Styrene	105.	50.0	52.6	ug/L	78-123
Bromoform	98.2	50.0	49.1	ug/L	66-130
Isopropylbenzene	110.	50.0	55.0	ug/L	72-131
Bromobenzene	100.	50.0	50.2	ug/L	80-120
N-Propylbenzene	107.	50.0	53.6	ug/L	76-126
1,1,2,2-Tetrachloroethane	97.2	50.0	48.6	ug/L	71-121
1,3,5-Trimethylbenzene	108.	50.0	54.1	ug/L	75-124
2-Chlorotoluene	104.	50.0	51.9	ug/L	79-122
1,2,3-Trichloropropane	97.2	50.0	48.6	ug/L	73-122
4-Chlorotoluene	104.	50.0	52.2	ug/L	78-122
tert-Butylbenzene	110.	50.0	55.1	ug/L	78-124
1,2,4-Trimethylbenzene	110.	50.0	54.8	ug/L	76-124
P-Isopropyltoluene	115.	50.0	57.3	ug/L	77-127
1,3-Dichlorobenzene	106.	50.0	53.2	ug/L	80-119
1,4-Dichlorobenzene	102.	50.0	51.0	ug/L	79-118
N-Butylbenzene	97.2	50.0	48.6	ug/L	75-128
sec-Butylbenzene	113.	50.0	56.6	ug/L	77-126
1,2-Dichlorobenzene	106.	50.0	52.8	ug/L	80-119
1,2-Dibromo-3-Chloropropane	99.2	50.0	49.6	ug/L	62-128
Hexachlorobutadiene	97.8	50.0	48.9	ug/L	66-134
1,2,4-Trichlorobenzene	98.8	50.0	49.4	ug/L	69-130
Naphthalene	101.	50.0	50.3	ug/L	61-128
1,2,3-Trichlorobenzene	112.	50.0	55.8	ug/L	69-129
P-Bromofluorobenzene	100.				85-114
Toluene-d8	99.6				89-112
1,2-Dichloroethane-d4	92.1				81-118
Dibromofluoromethane	96.3				80-119

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Data File: \\target_server\gg\chem\gcms-s.i\S062321.b\S0361.D
Report Date: 01-Jul-2021 08:43

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-s.i\S062321.b\S0361.D
Lab Smp Id: WG301245-1
Inj Date : 23-JUN-2021 10:50
Operator : CR   Inst ID: gcms-s.i
Smp Info : WG301245-1,SO3743
Misc Info : WG301245,WG301173-4,SO3743-5
Comment   : SW846 5030C
Method   : \\target_server\gg\chem\gcms-s.i\S062321.b\S8A05(14)D.m
Meth Date : 29-Jun-2021 13:03 croy   Quant Type: ISTD
Cal Date : 22-JUN-2021 11:34   Cal File: S0339.D
Als bottle: 2   QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: all.sub
Target Version: 4.12
Processing Host: VOA-WS

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution 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)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.108	1.109	(0.226)	320773	53.8507	53.8	
2	Chloromethane	50	1.221	1.224	(0.249)	368414	49.5755	49.6	
3	Vinyl chloride	62	1.266	1.269	(0.259)	281628	51.8851	51.9	
4	Bromomethane	94	1.452	1.456	(0.297)	73217	44.3491	44.3	
5	Chloroethane	64	1.526	1.523	(0.312)	136844	52.9008	52.9	
6	Trichlorofluoromethane	101	1.610	1.610	(0.329)	352542	55.2731	55.3	
7	Diethyl Ether	59	1.796	1.800	(0.367)	175505	46.3801	46.4	
8	1,1-Dichloroethene	96	1.928	1.932	(0.394)	215657	46.8055	46.8	
9	Freon-113	151	1.947	1.951	(0.398)	183008	46.7964	46.8	
10	Carbon Disulfide	76	1.954	1.954	(0.399)	549907	55.7619	55.8	
11	Iodomethane	142	2.031	2.031	(0.415)	291163	60.4783	60.5	
12	Acrolein	56	2.163	2.166	(0.442)	138799	239.517	240	
13	Allyl Chloride	41	2.256	2.256	(0.461)	268138	47.7366	47.7	
14	Methylene Chloride	84	2.336	2.340	(0.477)	401073	49.5737	49.6	
15	Acetone	43	2.381	2.385	(0.486)	83995	52.5233	52.5	
16	trans-1,2-Dichloroethene	96	2.455	2.459	(0.502)	381642	47.9931	48.0	
17	Methyl Acetate	43	2.475	2.478	(0.506)	192329	37.7760	37.8	
18	Methyl tert-butyl ether	73	2.545	2.549	(0.520)	942014	49.6150	49.6	
20	Acetonitrile	41	2.767	2.771	(0.565)	325895	436.925	437	
21	Di-isopropyl ether	45	2.873	2.877	(0.587)	859549	47.5479	47.5	
19	Tertiary-butyl alcohol	59	2.635	2.639	(0.538)	119916	192.694	193	
22	Chloroprene	53	2.966	2.967	(0.606)	435950	48.2412	48.2	
23	1,1-Dichloroethane	63	2.992	2.996	(0.611)	633379	48.8954	48.9	

Data File: \\target_server\gg\chem\gcms-s.i\S062321.b\S0361.D
Report Date: 01-Jul-2021 08:43

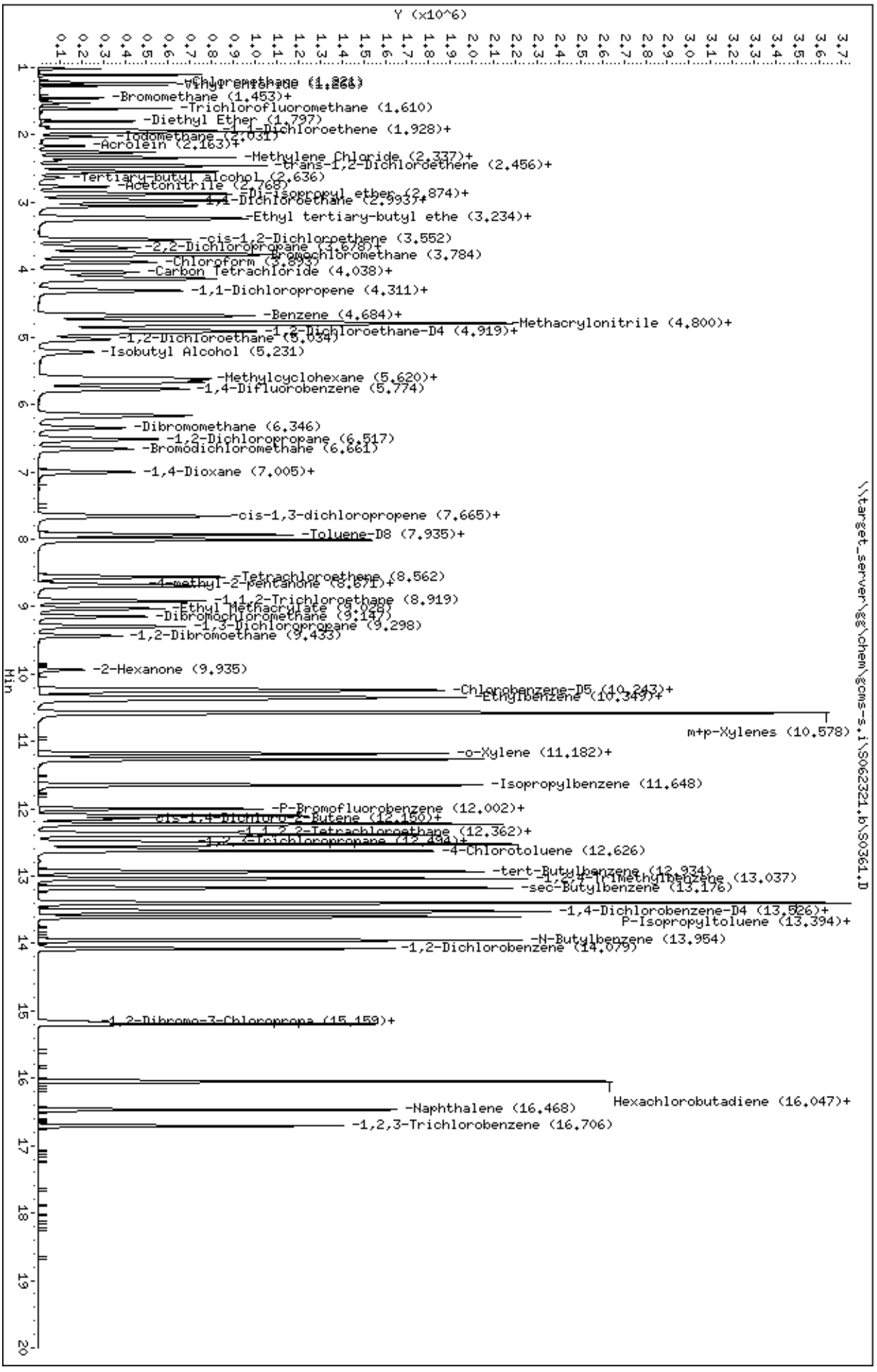
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
	24 Acrylonitrile	52	3.057	3.060	(0.624)	486437	237.435	237	
	25 Ethyl tertiary-butyl ether	59	3.233	3.240	(0.660)	913849	48.9334	48.9	
	26 Vinyl Acetate	43	3.253	3.260	(0.563)	656945	77.5523	77.6(R)	
	27 cis-1,2-Dichloroethene	96	3.552	3.555	(0.725)	420696	49.2466	49.2	
	28 2,2-Dichloropropane	77	3.677	3.678	(0.751)	478177	52.9390	52.9	
	30 Cyclohexane	56	3.767	3.768	(0.769)	574464	49.4802	49.5	
	29 Bromochloromethane	128	3.783	3.790	(0.773)	198861	54.6721	54.7	
	31 Chloroform	83	3.893	3.893	(0.795)	636701	48.1992	48.2	
	32 Carbon Tetrachloride	117	4.037	4.041	(0.699)	443104	51.1243	51.1	
	33 Tetrahydrofuran	42	4.095	4.089	(0.836)	78286	43.8281	43.8	
$	34 Dibromofluoromethane	113	4.130	4.134	(0.844)	276666	48.1705	48.2	
	35 1,1,1-Trichloroethane	97	4.134	4.136	(0.844)	548274	48.7676	48.8	
	37 1,1-Dichloropropene	75	4.310	4.314	(0.747)	498666	50.5618	50.6	
	36 2-Butanone	43	4.327	4.330	(0.884)	123898	51.1799	51.2	
	38 Benzene	78	4.683	4.687	(0.811)	1560866	50.5561	50.6	
	39 Propionitrile	54	4.767	4.777	(0.974)	451646	435.926	436	
	40 Methacrylonitrile	41	4.799	4.803	(0.980)	1440917	485.631	486	
*	41 Pentafluorobenzene	168	4.896	4.903	(1.000)	504477	50.0000		
$	42 1,2-Dichloroethane-D4	65	4.918	4.922	(1.005)	275380	46.0659	46.1	
	43 Tertiary-amyl methyl ether	73	4.928	4.932	(1.007)	838221	49.9552	50.0	
	44 1,2-Dichloroethane	62	5.034	5.041	(0.872)	425131	47.9386	47.9	
	45 Isobutyl Alcohol	43	5.230	5.237	(1.068)	164781	1023.97	1020	
	46 Methylcyclohexane	83	5.619	5.629	(1.148)	674624	50.7494	50.7	
	47 Trichloroethene	95	5.674	5.678	(0.983)	370862	49.8261	49.8	
*	48 1,4-Difluorobenzene	114	5.773	5.777	(1.000)	953665	50.0000		
	49 Dibromomethane	93	6.346	6.349	(1.099)	220444	49.9664	50.0	
	50 1,2-Dichloropropane	63	6.516	6.520	(1.129)	366383	50.2396	50.2	
	51 Bromodichloromethane	83	6.661	6.668	(1.154)	459171	51.3141	51.3	
	54 1,4-Dioxane	88	6.998	7.009	(1.212)	85245	809.161	809	
	52 Methyl Methacrylate	41	7.002	7.009	(1.213)	209104	48.1190	48.1	
	57 cis-1,3-dichloropropene	75	7.664	7.668	(1.327)	590236	51.4620	51.5	
	56 2-Chloroethylvinylether	63	7.648	7.648	(1.325)	252398	51.7614	51.8	
$	58 Toluene-D8	98	7.934	7.938	(1.374)	1117374	49.7800	49.8	
	59 Toluene	91	8.011	8.012	(1.388)	1651713	51.2726	51.3	
	60 Tetrachloroethene	164	8.558	8.564	(0.837)	300636	52.3955	52.4	
	61 4-methyl-2-pentanone	43	8.670	8.670	(1.502)	228437	53.0734	53.1	
	62 trans-1,3-Dichloropropene	75	8.693	8.696	(1.506)	531759	55.6785	55.7	
	63 1,1,2-Trichloroethane	97	8.918	8.919	(1.545)	360472	52.0477	52.0	
	53 Ethyl Methacrylate	69	9.027	9.034	(1.564)	466205	48.0900	48.1	
	64 Dibromochloromethane	129	9.146	9.153	(0.894)	369736	53.3656	53.4	
	65 1,3-Dichloropropane	76	9.297	9.298	(0.909)	625119	49.5966	49.6	
	66 1,2-Dibromoethane	107	9.432	9.439	(1.634)	360499	53.9769	54.0	
	67 2-Hexanone	43	9.934	9.941	(0.971)	154024	53.0966	53.1	
*	68 Chlorobenzene-D5	117	10.230	10.234	(1.000)	925735	50.0000		
	69 Chlorobenzene	112	10.249	10.253	(1.002)	1079712	52.4676	52.5	
	71 Ethylbenzene	106	10.349	10.349	(1.012)	603652	52.4917	52.5	
	72 1,1,1,2-Tetrachloroethane	131	10.381	10.382	(1.015)	363442	53.4389	53.4	
	73 m+p-Xylenes	106	10.577	10.581	(1.034)	1470012	109.628	110	
	74 o-Xylene	106	11.182	11.182	(1.093)	713503	56.7273	56.7	
	76 Bromoform	173	11.249	11.253	(1.100)	229021	49.1164	49.1	
	75 Styrene	104	11.265	11.266	(1.101)	1184729	52.5929	52.6	
	77 Isopropylbenzene	105	11.648	11.652	(0.862)	1776371	55.0322	55.0	
$	78 P-Bromofluorobenzene	95	12.001	12.002	(2.079)	426546	50.2701	50.3	
	80 Bromobenzene	156	12.101	12.105	(0.896)	438606	50.1641	50.2	

Data File: \\target_server\gg\chem\gcms-s.i\S062321.b\S0361.D
Report Date: 01-Jul-2021 08:43

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
	79 cis-1,4-Dichloro-2-Butene	53	12.149	12.153	(0.899)	106660	51.5377	51.5	
	81 N-Propylbenzene	91	12.227	12.227	(0.905)	2068772	53.5813	53.6	
	82 1,1,2,2-Tetrachloroethane	83	12.362	12.362	(0.915)	464462	48.6145	48.6	
	83 2-Chlorotoluene	91	12.391	12.391	(0.917)	1240207	51.8707	51.9	
	84 1,2,3-Trichloropropane	75	12.493	12.494	(0.925)	365306	48.5575	48.6	
	85 1,3,5-Trimethylbenzene	105	12.526	12.526	(0.927)	1452016	54.1438	54.1	
	86 trans-1,4-Dichloro-2-Butene	53	12.593	12.590	(0.932)	111237	51.3126	51.3	
	87 4-Chlorotoluene	91	12.625	12.626	(0.934)	1305212	52.2471	52.2	
	88 tert-Butylbenzene	119	12.934	12.934	(0.957)	1287919	55.0988	55.1	
	90 1,2,4-Trimethylbenzene	105	13.037	13.037	(0.965)	1474810	54.7586	54.8	
	91 sec-Butylbenzene	105	13.175	13.179	(0.975)	1903768	56.6581	56.6	
	92 P-Isopropyltoluene	119	13.394	13.394	(0.991)	1617520	57.2620	57.3	
	93 1,3-Dichlorobenzene	146	13.403	13.404	(0.992)	846803	53.2379	53.2	
*	94 1,4-Dichlorobenzene-D4	152	13.513	13.513	(1.000)	495563	50.0000		
	95 1,4-Dichlorobenzene	146	13.532	13.533	(1.001)	846167	50.9927	51.0	
	96 1,2,3-Trimethylbenzene	105	13.606	13.606	(1.007)	1475410	52.3084	52.3	
	97 N-Butylbenzene	91	13.953	13.954	(1.033)	1427935	48.5978	48.6	
	99 1,2-Dichlorobenzene	146	14.079	14.079	(1.042)	810178	52.7551	52.8	
	100 1,2-Dibromo-3-Chloropropane	157	15.159	15.159	(1.122)	81235	49.6023	49.6	
	101 1,3,5-Trichlorobenzene	180	15.194	15.198	(1.124)	569901	54.9037	54.9	
	102 Hexachlorobutadiene	225	16.046	16.047	(1.187)	240467	48.9221	48.9	
	103 1,2,4-Trichlorobenzene	180	16.046	16.047	(1.187)	525185	49.3692	49.4	
	104 Naphthalene	128	16.468	16.468	(1.219)	1374140	50.3168	50.3	
	105 1,2,3-Trichlorobenzene	180	16.705	16.709	(1.236)	492486	55.8158	55.8	
M	98 1,2-Dichloroethylene (total)	96				802338	97.2397	97.2	
M	106 Xylenes (total)	106				2183515	166.355	166	
M	55 Total Alkylbenzenes	100				11232740	380.100	380	

QC Flag Legend

R - Spike/Surrogate failed recovery limits.


Data File: \\target_server\gg\chem\gcms-s.i\S062321.b\S0361.D
Date : 23-JUN-2021 10:50
Client ID:
Sample Info: WG301245-1,S03743
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-s.i
Operator: CR
Column diameter: 0.18
\\target_server\gg\chem\gcms-s.i\S062321.b\S0361.D
Y (x10^6)
Min
-Chloromethane (1.324)
-Vinyl chloride (1.366)
-Bromomethane (1.453)+
-Trichlorofluoromethane (1.610)
-Diethyl Ether (1.797)
-1,1-Dichloroethene (1.928)+
-Iodomethane (2.031)
-Acrolein (2.163)+
-Methylene Chloride (2.337)+
-trans-1,2-Dichloroethene (2.456)+
-Tertiary-butyl alcohol (2.636)
-Acetonitrile (2.768)
-Di-isopropyl ether (2.874)+
1,1-Dichloroethane (2.993)+
-Ethyl tertiary-butyl ethe (3.234)+
-cis-1,2-Dichloroethene (3.552)
-2,2-Dichloropropane (3.678)+
-Bromochloromethane (3.784)
-Chloroform (3.893)
-Carbon Tetrachloride (4.038)+
-1,1-Dichloropropene (4.311)+
-Benzene (4.684)+
-Methacrylonitrile (4.800)+
-1,2-Dichloroethane-D4 (4.919)+
-1,2-Dichloroethane (5.034)
-Isobutyl Alcohol (5.231)
-Methylcyclohexane (5.620)+
-1,4-Difluorobenzene (5.774)
-Dibromomethane (6.346)
-1,2-Dichloropropane (6.517)
-Bromodichloromethane (6.661)
-1,4-Dioxane (7.005)+
-cis-1,3-dichloropropene (7.665)+
-Toluene-D8 (7.935)+
-Tetrachloroethene (8.562)
-4-methyl-2-pentanone (8.671)+
-1,1,2-Trichloroethane (8.919)
-Ethyl Methacrylate (9.050)
-Dibromochloromethane (9.147)
-1,3-Dichloropropane (9.298)
-1,2-Dibromoethane (9.433)
-2-Hexanone (9.935)
-Chlorobenzene-D5 (10.243)+
-Ethylbenzene (10.349)+
m+p-Xylenes (10.578)
-o-Xylene (11.182)+
-Isopropylbenzene (11.648)
-P-Bromofluorobenzene (12.002)+
cis-1,4-Dichloro-2-Butene (12.150)+
-1,1,2,2-Tetrachloroethane (12.362)+
-1,2,3-Trichloropropane (12.494)+
-4-Chlorotoluene (12.626)
-tert-Butylbenzene (12.934)
-1,2,4-Trimethylbenzene (13.037)
-sec-Butylbenzene (13.176)
-1,4-Dichlorobenzene-D4 (13.526)+
P-Isopropyltoluene (13.394)+
-N-Butylbenzene (13.954)
-1,2-Dichlorobenzene (14.079)
-1,2-Dibromo-3-Chloropropa (15.159)+
Hexachlorobutadiene (16.047)+
-Naphthalene (16.468)
-1,2,3-Trichlorobenzene (16.706)

Katahdin
ANALYTICAL SERVICES

LCS Recovery Report

Lab ID: WG301327-1
Client ID: LCS
SDG: SO3743
LCS File ID: T2389.D
Report Date: 01-JUL-21

Extract Date: 24-JUN-21
Extracted By: CR
Extraction Method: SW846 5030
Lab Prep Batch: WG301327

Analysis Date: 24-JUN-21
Analyst: CR
Analysis Method: SW846 8260B
Matrix: AQ

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Dichlorodifluoromethane	109.	50.0	54.6	ug/L	32-152
Chloromethane	108.	50.0	54.2	ug/L	50-139
Vinyl Chloride	110.	50.0	55.2	ug/L	58-137
Bromomethane	113.	50.0	56.7	ug/L	53-141
Chloroethane	106.	50.0	53.1	ug/L	60-138
Trichlorofluoromethane	116.	50.0	58.0	ug/L	65-141
1,1-Dichloroethene	104.	50.0	52.2	ug/L	71-131
Carbon Disulfide	123.	50.0	61.6	ug/L	64-133
Methylene Chloride	103.	50.0	51.7	ug/L	74-124
Acetone	121.	50.0	60.4	ug/L	39-160
trans-1,2-Dichloroethene	98.4	50.0	49.2	ug/L	75-124
Methyl tert-butyl Ether	102.	50.0	51.0	ug/L	71-124
1,1-Dichloroethane	106.	50.0	52.8	ug/L	77-125
Vinyl Acetate	* 151.	50.0	75.7	ug/L	54-146
cis-1,2-Dichloroethene	101.	50.0	50.7	ug/L	78-123
1,2-Dichloroethylene (Total)	99.9	100.	99.9	ug/L	79-121
2,2-Dichloropropane	115.	50.0	57.4	ug/L	60-139
Bromochloromethane	108.	50.0	54.2	ug/L	78-123
Chloroform	100.	50.0	50.2	ug/L	79-124
Carbon Tetrachloride	106.	50.0	52.8	ug/L	72-136
1,1,1-Trichloroethane	105.	50.0	52.5	ug/L	74-131
1,1-Dichloropropene	102.	50.0	51.2	ug/L	79-125
2-Butanone	106.	50.0	52.8	ug/L	56-143
Benzene	101.	50.0	50.5	ug/L	79-120
1,2-Dichloroethane	94.6	50.0	47.3	ug/L	73-128
Trichloroethene	102.	50.0	50.8	ug/L	79-123
Dibromomethane	95.4	50.0	47.7	ug/L	79-123
1,2-Dichloropropane	101.	50.0	50.6	ug/L	78-122
Bromodichloromethane	104.	50.0	51.9	ug/L	79-125
cis-1,3-Dichloropropene	101.	50.0	50.5	ug/L	75-124
Toluene	102.	50.0	50.9	ug/L	80-121
4-Methyl-2-Pentanone	102.	50.0	51.0	ug/L	67-130
Tetrachloroethene	101.	50.0	50.3	ug/L	74-129
trans-1,3-Dichloropropene	108.	50.0	53.9	ug/L	73-127
1,1,2-Trichloroethane	98.4	50.0	49.2	ug/L	80-119
Dibromochloromethane	101.	50.0	50.4	ug/L	74-126

600 Technology Way
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Katahdin
ANALYTICAL SERVICES

LCS Recovery Report

Lab ID: WG301327-1
Client ID: LCS
SDG: SO3743
LCS File ID: T2389.D
Report Date: 01-JUL-21

Extract Date: 24-JUN-21
Extracted By: CR
Extraction Method: SW846 5030
Lab Prep Batch: WG301327

Analysis Date: 24-JUN-21
Analyst: CR
Analysis Method: SW846 8260B
Matrix: AQ

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
1,3-Dichloropropane	95.4	50.0	47.7	ug/L	80-119
1,2-Dibromoethane	97.2	50.0	48.6	ug/L	77-121
2-Hexanone	105.	50.0	52.5	ug/L	57-139
Chlorobenzene	101.	50.0	50.5	ug/L	82-118
Ethylbenzene	101.	50.0	50.6	ug/L	79-121
1,1,1,2-Tetrachloroethane	102.	50.0	51.1	ug/L	78-124
Xylenes (Total)	105.	150.	157.	ug/L	79-121
m+p-Xylenes	104.	100.	104.	ug/L	80-121
o-Xylene	105.	50.0	52.7	ug/L	78-122
Styrene	103.	50.0	51.7	ug/L	78-123
Bromoform	91.6	50.0	45.8	ug/L	66-130
Isopropylbenzene	105.	50.0	52.4	ug/L	72-131
Bromobenzene	97.4	50.0	48.7	ug/L	80-120
N-Propylbenzene	105.	50.0	52.3	ug/L	76-126
1,1,2,2-Tetrachloroethane	92.6	50.0	46.3	ug/L	71-121
1,3,5-Trimethylbenzene	102.	50.0	51.0	ug/L	75-124
2-Chlorotoluene	104.	50.0	51.9	ug/L	79-122
1,2,3-Trichloropropane	90.2	50.0	45.1	ug/L	73-122
4-Chlorotoluene	104.	50.0	51.8	ug/L	78-122
tert-Butylbenzene	105.	50.0	52.4	ug/L	78-124
1,2,4-Trimethylbenzene	105.	50.0	52.4	ug/L	76-124
P-Isopropyltoluene	107.	50.0	53.5	ug/L	77-127
1,3-Dichlorobenzene	98.8	50.0	49.4	ug/L	80-119
1,4-Dichlorobenzene	97.2	50.0	48.6	ug/L	79-118
N-Butylbenzene	105.	50.0	52.7	ug/L	75-128
sec-Butylbenzene	107.	50.0	53.6	ug/L	77-126
1,2-Dichlorobenzene	99.8	50.0	49.9	ug/L	80-119
1,2-Dibromo-3-Chloropropane	92.4	50.0	46.2	ug/L	62-128
Hexachlorobutadiene	96.0	50.0	48.0	ug/L	66-134
1,2,4-Trichlorobenzene	96.4	50.0	48.2	ug/L	69-130
Naphthalene	88.0	50.0	44.0	ug/L	61-128
1,2,3-Trichlorobenzene	94.6	50.0	47.3	ug/L	69-129
P-Bromofluorobenzene	101.				85-114
Toluene-d8	100.				89-112
1,2-Dichloroethane-d4	97.5				81-118
Dibromofluoromethane	98.7				80-119

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Data File: \\target_server\gg\chem\gcms-t.i\T062421.b\T2389.D
Report Date: 01-Jul-2021 08:58

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-t.i\T062421.b\T2389.D
Lab Smp Id: WG301327-1
Inj Date : 24-JUN-2021 11:24
Operator : CR   Inst ID: gcms-t.i
Smp Info : WG301327-1,SO3743
Misc Info : WG301327,WG301244-4,SO3743-2
Comment   : SW846 5030
Method   : \\target_server\gg\chem\gcms-t.i\T062421.b\T8A05(62)D.m
Meth Date : 29-Jun-2021 14:02 croy   Quant Type: ISTD
Cal Date : 23-JUN-2021 12:27   Cal File: T2383.D
Als bottle: 2   QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.225	1.225	(0.231)	298993	54.6020	54.6	
2	Chloromethane	50	1.352	1.356	(0.255)	287268	54.1537	54.2	
3	Vinyl chloride	62	1.397	1.398	(0.264)	261134	55.2288	55.2	
4	Bromomethane	94	1.599	1.600	(0.302)	90046	56.7059	56.7	
5	Chloroethane	64	1.678	1.675	(0.317)	113570	53.1419	53.1	
6	Trichlorofluoromethane	101	1.768	1.764	(0.334)	328466	58.0512	58.0	
7	Diethyl Ether	59	1.970	1.970	(0.372)	140724	48.9536	49.0	
8	1,1-Dichloroethene	96	2.116	2.112	(0.399)	186790	52.1708	52.2	
9	Freon-113	151	2.138	2.134	(0.403)	139077	50.0860	50.1	
10	Carbon Disulfide	76	2.142	2.142	(0.404)	553350	61.6595	61.6	
11	Iodomethane	142	2.224	2.225	(0.420)	225766	60.5991	60.6	
12	Acrolein	56	2.366	2.367	(0.447)	157425	228.945	229	
13	Allyl Chloride	41	2.467	2.468	(0.466)	223618	51.8280	51.8	
14	Methylene Chloride	84	2.553	2.554	(0.482)	202101	51.7466	51.7	
15	Acetone	43	2.602	2.603	(0.491)	56781	60.3696	60.4	
16	trans-1,2-Dichloroethene	96	2.684	2.685	(0.507)	209694	49.1533	49.2	
17	Methyl Acetate	43	2.699	2.700	(0.509)	115192	36.3500	36.3	
18	Methyl tert-butyl ether	73	2.778	2.782	(0.524)	570538	51.0166	51.0	
19	Tertiary-butyl alcohol	59	2.875	2.876	(0.543)	93798	191.032	191	
20	Acetonitrile	41	3.017	3.018	(0.569)	247518	442.177	442	
21	Di-isopropyl ether	45	3.133	3.134	(0.591)	670958	51.0765	51.1	
22	Chloroprene	53	3.235	3.239	(0.610)	341378	51.2329	51.2	
23	1,1-Dichloroethane	63	3.261	3.261	(0.615)	398549	52.8413	52.8	
24	Acrylonitrile	52	3.328	3.329	(0.628)	306167	228.538	228	

Data File: \\target_server\gg\chem\gcms-t.i\T062421.b\T2389.D
Report Date: 01-Jul-2021 08:58

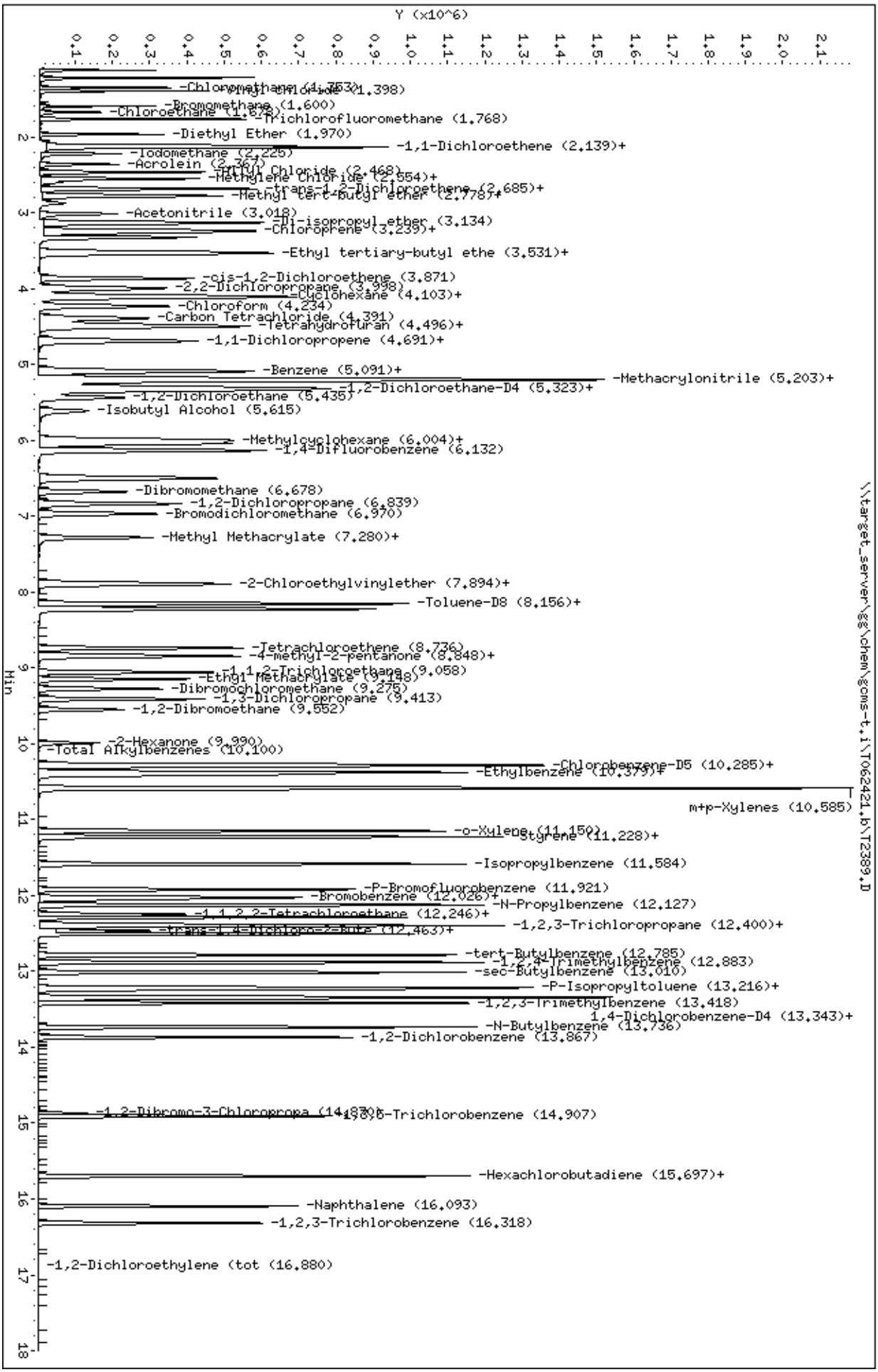
		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
	25	Ethyl tertiary-butyl ether	59	3.523	3.523	(0.665)	611801	49.7360	49.7	
	26	Vinyl Acetate	43	3.541	3.546	(0.578)	512972	75.6776	75.7(R)	
	27	cis-1,2-Dichloroethene	96	3.871	3.871	(0.730)	232702	50.7130	50.7	
	28	2,2-Dichloropropane	77	3.998	4.002	(0.754)	344373	57.4293	57.4	
	29	Cyclohexane	56	4.103	4.103	(0.774)	339822	51.8014	51.8	
	30	Bromochloromethane	128	4.121	4.118	(0.778)	104008	54.1719	54.2	
	31	Chloroform	83	4.234	4.234	(0.799)	402939	50.2205	50.2	
	32	Carbon Tetrachloride	117	4.391	4.395	(0.716)	291136	52.8011	52.8	
	33	Tetrahydrofuran	42	4.451	4.448	(0.840)	63409	45.4378	45.4	
$	34	Dibromofluoromethane	113	4.488	4.489	(0.847)	227891	49.3442	49.3	
	35	1,1,1-Trichloroethane	97	4.499	4.496	(0.849)	362243	52.5360	52.5	
	36	1,1-Dichloropropene	75	4.690	4.687	(0.765)	305495	51.1998	51.2	
	37	2-Butanone	43	4.709	4.702	(0.888)	102185	52.8356	52.8	
	38	Benzene	78	5.091	5.091	(0.830)	857317	50.4839	50.5	
	39	Propionitrile	54	5.177	5.177	(0.977)	275245	434.170	434	
	40	Methacrylonitrile	41	5.203	5.207	(0.982)	1160342	474.219	474	
*	41	Pentafluorobenzene	168	5.300	5.304	(1.000)	417644	50.0000		
$	42	1,2-Dichloroethane-D4	65	5.323	5.327	(1.004)	259726	48.7674	48.8	
	43	Tertiary-amyl methyl ether	73	5.341	5.338	(1.008)	524264	50.6467	50.6	
	44	1,2-Dichloroethane	62	5.435	5.439	(0.886)	283451	47.3318	47.3	
	45	Isobutyl Alcohol	43	5.615	5.615	(1.059)	147721	882.160	882	
	46	Methylcyclohexane	83	6.000	5.997	(1.132)	354812	51.9268	51.9	
	47	Trichloroethene	95	6.045	6.049	(0.986)	212635	50.8003	50.8	
*	48	1,4-Difluorobenzene	114	6.131	6.139	(1.000)	731699	50.0000		
	49	Dibromomethane	93	6.677	6.678	(1.089)	127491	47.7439	47.7	
	50	1,2-Dichloropropane	63	6.838	6.839	(1.115)	206971	50.6589	50.6	
	51	Bromodichloromethane	83	6.973	6.970	(1.137)	298213	51.8678	51.9	
	52	Methyl Methacrylate	41	7.280	7.280	(1.187)	170453	49.7949	49.8	
	53	1,4-Dioxane	88	7.284	7.292	(1.188)	43470	719.989	720	
	54	2-Chloroethylvinylether	63	7.875	7.872	(1.284)	128424	55.5642	55.6	
	55	cis-1,3-dichloropropene	75	7.901	7.902	(1.289)	351756	50.4622	50.5	
$	56	Toluene-D8	98	8.156	8.156	(1.330)	822015	50.0345	50.0	
	57	Toluene	92	8.223	8.223	(1.341)	520382	50.8867	50.9	
	58	Tetrachloroethene	164	8.736	8.744	(0.850)	159467	50.2811	50.3	
	59	4-methyl-2-pentanone	43	8.825	8.822	(1.439)	178843	51.0212	51.0	
	60	trans-1,3-Dichloropropene	75	8.848	8.852	(1.443)	324227	53.8664	53.9	
	61	1,1,2-Trichloroethane	83	9.057	9.058	(1.477)	156256	49.2429	49.2	
	62	Ethyl Methacrylate	69	9.147	9.152	(1.492)	258299	46.2120	46.2	
	63	Dibromochloromethane	129	9.274	9.275	(0.903)	216560	50.3971	50.4	
	64	1,3-Dichloropropane	76	9.413	9.410	(0.916)	331238	47.6831	47.7	
	65	1,2-Dibromoethane	107	9.551	9.552	(1.558)	194509	48.6278	48.6	
M	66	Total Alkylbenzenes	100				5540638	367.759	368	
	67	2-Hexanone	43	9.989	9.990	(0.972)	129394	52.5217	52.5	
*	68	Chlorobenzene-D5	117	10.274	10.274	(1.000)	701252	50.0000		
	69	Chlorobenzene	112	10.296	10.297	(1.002)	538208	50.4903	50.5	
	70	Ethylbenzene	91	10.375	10.379	(1.010)	966290	50.5963	50.6	
	71	1,1,1,2-Tetrachloroethane	131	10.408	10.409	(1.013)	201269	51.0833	51.1	
	72	m+p-Xylenes	91	10.584	10.585	(1.030)	1465674	104.111	104	
	73	o-Xylene	91	11.149	11.150	(1.085)	744966	52.6677	52.7	
	74	Styrene	104	11.228	11.232	(1.093)	585390	51.7115	51.7	
	75	Bromoform	173	11.220	11.221	(1.092)	127938	45.7880	45.8	
	76	Isopropylbenzene	105	11.583	11.584	(0.868)	913794	52.4403	52.4	
$	77	P-Bromofluorobenzene	95	11.920	11.921	(1.944)	326466	50.5547	50.6	
	78	Bromobenzene	156	12.025	12.022	(0.902)	213246	48.7024	48.7	

Data File: \\target_server\gg\chem\gcms-t.i\T062421.b\T2389.D
Report Date: 01-Jul-2021 08:58

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
	79 cis-1,4-Dichloro-2-Butene	53	12.051	12.052	(0.903)	69535	49.5362	49.5	
	80 N-Propylbenzene	91	12.126	12.127	(0.909)	1073811	52.2685	52.3	
	81 1,1,2,2-Tetrachloroethane	83	12.246	12.246	(0.918)	229346	46.2915	46.3	
	82 2-Chlorotoluene	91	12.283	12.284	(0.921)	638043	51.9446	51.9	
	83 1,2,3-Trichloropropane	75	12.377	12.377	(0.928)	184327	45.0819	45.1	
	84 1,3,5-Trimethylbenzene	105	12.399	12.400	(0.930)	716680	50.9939	51.0	
	85 trans-1,4-Dichloro-2-Butene	53	12.463	12.463	(0.934)	71593	48.4646	48.5	
	86 4-Chlorotoluene	91	12.504	12.505	(0.937)	669104	51.7790	51.8	
	87 tert-Butylbenzene	119	12.785	12.785	(0.958)	616849	52.3551	52.4	
	89 1,2,4-Trimethylbenzene	105	12.882	12.883	(0.966)	726978	52.4135	52.4	
	90 sec-Butylbenzene	105	13.013	13.010	(0.976)	926263	53.5777	53.6	
	91 P-Isopropyltoluene	119	13.211	13.212	(0.990)	779323	53.4880	53.5	
	92 1,3-Dichlorobenzene	146	13.238	13.238	(0.992)	386520	49.3974	49.4	
*	93 1,4-Dichlorobenzene-D4	152	13.339	13.339	(1.000)	337053	50.0000		
	94 1,4-Dichlorobenzene	146	13.354	13.354	(1.001)	392539	48.6243	48.6	
	95 1,2,3-Trimethylbenzene	105	13.417	13.418	(1.006)	721592	50.4455	50.4	
	96 N-Butylbenzene	91	13.735	13.736	(1.030)	700734	52.6624	52.7	
	97 1,2-Dichlorobenzene	146	13.866	13.871	(1.040)	360993	49.9331	49.9	
	98 1,2-Dibromo-3-Chloropropane	157	14.869	14.873	(1.115)	40391	46.1553	46.2	
	99 1,3,5-Trichlorobenzene	180	14.910	14.911	(1.118)	247239	49.8868	49.9	
	100 Hexachlorobutadiene	225	15.696	15.693	(1.177)	95753	47.9852	48.0	
	101 1,2,4-Trichlorobenzene	180	15.700	15.700	(1.177)	213084	48.1864	48.2	
	102 Naphthalene	128	16.093	16.093	(1.206)	548881	44.0020	44.0	
M	103 1,2-Dichloroethylene (total)	96				442396	99.8663	99.9	
	104 1,2,3-Trichlorobenzene	180	16.317	16.318	(1.223)	185619	47.3141	47.3	
M	105 Xylenes (total)	91				2210640	156.778	157	

QC Flag Legend

R - Spike/Surrogate failed recovery limits.


Data File: \\target_server\gg\chem\gcms-t.i\T062421.b\T2389.D
Date : 24-JUN-2021 11:24
Client ID:
Sample Info: WG301327-1,S03743
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-t.i
Operator: CR
Column diameter: 0.18
\\target_server\gg\chem\gcms-t.i\T062421.b\T2389.D
Y (x10^6)
Min
-Chloromethane (1.353)
-Vinyl Chloride (1.398)
-Bromomethane (1.600)
-Chloroethane (1.676)
-Trichlorofluoromethane (1.768)
-Diethyl Ether (1.970)
-1,1-Dichloroethene (2.139)+
-Iodomethane (2.225)
-Acrolein (2.367)
-Ethyl Chloride (2.468)
-Methylene Chloride (2.554)+
-trans-1,2-Dichloroethene (2.685)+
-Methyl tert-butyl ether (2.778)+
-Acetonitrile (3.018)
-Di-isopropyl ether (3.134)
-Chloroprene (3.239)+
-Ethyl tertiary-butyl ethe (3.531)+
-cis-1,2-Dichloroethene (3.871)
-2,2-Dichloropropane (3.998)
-Cyclohexane (4.103)+
-Chloroform (4.234)
-Carbon Tetrachloride (4.391)
-Tetrahydrofuran (4.496)+
-1,1-Dichloropropene (4.691)+
-Benzene (5.091)+
-Methacrylonitrile (5.203)+
-1,2-Dichloroethane-D4 (5.323)+
-1,2-Dichloroethane (5.435)
-Isobutyl Alcohol (5.615)
-Methylcyclohexane (6.004)+
-1,4-Difluorobenzene (6.132)
-Dibromomethane (6.678)
-1,2-Dichloropropane (6.839)
-Bromodichloromethane (6.970)
-Methyl Methacrylate (7.280)+
-2-Chloroethylvinylether (7.894)+
-Toluene-D8 (8.156)+
-Tetrachloroethene (8.736)
-4-methyl-2-pentanone (8.848)+
-1,1,2-Trichloroethane (9.058)
-Ethyl Methacrylate (9.148)
-Dibromochloromethane (9.275)
-1,3-Dichloropropane (9.413)
-1,2-Dibromoethane (9.552)
-2-Hexanone (9.990)
-Total Alkylbenzenes (10.100)
-Chlorobenzene-D5 (10.285)+
-Ethylbenzene (10.379)+
m+p-Xylenes (10.585)
-o-Xylene (11.150)
-Styrene (11.228)+
-Isopropylbenzene (11.584)
-P-Bromofluorobenzene (11.921)
-Bromobenzene (12.026)+
-N-Propylbenzene (12.127)
-1,1,2,2-Tetrachloroethane (12.246)+
-1,2,3-Trichloropropane (12.400)+
-trans-1,4-Dichloro-2-Bute (12.463)+
-tert-Butylbenzene (12.785)
-1,2,4-Trimethylbenzene (12.883)
-sec-Butylbenzene (13.010)
-P-Isopropyltoluene (13.216)+
-1,2,3-Trimethylbenzene (13.418)
1,4-Dichlorobenzene-D4 (13.343)+
-N-Butylbenzene (13.736)
-1,2-Dichlorobenzene (13.867)
-1,2-Dibromo-3-Chloropropa (14.870)
-1,3,5-Trichlorobenzene (14.907)
-Hexachlorobutadiene (15.697)+
-Naphthalene (16.093)
-1,2,3-Trichlorobenzene (16.318)
-1,2-Dichloroethylene (tot (16.880)

Katahdin
ANALYTICAL SERVICES

MS/MSD Recovery Report

MS ID: WG301245-8
MSD ID: WG301245-9
Sample ID: SO3743-5
Client ID: G6M-04-10A-SPR21
SDG: SO3743
MS File ID: S0379.D

Extract Date: 23-JUN-21
Extracted By: CR
Extraction Method: SW846 5030C
Lab Prep Batch: WG301245
Report Date: 01-JUL-21
MSD File ID: S0380.D

Analysis Date: 23-JUN-21
Analyst: CR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits
Dichlorodifluoromethane	50.0	50.0	ug/L	U1.0	60.3	61.2	121.	122.	1	20	32-152
Chloromethane	50.0	50.0	ug/L	J0.72	53.1	54.2	105.	107.	2	20	50-139
Vinyl Chloride	50.0	50.0	ug/L	J1.5	60.4	60.7	118.	118.	0	20	58-137
Bromomethane	50.0	50.0	ug/L	U1.0	45.3	44.7	90.6	89.4	1	20	53-141
Chloroethane	50.0	50.0	ug/L	U1.0	59.1	57.9	118.	116.	2	20	60-138
Trichlorofluoromethane	50.0	50.0	ug/L	U1.0	64.7	63.0	129.	126.	3	20	65-141
1,1-Dichloroethene	50.0	50.0	ug/L	U0.50	53.0	52.6	106.	105.	1	20	71-131
Carbon Disulfide	50.0	50.0	ug/L	UM0.50	64.8	66.8	130.	134.*	3	20	64-133
Methylene Chloride	50.0	50.0	ug/L	U2.5	52.2	54.4	104.	109.	4	20	74-124
Acetone	50.0	50.0	ug/L	U2.5	47.7	50.5	95.4	101.	6	20	39-160
trans-1,2-Dichloroethene	50.0	50.0	ug/L	J0.62	52.9	55.4	104.	110.	5	20	75-124
Methyl tert-butyl Ether	50.0	50.0	ug/L	U0.50	50.1	53.2	100.	106.	6	20	71-124
1,1-Dichloroethane	50.0	50.0	ug/L	U0.50	53.6	55.2	107.	110.	3	20	77-125
Vinyl Acetate	50.0	50.0	ug/L	UL0.50	68.5	72.2	137.	144.	5	20	54-146
cis-1,2-Dichloroethene	50.0	50.0	ug/L	4.7	57.6	60.1	106.	111.	4	20	78-123
1,2-Dichloroethylene (Total)	100.	100.	ug/L	5.3	110.	116.	105.	111.	5	20	79-121
2,2-Dichloropropane	50.0	50.0	ug/L	U0.50	48.2	51.5	96.4	103.	7	20	60-139
Bromochloromethane	50.0	50.0	ug/L	U0.50	57.6	59.7	115.	119.	4	20	78-123
Chloroform	50.0	50.0	ug/L	U0.50	51.5	54.1	103.	108.	5	20	79-124
Carbon Tetrachloride	50.0	50.0	ug/L	U0.50	57.7	59.2	115.	118.	2	20	72-136
1,1,1-Trichloroethane	50.0	50.0	ug/L	U0.50	54.4	56.2	109.	112.	3	20	74-131
1,1-Dichloropropene	50.0	50.0	ug/L	U0.50	57.0	59.4	114.	119.	4	20	79-125
2-Butanone	50.0	50.0	ug/L	U2.5	47.5	51.7	95.0	103.	8	20	56-143
Benzene	50.0	50.0	ug/L	U0.50	55.4	57.3	111.	115.	3	20	79-120
1,2-Dichloroethane	50.0	50.0	ug/L	U0.50	50.8	53.0	102.	106.	4	20	73-128
Trichloroethene	50.0	50.0	ug/L	U0.50	55.7	57.5	111.	115.	3	20	79-123
Dibromomethane	50.0	50.0	ug/L	U0.50	53.2	56.2	106.	112.	5	20	79-123
1,2-Dichloropropane	50.0	50.0	ug/L	U0.50	54.2	55.4	108.	111.	2	20	78-122
Bromodichloromethane	50.0	50.0	ug/L	U0.50	56.0	57.5	112.	115.	3	20	79-125
cis-1,3-Dichloropropene	50.0	50.0	ug/L	U0.50	51.5	53.5	103.	107.	4	20	75-124
Toluene	50.0	50.0	ug/L	U0.50	56.2	57.5	112.	115.	2	20	80-121
4-Methyl-2-Pentanone	50.0	50.0	ug/L	U2.5	54.7	58.6	109.	117.	7	20	67-130
Tetrachloroethene	50.0	50.0	ug/L	U0.50	57.1	60.3	114.	121.	5	20	74-129
trans-1,3-Dichloropropene	50.0	50.0	ug/L	U0.50	56.9	59.5	114.	119.	4	20	73-127
1,1,2-Trichloroethane	50.0	50.0	ug/L	U0.50	54.2	56.0	108.	112.	3	20	80-119

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MS/MSD Recovery Report

MS ID: WG301245-8
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Sample ID: SO3743-5
Client ID: G6M-04-10A-SPR21
SDG: SO3743
MS File ID: S0379.D

Extract Date: 23-JUN-21
Extracted By: CR
Extraction Method: SW846 5030C
Lab Prep Batch: WG301245
Report Date: 01-JUL-21
MSD File ID: S0380.D

Analysis Date: 23-JUN-21
Analyst: CR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits
Dibromochloromethane	50.0	50.0	ug/L	U0.50	56.3	59.8	113.	120.	6	20	74-126
1,3-Dichloropropane	50.0	50.0	ug/L	U0.50	52.6	54.8	105.	110.	4	20	80-119
1,2-Dibromoethane	50.0	50.0	ug/L	U0.50	55.4	59.0	111.	118.	6	20	77-121
2-Hexanone	50.0	50.0	ug/L	U2.5	54.9	60.0	110.	120.	9	20	57-139
Chlorobenzene	50.0	50.0	ug/L	U0.50	56.8	59.2	114.	118.	4	20	82-118
Ethylbenzene	50.0	50.0	ug/L	U0.50	57.7	60.1	115.	120.	4	20	79-121
1,1,1,2-Tetrachloroethane	50.0	50.0	ug/L	U0.50	58.2	60.4	116.	121.	4	20	78-124
Xylenes (Total)	150.	150.	ug/L	UMM1.5	183.	190.	122.*	127.*	4	20	79-121
m+p-Xylenes	100.	100.	ug/L	UM1.0	121.	125.	121.	125.*	3	20	80-121
o-Xylene	50.0	50.0	ug/L	UMM0.50	62.1	64.6	124.*	129.*	4	20	78-122
Styrene	50.0	50.0	ug/L	U0.50	56.8	59.2	114.	118.	4	20	78-123
Bromoform	50.0	50.0	ug/L	U0.50	50.9	54.9	102.	110.	8	20	66-130
Isopropylbenzene	50.0	50.0	ug/L	U0.50	60.2	63.0	120.	126.	4	20	72-131
Bromobenzene	50.0	50.0	ug/L	U0.50	52.7	56.1	105.	112.	6	20	80-120
N-Propylbenzene	50.0	50.0	ug/L	U0.50	59.0	61.6	118.	123.	4	20	76-126
1,1,2,2-Tetrachloroethane	50.0	50.0	ug/L	U0.50	50.3	54.4	101.	109.	8	20	71-121
1,3,5-Trimethylbenzene	50.0	50.0	ug/L	J0.81	58.6	61.2	116.	121.	4	20	75-124
2-Chlorotoluene	50.0	50.0	ug/L	U0.50	56.3	58.7	113.	117.	4	20	79-122
1,2,3-Trichloropropane	50.0	50.0	ug/L	U0.50	50.4	54.3	101.	109.	7	20	73-122
4-Chlorotoluene	50.0	50.0	ug/L	U0.50	56.3	58.7	113.	117.	4	20	78-122
tert-Butylbenzene	50.0	50.0	ug/L	UM0.50	60.1	62.8	120.	126.*	4	20	78-124
1,2,4-Trimethylbenzene	50.0	50.0	ug/L	J0.81	60.3	63.0	119.	124.	4	20	76-124
P-Isopropyltoluene	50.0	50.0	ug/L	UM0.50	62.8	65.6	126.	131.*	4	20	77-127
1,3-Dichlorobenzene	50.0	50.0	ug/L	UM0.50	57.0	59.9	114.	120.*	5	20	80-119
1,4-Dichlorobenzene	50.0	50.0	ug/L	U0.50	54.4	57.1	109.	114.	5	20	79-118
N-Butylbenzene	50.0	50.0	ug/L	U0.50	54.7	57.4	109.	115.	5	20	75-128
sec-Butylbenzene	50.0	50.0	ug/L	UM0.50	62.6	64.9	125.	130.*	4	20	77-126
1,2-Dichlorobenzene	50.0	50.0	ug/L	U0.50	55.7	58.7	111.	117.	5	20	80-119
1,2-Dibromo-3-Chloropropane	50.0	50.0	ug/L	U0.75	51.5	57.8	103.	116.	12	20	62-128
Hexachlorobutadiene	50.0	50.0	ug/L	U0.75	52.2	56.8	104.	114.	8	20	66-134
1,2,4-Trichlorobenzene	50.0	50.0	ug/L	U0.50	52.1	55.6	104.	111.	6	20	69-130
Naphthalene	50.0	50.0	ug/L	U0.50	53.1	57.9	106.	116.	9	20	61-128
1,2,3-Trichlorobenzene	50.0	50.0	ug/L	U0.50	58.4	62.4	117.	125.	7	20	69-129
P-Bromofluorobenzene							102.	101.			85-114
Toluene-d8							99.6	98.4			89-112

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MS/MSD Recovery Report

MS ID: WG301245-8
MSD ID: WG301245-9
Sample ID: SO3743-5
Client ID: G6M-04-10A-SPR21
SDG: SO3743
MS File ID: S0379.D

Extract Date: 23-JUN-21
Extracted By: CR
Extraction Method: SW846 5030C
Lab Prep Batch: WG301245
Report Date: 01-JUL-21
MSD File ID: S0380.D

Analysis Date: 23-JUN-21
Analyst: CR
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA

1,2-Dichloroethane-d4	92.3	91.5	81-118
Dibromofluoromethane	95.9	95.2	80-119

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Data File: \\target_server\gg\chem\gcms-s.i\S062321.b\S0379.D
Report Date: 01-Jul-2021 08:47

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Data file : \\target_server\gg\chem\gcms-s.i\S062321.b\S0379.D
Lab Smp Id: WG301245-8
Inj Date : 23-JUN-2021 19:53
Operator : CR Inst ID: gcms-s.i
Smp Info : WG301245-8,SO3743
Misc Info : WG301245,WG301173-4,SO3743-5
Comment : SW846 5030C
Method : \\target_server\gg\chem\gcms-s.i\S062321.b\S8A05(14)D.m
Meth Date : 01-Jul-2021 08:43 croy Quant Type: ISTD
Cal Date : 22-JUN-2021 11:34 Cal File: S0339.D
Als bottle: 20 QC Sample: MS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: VOA-WS

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

CR
9:24 am, Jul 01, 2021

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
1	Dichlorodifluoromethane	85	1.108	1.109	(0.226)	338231	60.3029	60.3	
2	Chloromethane	50	1.224	1.224	(0.250)	371765	53.1289	53.1	
3	Vinyl chloride	62	1.266	1.269	(0.259)	308455	60.3518	60.4	
4	Bromomethane	94	1.452	1.456	(0.297)	70447	45.3175	45.3	
5	Chloroethane	64	1.526	1.523	(0.312)	143869	59.0657	59.1(M)	M7
6	Trichlorofluoromethane	101	1.610	1.610	(0.329)	388829	64.7430	64.7	
7	Diethyl Ether	59	1.796	1.800	(0.367)	182291	51.1610	51.2	
8	1,1-Dichloroethene	96	1.928	1.932	(0.394)	229953	53.0034	53.0	
9	Freon-113	151	1.947	1.951	(0.398)	206376	56.0445	56.0	
10	Carbon Disulfide	76	1.954	1.954	(0.399)	601348	64.7599	64.8	
11	Iodomethane	142	2.028	2.031	(0.414)	331279	73.0784	73.1(R)	
12	Acrolein	56	2.163	2.166	(0.442)	161956	296.810	297	
13	Allyl Chloride	41	2.256	2.256	(0.461)	264173	49.9474	49.9	
14	Methylene Chloride	84	2.336	2.340	(0.477)	397962	52.2397	52.2	
15	Acetone	43	2.381	2.385	(0.486)	72017	47.7403	47.7	
16	trans-1,2-Dichloroethene	96	2.455	2.459	(0.502)	395974	52.8836	52.9	
17	Methyl Acetate	43	2.475	2.478	(0.506)	169903	35.4408	35.4	
18	Methyl tert-butyl ether	73	2.545	2.549	(0.520)	896136	50.1257	50.1	
20	Acetonitrile	41	2.767	2.771	(0.565)	338190	486.054	486	
21	Di-isopropyl ether	45	2.873	2.877	(0.587)	891651	52.3826	52.4	
19	Tertiary-butyl alcohol	59	2.639	2.639	(0.539)	119411	203.782	204	
22	Chloroprene	53	2.963	2.967	(0.605)	482251	56.6742	56.7	
23	1,1-Dichloroethane	63	2.992	2.996	(0.611)	654016	53.6197	53.6	

Data File: \\target_server\gg\chem\gcms-s.i\S062321.b\S0379.D
Report Date: 01-Jul-2021 08:47

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
	24 Acrylonitrile	52	3.057	3.060	(0.624)	496049	257.143	257	
	25 Ethyl tertiary-butyl ether	59	3.237	3.240	(0.661)	915721	52.0746	52.1	
	26 Vinyl Acetate	43	3.253	3.260	(0.564)	546185	68.4675	68.5	
	27 cis-1,2-Dichloroethene	96	3.548	3.555	(0.725)	463285	57.5954	57.6	
	28 2,2-Dichloropropane	77	3.671	3.678	(0.750)	410083	48.2158	48.2	
	30 Cyclohexane	56	3.761	3.768	(0.768)	621053	56.8105	56.8	
	29 Bromochloromethane	128	3.786	3.790	(0.773)	197322	57.6133	57.6	
	31 Chloroform	83	3.889	3.893	(0.794)	640642	51.5052	51.5	
	32 Carbon Tetrachloride	117	4.037	4.041	(0.700)	470739	57.6741	57.7	
	33 Tetrahydrofuran	42	4.089	4.089	(0.835)	68527	40.7438	40.7	
$	34 Dibromofluoromethane	113	4.127	4.134	(0.843)	259427	47.9702	48.0	
	35 1,1,1-Trichloroethane	97	4.137	4.136	(0.845)	575417	54.3561	54.4	
	37 1,1-Dichloropropene	75	4.307	4.314	(0.747)	529678	57.0301	57.0	
	36 2-Butanone	43	4.327	4.330	(0.884)	108242	47.4856	47.5	
	38 Benzene	78	4.680	4.687	(0.812)	1610161	55.3804	55.4	
	39 Propionitrile	54	4.770	4.777	(0.974)	471421	483.231	483	
	40 Methacrylonitrile	41	4.796	4.803	(0.980)	1482065	530.476	530	
*	41 Pentafluorobenzene	168	4.896	4.903	(1.000)	475018	50.0000		
$	42 1,2-Dichloroethane-D4	65	4.921	4.922	(1.005)	259877	46.1685	46.2	
	43 Tertiary-amyl methyl ether	73	4.921	4.932	(1.005)	825856	52.2706	52.3	
	44 1,2-Dichloroethane	62	5.031	5.041	(0.872)	424643	50.8470	50.8	
	45 Isobutyl Alcohol	43	5.230	5.237	(1.068)	162183	1070.33	1070	
	46 Methylcyclohexane	83	5.619	5.629	(1.148)	753663	60.2112	60.2	
	47 Trichloroethene	95	5.671	5.678	(0.983)	390184	55.6663	55.7	
*	48 1,4-Difluorobenzene	114	5.767	5.777	(1.000)	898084	50.0000		
	49 Dibromomethane	93	6.343	6.349	(1.100)	221150	53.2286	53.2	
	50 1,2-Dichloropropane	63	6.513	6.520	(1.129)	372154	54.1891	54.2	
	51 Bromodichloromethane	83	6.661	6.668	(1.155)	472217	56.0381	56.0	
	54 1,4-Dioxane	88	6.999	7.009	(1.214)	93811	945.581	946	
	52 Methyl Methacrylate	41	7.005	7.009	(1.215)	210886	51.5325	51.5	
	57 cis-1,3-dichloropropene	75	7.661	7.668	(1.328)	556635	51.5360	51.5	
$	58 Toluene-D8	98	7.931	7.938	(1.375)	1052675	49.8000	49.8	
	59 Toluene	91	8.008	8.012	(1.389)	1706700	56.2583	56.2	
	60 Tetrachloroethene	164	8.561	8.564	(0.837)	307527	57.0900	57.1	
	61 4-methyl-2-pentanone	43	8.667	8.670	(1.503)	221842	54.7309	54.7	
	62 trans-1,3-Dichloropropene	75	8.693	8.696	(1.507)	511881	56.9142	56.9	
	63 1,1,2-Trichloroethane	97	8.915	8.919	(1.546)	353847	54.2531	54.2	
	53 Ethyl Methacrylate	69	9.027	9.034	(1.565)	479580	52.5313	52.5	
	64 Dibromochloromethane	129	9.146	9.153	(0.894)	365942	56.2608	56.3	
	65 1,3-Dichloropropane	76	9.294	9.298	(0.909)	622885	52.6407	52.6	
	66 1,2-Dibromoethane	107	9.433	9.439	(1.636)	348264	55.3721	55.4	
	67 2-Hexanone	43	9.934	9.941	(0.971)	149405	54.8615	54.9	
*	68 Chlorobenzene-D5	117	10.227	10.234	(1.000)	869086	50.0000		
	69 Chlorobenzene	112	10.249	10.253	(1.002)	1096402	56.7514	56.8	
	71 Ethylbenzene	106	10.346	10.349	(1.012)	623304	57.7335	57.7	
	72 1,1,1,2-Tetrachloroethane	131	10.375	10.382	(1.014)	371787	58.2291	58.2	
	73 m+p-Xylenes	106	10.574	10.581	(1.034)	1522882	120.973	121	
	74 o-Xylene	106	11.178	11.182	(1.093)	733415	62.1112	62.1(R)	
	76 Bromoform	173	11.249	11.253	(1.100)	222783	50.8929	50.9	
	75 Styrene	104	11.265	11.266	(1.102)	1201996	56.8375	56.8	
	77 Isopropylbenzene	105	11.645	11.652	(0.862)	1849370	60.1971	60.2	
$	78 P-Bromofluorobenzene	95	11.998	12.002	(2.080)	407216	50.9621	51.0	
	80 Bromobenzene	156	12.101	12.105	(0.896)	438411	52.6828	52.7	
	79 cis-1,4-Dichloro-2-Butene	53	12.146	12.153	(0.899)	95881	48.6771	48.7	

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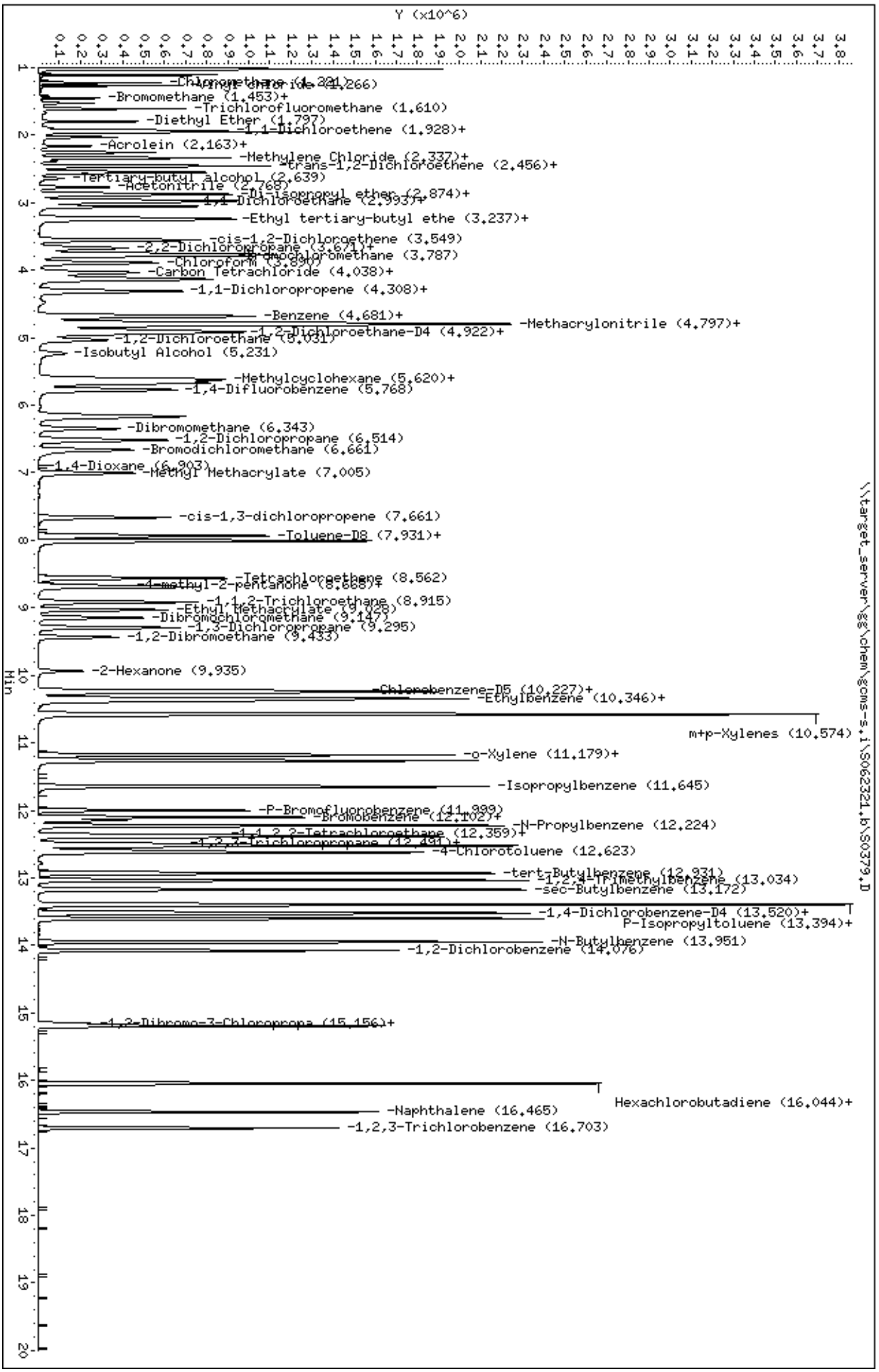
Report Date: 01-Jul-2021 08:47

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
	81 N-Propylbenzene	91	12.223	12.227	(0.905)	2168183	59.0018	59.0	
	82 1,1,2,2-Tetrachloroethane	83	12.358	12.362	(0.915)	457256	50.2857	50.3	
	83 2-Chlorotoluene	91	12.387	12.391	(0.917)	1280988	56.2914	56.3	
	84 1,2,3-Trichloropropane	75	12.490	12.494	(0.925)	360587	50.3592	50.4	
	85 1,3,5-Trimethylbenzene	105	12.522	12.526	(0.927)	1497223	58.6587	58.6	
	86 trans-1,4-Dichloro-2-Butene	53	12.590	12.590	(0.932)	102519	49.6876	49.7	
	87 4-Chlorotoluene	91	12.622	12.626	(0.934)	1339810	56.3500	56.3	
	88 tert-Butylbenzene	119	12.931	12.934	(0.957)	1336973	60.0959	60.1	
	90 1,2,4-Trimethylbenzene	105	13.034	13.037	(0.965)	1546106	60.3149	60.3	
	91 sec-Butylbenzene	105	13.172	13.179	(0.975)	2002081	62.6035	62.6	
	92 P-Isopropyltoluene	119	13.394	13.394	(0.991)	1688574	62.8066	62.8	
	93 1,3-Dichlorobenzene	146	13.400	13.404	(0.992)	863539	57.0413	57.0	
*	94 1,4-Dichlorobenzene-D4	152	13.510	13.513	(1.000)	471661	50.0000		
	95 1,4-Dichlorobenzene	146	13.529	13.533	(1.001)	858390	54.3508	54.4	
	96 1,2,3-Trimethylbenzene	105	13.603	13.606	(1.007)	1588888	59.1862	59.2	
	97 N-Butylbenzene	91	13.950	13.954	(1.033)	1513319	54.7042	54.7	
	99 1,2-Dichlorobenzene	146	14.075	14.079	(1.042)	813862	55.6806	55.7	
	100 1,2-Dibromo-3-Chloropropane	157	15.156	15.159	(1.122)	80321	51.5295	51.5	
	101 1,3,5-Trichlorobenzene	180	15.194	15.198	(1.125)	594217	60.1473	60.1	
	102 Hexachlorobutadiene	225	16.043	16.047	(1.188)	244087	52.1751	52.2	
	103 1,2,4-Trichlorobenzene	180	16.043	16.047	(1.188)	527320	52.0819	52.1	
	104 Naphthalene	128	16.464	16.468	(1.219)	1374049	53.0700	53.1	
	105 1,2,3-Trichlorobenzene	180	16.706	16.709	(1.237)	490782	58.4414	58.4	
M	98 1,2-Dichloroethylene (total)	96				859259	110.479	110	
M	106 Xylenes (total)	106				2256297	183.084	183(R)	
M	55 Total Alkylbenzenes	100				11752459	418.186	418(R)	

QC Flag Legend

R - Spike/Surrogate failed recovery limits.
M - Compound response manually integrated.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Client ID:
Sample Info: WG301245-8,S03743
Purge Volume: 5.0
Column phase: RTX-VMS
Instrument: gcms-s.i
Operator: CR
Column diameter: 0.18
\\target_server\gg\chem\gcms-s.i\S062321.b\S0379.D
Y (x10^6)
Min
-Chloromethane (1.291)
-Vinyl chloride (1.266)
-Bromomethane (1.453)+
-Trichlorofluoromethane (1.610)
-Diethyl Ether (1.797)
-1,1-Dichloroethene (1.928)+
-Acrolein (2.163)+
-Methylene Chloride (2.337)+
-trans-1,2-Dichloroethene (2.456)+
-Tertiary-butyl alcohol (2.639)
-Acetonitrile (2.768)
-Di-isopropyl ether (2.874)+
-1,1-Dichloroethane (2.993)+
-Ethyl tertiary-butyl ethe (3.237)+
-cis-1,2-Dichloroethene (3.549)
-2,2-Dichloropropane (3.671)+
-Bromochloromethane (3.787)
-Chloroform (3.890)
-Carbon Tetrachloride (4.038)+
-1,1-Dichloropropene (4.308)+
-Benzene (4.681)+
-Methacrylonitrile (4.797)+
-1,2-Dichloroethane-D4 (4.922)+
-1,2-Dichloroethane (5.031)
-Isobutyl Alcohol (5.231)
-Methylcyclohexane (5.620)+
-1,4-Difluorobenzene (5.768)
-Dibromomethane (6.343)
-1,2-Dichloropropane (6.514)
-Bromodichloromethane (6.661)
-1,4-Dioxane (6.903)
-Methyl Methacrylate (7.005)
-cis-1,3-dichloropropene (7.661)
-Toluene-D8 (7.931)+
-Tetrachloroethene (8.562)
-4-methyl-2-pentanone (8.668)+
-1,1,2-Trichloroethane (8.915)
-Ethyl Methacrylate (9.076)
-Dibromochloromethane (9.147)
-1,3-Dichloropropane (9.295)
-1,2-Dibromoethane (9.433)
-2-Hexanone (9.935)
-Chlorobenzene-D5 (10.227)+
-Ethylbenzene (10.346)+
m+p-Xylenes (10.574)
-o-Xylene (11.179)+
-Isopropylbenzene (11.645)
-P-Bromofluorobenzene (11.999)
-Bromobenzene (12.102)+
-N-Propylbenzene (12.224)
-1,1,2,2-Tetrachloroethane (12.359)+
-1,2,4-Trichloropropane (12.491)+
-4-Chlorotoluene (12.623)
-tert-Butylbenzene (12.931)
-1,2,4-Trimethylbenzene (13.034)
-sec-Butylbenzene (13.172)
-1,4-Dichlorobenzene-D4 (13.520)+
P-Isopropyltoluene (13.394)+
-N-Butylbenzene (13.951)
-1,2-Dichlorobenzene (14.076)
-1,2-Dibromo-3-Chloropropa (15.156)+
Hexachlorobutadiene (16.044)+
-Naphthalene (16.465)
-1,2,3-Trichlorobenzene (16.703)

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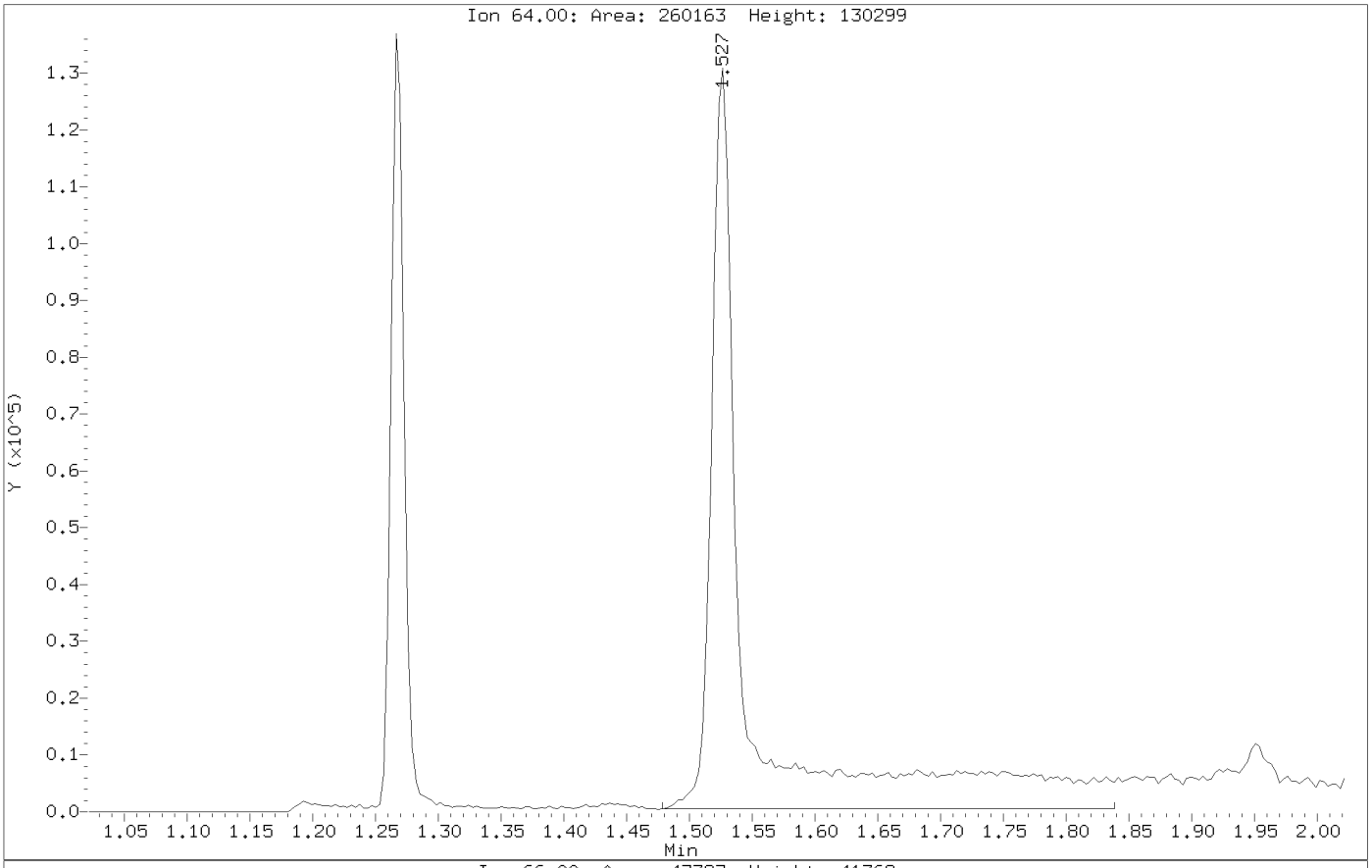
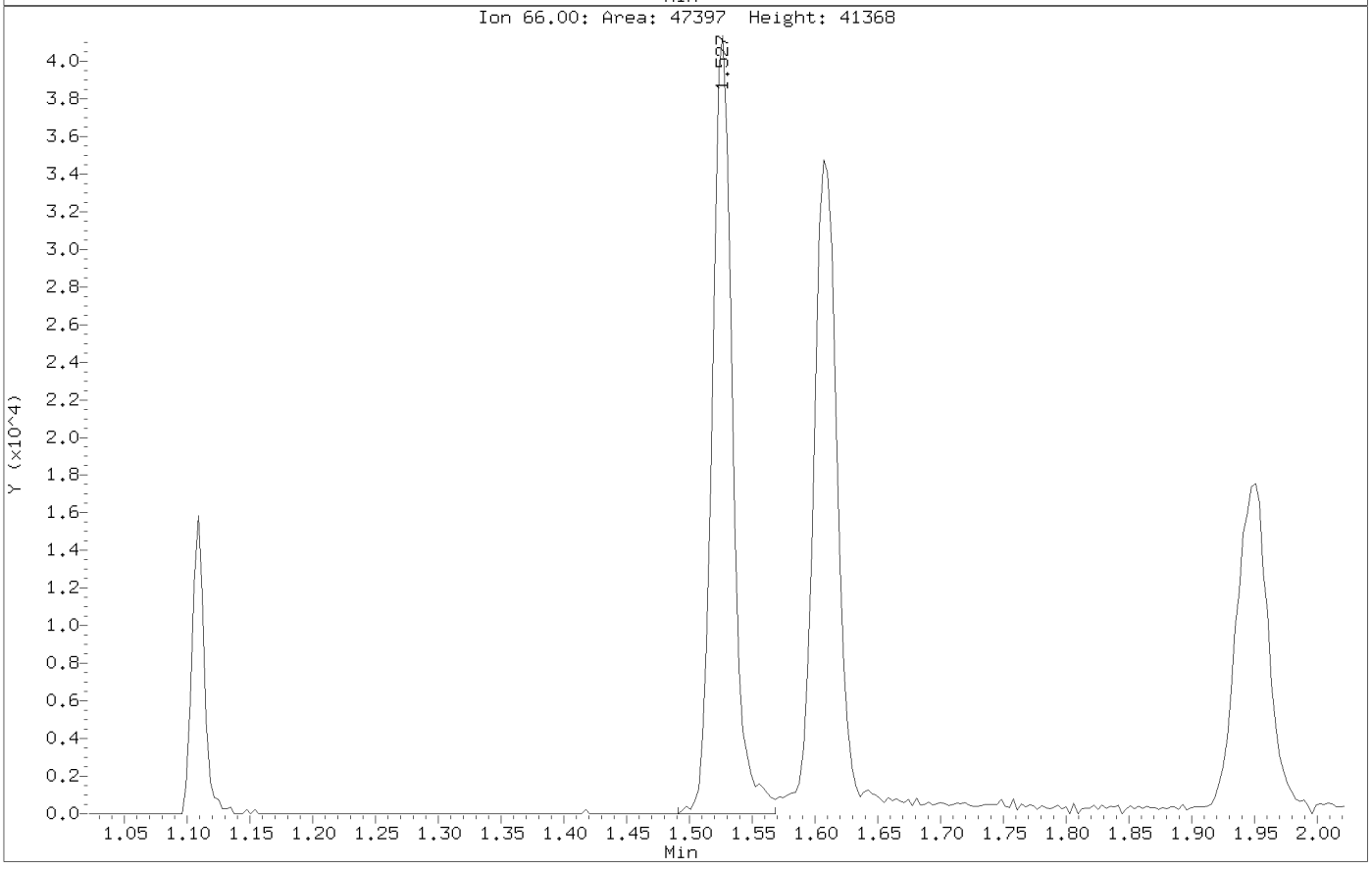
Injection Date: 23-JUN-2021 19:53
Instrument: gcms-s.i
Client Sample ID:

Compound: Chloroethane
CAS Number: 75-00-3

BEFORE MANUAL INTEGRATION





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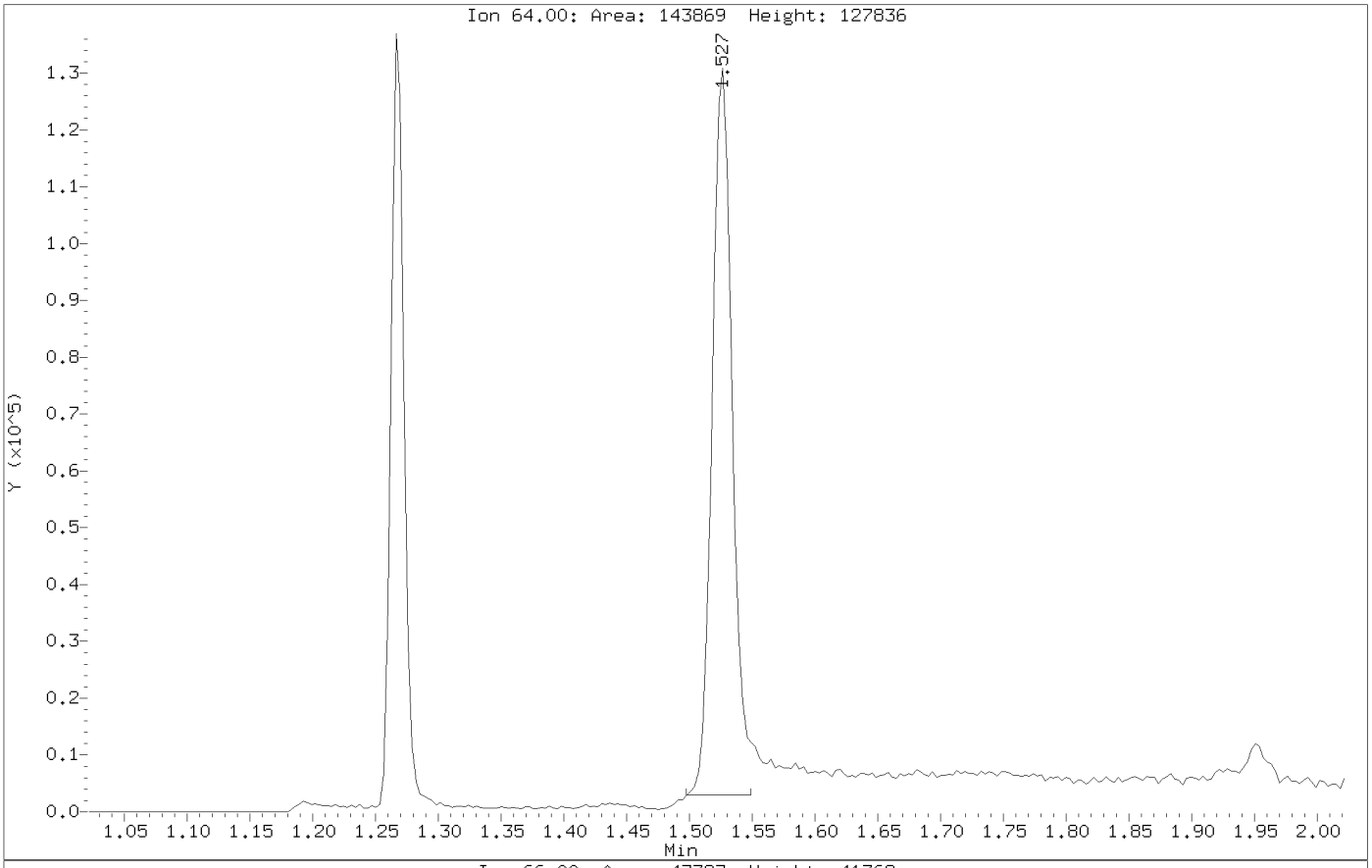
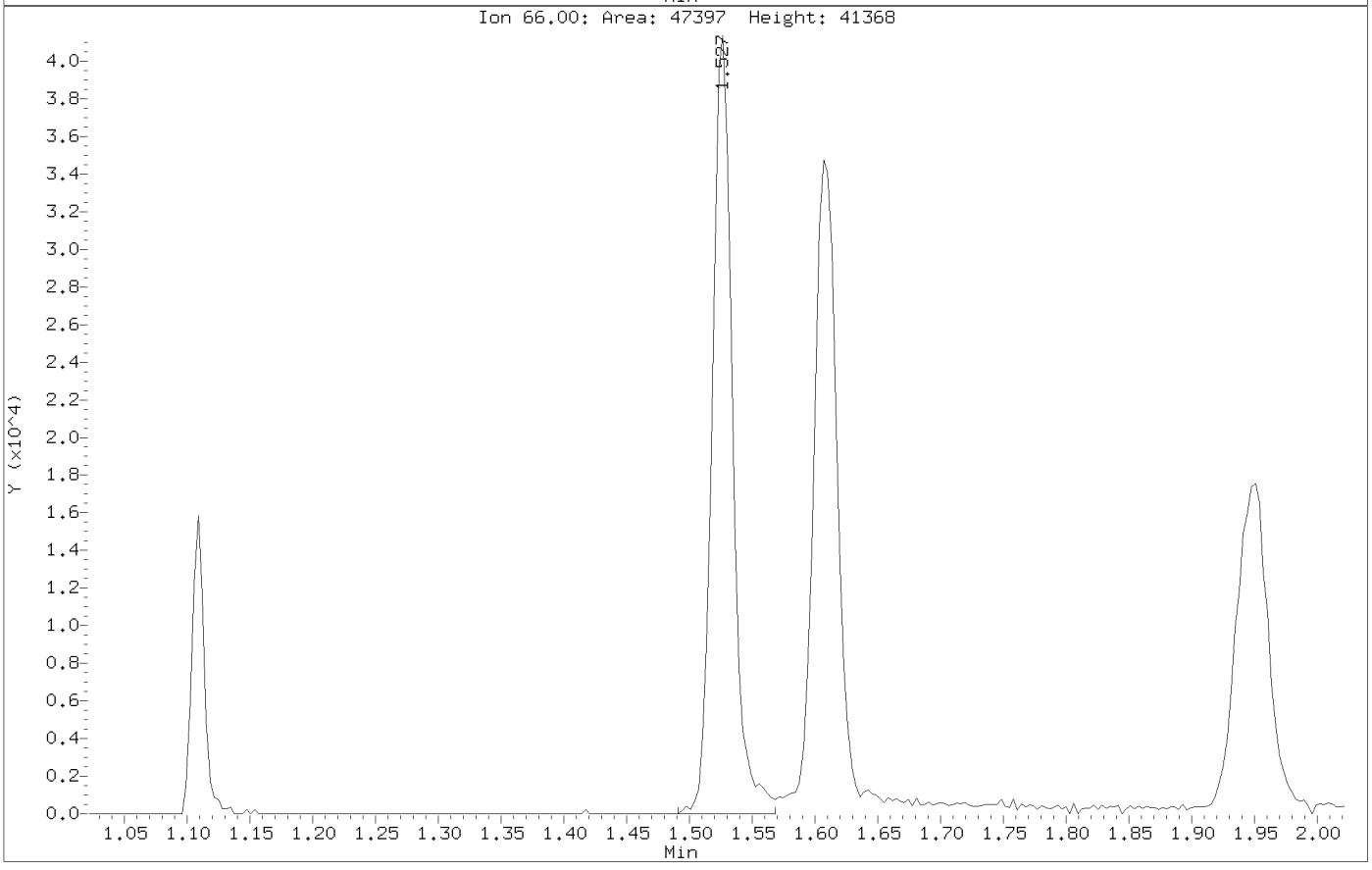
Instrument: gcms-s.i
Client Sample ID:

Compound: Chloroethane
CAS Number: 75-00-3

AFTER MANUAL INTEGRATION





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Report Date: 01-Jul-2021 08:47

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-s.i\S062321.b\S0380.D
Lab Smp Id: WG301245-9
Inj Date : 23-JUN-2021 20:22
Operator : CR Inst ID: gcms-s.i
Smp Info : WG301245-9,SO3743
Misc Info : WG301245,WG301173-4,SO3743-5
Comment : SW846 5030C
Method : \\target_server\gg\chem\gcms-s.i\S062321.b\S8A05(14)D.m
Meth Date : 01-Jul-2021 08:43 croy Quant Type: ISTD
Cal Date : 22-JUN-2021 11:34 Cal File: S0339.D
Als bottle: 21 QC Sample: MSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12
Processing Host: VOA-WS

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

CR
9:24 am, Jul 01, 2021

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)	REVIEW CODE
1 Dichlorodifluoromethane	85	1.108	1.109	(0.227)	352410	61.2553	61.2	
2 Chloromethane	50	1.221	1.224	(0.250)	389240	54.2314	54.2	
3 Vinyl chloride	62	1.266	1.269	(0.259)	318101	60.6784	60.7	
4 Bromomethane	94	1.452	1.456	(0.297)	71280	44.7036	44.7	
5 Chloroethane	64	1.523	1.523	(0.312)	144775	57.9472	57.9(M)	M7
6 Trichlorofluoromethane	101	1.606	1.610	(0.329)	388102	63.0014	63.0	
7 Diethyl Ether	59	1.796	1.800	(0.367)	176441	48.2774	48.3	
8 1,1-Dichloroethene	96	1.925	1.932	(0.394)	234120	52.6107	52.6	
9 Freon-113	151	1.947	1.951	(0.398)	196906	52.1319	52.1	
10 Carbon Disulfide	76	1.950	1.954	(0.399)	636731	66.8508	66.8(R)	
11 Iodomethane	142	2.028	2.031	(0.415)	331793	71.3564	71.4(R)	
12 Acrolein	56	2.163	2.166	(0.442)	161326	288.241	288	
13 Allyl Chloride	41	2.253	2.256	(0.461)	260860	48.0843	48.1	
14 Methylene Chloride	84	2.333	2.340	(0.477)	425545	54.4597	54.4	
15 Acetone	43	2.381	2.385	(0.487)	78104	50.5300	50.5	
16 trans-1,2-Dichloroethene	96	2.452	2.459	(0.502)	425154	55.3568	55.4	
17 Methyl Acetate	43	2.475	2.478	(0.506)	171087	34.7928	34.8	
18 Methyl tert-butyl ether	73	2.545	2.549	(0.521)	975540	53.1989	53.2	
20 Acetonitrile	41	2.767	2.771	(0.566)	341799	478.216	478	
21 Di-isopropyl ether	45	2.873	2.877	(0.588)	873251	50.0152	50.0	
19 Tertiary-butyl alcohol	59	2.639	2.639	(0.540)	130705	217.463	217	
22 Chloroprene	53	2.963	2.967	(0.606)	474732	54.3916	54.4	
23 1,1-Dichloroethane	63	2.989	2.996	(0.611)	690069	55.1568	55.2	

Data File: \\target_server\gg\chem\gcms-s.i\S062321.b\S0380.D
Report Date: 01-Jul-2021 08:47

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
	24 Acrylonitrile	52	3.053	3.060	(0.625)	513608	259.569	260	
	25 Ethyl tertiary-butyl ether	59	3.233	3.240	(0.661)	915226	50.7413	50.7	
	26 Vinyl Acetate	43	3.253	3.260	(0.564)	591184	72.1808	72.2	
	27 cis-1,2-Dichloroethene	96	3.552	3.555	(0.726)	496268	60.1487	60.1	
	28 2,2-Dichloropropane	77	3.674	3.678	(0.751)	449249	51.4963	51.5	
	30 Cyclohexane	56	3.764	3.768	(0.770)	640764	57.1438	57.1	
	29 Bromochloromethane	128	3.780	3.790	(0.773)	209883	59.7441	59.7	
	31 Chloroform	83	3.889	3.893	(0.795)	690115	54.0914	54.1	
	32 Carbon Tetrachloride	117	4.034	4.041	(0.699)	496311	59.2255	59.2	
	33 Tetrahydrofuran	42	4.085	4.089	(0.836)	76904	44.5779	44.6	
$	34 Dibromofluoromethane	113	4.130	4.134	(0.845)	263944	47.5816	47.6	
	35 1,1,1-Trichloroethane	97	4.130	4.136	(0.845)	610001	56.1780	56.2	
	37 1,1-Dichloropropene	75	4.307	4.314	(0.746)	566406	59.3983	59.4	
	36 2-Butanone	43	4.327	4.330	(0.885)	120819	51.6740	51.7	
	38 Benzene	78	4.680	4.687	(0.811)	1710803	57.3114	57.3	
	39 Propionitrile	54	4.767	4.777	(0.975)	481246	480.932	481	
	40 Methacrylonitrile	41	4.796	4.803	(0.981)	1504195	524.896	525	
*	41 Pentafluorobenzene	168	4.889	4.903	(1.000)	487236	50.0000		
$	42 1,2-Dichloroethane-D4	65	4.921	4.922	(1.007)	264134	45.7481	45.7	
	43 Tertiary-amyl methyl ether	73	4.928	4.932	(1.008)	834589	51.4988	51.5	
	44 1,2-Dichloroethane	62	5.034	5.041	(0.872)	454492	53.0056	53.0	
	45 Isobutyl Alcohol	43	5.230	5.237	(1.070)	167904	1080.30	1080	
	46 Methylcyclohexane	83	5.613	5.629	(1.148)	752181	58.5859	58.6	
	47 Trichloroethene	95	5.667	5.678	(0.982)	413581	57.4696	57.5	
*	48 1,4-Difluorobenzene	114	5.770	5.777	(1.000)	922068	50.0000		
	49 Dibromomethane	93	6.346	6.349	(1.100)	239709	56.1949	56.2	
	50 1,2-Dichloropropane	63	6.513	6.520	(1.129)	391020	55.4552	55.4	
	51 Bromodichloromethane	83	6.658	6.668	(1.154)	497320	57.4819	57.5	
	54 1,4-Dioxane	88	6.999	7.009	(1.213)	99366	975.522	976	
	52 Methyl Methacrylate	41	7.002	7.009	(1.213)	218000	51.8852	51.9	
	57 cis-1,3-dichloropropene	75	7.661	7.668	(1.328)	592882	53.4641	53.5	
$	58 Toluene-D8	98	7.931	7.938	(1.374)	1067783	49.2008	49.2	
	59 Toluene	91	8.005	8.012	(1.387)	1792313	57.5437	57.5	
	60 Tetrachloroethene	164	8.555	8.564	(0.837)	330597	60.2887	60.3	
	61 4-methyl-2-pentanone	43	8.664	8.670	(1.501)	243884	58.6039	58.6	
	62 trans-1,3-Dichloropropene	75	8.690	8.696	(1.506)	549582	59.5166	59.5	
	63 1,1,2-Trichloroethane	97	8.915	8.919	(1.545)	375367	56.0556	56.0	
	53 Ethyl Methacrylate	69	9.027	9.034	(1.564)	487116	51.9689	52.0	
	64 Dibromochloromethane	129	9.143	9.153	(0.894)	396062	59.8160	59.8	
	65 1,3-Dichloropropane	76	9.291	9.298	(0.909)	660242	54.8122	54.8	
	66 1,2-Dibromoethane	107	9.433	9.439	(1.635)	381311	59.0494	59.0	
	67 2-Hexanone	43	9.934	9.941	(0.971)	166421	60.0304	60.0	
*	68 Chlorobenzene-D5	117	10.227	10.234	(1.000)	884713	50.0000		
	69 Chlorobenzene	112	10.246	10.253	(1.002)	1163491	59.1603	59.2(R)	
	71 Ethylbenzene	106	10.342	10.349	(1.011)	660333	60.0829	60.1	
	72 1,1,1,2-Tetrachloroethane	131	10.375	10.382	(1.014)	392304	60.3572	60.4	
	73 m+p-Xylenes	106	10.574	10.581	(1.034)	1601802	124.995	125(R)	
	70 1-Chlorohexane	91	10.574	10.581	(1.034)	2939918		(aR)	
	74 o-Xylene	106	11.178	11.182	(1.093)	776971	64.6377	64.6(R)	
	76 Bromoform	173	11.246	11.253	(1.100)	244828	54.9411	54.9	
	75 Styrene	104	11.262	11.266	(1.101)	1273989	59.1777	59.2	
	77 Isopropylbenzene	105	11.648	11.652	(0.862)	1958479	62.9887	63.0	
$	78 P-Bromofluorobenzene	95	11.998	12.002	(2.079)	413329	50.3817	50.4	
	80 Bromobenzene	156	12.101	12.105	(0.896)	472777	56.1353	56.1	

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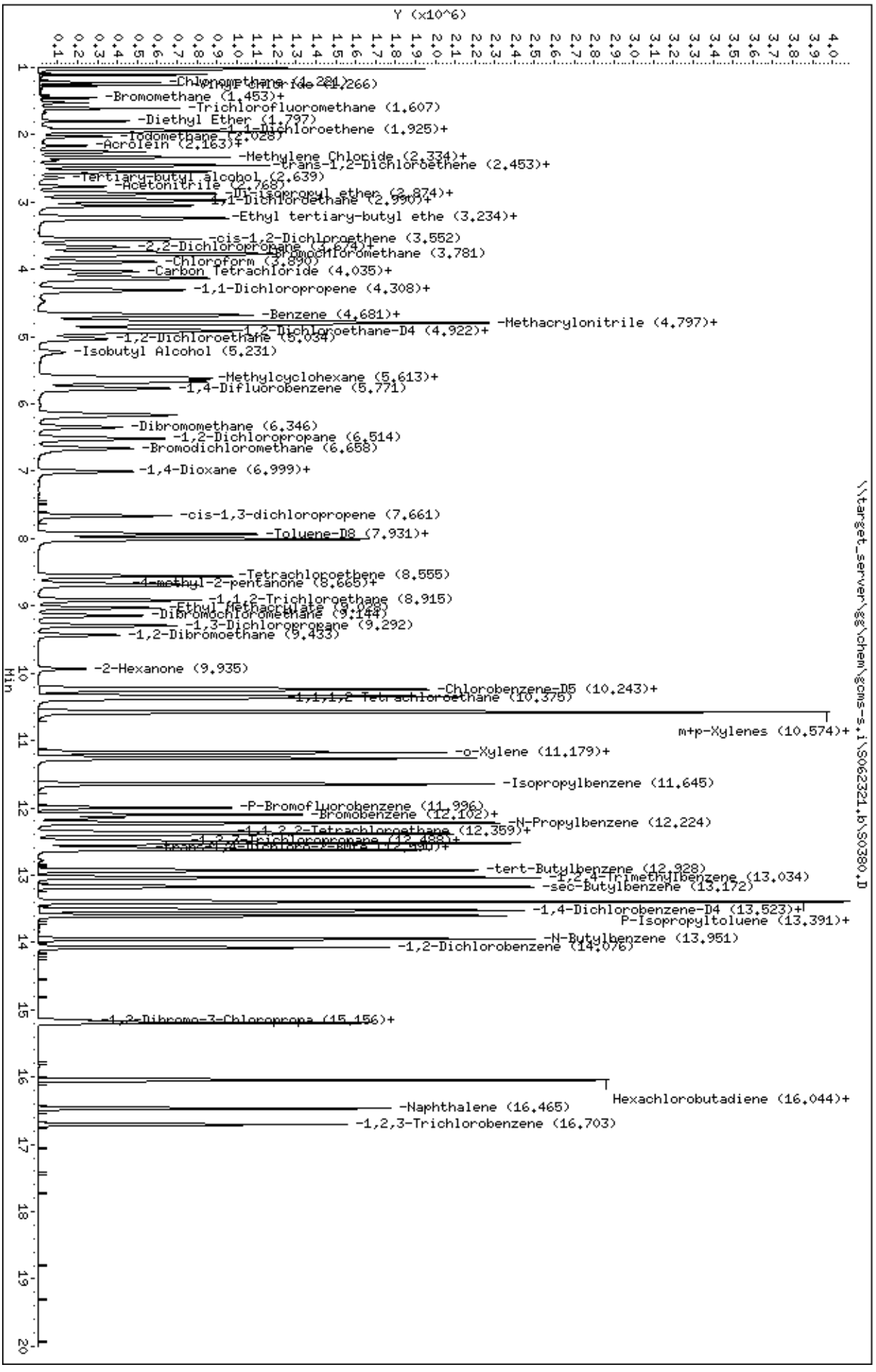
Report Date: 01-Jul-2021 08:47

			QUANT SIG					CONCENTRATIONS ON-COLUMN	CONCENTRATIONS FINAL	
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)	REVIEW CODE
	79	cis-1,4-Dichloro-2-Butene	53	12.146	12.153	(0.899)	98445	49.3831	49.4	
	81	N-Propylbenzene	91	12.223	12.227	(0.905)	2291396	61.6115	61.6	
	82	1,1,2,2-Tetrachloroethane	83	12.358	12.362	(0.915)	500662	54.4028	54.4	
	83	2-Chlorotoluene	91	12.384	12.391	(0.917)	1351095	58.6645	58.7	
	84	1,2,3-Trichloropropane	75	12.487	12.494	(0.924)	393392	54.2858	54.3	
	85	1,3,5-Trimethylbenzene	105	12.522	12.526	(0.927)	1582428	61.2579	61.2	
	86	trans-1,4-Dichloro-2-Butene	53	12.590	12.590	(0.932)	106121	50.8203	50.8	
	87	4-Chlorotoluene	91	12.619	12.626	(0.934)	1412481	58.6982	58.7	
	88	tert-Butylbenzene	119	12.928	12.934	(0.957)	1414230	62.8108	62.8(R)	
	90	1,2,4-Trimethylbenzene	105	13.034	13.037	(0.965)	1633401	62.9608	63.0(R)	
	91	sec-Butylbenzene	105	13.172	13.179	(0.975)	2101651	64.9336	64.9(R)	
	92	P-Isopropyltoluene	119	13.391	13.394	(0.991)	1786078	65.6414	65.6(R)	
	93	1,3-Dichlorobenzene	146	13.400	13.404	(0.992)	917415	59.8777	59.9(R)	
*	94	1,4-Dichlorobenzene-D4	152	13.510	13.513	(1.000)	477351	50.0000		
	95	1,4-Dichlorobenzene	146	13.529	13.533	(1.001)	913187	57.1311	57.1	
	96	1,2,3-Trimethylbenzene	105	13.603	13.606	(1.007)	1563082	57.5309	57.5	
	97	N-Butylbenzene	91	13.950	13.954	(1.033)	1599001	57.3787	57.4	
	99	1,2-Dichlorobenzene	146	14.075	14.079	(1.042)	868739	58.7266	58.7	
	100	1,2-Dibromo-3-Chloropropane	157	15.156	15.159	(1.122)	91212	57.8191	57.8	
	101	1,3,5-Trichlorobenzene	180	15.194	15.198	(1.125)	597868	59.7955	59.8	
	102	Hexachlorobutadiene	225	16.046	16.047	(1.188)	269039	56.8232	56.8	
	103	1,2,4-Trichlorobenzene	180	16.043	16.047	(1.188)	569970	55.6233	55.6	
	104	Naphthalene	128	16.464	16.468	(1.219)	1508115	57.9473	57.9	
	105	1,2,3-Trichlorobenzene	180	16.706	16.709	(1.237)	530117	62.3729	62.4	
M	98	1,2-Dichloroethylene (total)	96				921422	115.506	116	
M	106	Xylenes (total)	106				2378773	189.633	190(R)	
M	55	Total Alkylbenzenes	100				12408185	436.595	436(R)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
R - Spike/Surrogate failed recovery limits.
M - Compound response manually integrated.



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Date : 23-JUN-2021 20:22
Client ID:
Sample Info: WG301245-9,S03743
Purge Volume: 5.0
Column phase: RTX-VMS

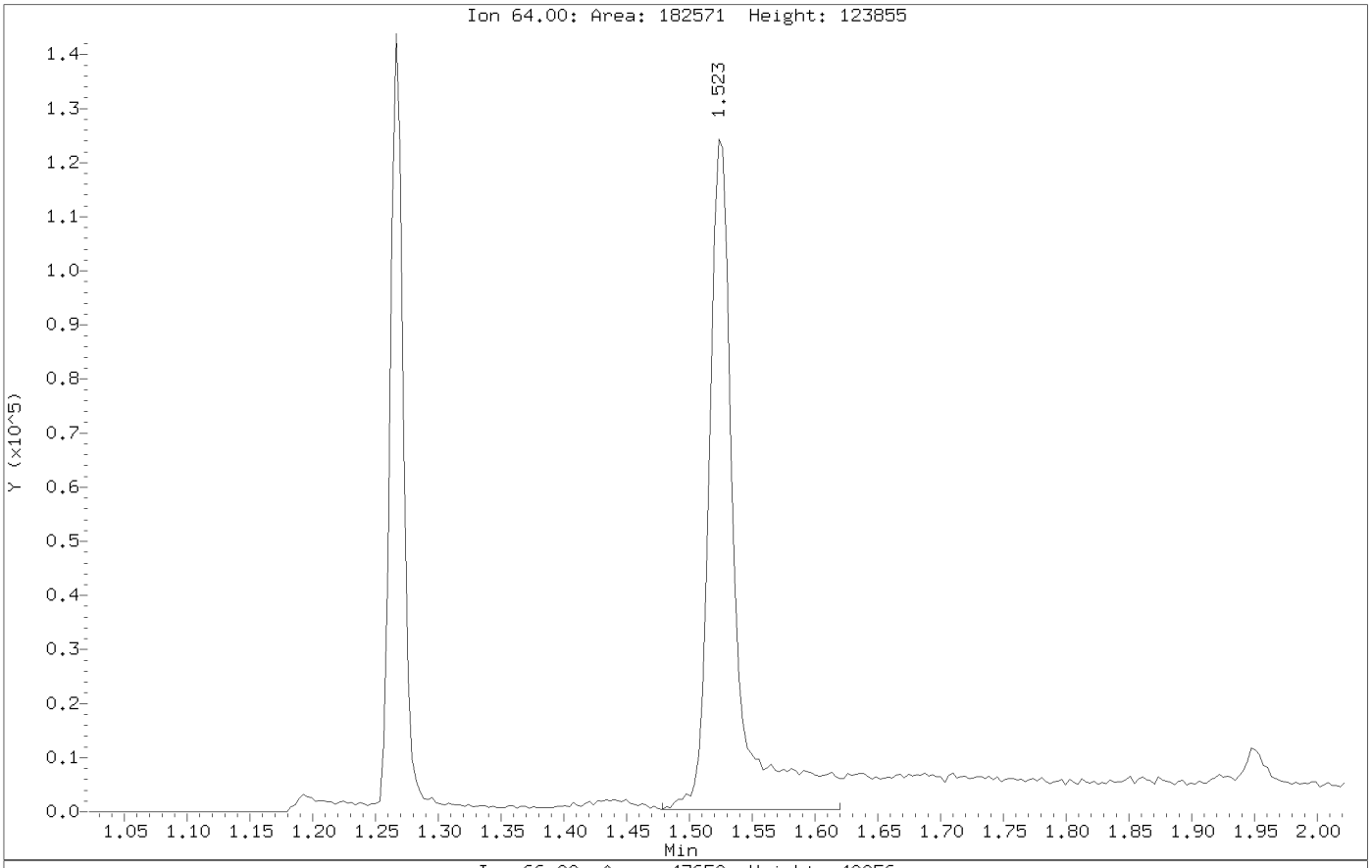
Instrument: gcms-s.i
Operator: CR
Column diameter: 0.18

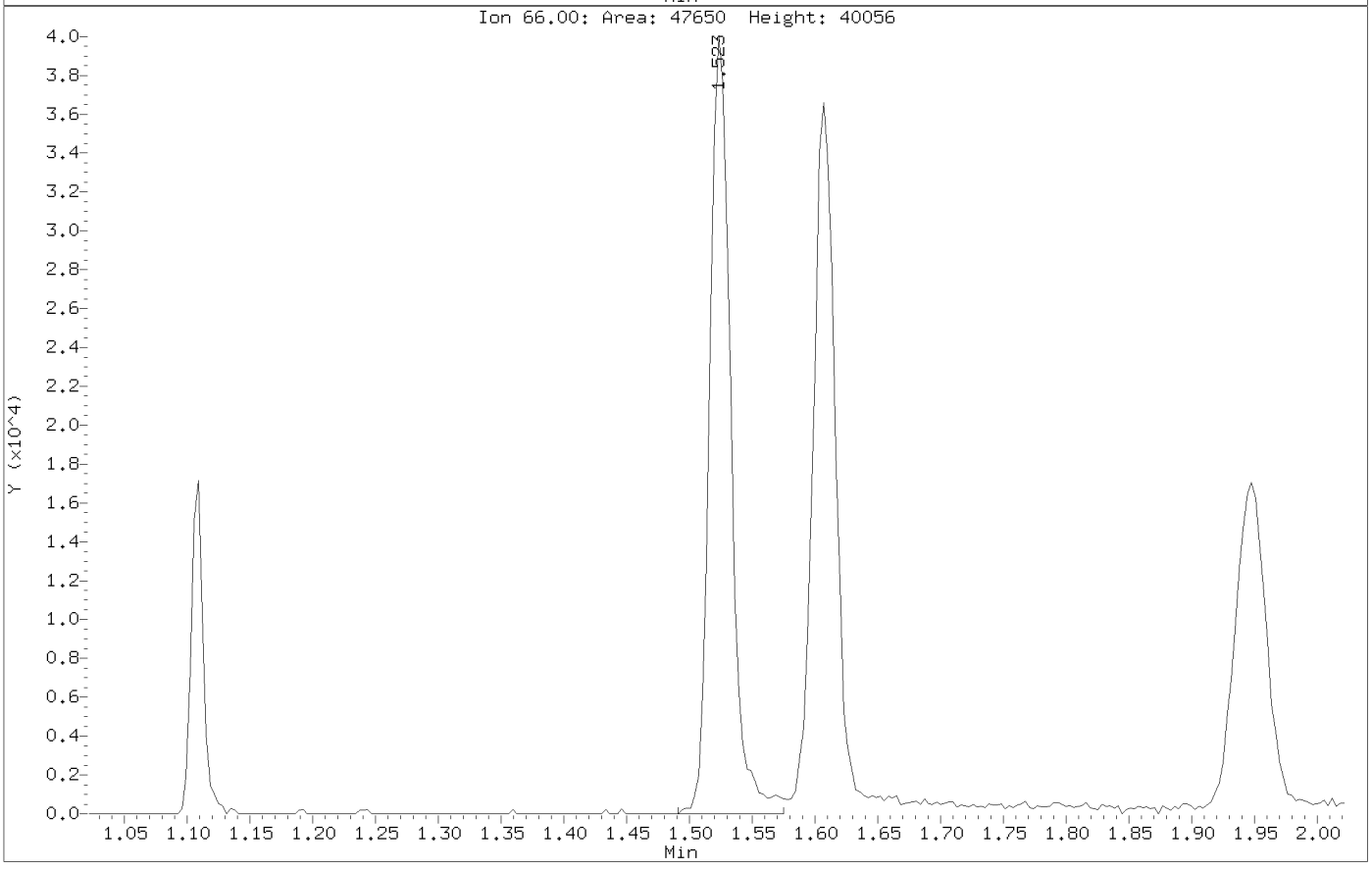
\\target_server\gg\chem\gcms-s.i\S062321.b\S0380.D

Data File: \\target_server\gg\chem\gcms-s.i\S062321.b\S0380.D
Injection Date: 23-JUN-2021 20:22
Instrument: gcms-s.i
Client Sample ID:

Compound: Chloroethane
CAS Number: 75-00-3

BEFORE MANUAL INTEGRATION

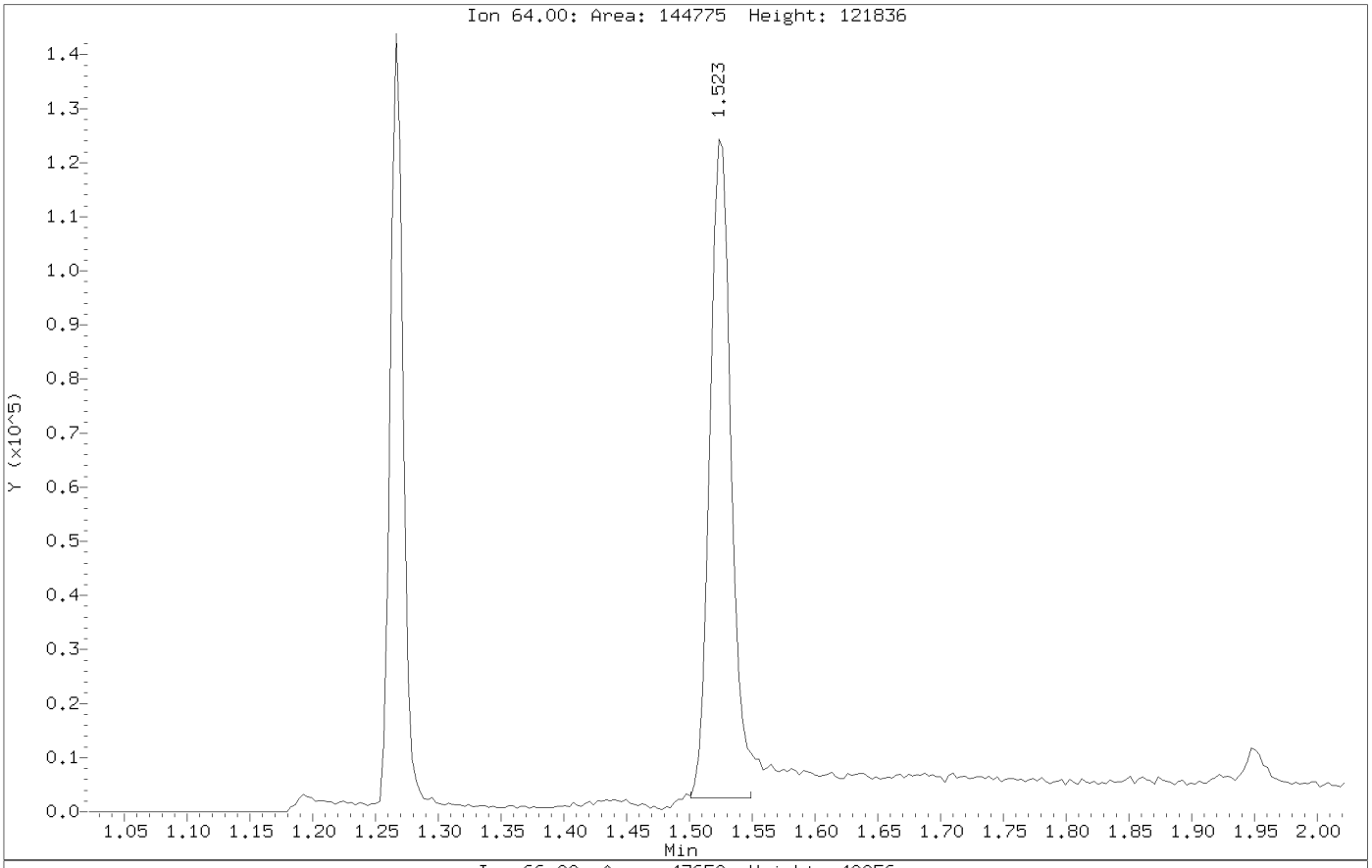


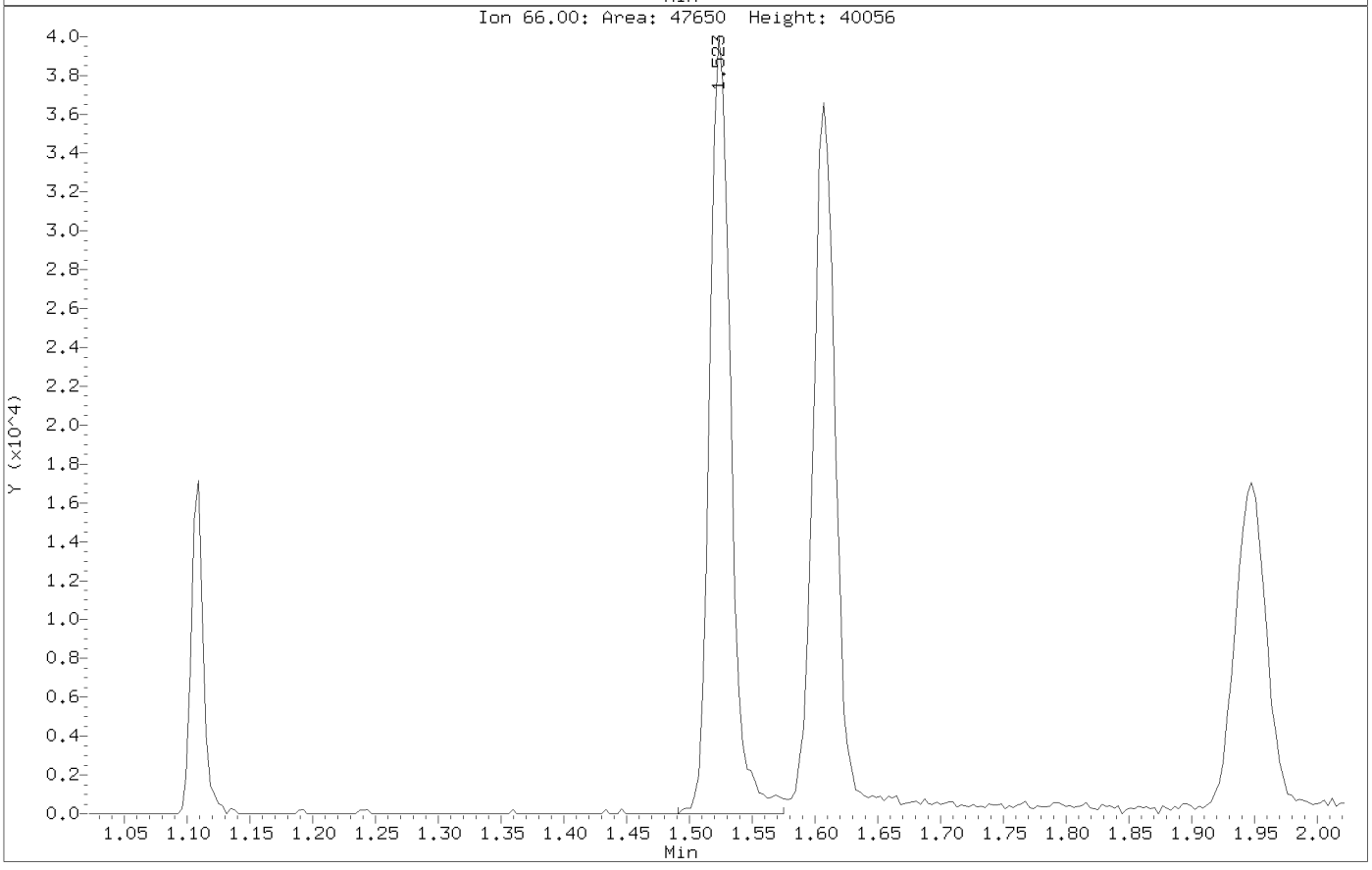


Data File: \\target_server\gg\chem\gcms-s.i\S062321.b\S0380.D
Injection Date: 23-JUN-2021 20:22
Instrument: gcms-s.i
Client Sample ID:

Compound: Chloroethane
CAS Number: 75-00-3

AFTER MANUAL INTEGRATION





Logbooks and Supporting Documents

WG

KATAHDIN ANALYTICAL SERVICES

10:18

GCMS-S INSTRUMENT RUNLOG

DATE/TIME OF BFB INJECTION: 06-22-21

Method - Check One:	8260 ✓	8260 - 10 mL	8260 SIM	624	524
STD IDs: * BFB STD: V2240	CAL STD: V2247	GAS STD: V2246B	XTRAs STD: V2245	LCS/MS STD: V2243	
SURR STD: V2235	IS STD: V2230				

SAMPLE NAME	DATAFILE	DF	ALS #	METHOD	Prep Method: 5030	5035	1311	Criteria: KAS	DoD	QAPP	pH Paper Lot #: [illegible]	KI Paper Lot #	Y/N	ANALYST	pH	TRC	COMMENTS
WG301173-11	SB572	—	—	VOABFB	✓								Y	CR	N/A	N/A	
Rinse	S0357	1	1	S8A05(14)									N				Curve OK except -
Vstd 75 -7	38	1	2										Y				chloroethane 1-75
50 -4	39	1	3										Y				no good for TAA, TRA+
20 -3	40	1	4										Y				1,4-Dioxane
5 -2	41	1	5										Y				
1 -1	42	1	6										Y				
150 -6	43	1	7										Y				
100 -5	44	1	8										Y				
LCS/Ind -9/-8	45	1	9										Y				Ind "A" file
LCSA -B	46	1	10										Y				
VBlank	47	1	11										N				
VBlank -10	48	1	12										Y				
LOD 0.5	49	1	13														
LOD 0.75	50	1	14												↓		
S0361001-9RA B	51	1	15						5.1				Y		42		
-10RA A	52	1	16										Y				
-11RA B	53	1	17										Y				
-12RA B	54	1	18						↓				N		↓		ISST RR
CCV -12	55	1	19										Y		N/A		19:53 ✓
CCV	56	1	20										N				
CCV	57	1	21										N				Not needed
Rinse	↓ 58	1	22	↓	↓								N	↓	↓	↓	↓

* Refer to page 1 for standard preparation instructions.

CR 6/23/21

GCMS-S INSTRUMENT RUNLOG

WG

KATAHDIN ANALYTICAL SERVICES

9:52

DATE/TIME OF BFB INJECTION: 06-23-21

Method - Check One:	8260 ✓	8260 - 10 mL	8260 SIM	624	524

STD IDs: * BFB STD: V2240 | CAL STD: V2247 | GAS STD: V2246 B | XTRAs STD: V2245 | LCS/MS STD: V2243

SURR STD: V2230 | IS STD: V2230 | pH Paper Lot #: 603323 | KI Paper Lot #: —

SAMPLE NAME	DATAFILE	DF	ALS #	METHOD	Prep Method 5030	Prep Method 5035	Prep Method 1311	Criteria KAS	Criteria DoD	Criteria QAPP	Y/N	ANALYST	pH	TRC	COMMENTS
WG301245-3	S8573	—	—	VOA6F6	✓						Y	CZ	N/A	N/A	
VStd 050 -4	S03160	1	1	S8A15(14)							Y				
LCS -1	61	1	2								Y				
VBlank	62	1	3								N				
VBlank -2	63	1	4								Y				
S03743-1A	64	1	5						5.1		Y		<2		
-3A	65	1	6						↓		Y				
S03728-1RA B	66	1	7					✓			Y				
S03601-12RA2 C	67	1	8						5.1		Y				
-13RA B	68	1	9								Y				
-15RA B	69	1	10								Y				ocl RR 1:2
-14DL B	70	2	11						↓		N				ok dil
S03728-5RA D	71	1	12					✓			Y				
-6RA B	72	1	13								Y				
-7RA B	73	1	14					↓			Y				
S03743-2 A	74	1	15						5.1		Y				ocl RR 1:2
-5 A	75	1	16								Y				
S03601-14RA C	76	1	17						↓		Y				
S03728-5MSRA E	77	1	18					✓							1:RR RR
-5MSDRA F	78	1	19					↓							
S03743-5MS B	79	1	20						5.1		Y				
-5MSD C	80	1	21						↓		Y		↓		
CCV	81	1	22								Y		N/A		20:52
CCV	82	1	23								N				
CCV	83	1	24								N				
Rinse	84	1	25	↓	↓						—	↓	↓	↓	

* Refer to page 1 for standard preparation instructions.

KATAHDIN ANALYTICAL SERVICES

GCMS-T INSTRUMENT RUNLOG

WG

DATE/TIME OF BFB INJECTION: 6-23-21 8:47

Method - Check One:	8260 ✓	8260 - 10 mL	8260 SIM	624	524
STD IDs: * BFB STD: V2240	CAL STD: V2247	GAS STD: V2241A	XTRAs STD: V2245	LCS/MS STD: V2243	
SURR STD: V2230	IS STD: V2230				

SAMPLE NAME	DATAFILE	DF	ALS #	METHOD	Prep Method 5030	5035	1311	Criteria RAS	DoD	OAPP	pH Paper Lot #: Y/N	Analyst	pH	TRC	KI Paper Lot # COMMENTS
WG301244-11	TB518B	—	—	YCO23EOS	✓						Y	[illegible]	N/A	N/A	
Vstd150 -6	T2377	1	1	TITA05(62)							Y				
100 -5	78	1	2								Y				Curve good
75 -7	79	1	3								Y				for everything
50 -4	80	1	4								Y				except
20 -3	81	1	5								Y				TBA +
5 -2	82	1	6								Y				Chloroethane
1 -1	83	1	7								Y				up to 150
Ind	84	1	8								N				6-23-21
Ind	85	1	9								N				

* Refer to page 1 for standard preparation instructions.

CR 6/23/21

10:00

WG

KATAHDIN ANALYTICAL SERVICES

GCMS-T INSTRUMENT RUNLOG

DATE/TIME OF BFB INJECTION: 06-24-21

Method - Check One:	8260 ✓	8260 - 10 mL	8260 SIM	624	524
STD IDs: * BFB STD: V2246	CAL STD: V2247	GAS STD: V2249	XTRAs STD: V2248	LCS/MS STD: V2250	
SURR STD: V2230	IS STD: V2230		pH Paper Lot #: 602803	KI Paper Lot # —	

SAMPLE NAME	DATAFILE	DF	ALS #	METHOD	Prep Method 5030	5035	1311	Criteria KAS	DoD	QAPP	Y/N	ANALYST	pH	TRC	COMMENTS
WG301327-3	T1519	—	—	VOABFB	✓						Y	CR	N/A	N/A	
Vstd 050 -4	T1388	1	1	TSAVO5(6)	↓						Y	↓	↓	↓	
LCS/Ind -1/-6	89	1	2	↓							Y				
VBlank	90	1	3								N				
VBlank -2	91	1	4								Y		↓		
SO31601-13DL C	92	2	5						5.1		Y		<2		
SO37413-2DL B	93	2	6						↓		Y		↓		
SO37376-5MSRA2 G	94	1	7					✓			Y				
↓ -5MSDRA2 H	95	1	8					✓			Y		↓		
CCV	96	1	9								Y		N/A		15:41 ✓
CCV	97	1	10								N				[illegible]
CCV	98	1	11								N				
Rinse	↓ 99	1	12	↓	↓						—	↓	↓	↓	

[illegible] 6-24-21

* Refer to page 1 for standard preparation instructions.

METHANE ETHANE ETHYLENE DATA BY METHOD RSK SOP 175

QC Summary Section

Form 4
Method Blank Summary - VOA

Lab Name : Katahdin Analytical Services
Project : Fort Devens 2021 LTM
Lab File ID : 5OF2099.D
Instrument ID : GC05
Heated Purge : No

SDG : SO3743
Lab Sample ID : WG301388-1
Date Analyzed : 25-JUN-21
Time Analyzed : 08:12

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG301388-2	5OF2100.D	06/25/21	08:29
G6M-04-02X-SPR21	SO3743-2	5OF2104.D	06/25/21	10:44
G6M-04-10A-SPR21	SO3743-5	5OF2105.D	06/25/21	11:01
G6M-04-02X-SPR21	SO3743-2DL	5OF2116.D	06/25/21	15:09
G6M-04-10A-SPR21	SO3743-5DL	5OF2117.D	06/25/21	15:47
Matrix Spike	WG301388-3	5OF2118.D	06/25/21	16:04
Matrix Spike Duplica	WG301388-4	5OF2119.D	06/25/21	16:21

Form 8
GC Analytical Sequence

Lab Name : Katahdin Analytical Services
SDG : SO3743
Project : Fort Devens 2021 LTM
Column ID : A
Instrument ID : GC05

Client Sample ID	Lab Sample ID	Date Analyzed	Time Analyzed
Initial Calibration	WG298587-2	05/10/21	08:46
Initial Calibration	WG298587-3	05/10/21	09:03
Initial Calibration	WG298587-4	05/10/21	09:20
Initial Calibration	WG298587-5	05/10/21	09:37
Initial Calibration	WG298587-6	05/10/21	09:54
Initial Calibration	WG298587-1	05/10/21	11:29
Initial Calibration	WG298587-7	05/10/21	12:17
Initial Calibration	WG298587-8	05/10/21	12:34
Independent Source	WG298587-9	05/10/21	14:02
Continuing Calibrati	WG301388-5	06/25/21	07:43
Method Blank	WG301388-1	06/25/21	08:12
Laboratory Control S	WG301388-2	06/25/21	08:29
G6M-04-02X-SPR21	SO3743-2	06/25/21	10:44
G6M-04-10A-SPR21	SO3743-5	06/25/21	11:01
G6M-04-02X-SPR21	SO3743-2DL	06/25/21	15:09
G6M-04-10A-SPR21	SO3743-5DL	06/25/21	15:47
Matrix Spike	WG301388-3	06/25/21	16:04
Matrix Spike Duplica	WG301388-4	06/25/21	16:21
Continuing Calibrati	WG301388-6	06/25/21	16:38

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http://katahdinlab.com
sales@katahdinlab.com

Sample Data Section

KATAHDIN ANALYTICAL SERVICES - ORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.

* Compound recovery or percent RPD (relative percent difference) was outside of quality control limits.

D Indicates the result was obtained from analysis of a diluted sample. Surrogate recoveries may not be calculable.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

or

J Used for Pesticides, PCBs, Herbicides, Formaldehyde, Explosives and Method 504.1 analytes when there is a greater than 40% difference for detected concentrations between the two GC columns.

B Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.

C Indicates that the flagged compound did not meet DoD criteria in the corresponding daily calibration verification (CV).

L Indicates that the flagged compound did not meet DoD criteria in the corresponding Laboratory Control Sample (LCS) and/or Laboratory Control Sample Duplicate (LCSD) prepared and/or analyzed concurrently with the sample.

M Indicates that the flagged compound did not meet DoD criteria in the Matrix Spike and/or Matrix Spike Duplicate prepared and/or analyzed concurrently with the native sample.

N Presumptive evidence of a compound based on a mass spectral library search.

A Indicates that a tentatively identified compound is a suspected aldol-condensation product.

P Used for Pesticide/Aroclor analyte when there is a greater than 25% difference for detected concentrations between the two GC columns. (for CLP methods only).

Katahdin Analytical Services, Inc.

Manual Integration Codes For GC/MS, GC, HPLC and/or IC

M1	Peak splitting.
M2	Well defined peaks on the shoulders of the other peaks.
M3	There is additional area due to a coeluting interferant.
M4	There are negative spikes in the baseline.
M5	There are rising or falling baselines.
M6	The software has failed to detect a peak or misidentified a peak.
M7	Excessive peak tailing.
M8	Analysis such as GRO, DRO and TPH require a baseline hold.
M9	Peak was not completely integrated as in GC/MS.
M10	Primary ion was correctly integrated, but secondary or tertiary ion needed manual integration as in GC/MS.
M11	For GC analysis, when a sample is diluted by 1:10 or more, the surrogate is set to undetected and then the area under the surrogate is manually integrated.
M12	Manual integration saved in method due to TurboChrom floating point error.

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: SERES Engineering & Services, LLC
Lab ID: SO3743-2
Client ID: G6M-04-02X-SPR21
Project: Fort Devens 2021 LTM
SDG: SO3743
Lab File ID: 5OF2104.D

Sample Date: 17-JUN-21
Received Date: 18-JUN-21
Extract Date: 25-JUN-21
Extracted By: DL
Extraction Method: RSK SOP 175
Lab Prep Batch: WG301388

Analysis Date: 25-JUN-21
Analyst: DL
Analysis Method: RSK SOP 175
Matrix: AQ
% Solids: NA
Report Date: 30-JUN-21

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Methane	E	6200	ug/L	1	10	10.	1.9	5.0
Ethane	U	10.	ug/L	1	10	10.	2.2	5.0
Ethene		33.	ug/L	1	10	10.	2.0	5.0

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
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http://www.katahdinlab.com

Data File: \\target_server\gg\chem\gc05.i\GC05OF25.b\5OF2104.d
Report Date: 29-Jun-2021 12:49

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc05.i\GC05OF25.b\5OF2104.d
Lab Smp Id: SO3743-2 Client Smp ID: G6M-04-02X-SPR21
Inj Date : 25-JUN-2021 10:44
Operator : DL Inst ID: gc05.i
Smp Info : SO3743-2
Misc Info : WG301388,WG298587-3
Comment : RSK SOP 175
Method : \\TARGET_SERVER\GG\chem\gc05.i\GC05OF25.B\MEEB39A.m
Meth Date : 28-Jun-2021 06:34 dlewry Quant Type: ESTD
Cal Date : 10-MAY-2021 11:29 Cal File: 5OE2043.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: RSKSOP175-MEE.sub
Target Version: 4.12
Processing Host: V200T3

Concentration Formula: Amt * DF * 0.005/Vo*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	0.00500	sample purged (L)
Cpnd Variable		Local Compound Variable

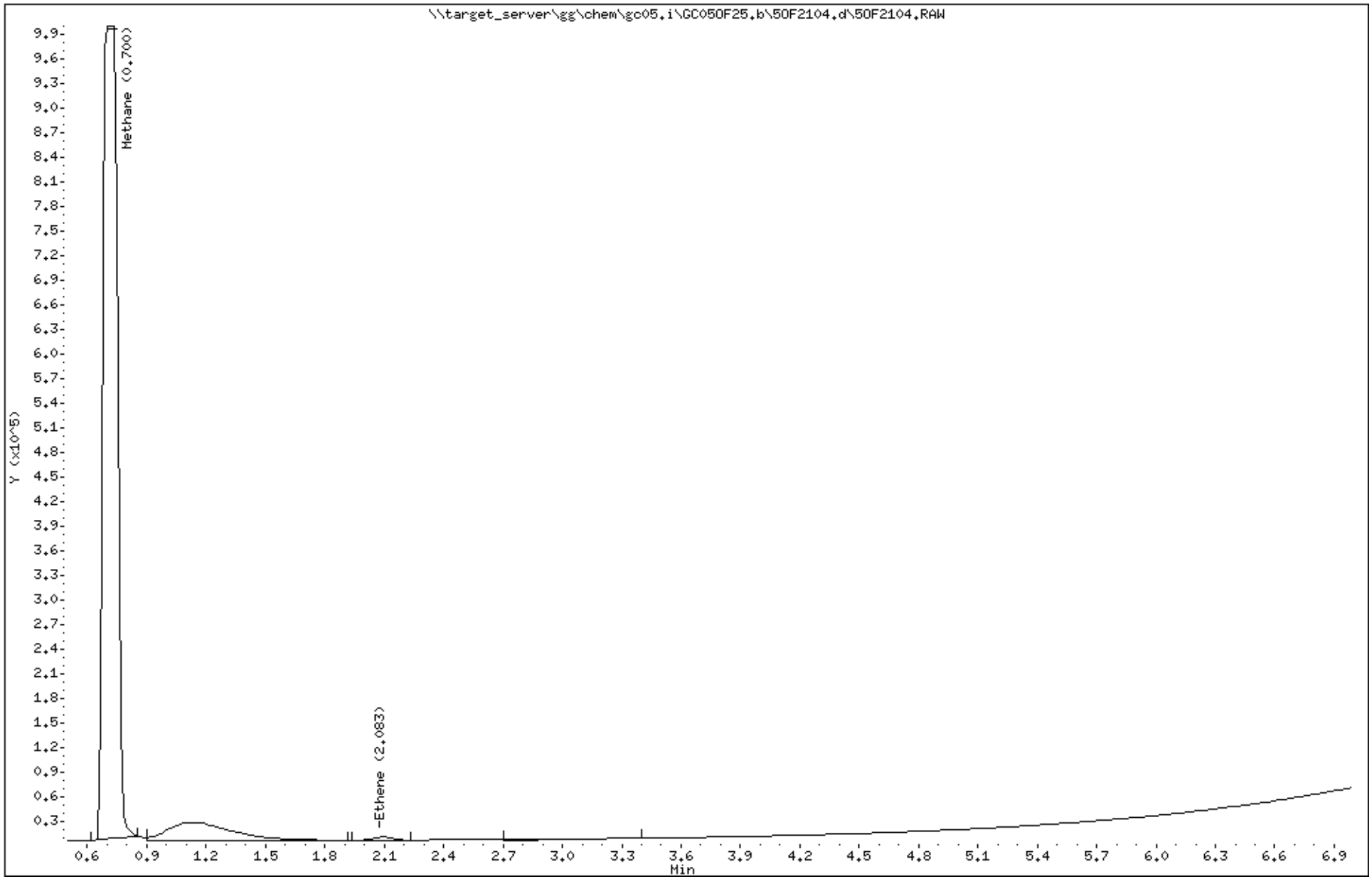
Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
1 Methane	0.700	0.733	-0.033	5022958	6.21988	6220(AM)	M2
2 Ethene	2.083	2.133	-0.050	24295	0.03263	32.6	

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.
M - Compound response manually integrated.

DL
9:12 am, Jun 30, 2021

Data File: \\target_server\gg\chem\gc05.i\GC050F25.b\50F2104.d
Date : 25-JUN-2021 10:44
Client ID: G6M-04-02X-SPR21
Instrument: gc05.i
Sample Info: S03743-2
Purge Volume: 0.0
Operator: DL
Column phase: Porapak Q
Column diameter: 0.00



Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: SERES Engineering & Services, LLC
Lab ID: SO3743-2DL
Client ID: G6M-04-02X-SPR21
Project: Fort Devens 2021 LTM
SDG: SO3743
Lab File ID: 5OF2116.D

Sample Date: 17-JUN-21
Received Date: 18-JUN-21
Extract Date: 25-JUN-21
Extracted By: DL
Extraction Method: RSK SOP 175
Lab Prep Batch: WG301388

Analysis Date: 25-JUN-21
Analyst: DL
Analysis Method: RSK SOP 175
Matrix: AQ
% Solids: NA
Report Date: 30-JUN-21

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Methane		20000	ug/L	20	10	200	39.	100
Ethane	U	200	ug/L	20	10	200	44.	100
Ethene	U	200	ug/L	20	10	200	39.	100

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Data File: \\target_server\gg\chem\gc05.i\GC05OF25.b\5OF2116.d
Report Date: 29-Jun-2021 12:51

Katahdin Analytical Services

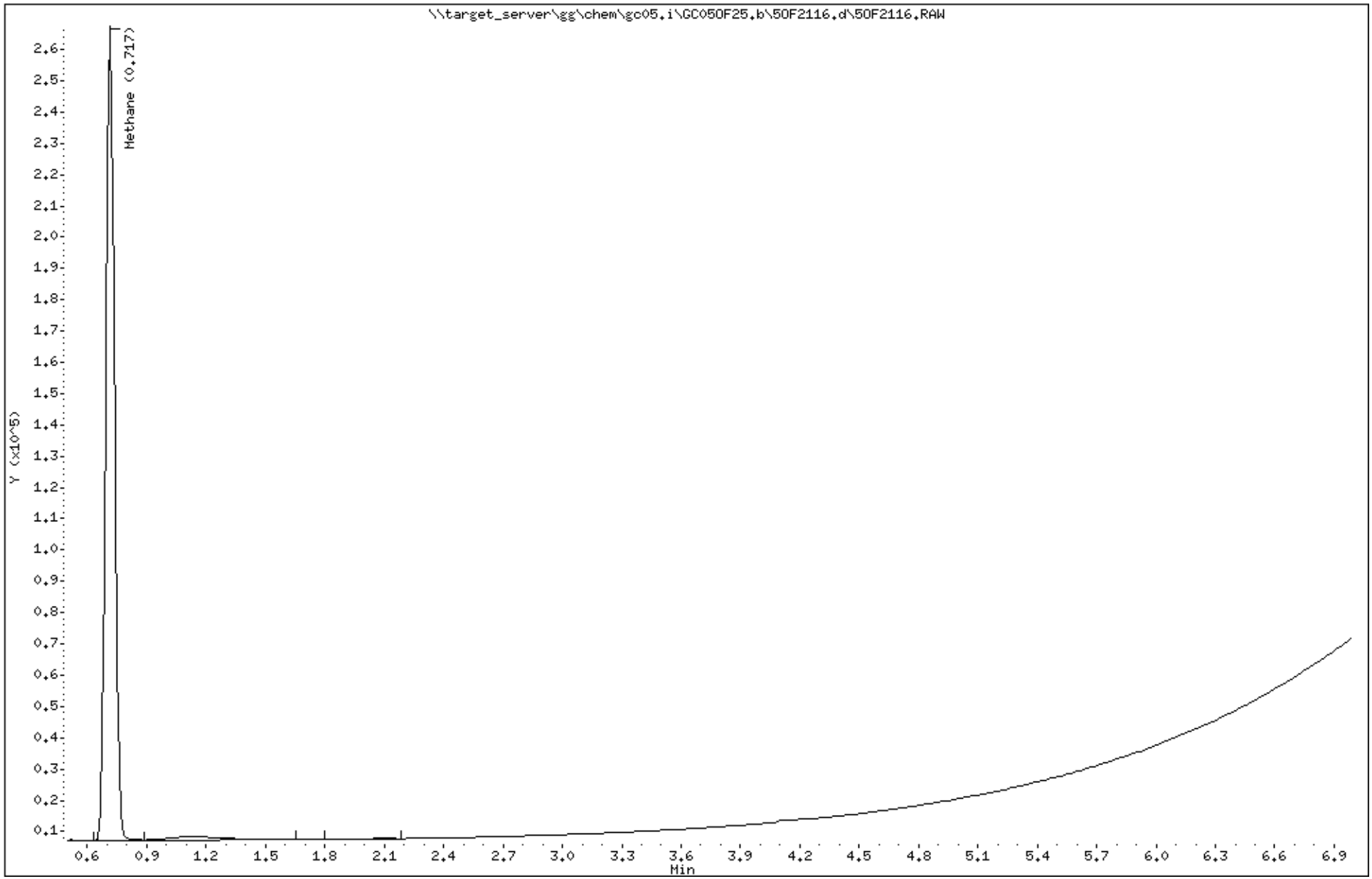
Data file : \\target_server\gg\chem\gc05.i\GC05OF25.b\5OF2116.d
Lab Smp Id: SO3743-2DL Client Smp ID: G6M-04-02X-SPR21
Inj Date : 25-JUN-2021 15:09
Operator : DL Inst ID: gc05.i
Smp Info : SO3743-2DL
Misc Info : WG301388,WG298587-3
Comment   : RSK SOP 175
Method   : \\TARGET_SERVER\GG\chem\gc05.i\GC05OF25.B\MEEB39A.m
Meth Date : 28-Jun-2021 06:34 dlewry Quant Type: ESTD
Cal Date : 10-MAY-2021 11:29 Cal File: 5OE2043.d
Als bottle: 1
Dil Factor: 20.00000
Integrator: Falcon Compound Sublist: RSKSOP175-MEE.sub
Target Version: 4.12
Processing Host: V200T3

Concentration Formula: Amt * DF * 0.005/Vo*1000 * CpndVariable

Name	Value	Description
DF	20.000	Dilution Factor
Vo	0.00500	sample purged (L)
Cpnd Variable		Local Compound Variable

					CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	
Compounds	RT	EXP RT	DLT RT	RESPONSE			REVIEW CODE
1 Methane	0.716	0.733	-0.017	815760	1.01015	20200	

Data File: \\target_server\gg\chem\gc05.i\GC050F25.b\50F2116.d
Date : 25-JUN-2021 15:09
Client ID: G6M-04-02X-SPR21
Instrument: gc05.i
Sample Info: S03743-2DL
Purge Volume: 0.0
Operator: DL
Column phase: Porapak Q
Column diameter: 0.00



Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: SERES Engineering & Services, LLC
Lab ID: SO3743-5
Client ID: G6M-04-10A-SPR21
Project: Fort Devens 2021 LTM
SDG: SO3743
Lab File ID: 5OF2105.D

Sample Date: 17-JUN-21
Received Date: 18-JUN-21
Extract Date: 25-JUN-21
Extracted By: DL
Extraction Method: RSK SOP 175
Lab Prep Batch: WG301388

Analysis Date: 25-JUN-21
Analyst: DL
Analysis Method: RSK SOP 175
Matrix: AQ
% Solids: NA
Report Date: 30-JUN-21

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Methane	EM	5900	ug/L	1	10	10.	1.9	5.0
Ethane	U	10.	ug/L	1	10	10.	2.2	5.0
Ethene	U	10.	ug/L	1	10	10.	2.0	5.0

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http://www.katahdinlab.com

Data File: \\target_server\gg\chem\gc05.i\GC05OF25.b\5OF2105.d
Report Date: 29-Jun-2021 12:49

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc05.i\GC05OF25.b\5OF2105.d
Lab Smp Id: SO3743-5 Client Smp ID: G6M-04-10A-SPR21
Inj Date : 25-JUN-2021 11:01
Operator : DL Inst ID: gc05.i
Smp Info : SO3743-5
Misc Info : WG301388,WG298587-3
Comment : RSK SOP 175
Method : \\TARGET_SERVER\GG\chem\gc05.i\GC05OF25.B\MEEB39A.m
Meth Date : 28-Jun-2021 06:34 dlewry Quant Type: ESTD
Cal Date : 10-MAY-2021 11:29 Cal File: 5OE2043.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: RSKSOP175-MEE.sub
Target Version: 4.12
Processing Host: V200T3

Concentration Formula: Amt * DF * 0.005/Vo*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	0.00500	sample purged (L)
Cpnd Variable		Local Compound Variable

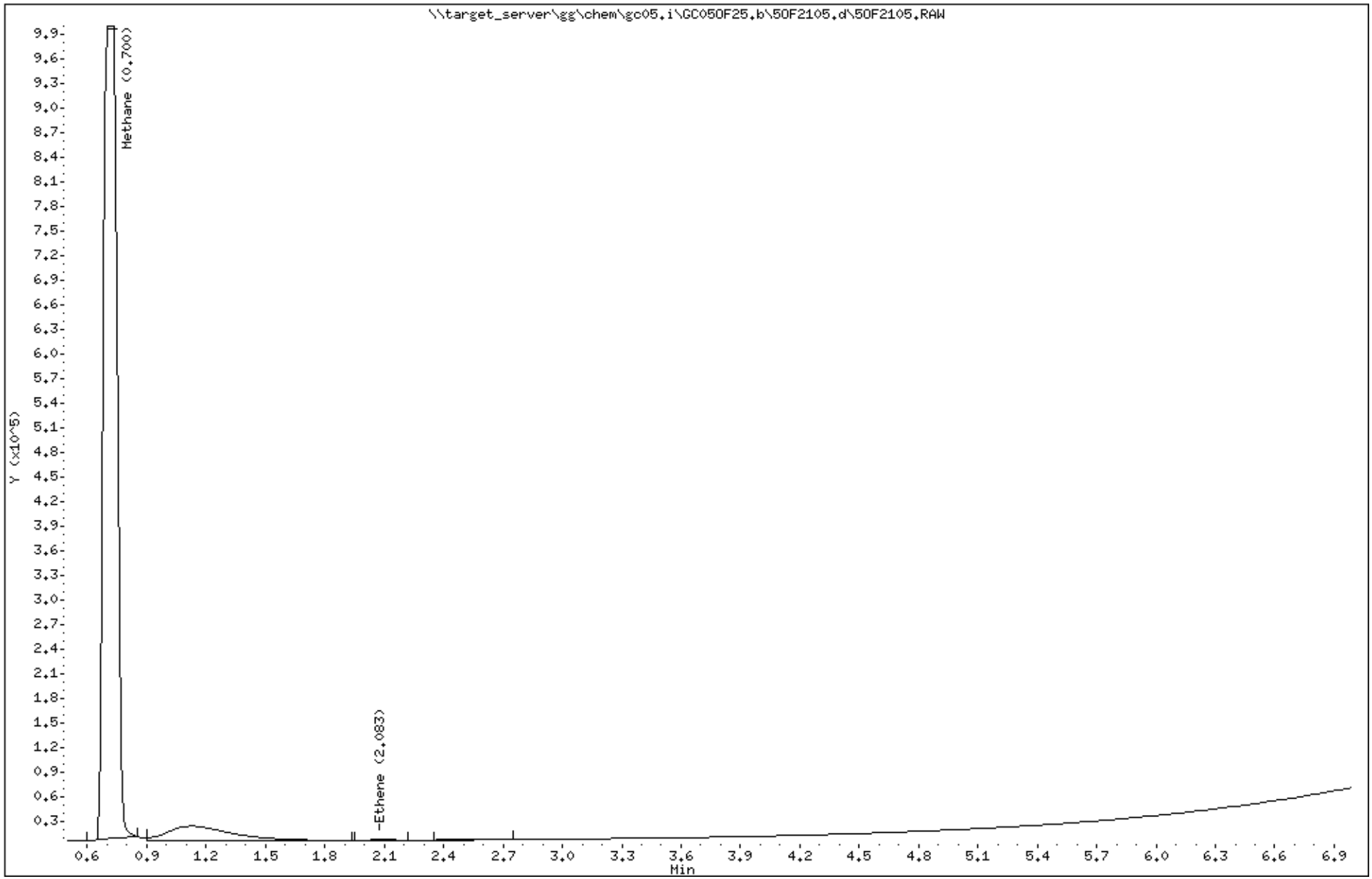
Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
1 Methane	0.700	0.733	-0.033	4760464	5.89484	5890(AM)	M2
2 Ethene	2.083	2.133	-0.050	4320	0.00580	5.80(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount exceeded maximum amount.
M - Compound response manually integrated.

DL
9:12 am, Jun 30, 2021

Data File: \\target_server\gg\chem\gc05.i\GC050F25.b\50F2105.d
Date : 25-JUN-2021 11:01
Client ID: G6M-04-10A-SPR21
Instrument: gc05.i
Sample Info: S03743-5
Purge Volume: 0.0
Operator: DL
Column phase: Porapak Q
Column diameter: 0.00



Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: SERES Engineering & Services, LLC
Lab ID: SO3743-5DL
Client ID: G6M-04-10A-SPR21
Project: Fort Devens 2021 LTM
SDG: SO3743
Lab File ID: 5OF2117.D

Sample Date: 17-JUN-21
Received Date: 18-JUN-21
Extract Date: 25-JUN-21
Extracted By: DL
Extraction Method: RSK SOP 175
Lab Prep Batch: WG301388

Analysis Date: 25-JUN-21
Analyst: DL
Analysis Method: RSK SOP 175
Matrix: AQ
% Solids: NA
Report Date: 30-JUN-21

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Methane	M	17000	ug/L	20	10	200	39.	100
Ethane	U	200	ug/L	20	10	200	44.	100
Ethene	U	200	ug/L	20	10	200	39.	100

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://www.katahdinlab.com

Data File: \\target_server\gg\chem\gc05.i\GC05OF25.b\5OF2117.d
Report Date: 29-Jun-2021 14:31

Katahdin Analytical Services

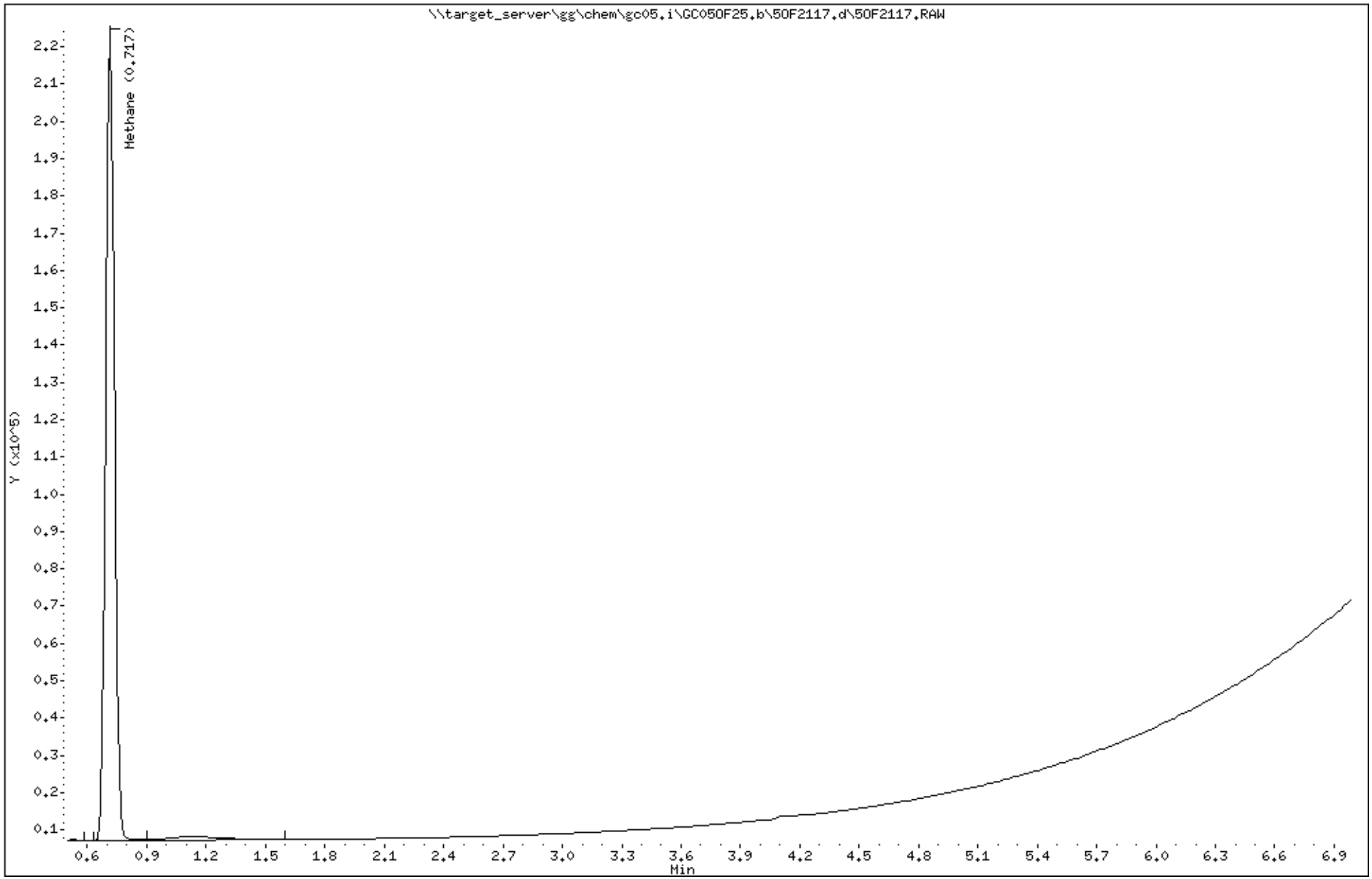
Data file : \\target_server\gg\chem\gc05.i\GC05OF25.b\5OF2117.d
Lab Smp Id: SO3743-5DL Client Smp ID: G6M-04-10A-SPR21
Inj Date : 25-JUN-2021 15:47
Operator : DL Inst ID: gc05.i
Smp Info : SO3743-5DL
Misc Info : WG301388,WG298587-3
Comment : RSK SOP 175
Method : \\TARGET_SERVER\GG\chem\gc05.i\GC05OF25.B\MEEB39A.m
Meth Date : 28-Jun-2021 06:34 dlewry Quant Type: ESTD
Cal Date : 10-MAY-2021 11:29 Cal File: 5OE2043.d
Als bottle: 1
Dil Factor: 20.00000
Integrator: Falcon Compound Sublist: RSKSOP175-MEE.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 0.005/Vo*1000 * CpndVariable

Name	Value	Description
DF	20.000	Dilution Factor
Vo	0.00500	sample purged (L)
Cpnd Variable		Local Compound Variable

					CONCENTRATIONS		
					ON-COLUMN	FINAL	
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/L)	REVIEW CODE
1 Methane	0.716	0.733	-0.017	684808	0.84799	17000	

Data File: \\target_server\gg\chem\gc05.i\GC050F25.b\50F2117.d
Date : 25-JUN-2021 15:47
Client ID: G6M-04-10A-SPR21
Instrument: gc05.i
Sample Info: S03743-5DL
Purge Volume: 0.0
Operator: DL
Column phase: Porapak Q
Column diameter: 0.00



Standards Data Section

Katahdin
ANALYTICAL SERVICES

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SO3743
Project : Fort Devens 2021 LTM
Instrument ID: GC05
Lab File IDs : 5OE2043.d 5OE2036.d 5OE2037.d 5OE2038.d 5OE2039.d 5OE2040.d 5OE2044.d 5OE2045.d
Calibration Date(s): 10-MAY-21 08:29 10-MAY-21 12:34

	0.0090000	0.0500000	0.1250000	0.2490000	1.2470	2.2450	0.0200000	0.0300000	Curve	b	m1	m2	%RSD	MAX	
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7	Level 8	Type					%RSD	
Methane	1065800	824593	769478	761226	718084	553637	896455	871250	AVG		807600		18.43	20	O
Ethane	633000	755220	753576	775671	746321	574014	721600	747067	AVG		713300		9.972	20	O
Ethene	683667	781766	788095	794438	760221	585780	757895	803964	AVG		744500		9.979	20	O

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://katahdinlab.com
sales@katahdinlab.com

Data File: \\target_server\gg\chem\gc05.i\GC05OE10.b\5OE2046.d
Report Date: 12-May-2021 13:33

Katahdin Analytical Services

RECOVERY REPORT

Client Name: Client SDG: SDGa00256
Sample Matrix: LIQUID Fraction: VOA
Lab Smp Id: WG298587-9
Level: LOW Operator: JHR
Data Type: GC DATA SampleType: LCS
SpikeList File: ind.spk Quant Type: ESTD
Sublist File: IND.sub
Method File: \\TARGET_SERVER\GG\chem\gc05.i\GC05OE10.B\MEEB39A.m
Misc Info: WG298587,WG298587-3

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
1 Methane	133	130	97.69	80-120
2 Ethene	233	261	112.06	80-120
3 Ethane	249	281	112.71	80-120

Data File: \\target_server\gg\chem\gc05.i\GC05OE10.b\5OE2043.d
Report Date: 12-May-2021 13:32

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc05.i\GC05OE10.b\5OE2043.d
Lab Smp Id: WG298587-1
Inj Date : 10-MAY-2021 11:29
Operator : JHR Inst ID: gc05.i
Smp Info : WG298587-1
Misc Info : WG297119,WG294889-3
Comment   : RSK SOP 175
Method   : \\target_server\gg\chem\gc05.i\GC05OE10.b\MEEB39A.m
Meth Date : 12-May-2021 13:29 gc05.i Quant Type: ESTD
Cal Date : 10-MAY-2021 11:29 Cal File: 5OE2043.d
Als bottle: 1 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 0.005/Vo*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	0.00500	sample purged (L)
Cpnd Variable		Local Compound Variable

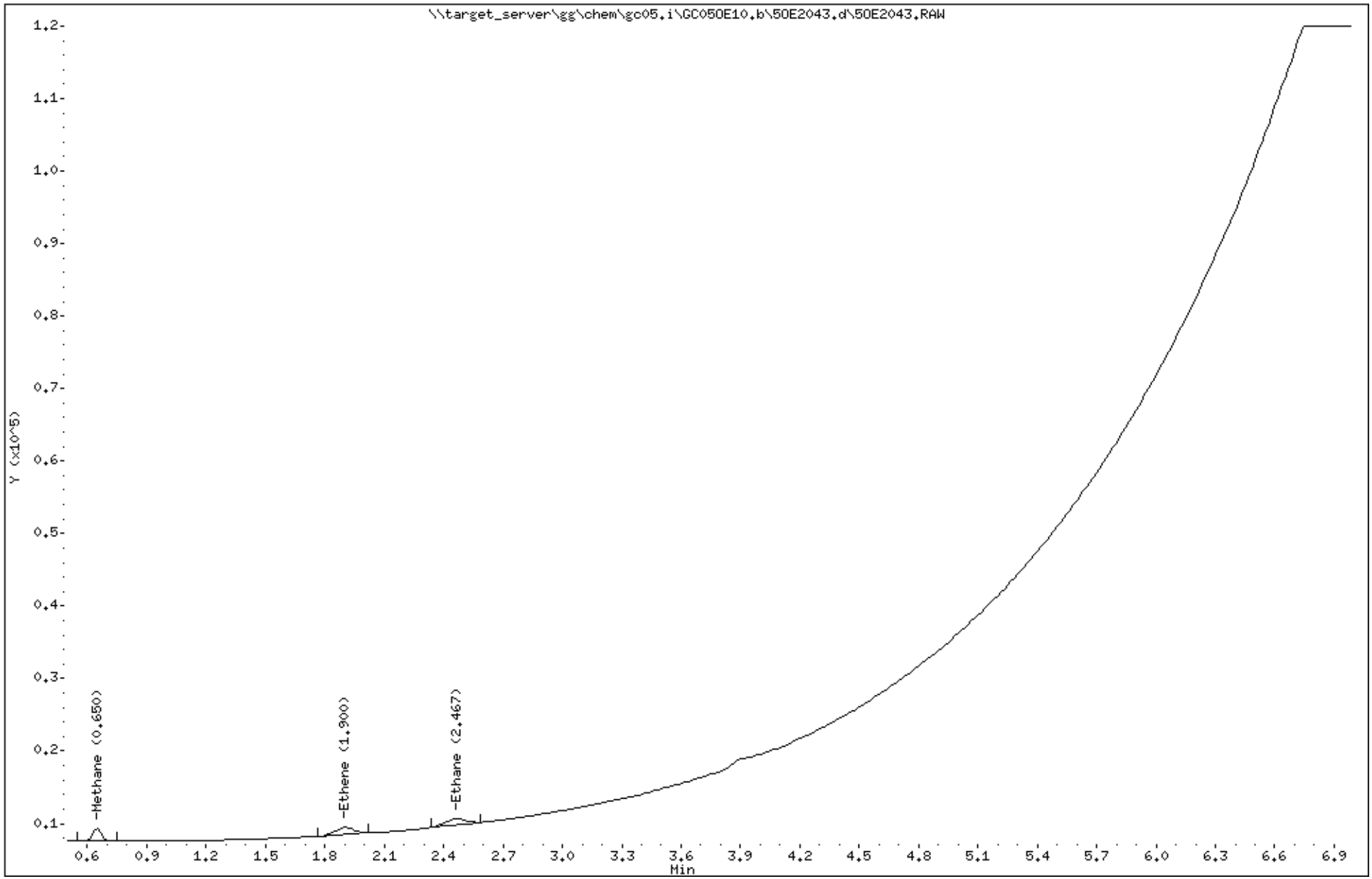
					AMOUNTS		
Compounds	RT	EXP RT	DLT RT	RESPONSE	CAL-AMT (ug/mL)	ON-COL (ug/mL)	REVIEW CODE
1 Methane	0.650	0.650	0.000	5329	0.00500	0.00660(a)	
2 Ethene	1.900	1.900	0.000	6153	0.00900	0.00826(aM)	M5
3 Ethane	2.466	2.467	-0.001	5697	0.00900	0.00799(aM)	M5

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

JHR
1:35 pm, May 12, 2021

Data File: \\target_server\gg\chem\gc05.i\GC050E10.b\50E2043.d
Date : 10-MAY-2021 11:29
Client ID:
Instrument: gc05.i
Sample Info: WG298587-1
Purge Volume: 0.0
Operator: JHR
Column phase: Porapak Q
Column diameter: 0.00



Data File: \\target_server\gg\chem\gc05.i\GC05OE10.b\5OE2036.d
Report Date: 12-May-2021 13:32

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc05.i\GC05OE10.b\5OE2036.d
Lab Smp Id: WG298587-2
Inj Date : 10-MAY-2021 08:46
Operator : JHR   Inst ID: gc05.i
Smp Info : WG298587-2
Misc Info :
Comment   : RSK SOP 175
Method   : \\TARGET_SERVER\GG\chem\gc05.i\GC05OE10.B\MEEB39A.m
Meth Date : 12-May-2021 13:29 gc05.i   Quant Type: ESTD
Cal Date : 10-MAY-2021 08:46   Cal File: 5OE2036.d
Als bottle: 1   Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: all.sub
Target Version: 4.12
Processing Host: V200T5

Concentration Formula: Amt * DF * 0.005/Vo*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	0.00500	sample purged (L)
Cpnd Variable		Local Compound Variable

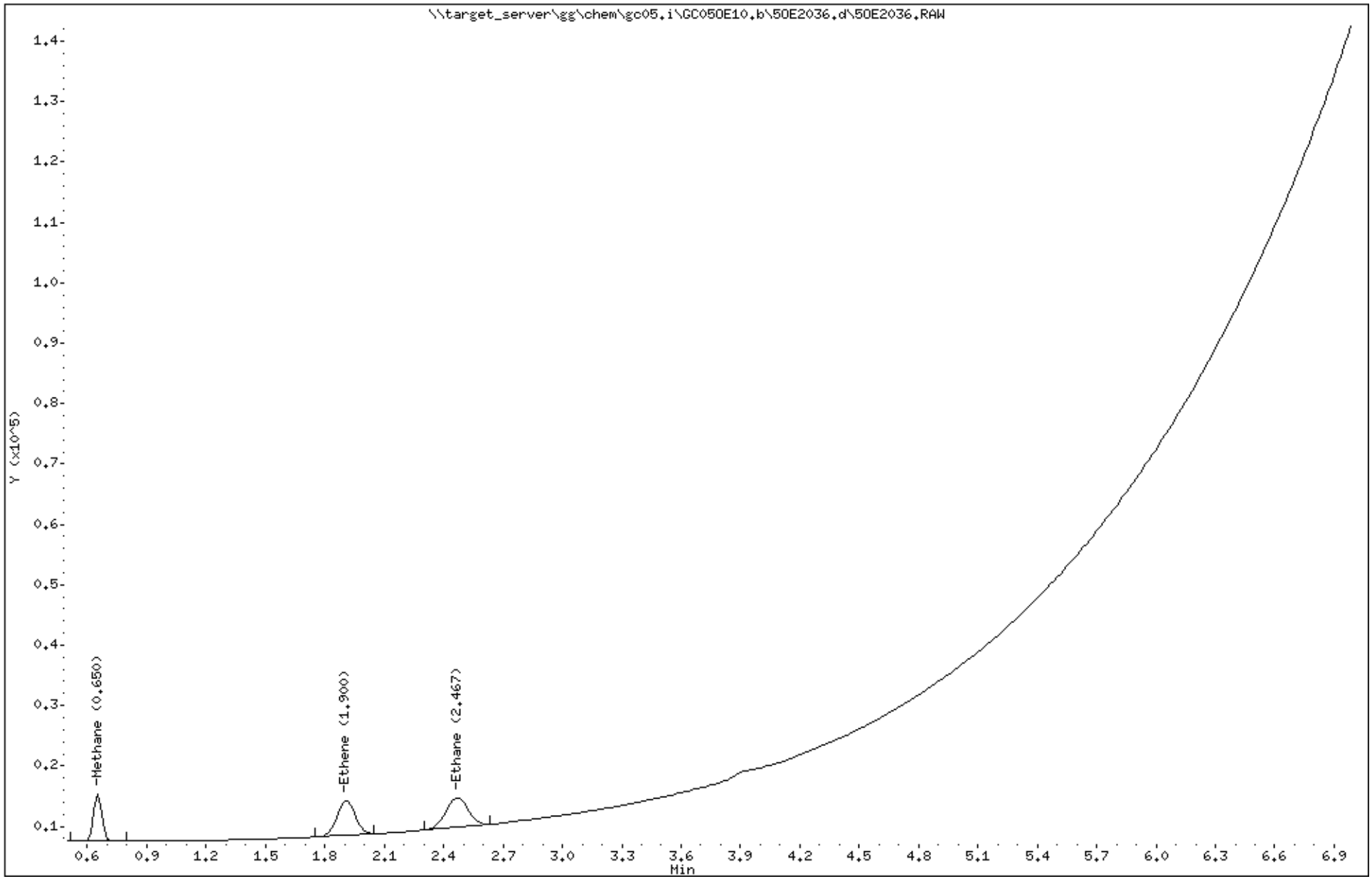
					AMOUNTS		
					CAL-AMT	ON-COL	
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)	REVIEW CODE
1 Methane	0.650	0.650	0.000	22264	0.02700	0.0276(a)	
2 Ethene	1.900	1.900	0.000	36743	0.04700	0.0492(aM)	M5
3 Ethane	2.466	2.467	-0.001	37761	0.05000	0.0532(aM)	M5

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

JHR
1:35 pm, May 12, 2021

Data File: \\target_server\gg\chem\gc05.i\GC050E10.b\50E2036.d
Date : 10-MAY-2021 08:46
Client ID:
Instrument: gc05.i
Sample Info: WG298587-2
Purge Volume: 0.0
Operator: JHR
Column phase: Porapak Q
Column diameter: 0.00



Data File: \\target_server\gg\chem\gc05.i\GC05OE10.b\5OE2037.d
Report Date: 12-May-2021 13:32

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc05.i\GC05OE10.b\5OE2037.d
Lab Smp Id: WG298587-3
Inj Date : 10-MAY-2021 09:03
Operator : JHR   Inst ID: gc05.i
Smp Info : WG298587-3
Misc Info :
Comment   : RSK SOP 175
Method   : \\TARGET_SERVER\GG\chem\gc05.i\GC05OE10.B\MEEB39A.m
Meth Date : 12-May-2021 13:29 gc05.i   Quant Type: ESTD
Cal Date : 10-MAY-2021 09:03   Cal File: 5OE2037.d
Als bottle: 1   Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: all.sub
Target Version: 4.12
Processing Host: V200T5

Concentration Formula: Amt * DF * 0.005/Vo*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	0.00500	sample purged (L)
Cpnd Variable		Local Compound Variable

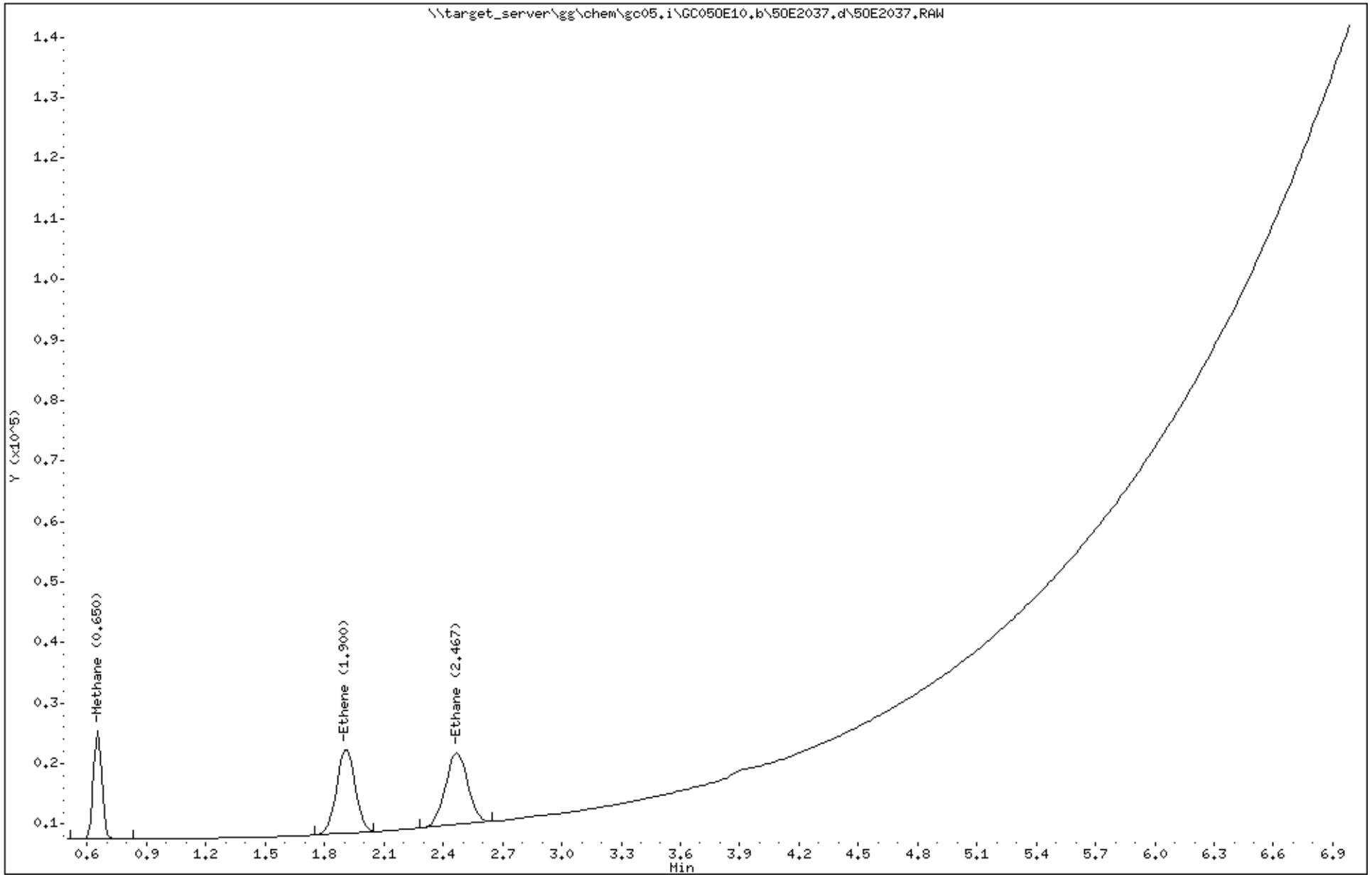
					AMOUNTS		
					CAL-AMT	ON-COL	
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)	REVIEW CODE
1 Methane	0.650	0.650	0.000	51555	0.06700	0.0638(a)	
2 Ethene	1.900	1.900	0.000	91419	0.11600	0.123(aM)	M5
3 Ethane	2.466	2.467	-0.001	94197	0.12500	0.133(aM)	M5

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

JHR
1:35 pm, May 12, 2021

Data File: \\target_server\gg\chem\gc05.i\GC050E10.b\50E2037.d
Date : 10-MAY-2021 09:03
Client ID:
Instrument: gc05.i
Sample Info: WG298587-3
Purge Volume: 0.0
Operator: JHR
Column phase: Porapak Q
Column diameter: 0.00



Data File: \\target_server\gg\chem\gc05.i\GC05OE10.b\5OE2038.d
Report Date: 12-May-2021 13:32

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Data file : \\target_server\gg\chem\gc05.i\GC05OE10.b\5OE2038.d
Lab Smp Id: WG298587-4
Inj Date : 10-MAY-2021 09:20
Operator : JHR   Inst ID: gc05.i
Smp Info : WG298587-4
Misc Info :
Comment   : RSK SOP 175
Method   : \\TARGET_SERVER\GG\chem\gc05.i\GC05OE10.B\MEEB39A.m
Meth Date : 12-May-2021 13:29 gc05.i   Quant Type: ESTD
Cal Date : 10-MAY-2021 09:20   Cal File: 5OE2038.d
Als bottle: 1   Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: all.sub
Target Version: 4.12
Processing Host: V200T5

Concentration Formula: Amt * DF * 0.005/Vo*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	0.00500	sample purged (L)
Cpnd Variable		Local Compound Variable

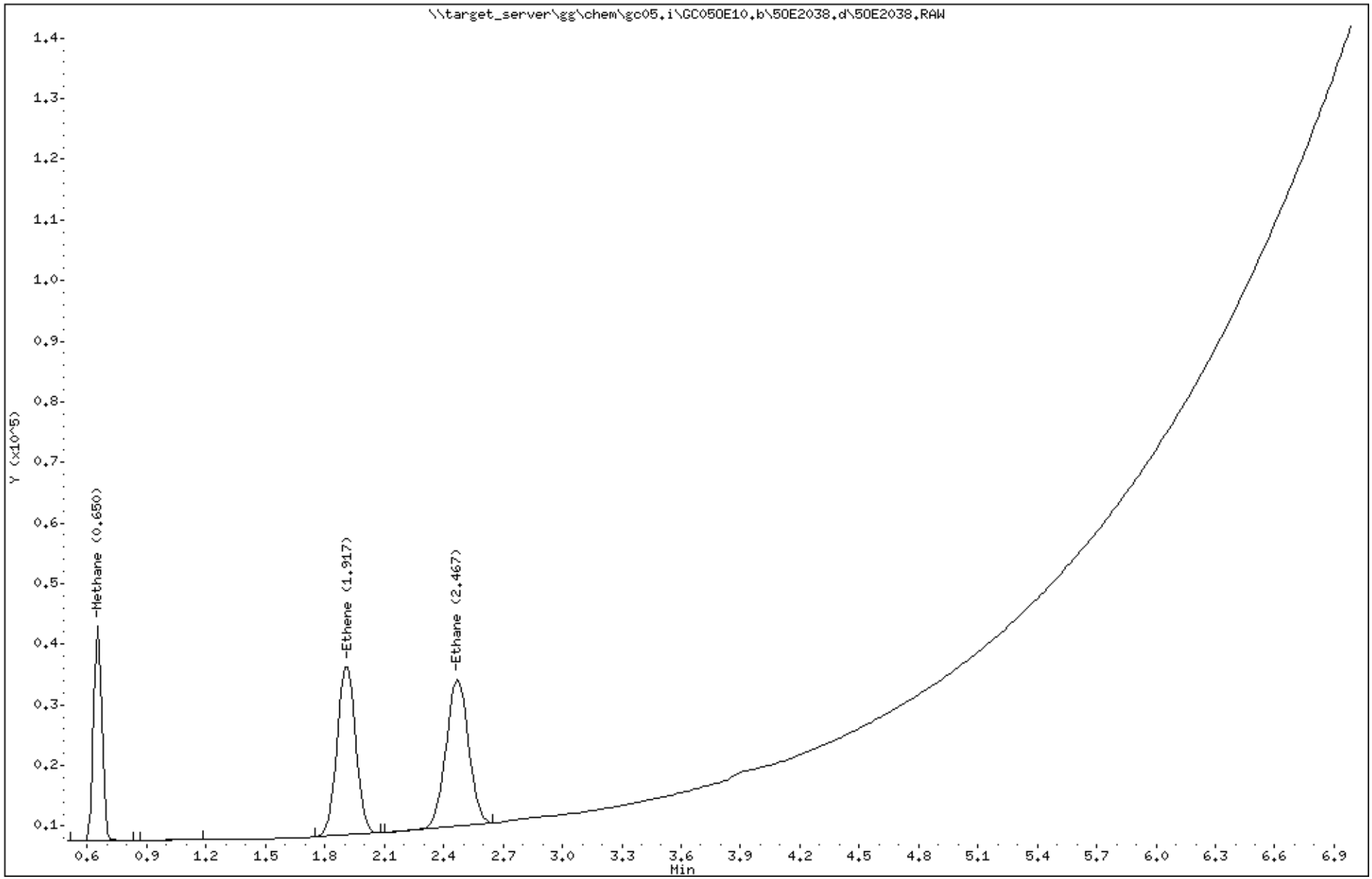
					AMOUNTS		
					CAL-AMT	ON-COL	
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)	REVIEW CODE
1 Methane	0.650	0.650	0.000	101243	0.13300	0.125(a)	
2 Ethene	1.916	1.900	0.016	185104	0.23300	0.249(aM)	M5
3 Ethane	2.466	2.467	-0.001	193142	0.24900	0.273(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

JHR
1:35 pm, May 12, 2021

Data File: \\target_server\gg\chem\gc05.i\GC050E10.b\50E2038.d
Date : 10-MAY-2021 09:20
Client ID:
Instrument: gc05.i
Sample Info: WG298587-4
Purge Volume: 0.0
Operator: JHR
Column phase: Porapak Q
Column diameter: 0.00



Data File: \\target_server\gg\chem\gc05.i\GC05OE10.b\5OE2039.d
Report Date: 12-May-2021 13:32

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc05.i\GC05OE10.b\5OE2039.d
Lab Smp Id: WG298587-5
Inj Date : 10-MAY-2021 09:37
Operator : JHR   Inst ID: gc05.i
Smp Info : WG298587-5
Misc Info :
Comment   : RSK SOP 175
Method   : \\TARGET_SERVER\GG\chem\gc05.i\GC05OE10.B\MEEB39A.m
Meth Date : 12-May-2021 13:29 gc05.i   Quant Type: ESTD
Cal Date : 10-MAY-2021 09:37   Cal File: 5OE2039.d
Als bottle: 1   Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: all.sub
Target Version: 4.12
Processing Host: V200T5

Concentration Formula: Amt * DF * 0.005/Vo*1000 * CpndVariable

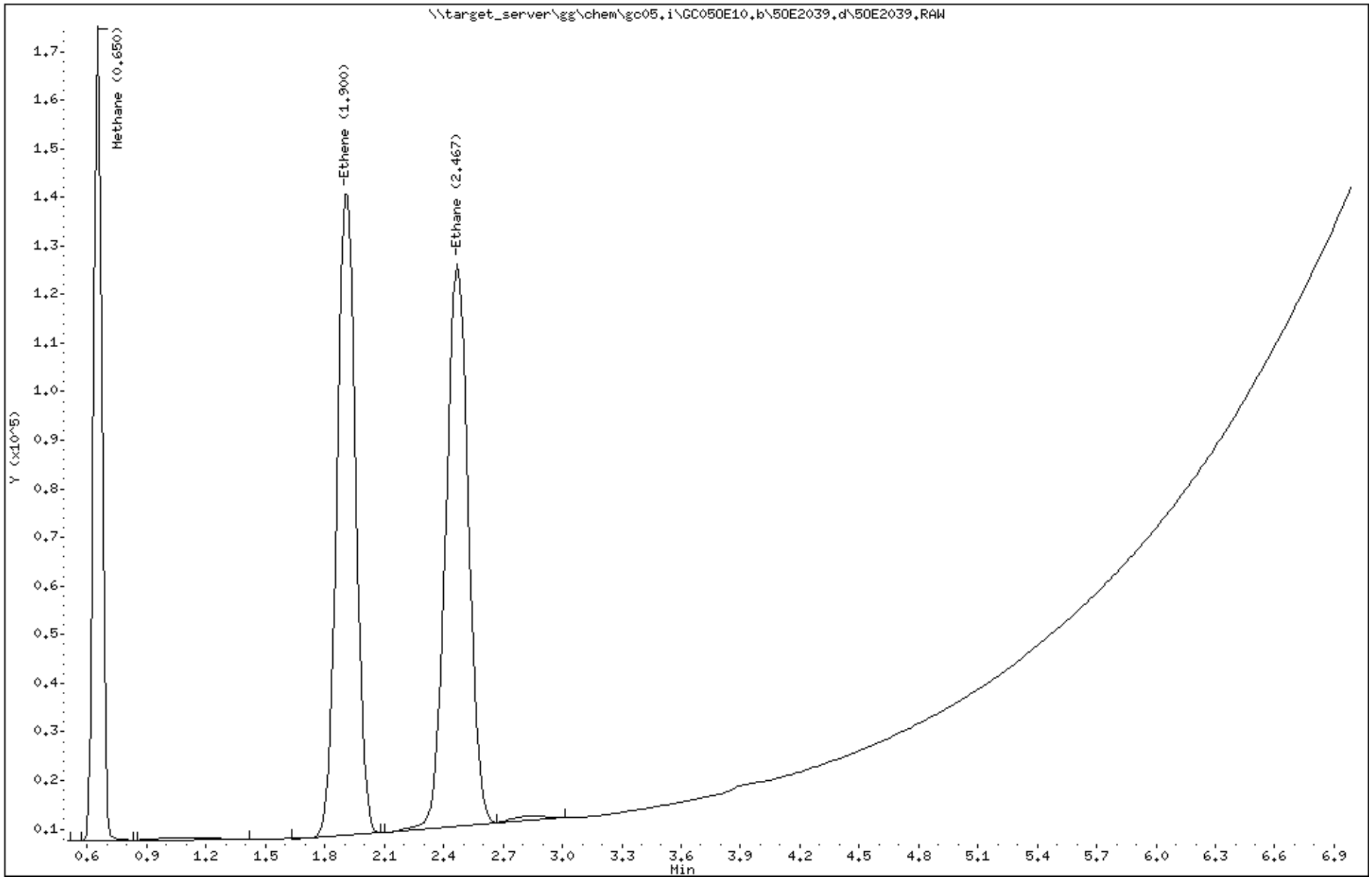
Name	Value	Description
DF	1.000	Dilution Factor
Vo	0.00500	sample purged (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1 Methane	0.650	0.650	0.000	477526	0.66500	0.564(a)	
2 Ethene	1.900	1.900	0.000	884897	1.16400	1.08(a)	
3 Ethane	2.466	2.467	-0.001	930662	1.24700	1.21(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

Data File: \\target_server\gg\chem\gc05.i\GC050E10.b\50E2039.d
Date : 10-MAY-2021 09:37
Client ID:
Instrument: gc05.i
Sample Info: WG298587-5
Purge Volume: 0.0
Operator: JHR
Column phase: Porapak Q
Column diameter: 0.00



Data File: \\target_server\gg\chem\gc05.i\GC05OE10.b\5OE2040.d
Report Date: 12-May-2021 13:32

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc05.i\GC05OE10.b\5OE2040.d
Lab Smp Id: WG298587-6
Inj Date : 10-MAY-2021 09:54
Operator : JHR   Inst ID: gc05.i
Smp Info : WG298587-6
Misc Info :
Comment   : RSK SOP 175
Method   : \\TARGET_SERVER\GG\chem\gc05.i\GC05OE10.B\MEEB39A.m
Meth Date : 12-May-2021 13:29 gc05.i   Quant Type: ESTD
Cal Date : 10-MAY-2021 09:54   Cal File: 5OE2040.d
Als bottle: 1   Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: all.sub
Target Version: 4.12
Processing Host: V200T5

Concentration Formula: Amt * DF * 0.005/Vo*1000 * CpndVariable

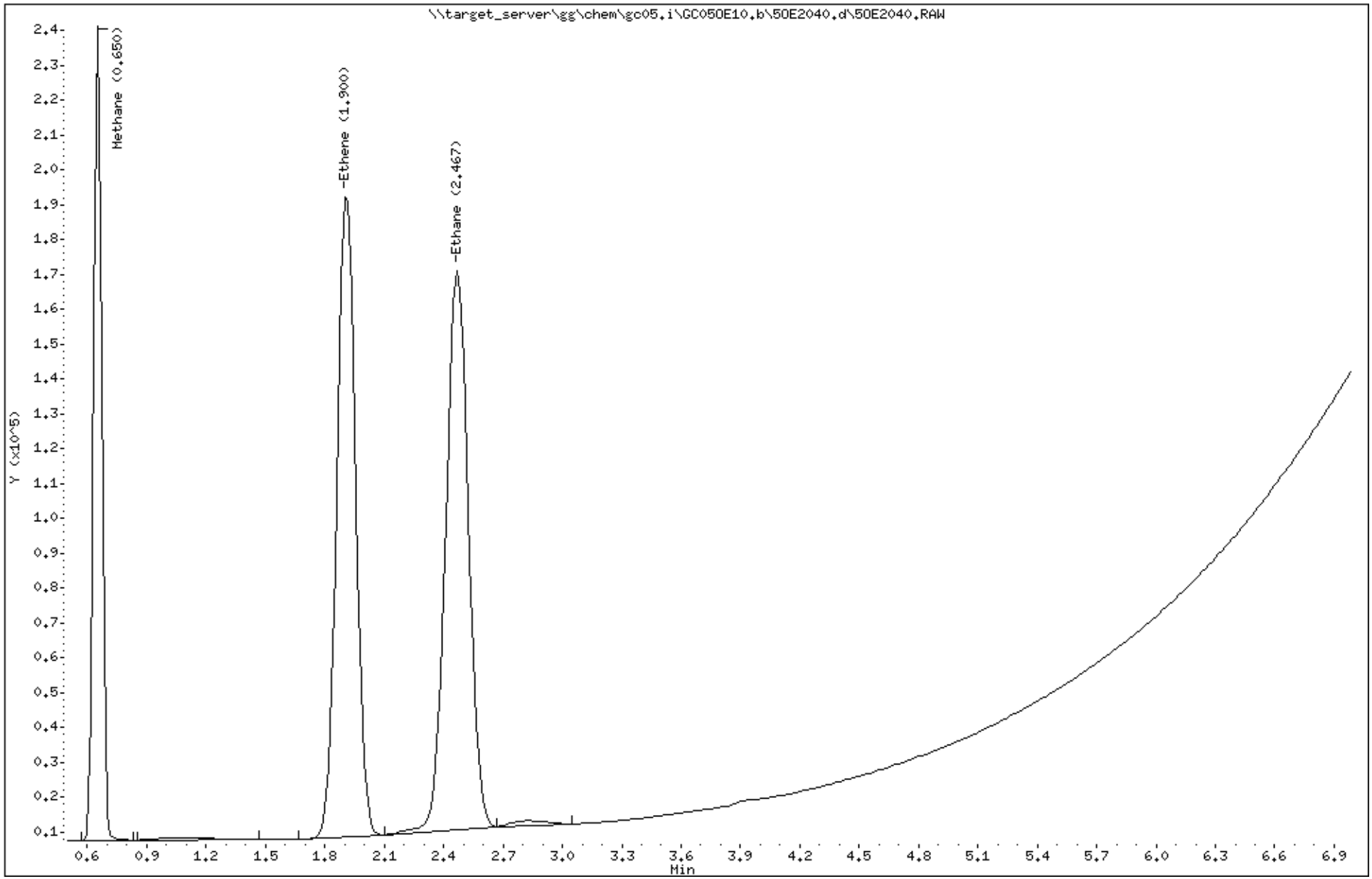
Name	Value	Description
DF	1.000	Dilution Factor
Vo	0.00500	sample purged (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/mL)	AMOUNTS ON-COL (ug/mL)	REVIEW CODE
1 Methane	0.650	0.650	0.000	662704	1.19700	0.831(a)	
2 Ethene	1.900	1.900	0.000	1227210	2.09500	1.58(a)	
3 Ethane	2.466	2.467	-0.001	1288662	2.24500	1.75(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

Data File: \\target_server\gg\chem\gc05.i\GC050E10.b\50E2040.d
Date : 10-MAY-2021 09:54
Client ID:
Instrument: gc05.i
Sample Info: WG298587-6
Purge Volume: 0.0
Operator: JHR
Column phase: Porapak Q
Column diameter: 0.00



Data File: \\target_server\gg\chem\gc05.i\GC05OE10.b\5OE2044.d
Report Date: 12-May-2021 13:32

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc05.i\GC05OE10.b\5OE2044.d
Lab Smp Id: WG298587-7
Inj Date : 10-MAY-2021 12:17
Operator : JHR   Inst ID: gc05.i
Smp Info : WG298587-7
Misc Info :
Comment   : RSK SOP 175
Method   : \\TARGET_SERVER\GG\chem\gc05.i\GC05OE10.B\MEEB39A.m
Meth Date : 12-May-2021 13:29 gc05.i   Quant Type: ESTD
Cal Date : 10-MAY-2021 12:17   Cal File: 5OE2044.d
Als bottle: 1   Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: all.sub
Target Version: 4.12
Processing Host: V200T5

Concentration Formula: Amt * DF * 0.005/Vo*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	0.00500	sample purged (L)
Cpnd Variable		Local Compound Variable

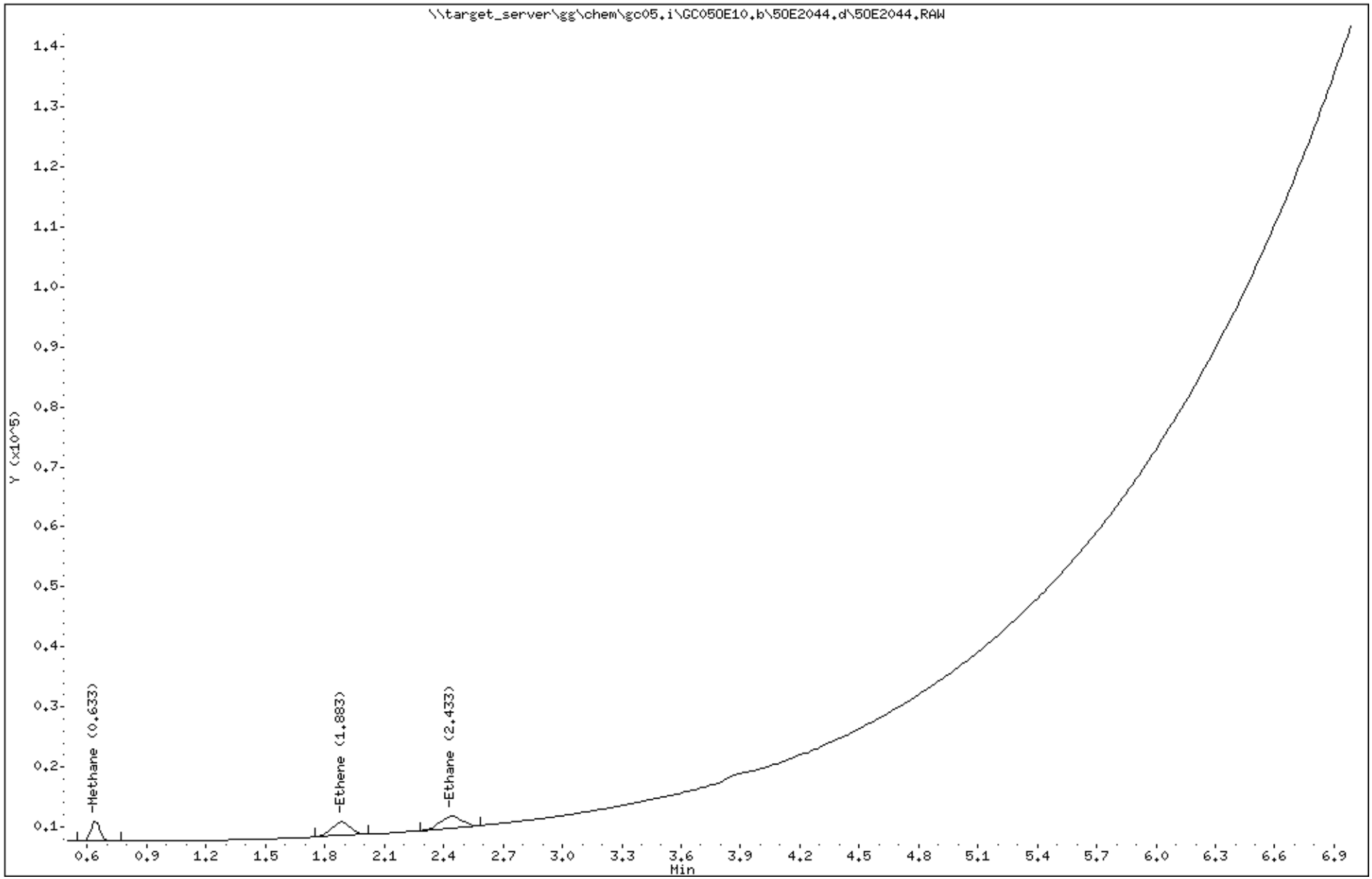
					AMOUNTS		
					CAL-AMT	ON-COL	
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)	REVIEW CODE
1 Methane	0.633	0.650	-0.017	9861	0.01100	0.0122(a)	
2 Ethene	1.883	1.900	-0.017	14400	0.01900	0.0190(aM)	M5
3 Ethane	2.433	2.467	-0.034	14432	0.02000	0.0202(aM)	M5

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

JHR
1:35 pm, May 12, 2021

Data File: \\target_server\gg\chem\gc05.i\GC050E10.b\50E2044.d
Date : 10-MAY-2021 12:17
Client ID:
Instrument: gc05.i
Sample Info: WG298587-7
Purge Volume: 0.0
Operator: JHR
Column phase: Porapak Q
Column diameter: 0.00



Data File: \\target_server\gg\chem\gc05.i\GC05OE10.b\5OE2045.d
Report Date: 12-May-2021 13:32

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Data file : \\target_server\gg\chem\gc05.i\GC05OE10.b\5OE2045.d
Lab Smp Id: WG298587-8
Inj Date : 10-MAY-2021 12:34
Operator : JHR   Inst ID: gc05.i
Smp Info : WG298587-8
Misc Info :
Comment   : RSK SOP 175
Method   : \\TARGET_SERVER\GG\chem\gc05.i\GC05OE10.B\MEEB39A.m
Meth Date : 12-May-2021 13:29 gc05.i   Quant Type: ESTD
Cal Date : 10-MAY-2021 12:34   Cal File: 5OE2045.d
Als bottle: 1   Calibration Sample, Level: 8
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: all.sub
Target Version: 4.12
Processing Host: V200T5

Concentration Formula: Amt * DF * 0.005/Vo*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	0.00500	sample purged (L)
Cpnd Variable		Local Compound Variable

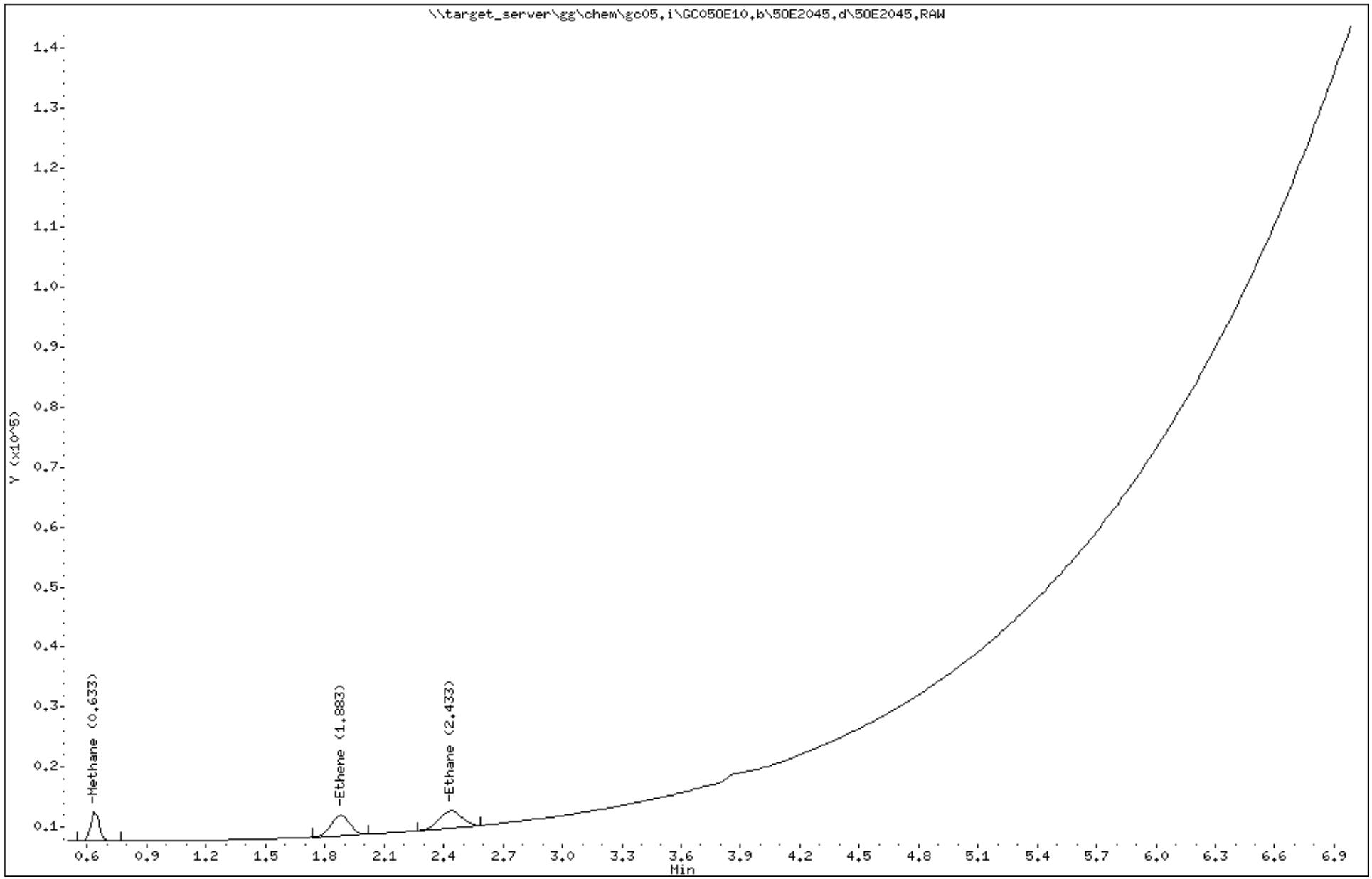
					AMOUNTS		
					CAL-AMT	ON-COL	
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)	REVIEW CODE
1 Methane	0.633	0.650	-0.017	13940	0.01600	0.0173(a)	
2 Ethene	1.883	1.900	-0.017	22511	0.02800	0.0300(aM)	M5
3 Ethane	2.433	2.467	-0.034	22412	0.03000	0.0315(aM)	M5

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

JHR
1:35 pm, May 12, 2021

Data File: \\target_server\gg\chem\gc05.i\GC050E10.b\50E2045.d
Date : 10-MAY-2021 12:34
Client ID:
Instrument: gc05.i
Sample Info: WG298587-8
Purge Volume: 0.0
Operator: JHR
Column phase: Porapak Q
Column diameter: 0.00



Data File: \\target_server\gg\chem\gc05.i\GC05OE10.b\5OE2046.d
Report Date: 12-May-2021 13:33

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc05.i\GC05OE10.b\5OE2046.d
Lab Smp Id: WG298587-9
Inj Date : 10-MAY-2021 14:02
Operator : JHR   Inst ID: gc05.i
Smp Info : WG298587-9
Misc Info : WG298587,WG298587-3
Comment   : RSK SOP 175
Method   : \\TARGET_SERVER\GG\chem\gc05.i\GC05OE10.B\MEEB39A.m
Meth Date : 12-May-2021 13:29 gc05.i   Quant Type: ESTD
Cal Date : 10-MAY-2021 12:34   Cal File: 5OE2045.d
Als bottle: 1   QC Sample: LCS
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: IND.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 0.005/Vo*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	0.00500	sample purged (L)
Cpnd Variable		Local Compound Variable

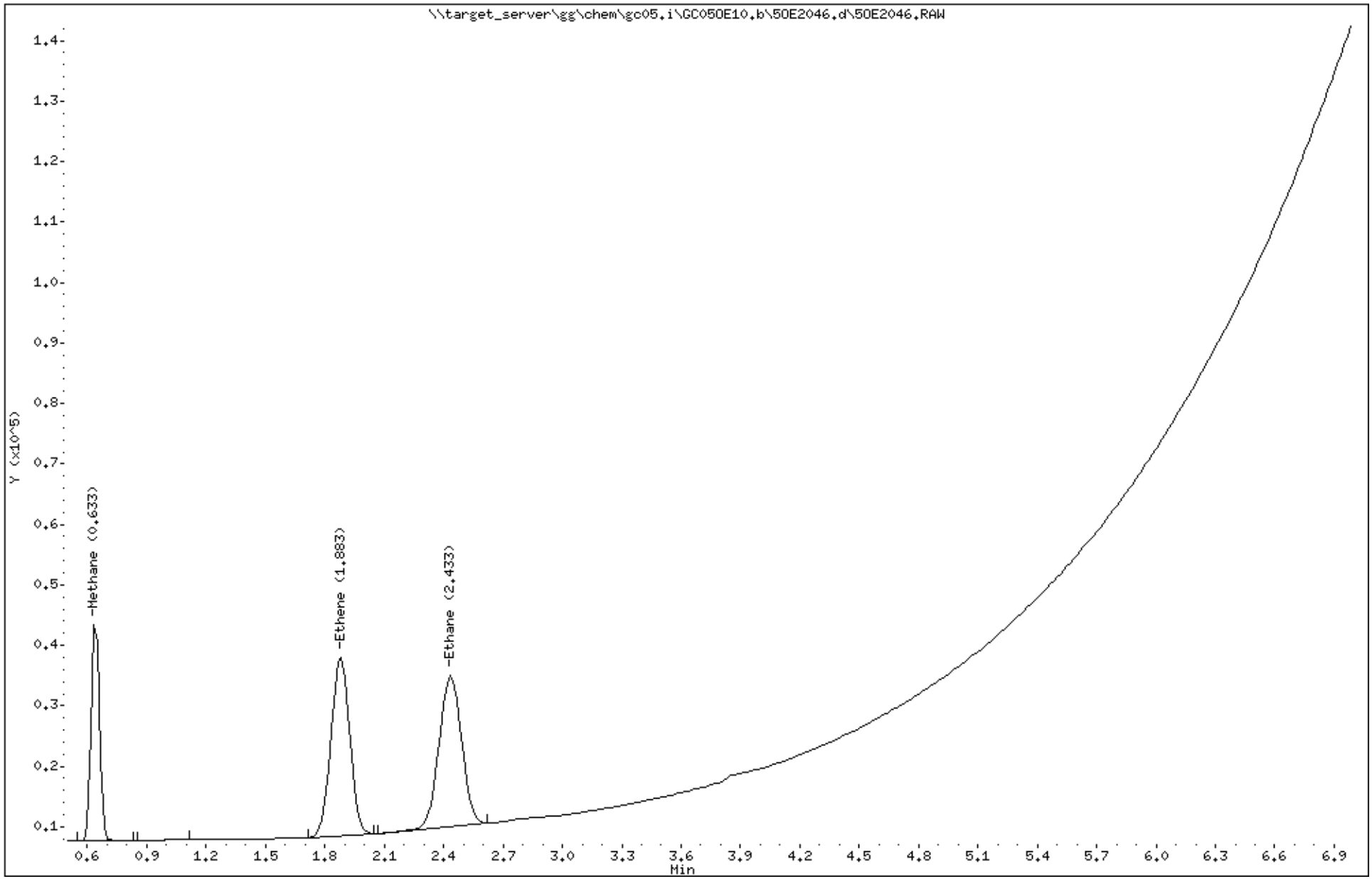
					CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	
Compounds	RT	EXP RT	DLT RT	RESPONSE			REVIEW CODE
1 Methane	0.633	0.650	-0.017	104922	0.12992	130	
2 Ethene	1.883	1.900	-0.017	194388	0.26111	261(M)	M5
3 Ethane	2.433	2.467	-0.034	200183	0.28064	281	

QC Flag Legend

M - Compound response manually integrated.

JHR
1:35 pm, May 12, 2021

Data File: \\target_server\gg\chem\gc05.i\GC050E10.b\50E2046.d
Date : 10-MAY-2021 14:02
Client ID:
Instrument: gc05.i
Sample Info: WG298587-9
Purge Volume: 0.0
Operator: JHR
Column phase: Porapak Q
Column diameter: 0.00



Katahdin
ANALYTICAL SERVICES

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Fort Devens 2021 LTM
SDG: SO3743
Lab ID : WG301388-5
Analytical Date: 06/25/21 07:43
Lab File ID : 5OF2098.d
Instrument ID: GC05
Initial Calibration Date(s): 05/10/21 08:29 05/10/21 12:34
Column ID: A

	Compound	$\overline{RRF}$/Amount	RF0.125	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
1	Methane	807565	743866	0.100	-7.88785	20.00000	Averaged
2	Ethene	744478	783138	0.100	5.19287	20.00000	Averaged
3	Ethane	713309	747624	0.100	4.81074	20.00000	Averaged

*** = Compound out of QC criteria**

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Data File: \\target_server\gg\chem\gc05.i\GC05OF25.b\5OF2098.d
Report Date: 29-Jun-2021 12:49

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc05.i\GC05OF25.b\5OF2098.d
Lab Smp Id: WG301388-5
Inj Date : 25-JUN-2021 07:43
Operator : DL   Inst ID: gc05.i
Smp Info : WG301388-5,SO3743
Misc Info : WG301388,WG298587-3,SO3743-5
Comment   : RSK SOP 175
Method   : \\target_server\gg\chem\gc05.i\GC05OF25.b\MEEB39A.m
Meth Date : 28-Jun-2021 06:34 dlewry   Quant Type: ESTD
Cal Date : 10-MAY-2021 11:29   Cal File: 5OE2043.d
Als bottle: 1   Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 0.005/Vo*1000 * CpndVariable

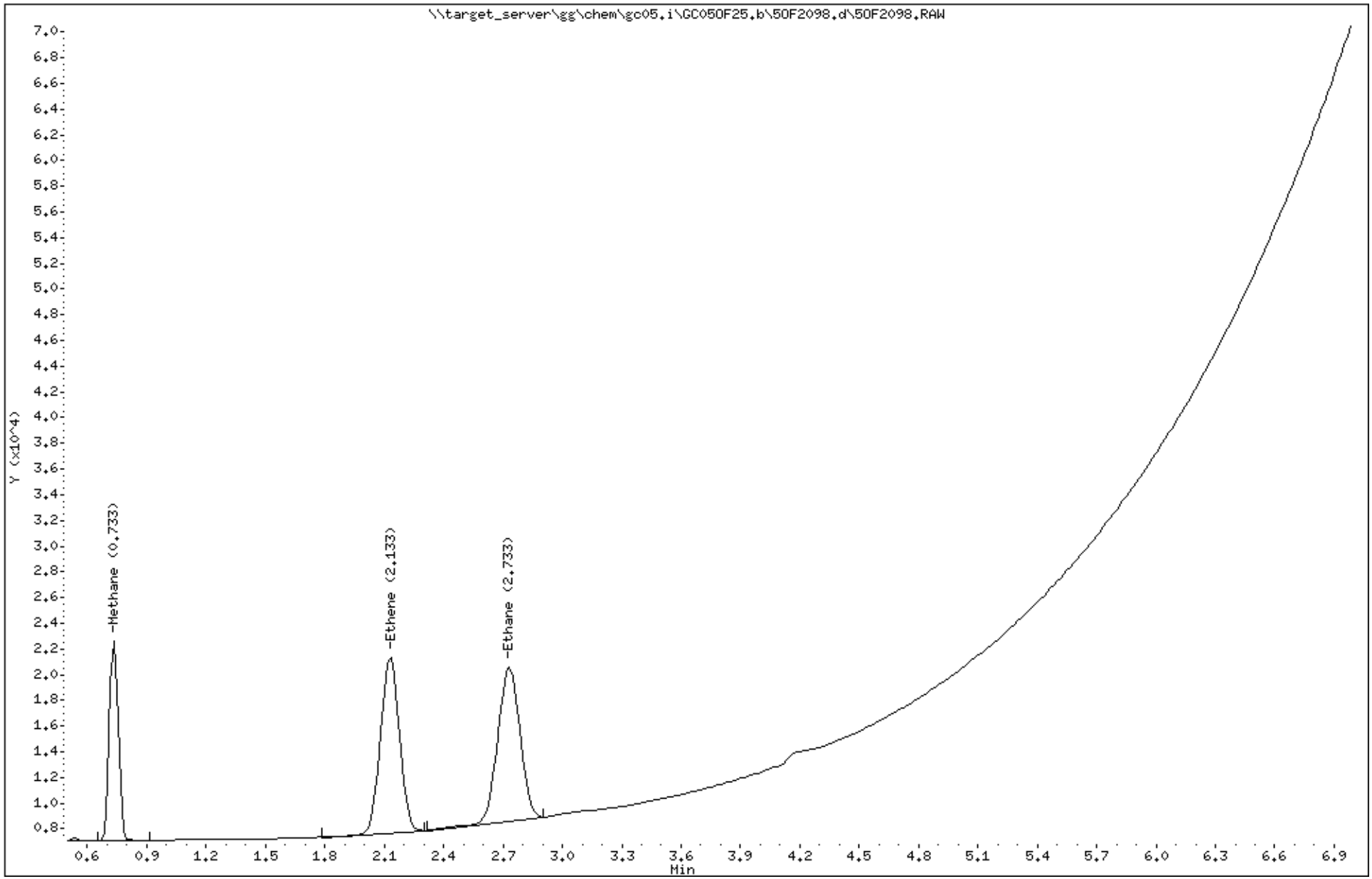
Name	Value	Description
DF	1.000	Dilution Factor
Vo	0.00500	sample purged (L)
Cpnd Variable		Local Compound Variable

					AMOUNTS		
					CAL-AMT	ON-COL	
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)	REVIEW CODE
1 Methane	0.733	0.733	0.000	49839	0.06700	0.0617(a)	
2 Ethene	2.133	2.133	0.000	90844	0.11600	0.122(a)	
3 Ethane	2.733	2.733	0.000	93453	0.12500	0.131(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

Data File: \\target_server\gg\chem\gc05.i\GC050F25.b\50F2098.d
Date : 25-JUN-2021 07:43
Client ID:
Instrument: gc05.i
Sample Info: WG301388-5,SO3743
Purge Volume: 0.0
Operator: DL
Column phase: Porapak Q
Column diameter: 0.00



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ANALYTICAL SERVICES

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : Fort Devens 2021 LTM
SDG: SO3743
Lab ID : WG301388-6
Analytical Date: 06/25/21 16:38
Lab File ID : 5OF2120.d
Instrument ID: GC05
Initial Calibration Date(s): 05/10/21 08:29 05/10/21 12:34
Column ID: A

	Compound	$\overline{RRF}$/Amount	RF0.125	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
1	Methane	807565	701030	0.100	-13.19217	20.00000	Averaged
2	Ethene	744478	733698	0.100	-1.44798	20.00000	Averaged
3	Ethane	713309	703048	0.100	-1.43844	20.00000	Averaged

*** = Compound out of QC criteria**

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Data File: \\target_server\gg\chem\gc05.i\GC05OF25.b\5OF2120.d
Report Date: 29-Jun-2021 12:49

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Data file : \\target_server\gg\chem\gc05.i\GC05OF25.b\5OF2120.d
Lab Smp Id: WG301388-6
Inj Date : 25-JUN-2021 16:38
Operator : DL   Inst ID: gc05.i
Smp Info : WG301388-6,SO3743
Misc Info : WG301388,WG298587-3,SO3743-5
Comment   : RSK SOP 175
Method   : \\TARGET_SERVER\GG\chem\gc05.i\GC05OF25.B\MEEB39A.m
Meth Date : 28-Jun-2021 06:34 dlewry   Quant Type: ESTD
Cal Date : 10-MAY-2021 11:29   Cal File: 5OE2043.d
Als bottle: 1   Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon   Compound Sublist: all.sub
Target Version: 4.12
Processing Host: V200T3

Concentration Formula: Amt * DF * 0.005/Vo*1000 * CpndVariable

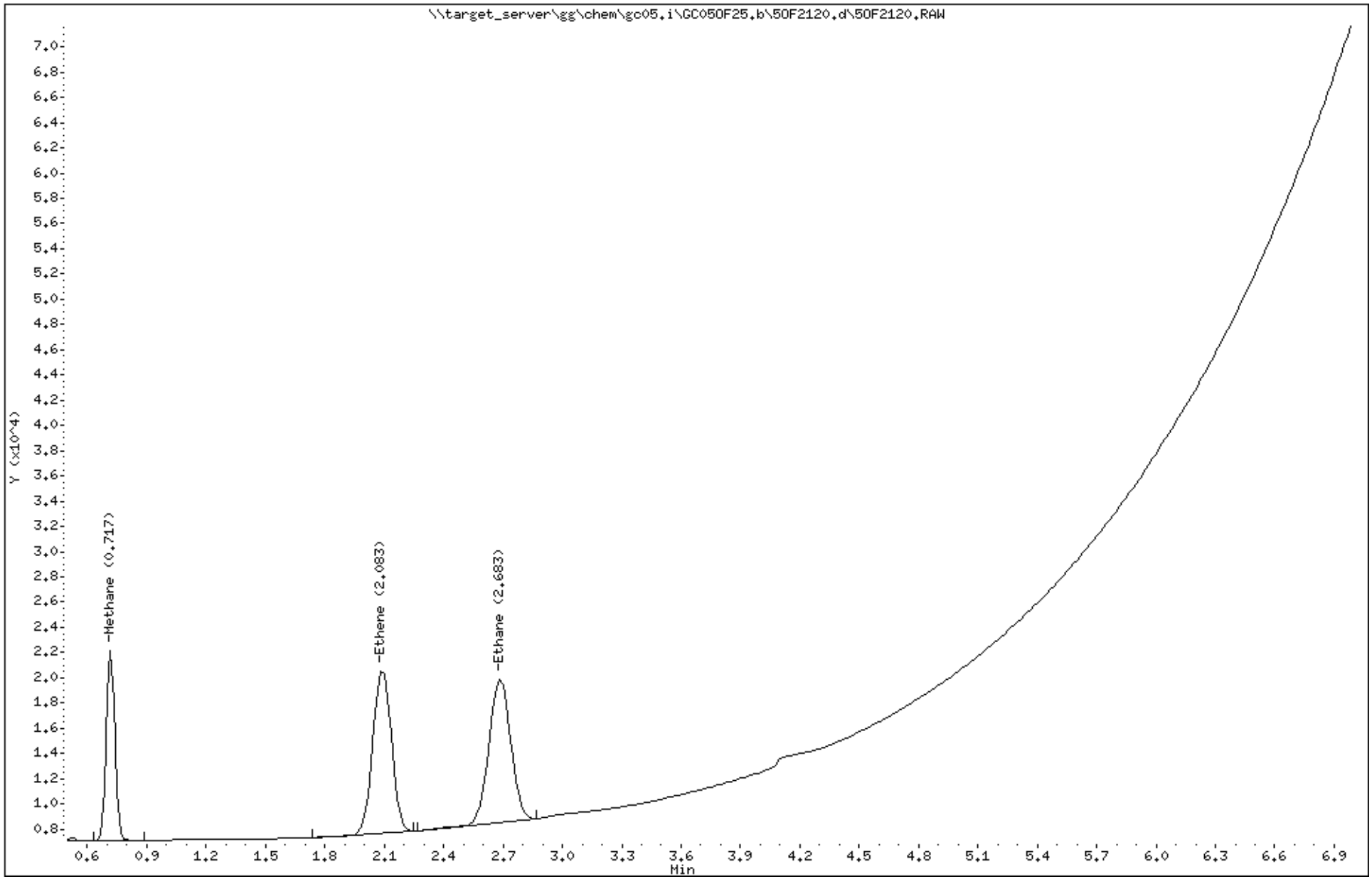
Name	Value	Description
DF	1.000	Dilution Factor
Vo	0.00500	sample purged (L)
Cpnd Variable		Local Compound Variable

					AMOUNTS		
					CAL-AMT	ON-COL	
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/mL)	(ug/mL)	REVIEW CODE
1 Methane	0.716	0.733	-0.017	46969	0.06700	0.0582(a)	
2 Ethene	2.083	2.133	-0.050	85109	0.11600	0.114(a)	
3 Ethane	2.683	2.733	-0.050	87881	0.12500	0.123(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

Data File: \\target_server\gg\chem\gc05.i\GC050F25.b\50F2120.d
Date : 25-JUN-2021 16:38
Client ID:
Instrument: gc05.i
Sample Info: WG301388-6,S03743
Purge Volume: 0.0
Operator: DL
Column phase: Porapak Q
Column diameter: 0.00



Raw QC Data Section

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ANALYTICAL SERVICES

Report of Analytical Results

Lab ID: WG301388-1
Client ID: Method Blank
SDG: SO3743
Lab File ID: 5OF2099.D

Extract Date: 25-JUN-21
Extracted By: DL
Extraction Method: RSK SOP 175
Lab Prep Batch: WG301388
% Solids: NA

Analysis Date: 25-JUN-21
Analyst: DL
Analysis Method: RSK SOP 175
Matrix: AQ
Report Date: 30-JUN-21

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Methane	U	10.	ug/L	1	10	10.	1.9	5.0
Ethane	U	10.	ug/L	1	10	10.	2.2	5.0
Ethene	U	10.	ug/L	1	10	10.	2.0	5.0

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Data File: \\target_server\gg\chem\gc05.i\GC05OF25.b\5OF2099.d
Report Date: 29-Jun-2021 12:49

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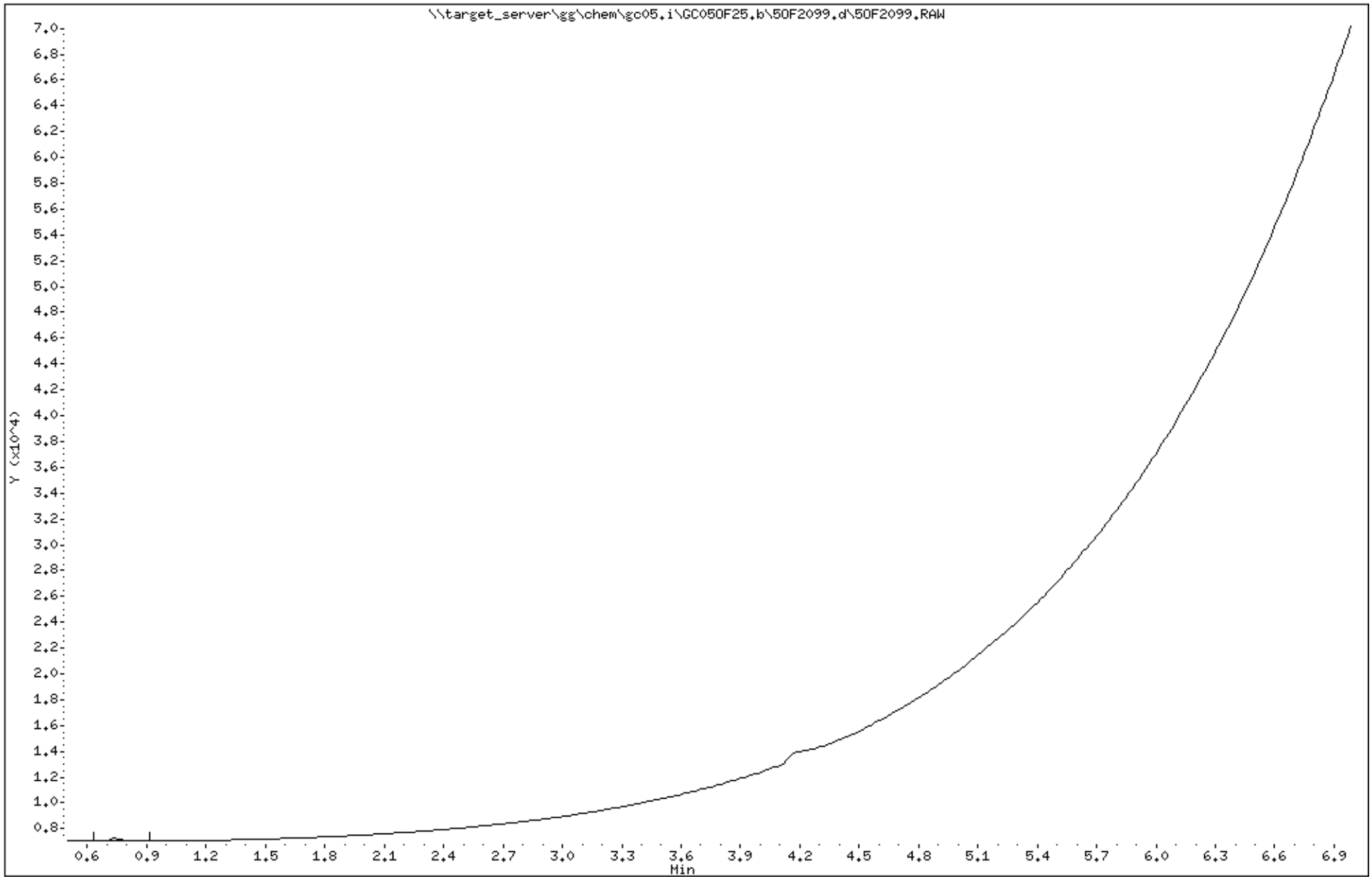
Data file : \\target_server\gg\chem\gc05.i\GC05OF25.b\5OF2099.d
Lab Smp Id: WG301388-1 Client Smp ID: WG301388-Blank
Inj Date : 25-JUN-2021 08:12
Operator : DL Inst ID: gc05.i
Smp Info : WG301388-1,SO3743
Misc Info : WG301388,WG298587-3,SO3743-5
Comment : RSK SOP 175
Method : \\TARGET_SERVER\GG\chem\gc05.i\GC05OF25.B\MEEB39A.m
Meth Date : 28-Jun-2021 06:34 dlewry Quant Type: ESTD
Cal Date : 10-MAY-2021 11:29 Cal File: 5OE2043.d
Als bottle: 1 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: RSKSOP175-MEE.sub
Target Version: 4.12
Processing Host: V200T3

Concentration Formula: Amt * DF * 0.005/Vo*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	0.00500	sample purged (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE

Data File: \\target_server\gg\chem\gc05.i\GC050F25.b\50F2099.d
Date : 25-JUN-2021 08:12
Client ID: WG301388-Blank
Instrument: gc05.i
Sample Info: WG301388-1,SO3743
Purge Volume: 0.0
Operator: DL
Column phase: Porapak Q
Column diameter: 0.00



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ANALYTICAL SERVICES

LCS Recovery Report

Lab ID: WG301388-2
Client ID: LCS
SDG: SO3743
LCS File ID: 5OF2100.D
Report Date: 30-JUN-21

Extract Date: 25-JUN-21
Extracted By: DL
Extraction Method: RSK SOP 175
Lab Prep Batch: WG301388

Analysis Date: 25-JUN-21
Analyst: DL
Analysis Method: RSK SOP 175
Matrix: AQ

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Methane	104.	133.	139.	ug/L	70-130
Ethane	120.	249.	300.	ug/L	70-130
Ethene	122.	233.	285.	ug/L	70-130

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Data File: \\target_server\gg\chem\gc05.i\GC05OF25.b\5OF2100.d
Report Date: 29-Jun-2021 12:49

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Data file : \\target_server\gg\chem\gc05.i\GC05OF25.b\5OF2100.d
Lab Smp Id: WG301388-2 Client Smp ID: WG301388-LCS
Inj Date : 25-JUN-2021 08:29
Operator : DL Inst ID: gc05.i
Smp Info : WG301388-2,SO3743
Misc Info : WG301388,WG298587-3,SO3743-5
Comment : RSK SOP 175
Method : \\TARGET_SERVER\GG\chem\gc05.i\GC05OF25.B\MEEB39A.m
Meth Date : 28-Jun-2021 06:34 dlewry Quant Type: ESTD
Cal Date : 10-MAY-2021 11:29 Cal File: 5OE2043.d
Als bottle: 1 QC Sample: LCS
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: RSKSOP175-MEE.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 0.005/Vo*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	0.00500	sample purged (L)
Cpnd Variable		Local Compound Variable

					CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	
Compounds	RT	EXP RT	DLT RT	RESPONSE			REVIEW CODE
1 Methane	0.733	0.733	0.000	112271	0.13902	139	
2 Ethene	2.133	2.133	0.000	212456	0.28538	285	
3 Ethane	2.733	2.733	0.000	214049	0.30008	300(M)	M2

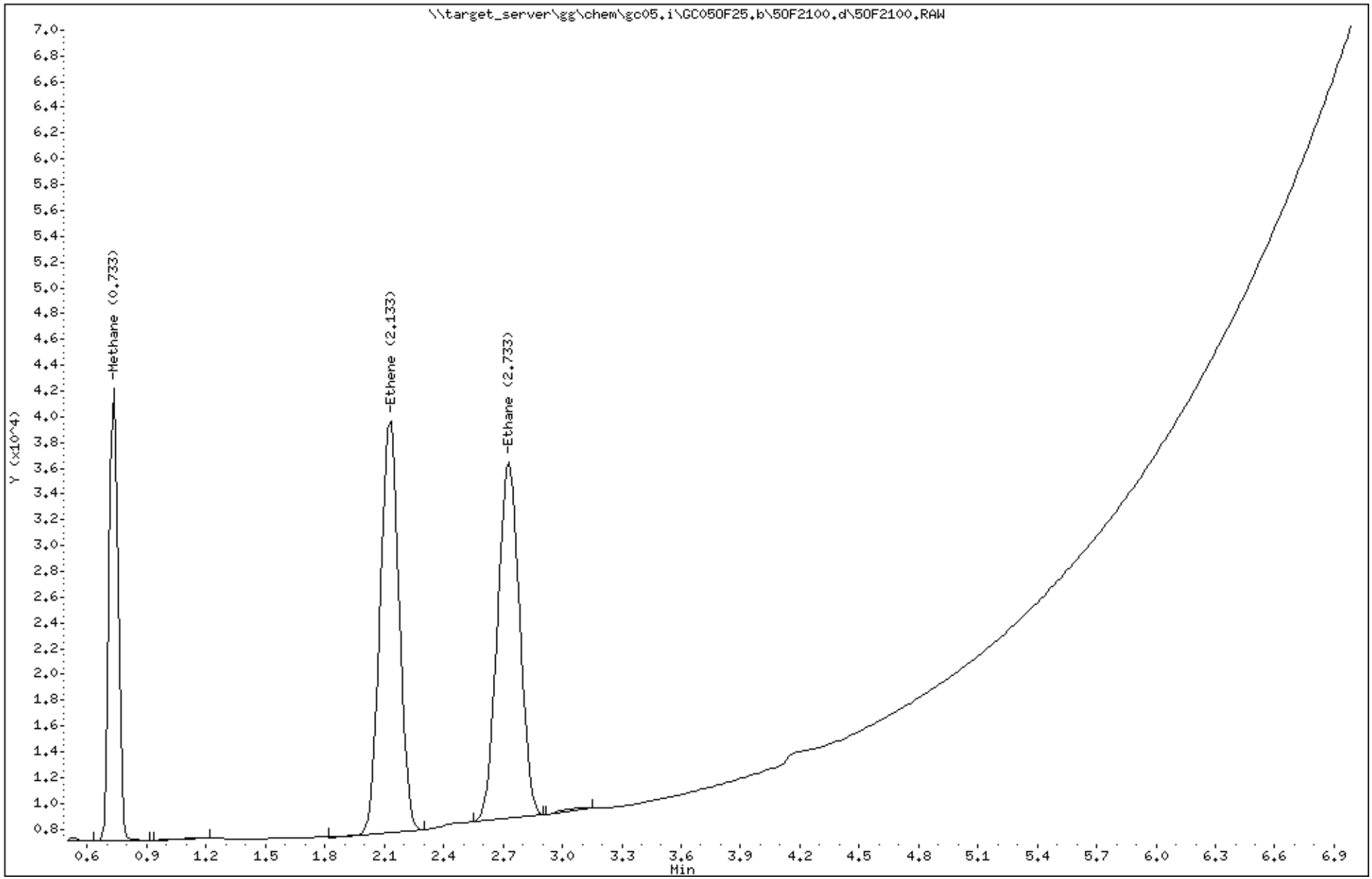
DL

9:13 am, Jun 30, 2021

QC Flag Legend

M - Compound response manually integrated.

Data File: \\target_server\gg\chem\gc05.i\GC050F25.b\50F2100.d
Date : 25-JUN-2021 08:29
Client ID: WG301388-LCS
Instrument: gc05.i
Sample Info: WG301388-2,S03743
Purge Volume: 0.0
Operator: DL
Column phase: Porapak Q
Column diameter: 0.00



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ANALYTICAL SERVICES

MS/MSD Recovery Report

MS ID: WG301388-3
MSD ID: WG301388-4
Sample ID: SO3743-5
Client ID: G6M-04-10A-SPR21
SDG: SO3743
MS File ID: 5OF2118.D

Extract Date: 25-JUN-21
Extracted By: DL
Extraction Method: RSK SOP 175
Lab Prep Batch: WG301388
Report Date: 30-JUN-21
MSD File ID: 5OF2119.d

Analysis Date: 25-JUN-21
Analyst: DL
Analysis Method: RSK SOP 175
Matrix: AQ
% Solids: NA

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits
Methane	133.	133.	ug/L	EM5900	6000	6000	45.1*	75.2	1	30	70-130
Ethane	249.	249.	ug/L	U10.	230	240	91.2	94.4	3	30	70-130
Ethene	233.	233.	ug/L	U10.	220	220	89.8	92.8	3	30	70-130

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Data File: \\target_server\gg\chem\gc05.i\GC05OF25.b\5OF2118.d
Report Date: 29-Jun-2021 12:49

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc05.i\GC05OF25.b\5OF2118.d
Lab Smp Id: WG301388-3 Client Smp ID: G6M-04-10A-SPR21MS
Inj Date : 25-JUN-2021 16:04
Operator : DL Inst ID: gc05.i
Smp Info : WG301388-3,SO3743
Misc Info : WG301388,WG298587-3,SO3743-5
Comment : RSK SOP 175
Method : \\TARGET_SERVER\GG\chem\gc05.i\GC05OF25.B\MEEB39A.m
Meth Date : 28-Jun-2021 06:34 dlewry Quant Type: ESTD
Cal Date : 10-MAY-2021 11:29 Cal File: 5OE2043.d
Als bottle: 1 QC Sample: MS
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: RSKSOP175-MEE.sub
Target Version: 4.12
Processing Host: V200T3

Concentration Formula: Amt * DF * 0.005/Vo*1000 * CpndVariable

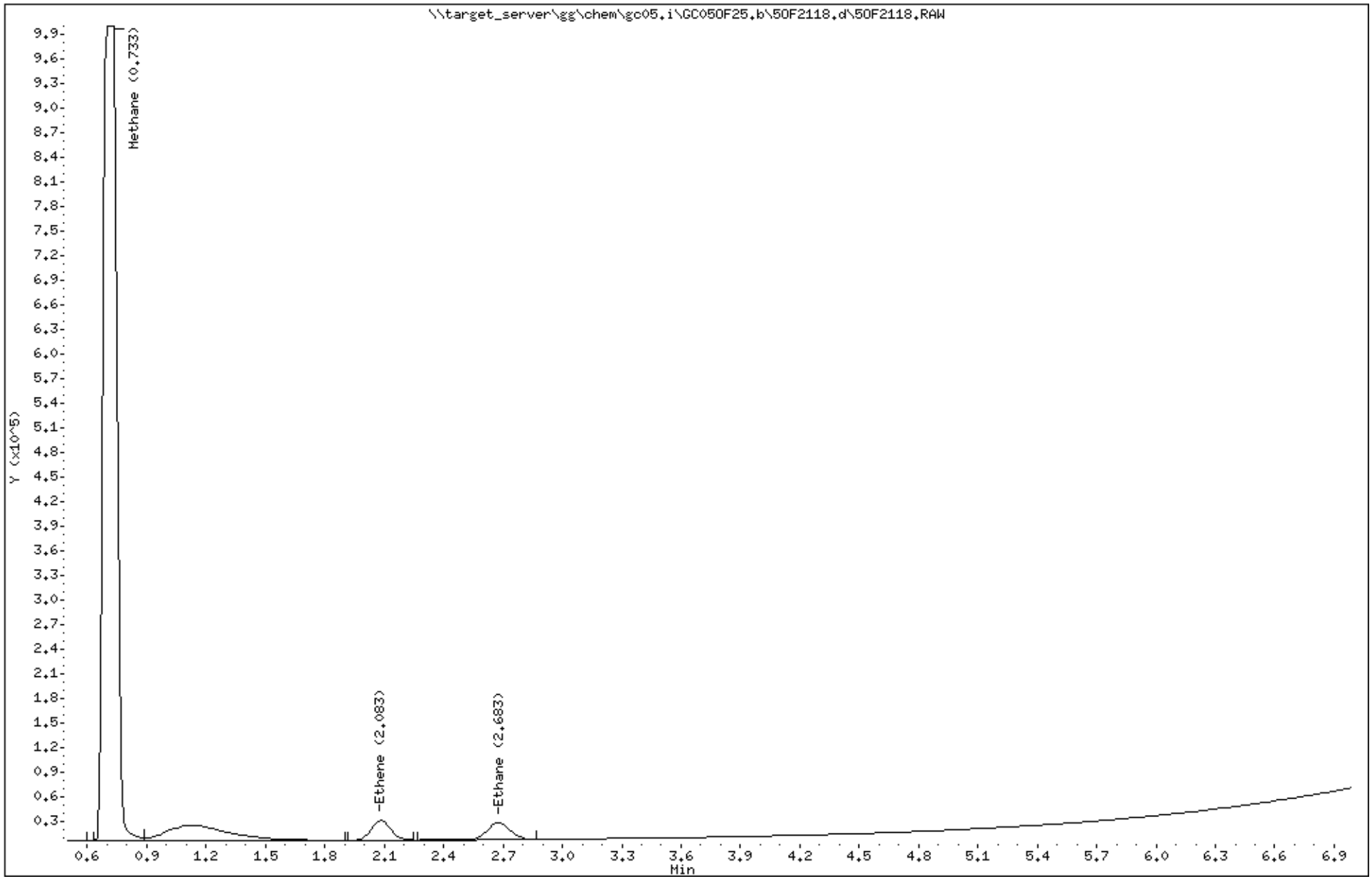
Name	Value	Description
DF	1.000	Dilution Factor
Vo	0.00500	sample purged (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
1 Methane	0.733	0.733	0.000	4807122	5.95261	5950(AR)	
2 Ethene	2.083	2.133	-0.050	159901	0.21478	215	
3 Ethane	2.683	2.733	-0.050	161660	0.22663	227	

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.
R - Spike/Surrogate failed recovery limits.

Data File: \\target_server\gg\chem\gc05.i\GC050F25.b\50F2118.d
Date : 25-JUN-2021 16:04
Client ID: G6M-04-10A-SPR21MS
Instrument: gc05.i
Sample Info: WG301388-3,SO3743
Purge Volume: 0.0
Operator: DL
Column phase: Porapak Q
Column diameter: 0.00



Data File: \\target_server\gg\chem\gc05.i\GC05OF25.b\5OF2119.d
Report Date: 29-Jun-2021 12:49

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc05.i\GC05OF25.b\5OF2119.d
Lab Smp Id: WG301388-4 Client Smp ID: G6M-04-10A-SPR21MSD
Inj Date : 25-JUN-2021 16:21
Operator : DL Inst ID: gc05.i
Smp Info : WG301388-4,SO3743
Misc Info : WG301388,WG298587-3,SO3743-5
Comment : RSK SOP 175
Method : \\TARGET_SERVER\GG\chem\gc05.i\GC05OF25.B\MEEB39A.m
Meth Date : 28-Jun-2021 06:34 dlewry Quant Type: ESTD
Cal Date : 10-MAY-2021 11:29 Cal File: 5OE2043.d
Als bottle: 1 QC Sample: MSD
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: RSKSOP175-MEE.sub
Target Version: 4.12
Processing Host: V200T3

Concentration Formula: Amt * DF * 0.005/Vo*1000 * CpndVariable

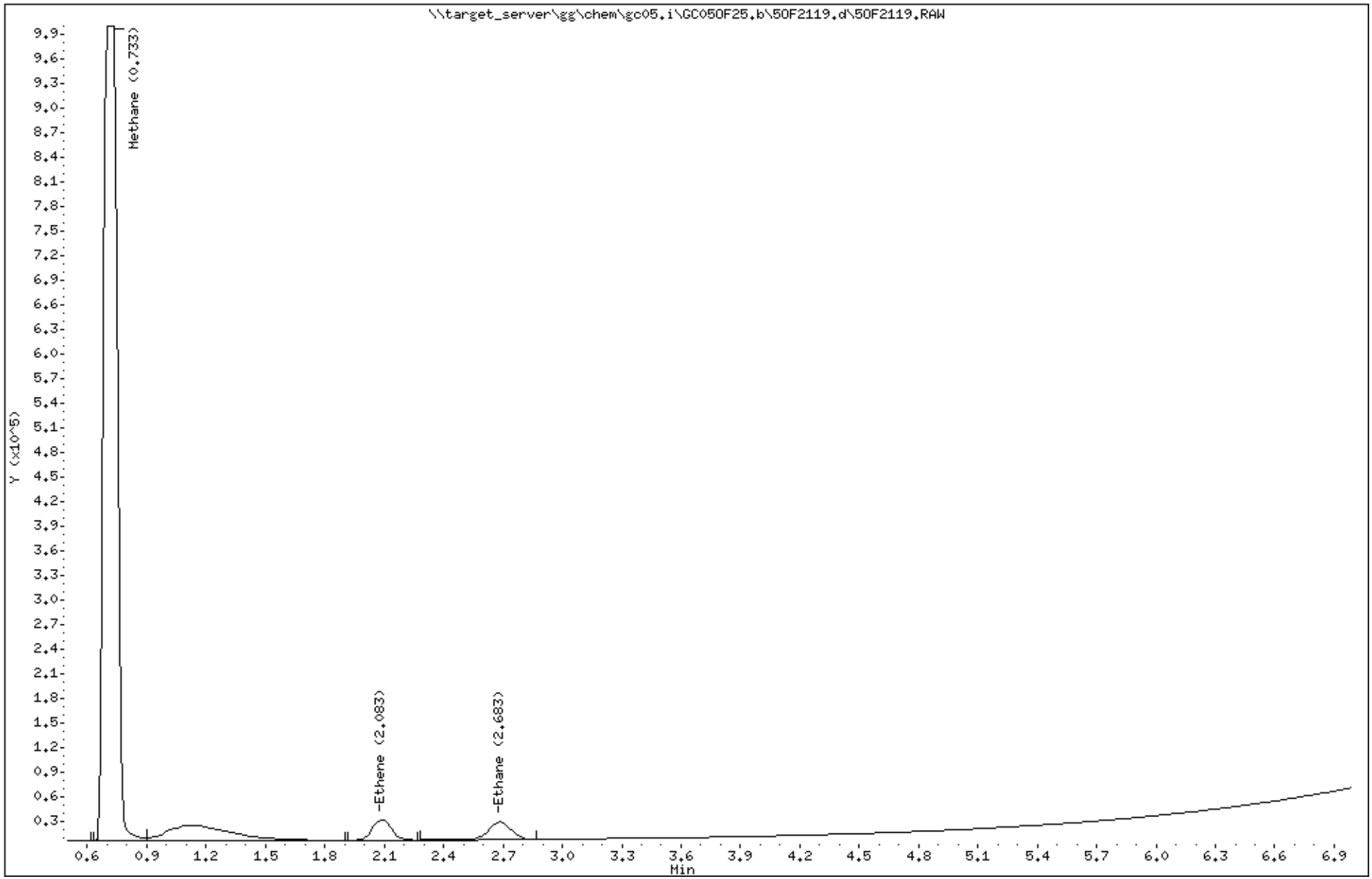
Name	Value	Description
DF	1.000	Dilution Factor
Vo	0.00500	sample purged (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/mL)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
1 Methane	0.733	0.733	0.000	4839686	5.99293	5990(AR)	
2 Ethene	2.083	2.133	-0.050	165060	0.22171	222	
3 Ethane	2.683	2.733	-0.050	167446	0.23475	235	

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.
R - Spike/Surrogate failed recovery limits.

Data File: \\target_server\gg\chem\gc05.i\GC050F25.b\50F2119.d
Date : 25-JUN-2021 16:21
Client ID: G6M-04-10A-SPR21MSD
Instrument: gc05.i
Sample Info: WG301388-4,SO3743
Purge Volume: 0.0
Operator: DL
Column phase: Porapak Q
Column diameter: 0.00



Logbooks and Supporting Documents

Katahdin Analytical Services

GC Laboratory Instrument Runlog

Date: 5-10-21

Instrument: GC05

Methods: RSK SOP-175 / EPA Rerion 1

Sample Name	Data File	Sample Amt.	DF	Method	Y/N	pH	Analyst	Comments
Prime	50E2034	5mL	1	MEEB39A	N	-	JHR	New Bag - AMP 6551
Ical-1	35	38uL			N	-		Methane high
-2	36	200uL			Y	-		WG298587-2
-3	37	500uL			Y	-		-3
-4	38	1000uL			Y	-		-4
-5	39	5000uL			Y	-		-5
-6	40	9000uL			Y	-		3mL x3 -6
Rinse	41	5mL			N	-		
Ical-1	42	38uL			N	-		Methane High
-1	43	38uL			Y	-		WG298587-1
-7	44	80uL			Y	-		-7
-8	45	120uL			Y	-		-8
IND	46	100uL			Y	-		New Bag - AMP 6396 -9
CV	47	5mL			Y	-		
								JHR 5-10-21

STANDARD	STOCK #	CONC.	AMOUNT
ICAL	AMP 6551 *	1000 ug/mL	see comments
CV	AMP ~~6396~~ 6551	1000 ug/mL	500 uL
LCS/IND	AMP 6396	10 000 ug/mL	100 uL

* JHR 5-10-21

Katahdin Analytical Services

GC Laboratory Instrument Runlog

Date: 6-25-21

Instrument: GC05

Methods: RSK SOP-175 / EPA Rerion 1

Sample Name	Data File	Sample Amt.	DF	Method	Y/N	pH	Analyst	Comments
Prime	50F2097	5mL	1	MEEB39A	N	—	DL	
CV	98	↓	↓	↓	Y	↓	↓	WG-301388-5
WG-301388-1	99	↓	↓	↓	Y	↓	↓	
↓ -2	50F2100	↓	↓	↓	Y	↓	↓	
LOD	101	↓	↓	↓	Y	↓	↓	1.9 uL AMP6396
LOQ	102	↓	↓	↓	Y	↓	↓	3-8uL ↓
LOQ 2	103	↓	↓	↓	Y	↓	↓	7-6 uL ↓
SO3743-2D	104	↓	↓	↓	Y	2	↓	M overcal
↓ -5G	105	↓	↓	↓	Y	↓	↓	↓
SO3813-2D	106	↓	↓	↓	N	↓	↓	↓
-3D	107	↓	↓	↓	Y	↓	↓	
-4D	108	↓	↓	↓	Y	↓	↓	
-5D	109	↓	↓	↓	Y	↓	↓	
-6D	110	↓	↓	↓	N	↓	↓	M overcal
-7D	111	↓	↓	↓	Y	↓	↓	
-8D	112	↓	↓	↓	Y	↓	↓	
-9D	113	↓	↓	↓	N	↓	↓	M overcal
-10D	114	↓	↓	↓	N	↓	↓	↓
-11D	115	↓	↓	↓	Y	↓	↓	
SO3743-2E	116	25mL	20	↓	Y	↓	↓	
↓ -5J	117	↓	↓	↓	Y	↓	↓	
WG-301388-3	118	5mL	1	↓	Y	↓	↓	MS SO3743-5H
-4	119	↓	↓	↓	Y	↓	↓	MSD ↓ -5I
CV	120	↓	↓	↓	Y	—	↓	WG-301388-6
								DL 6-25-21

Chemical nitrogen update RTs

#DL6-25-21

STANDARD	STOCK #	CONC.	AMOUNT
ICAL		1000 ug/mL	see comments
CV	AMP6551	1000 ug/mL	500 uL
LCS	AMP6396	10 000 ug/mL	100 uL

PM 1 of 4

6003823

METALS DATA

Sample Data Section

METALS SAMPLE FLAGGING

FLAG	SPECIFIED MEANING
E	The reported value is estimated because of the presence of interference (as indicated by serial dilution).
N	The pre-digestion spiked sample recovery is not within control limits.
*	The duplicate sample analysis relative percent difference (RPD) is not within control limits.
B	Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.
A	The post-digestion spiked sample recovery is not within control limits.
•	Analytical run QC sample (e.g. ICV, CCV, ICB, CCB, ICSA, ICSAB) not within control limits.
U	The analyte was not detected above the specified level. This level may be the Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client. Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL, "U" LOQ or "U" LOD, where the rate of false negatives is <1%.
J	Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), but above the Method Detection Limit (MDL).
Q	One or more quality control criteria failed (e.g., LCS recovery, surrogate spike recovery or CCV).

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: Katahdin Analytical Services

SDG Name: SO3743 **SOW No.** SW846

Client Field ID	Lab Sample ID
AOC50-FB-SPR21	SO3743-003
G6M-04-02X-SPR21	SO3743-002
G6M-04-10A-SPR21	SO3743-005
G6M-04-10A-SPR21P	SO3743-005P
G6M-04-10A-SPR21S	SO3743-005S

Were ICP interelement corrections applied ?	Yes
Were ICP background corrections applied ?	Yes
If yes - were raw data generated before application of background corrections ?	No

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: _____ Name: Kayla Croteau

Date: 07/07/21 Title: Analyst

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** G6M-04-02X-SPR21

Matrix: WATER **SDG Name:** SO3743

Percent Solids: 0.00 **Lab Sample ID:** SO3743-002

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7440-38-2	ARSENIC, DISSOLVED	50.3			MS	5	5.0	2.3	4.0
7439-89-6	IRON, DISSOLVED	28300			P	1	100	5.4	80
7439-96-5	MANGANESE, DISSOLVED	7860			P	1	5.0	1.1	4.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** AOC50-FB-SPR21

Matrix: WATER **SDG Name:** SO3743

Percent Solids: 0.00 **Lab Sample ID:** SO3743-003

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7440-38-2	ARSENIC, DISSOLVED	5.0	U		MS	5	5.0	2.3	4.0
7439-89-6	IRON, DISSOLVED	16	J		P	1	100	5.4	80
7439-96-5	MANGANESE, DISSOLVED	1.7	J		P	1	5.0	1.1	4.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** G6M-04-10A-SPR21

Matrix: WATER **SDG Name:** SO3743

Percent Solids: 0.00 **Lab Sample ID:** SO3743-005

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7440-38-2	ARSENIC, DISSOLVED	310		A	MS	5	5.0	2.3	4.0
7439-89-6	IRON, DISSOLVED	85100		N	P	1	100	5.4	80
7439-96-5	MANGANESE, DISSOLVED	1150		N	P	1	5.0	1.1	4.0

Comments:

QC Summary Section

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SO3743

Concentration Units: ug/L

SAMPLE: ICV

File: IOF23B Jun 23, 2021 18:05

Analyte	True	Found	%R (1)
ALUMINUM	10000.0	9941.00	99.4
CALCIUM	10000.0	9946.00	99.5
IRON	10000.0	9953.00	99.5
MAGNESIUM	10000.0	10440.00	104.4
MANGANESE	400.0	406.50	101.6

SAMPLE: CCV

File: IOF23B Jun 23, 2021 18:27

Analyte	True	Found	%R (1)
ALUMINUM	12500.0	12950.00	103.6
CALCIUM	12500.0	12880.00	103.0
IRON	12500.0	12910.00	103.3
MAGNESIUM	12500.0	13020.00	104.2
MANGANESE	500.0	518.00	103.6

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SO3743

Concentration Units: ug/L

SAMPLE: CCV

File: IOF23B Jun 23, 2021 18:46

Analyte	True	Found	%R (1)
ALUMINUM	12500.0	12950.00	103.6
CALCIUM	12500.0	12940.00	103.5
IRON	12500.0	13020.00	104.2
MAGNESIUM	12500.0	13060.00	104.5
MANGANESE	500.0	516.40	103.3

SAMPLE: CCV

File: IOF23B Jun 23, 2021 19:34

Analyte	True	Found	%R (1)
ALUMINUM	12500.0	12930.00	103.4
CALCIUM	12500.0	12930.00	103.4
IRON	12500.0	12970.00	103.8
MAGNESIUM	12500.0	13110.00	104.9
MANGANESE	500.0	517.90	103.6

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SO3743

Concentration Units: ug/L

SAMPLE: CCV

File: IOF23B Jun 23, 2021 20:28

Analyte	True	Found	%R (1)
ALUMINUM	12500.0	12950.00	103.6
CALCIUM	12500.0	12930.00	103.4
IRON	12500.0	12980.00	103.8
MAGNESIUM	12500.0	13070.00	104.6
MANGANESE	500.0	520.60	104.1

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SO3743

Concentration Units: ug/L

SAMPLE: ICV

File: LOF29C Jun 29, 2021 14:20

Analyte	True	Found	%R (1)
ALUMINUM	400.0	398.24	99.6
ARSENIC	20.0	20.32	101.6
CALCIUM	4000.0	3938.64	98.5
IRON	4000.0	3973.74	99.3
MAGNESIUM	4000.0	4056.92	101.4
MOLYBDENUM	40.0	40.42	101.1
POTASSIUM	4000.0	3958.42	99.0
SODIUM	4000.0	4036.51	100.9

SAMPLE: CCV

File: LOF29C Jun 29, 2021 14:43

Analyte	True	Found	%R (1)
ALUMINUM	500.0	502.34	100.5
ARSENIC	25.0	25.21	100.8
CALCIUM	5000.0	4930.24	98.6
IRON	5000.0	4968.02	99.4
MAGNESIUM	5000.0	5158.03	103.2
MOLYBDENUM	25.0	26.84	107.4
POTASSIUM	5000.0	5005.41	100.1
SODIUM	5000.0	5098.10	102.0

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SO3743

Concentration Units: ug/L

SAMPLE: CCV

File: LOF29C Jun 29, 2021 15:13

Analyte	True	Found	%R (1)
ALUMINUM	500.0	497.09	99.4
ARSENIC	25.0	24.94	99.8
CALCIUM	5000.0	4915.96	98.3
IRON	5000.0	5001.94	100.0
MAGNESIUM	5000.0	5207.76	104.2
MOLYBDENUM	25.0	25.30	101.2
POTASSIUM	5000.0	5011.34	100.2
SODIUM	5000.0	5136.37	102.7

SAMPLE: CCV

File: LOF29C Jun 29, 2021 15:42

Analyte	True	Found	%R (1)
ALUMINUM	500.0	500.03	100.0
ARSENIC	25.0	24.64	98.6
CALCIUM	5000.0	4963.54	99.3
IRON	5000.0	4913.33	98.3
MAGNESIUM	5000.0	5235.38	104.7
MOLYBDENUM	25.0	24.84	99.4
POTASSIUM	5000.0	4988.90	99.8
SODIUM	5000.0	5150.39	103.0

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SO3743

Concentration Units: ug/L

SAMPLE: CCV

File: LOF29C Jun 29, 2021 16:12

Analyte	True	Found	%R (1)
ALUMINUM	500.0	508.95	101.8
ARSENIC	25.0	24.90	99.6
CALCIUM	5000.0	4968.61	99.4
IRON	5000.0	4925.40	98.5
MAGNESIUM	5000.0	5257.77	105.2
MOLYBDENUM	25.0	25.19	100.8
POTASSIUM	5000.0	5064.91	101.3
SODIUM	5000.0	5223.10	104.5

SAMPLE: CCV

File: LOF29C Jun 29, 2021 17:01

Analyte	True	Found	%R (1)
ALUMINUM	500.0	3685872.61	37174.5 •
ARSENIC	25.0	229370.93	7483.7 •
CALCIUM	5000.0	4149412.25	82988.2 •
IRON	5000.0	9908036.33	98160.7 •
MAGNESIUM	5000.0	8277270.10	65545.4 •
MOLYBDENUM	25.0	230869.60	23478.4 •
POTASSIUM	5000.0	7109309.98	42186.2 •
SODIUM	5000.0	8015130.82	60302.6 •

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SO3743

Concentration Units: ug/L

SAMPLE: CCV

File: LOF29C Jun 29, 2021 17:30

Analyte	True	Found	%R (1)
ALUMINUM	500.0	511.54	102.3
ARSENIC	25.0	24.58	98.3
CALCIUM	5000.0	4956.18	99.1
IRON	5000.0	4998.15	100.0
MAGNESIUM	5000.0	5250.64	105.0
MOLYBDENUM	25.0	24.99	100.0
POTASSIUM	5000.0	5056.17	101.1
SODIUM	5000.0	5231.74	104.6

SAMPLE: CCV

File: LOF29C Jun 29, 2021 18:00

Analyte	True	Found	%R (1)
ALUMINUM	500.0	505.44	101.1
ARSENIC	25.0	24.71	98.8
CALCIUM	5000.0	5043.69	100.9
IRON	5000.0	4994.48	99.9
MAGNESIUM	5000.0	5275.47	105.5
MOLYBDENUM	25.0	24.91	99.6
POTASSIUM	5000.0	5022.60	100.5
SODIUM	5000.0	5229.27	104.6

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SO3743

Concentration Units: ug/L

SAMPLE: CCV

File: LOF29C Jun 29, 2021 18:30

Analyte	True	Found	%R (1)
ALUMINUM	500.0	508.32	101.7
ARSENIC	25.0	24.42	97.7
CALCIUM	5000.0	4964.76	99.3
IRON	5000.0	4979.41	99.6
MAGNESIUM	5000.0	5267.55	105.4
MOLYBDENUM	25.0	25.04	100.2
POTASSIUM	5000.0	5032.22	100.6
SODIUM	5000.0	5181.22	103.6

SAMPLE: CCV

File: LOF29C Jun 29, 2021 19:00

Analyte	True	Found	%R (1)
ALUMINUM	500.0	507.40	101.5
ARSENIC	25.0	24.91	99.6
CALCIUM	5000.0	4988.90	99.8
IRON	5000.0	5008.56	100.2
MAGNESIUM	5000.0	5274.71	105.5
MOLYBDENUM	25.0	25.09	100.4
POTASSIUM	5000.0	5034.20	100.7
SODIUM	5000.0	5220.09	104.4

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SO3743

Concentration Units: ug/L

SAMPLE: CCV

File: LOF29C Jun 29, 2021 19:30

Analyte	True	Found	%R (1)
ALUMINUM	500.0	505.91	101.2
ARSENIC	25.0	24.72	98.9
CALCIUM	5000.0	5036.96	100.7
IRON	5000.0	5058.02	101.2
MAGNESIUM	5000.0	5268.60	105.4
MOLYBDENUM	25.0	25.06	100.2
POTASSIUM	5000.0	5053.01	101.1
SODIUM	5000.0	5207.27	104.1

SAMPLE: CCV

File: LOF29C Jun 29, 2021 20:01

Analyte	True	Found	%R (1)
ALUMINUM	500.0	511.95	102.4
ARSENIC	25.0	24.84	99.4
CALCIUM	5000.0	4999.96	100.0
IRON	5000.0	5008.28	100.2
MAGNESIUM	5000.0	5244.36	104.9
MOLYBDENUM	25.0	25.33	101.3
POTASSIUM	5000.0	5092.01	101.8
SODIUM	5000.0	5236.56	104.7

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SO3743

Concentration Units: ug/L

SAMPLE: CCV

File: LOF29C Jun 29, 2021 20:32

Analyte	True	Found	%R (1)
ALUMINUM	500.0	514.06	102.8
ARSENIC	25.0	24.56	98.2
CALCIUM	5000.0	5062.88	101.3
IRON	5000.0	5076.62	101.5
MAGNESIUM	5000.0	5252.73	105.1
MOLYBDENUM	25.0	25.17	100.7
POTASSIUM	5000.0	5069.77	101.4
SODIUM	5000.0	5160.38	103.2

SAMPLE: CCV

File: LOF29C Jun 29, 2021 21:02

Analyte	True	Found	%R (1)
ALUMINUM	500.0	519.89	104.0
ARSENIC	25.0	25.00	100.0
CALCIUM	5000.0	5063.29	101.3
IRON	5000.0	5073.17	101.5
MAGNESIUM	5000.0	5352.68	107.1
MOLYBDENUM	25.0	25.75	103.0
POTASSIUM	5000.0	5183.47	103.7
SODIUM	5000.0	5284.65	105.7

(1) Control Limits: Mercury 80-120; Other Metals 90-110

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SO3743

Concentration Units: ug/L

SAMPLE: PQL

File: IOF23B Jun 23, 2021 18:12

Analyte	TRUE	FOUND	% R
ALUMINUM	300.0	301.00	100.3
CALCIUM	100.0	93.87	93.9
IRON	100.0	100.50	100.5
MAGNESIUM	100.0	111.30	111.3
MANGANESE	5.0	5.29	105.8

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SO3743

Concentration Units: ug/L

SAMPLE: PQL

File: LOF29C Jun 29, 2021 14:25

Analyte	TRUE	FOUND	% R
ALUMINUM	20.0	20.08	100.4
ARSENIC	1.0	1.07	107.0
CALCIUM	20.0	20.30	101.5
IRON	20.0	23.83	119.2
MAGNESIUM	20.0	21.40	107.0
MOLYBDENUM	1.0	1.46	146.0•
POTASSIUM	200.0	226.10	113.1
SODIUM	200.0	219.53	109.8

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SO3743

Concentration Units: ug/L

SAMPLE: ICB

File: IOF23B Jun 23, 2021 18:08

Analyte	Result	C
ALUMINUM	10.000	U
CALCIUM	11.000	U
IRON	-6.526	U
MAGNESIUM	-3.473	U
MANGANESE	0.870	U

SAMPLE: CCB

File: IOF23B Jun 23, 2021 18:31

Analyte	Result	C
ALUMINUM	10.000	U
CALCIUM	11.000	U
IRON	3.600	U
MAGNESIUM	2.900	U
MANGANESE	0.870	U

SAMPLE: CCB

File: IOF23B Jun 23, 2021 18:50

Analyte	Result	C
ALUMINUM	10.000	U
CALCIUM	11.000	U
IRON	3.600	U
MAGNESIUM	2.900	U
MANGANESE	0.870	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SO3743

Concentration Units: ug/L

SAMPLE: CCB

File: IOF23B Jun 23, 2021 19:38

Analyte	Result	C
ALUMINUM	-15.550	U
CALCIUM	11.000	U
IRON	-6.010	U
MAGNESIUM	2.900	U
MANGANESE	0.870	U

SAMPLE: CCB

File: IOF23B Jun 23, 2021 20:32

Analyte	Result	C
ALUMINUM	10.000	U
CALCIUM	11.000	U
IRON	3.600	U
MAGNESIUM	2.900	U
MANGANESE	0.870	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SO3743

Concentration Units: ug/L

SAMPLE: ICB

File: LOF29C Jun 29, 2021 14:23

Analyte	Result	C
ALUMINUM	0.330	U
ARSENIC	0.250	U
CALCIUM	6.800	U
IRON	6.400	U
MAGNESIUM	1.912	J
MOLYBDENUM	1.359	B
POTASSIUM	12.000	U
SODIUM	6.600	U

SAMPLE: CCB

File: LOF29C Jun 29, 2021 14:45

Analyte	Result	C
ALUMINUM	8.177	J
ARSENIC	0.250	U
CALCIUM	6.800	U
IRON	7.040	J
MAGNESIUM	10.686	B
MOLYBDENUM	1.890	B
POTASSIUM	12.328	J
SODIUM	27.534	J

SAMPLE: CCB

File: LOF29C Jun 29, 2021 15:15

Analyte	Result	C
ALUMINUM	0.330	U
ARSENIC	0.250	U
CALCIUM	6.800	U
IRON	6.400	U
MAGNESIUM	1.571	J
MOLYBDENUM	0.864	B
POTASSIUM	12.000	U
SODIUM	6.600	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SO3743

Concentration Units: ug/L

SAMPLE: CCB
File: LOF29C Jun 29, 2021 15:45

Analyte	Result	C
ALUMINUM	0.330	U
ARSENIC	0.250	U
CALCIUM	6.800	U
IRON	6.400	U
MAGNESIUM	1.706	J
MOLYBDENUM	0.721	B
POTASSIUM	12.000	U
SODIUM	14.231	J

SAMPLE: CCB
File: LOF29C Jun 29, 2021 16:14

Analyte	Result	C
ALUMINUM	0.330	U
ARSENIC	0.250	U
CALCIUM	6.800	U
IRON	6.400	U
MAGNESIUM	1.131	J
MOLYBDENUM	0.708	B
POTASSIUM	12.000	U
SODIUM	16.163	J

SAMPLE: CCB
File: LOF29C Jun 29, 2021 17:03

Analyte	Result	C
ALUMINUM	151.314	B
ARSENIC	42.245	B
CALCIUM	8.243	J
IRON	12.541	B
MAGNESIUM	388.379	B
MOLYBDENUM	252.436	B
POTASSIUM	14719.560	B
SODIUM	8206.648	B

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SO3743

Concentration Units: ug/L

SAMPLE: CCB
File: LOF29C Jun 29, 2021 17:33

Analyte	Result	C
ALUMINUM	0.330	U
ARSENIC	0.250	U
CALCIUM	6.800	U
IRON	6.400	U
MAGNESIUM	1.011	J
MOLYBDENUM	0.691	B
POTASSIUM	12.000	U
SODIUM	14.845	J

SAMPLE: CCB
File: LOF29C Jun 29, 2021 18:03

Analyte	Result	C
ALUMINUM	0.330	U
ARSENIC	0.250	U
CALCIUM	6.800	U
IRON	6.400	U
MAGNESIUM	1.207	J
MOLYBDENUM	0.686	B
POTASSIUM	12.000	U
SODIUM	23.608	J

SAMPLE: CCB
File: LOF29C Jun 29, 2021 18:32

Analyte	Result	C
ALUMINUM	0.330	U
ARSENIC	0.250	U
CALCIUM	6.800	U
IRON	6.400	U
MAGNESIUM	0.523	J
MOLYBDENUM	0.691	B
POTASSIUM	12.000	U
SODIUM	17.638	J

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SO3743

Concentration Units: ug/L

SAMPLE: CCB
File: LOF29C Jun 29, 2021 19:02

Analyte	Result	C
ALUMINUM	0.330	U
ARSENIC	0.290	J
CALCIUM	6.800	U
IRON	6.400	U
MAGNESIUM	0.916	J
MOLYBDENUM	0.636	B
POTASSIUM	12.000	U
SODIUM	11.180	J

SAMPLE: CCB
File: LOF29C Jun 29, 2021 19:33

Analyte	Result	C
ALUMINUM	0.330	U
ARSENIC	0.250	U
CALCIUM	6.800	U
IRON	6.400	U
MAGNESIUM	0.593	J
MOLYBDENUM	0.670	B
POTASSIUM	12.000	U
SODIUM	11.991	J

SAMPLE: CCB
File: LOF29C Jun 29, 2021 20:03

Analyte	Result	C
ALUMINUM	0.330	U
ARSENIC	0.250	U
CALCIUM	6.800	U
IRON	6.400	U
MAGNESIUM	0.568	J
MOLYBDENUM	0.619	B
POTASSIUM	12.000	U
SODIUM	9.820	J

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SO3743

Concentration Units: ug/L

SAMPLE: CCB

File: LOF29C Jun 29, 2021 20:34

Analyte	Result	C
ALUMINUM	0.330	U
ARSENIC	0.250	U
CALCIUM	6.800	U
IRON	6.400	U
MAGNESIUM	0.959	J
MOLYBDENUM	0.583	B
POTASSIUM	12.000	U
SODIUM	13.419	J

SAMPLE: CCB

File: LOF29C Jun 29, 2021 21:05

Analyte	Result	C
ALUMINUM	0.330	U
ARSENIC	0.250	U
CALCIUM	6.800	U
IRON	6.400	U
MAGNESIUM	0.736	J
MOLYBDENUM	0.645	B
POTASSIUM	12.000	U
SODIUM	13.058	J

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBWOF21ICW2

Matrix: WATER **SDG Name:** SO3743

QC Batch ID: OF21ICW2

Concentration Units : ug/L

Analyte	RESULT	C
IRON	9.4	J
MANGANESE	5.0	U

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBWOF21IMW2

Matrix: WATER **SDG Name:** SO3743

QC Batch ID: OF21IMW2

Concentration Units : ug/L

Analyte	RESULT	C
ARSENIC	5.0	U

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SO3743

Concentration Units: ug/L

SAMPLE: ICSA

File: IOF23B Jun 23, 2021 18:16

Analyte	TRUE	FOUND	% R
ALUMINUM	500000.00	514000.00	102.8
CALCIUM	500000.00	481500.00	96.3
IRON	200000.00	183700.00	91.8
MAGNESIUM	500000.00	446600.00	89.3
MANGANESE	0	-1.35	

SAMPLE: ICSAB

File: IOF23B Jun 23, 2021 18:22

Analyte	TRUE	FOUND	% R
ALUMINUM	500000.00	527900.00	105.6
CALCIUM	500000.00	486200.00	97.2
IRON	200000.00	188600.00	94.3
MAGNESIUM	500000.00	447500.00	89.5
MANGANESE	500.00	484.80	97.0

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SO3743

Concentration Units: ug/L

SAMPLE: ICSA

File: LOF29C Jun 29, 2021 14:28

Analyte	TRUE	FOUND	% R
ALUMINUM	100000.00	98461.18	98.5
ARSENIC	0	0.11	
CALCIUM	100000.00	100528.57	100.5
IRON	100000.00	97473.23	97.5
MAGNESIUM	100000.00	97050.72	97.1
MOLYBDENUM	2000.00	2061.14	103.1
POTASSIUM	100000.00	97466.34	97.5
SODIUM	100000.00	98109.60	98.1

SAMPLE: ICSAB

File: LOF29C Jun 29, 2021 14:30

Analyte	TRUE	FOUND	% R
ALUMINUM	100000.00	95756.67	95.8
ARSENIC	20.00	20.53	105.0
CALCIUM	100000.00	100151.17	100.2
IRON	100000.00	96729.81	96.7
MAGNESIUM	100000.00	95510.51	95.5
MOLYBDENUM	2000.00	2085.14	104.3
POTASSIUM	100000.00	95290.34	95.3
SODIUM	100000.00	97519.60	97.5

5A

SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** G6M-04-10A-SPR21P

Matrix: WATER **SDG Name:** SO3743

Percent Solids: 0.00 **Lab Sample ID:** SO3743-005P

Concentration Units : ug/L

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ARSENIC, DISSOLVED	410		310		100	100.4		84	116	MS
IRON, DISSOLVED	84800		85100		1000	-30.0	N	87	115	P
MANGANESE, DISSOLVED	1630		1150		500	96.4		90	114	P

Comments:

5A

SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** G6M-04-10A-SPR21S

Matrix: WATER **SDG Name:** SO3743

Percent Solids: 0.00 **Lab Sample ID:** SO3743-005S

Concentration Units : ug/L

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ARSENIC, DISSOLVED	425		310		100	114.9		84	116	MS
IRON, DISSOLVED	90300		85100		1000	519.0	N	87	115	P
MANGANESE, DISSOLVED	1760		1150		500	121.2	N	90	114	P

Comments:

5B

POST DIGEST SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** G6M-04-10A-SPR21A

Matrix: WATER **SDG Name:** SO3743

Percent Solids: 0.00 **Lab Sample ID:** SO3743-005A

Concentration Units : ug/L

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ARSENIC, DISSOLVED	80.2		62.0		10	182.2	A	80	120	MS
IRON, DISSOLVED	91200		85100		5500	111.5		80	120	P
MANGANESE, DISSOLVED	1680		1150		500	105.8		80	120	P

Comments:

5D

SPIKE DUPLICATES

Lab Name: Katahdin Analytical Services **Client Field ID:** G6M-04-10A-SPR21

Matrix: WATER **SDG Name:** SO3743

Percent Solids: 0.00 **Lab Sample ID:** SO3743-005

Concentration Units : ug/L

Analyte	Control Limits	Spike Result	C	Spike Dup. Result	C	RPD	Q	M
ARSENIC, DISSOLVED		425		410		3.5		MS
IRON, DISSOLVED		90300		84800		6.3		P
MANGANESE, DISSOLVED		1760		1630		7.3		P

Comments:

FORM VD - IN

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSWOF21ICW2

Matrix: WATER **SDG Name:** SO3743

QC Batch ID: OF21ICW2

Concentration Units : ug/L

Analyte	TRUE	FOUND	% R	LIMITS (%)	
IRON	1000	1090	108.9	87	115
MANGANESE	500	537	107.3	90	114

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSWOF21IMW2

Matrix: WATER **SDG Name:** SO3743

QC Batch ID: OF21IMW2

Concentration Units : ug/L

Analyte	TRUE	FOUND	% R	LIMITS (%)	
ARSENIC	100	106	106.2	84	116

ICP SERIAL DILUTION

Lab Name: Katahdin Analytical Services **Client Field ID:** G6M-04-10A-SPR21L

Matrix: WATER **SDG Name:** SO3743

Lab Sample ID: SO3743-005L

Concentration Units: ug/L

Analyte	Sample Result	C	Dilution Result	C	% Difference	Q	M
ARSENIC, DISSOLVED	62.0		64.4		3.9		MS
IRON, DISSOLVED	85100		88500		4.0		P
MANGANESE, DISSOLVED	1150		1180		2.6		P

INSTRUMENT DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** I

Instrument Name: THERMO ICAP 6500 **Date:** 01/23/2019

Concentration Units: ug/L

Analyte	PQL/LOQ	IDL	M
ALUMINUM	300	10	P
CALCIUM	100	11	P
IRON	100	3.6	P
MAGNESIUM	100	2.9	P
MANGANESE	5.0	0.87	P
MOLYBDENUM	10	0.41	P
POTASSIUM	1000	73	P
SODIUM	1000	12	P

INSTRUMENT DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** L

Instrument Name: AGILENT 7800 ICP-MS **Date:** 06/11/2018

Concentration Units: ug/L

Analyte	PQL/LOQ	IDL	M
ALUMINUM	20	0.33	MS
ARSENIC	1.0	0.25	MS
CALCIUM	20	6.8	MS
IRON	20	6.4	MS
MAGNESIUM	20	0.35	MS
MOLYBDENUM	1.0	0.020	MS
POTASSIUM	200	12	MS
SODIUM	200	6.6	MS

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services **Instrument Code:** I

Instrument Name: THERMO ICAP 6500 **Date:** 06/11/2010

Analyte	LOD	Units	M	EPA Prep./Anal. Method
IRON	80	ug/L	P	SW846 3010A / SW846 6010C
MANGANESE	4.0	ug/L	P	SW846 3010A / SW846 6010C

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services **Instrument Code:** L

Instrument Name: AGILENT 7800 ICP-MS **Date:** 06/11/2010

Analyte	LOD	Units	M	EPA Prep./Anal. Method
ARSENIC	0.80	ug/L	MS	SW846 3010A / SW846 6020A

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** I

Instrument Name: THERMO ICAP 6500 **Date:** 01/19/2011

Analyte	MDL	Units	M	EPA Prep./Anal. Method
IRON	5.4	ug/L	P	SW846 3010A / SW846 6010C
MANGANESE	1.1	ug/L	P	SW846 3010A / SW846 6010C

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** L

Instrument Name: AGILENT 7800 ICP-MS **Date:** 01/25/2011

Analyte	MDL	Units	M	EPA Prep./Anal. Method
ARSENIC	0.45	ug/L	MS	SW846 3010A / SW846 6020A

ICP INTERELEMENT CORRECTION FACTORS

Lab Name: Katahdin Analytical Services **SDG Name:** SO3743

Instrument Name: THERMO ICAP 6500 **Instrument ID:** I **Date:** 03/10/2021

	Wavelength	Interelement Correction Factors for:												
Analyte	**(nm)**	**Al**	**Ca**	**Fe**	**Mg**	**As**	**Cr**	**Co**	**Cu**	**Mn**	**Mo**	**Ni**	**Ti**	**V**
ALUMINUM	396.15	0.0	0.0006250	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0293740	0.0	0.0	0.0
ANTIMONY	206.83	0.0000130	0.0	0.0000150	0.0	0.0000731	0.0160080	0.0	0.0	0.0	-0.0046490	-0.0008980	0.0	-0.0005030
ARSENIC	189.04	-0.0000090	0.0	-0.0001780	0.0	0.0	0.0001984	0.0	0.0	0.0	0.0015170	0.0	0.0	0.0
BARIUM	455.40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BERYLLIUM	313.04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.0006836	0.0001220
BORON	208.96	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0501700	0.0	0.0	0.0
CADMIUM	226.50	0.0	0.0	0.0000850	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.0001140	0.0000801	0.0
CALCIUM	315.89	0.0	0.0	0.0	0.0	0.0	0.0026700	0.0008487	0.0	0.0	0.0	0.0	0.0	0.0
CHROMIUM	267.72	0.0	0.0	-0.0000010	0.0	0.0	0.0	0.0	0.0	0.0003640	0.0	0.0	0.0	-0.0000100
COBALT	228.62	0.0	0.0	0.0000050	0.0	0.0	0.0001670	0.0	0.0	0.0	0.0	0.0001562	0.0017840	0.0
COPPER	327.40	0.0000079	0.0	-0.0000147	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.0006988	0.0004860
GOLD	242.79	0.0	0.0	0.0001110	0.0	0.0	0.0	0.0	0.0	0.0058700	0.0	0.0	0.0	0.0
IRON	259.94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LEAD	220.35	-0.0001590	0.0	0.0000440	0.0	0.0001480	-0.0000772	-0.0000860	0.0004910	0.0	-0.0010840	0.0003270	-0.0000220	0.0
LITHIUM	670.78	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAGNESIUM	202.58	0.0	0.0	0.0000300	0.0	0.0	0.0	0.1395100	0.0	0.0	0.0145280	0.0	0.0003530	0.0
MANGANESE	257.61	-0.0000050	0.0	0.0000100	0.0000391	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MOLYBDENUM	202.03	0.0	0.0	0.0	0.0	0.0	0.0000270	0.0	0.0	-0.0000204	0.0	0.0	0.0	-0.0001163
NICKEL	231.60	0.0	0.0	-0.0000490	0.0	0.0	0.0	0.0000390	0.0	0.0	0.0034490	0.0	0.0	0.0
POTASSIUM	766.49	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SELENIUM	196.09	0.0000090	0.0	0.0000320	0.0	0.0003180	0.0	0.0002310	0.0	0.0006280	0.0	0.0	0.0	0.0003040
SILICON	251.61	0.0	0.0	-0.0000150	0.0	0.0	0.0	0.0	0.0	0.0	0.0132630	0.0	0.0105540	0.0
SILVER	328.07	0.0	0.0	-0.0002820	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.0008413	0.0
SODIUM	589.59	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
STRONTIUM	421.55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
THALLIUM	190.86	0.0000030	0.0	0.0000001	0.0	0.0	0.0	0.0023030	-0.0000680	-0.0024730	-0.0000880	0.0	-0.0009840	-0.0078940
TIN	189.99	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TITANIUM	334.90	0.0	0.0	0.0	0.0	0.0	0.0001510	0.0	0.0	0.0	0.0002130	0.0	0.0	0.0
VANADIUM	292.40	0.0	0.0	0.0000120	0.0	0.0	-0.0053650	0.0	0.0	-0.0001670	-0.0037960	0.0	0.0006990	0.0
ZINC	206.20	0.0	0.0	0.0	0.0	0.0	-0.0010444	0.0	0.0	0.0	0.0	0.0	0.0	0.0

FORM XI - IN

ICP LINEAR RANGES

Lab Name: Katahdin Analytical Services **Instrument Code:** I

Instrument Name: THERMO ICAP 6500 **Date:** 11/25/2020

Concentration Units: ug/L

Analyte	Integration Time (sec)	Linear Range	M
ALUMINUM	5.00	500000	P
ARSENIC	45.00	20000	P
CALCIUM	5.00	500000	P
IRON	5.00	250000	P
MAGNESIUM	45.00	200000	P
MANGANESE	5.00	20000	P
MOLYBDENUM	45.00	5000	P
POTASSIUM	5.00	300000	P
SODIUM	5.00	200000	P

ICP LINEAR RANGES

Lab Name: Katahdin Analytical Services **Instrument Code:** L

Instrument Name: AGILENT 7800 ICP-MS **Date:** 12/05/2020

Concentration Units: ug/L

Analyte	Integration Time (sec)	Linear Range	M
ALUMINUM	0.01	200000	MS
ARSENIC	0.30	1000	MS
CALCIUM	0.03	200000	MS
IRON	0.03	100000	MS
MAGNESIUM	0.05	200000	MS
MANGANESE	0.10	2000	MS
MOLYBDENUM	0.10	1000	MS
POTASSIUM	0.01	200000	MS
SODIUM	0.01	200000	MS

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** OF21ICW2

Matrix: WATER **SDG Name:** SO3743

Method: P **Prep Date:** 06/21/2021

Client ID	Lab Sample ID	Initial (L)	Final (L)	Bottle ID
LCSWOF21ICW2	LCSWOF21ICW2	0.05	0.05	
PBWOF21ICW2	PBWOF21ICW2	0.05	0.05	
G6M-04-02X-SPR21	SO3743-002	0.05	0.05	I
AOC50-FB-SPR21	SO3743-003	0.05	0.05	I
G6M-04-10A-SPR21	SO3743-005	0.05	0.05	Y
G6M-04-10A-SPR21P	SO3743-005P	0.05	0.05	Y
G6M-04-10A-SPR21S	SO3743-005S	0.05	0.05	Y

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** OF21IMW2

Matrix: WATER **SDG Name:** SO3743

Method: MS **Prep Date:** 06/21/2021

Client ID	Lab Sample ID	Initial (L)	Final (L)	Bottle ID
LCSWOF21IMW2	LCSWOF21IMW2	0.05	0.05	
PBWOF21IMW2	PBWOF21IMW2	0.05	0.05	
G6M-04-02X-SPR21	SO3743-002	0.05	0.05	I
AOC50-FB-SPR21	SO3743-003	0.05	0.05	I
G6M-04-10A-SPR21	SO3743-005	0.05	0.05	Y
G6M-04-10A-SPR21P	SO3743-005P	0.05	0.05	Y
G6M-04-10A-SPR21S	SO3743-005S	0.05	0.05	Y

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SO3743

Instrument ID: THERMO ICAP 6500 **File Name:** IOF23B

Date: 06/23/2021 **Method:** P

Lab Sample ID	Client ID	D.F.	Time	Elements			
Blank		1	17:57	AL	CA	FE	MG MN
Std 1		1	18:01	AL	CA	FE	MG MN
ICV		1	18:05	AL	CA	FE	MG MN
ICB		1	18:08	AL	CA	FE	MG MN
PQL		1	18:12	AL	CA	FE	MG MN
ICSA		1	18:16	AL	CA	FE	MG MN
ICSAB		1	18:22	AL	CA	FE	MG MN
CCV		1	18:27	AL	CA	FE	MG MN
CCB		1	18:31	AL	CA	FE	MG MN
ZZZZZZ		1	18:35				
ZZZZZZ		1	18:41				
CCV		1	18:46	AL	CA	FE	MG MN
CCB		1	18:50	AL	CA	FE	MG MN
LCSWOF21ICW2		1	18:54			FE	MN
PBWOF21ICW2		1	18:58			FE	MN
ZZZZZZ		1	19:02				
ZZZZZZ		1	19:06				
ZZZZZZ		1	19:10				
ZZZZZZ		1	19:14				
ZZZZZZ		1	19:18				
ZZZZZZ		1	19:22				
ZZZZZZ		1	19:26				
ZZZZZZ		1	19:30				
CCV		1	19:34	AL	CA	FE	MG MN
CCB		1	19:38	AL	CA	FE	MG MN
ZZZZZZ		1	19:42				
ZZZZZZ		1	19:46				

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SO3743

Instrument ID: THERMO ICAP 6500 **File Name:** IOF23B

Date: 06/23/2021 **Method:** P

Lab Sample ID	Client ID	D.F.	Time	Elements				
ZZZZZZ		1	19:50					
SO3743-002	G6M-04-02X-SPR21	1	19:56			FE	MN	
SO3743-003	AOC50-FB-SPR21	1	20:01			FE	MN	
SO3743-005	G6M-04-10A-SPR21	1	20:05			FE	MN	
SO3743-005L	G6M-04-10A-SPR21L	5	20:10			FE	MN	
SO3743-005A	G6M-04-10A-SPR21A	1	20:14			FE	MN	
SO3743-005P	G6M-04-10A-SPR21P	1	20:19			FE	MN	
SO3743-005S	G6M-04-10A-SPR21S	1	20:24			FE	MN	
CCV		1	20:28	AL	CA	FE	MG	MN
CCB		1	20:32	AL	CA	FE	MG	MN

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SO3743

Instrument ID: AGILENT 7800 ICP-MS **File Name:** LOF29C

Date: 06/29/2021 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements							
CalBlank		1	14:14	Al	As	Ca	Fe	Mg	Mo	K	Na
CalStd		1	14:17	Al	As	Ca	Fe	Mg	Mo	K	Na
ICV		1	14:20	Al	As	Ca	Fe	Mg	Mo	K	Na
ICB		1	14:23	Al	As	Ca	Fe	Mg	Mo	K	Na
PQL		1	14:25	Al	As	Ca	Fe	Mg	Mo	K	Na
ICSA		1	14:28	Al	As	Ca	Fe	Mg	Mo	K	Na
ICSAB		1	14:30	Al	As	Ca	Fe	Mg	Mo	K	Na
ZZZZZZ		1	14:33								
ZZZZZZ		1	14:35								
ZZZZZZ		1	14:38								
ZZZZZZ		1	14:40								
CCV		1	14:43	Al	As	Ca	Fe	Mg	Mo	K	Na
CCB		1	14:45	Al	As	Ca	Fe	Mg	Mo	K	Na
ZZZZZZ		5	14:48								
ZZZZZZ		5	14:50								
ZZZZZZ		5	14:53								
ZZZZZZ		5	14:55								
ZZZZZZ		1	14:57								
ZZZZZZ		1	15:00								
ZZZZZZ		1	15:03								
ZZZZZZ		5	15:05								
ZZZZZZ		5	15:08								
ZZZZZZ		1	15:10								
CCV		1	15:13	Al	As	Ca	Fe	Mg	Mo	K	Na
CCB		1	15:15	Al	As	Ca	Fe	Mg	Mo	K	Na
ZZZZZZ		20	15:18								
ZZZZZZ		5	15:20								

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SO3743

Instrument ID: AGILENT 7800 ICP-MS **File Name:** LOF29C

Date: 06/29/2021 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements						
ZZZZZZ		5	15:23							
ZZZZZZ		5	15:25							
ZZZZZZ		5	15:27							
ZZZZZZ		1	15:30							
ZZZZZZ		5	15:32							
ZZZZZZ		5	15:35							
ZZZZZZ		5	15:37							
ZZZZZZ		1	15:40							
CCV		1	15:42	Al	As	Ca	Fe	Mg	Mo	K	Na
CCB		1	15:45	Al	As	Ca	Fe	Mg	Mo	K	Na
ZZZZZZ		5	15:47							
ZZZZZZ		5	15:50							
ZZZZZZ		5	15:52							
ZZZZZZ		5	15:55							
ZZZZZZ		1	15:57							
ZZZZZZ		5	16:00							
ZZZZZZ		5	16:02							
ZZZZZZ		25	16:04							
ZZZZZZ		5	16:07							
ZZZZZZ		1	16:09							
CCV		1	16:12	Al	As	Ca	Fe	Mg	Mo	K	Na
CCB		1	16:14	Al	As	Ca	Fe	Mg	Mo	K	Na
ZZZZZZ		5	16:17							
ZZZZZZ		5	16:19							
ZZZZZZ		5	16:22							
ZZZZZZ		5	16:43							
ZZZZZZ		1	16:45							

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SO3743

Instrument ID: AGILENT 7800 ICP-MS **File Name:** LOF29C

Date: 06/29/2021 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements							
ZZZZZZ		5	16:48								
ZZZZZZ		5	16:50								
ZZZZZZ		25	16:53								
ZZZZZZ		5	16:55								
ZZZZZZ		1	16:58								
CCV		1	17:01	Al	As	Ca	Fe	Mg	Mo	K	Na
CCB		1	17:03	Al	As	Ca	Fe	Mg	Mo	K	Na
ZZZZZZ		5	17:06								
ZZZZZZ		5	17:08								
ZZZZZZ		25	17:11								
ZZZZZZ		5	17:13								
ZZZZZZ		5	17:16								
ZZZZZZ		1	17:18								
ZZZZZZ		5	17:20								
ZZZZZZ		5	17:23								
ZZZZZZ		5	17:25								
ZZZZZZ		1	17:28								
CCV		1	17:30	Al	As	Ca	Fe	Mg	Mo	K	Na
CCB		1	17:33	Al	As	Ca	Fe	Mg	Mo	K	Na
ZZZZZZ		5	17:35								
ZZZZZZ		5	17:38								
ZZZZZZ		5	17:40								
ZZZZZZ		5	17:43								
ZZZZZZ		1	17:45								
ZZZZZZ		5	17:48								
ZZZZZZ		5	17:50								
ZZZZZZ		5	17:53								

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SO3743

Instrument ID: AGILENT 7800 ICP-MS **File Name:** LOF29C

Date: 06/29/2021 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements							
ZZZZZZ		5	17:55								
ZZZZZZ		1	17:58								
CCV		1	18:00	Al	As	Ca	Fe	Mg	Mo	K	Na
CCB		1	18:03	Al	As	Ca	Fe	Mg	Mo	K	Na
ZZZZZZ		25	18:05								
ZZZZZZ		5	18:08								
ZZZZZZ		5	18:10								
ZZZZZZ		5	18:12								
ZZZZZZ		1	18:15								
ZZZZZZ		5	18:18								
ZZZZZZ		5	18:20								
ZZZZZZ		20	18:23								
ZZZZZZ		5	18:25								
ZZZZZZ		1	18:27								
CCV		1	18:30	Al	As	Ca	Fe	Mg	Mo	K	Na
CCB		1	18:32	Al	As	Ca	Fe	Mg	Mo	K	Na
ZZZZZZ		5	18:35								
ZZZZZZ		5	18:37								
ZZZZZZ		5	18:40								
ZZZZZZ		1	18:42								
ZZZZZZ		1	18:45								
ZZZZZZ		5	18:47								
ZZZZZZ		5	18:50								
ZZZZZZ		5	18:52								
ZZZZZZ		5	18:55								
ZZZZZZ		1	18:57								
CCV		1	19:00	Al	As	Ca	Fe	Mg	Mo	K	Na

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SO3743

Instrument ID: AGILENT 7800 ICP-MS **File Name:** LOF29C

Date: 06/29/2021 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements							
CCB		1	19:02	Al	As	Ca	Fe	Mg	Mo	K	Na
ZZZZZZ		25	19:05								
ZZZZZZ		5	19:07								
ZZZZZZ		5	19:10								
ZZZZZZ		5	19:12								
ZZZZZZ		1	19:15								
ZZZZZZ		5	19:17								
ZZZZZZ		5	19:20								
ZZZZZZ		5	19:22								
ZZZZZZ		5	19:25								
ZZZZZZ		1	19:27								
CCV		1	19:30	Al	As	Ca	Fe	Mg	Mo	K	Na
CCB		1	19:33	Al	As	Ca	Fe	Mg	Mo	K	Na
ZZZZZZ		5	19:35								
ZZZZZZ		5	19:38								
ZZZZZZ		5	19:40								
ZZZZZZ		1	19:43								
ZZZZZZ		1	19:45								
PBWOF21IMW2		5	19:48		As						
LCSWOF21IMW2		5	19:51		As						
ZZZZZZ		5	19:53								
ZZZZZZ		5	19:56								
ZZZZZZ		1	19:58								
CCV		1	20:01	Al	As	Ca	Fe	Mg	Mo	K	Na
CCB		1	20:03	Al	As	Ca	Fe	Mg	Mo	K	Na
ZZZZZZ		5	20:06								
ZZZZZZ		5	20:09								

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SO3743

Instrument ID: AGILENT 7800 ICP-MS **File Name:** LOF29C

Date: 06/29/2021 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements							
ZZZZZZ		5	20:11								
ZZZZZZ		1	20:14								
ZZZZZZ		1	20:16								
ZZZZZZ		5	20:19								
SO3743-002	G6M-04-02X-SPR21	5	20:21		As						
SO3743-003	AOC50-FB-SPR21	5	20:24		As						
SO3743-005	G6M-04-10A-SPR21	5	20:27		As						
ZZZZZZ		1	20:29								
CCV		1	20:32	Al	As	Ca	Fe	Mg	Mo	K	Na
CCB		1	20:34	Al	As	Ca	Fe	Mg	Mo	K	Na
SO3743-005A	G6M-04-10A-SPR21A	5	20:37		As						
SO3743-005L	G6M-04-10A-SPR21L	25	20:39		As						
SO3743-005P	G6M-04-10A-SPR21P	5	20:42		As						
SO3743-005S	G6M-04-10A-SPR21S	5	20:45		As						
ZZZZZZ		1	20:47								
ZZZZZZ		1	20:50								
ZZZZZZ		1	20:52								
ZZZZZZ		1	20:55								
ZZZZZZ		1	20:57								
ZZZZZZ		1	21:00								
CCV		1	21:02	Al	As	Ca	Fe	Mg	Mo	K	Na
CCB		1	21:05	Al	As	Ca	Fe	Mg	Mo	K	Na

Raw Data Section

KATAHDIN ANALYTICAL SERVICES, LLC
METALS ANALYSIS RUN INFORMATION SHEET

INSTR. ID: I (Thermo iCAP 6500) **ANALYST**: EP **ANALYSIS DATE**: 06/23/2021

METHOD: **ICP**
- ☐ 200.7
- ☑ 6010
- ☑ DOD
- ☐ _____

FILE NAME: IOF23B

The pHs of all samples that were tested by direct analysis in this analytical run were checked just prior to analysis and confirmed to be <2. The time of preservation of these samples was checked in the "Measured Turbidity and Preservation of Incoming Samples" logbook to verify that they had been preserved at least 16 hours prior to analysis. These verifications were performed by _____ (initals) on _____ (date).

STANDARDS USED:

Standard Name	Standard ID	Prep Date	Expiration Date	Standard Conc.
Cal. Blk/ICB/CCB	MW20297	06/23/2021	06/23/2022	0 ug/L
Standard 1	MW20298	06/23/2021	08/05/2021	Varies by Element
ICV	MW20290	06/21/2021	09/21/2021	Varies by Element
PQL	MW20246	06/01/2021	07/22/2021	Varies by Element
LRS1	MW20284	06/17/2021	07/22/2021	Varies by Element
LRS2	MW20289	06/21/2021	08/05/2021	Varies by Element
ICSA	MW20234	05/25/2021	08/25/2021	Varies by Element
ICSAB	MW20221	05/17/2021	07/08/2021	Varies by Element
CCV	MW20299	06/23/2021	08/05/2021	Varies by Element
Internal Standard	MW20259	06/04/2021	09/04/2021	5.0 mg/L Yttrium

Additional Comments and Notes:

ICV warned high for boron, cobalt, nickel, lead, selenium, and thallium. Non-200.7 BQC accepted.

PQL failed high for lead.

Initial CCV warned high for cobalt, chromium, copper, nickel, lead, titanium, and thallium. Replaced with passing opening CCV.

REVIEWED
NwA 6/29/21
KATAHDIN ANALYTICAL
METALS SECTION

Dilutions: Some samples were diluted based on history or due to interfering element concentrations.

Dilution preparations are as follows:

5x diln.: 2.0 mL of sample (pipet M25) + 8.0 mL of MW20220 (pipet M25)

Post Spike: 0.123mL MW20210 (pipet M27) to 6.0mL of sample (pipet M25)

INSTRUMENT RUNLOG

Instrument: ICAP 6500

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
Blank	1.000	IOF23B	06/23/2021	17:57	EP
Std 1	1.000	IOF23B	06/23/2021	18:01	EP
ICV	1.000	IOF23B	06/23/2021	18:05	EP
ICB	1.000	IOF23B	06/23/2021	18:08	EP
PQL	1.000	IOF23B	06/23/2021	18:12	EP
ICSA	1.000	IOF23B	06/23/2021	18:16	EP
ICSAB	1.000	IOF23B	06/23/2021	18:22	EP
CCV	1.000	IOF23B	06/23/2021	18:27	EP
CCB	1.000	IOF23B	06/23/2021	18:31	EP
LRS1	1.000	IOF23B	06/23/2021	18:35	EP
LRS2	1.000	IOF23B	06/23/2021	18:41	EP
CCV	1.000	IOF23B	06/23/2021	18:46	EP
CCB	1.000	IOF23B	06/23/2021	18:50	EP
LCSWOF21ICW2	1.000	IOF23B	06/23/2021	18:54	EP
PBWOF21ICW2	1.000	IOF23B	06/23/2021	18:58	EP
LCSOOF22ICS1	1.000	IOF23B	06/23/2021	19:02	EP
PBSOF22ICS1	1.000	IOF23B	06/23/2021	19:06	EP
LCSWOF22ICW2	1.000	IOF23B	06/23/2021	19:10	EP
PBWOF22ICW2	1.000	IOF23B	06/23/2021	19:14	EP
SO3731-001	1.000	IOF23B	06/23/2021	19:18	EP
SO3742-001	1.000	IOF23B	06/23/2021	19:22	EP
SO3742-002	1.000	IOF23B	06/23/2021	19:26	EP
SO3742-003	1.000	IOF23B	06/23/2021	19:30	EP
CCV	1.000	IOF23B	06/23/2021	19:34	EP
CCB	1.000	IOF23B	06/23/2021	19:38	EP
SO3742-004	1.000	IOF23B	06/23/2021	19:42	EP
SO3742-006	1.000	IOF23B	06/23/2021	19:46	EP
SO3742-008	1.000	IOF23B	06/23/2021	19:50	EP
SO3743-002	1.000	IOF23B	06/23/2021	19:56	EP
SO3743-003	1.000	IOF23B	06/23/2021	20:01	EP
SO3743-005	1.000	IOF23B	06/23/2021	20:05	EP
SO3743-005L	5.000	IOF23B	06/23/2021	20:10	EP
SO3743-005A	1.000	IOF23B	06/23/2021	20:14	EP
SO3743-005P	1.000	IOF23B	06/23/2021	20:19	EP
SO3743-005S	1.000	IOF23B	06/23/2021	20:24	EP
CCV	1.000	IOF23B	06/23/2021	20:28	EP
CCB	1.000	IOF23B	06/23/2021	20:32	EP
SO3700-001	1.000	IOF23B	06/23/2021	20:36	EP
SO3700-002	1.000	IOF23B	06/23/2021	20:40	EP
SO3700-003	1.000	IOF23B	06/23/2021	20:44	EP
SO3700-004	1.000	IOF23B	06/23/2021	20:48	EP
SO3700-004	1.000	IOF23B	06/23/2021	20:52	EP
SO3700-004L	5.000	IOF23B	06/23/2021	20:56	EP
SO3700-004A	1.000	IOF23B	06/23/2021	21:00	EP

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SO3700-004D	1.000	IOF23B	06/23/2021	21:04	EP
SO3700-004S	1.000	IOF23B	06/23/2021	21:08	EP
SO3700-005	1.000	IOF23B	06/23/2021	21:12	EP
CCV	1.000	IOF23B	06/23/2021	21:16	EP
CCB	1.000	IOF23B	06/23/2021	21:20	EP
SO3700-006	1.000	IOF23B	06/23/2021	21:24	EP
SO3700-007	1.000	IOF23B	06/23/2021	21:29	EP
SO3700-008	1.000	IOF23B	06/23/2021	21:33	EP
SO3700-009	1.000	IOF23B	06/23/2021	21:37	EP
SO3700-010	1.000	IOF23B	06/23/2021	21:41	EP
SO3700-011	1.000	IOF23B	06/23/2021	21:45	EP
SO3700-012	1.000	IOF23B	06/23/2021	21:49	EP
SO3700-013	1.000	IOF23B	06/23/2021	21:53	EP
SO3700-014	1.000	IOF23B	06/23/2021	21:57	EP
SO3700-015	1.000	IOF23B	06/23/2021	22:01	EP
CCV	1.000	IOF23B	06/23/2021	22:05	EP
CCB	1.000	IOF23B	06/23/2021	22:09	EP
SO3700-016	1.000	IOF23B	06/23/2021	22:13	EP
SO3728-002	1.000	IOF23B	06/23/2021	22:17	EP
SO3728-003	1.000	IOF23B	06/23/2021	22:21	EP
SO3728-004	1.000	IOF23B	06/23/2021	22:25	EP
SO3728-004L	5.000	IOF23B	06/23/2021	22:29	EP
SO3728-004A	1.000	IOF23B	06/23/2021	22:33	EP
SO3728-004P	1.000	IOF23B	06/23/2021	22:37	EP
SO3728-004S	1.000	IOF23B	06/23/2021	22:41	EP
SO3728-005	1.000	IOF23B	06/23/2021	22:45	EP
SO3728-006	1.000	IOF23B	06/23/2021	22:49	EP
CCV	1.000	IOF23B	06/23/2021	22:53	EP
CCB	1.000	IOF23B	06/23/2021	22:57	EP
SO3728-007	1.000	IOF23B	06/23/2021	23:01	EP
SO3728-008	1.000	IOF23B	06/23/2021	23:05	EP
SO3728-009	1.000	IOF23B	06/23/2021	23:09	EP
SO3728-010	1.000	IOF23B	06/23/2021	23:13	EP
SO3728-011	1.000	IOF23B	06/23/2021	23:17	EP
SO3728-012	1.000	IOF23B	06/23/2021	23:21	EP
CCV	1.000	IOF23B	06/23/2021	23:25	EP
CCB	1.000	IOF23B	06/23/2021	23:29	EP
PQL	1.000	IOF23B	06/23/2021	23:33	EP
ICSA	1.000	IOF23B	06/23/2021	23:37	EP
ICSAB	1.000	IOF23B	06/23/2021	23:43	EP
CCV	1.000	IOF23B	06/23/2021	23:48	EP
CCB	1.000	IOF23B	06/23/2021	23:52	EP

Intensity Report

Author:

Published: 6/24/2021 8:10:22AM

Notes:

Blank

Method Name: FAST-2016_NO_AU Method Revision: 321

Analyst Name: EP

Acquire Date: 6/23/2021 5:57:08PM Sample Type: Standard

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		-0.00002200	Cts/S	0.00001200	52.33	-3.810
Al3961_R		0.0004110	Cts/S	0.0002960	71.84	7.502
As1891_A		-0.0003460	Cts/S	0.00001700	4.892	-2.471
B_2089_A		0.0007690	Cts/S	0.00004300	5.620	5.494
Ba4554_R		0.0004550	Cts/S	0.00004300	9.382	8.306
Be3130_R		-0.00008300	Cts/S	0.0002360	283.5	-1.524
Ca3158_R		0.0006960	Cts/S	0.0002320	33.33	12.69
Cd2265_A		-0.00003600	Cts/S	0.000004000	10.01	-0.2602
Co2286_A		0.00001900	Cts/S	0.00001900	95.42	0.1387
Cr2677_A		0.00001400	Cts/S	0.00001100	81.00	2.389
Cu3273_A		-0.00002500	Cts/S	0.000004000	16.44	-4.221
Fe2599_R		0.0009160	Cts/S	0.00008300	9.012	16.72
K_7664_R		-0.0008580	Cts/S	0.0001730	20.12	-15.65
Li6707_R		0.0001500	Cts/S	0.0005270	351.2	2.746
Mg2025_A		-0.0008580	Cts/S	0.00006900	8.074	-6.129
Mn2576_R		0.0003550	Cts/S	0.00004300	12.12	6.487
Mo2020_A		0.00007000	Cts/S	0.00001900	27.49	0.5010
Na5895_R		0.002255	Cts/S	0.0005600	24.84	41.15
Ni2316_A		0.0001270	Cts/S	0.00002600	20.51	0.9097
Pb2203_A		-0.0001270	Cts/S	0.000007000	5.230	-0.9071
Sb2068_A		-0.00009500	Cts/S	0.00001000	10.18	-0.6757
Se1960_A		0.0002140	Cts/S	0.00005800	27.08	1.527
Si2516_R		0.0009860	Cts/S	0.0002790	28.30	17.99
Sn1899_A		0.0002260	Cts/S	0.00001700	7.673	1.617
Sr4215_R		-0.0006510	Cts/S	0.00008400	12.91	-11.88
Ti3349_A		-0.0001090	Cts/S	0.00002500	22.49	-18.76
Tl1908_A		-0.0002870	Cts/S	0.000002000	0.5804	-2.054
V_2924_A		-0.00004200	Cts/S	0.00001000	23.24	-7.106
Zn2062_A		0.004072	Cts/S	0.00001400	0.3345	29.09
Y_3600_R		18,246	Cts/S	37.169	0.20371	18,246
Y_2243_A		7,144.0	Cts/S	17.431	0.24399	7,144.0
Y_3600_A		171,090	Cts/S	4,009.1	2.3432	171,090

Std 1

Method Name: FAST-2016_NO_AU Method Revision: 321

Analyst Name: EP

Acquire Date: 6/23/2021 6:01:12PM Sample Type: Standard

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		0.1073	Cts/S	0.00001100	0.01030	17,670
Al3961_R		1.191	Cts/S	0.001414	0.1188	21,500
As1891_A		0.04949	Cts/S	0.00004400	0.08940	344.0
B_2089_A		0.1937	Cts/S	0.0001290	0.06683	1,346
Ba4554_R		3.477	Cts/S	0.001066	0.03067	62,770
Be3130_R		4.631	Cts/S	0.004675	0.1009	83,610
Ca3158_R		1.366	Cts/S	0.001172	0.08582	24,650
Cd2265_A		1.600	Cts/S	0.003223	0.2014	11,130
Co2286_A		0.4957	Cts/S	0.0008440	0.1703	3,446
Cr2677_A		0.07080	Cts/S	0.0001240	0.1758	11,660
Cu3273_A		0.08184	Cts/S	0.00006300	0.07648	13,480
Fe2599_R		2.400	Cts/S	0.008701	0.3625	43,340
K_7664_R		0.7907	Cts/S	0.002667	0.3373	14,270
Li6707_R		0.6413	Cts/S	0.001028	0.1602	11,580

Std 1

Method Name: FAST-2016_NO_AU Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 6:01:12PM Sample Type: Standard

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Mg2025_A		1.368	Cts/S	0.0009020	0.06590	9,510
Mn2576_R		0.4250	Cts/S	0.0007060	0.1661	7,673
Mo2020_A		0.4623	Cts/S	0.0007970	0.1723	3,213
Na5895_R		2.526	Cts/S	0.006438	0.2548	45,610
Ni2316_A		0.2307	Cts/S	0.0008630	0.3740	1,604
Pb2203_A		0.1211	Cts/S	0.0003490	0.2879	842.1
Sb2068_A		0.06501	Cts/S	0.0001890	0.2905	451.9
Se1960_A		0.03673	Cts/S	0.00003200	0.08598	255.3
Si2516_R		0.4702	Cts/S	0.001267	0.2695	8,490
Sn1899_A		0.06057	Cts/S	0.00007000	0.1161	421.1
Sr4215_R		4.437	Cts/S	0.007281	0.1641	80,110
Ti3349_A		0.1476	Cts/S	0.0001290	0.08769	24,320
Tl1908_A		0.07641	Cts/S	0.0002240	0.2938	531.1
V_2924_A		0.07132	Cts/S	0.00002800	0.03917	11,750
Zn2062_A		0.3326	Cts/S	0.0004410	0.1327	2,312
Y_3600_R		18,054	Cts/S	14.921	0.082643	18,054
Y_2243_A		6,951.4	Cts/S	0.49626	0.0071390	6,951.4
Y_3600_A		164,720	Cts/S	362.52	0.22008	164,720

ICV

Method Name: FAST-2016_NO_AU Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 6:05:01PM Sample Type: QC

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		420.8	ug/L	0.06400	0.01521	7,681
Al3961_R		9,941	ug/L	164.7	1.656	8,820
As1891_A		405.4	ug/L	1.654	0.4080	142.7
B_2089_A	W	426.6	ug/L	1.987	0.4657	596.4
Ba4554_R		407.7	ug/L	6.377	1.564	26,390
Be3130_R		414.6	ug/L	4.590	1.107	35,740
Ca3158_R		9,946	ug/L	118.9	1.196	10,120
Cd2265_A		419.1	ug/L	1.486	0.3546	4,816
Co2286_A	W	422.9	ug/L	2.204	0.5212	1,506
Cr2677_A		415.7	ug/L	0.5145	0.1238	5,011
Cu3273_A		417.1	ug/L	0.3677	0.08816	5,808
Fe2599_R		9,953	ug/L	119.3	1.199	17,800
K_7664_R		13,520	ug/L	209.6	1.551	7,949
Li6707_R		403.8	ug/L	6.649	1.647	4,822
Mg2025_A		10,440	ug/L	41.48	0.3975	4,099
Mn2576_R		406.5	ug/L	7.365	1.812	3,220
Mo2020_A		421.2	ug/L	2.183	0.5182	1,399
Na5895_R		9,781	ug/L	147.9	1.512	18,420
Ni2316_A	W	423.2	ug/L	2.410	0.5695	701.9
Pb2203_A	W	432.7	ug/L	2.366	0.5468	376.1
Sb2068_A		420.9	ug/L	2.587	0.6146	196.1
Se1960_A	W	426.4	ug/L	2.606	0.6111	113.4
Si2516_R		9,629	ug/L	123.7	1.284	3,383
Sn1899_A		419.7	ug/L	0.05476	0.01305	183.6
Sr4215_R		404.2	ug/L	6.609	1.635	33,380
Ti3349_A		411.7	ug/L	0.3151	0.07655	10,330
Tl1908_A	W	438.3	ug/L	2.142	0.4888	239.4
V_2924_A		414.6	ug/L	0.3499	0.08440	5,028
Zn2062_A		417.6	ug/L	1.553	0.3718	1,015
Y_3600_R		18,616	Cts/S	211.96	1.1385	18,616
Y_2243_A		7,182.6	Cts/S	32.849	0.45734	7,182.6
Y_3600_A		170,190	Cts/S	444.81	0.26136	170,190

ICB

Method Name: FAST-2016_NO_AU
Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 6:08:51PM
Sample Type: QC

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		0.2057	ug/L	0.1348	65.54	0.02469
Al3961_R		-5.758	ug/L	3.737	64.90	2.547
As1891_A		-1.106	ug/L	1.122	101.4	-2.879
B_2089_A		0.7573	ug/L	0.1594	21.05	6.544
Ba4554_R		0.1475	ug/L	0.08137	55.16	17.68
Be3130_R		0.1257	ug/L	0.03514	27.96	9.098
Ca3158_R		-5.414	ug/L	8.201	151.5	7.265
Cd2265_A		-0.07665	ug/L	0.001208	1.576	-1.152
Co2286_A		-0.05416	ug/L	0.004398	8.120	-0.05124
Cr2677_A		0.09647	ug/L	0.03945	40.89	3.554
Cu3273_A		-0.1304	ug/L	0.4335	332.3	-6.038
Fe2599_R		-6.526	ug/L	0.9983	15.30	5.292
K_7664_R		-10.66	ug/L	19.23	180.4	-21.79
Li6707_R		-0.9381	ug/L	0.4242	45.22	-8.225
Mg2025_A		-3.473	ug/L	0.5629	16.21	-7.523
Mn2576_R		-0.1809	ug/L	0.2555	141.3	5.085
Mo2020_A		0.1032	ug/L	0.05494	53.23	0.8460
Na5895_R		-2.338	ug/L	7.141	305.5	36.85
Ni2316_A		-0.2784	ug/L	0.3258	117.0	0.4558
Pb2203_A		0.1254	ug/L	0.03200	25.52	-0.8020
Sb2068_A		0.1895	ug/L	0.6016	317.4	-0.5851
Se1960_A		-0.5040	ug/L	0.4258	84.48	1.402
Si2516_R		13.61	ug/L	7.845	57.66	22.70
Sn1899_A		-1.242	ug/L	0.1195	9.623	1.087
Sr4215_R		-0.06063	ug/L	0.02124	35.03	-16.83
Ti3349_A		0.2179	ug/L	0.04449	20.42	-13.12
Tl1908_A		0.4873	ug/L	0.3566	73.17	-1.794
V_2924_A		-0.06842	ug/L	0.2998	438.1	-7.914
Zn2062_A		-4.068	ug/L	0.1658	4.077	19.62
Y_3600_R		18,300	Cts/S	275.15	1.5035	18,300
Y_2243_A		7,179.1	Cts/S	8.3665	0.11654	7,179.1
Y_3600_A		170,000	Cts/S	1,034.9	0.60879	170,000

PQL

Method Name: FAST-2016_NO_AU
Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 6:12:54PM
Sample Type: QC

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		10.15	ug/L	0.08518	0.8395	184.3
Al3961_R		301.0	ug/L	0.1262	0.04194	263.6
As1891_A		7.968	ug/L	0.06777	0.8505	0.3811
B_2089_A		51.08	ug/L	0.1669	0.3267	76.03
Ba4554_R		5.516	ug/L	0.05805	1.053	351.0
Be3130_R		5.550	ug/L	0.1046	1.884	457.5
Ca3158_R		93.87	ug/L	3.210	3.420	104.1
Cd2265_A		5.230	ug/L	0.03801	0.7268	60.87
Co2286_A		10.76	ug/L	0.1707	1.587	39.18
Cr2677_A		10.40	ug/L	0.3098	2.979	129.4
Cu3273_A		25.57	ug/L	0.08276	0.3236	356.9
Fe2599_R		100.5	ug/L	0.9834	0.9783	188.9
K_7664_R		1,039	ug/L	17.84	1.718	572.6
Li6707_R		105.2	ug/L	0.1170	0.1113	1,208
Mg2025_A		111.3	ug/L	1.174	1.055	38.44
Mn2576_R		5.286	ug/L	0.3732	7.060	46.46
Mo2020_A		10.21	ug/L	0.1462	1.432	35.02
Na5895_R		1,034	ug/L	10.17	0.9841	1,906
Ni2316_A		10.30	ug/L	0.2346	2.278	18.30

PQL

Method Name: FAST-2016_NO_AU
Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 6:12:54PM
Sample Type: QC

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb2203_A	F	6.590	ug/L	0.04735	0.7185	4.899
Sb2068_A		8.319	ug/L	0.3670	4.412	2.914
Se1960_A		9.324	ug/L	0.07248	0.7773	4.052
Si2516_R		181.0	ug/L	2.899	1.602	78.42
Sn1899_A		101.4	ug/L	0.3765	0.3713	46.40
Sr4215_R		10.47	ug/L	0.1779	1.699	819.3
Ti3349_A		15.59	ug/L	0.1106	0.7090	378.6
Tl1908_A	W	18.14	ug/L	0.2722	1.500	8.093
V_2924_A		10.38	ug/L	0.1105	1.064	120.6
Zn2062_A		18.30	ug/L	0.08068	0.4409	73.76
Y_3600_R		17,881	Cts/S	178.26	0.99693	17,881
Y_2243_A		7,312.5	Cts/S	32.915	0.45011	7,312.5
Y_3600_A		172,500	Cts/S	1,559.1	0.90379	172,500

ICSA

Method Name: FAST-2016_NO_AU
Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 6:16:56PM
Sample Type: QC

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		0.3016	ug/L	0.2623	86.98	-387.0
Al3961_R		514,000	ug/L	4,097	0.7971	429,900
As1891_A		-1.732	ug/L	2.609	150.7	-13.56
B_2089_A		-2.905	ug/L	0.5697	19.61	1.328
Ba4554_R		0.07296	ug/L	0.1797	246.4	12.42
Be3130_R		0.005394	ug/L	0.1068	1,980	-1.011
Ca3158_R		481,500	ug/L	4,403	0.9145	462,200
Cd2265_A		0.4645	ug/L	0.4094	88.13	371.5
Co2286_A		-0.7340	ug/L	0.1071	14.60	2.892
Cr2677_A		-0.9422	ug/L	0.6511	69.11	6.313
Cu3273_A		-1.481	ug/L	0.1684	11.37	1.397
Fe2599_R		183,700	ug/L	1,035	0.5632	310,100
K_7664_R		-21.63	ug/L	9.059	41.88	-27.11
Li6707_R		4.572	ug/L	0.06801	1.488	54.20
Mg2025_A		446,600	ug/L	2,035	0.4558	151,900
Mn2576_R		-1.351	ug/L	0.5435	40.23	0.1526
Mo2020_A		-2.142	ug/L	0.07174	3.349	-5.733
Na5895_R		7.689	ug/L	5.909	76.86	53.36
Ni2316_A		-2.033	ug/L	0.1671	8.218	-8.664
Pb2203_A		1.014	ug/L	0.7450	73.45	-30.34
Sb2068_A		3.367	ug/L	2.135	63.42	2.760
Se1960_A		-1.957	ug/L	1.887	96.43	3.534
Si2516_R		7.865	ug/L	8.748	111.2	0.4395
Sn1899_A		7.717	ug/L	0.8633	11.19	4.313
Sr4215_R		4.717	ug/L	0.08742	1.853	356.8
Ti3349_A		0.6709	ug/L	0.07811	11.64	-1.522
Tl1908_A		-0.1355	ug/L	1.115	822.6	-0.5847
V_2924_A		2.445	ug/L	0.1486	6.078	29.21
Zn2062_A		-4.399	ug/L	0.5593	12.72	16.35
Y_3600_R		17,588	Cts/S	151.89	0.86359	17,588
Y_2243_A		6,230.6	Cts/S	23.401	0.37558	6,230.6
Y_3600_A		146,930	Cts/S	18.835	0.012819	146,930

ICSAB

Method Name: FAST-2016_NO_AU
Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 6:22:31PM
Sample Type: QC

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

ICSAB

Method Name: FAST-2016_NO_AU
Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 6:22:31PM
Sample Type: QC

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		230.8	ug/L	0.5414	0.2346	3,240
Al3961_R		527,900	ug/L	885.6	0.1678	437,700
As1891_A		103.5	ug/L	1.186	1.147	19.07
B_2089_A		519.3	ug/L	0.3008	0.05792	628.6
Ba4554_R		508.2	ug/L	1.876	0.3691	30,810
Be3130_R		513.7	ug/L	0.9447	0.1839	41,470
Ca3158_R		486,200	ug/L	4,969	1.022	462,700
Cd2265_A		966.2	ug/L	3.764	0.3896	9,971
Co2286_A		469.8	ug/L	0.1686	0.03588	1,458
Cr2677_A		496.6	ug/L	1.591	0.3203	5,170
Cu3273_A		557.8	ug/L	1.662	0.2979	6,716
Fe2599_R		188,600	ug/L	613.8	0.3254	315,600
K_7664_R		21,240	ug/L	78.14	0.3678	11,710
Li6707_R		550.5	ug/L	3.787	0.6880	6,156
Mg2025_A		447,500	ug/L	1,306	0.2918	152,400
Mn2576_R		484.8	ug/L	4.757	0.9812	3,598
Mo2020_A		496.0	ug/L	1.232	0.2484	1,430
Na5895_R		21,180	ug/L	91.80	0.4334	37,320
Ni2316_A		929.8	ug/L	2.247	0.2417	1,329
Pb2203_A		49.37	ug/L	0.5351	1.084	5.050
Sb2068_A		643.1	ug/L	2.381	0.3703	262.6
Se1960_A		47.67	ug/L	5.993	12.57	14.95
Si2516_R		2,074	ug/L	23.90	1.152	677.2
Sn1899_A		487.5	ug/L	0.7963	0.1633	184.9
Sr4215_R		513.8	ug/L	2.025	0.3941	39,740
Ti3349_A		525.9	ug/L	0.06222	0.01183	11,380
Tl1908_A		92.06	ug/L	0.7462	0.8106	42.69
V_2924_A		509.4	ug/L	0.1757	0.03449	5,334
Zn2062_A		964.0	ug/L	3.020	0.3133	2,001
Y_3600_R		17,434	Cts/S	46.360	0.26592	17,434
Y_2243_A		6,235.6	Cts/S	17.317	0.27772	6,235.6
Y_3600_A		146,620	Cts/S	49.949	0.034067	146,620

CCV

Method Name: FAST-2016_NO_AU
Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 6:27:56PM
Sample Type: QC

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		520.1	ug/L	6.438	1.238	9,165
Al3961_R		12,950	ug/L	31.38	0.2424	11,150
As1891_A		514.0	ug/L	0.5014	0.09754	176.1
B_2089_A		519.8	ug/L	3.682	0.7083	704.4
Ba4554_R		521.2	ug/L	2.544	0.4881	32,740
Be3130_R		521.8	ug/L	4.000	0.7665	43,660
Ca3158_R		12,880	ug/L	58.39	0.4535	12,710
Cd2265_A		525.2	ug/L	3.155	0.6008	5,857
Co2286_A	W	527.8	ug/L	1.981	0.3753	1,824
Cr2677_A	W	530.0	ug/L	6.720	1.268	6,167
Cu3273_A	W	527.9	ug/L	6.980	1.322	7,097
Fe2599_R		12,910	ug/L	68.06	0.5272	22,400
K_7664_R		12,900	ug/L	31.75	0.2461	7,363
Li6707_R		517.8	ug/L	2.582	0.4986	6,001
Mg2025_A		13,020	ug/L	87.33	0.6707	4,963
Mn2576_R		518.0	ug/L	2.306	0.4452	3,980
Mo2020_A		525.9	ug/L	2.915	0.5543	1,695
Na5895_R		12,950	ug/L	53.64	0.4142	23,660
Ni2316_A	W	530.4	ug/L	2.593	0.4889	853.4

CCV

Method Name: FAST-2016_NO_AU Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 6:27:56PM Sample Type: QC

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb2203_A	W	531.8	ug/L	4.111	0.7730	448.6
Sb2068_A		524.2	ug/L	1.665	0.3176	237.2
Se1960_A		517.9	ug/L	0.1982	0.03827	133.3
Si2516_R		12,970	ug/L	120.7	0.9307	4,415
Sn1899_A		524.6	ug/L	3.055	0.5825	222.2
Sr4215_R		517.9	ug/L	2.853	0.5509	41,510
Ti3349_A	W	528.6	ug/L	7.041	1.332	12,810
Tl1908_A	W	533.6	ug/L	2.305	0.4320	283.3
V_2924_A		523.7	ug/L	6.810	1.300	6,133
Zn2062_A		524.5	ug/L	2.539	0.4840	1,229
Y_3600_R		18,067	Cts/S	21.092	0.11675	18,067
Y_2243_A		6,969.7	Cts/S	1.9235	0.027599	6,969.7
Y_3600_A		164,320	Cts/S	2,092.8	1.2736	164,320

CCB

Method Name: FAST-2016_NO_AU Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 6:31:46PM Sample Type: QC

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		0.2287	ug/L	0.002145	0.9380	0.4242
Al3961_R		-3.784	ug/L	5.147	136.0	4.191
As1891_A		-1.416	ug/L	0.7703	54.39	-2.996
B_2089_A		0.3765	ug/L	0.2215	58.83	6.038
Ba4554_R		0.1251	ug/L	0.06555	52.39	16.14
Be3130_R		0.1229	ug/L	0.01945	15.83	8.826
Ca3158_R		-2.484	ug/L	0.1197	4.818	10.16
Cd2265_A		0.02958	ug/L	0.04009	135.5	0.07542
Co2286_A		-0.07255	ug/L	0.1425	196.5	-0.1224
Cr2677_A		0.2710	ug/L	0.1650	60.89	5.596
Cu3273_A		0.3323	ug/L	0.1406	42.30	0.4240
Fe2599_R		-2.041	ug/L	0.3671	17.99	13.07
K_7664_R		-12.40	ug/L	12.27	98.92	-22.67
Li6707_R		0.2677	ug/L	0.8997	336.1	5.851
Mg2025_A		-0.2393	ug/L	1.891	790.0	-6.265
Mn2576_R		0.01604	ug/L	0.1338	834.1	6.571
Mo2020_A		-0.03537	ug/L	0.09799	277.1	0.3892
Na5895_R		-6.991	ug/L	2.184	31.24	28.11
Ni2316_A		-0.04490	ug/L	0.03979	88.61	0.8425
Pb2203_A		-0.2927	ug/L	0.2095	71.59	-1.171
Sb2068_A		-0.03689	ug/L	0.7294	1,977	-0.6917
Se1960_A		-0.2284	ug/L	0.4527	198.2	1.477
Si2516_R		6.172	ug/L	1.658	26.86	20.00
Sn1899_A		-0.8184	ug/L	0.5360	65.49	1.272
Sr4215_R		0.01295	ug/L	0.1012	781.5	-10.76
Ti3349_A		-0.05023	ug/L	0.3436	684.0	-19.67
Tl1908_A		0.8612	ug/L	0.1022	11.86	-1.592
V_2924_A		0.2509	ug/L	0.1000	39.85	-3.979
Zn2062_A		-4.122	ug/L	0.05235	1.270	19.54
Y_3600_R		18,141	Cts/S	62.553	0.34482	18,141
Y_2243_A		7,195.1	Cts/S	97.195	1.3509	7,195.1
Y_3600_A		168,300	Cts/S	709.02	0.42129	168,300

LRS1

Method Name: FAST-2016_NO_AU Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 6:35:51PM Sample Type: QC

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

LRS1

Method Name: FAST-2016_NO_AU
Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 6:35:51PM
Sample Type: QC

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		2,104	ug/L	23.39	1.111	37,880
Al3961_R		9.299	ug/L	4.555	48.99	173.0
As1891_A		20,870	ug/L	100.9	0.4832	7,205
B_2089_A		21,680	ug/L	51.82	0.2390	28,240
Ba4554_R		20,830	ug/L	704.8	3.384	1,275,000
Be3130_R		20,980	ug/L	446.5	2.128	1,712,000
Ca3158_R		-91.74	ug/L	2.652	2.891	24.70
Cd2265_A		20,260	ug/L	91.08	0.4497	222,700
Co2286_A		20,740	ug/L	111.8	0.5392	70,930
Cr2677_A		19,990	ug/L	353.7	1.769	236,900
Cu3273_A		20,150	ug/L	549.0	2.724	276,200
Fe2599_R		-4.130	ug/L	1.812	43.87	9.121
K_7664_R		4.596	ug/L	17.85	388.4	-12.67
Li6707_R		21,030	ug/L	994.9	4.730	237,400
Mg2025_A		1,430	ug/L	1.063	0.07439	932.8
Mn2576_R		21,140	ug/L	844.2	3.993	158,100
Mo2020_A		5,194	ug/L	23.72	0.4566	16,570
Na5895_R		22.47	ug/L	3.819	17.00	79.60
Ni2316_A		20,740	ug/L	69.60	0.3355	32,940
Pb2203_A		21,780	ug/L	87.12	0.4000	18,280
Sb2068_A		21,490	ug/L	54.97	0.2558	9,669
Se1960_A		21,780	ug/L	83.33	0.3825	5,489
Si2516_R		57.28	ug/L	25.27	44.11	82.98
Sn1899_A		19,900	ug/L	70.77	0.3556	8,293
Sr4215_R		19,680	ug/L	228.6	1.162	1,539,000
Ti3349_A		20,370	ug/L	719.3	3.531	503,700
Tl1908_A		20,760	ug/L	85.35	0.4112	10,990
V_2924_A		19,880	ug/L	361.5	1.818	238,600
Zn2062_A		20,100	ug/L	109.8	0.5461	45,630
Y_3600_R		17,616	Cts/S	416.00	2.3616	17,616
Y_2243_A		6,903.2	Cts/S	18.797	0.27230	6,903.2
Y_3600_A		167,440	Cts/S	2,325.1	1.3886	167,440

LRS2

Method Name: FAST-2016_NO_AU
Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 6:41:36PM
Sample Type: QC

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		1.163	ug/L	1.153	99.18	-479.8
Al3961_R		521,600	ug/L	4,478	0.8584	420,900
As1891_A		3.272	ug/L	0.1373	4.196	-14.63
B_2089_A		19.08	ug/L	2.180	11.42	27.20
Ba4554_R		1.681	ug/L	0.09114	5.422	106.9
Be3130_R		0.9736	ug/L	0.1834	18.84	75.09
Ca3158_R		498,100	ug/L	5,379	1.080	461,300
Cd2265_A		-2.042	ug/L	0.8088	39.60	449.9
Co2286_A		-0.06242	ug/L	0.5456	874.1	6.399
Cr2677_A		-1.775	ug/L	0.2194	12.36	1.524
Cu3273_A		1.074	ug/L	0.1139	10.60	28.13
Fe2599_R		234,100	ug/L	2,946	1.258	381,300
K_7664_R		323,700	ug/L	7,664	2.367	173,900
Li6707_R		5.630	ug/L	0.1853	3.291	63.77
Mg2025_A		185,300	ug/L	261.8	0.1413	63,400
Mn2576_R		11.81	ug/L	0.3744	3.172	24.79
Mo2020_A		-0.7385	ug/L	0.2686	36.37	-1.699
Na5895_R		211,600	ug/L	474.3	0.2242	362,500
Ni2316_A		-0.7491	ug/L	0.1852	24.73	-8.657

LRS2

Method Name: FAST-2016_NO_AU
Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 6:41:36PM
Sample Type: QC

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb2203_A		2.129	ug/L	1.568	73.65	-29.33
Sb2068_A		4.558	ug/L	0.9553	20.96	3.521
Se1960_A		-0.3999	ug/L	1.725	431.4	3.981
Si2516_R		53,590	ug/L	1,378	2.571	17,060
Sn1899_A		10.60	ug/L	0.8135	7.675	5.425
Sr4215_R		5.195	ug/L	0.1130	2.176	380.2
Ti3349_A		3.619	ug/L	0.2041	5.641	62.44
Tl1908_A		-0.7228	ug/L	1.088	150.5	-0.9404
V_2924_A		4.078	ug/L	0.6229	15.28	48.92
Zn2062_A		-0.3680	ug/L	0.1470	39.95	24.75
Y_3600_R		16,968	Cts/S	276.07	1.6270	16,968
Y_2243_A		6,265.4	Cts/S	6.0748	0.096958	6,265.4
Y_3600_A		146,870	Cts/S	170.80	0.11629	146,870

CCV

Method Name: FAST-2016_NO_AU
Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 6:46:50PM
Sample Type: QC

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		515.4	ug/L	4.074	0.7905	9,174
Al3961_R		12,950	ug/L	169.0	1.305	11,130
As1891_A		516.0	ug/L	0.1109	0.02149	177.1
B_2089_A	W	534.9	ug/L	1.298	0.2427	725.3
Ba4554_R		524.2	ug/L	6.994	1.334	32,890
Be3130_R	W	527.5	ug/L	6.420	1.217	44,080
Ca3158_R		12,940	ug/L	112.0	0.8655	12,760
Cd2265_A		526.9	ug/L	1.067	0.2026	5,886
Co2286_A	W	528.4	ug/L	1.108	0.2097	1,828
Cr2677_A		524.2	ug/L	3.288	0.6271	6,162
Cu3273_A		521.8	ug/L	1.510	0.2895	7,087
Fe2599_R		13,020	ug/L	167.6	1.288	22,560
K_7664_R		13,030	ug/L	208.8	1.603	7,426
Li6707_R		523.5	ug/L	6.286	1.201	6,059
Mg2025_A		13,060	ug/L	1.517	0.01162	4,986
Mn2576_R		516.4	ug/L	6.841	1.325	3,963
Mo2020_A	W	527.6	ug/L	1.407	0.2667	1,703
Na5895_R		13,010	ug/L	193.3	1.486	23,740
Ni2316_A	W	532.5	ug/L	0.08520	0.01600	858.0
Pb2203_A	W	533.2	ug/L	1.222	0.2292	450.4
Sb2068_A		526.6	ug/L	3.146	0.5974	238.6
Se1960_A		519.0	ug/L	1.883	0.3628	133.8
Si2516_R		13,120	ug/L	174.0	1.326	4,463
Sn1899_A	W	527.3	ug/L	0.6976	0.1323	223.7
Sr4215_R		520.5	ug/L	6.775	1.302	41,670
Ti3349_A		524.4	ug/L	5.058	0.9646	12,840
Tl1908_A	W	533.9	ug/L	2.873	0.5380	283.9
V_2924_A		520.4	ug/L	5.984	1.150	6,156
Zn2062_A		525.4	ug/L	0.09881	0.01881	1,233
Y_3600_R		18,046	Cts/S	151.47	0.83935	18,046
Y_2243_A		6,980.0	Cts/S	4.7216	0.067644	6,980.0
Y_3600_A		165,990	Cts/S	1,770.3	1.0665	165,990

CCB

Method Name: FAST-2016_NO_AU
Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 6:50:41PM
Sample Type: QC

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

CCB

Method Name: FAST-2016_NO_AU
Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 6:50:41PM
Sample Type: QC

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		0.09855	ug/L	0.5750	583.5	-1.933
Al3961_R		-3.908	ug/L	6.086	155.7	4.115
As1891_A		-0.7304	ug/L	0.5625	77.01	-2.736
B_2089_A		9.692	ug/L	0.6199	6.396	18.51
Ba4554_R		0.2813	ug/L	0.2103	74.78	25.51
Be3130_R		0.3364	ug/L	0.1206	35.84	26.30
Ca3158_R		1.849	ug/L	4.006	216.6	14.33
Cd2265_A		0.07451	ug/L	0.1665	223.5	0.5860
Co2286_A		0.2203	ug/L	0.1103	50.05	0.9208
Cr2677_A		0.2825	ug/L	0.03866	13.69	5.797
Cu3273_A		0.3539	ug/L	0.02023	5.714	0.7245
Fe2599_R		-0.9102	ug/L	3.621	397.8	14.77
K_7664_R		39.90	ug/L	42.04	105.4	6.958
Li6707_R		1.492	ug/L	0.4143	27.76	19.89
Mg2025_A		-1.860	ug/L	0.8126	43.70	-6.864
Mn2576_R		0.05186	ug/L	0.2192	422.8	6.743
Mo2020_A		0.1640	ug/L	0.02686	16.37	1.045
Na5895_R		8.290	ug/L	8.862	106.9	55.61
Ni2316_A		-0.3403	ug/L	0.2300	67.60	0.3531
Pb2203_A		-0.7366	ug/L	0.5395	73.24	-1.550
Sb2068_A		0.6408	ug/L	0.5189	80.98	-0.3726
Se1960_A		1.298	ug/L	1.247	96.08	1.868
Si2516_R		20.21	ug/L	21.36	105.7	24.38
Sn1899_A		-0.9945	ug/L	0.6882	69.19	1.191
Sr4215_R		0.2929	ug/L	0.07448	25.43	11.54
Ti3349_A		0.2964	ug/L	0.07622	25.71	-11.15
Tl1908_A		0.3168	ug/L	0.4237	133.7	-1.884
V_2924_A		0.3271	ug/L	0.2684	82.07	-3.106
Zn2062_A		-4.067	ug/L	0.1448	3.561	19.57
Y_3600_R		17,920	Cts/S	458.85	2.5606	17,920
Y_2243_A		7,157.0	Cts/S	7.0794	0.098916	7,157.0
Y_3600_A		170,040	Cts/S	818.62	0.48144	170,040

LCSWOF21ICW2

Method Name: FAST-2016_NO_AU
Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 6:54:45PM
Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		53.35	ug/L	0.1724	0.3232	958.9
Al3961_R		2,176	ug/L	27.54	1.266	1,910
As1891_A		109.5	ug/L	1.178	1.077	36.76
B_2089_A		561.5	ug/L	0.03835	0.006830	764.8
Ba4554_R		2,130	ug/L	7.798	0.3662	135,900
Be3130_R		54.81	ug/L	0.4868	0.8881	4,630
Ca3158_R		2,647	ug/L	20.16	0.7616	2,666
Cd2265_A		276.7	ug/L	0.2543	0.09190	3,163
Co2286_A		556.1	ug/L	0.05135	0.009235	1,977
Cr2677_A		221.3	ug/L	0.04953	0.02238	2,639
Cu3273_A		278.1	ug/L	0.8789	0.3160	3,827
Fe2599_R		1,089	ug/L	7.959	0.7311	1,934
K_7664_R		10,720	ug/L	99.60	0.9289	6,213
Li6707_R		528.4	ug/L	3.923	0.7424	6,219
Mg2025_A		5,507	ug/L	2.612	0.04743	2,162
Mn2576_R		536.7	ug/L	2.128	0.3964	4,191
Mo2020_A		110.7	ug/L	0.2986	0.2698	367.3
Na5895_R		7,992	ug/L	79.41	0.9936	14,850
Ni2316_A		558.5	ug/L	0.4078	0.07302	922.4

LCSWOF21ICW2

Method Name: FAST-2016_NO_AU
Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 6:54:45PM
Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb2203_A	F	115.2	ug/L	0.1484	0.1288	99.33
Sb2068_A		109.6	ug/L	0.1666	0.1520	48.95
Se1960_A		112.4	ug/L	0.5602	0.4984	31.03
Si2516_R		1,127	ug/L	11.87	1.053	407.5
Sn1899_A		548.4	ug/L	0.8749	0.1595	239.0
Sr4215_R		528.7	ug/L	4.815	0.9108	43,040
Ti3349_A		550.4	ug/L	2.577	0.4683	13,660
Tl1908_A	F	120.2	ug/L	0.6572	0.5467	63.14
V_2924_A		546.1	ug/L	3.823	0.7000	6,593
Zn2062_A		553.5	ug/L	0.1660	0.02999	1,335
Y_3600_R		18,350	Cts/S	12.380	0.067467	18,350
Y_2243_A		7,173.9	Cts/S	0.96925	0.013511	7,173.9
Y_3600_A		168,280	Cts/S	745.68	0.44312	168,280

PBWOF21ICW2

Method Name: FAST-2016_NO_AU
Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 6:58:40PM
Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		0.008976	ug/L	0.1684	1,876	-3.671
Al3961_R		4.400	ug/L	0.4460	10.14	11.33
As1891_A		0.3130	ug/L	1.462	467.0	-2.406
B_2089_A		5.995	ug/L	0.6031	10.06	13.79
Ba4554_R		0.03156	ug/L	0.1319	418.0	10.30
Be3130_R		-0.005712	ug/L	0.04192	733.9	-2.037
Ca3158_R		-6.122	ug/L	1.253	20.46	6.606
Cd2265_A		-0.02761	ug/L	0.03053	110.6	-0.5629
Co2286_A		0.1468	ug/L	0.008485	5.778	0.6748
Cr2677_A		0.1177	ug/L	0.1965	167.0	3.860
Cu3273_A		0.1813	ug/L	0.2257	124.5	-1.688
Fe2599_R		9.408	ug/L	1.496	15.91	33.22
K_7664_R		0.3442	ug/L	7.880	2,289	-15.47
Li6707_R		0.6300	ug/L	0.7229	114.7	10.12
Mg2025_A		14.68	ug/L	1.207	8.224	-0.4103
Mn2576_R		-0.07780	ug/L	0.08660	111.3	5.886
Mo2020_A		-0.01312	ug/L	0.01037	79.05	0.4666
Na5895_R		6.690	ug/L	0.9690	14.48	53.49
Ni2316_A		-0.4876	ug/L	0.1472	30.20	0.1113
Pb2203_A		0.1496	ug/L	0.7310	488.5	-0.7928
Sb2068_A		-0.6177	ug/L	0.3089	50.02	-0.9791
Se1960_A		0.5336	ug/L	0.7503	140.6	1.698
Si2516_R		52.06	ug/L	1.468	2.820	35.85
Sn1899_A		-0.8769	ug/L	0.1401	15.98	1.263
Sr4215_R		-0.03163	ug/L	0.06064	191.7	-14.46
Ti3349_A		0.5090	ug/L	0.1188	23.34	-5.881
Tl1908_A		1.058	ug/L	0.03740	3.535	-1.501
V_2924_A		0.3659	ug/L	0.05490	15.00	-2.631
Zn2062_A		-3.580	ug/L	0.08031	2.244	21.08
Y_3600_R		18,256	Cts/S	51.675	0.28305	18,256
Y_2243_A		7,283.9	Cts/S	1.4221	0.019524	7,283.9
Y_3600_A		171,770	Cts/S	1,074.0	0.62524	171,770

LCSOOF22ICS1

Method Name: FAST-2016_NO_AU
Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 7:02:44PM
Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

LCSOOF22ICS1

Method Name: FAST-2016_NO_AU
Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 7:02:44PM
Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		50.05	ug/L	0.08179	0.1634	893.9
Al3961_R		2,098	ug/L	16.33	0.7784	1,832
As1891_A		101.4	ug/L	0.1965	0.1938	33.47
B_2089_A		520.2	ug/L	3.900	0.7497	700.8
Ba4554_R		2,054	ug/L	6.304	0.3070	130,300
Be3130_R		52.71	ug/L	0.1127	0.2139	4,429
Ca3158_R		2,549	ug/L	14.19	0.5569	2,554
Cd2265_A		262.0	ug/L	1.446	0.5518	2,960
Co2286_A		531.9	ug/L	3.095	0.5818	1,869
Cr2677_A		211.2	ug/L	1.255	0.5943	2,504
Cu3273_A		264.9	ug/L	1.946	0.7345	3,623
Fe2599_R		1,025	ug/L	3.288	0.3207	1,813
K_7664_R		10,250	ug/L	61.99	0.6048	5,908
Li6707_R		508.8	ug/L	0.8158	0.1604	5,957
Mg2025_A		5,134	ug/L	40.57	0.7902	1,992
Mn2576_R		516.2	ug/L	4.009	0.7767	4,010
Mo2020_A		106.7	ug/L	0.9716	0.9109	349.9
Na5895_R		7,618	ug/L	32.93	0.4322	14,080
Ni2316_A		531.4	ug/L	3.323	0.6254	867.3
Pb2203_A		108.2	ug/L	1.067	0.9863	92.16
Sb2068_A		102.0	ug/L	0.9870	0.9672	44.79
Se1960_A		106.6	ug/L	1.689	1.584	29.16
Si2516_R		1,014	ug/L	2.874	0.2833	366.7
Sn1899_A		561.7	ug/L	2.090	0.3721	241.9
Sr4215_R		506.6	ug/L	2.092	0.4130	41,030
Ti3349_A		522.4	ug/L	2.919	0.5588	12,890
Tl1908_A	F	112.3	ug/L	0.5544	0.4937	58.13
V_2924_A		520.4	ug/L	3.780	0.7264	6,244
Zn2062_A		522.9	ug/L	3.160	0.6044	1,248
Y_3600_R		18,253	Cts/S	81.730	0.44775	18,253
Y_2243_A		7,089.5	Cts/S	48.186	0.67968	7,089.5
Y_3600_A		167,250	Cts/S	913.48	0.54617	167,250

PBSOF22ICS1

Method Name: FAST-2016_NO_AU
Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 7:06:39PM
Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		0.06361	ug/L	0.1645	258.6	-2.657
Al3961_R		-6.103	ug/L	7.395	121.2	2.265
As1891_A		-0.9105	ug/L	0.1718	18.87	-2.851
B_2089_A		3.989	ug/L	0.2094	5.251	11.05
Ba4554_R		0.9053	ug/L	0.1908	21.08	67.09
Be3130_R		0.06898	ug/L	0.005723	8.296	4.378
Ca3158_R		12.86	ug/L	0.7921	6.161	26.03
Cd2265_A		-0.01994	ug/L	0.03628	181.9	-0.4809
Co2286_A		0.06340	ug/L	0.05070	79.96	0.3735
Cr2677_A		0.8555	ug/L	0.2561	29.93	12.95
Cu3273_A		0.09242	ug/L	0.1567	169.5	-2.982
Fe2599_R		6.611	ug/L	0.2454	3.712	28.88
K_7664_R		60.76	ug/L	4.199	6.910	19.85
Li6707_R		0.09212	ug/L	1.366	1,483	3.900
Mg2025_A		13.20	ug/L	0.2976	2.255	-0.9995
Mn2576_R		0.2392	ug/L	0.1413	59.10	8.515
Mo2020_A		0.02194	ug/L	0.007590	34.59	0.5849
Na5895_R		8.398	ug/L	1.953	23.25	57.78
Ni2316_A		-0.1850	ug/L	0.6057	327.4	0.6182

PBSOF22ICS1

Method Name: FAST-2016_NO_AU
Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 7:06:39PM
Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb2203_A		-0.1382	ug/L	0.03452	24.98	-1.047
Sb2068_A		-0.1718	ug/L	0.8886	517.4	-0.9320
Se1960_A		-0.4226	ug/L	1.714	405.6	1.444
Si2516_R		24.70	ug/L	4.157	16.83	27.00
Sn1899_A		42.84	ug/L	0.04720	0.1102	20.48
Sr4215_R		0.2267	ug/L	0.002579	1.138	6.605
Ti3349_A		0.4286	ug/L	0.08941	20.86	-7.972
Tl1908_A		0.1580	ug/L	1.110	702.6	-2.006
V_2924_A		0.2724	ug/L	0.03741	13.73	-3.848
Zn2062_A		-3.630	ug/L	0.07121	1.962	20.96
Y_3600_R		18,623	Cts/S	17.207	0.092398	18,623
Y_2243_A		7,283.7	Cts/S	2.5469	0.034967	7,283.7
Y_3600_A		173,320	Cts/S	1,118.1	0.64509	173,320

LCSWOF22ICW2

Method Name: FAST-2016_NO_AU
Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 7:10:44PM
Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		52.77	ug/L	0.8798	1.667	955.8
Al3961_R		2,175	ug/L	18.26	0.8397	1,931
As1891_A		108.0	ug/L	0.6329	0.5858	36.36
B_2089_A		552.2	ug/L	0.01556	0.002818	754.4
Ba4554_R		2,138	ug/L	5.772	0.2699	138,000
Be3130_R		54.69	ug/L	0.1452	0.2655	4,673
Ca3158_R		2,618	ug/L	2.292	0.08755	2,668
Cd2265_A		275.1	ug/L	0.01539	0.005596	3,154
Co2286_A		553.2	ug/L	0.7746	0.1400	1,973
Cr2677_A		218.3	ug/L	1.768	0.8102	2,623
Cu3273_A		275.4	ug/L	1.915	0.6954	3,819
Fe2599_R		1,088	ug/L	9.715	0.8931	1,955
K_7664_R		10,690	ug/L	16.46	0.1540	6,266
Li6707_R		531.6	ug/L	1.298	0.2442	6,329
Mg2025_A		5,505	ug/L	23.60	0.4286	2,168
Mn2576_R		533.5	ug/L	1.184	0.2219	4,214
Mo2020_A		109.7	ug/L	0.04092	0.03730	365.2
Na5895_R		7,980	ug/L	10.98	0.1376	15,000
Ni2316_A		555.0	ug/L	0.2826	0.05092	919.3
Pb2203_A	F	114.6	ug/L	1.418	1.237	99.08
Sb2068_A		108.8	ug/L	0.1894	0.1740	48.74
Se1960_A		110.4	ug/L	2.872	2.602	30.59
Si2516_R		1,101	ug/L	13.71	1.245	403.1
Sn1899_A		541.9	ug/L	1.397	0.2579	236.9
Sr4215_R		528.0	ug/L	0.7036	0.1333	43,480
Ti3349_A		544.4	ug/L	2.809	0.5159	13,620
Tl1908_A	F	119.7	ug/L	0.4362	0.3643	63.06
V_2924_A		542.0	ug/L	4.150	0.7656	6,595
Zn2062_A		547.8	ug/L	0.3220	0.05878	1,325
Y_3600_R		18,563	Cts/S	138.38	0.74549	18,563
Y_2243_A		7,195.4	Cts/S	18.438	0.25624	7,195.4
Y_3600_A		169,620	Cts/S	1,088.2	0.64156	169,620

PBWOF22ICW2

Method Name: FAST-2016_NO_AU
Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 7:14:37PM
Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

PBWOF22ICW2

Method Name: FAST-2016_NO_AU
Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 7:14:37PM
Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		0.05667	ug/L	0.01035	18.27	-2.874
Al3961_R		-7.167	ug/L	7.643	106.6	1.334
As1891_A		-0.2886	ug/L	0.6434	222.9	-2.637
B_2089_A		3.108	ug/L	0.3060	9.846	9.885
Ba4554_R		0.6274	ug/L	0.07566	12.06	48.52
Be3130_R		0.009032	ug/L	0.02804	310.5	-0.7532
Ca3158_R		-5.625	ug/L	8.388	149.1	7.120
Cd2265_A		-0.005214	ug/L	0.04644	890.6	-0.2366
Co2286_A		0.1771	ug/L	0.1084	61.21	0.7833
Cr2677_A		0.06748	ug/L	0.08520	126.3	3.276
Cu3273_A		-0.07067	ug/L	0.02596	36.73	-5.286
Fe2599_R		38.99	ug/L	0.4351	1.116	85.78
K_7664_R		-2.667	ug/L	3.144	117.9	-17.34
Li6707_R		0.9049	ug/L	0.7388	81.65	13.49
Mg2025_A		13.28	ug/L	0.2631	1.982	-0.9703
Mn2576_R		0.3126	ug/L	0.1458	46.64	8.992
Mo2020_A		-0.007872	ug/L	0.1183	1,503	0.4872
Na5895_R		6.267	ug/L	7.570	120.8	53.10
Ni2316_A		-0.1566	ug/L	0.2524	161.2	0.6661
Pb2203_A		-0.1792	ug/L	0.3622	202.1	-1.088
Sb2068_A		0.4208	ug/L	0.4479	106.4	-0.4888
Se1960_A		-1.864	ug/L	0.2747	14.73	1.066
Si2516_R		49.76	ug/L	9.753	19.60	35.37
Sn1899_A		-0.5368	ug/L	0.2507	46.70	1.419
Sr4215_R		-0.02464	ug/L	0.07450	302.4	-13.98
Ti3349_A		0.07759	ug/L	0.1904	245.4	-16.94
Tl1908_A		1.101	ug/L	0.5252	47.69	-1.484
V_2924_A		0.4132	ug/L	0.1391	33.67	-2.068
Zn2062_A		-3.866	ug/L	0.08169	2.113	20.48
Y_3600_R		18,414	Cts/S	182.41	0.99060	18,414
Y_2243_A		7,315.5	Cts/S	30.686	0.41947	7,315.5
Y_3600_A		173,210	Cts/S	1,032.0	0.59580	173,210

SO3731-001

Method Name: FAST-2016_NO_AU
Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 7:18:42PM
Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		-0.009262	ug/L	0.1512	1,632	-4.107
Al3961_R		18.67	ug/L	1.077	5.765	29.54
As1891_A		4.286	ug/L	1.018	23.74	-0.9371
B_2089_A		9.657	ug/L	0.2854	2.955	18.30
Ba4554_R		73.29	ug/L	0.5866	0.8005	4,634
Be3130_R		0.01916	ug/L	0.04587	239.4	0.09304
Ca3158_R	W	28,430	ug/L	393.5	1.384	28,190
Cd2265_A		-0.04248	ug/L	0.04336	102.1	-0.4950
Co2286_A		0.1315	ug/L	0.1230	93.54	0.6009
Cr2677_A		0.8648	ug/L	0.09465	10.94	12.57
Cu3273_A		0.9124	ug/L	0.1467	16.08	8.326
Fe2599_R		106.7	ug/L	0.5237	0.4908	202.6
K_7664_R		11,220	ug/L	149.3	1.331	6,434
Li6707_R		33.87	ug/L	0.04933	0.1456	397.1
Mg2025_A		3,491	ug/L	9.520	0.2727	1,345
Mn2576_R		8.357	ug/L	0.1574	1.884	71.73
Mo2020_A		0.7434	ug/L	0.07174	9.649	2.934
Na5895_R		11,000	ug/L	181.1	1.646	20,210
Ni2316_A		1.089	ug/L	0.2879	26.44	2.677

SO3731-001

Method Name: FAST-2016_NO_AU
Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 7:18:42PM
Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb2203_A		-0.06914	ug/L	0.5237	757.5	-0.9603
Sb2068_A		0.1419	ug/L	0.5238	369.0	-0.6000
Se1960_A		-0.2436	ug/L	0.6233	255.9	1.452
Si2516_R		2,591	ug/L	48.82	1.884	901.1
Sn1899_A		-0.7325	ug/L	0.1729	23.60	1.291
Sr4215_R	W	1,386	ug/L	17.26	1.245	111,700
Ti3349_A		-0.1375	ug/L	0.03088	22.46	-21.61
Tl1908_A		1.144	ug/L	0.4305	37.64	-1.420
V_2924_A		0.05848	ug/L	0.07858	134.4	-6.340
Zn2062_A		5.673	ug/L	0.09024	1.591	42.07
Y_3600_R		18,158	Cts/S	145.83	0.80312	18,158
Y_2243_A		7,086.1	Cts/S	26.231	0.37018	7,086.1
Y_3600_A		166,680	Cts/S	512.31	0.30736	166,680

SO3742-001

Method Name: FAST-2016_NO_AU
Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 7:22:44PM
Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		0.09906	ug/L	0.4215	425.6	-1.912
Al3961_R		-0.1388	ug/L	1.431	1,031	10.35
As1891_A		0.07520	ug/L	1.161	1,544	-2.403
B_2089_A		8.099	ug/L	0.1025	1.266	16.05
Ba4554_R		74.80	ug/L	0.06935	0.09272	4,726
Be3130_R		0.004386	ug/L	0.02573	586.8	-1.127
Ca3158_R		14,500	ug/L	196.7	1.356	14,370
Cd2265_A		-0.01112	ug/L	0.02596	233.5	-0.3577
Co2286_A		-0.01217	ug/L	0.1148	943.3	0.09117
Cr2677_A		0.3870	ug/L	0.2906	75.09	6.745
Cu3273_A		0.4635	ug/L	0.04940	10.66	2.148
Fe2599_R		10.38	ug/L	0.8476	8.165	34.71
K_7664_R		3,308	ug/L	38.11	1.152	1,885
Li6707_R		-0.1076	ug/L	0.2184	203.0	1.458
Mg2025_A		2,088	ug/L	6.650	0.3184	794.8
Mn2576_R		6.440	ug/L	0.006143	0.09539	56.58
Mo2020_A		-0.1662	ug/L	0.09021	54.29	-0.04478
Na5895_R	W	84,840	ug/L	461.5	0.5440	155,500
Ni2316_A		1.421	ug/L	0.07897	5.558	3.185
Pb2203_A		-0.1302	ug/L	0.1225	94.06	-1.002
Sb2068_A		1.050	ug/L	0.2993	28.51	-0.1808
Se1960_A		-0.1815	ug/L	0.3137	172.9	1.454
Si2516_R		4,784	ug/L	42.84	0.8955	1,647
Sn1899_A		-0.2719	ug/L	0.5777	212.5	1.474
Sr4215_R		99.62	ug/L	0.6248	0.6272	8,010
Ti3349_A		-0.4064	ug/L	0.1104	27.17	-27.45
Tl1908_A		1.417	ug/L	0.9439	66.59	-1.258
V_2924_A		0.2038	ug/L	0.4055	199.0	-4.412
Zn2062_A		-2.550	ug/L	0.01293	0.5071	22.70
Y_3600_R		18,146	Cts/S	168.64	0.92935	18,146
Y_2243_A		7,020.9	Cts/S	11.166	0.15904	7,020.9
Y_3600_A		162,010	Cts/S	1,347.6	0.83184	162,010

SO3742-002

Method Name: FAST-2016_NO_AU
Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 7:26:46PM
Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

SO3742-002

Method Name: FAST-2016_NO_AU
Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 7:26:46PM
Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		0.4515	ug/L	0.03770	8.349	-22.03
Al3961_R		-6.278	ug/L	0.3460	5.511	2.943
As1891_A		170.1	ug/L	1.582	0.9298	58.20
B_2089_A		5.049	ug/L	0.1788	3.540	12.36
Ba4554_R		7.613	ug/L	0.04704	0.6179	497.3
Be3130_R		0.06795	ug/L	0.009369	13.79	4.279
Ca3158_R		4,036	ug/L	1.809	0.04483	4,083
Cd2265_A		-0.1936	ug/L	0.02091	10.80	22.44
Co2286_A		3.769	ug/L	0.07062	1.874	13.91
Cr2677_A		-0.5136	ug/L	0.2775	54.02	5.766
Cu3273_A		-0.1805	ug/L	0.3214	178.0	-7.896
Fe2599_R		10,780	ug/L	32.70	0.3034	19,130
K_7664_R		768.2	ug/L	13.84	1.802	433.5
Li6707_R		1.719	ug/L	0.07125	4.146	23.13
Mg2025_A		799.1	ug/L	4.749	0.5942	308.6
Mn2576_R	W	5,218	ug/L	18.34	0.3514	40,950
Mo2020_A		0.02155	ug/L	0.1216	564.2	2.030
Na5895_R		3,695	ug/L	15.61	0.4225	6,933
Ni2316_A		0.4459	ug/L	0.01138	2.552	1.215
Pb2203_A		0.2534	ug/L	0.3417	134.9	-0.4885
Sb2068_A		-0.1221	ug/L	0.07400	60.60	-0.6811
Se1960_A		0.2884	ug/L	0.2605	90.31	2.139
Si2516_R		5,036	ug/L	30.72	0.6101	1,763
Sn1899_A		-0.9292	ug/L	0.5105	54.94	1.228
Sr4215_R		37.74	ug/L	0.03479	0.09218	3,082
Ti3349_A		0.07087	ug/L	0.1092	154.1	-16.93
Tl1908_A		4.193	ug/L	0.6089	14.52	-4.195
V_2924_A		0.5633	ug/L	0.1582	28.08	-14.74
Zn2062_A		-2.228	ug/L	0.01115	0.5004	24.07
Y_3600_R		18,474	Cts/S	21.029	0.11383	18,474
Y_2243_A		7,208.3	Cts/S	35.069	0.48651	7,208.3
Y_3600_A		171,190	Cts/S	287.95	0.16820	171,190

SO3742-003

Method Name: FAST-2016_NO_AU
Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 7:30:48PM
Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		-0.009715	ug/L	0.2299	2,366	-4.609
Al3961_R		9.188	ug/L	2.354	25.62	22.25
As1891_A		109.6	ug/L	0.3646	0.3326	35.89
B_2089_A		32.85	ug/L	0.1357	0.4133	48.50
Ba4554_R		41.10	ug/L	0.2959	0.7200	2,597
Be3130_R		0.04847	ug/L	0.01131	23.33	2.596
Ca3158_R	W	32,710	ug/L	471.5	1.441	32,360
Cd2265_A		-0.07283	ug/L	0.05585	76.68	-0.3072
Co2286_A		0.1551	ug/L	0.1654	106.7	0.6759
Cr2677_A		0.4580	ug/L	0.2421	52.86	8.405
Cu3273_A		0.006373	ug/L	0.2489	3,906	-4.009
Fe2599_R		337.4	ug/L	4.612	1.367	603.3
K_7664_R		1,868	ug/L	19.78	1.059	1,056
Li6707_R		1.708	ug/L	1.057	61.88	22.48
Mg2025_A		1,509	ug/L	0.9550	0.06330	569.9
Mn2576_R		452.9	ug/L	6.577	1.452	3,492
Mo2020_A		2.464	ug/L	0.1199	4.868	8.573
Na5895_R	W	47,000	ug/L	583.5	1.242	86,000
Ni2316_A		-0.3143	ug/L	0.03926	12.49	0.3881

SO3742-003

Method Name: FAST-2016_NO_AU
Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 7:30:48PM
Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb2203_A		-0.1827	ug/L	0.9710	531.5	-1.042
Sb2068_A		-0.7926	ug/L	0.9465	119.4	-1.027
Se1960_A		0.4111	ug/L	0.7294	177.4	1.640
Si2516_R		7,033	ug/L	100.4	1.427	2,409
Sn1899_A		-0.01417	ug/L	0.4870	3,438	1.577
Sr4215_R		166.8	ug/L	2.886	1.730	13,400
Ti3349_A		-0.4979	ug/L	0.1385	27.81	-30.12
Tl1908_A		1.336	ug/L	0.2163	16.19	-1.664
V_2924_A		0.03858	ug/L	0.06208	160.9	-7.848
Zn2062_A		-3.462	ug/L	0.04944	1.428	20.50
Y_3600_R		18,118	Cts/S	214.44	1.1836	18,118
Y_2243_A		6,989.8	Cts/S	29.219	0.41802	6,989.8
Y_3600_A		164,790	Cts/S	818.80	0.49689	164,790

CCV

Method Name: FAST-2016_NO_AU
Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 7:34:49PM
Sample Type: QC

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		515.9	ug/L	0.9296	0.1802	9,265
Al3961_R		12,930	ug/L	30.41	0.2351	11,220
As1891_A		518.3	ug/L	3.450	0.6656	178.7
B_2089_A		523.8	ug/L	4.039	0.7711	713.9
Ba4554_R		522.8	ug/L	0.8073	0.1544	33,090
Be3130_R		523.4	ug/L	0.3514	0.06714	44,120
Ca3158_R		12,930	ug/L	33.74	0.2609	12,860
Cd2265_A	W	528.3	ug/L	3.337	0.6316	5,927
Co2286_A	W	532.1	ug/L	3.499	0.6575	1,849
Cr2677_A		525.4	ug/L	2.129	0.4052	6,230
Cu3273_A		521.3	ug/L	1.137	0.2180	7,142
Fe2599_R		12,970	ug/L	39.99	0.3084	22,670
K_7664_R		12,930	ug/L	16.85	0.1303	7,438
Li6707_R		518.8	ug/L	0.5721	0.1103	6,058
Mg2025_A		13,110	ug/L	126.7	0.9669	5,026
Mn2576_R		517.9	ug/L	1.831	0.3536	4,010
Mo2020_A	W	529.9	ug/L	3.239	0.6112	1,718
Na5895_R		12,930	ug/L	16.59	0.1283	23,800
Ni2316_A	W	533.4	ug/L	4.951	0.9282	863.2
Pb2203_A	W	534.0	ug/L	5.058	0.9473	453.1
Sb2068_A	W	527.5	ug/L	4.022	0.7624	240.1
Se1960_A		521.9	ug/L	4.333	0.8303	135.1
Si2516_R		12,940	ug/L	52.30	0.4043	4,438
Sn1899_A		526.4	ug/L	2.559	0.4862	224.3
Sr4215_R		517.5	ug/L	0.2511	0.04852	41,790
Ti3349_A		525.0	ug/L	0.9842	0.1875	12,970
Tl1908_A	W	536.0	ug/L	4.679	0.8730	286.2
V_2924_A		521.5	ug/L	2.481	0.4757	6,224
Zn2062_A		526.7	ug/L	2.268	0.4307	1,242
Y_3600_R		18,203	Cts/S	57.723	0.31711	18,203
Y_2243_A		7,010.9	Cts/S	55.380	0.78992	7,010.9
Y_3600_A		167,450	Cts/S	206.45	0.12330	167,450

CCB

Method Name: FAST-2016_NO_AU
Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 7:38:39PM
Sample Type: QC

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

CCB

Method Name: FAST-2016_NO_AU
Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 7:38:39PM
Sample Type: QC

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		0.2368	ug/L	0.01026	4.333	0.5867
Al3961_R		-15.55	ug/L	5.894	37.90	-5.954
As1891_A		-0.4678	ug/L	0.5188	110.9	-2.653
B_2089_A		1.060	ug/L	0.2693	25.41	6.956
Ba4554_R		0.1085	ug/L	0.02430	22.39	15.14
Be3130_R		0.1566	ug/L	0.06888	44.00	11.69
Ca3158_R		-9.688	ug/L	4.428	45.70	3.031
Cd2265_A		0.03104	ug/L	0.06680	215.3	0.08023
Co2286_A		0.2222	ug/L	0.04910	22.10	0.9284
Cr2677_A		0.1120	ug/L	0.1800	160.7	3.746
Cu3273_A		0.2888	ug/L	0.2157	74.71	-0.1766
Fe2599_R		-6.010	ug/L	1.166	19.40	6.169
K_7664_R		-5.186	ug/L	1.141	22.00	-18.59
Li6707_R		0.7808	ug/L	0.3756	48.11	11.82
Mg2025_A		-1.975	ug/L	0.5353	27.11	-6.937
Mn2576_R		-0.3158	ug/L	0.1919	60.77	4.025
Mo2020_A		0.05878	ug/L	0.1775	302.0	0.6994
Na5895_R		-3.518	ug/L	2.576	73.23	34.54
Ni2316_A		-0.2850	ug/L	0.2009	70.49	0.4456
Pb2203_A		-0.01003	ug/L	0.3725	3,716	-0.9201
Sb2068_A		0.08599	ug/L	0.2767	321.8	-0.6373
Se1960_A		-0.1611	ug/L	0.9177	569.6	1.493
Si2516_R		14.12	ug/L	5.222	36.99	22.76
Sn1899_A		-0.4488	ug/L	0.1840	41.00	1.432
Sr4215_R		-0.03070	ug/L	0.01231	40.08	-14.32
Ti3349_A		0.01078	ug/L	0.03999	370.8	-18.31
Tl1908_A		0.4645	ug/L	0.08702	18.73	-1.808
V_2924_A		0.001672	ug/L	0.08954	5,356	-7.060
Zn2062_A		-4.138	ug/L	0.09029	2.182	19.47
Y_3600_R		18,187	Cts/S	77.852	0.42807	18,187
Y_2243_A		7,185.1	Cts/S	6.0964	0.084848	7,185.1
Y_3600_A		169,910	Cts/S	818.65	0.48181	169,910

SO3742-004

Method Name: FAST-2016_NO_AU
Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 7:42:45PM
Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		0.08877	ug/L	0.05020	56.54	-22.75
Al3961_R		-4.947	ug/L	4.534	91.65	5.035
As1891_A		3.053	ug/L	1.049	34.38	-1.872
B_2089_A		8.257	ug/L	0.09491	1.149	16.67
Ba4554_R		21.22	ug/L	0.04172	0.1966	1,358
Be3130_R		0.04641	ug/L	0.01644	35.41	2.428
Ca3158_R		8,690	ug/L	136.1	1.566	8,689
Cd2265_A		-0.2189	ug/L	0.04979	22.75	16.57
Co2286_A		0.04594	ug/L	0.04584	99.79	0.5660
Cr2677_A		-0.01760	ug/L	0.2324	1,321	3.585
Cu3273_A		0.4951	ug/L	0.4067	82.15	1.814
Fe2599_R		8,385	ug/L	99.11	1.182	14,740
K_7664_R		1,758	ug/L	10.22	0.5815	1,002
Li6707_R		1.040	ug/L	1.346	129.4	14.84
Mg2025_A		1,196	ug/L	3.584	0.2997	463.3
Mn2576_R		394.4	ug/L	6.991	1.773	3,069
Mo2020_A		0.4309	ug/L	0.2001	46.44	2.045
Na5895_R		5,297	ug/L	78.91	1.490	9,823
Ni2316_A		-0.5477	ug/L	0.2195	40.07	-0.3306

SO3742-004

Method Name: FAST-2016_NO_AU
Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 7:42:45PM
Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb2203_A		-0.02673	ug/L	0.3266	1,222	-0.7780
Sb2068_A		-0.2417	ug/L	0.2732	113.0	-0.7436
Se1960_A		0.6162	ug/L	1.408	228.5	1.743
Si2516_R		3,348	ug/L	53.18	1.588	1,167
Sn1899_A		-0.2373	ug/L	0.1377	58.03	1.524
Sr4215_R		91.39	ug/L	1.038	1.136	7,407
Ti3349_A		-0.1070	ug/L	0.02417	22.59	-21.36
Tl1908_A		1.138	ug/L	0.1419	12.47	-1.786
V_2924_A		0.2020	ug/L	0.1208	59.79	-5.312
Zn2062_A		-2.934	ug/L	0.04212	1.436	22.33
Y_3600_R		18,294	Cts/S	240.34	1.3138	18,294
Y_2243_A		7,187.8	Cts/S	18.485	0.25717	7,187.8
Y_3600_A		170,660	Cts/S	183.40	0.10747	170,660

SO3742-006

Method Name: FAST-2016_NO_AU
Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 7:46:47PM
Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		0.1262	ug/L	0.1233	97.71	-48.54
Al3961_R		0.9923	ug/L	0.3183	32.08	11.62
As1891_A	W	2,338	ug/L	7.095	0.3035	829.2
B_2089_A		28.68	ug/L	0.3690	1.287	43.94
Ba4554_R		9.053	ug/L	0.2087	2.305	590.7
Be3130_R		0.03834	ug/L	0.01100	28.68	1.771
Ca3158_R		14,090	ug/L	58.67	0.4164	14,240
Cd2265_A		-0.4472	ug/L	0.1004	22.45	40.22
Co2286_A		9.126	ug/L	0.03482	0.3815	32.89
Cr2677_A		-0.2641	ug/L	0.1015	38.42	2.864
Cu3273_A		-0.2660	ug/L	0.03590	13.49	-9.656
Fe2599_R		19,940	ug/L	58.33	0.2926	35,420
K_7664_R		2,521	ug/L	16.13	0.6401	1,461
Li6707_R		0.6381	ug/L	0.02601	4.076	10.34
Mg2025_A		1,932	ug/L	3.258	0.1687	745.7
Mn2576_R	W	1,200	ug/L	5.392	0.4493	9,434
Mo2020_A		4.513	ug/L	0.02818	0.6245	15.69
Na5895_R	W	46,740	ug/L	78.46	0.1679	87,340
Ni2316_A		4.396	ug/L	0.09603	2.184	7.326
Pb2203_A		0.5326	ug/L	0.4727	88.74	-0.07554
Sb2068_A		-0.03281	ug/L	1.292	3,939	-0.6666
Se1960_A		-0.03623	ug/L	0.3331	919.3	1.615
Si2516_R		8,439	ug/L	41.85	0.4959	2,947
Sn1899_A		-0.8499	ug/L	0.4376	51.49	1.247
Sr4215_R		115.9	ug/L	0.07908	0.06824	9,503
Ti3349_A		-0.3314	ug/L	0.2873	86.69	-25.93
Tl1908_A		1.699	ug/L	0.4477	26.36	-2.150
V_2924_A		0.6089	ug/L	0.05762	9.464	-2.177
Zn2062_A		-2.193	ug/L	0.02908	1.326	23.86
Y_3600_R		18,502	Cts/S	6.5354	0.035323	18,502
Y_2243_A		7,123.7	Cts/S	4.3650	0.061274	7,123.7
Y_3600_A		164,340	Cts/S	3,456.6	2.1033	164,340

SO3742-008

Method Name: FAST-2016_NO_AU
Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 7:50:49PM
Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

SO3742-008

Method Name: FAST-2016_NO_AU
Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 7:50:49PM
Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		0.5837	ug/L	0.1660	28.44	-8.699
Al3961_R		19.70	ug/L	8.416	42.72	42.51
As1891_A		49.74	ug/L	0.1219	0.2450	14.52
B_2089_A		120.8	ug/L	0.2441	0.2021	162.7
Ba4554_R		74.82	ug/L	0.4881	0.6523	4,706
Be3130_R		-0.02593	ug/L	0.04996	192.7	-3.635
Ca3158_R	W	87,640	ug/L	836.8	0.9549	86,420
Cd2265_A		-0.03245	ug/L	0.01311	40.38	13.90
Co2286_A		14.47	ug/L	0.1073	0.7416	50.05
Cr2677_A		0.4466	ug/L	0.1096	24.55	26.46
Cu3273_A		5.985	ug/L	0.06188	1.034	75.63
Fe2599_R		6,514	ug/L	34.38	0.5278	11,310
K_7664_R		7,559	ug/L	34.65	0.4583	4,308
Li6707_R		9.272	ug/L	1.035	11.16	110.2
Mg2025_A		11,010	ug/L	19.88	0.1805	4,174
Mn2576_R	W	11,650	ug/L	120.8	1.037	89,400
Mo2020_A		-1.207	ug/L	0.02053	1.701	-0.2597
Na5895_R	W	44,950	ug/L	263.1	0.5852	82,020
Ni2316_A		12.27	ug/L	0.1495	1.218	20.22
Pb2203_A		1.050	ug/L	0.7171	68.31	0.1243
Sb2068_A		-1.546	ug/L	0.7806	50.51	-1.323
Se1960_A		-0.4214	ug/L	1.036	246.0	2.497
Si2516_R		9,352	ug/L	78.49	0.8393	3,188
Sn1899_A		-1.380	ug/L	0.02824	2.046	0.9946
Sr4215_R		919.2	ug/L	4.109	0.4470	73,680
Ti3349_A		-0.2144	ug/L	0.01314	6.131	-23.13
Tl1908_A		7.723	ug/L	0.2439	3.158	-7.405
V_2924_A		0.5803	ug/L	0.1377	23.72	-32.05
Zn2062_A		-0.02916	ug/L	0.07704	264.2	28.24
Y_3600_R		18,065	Cts/S	199.24	1.1029	18,065
Y_2243_A		6,952.0	Cts/S	14.404	0.20719	6,952.0
Y_3600_A		163,950	Cts/S	112.86	0.068834	163,950

SO3743-002

Method Name: FAST-2016_NO_AU
Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 7:56:11PM
Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		1.111	ug/L	0.05844	5.259	-49.18
Al3961_R		7.272	ug/L	4.480	61.60	22.67
As1891_A		51.51	ug/L	1.469	2.852	13.66
B_2089_A		8.976	ug/L	0.3397	3.784	16.67
Ba4554_R		124.6	ug/L	0.1676	0.1345	7,986
Be3130_R		-0.02243	ug/L	0.02601	115.9	-3.425
Ca3158_R	W	41,520	ug/L	249.5	0.6009	41,750
Cd2265_A		-0.5460	ug/L	0.004150	0.7600	55.67
Co2286_A		2.708	ug/L	0.1814	6.699	10.10
Cr2677_A		-0.4126	ug/L	0.2515	60.96	11.99
Cu3273_A		-0.03455	ug/L	0.2356	682.0	-7.166
Fe2599_R	W	28,280	ug/L	114.3	0.4041	50,010
K_7664_R		7,119	ug/L	5.327	0.07483	4,136
Li6707_R		2.703	ug/L	0.01073	0.3971	34.68
Mg2025_A		4,345	ug/L	25.12	0.5781	1,612
Mn2576_R	W	7,856	ug/L	3.646	0.04641	61,470
Mo2020_A		-1.246	ug/L	0.1712	13.74	-1.378
Na5895_R	F	221,300	ug/L	130.0	0.05877	411,500
Ni2316_A		-0.4764	ug/L	0.6261	131.4	-0.9838

SO3743-002

Method Name: FAST-2016_NO_AU
Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 7:56:11PM
Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb2203_A		0.9166	ug/L	0.1371	14.96	0.3998
Sb2068_A		-0.4227	ug/L	0.2475	58.55	-0.6777
Se1960_A		1.449	ug/L	0.9108	62.85	2.572
Si2516_R		10,470	ug/L	80.18	0.7659	3,635
Sn1899_A		-0.04985	ug/L	0.06969	139.8	1.523
Sr4215_R		874.9	ug/L	2.563	0.2929	71,510
Ti3349_A		-0.2862	ug/L	0.1005	35.12	-24.08
Tl1908_A		4.176	ug/L	0.4698	11.25	-6.128
V_2924_A		0.8830	ug/L	0.06831	7.735	-16.12
Zn2062_A		-1.934	ug/L	0.06737	3.484	23.42
Y_3600_R		18,419	Cts/S	14.044	0.076247	18,419
Y_2243_A		6,818.7	Cts/S	25.908	0.37996	6,818.7
Y_3600_A		158,880	Cts/S	2,004.2	1.2614	158,880

SO3743-003

Method Name: FAST-2016_NO_AU
Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 8:01:44PM
Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		-0.04084	ug/L	0.1239	303.3	-4.621
Al3961_R		-5.202	ug/L	5.148	98.97	3.090
As1891_A		-0.8940	ug/L	0.4898	54.78	-2.843
B_2089_A		0.06179	ug/L	0.01423	23.03	5.676
Ba4554_R		0.2804	ug/L	0.02562	9.136	26.54
Be3130_R		0.004166	ug/L	0.03300	792.3	-1.176
Ca3158_R		107.7	ug/L	2.192	2.035	122.0
Cd2265_A		-0.01400	ug/L	0.005024	35.88	-0.3894
Co2286_A		0.1239	ug/L	0.04523	36.51	0.5872
Cr2677_A		0.03639	ug/L	0.06861	188.5	2.883
Cu3273_A		0.5237	ug/L	0.1485	28.36	3.133
Fe2599_R		16.11	ug/L	0.9690	6.015	45.70
K_7664_R		3.713	ug/L	19.54	526.3	-13.69
Li6707_R		0.7940	ug/L	0.2954	37.20	12.22
Mg2025_A		22.90	ug/L	1.370	5.982	2.857
Mn2576_R		1.675	ug/L	0.09501	5.671	19.81
Mo2020_A		-0.1197	ug/L	0.1489	124.3	0.1094
Na5895_R		373.6	ug/L	0.2385	0.06385	742.0
Ni2316_A		-0.3917	ug/L	0.3278	83.69	0.2720
Pb2203_A		-0.5969	ug/L	0.1269	21.27	-1.452
Sb2068_A		-0.5243	ug/L	0.7059	134.6	-0.9349
Se1960_A		-0.006722	ug/L	0.4213	6,268	1.553
Si2516_R		376.6	ug/L	15.78	4.189	149.5
Sn1899_A		-0.3968	ug/L	0.08418	21.21	1.473
Sr4215_R		0.2717	ug/L	0.02802	10.32	10.28
Ti3349_A		0.05937	ug/L	0.07195	121.2	-17.37
Tl1908_A		0.9582	ug/L	0.1435	14.98	-1.557
V_2924_A		0.1245	ug/L	0.04405	35.37	-5.639
Zn2062_A		-3.802	ug/L	0.03476	0.9143	20.53
Y_3600_R		18,565	Cts/S	190.49	1.0260	18,565
Y_2243_A		7,277.1	Cts/S	37.019	0.50871	7,277.1
Y_3600_A		172,650	Cts/S	27.593	0.015982	172,650

SO3743-005

Method Name: FAST-2016_NO_AU
Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 8:05:49PM
Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

SO3743-005

Method Name: FAST-2016_NO_AU
Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 8:05:49PM
Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		0.7570	ug/L	0.2841	37.53	-183.8
Al3961_R		2.405	ug/L	6.537	271.8	14.24
As1891_A		338.9	ug/L	3.331	0.9830	108.3
B_2089_A		13.30	ug/L	0.01521	0.1144	22.22
Ba4554_R		88.40	ug/L	1.293	1.463	5,648
Be3130_R		0.05247	ug/L	0.02800	53.37	2.924
Ca3158_R		21,910	ug/L	323.8	1.478	21,960
Cd2265_A		-1.770	ug/L	0.1741	9.836	166.4
Co2286_A		0.7075	ug/L	0.1389	19.63	5.064
Cr2677_A		-0.6208	ug/L	0.1345	21.66	4.031
Cu3273_A		-0.6807	ug/L	0.07634	11.22	-20.97
Fe2599_R	W	85,110	ug/L	1,157	1.359	149,900
K_7664_R	W	28,650	ug/L	419.4	1.464	16,630
Li6707_R		0.7518	ug/L	1.207	160.5	11.49
Mg2025_A		2,169	ug/L	9.355	0.4313	800.9
Mn2576_R	W	1,147	ug/L	17.55	1.530	8,928
Mo2020_A		0.6466	ug/L	0.1044	16.14	2.811
Na5895_R	W	156,300	ug/L	2,781	1.780	289,600
Ni2316_A		-0.003220	ug/L	0.6039	18,750	-2.442
Pb2203_A		0.2062	ug/L	0.3174	154.0	0.8222
Sb2068_A		-0.5952	ug/L	0.6048	101.6	-0.4533
Se1960_A		2.081	ug/L	0.8077	38.82	2.132
Si2516_R		9,810	ug/L	207.6	2.116	3,388
Sn1899_A		0.4174	ug/L	0.2404	57.60	1.712
Sr4215_R		151.7	ug/L	2.458	1.620	12,350
Ti3349_A		0.8891	ug/L	0.1516	17.05	3.446
Tl1908_A		1.739	ug/L	0.3019	17.36	-2.117
V_2924_A		3.900	ug/L	0.2044	5.242	39.24
Zn2062_A		5.075	ug/L	0.1203	2.371	39.07
Y_3600_R		18,355	Cts/S	272.68	1.4856	18,355
Y_2243_A		6,805.7	Cts/S	27.409	0.40273	6,805.7
Y_3600_A		157,720	Cts/S	1,571.7	0.99652	157,720

SO3743-005L

Method Name: FAST-2016_NO_AU
Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 8:10:42PM
Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		0.2755	ug/L	0.07459	27.07	-45.66
Al3961_R		-53.89	ug/L	16.48	30.59	-0.9037
As1891_A		322.1	ug/L	1.720	0.5338	19.70
B_2089_A		9.729	ug/L	1.708	17.56	8.167
Ba4554_R		89.42	ug/L	0.01094	0.01224	1,141
Be3130_R		-0.1112	ug/L	0.01016	9.137	-3.396
Ca3158_R		22,600	ug/L	293.1	1.297	4,509
Cd2265_A		-2.659	ug/L	0.06855	2.578	34.54
Co2286_A		1.556	ug/L	0.1779	11.43	1.809
Cr2677_A		-0.4606	ug/L	0.9723	211.1	3.204
Cu3273_A		-1.744	ug/L	0.7653	43.87	-10.83
Fe2599_R		88,470	ug/L	125.0	0.1413	30,970
K_7664_R		28,740	ug/L	36.00	0.1252	3,302
Li6707_R		2.759	ug/L	2.936	106.4	9.164
Mg2025_A		2,269	ug/L	16.41	0.7233	172.6
Mn2576_R		1,179	ug/L	1.380	0.1171	1,828
Mo2020_A		-0.3468	ug/L	0.01618	4.666	0.3397
Na5895_R	W	159,000	ug/L	887.2	0.5581	58,540
Ni2316_A		-1.659	ug/L	0.6683	40.28	-0.3593

SO3743-005L

Method Name: FAST-2016_NO_AU
Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 8:10:42PM
Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb2203_A		0.04273	ug/L	3.459	8,095	-0.5717
Sb2068_A		-1.087	ug/L	0.1364	12.55	-0.6774
Se1960_A		1.790	ug/L	9.589	535.5	1.670
Si2516_R		9,739	ug/L	60.03	0.6164	682.4
Sn1899_A		-7.229	ug/L	3.660	50.63	1.002
Sr4215_R		151.5	ug/L	0.6376	0.4209	2,439
Ti3349_A		0.5279	ug/L	0.6539	123.9	-15.79
Tl1908_A		4.700	ug/L	0.6743	14.35	-1.784
V_2924_A		3.856	ug/L	1.268	32.89	2.705
Zn2062_A		-10.19	ug/L	0.09867	0.9681	24.51
Y_3600_R		18,225	Cts/S	88.638	0.48635	18,225
Y_2243_A		7,207.1	Cts/S	26.498	0.36767	7,207.1
Y_3600_A		168,560	Cts/S	1,257.7	0.74618	168,560

SO3743-005A

Method Name: FAST-2016_NO_AU
Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 8:14:46PM
Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		843.7	ug/L	2.549	0.3022	14,320
Al3961_R		11,170	ug/L	232.0	2.078	9,564
As1891_A		859.1	ug/L	3.272	0.3808	285.9
B_2089_A		551.4	ug/L	2.973	0.5392	730.3
Ba4554_R		611.1	ug/L	13.86	2.269	38,160
Be3130_R		538.8	ug/L	10.43	1.937	44,810
Ca3158_R	W	27,900	ug/L	450.6	1.615	27,370
Cd2265_A		526.6	ug/L	2.997	0.5692	5,921
Co2286_A		525.4	ug/L	2.523	0.4802	1,779
Cr2677_A		526.8	ug/L	1.694	0.3217	5,976
Cu3273_A		536.0	ug/L	1.525	0.2845	7,009
Fe2599_R	W	91,230	ug/L	1,590	1.742	157,300
K_7664_R	W	39,260	ug/L	809.1	2.061	22,310
Li6707_R		526.6	ug/L	10.31	1.957	6,066
Mg2025_A		7,600	ug/L	49.93	0.6570	2,839
Mn2576_R	W	1,679	ug/L	29.45	1.755	12,790
Mo2020_A		534.9	ug/L	2.827	0.5286	1,688
Na5895_R	W	160,400	ug/L	1,347	0.8396	290,900
Ni2316_A		522.4	ug/L	2.198	0.4207	819.8
Pb2203_A		528.3	ug/L	3.267	0.6184	437.7
Sb2068_A		537.5	ug/L	4.523	0.8414	238.5
Se1960_A		553.3	ug/L	1.682	0.3039	139.4
Si2516_R		10,140	ug/L	192.0	1.894	3,427
Sn1899_A		534.2	ug/L	4.991	0.9342	221.5
Sr4215_R		670.1	ug/L	14.03	2.094	53,400
Ti3349_A		530.4	ug/L	1.295	0.2441	12,520
Tl1908_A		512.0	ug/L	3.168	0.6187	264.8
V_2924_A		534.7	ug/L	2.423	0.4532	6,100
Zn2062_A		552.4	ug/L	3.103	0.5617	1,266
Y_3600_R		17,962	Cts/S	245.54	1.3670	17,962
Y_2243_A		6,822.1	Cts/S	26.060	0.38200	6,822.1
Y_3600_A		160,000	Cts/S	653.65	0.40853	160,000

SO3743-005P

Method Name: FAST-2016_NO_AU
Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 8:19:26PM
Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

SO3743-005P

Method Name: FAST-2016_NO_AU
Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 8:19:26PM
Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		53.77	ug/L	0.3781	0.7032	729.9
Al3961_R		2,135	ug/L	4.611	0.2160	1,875
As1891_A		444.8	ug/L	3.427	0.7704	144.0
B_2089_A		566.8	ug/L	2.545	0.4490	730.0
Ba4554_R	W	2,164	ug/L	8.696	0.4018	137,800
Be3130_R		53.78	ug/L	0.05234	0.09733	4,534
Ca3158_R		24,110	ug/L	18.62	0.07723	24,120
Cd2265_A		270.1	ug/L	0.8233	0.3048	3,102
Co2286_A		537.7	ug/L	1.420	0.2642	1,811
Cr2677_A		213.2	ug/L	2.285	1.072	2,438
Cu3273_A		272.5	ug/L	0.6113	0.2243	3,576
Fe2599_R	W	84,800	ug/L	204.3	0.2409	149,100
K_7664_R	W	38,620	ug/L	54.24	0.1404	22,380
Li6707_R		521.9	ug/L	3.298	0.6319	6,131
Mg2025_A		7,142	ug/L	33.88	0.4744	2,651
Mn2576_R	W	1,632	ug/L	0.8039	0.04927	12,680
Mo2020_A		109.2	ug/L	0.5144	0.4710	343.1
Na5895_R	W	161,300	ug/L	438.2	0.2716	298,400
Ni2316_A		536.1	ug/L	1.188	0.2217	834.2
Pb2203_A		110.3	ug/L	0.3175	0.2879	91.39
Sb2068_A		109.6	ug/L	0.7809	0.7127	46.78
Se1960_A		116.6	ug/L	0.9262	0.7945	30.54
Si2516_R		10,710	ug/L	24.97	0.2332	3,692
Sn1899_A		526.9	ug/L	2.794	0.5303	217.3
Sr4215_R		660.6	ug/L	0.4168	0.06309	53,690
Ti3349_A		538.2	ug/L	2.867	0.5327	12,770
Tl1908_A		110.0	ug/L	0.08654	0.07864	53.39
V_2924_A		537.9	ug/L	4.124	0.7667	6,207
Zn2062_A		563.3	ug/L	2.628	0.4665	1,284
Y_3600_R		18,318	Cts/S	99.426	0.54279	18,318
Y_2243_A		6,785.5	Cts/S	29.379	0.43297	6,785.5
Y_3600_A		160,810	Cts/S	407.48	0.25340	160,810

SO3743-005S

Method Name: FAST-2016_NO_AU
Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 8:24:11PM
Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		56.66	ug/L	0.2121	0.3744	753.8
Al3961_R		2,262	ug/L	18.20	0.8045	1,936
As1891_A		460.5	ug/L	1.279	0.2777	148.9
B_2089_A		581.5	ug/L	3.464	0.5957	748.3
Ba4554_R	W	2,279	ug/L	21.47	0.9421	141,500
Be3130_R		56.67	ug/L	0.4089	0.7215	4,658
Ca3158_R	W	25,800	ug/L	124.8	0.4836	25,160
Cd2265_A		277.6	ug/L	1.899	0.6840	3,193
Co2286_A		553.1	ug/L	2.875	0.5198	1,861
Cr2677_A		223.9	ug/L	0.7166	0.3201	2,516
Cu3273_A		286.5	ug/L	1.004	0.3505	3,694
Fe2599_R	W	90,290	ug/L	676.1	0.7488	154,700
K_7664_R	W	41,180	ug/L	299.0	0.7261	23,260
Li6707_R		551.7	ug/L	7.114	1.289	6,318
Mg2025_A		7,351	ug/L	23.24	0.3161	2,727
Mn2576_R	W	1,756	ug/L	7.367	0.4196	13,300
Mo2020_A		112.8	ug/L	0.2181	0.1934	354.1
Na5895_R	W	171,200	ug/L	291.9	0.1706	308,600
Ni2316_A		550.1	ug/L	3.395	0.6172	855.1

SO3743-005S

Method Name: FAST-2016_NO_AU
Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 8:24:11PM
Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Pb2203_A		113.5	ug/L	0.7493	0.6601	94.05
Sb2068_A		112.6	ug/L	0.4857	0.4313	48.08
Se1960_A		121.4	ug/L	0.4433	0.3650	31.73
Si2516_R		11,420	ug/L	129.2	1.131	3,837
Sn1899_A		543.4	ug/L	2.621	0.4824	223.8
Sr4215_R		700.2	ug/L	6.951	0.9927	55,470
Ti3349_A		566.6	ug/L	0.5953	0.1051	13,210
Tl1908_A		114.0	ug/L	0.8707	0.7639	55.23
V_2924_A		567.2	ug/L	0.5980	0.1054	6,432
Zn2062_A		579.2	ug/L	5.233	0.9035	1,319
Y_3600_R		17,855	Cts/S	38.333	0.21469	17,855
Y_2243_A		6,779.4	Cts/S	17.494	0.25804	6,779.4
Y_3600_A		158,010	Cts/S	351.68	0.22257	158,010

CCV

Method Name: FAST-2016_NO_AU
Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 8:28:53PM
Sample Type: QC

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A	W	531.2	ug/L	9.849	1.854	9,291
Al3961_R		12,950	ug/L	28.59	0.2208	11,220
As1891_A		514.6	ug/L	0.4621	0.08979	178.1
B_2089_A		520.4	ug/L	0.4583	0.08808	712.2
Ba4554_R		520.7	ug/L	0.2604	0.05001	32,910
Be3130_R		523.3	ug/L	0.01196	0.002286	44,050
Ca3158_R		12,930	ug/L	29.33	0.2268	12,850
Cd2265_A		526.2	ug/L	1.131	0.2149	5,928
Co2286_A	W	530.8	ug/L	0.7877	0.1484	1,852
Cr2677_A	W	543.1	ug/L	11.66	2.147	6,272
Cu3273_A	W	536.8	ug/L	8.790	1.638	7,163
Fe2599_R		12,980	ug/L	20.89	0.1609	22,660
K_7664_R		12,920	ug/L	16.27	0.1259	7,420
Li6707_R		517.5	ug/L	0.05670	0.01096	6,034
Mg2025_A		13,070	ug/L	22.01	0.1684	5,032
Mn2576_R		520.6	ug/L	2.734	0.5251	4,025
Mo2020_A	W	527.3	ug/L	1.083	0.2054	1,716
Na5895_R		12,950	ug/L	6.108	0.04717	23,800
Ni2316_A	W	531.3	ug/L	0.3966	0.07465	863.3
Pb2203_A	W	531.2	ug/L	1.075	0.2024	452.5
Sb2068_A		523.4	ug/L	2.389	0.4565	239.2
Se1960_A		518.8	ug/L	3.626	0.6989	134.9
Si2516_R		12,990	ug/L	30.28	0.2331	4,451
Sn1899_A		523.2	ug/L	0.06965	0.01331	223.8
Sr4215_R		516.5	ug/L	0.8788	0.1701	41,660
Ti3349_A	W	542.5	ug/L	11.96	2.205	13,050
Tl1908_A	W	534.5	ug/L	0.5597	0.1047	286.6
V_2924_A	W	537.9	ug/L	11.93	2.218	6,253
Zn2062_A		526.1	ug/L	1.124	0.2136	1,245
Y_3600_R		18,178	Cts/S	39.570	0.21768	18,178
Y_2243_A		7,039.1	Cts/S	26.734	0.37980	7,039.1
Y_3600_A		163,100	Cts/S	2,323.8	1.4247	163,100

CCB

Method Name: FAST-2016_NO_AU
Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 8:32:45PM
Sample Type: QC

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio

CCB

Method Name: FAST-2016_NO_AU
Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 8:32:45PM
Sample Type: QC

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		0.1735	ug/L	0.1251	72.11	-0.5756
Al3961_R		-3.034	ug/L	4.398	145.0	4.823
As1891_A		-1.101	ug/L	0.4701	42.70	-2.895
B_2089_A		0.8331	ug/L	0.1116	13.40	6.697
Ba4554_R		0.2568	ug/L	0.01949	7.590	24.39
Be3130_R		0.2098	ug/L	0.04900	23.36	16.05
Ca3158_R		-3.801	ug/L	3.420	89.99	8.858
Cd2265_A		0.07104	ug/L	0.02347	33.04	0.5467
Co2286_A		0.2526	ug/L	0.04037	15.98	1.043
Cr2677_A		0.3357	ug/L	0.1388	41.34	6.456
Cu3273_A		-0.03615	ug/L	0.07807	216.0	-4.721
Fe2599_R		-3.104	ug/L	0.03215	1.036	11.19
K_7664_R		24.54	ug/L	1.491	6.078	-1.472
Li6707_R		1.700	ug/L	0.9543	56.12	22.50
Mg2025_A		-0.1439	ug/L	0.5859	407.2	-6.247
Mn2576_R		-0.01649	ug/L	0.1466	888.7	6.299
Mo2020_A		0.3709	ug/L	0.04853	13.08	1.745
Na5895_R		2.404	ug/L	1.773	73.76	45.17
Ni2316_A		-0.1601	ug/L	0.2242	140.0	0.6576
Pb2203_A		0.2578	ug/L	0.6413	248.8	-0.6920
Sb2068_A		-0.01917	ug/L	0.4066	2,121	-0.6896
Se1960_A		0.03935	ug/L	1.417	3,601	1.554
Si2516_R		14.56	ug/L	3.565	24.49	22.80
Sn1899_A		-0.5926	ug/L	0.3226	54.44	1.377
Sr4215_R		-0.02524	ug/L	0.0009960	3.944	-13.81
Ti3349_A		0.1617	ug/L	0.08071	49.92	-14.60
Tl1908_A		0.6373	ug/L	0.2372	37.23	-1.723
V_2924_A		0.3423	ug/L	0.03895	11.38	-2.941
Zn2062_A		-4.038	ug/L	0.06414	1.588	19.81
Y_3600_R		18,091	Cts/S	209.97	1.1606	18,091
Y_2243_A		7,222.9	Cts/S	23.792	0.32940	7,222.9
Y_3600_A		170,710	Cts/S	1,014.2	0.59413	170,710

SO3700-001

Method Name: FAST-2016_NO_AU
Method Revision: 321
Analyst Name: EP
Acquire Date: 6/23/2021 8:36:50PM
Sample Type: Unknown

Elem	Flags	Avg	Units	Stddev	%RSD	Intensity Ratio
Ag3280_A		0.9389	ug/L	0.03380	3.600	-64.05
Al3961_R	W	33,430	ug/L	187.3	0.5604	29,420
As1891_A		15.83	ug/L	0.6160	3.892	1.335
B_2089_A		34.29	ug/L	0.3366	0.9815	52.44
Ba4554_R		96.21	ug/L	0.1855	0.1928	6,197
Be3130_R		1.217	ug/L	0.003841	0.3157	43.79
Ca3158_R		20,560	ug/L	20.15	0.09797	20,780
Cd2265_A		0.09489	ug/L	0.003098	3.265	72.48
Co2286_A		9.312	ug/L	0.08138	0.8739	43.59
Cr2677_A		46.45	ug/L	0.2143	0.4614	568.3
Cu3273_A		33.23	ug/L	0.1509	0.4540	454.1
Fe2599_R	W	30,570	ug/L	8.214	0.02687	54,310
K_7664_R		2,935	ug/L	14.18	0.4830	1,704
Li6707_R		33.44	ug/L	1.568	4.688	399.5
Mg2025_A		7,722	ug/L	55.10	0.7135	3,063
Mn2576_R	W	1,389	ug/L	4.664	0.3358	10,910
Mo2020_A		1.869	ug/L	0.2042	10.92	7.162
Na5895_R		582.0	ug/L	2.722	0.4677	1,129
Ni2316_A		20.02	ug/L	0.4831	2.413	33.15

KATAHDIN ANALYTICAL SERVICES, LLC
METALS ANALYSIS RUN INFORMATION SHEET

INSTR. ID: L (Agilent 7800) **ANALYST**: NWA **ANALYSIS DATE**: 06/29/21

METHOD: **ICP-MS** **FILE NAME**: LOF29C

- ☑ 200.8
- ☑ 6020
- ☑ DOD

The pHs of all samples that were tested by direct analysis in this analytical run were checked just prior to analysis and confirmed
to be <2. The time of preservation of these samples was checked in the "Measured Turbidity and Preservation of Incoming Samples" logbook to verify that they had been preserved at least 16 hours prior to analysis. These verifications were performed by
_____ (initials) on _____ (date).

STANDARDS USED:

tandard Name	Standard ID	Prep Date	Expiration Date	Standard Conc.
. Blk/ICB/CCB	MW20280	06/14/21	06/14/22	0 ug/L
Standard 1	MW20282	06/15/21	07/14/21	Varies by Element
ICV	MW20281	06/15/21	07/14/21	Varies by Element
PQL	MW20277	06/10/21	07/16/21	Varies by Element
LRS1	MW20216	06/08/21	09/08/21	Varies by Element
LRS2	MW20217	06/08/21	09/08/21	Varies by Element
ICSA	MW20306	06/28/21	07/05/21	Varies by Element
ICSAB	MW20302	06/25/21	07/02/21	Varies by Element
CCV	MW20272	06/25/21	07/14/21	Varies by Element
l Standard (ISTD)	MW20247	06/02/21	08/30/21	0.4 mg/L (Li,Sc,Ge/Y,Tb,Bi)

Additional Comments and Notes:

PQL (14:25) Failed DoD High for TL (0.245 ug/L)

LRS1 (14:33) Failed DoD High for U (861.149 ug/L)

CCB (21:36) Failed DoD High for U (0.100 ug/L)

REVIEWED
6/30/21
KATAHDIN ANALYTICAL
METALS SECTION

For high failing ICB/ICSA/CCBs/PQLs, reported samples less than ½ PQL or >10x detected concentrations of failed analytes.

For low failing CCBs/PQLs, reported samples greater than 10x absolute value of failures, or greater than 10x LOQ, whichever is greater, or < ½ LOD.

INSTRUMENT RUNLOG

Instrument: AGILENT 7800

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
CalBlank	1	LOF29C	06/29/2021	14:14	NWA
CalStd	1	LOF29C	06/29/2021	14:17	NWA
ICV	1	LOF29C	06/29/2021	14:20	NWA
ICB	1	LOF29C	06/29/2021	14:23	NWA
PQL	1	LOF29C	06/29/2021	14:25	NWA
ICSA	1	LOF29C	06/29/2021	14:28	NWA
ICSAB	1	LOF29C	06/29/2021	14:30	NWA
LRS1	1	LOF29C	06/29/2021	14:33	NWA
LRS2	1	LOF29C	06/29/2021	14:35	NWA
RINSE	1	LOF29C	06/29/2021	14:38	NWA
RINSE	1	LOF29C	06/29/2021	14:40	NWA
CCV	1	LOF29C	06/29/2021	14:43	NWA
CCB	1	LOF29C	06/29/2021	14:45	NWA
PBSOF08IMS1	5	LOF29C	06/29/2021	14:48	NWA
LCSOOF08IMS1	5	LOF29C	06/29/2021	14:50	NWA
SO3356-001	5	LOF29C	06/29/2021	14:53	NWA
SO3356-002	5	LOF29C	06/29/2021	14:55	NWA
RINSE	1	LOF29C	06/29/2021	14:57	NWA
RINSE	1	LOF29C	06/29/2021	15:00	NWA
RINSE	1	LOF29C	06/29/2021	15:03	NWA
PBWOF10IMW3	5	LOF29C	06/29/2021	15:05	NWA
LCSWOF10IMW3	5	LOF29C	06/29/2021	15:08	NWA
RINSE	1	LOF29C	06/29/2021	15:10	NWA
CCV	1	LOF29C	06/29/2021	15:13	NWA
CCB	1	LOF29C	06/29/2021	15:15	NWA
SO3440-001	20	LOF29C	06/29/2021	15:18	NWA
SO3459-001	5	LOF29C	06/29/2021	15:20	NWA
SO3459-002	5	LOF29C	06/29/2021	15:23	NWA
SO3459-003	5	LOF29C	06/29/2021	15:25	NWA
SO3459-004	5	LOF29C	06/29/2021	15:27	NWA
RINSE	1	LOF29C	06/29/2021	15:30	NWA
SO3459-005	5	LOF29C	06/29/2021	15:32	NWA
SO3459-006	5	LOF29C	06/29/2021	15:35	NWA
SO3459-008	5	LOF29C	06/29/2021	15:37	NWA
RINSE	1	LOF29C	06/29/2021	15:40	NWA
CCV	1	LOF29C	06/29/2021	15:42	NWA
CCB	1	LOF29C	06/29/2021	15:45	NWA
SO3459-009	5	LOF29C	06/29/2021	15:47	NWA
SO3459-010	5	LOF29C	06/29/2021	15:50	NWA
SO3459-011	5	LOF29C	06/29/2021	15:52	NWA
SO3459-012	5	LOF29C	06/29/2021	15:55	NWA
RINSE	1	LOF29C	06/29/2021	15:57	NWA
SO3459-013	5	LOF29C	06/29/2021	16:00	NWA
SO3459-013A	5	LOF29C	06/29/2021	16:02	NWA

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SO3459-013L	25	LOF29C	06/29/2021	16:04	NWA
SO3459-013P	5	LOF29C	06/29/2021	16:07	NWA
RINSE	1	LOF29C	06/29/2021	16:09	NWA
CCV	1	LOF29C	06/29/2021	16:12	NWA
CCB	1	LOF29C	06/29/2021	16:14	NWA
SO3459-013S	5	LOF29C	06/29/2021	16:17	NWA
PBWOF17IMW1	5	LOF29C	06/29/2021	16:19	NWA
LCSWOF17IMW1	5	LOF29C	06/29/2021	16:22	NWA
SO3505-001	5	LOF29C	06/29/2021	16:43	NWA
RINSE	1	LOF29C	06/29/2021	16:45	NWA
SO3505-002	5	LOF29C	06/29/2021	16:48	NWA
SO3505-002A	5	LOF29C	06/29/2021	16:50	NWA
SO3505-002L	25	LOF29C	06/29/2021	16:53	NWA
SO3505-002P	5	LOF29C	06/29/2021	16:55	NWA
RINSE	1	LOF29C	06/29/2021	16:58	NWA
CCV	1	LOF29C	06/29/2021	17:01	NWA
CCB	1	LOF29C	06/29/2021	17:03	NWA
SO3505-002	5	LOF29C	06/29/2021	17:06	NWA
SO3505-002A	5	LOF29C	06/29/2021	17:08	NWA
SO3505-002L	25	LOF29C	06/29/2021	17:11	NWA
SO3505-002P	5	LOF29C	06/29/2021	17:13	NWA
SO3505-002S	5	LOF29C	06/29/2021	17:16	NWA
RINSE	1	LOF29C	06/29/2021	17:18	NWA
SO3505-003	5	LOF29C	06/29/2021	17:20	NWA
SO3505-004	5	LOF29C	06/29/2021	17:23	NWA
SO3505-005	5	LOF29C	06/29/2021	17:25	NWA
RINSE	1	LOF29C	06/29/2021	17:28	NWA
CCV	1	LOF29C	06/29/2021	17:30	NWA
CCB	1	LOF29C	06/29/2021	17:33	NWA
SO3505-006	5	LOF29C	06/29/2021	17:35	NWA
SO3505-007	5	LOF29C	06/29/2021	17:38	NWA
SO3505-008	5	LOF29C	06/29/2021	17:40	NWA
SO3505-009	5	LOF29C	06/29/2021	17:43	NWA
RINSE	1	LOF29C	06/29/2021	17:45	NWA
SO3505-010	5	LOF29C	06/29/2021	17:48	NWA
SO3505-011	5	LOF29C	06/29/2021	17:50	NWA
SO3505-012	5	LOF29C	06/29/2021	17:53	NWA
SO3505-012A	5	LOF29C	06/29/2021	17:55	NWA
RINSE	1	LOF29C	06/29/2021	17:58	NWA
CCV	1	LOF29C	06/29/2021	18:00	NWA
CCB	1	LOF29C	06/29/2021	18:03	NWA
SO35O5-012L	25	LOF29C	06/29/2021	18:05	NWA
SO3505-012P	5	LOF29C	06/29/2021	18:08	NWA
SO3505-012S	5	LOF29C	06/29/2021	18:10	NWA
SO3505-013	5	LOF29C	06/29/2021	18:12	NWA
RINSE	1	LOF29C	06/29/2021	18:15	NWA
SO3505-016	5	LOF29C	06/29/2021	18:18	NWA

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SO3505-016A	5	LOF29C	06/29/2021	18:20	NWA
SO3505-016L	25	LOF29C	06/29/2021	18:23	NWA
SO3505-016P	5	LOF29C	06/29/2021	18:25	NWA
RINSE	1	LOF29C	06/29/2021	18:27	NWA
CCV	1	LOF29C	06/29/2021	18:30	NWA
CCB	1	LOF29C	06/29/2021	18:32	NWA
SO3505-016S	5	LOF29C	06/29/2021	18:35	NWA
SO3505-017	5	LOF29C	06/29/2021	18:37	NWA
SO3505-018	5	LOF29C	06/29/2021	18:40	NWA
RINSE	1	LOF29C	06/29/2021	18:42	NWA
RINSE	1	LOF29C	06/29/2021	18:45	NWA
PBWOF18IMW1	5	LOF29C	06/29/2021	18:47	NWA
LCSWOF18IMW1	5	LOF29C	06/29/2021	18:50	NWA
SO3681-001	5	LOF29C	06/29/2021	18:52	NWA
SO3681-001A	5	LOF29C	06/29/2021	18:55	NWA
RINSE	1	LOF29C	06/29/2021	18:57	NWA
CCV	1	LOF29C	06/29/2021	19:00	NWA
CCB	1	LOF29C	06/29/2021	19:02	NWA
SO3681-001L	25	LOF29C	06/29/2021	19:05	NWA
SO3681-001P	5	LOF29C	06/29/2021	19:07	NWA
SO3681-001S	5	LOF29C	06/29/2021	19:10	NWA
SO3681-002	5	LOF29C	06/29/2021	19:12	NWA
RINSE	1	LOF29C	06/29/2021	19:15	NWA
SO3681-003	5	LOF29C	06/29/2021	19:17	NWA
SO3681-004	5	LOF29C	06/29/2021	19:20	NWA
SO3681-005	5	LOF29C	06/29/2021	19:22	NWA
SO3681-006	5	LOF29C	06/29/2021	19:25	NWA
RINSE	1	LOF29C	06/29/2021	19:27	NWA
CCV	1	LOF29C	06/29/2021	19:30	NWA
CCB	1	LOF29C	06/29/2021	19:33	NWA
SO3681-007	5	LOF29C	06/29/2021	19:35	NWA
SO3681-008	5	LOF29C	06/29/2021	19:38	NWA
SO3681-009	5	LOF29C	06/29/2021	19:40	NWA
RINSE	1	LOF29C	06/29/2021	19:43	NWA
RINSE	1	LOF29C	06/29/2021	19:45	NWA
PBWOF21IMW2	5	LOF29C	06/29/2021	19:48	NWA
LCSWOF21IMW2	5	LOF29C	06/29/2021	19:51	NWA
SO3742-001	5	LOF29C	06/29/2021	19:53	NWA
SO3742-002	5	LOF29C	06/29/2021	19:56	NWA
RINSE	1	LOF29C	06/29/2021	19:58	NWA
CCV	1	LOF29C	06/29/2021	20:01	NWA
CCB	1	LOF29C	06/29/2021	20:03	NWA
SO3742-003	5	LOF29C	06/29/2021	20:06	NWA
SO3742-004	5	LOF29C	06/29/2021	20:09	NWA
SO3742-006	5	LOF29C	06/29/2021	20:11	NWA
RINSE	1	LOF29C	06/29/2021	20:14	NWA
RINSE	1	LOF29C	06/29/2021	20:16	NWA

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
SO3742-008	5	LOF29C	06/29/2021	20:19	NWA
SO3743-002	5	LOF29C	06/29/2021	20:21	NWA
SO3743-003	5	LOF29C	06/29/2021	20:24	NWA
SO3743-005	5	LOF29C	06/29/2021	20:27	NWA
RINSE	1	LOF29C	06/29/2021	20:29	NWA
CCV	1	LOF29C	06/29/2021	20:32	NWA
CCB	1	LOF29C	06/29/2021	20:34	NWA
SO3743-005A	5	LOF29C	06/29/2021	20:37	NWA
SO3743-005L	25	LOF29C	06/29/2021	20:39	NWA
SO3743-005P	5	LOF29C	06/29/2021	20:42	NWA
SO3743-005S	5	LOF29C	06/29/2021	20:45	NWA
RINSE	1	LOF29C	06/29/2021	20:47	NWA
PBWOF25IMW1	1	LOF29C	06/29/2021	20:50	NWA
LCSWOF25IMW1	1	LOF29C	06/29/2021	20:52	NWA
SO3873-001	1	LOF29C	06/29/2021	20:55	NWA
SO3873-001A	1	LOF29C	06/29/2021	20:57	NWA
RINSE	1	LOF29C	06/29/2021	21:00	NWA
CCV	1	LOF29C	06/29/2021	21:02	NWA
CCB	1	LOF29C	06/29/2021	21:05	NWA
SO3873-001L	5	LOF29C	06/29/2021	21:08	NWA
SO3873-001P	1	LOF29C	06/29/2021	21:10	NWA
SO3873-001S	1	LOF29C	06/29/2021	21:13	NWA
SO3873-002	1	LOF29C	06/29/2021	21:15	NWA
RINSE	1	LOF29C	06/29/2021	21:18	NWA
SO3873-003	1	LOF29C	06/29/2021	21:20	NWA
SO3889-001	1	LOF29C	06/29/2021	21:23	NWA
RINSE	1	LOF29C	06/29/2021	21:25	NWA
SO3889-002	1	LOF29C	06/29/2021	21:28	NWA
SO3889-003	1	LOF29C	06/29/2021	21:30	NWA
CCV	1	LOF29C	06/29/2021	21:33	NWA
CCB	1	LOF29C	06/29/2021	21:36	NWA
RINSE	1	LOF29C	06/29/2021	21:38	NWA
SO3889-004	1	LOF29C	06/29/2021	21:41	NWA
SO3889-005	1	LOF29C	06/29/2021	21:43	NWA
RINSE	1	LOF29C	06/29/2021	21:46	NWA
RINSE	1	LOF29C	06/29/2021	21:48	NWA
PBWOF28IMW1	5	LOF29C	06/29/2021	21:51	NWA
LCSWOF28IMW1	5	LOF29C	06/29/2021	21:54	NWA
SO3924-001	5	LOF29C	06/29/2021	21:56	NWA
SO3925-001	5	LOF29C	06/29/2021	21:59	NWA
SO3925-002	5	LOF29C	06/29/2021	22:01	NWA
CCV	1	LOF29C	06/29/2021	22:04	NWA
CCB	1	LOF29C	06/29/2021	22:07	NWA
RINSE	1	LOF29C	06/29/2021	22:09	NWA
RINSE	1	LOF29C	06/29/2021	22:12	NWA
PBWOF17IMW1	5	LOF29C	06/29/2021	22:14	NWA
RINSE	1	LOF29C	06/29/2021	22:17	NWA

SAMPLE ID	DF	FILE	DATE	TIME	ANALYST
RINSE	1	LOF29C	06/29/2021	22:20	NWA
SO3459-013S	5	LOF29C	06/29/2021	22:22	NWA
PBWOF17IMW1	5	LOF29C	06/29/2021	22:25	NWA
LCSWOF17IMW1	5	LOF29C	06/29/2021	22:27	NWA
SO3505-001	5	LOF29C	06/29/2021	22:30	NWA
RINSE	1	LOF29C	06/29/2021	22:32	NWA
CCV	1	LOF29C	06/29/2021	22:35	NWA
CCB	1	LOF29C	06/29/2021	22:38	NWA
SO3505-002	5	LOF29C	06/29/2021	22:40	NWA
SO3505-002A	5	LOF29C	06/29/2021	22:43	NWA
SO3505-002L	25	LOF29C	06/29/2021	22:45	NWA
SO3505-002P	5	LOF29C	06/29/2021	22:48	NWA
RINSE	1	LOF29C	06/29/2021	22:50	NWA
SO3505-002S	5	LOF29C	06/29/2021	22:53	NWA
SO3505-003	5	LOF29C	06/29/2021	22:55	NWA
SO3505-004	5	LOF29C	06/29/2021	22:58	NWA
SO3505-005	5	LOF29C	06/29/2021	23:00	NWA
RINSE	1	LOF29C	06/29/2021	23:03	NWA
CCV	1	LOF29C	06/29/2021	23:06	NWA
CCB	1	LOF29C	06/29/2021	23:08	NWA
RINSE	1	LOF29C	06/29/2021	23:11	NWA
PBWOF16IMW1	1	LOF29C	06/29/2021	23:13	NWA
LCSWOF16IMW1	1	LOF29C	06/29/2021	23:16	NWA
SO3566-001	1	LOF29C	06/29/2021	23:18	NWA
RINSE	1	LOF29C	06/29/2021	23:21	NWA
RINSE	1	LOF29C	06/29/2021	23:23	NWA
RINSE	1	LOF29C	06/29/2021	23:26	NWA
CCV	1	LOF29C	06/29/2021	23:29	NWA
CCB	1	LOF29C	06/29/2021	23:31	NWA
PQL	1	LOF29C	06/29/2021	23:34	NWA
RINSE	1	LOF29C	06/29/2021	23:36	NWA
RINSE	1	LOF29C	06/29/2021	23:39	NWA

US EPA Tune Check Report

Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29A.b
Acq. Date-Time	6/29/2021 08:26:39
Report Comment	---
Instrument Name	G8421A SG18503526

[No Gas]

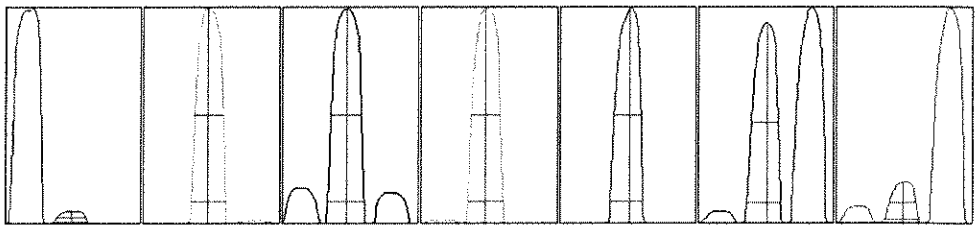
Sensitivity

Mass	Count	CPS	RSD%	RSD% (Required)	RSD% (Flag)
7	14104	141042.56	0.870	5.000	
9	7179	71794.51	0.718	5.000	
24	203921	2039207.71	0.979	5.000	
59	36747	367468.89	0.453	5.000	
115	426036	4260360.73	0.765	5.000	
205	25267	252672.08	2.244	5.000	
208	56658	566584.57	1.349	5.000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
7	13919	14101	14093	14148	14259
9	7090	7194	7210	7216	7188
24	200744	203225	205309	205583	204743
59	36473	36764	36803	36768	36925
115	422854	422684	428570	426207	429866
205	24380	25071	25428	25659	25799
208	55826	56887	55872	57295	57412

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
7	23153.41	7.00	6.90 - 7.10	
9	11670.56	8.95	8.90 - 9.10	
24	314069.39	23.95	23.90 - 24.10	
59	59803.25	58.95	58.90 - 59.10	
115	735046.58	115.05	114.90 - 115.10	
205	43959.23	205.05	204.90 - 205.10	
208	97923.84	208.00	207.90 - 208.10	

US EPA Tune Check Report

Mass	W-50%	W-10%	W-10% (Required)	W-10% (Flag)
7	0.63	0.729	0.900	
9	0.64	0.765	0.900	
24	0.67	0.809	0.900	
59	0.64	0.770	0.900	
115	0.61	0.725	0.900	
205	0.60	0.749	0.900	
208	0.60	0.741	0.900	

Integration Time [sec]	0.1
Acquisition Time [sec]	247
Y Axis	Linear

US EPA Tune Check Report

Tune Parameters

Plasma Parameters

Plasma Mode	General Purpose	Nebulizer Gas	1.05 L/min	Makeup Gas	0.00 L/min
RF Power	1550 W	Option Gas	---	Auxiliary Gas	0.90 L/min
RF Matching	1.20 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	10.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Omega Lens	7.4 V	Deflect	12.6 V
Extract 2	-200.0 V	Cell Entrance	-30 V	Plate Bias	-35 V
Omega Bias	-85 V	Cell Exit	-50 V		

Cell Parameters

Use Gas	No	3rd Gas Flow	---	Energy Discrimination	5.5 V
He Flow	0.0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	140 V		

QP Parameters

Mass Gain	122	Axis Gain	0.9987	QP Bias	-2.5 V
Mass Offset	125	Axis Offset	0.04		

Hardware Settings

Torch

Torch H	-0.3 mm	Torch V	1.0 mm

EM

Discriminator	3.3 mV	Analog HV	2639 V	Pulse HV	1308 V

[H2]

Sensitivity

Mass	Count	CPS	RSD%	RSD% (Required)	RSD% (Flag)
59	2797	27972.05	0.980	5.000	
89	268916	2689159.29	1.183	5.000	
205	24590	245900.76	0.439	5.000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
59	2759	2782	2800	2822	2823
89	264539	267749	268231	271829	272232
205	24421	24555	24671	24616	24688

Integration Time [sec] 0.1

US EPA Tune Check Report

Tune Parameters

Plasma Parameters

Plasma Mode	General Purpose	Nebulizer Gas	1.05 L/min	Makeup Gas	0.00 L/min
RF Power	1550 W	Option Gas	---	Auxiliary Gas	0.90 L/min
RF Matching	1.20 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	10.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Omega Lens	7.4 V	Deflect	0.8 V
Extract 2	-200.0 V	Cell Entrance	-40 V	Plate Bias	-55 V
Omega Bias	-85 V	Cell Exit	-60 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Energy Discrimination	5.0 V
He Flow	0.0 mL/min	OctP Bias	-18.0 V		
H2 Flow	5.5 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	122	Axis Gain	0.9987	QP Bias	-13.0 V
Mass Offset	125	Axis Offset	0.04		

Hardware Settings

Torch

Torch H	-0.3 mm	Torch V	1.0 mm

EM

Discriminator	3.3 mV	Analog HV	2639 V	Pulse HV	1308 V

[He]

Sensitivity

Mass	Count	CPS	RSD%	RSD% (Required)	RSD% (Flag)
59	8195	81949.06	1.181	5.000	
89	63606	636062.90	1.916	5.000	
205	14452	144520.22	1.016	5.000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
59	8049	8164	8237	8215	8310
89	61595	63416	63970	64391	64659
205	14266	14342	14479	14553	14620

Integration Time [sec] 0.1

US EPA Tune Check Report

Tune Parameters

Plasma Parameters

Plasma Mode	General Purpose	Nebulizer Gas	1.05 L/min	Makeup Gas	0.00 L/min
RF Power	1550 W	Option Gas	---	Auxiliary Gas	0.90 L/min
RF Matching	1.20 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	10.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Omega Lens	7.4 V	Deflect	1.2 V
Extract 2	-200.0 V	Cell Entrance	-40 V	Plate Bias	-55 V
Omega Bias	-85 V	Cell Exit	-60 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Energy Discrimination	5.0 V
He Flow	4.5 mL/min	OctP Bias	-18.0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	122	Axis Gain	0.9987	QP Bias	-13.0 V
Mass Offset	125	Axis Offset	0.04		

Hardware Settings

Torch

Torch H	-0.3 mm	Torch V	1.0 mm

EM

Discriminator	3.3 mV	Analog HV	2639 V	Pulse HV	1308 V

Calibration Blank Report

Sample Name	CalBlank
File Name	006CALB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 14:14:02
Sample Type	CalBlk
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	006CALB.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	**admin**

QC Analyte Table

Mass	Name	ISTD	Tune	CPS	RSD
9	Be	6	No Gas	10.00	88.2
11	B	6	No Gas	3815.08	0.6
23	Na	45	He	17787.30	1.6
24	Mg	45	He	97.79	43.8
27	Al	45	He	127.78	6.0
28	Si	45	H2	697.47	17.0
39	K	45	He	21242.87	1.7
40	Ca	45	H2	5633.53	3.9
51	V	89	He	263.35	13.7
52	Cr	89	He	855.21	1.7
55	Mn	89	He	72.66	10.4
56	Fe	89	H2	4335.48	6.4
59	Co	89	He	6.67	0.0
60	Ni	89	He	62.23	35.7
63	Cu	89	He	582.26	8.7
66	Zn	89	He	307.79	9.2
75	As	89	He	19.33	7.9
78	Se	89	H2	4.17	38.6
88	Sr	89	He	56.67	21.2
95	Mo	89	He	146.67	17.2
107	Ag	89	He	31.11	60.9
111	Cd	89	He	1.85	91.7
118	Sn	159	He	336.68	9.8
121	Sb	159	No Gas	106.78	21.6
137	Ba	159	No Gas	116.80	35.7
182	W	159	No Gas	2957.00	2.2
205	Tl	209	No Gas	126.81	25.4
208	Pb	209	No Gas	2262.63	4.5
232	Th	209	No Gas	513.93	6.0
238	U	209	No Gas	6.67	86.6

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD
Li	6	No Gas	5961075.87	1.1
Sc	45	No Gas	13015983.55	1.7
Sc	45	H2	1430290.90	4.0
Sc	45	He	438046.17	1.2
Ge	72	No Gas	2458564.83	1.0
Ge	72	H2	491199.00	4.5
Ge	72	He	255273.97	0.7
Y	89	H2	7442438.64	4.0
Y	89	He	2167302.66	0.2
Tb	159	No Gas	21871384.40	1.6
Tb	159	He	8589669.11	1.5
Bi	209	No Gas	10079220.95	0.4

Calibration Standard Report

Sample Name	CalStd
File Name	007CALS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 14:17:20
Sample Type	CalStd
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	006CALB.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	**admin**

QC Analyte Table

Mass	Name	ISTD	Tune	CPS	RSD
9	Be	6	No Gas	355507.25	2.2
11	B	6	No Gas	232774.99	3.1
23	Na	45	He	6591677.38	0.5
24	Mg	45	He	3844031.99	0.7
27	Al	45	He	146582.08	0.4
28	Si	45	H2	233962.94	0.8
39	K	45	He	3078764.84	0.6
40	Ca	45	H2	20322162.61	0.4
51	V	89	He	246854.38	0.6
52	Cr	89	He	311674.52	0.2
55	Mn	89	He	141239.47	0.5
56	Fe	89	H2	66237506.84	1.1
59	Co	89	He	485221.86	0.6
60	Ni	89	He	134637.87	1.0
63	Cu	89	He	356509.22	0.6
66	Zn	89	He	46691.25	0.4
75	As	89	He	32484.30	0.8
78	Se	89	H2	14173.22	0.4
88	Sr	89	He	164848.74	0.4
95	Mo	89	He	177119.91	0.1
107	Ag	89	He	577422.64	0.5
111	Cd	89	He	72942.18	0.5
118	Sn	159	He	146350.55	0.9
121	Sb	159	No Gas	928682.70	2.1
137	Ba	159	No Gas	390890.63	1.9
182	W	159	No Gas	653305.91	0.3
205	Tl	209	No Gas	1493878.40	2.6
208	Pb	209	No Gas	2144014.09	2.8
232	Th	209	No Gas	2012166.13	3.0
238	U	209	No Gas	2010662.05	2.1

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5464536.38	7.7	5961075.87	91.67	29.5	120.4	
Sc	45	No Gas	12229282.29	8.9	13015983.55	93.96	29.5	120.4	
Sc	45	H2	1498317.88	0.7	1430290.9	104.76	29.5	120.4	
Sc	45	He	439294.34	0.3	438046.17	100.28	29.5	120.4	
Ge	72	No Gas	2327384.38	7.4	2458564.83	94.66	29.5	120.4	
Ge	72	H2	505800.05	1.2	491199	102.97	29.5	120.4	
Ge	72	He	255150.58	0.2	255273.97	99.95	29.5	120.4	
Y	89	H2	7698737.01	1.0	7442438.64	103.44	29.5	120.4	
Y	89	He	2159661.41	0.7	2167302.66	99.65	29.5	120.4	
Tb	159	No Gas	20237422.89	9.8	21871384.4	92.53	29.5	120.4	
Tb	159	He	8598776.74	0.9	8589669.11	100.11	29.5	120.4	
Bi	209	No Gas	9254823.77	7.3	10079220.95	91.82	29.5	120.4	

Initial Calibration Verification (ICV) Report

Sample Name	ICV
File Name	008_ICV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 14:20:37
Sample Type	ICV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	006CALB.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**admin**

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
9	Be	6	No Gas	18.528	ppb	10.4	137261.69	20	92.64	89.6	110.4	
11	B	6	No Gas	19.359	ppb	11.4	96053.41	20	96.8	89.6	110.4	
23	Na	45	He	4036.509	ppb	1.0	2617755.84	4000	100.91	89.6	110.4	
24	Mg	45	He	4056.920	ppb	0.8	1528236.68	4000	101.42	89.6	110.4	
27	Al	45	He	398.235	ppb	1.5	57275.83	400	99.56	89.6	110.4	
28	Si	45	H2	452.750	ppb	3.7	102948.04	400	113.19	89.6	110.4	> +/- 10%
39	K	45	He	3958.419	ppb	0.7	1206879.98	4000	98.96	89.6	110.4	
40	Ca	45	H2	3938.638	ppb	2.2	7754494.47	4000	98.47	89.6	110.4	
51	V	89	He	20.030	ppb	0.5	97178.99	20	100.15	89.6	110.4	
52	Cr	89	He	20.136	ppb	0.8	123646.98	20	100.68	89.6	110.4	
55	Mn	89	He	20.137	ppb	0.3	55850.42	20	100.68	89.6	110.4	
56	Fe	89	H2	3973.737	ppb	0.8	25768026.91	4000	99.34	89.6	110.4	
59	Co	89	He	20.555	ppb	1.6	195706.54	20	102.78	89.6	110.4	
60	Ni	89	He	20.616	ppb	1.0	54501.69	20	103.08	89.6	110.4	
63	Cu	89	He	20.560	ppb	0.4	144167.17	20	102.8	89.6	110.4	
66	Zn	89	He	19.805	ppb	1.3	18325.89	20	99.02	89.6	110.4	
75	As	89	He	20.322	ppb	1.0	12964.44	20	101.61	89.6	110.4	
78	Se	89	H2	21.032	ppb	1.8	5838.29	20	105.16	89.6	110.4	
88	Sr	89	He	19.991	ppb	0.6	64698.78	20	99.96	89.6	110.4	
95	Mo	89	He	40.424	ppb	0.4	140525.97	40	101.06	89.6	110.4	
107	Ag	89	He	20.425	ppb	0.9	231441.24	20	102.12	89.6	110.4	
111	Cd	89	He	20.304	ppb	1.0	29062.69	20	101.52	89.6	110.4	
118	Sn	159	He	20.227	ppb	0.5	58244.38	20	101.14	89.6	110.4	
121	Sb	159	No Gas	20.752	ppb	9.1	382988.71	20	103.76	89.6	110.4	
137	Ba	159	No Gas	19.437	ppb	9.2	150945.48	20	97.19	89.6	110.4	
182	W	159	No Gas	25.921	ppb	7.1	338128.07	20	129.6	89.6	110.4	> +/- 10%
205	Tl	209	No Gas	21.344	ppb	12.4	649105.31	20	106.72	89.6	110.4	
208	Pb	209	No Gas	20.122	ppb	11.9	879547.80	20	100.61	89.6	110.4	
232	Th	209	No Gas	22.360	ppb	9.7	916685.11	20	111.8	89.6	110.4	> +/- 10%
238	U	209	No Gas	20.044	ppb	12.6	820525.28	20	100.22	89.6	110.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5696520.49	6.9	5961075.87	95.56	29.5	120.4	
Sc	45	No Gas	11990120.11	6.7	13015983.55	92.12	29.5	120.4	
Sc	45	H2	1451401.83	2.5	1430290.9	101.48	29.5	120.4	
Sc	45	He	430491.50	0.9	438046.17	98.28	29.5	120.4	
Ge	72	No Gas	2308888.70	6.2	2458564.83	93.91	29.5	120.4	
Ge	72	H2	501573.03	0.3	491199	102.11	29.5	120.4	
Ge	72	He	251911.31	0.3	255273.97	98.68	29.5	120.4	
Y	89	H2	7536046.30	0.7	7442438.64	101.26	29.5	120.4	
Y	89	He	2118869.81	0.6	2167302.66	97.77	29.5	120.4	
Tb	159	No Gas	20060022.34	7.4	21871384.4	91.72	29.5	120.4	
Tb	159	He	8430503.35	0.5	8589669.11	98.15	29.5	120.4	
Bi	209	No Gas	9460353.67	9.2	10079220.95	93.86	29.5	120.4	

Initial Calibration Blank (ICB) Report

Sample Name	ICB
File Name	009_ICB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 14:23:05
Sample Type	ICB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	006CALB.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**admin**

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
9	Be	6	No Gas	0.051	ppb	13.4	413.36	0.2	
11	B	6	No Gas	0.456	ppb	11.9	6197.11	4	
23	Na	45	He	3.367	ppb	10.2	19795.62	200	
24	Mg	45	He	1.912	ppb	17.6	822.32	20	
27	Al	45	He	-0.021	ppb	N/A	123.34	20	
28	Si	45	H2	0.210	ppb	299.4	760.87	100	
39	K	45	He	4.734	ppb	36.5	22460.85	200	
40	Ca	45	H2	1.911	ppb	9.1	9579.14	20	
51	V	89	He	0.004	ppb	214.9	280.02	1	
52	Cr	89	He	0.009	ppb	93.1	904.53	1	
55	Mn	89	He	0.011	ppb	83.7	103.32	0.4	
56	Fe	89	H2	4.456	ppb	10.3	33376.90	20	
59	Co	89	He	0.008	ppb	23.8	80.01	0.2	
60	Ni	89	He	0.002	ppb	314.4	67.78	0.4	
63	Cu	89	He	0.027	ppb	30.5	766.72	0.6	
66	Zn	89	He	-0.027	ppb	N/A	281.12	2	
75	As	89	He	0.162	ppb	29.3	124.02	1	
78	Se	89	H2	0.936	ppb	11.1	264.49	1	Fail 6020/DoD
88	Sr	89	He	0.006	ppb	137.8	74.45	1	
95	Mo	89	He	1.359	ppb	13.5	4937.75	1	Fail All Methods□ Fail 6020/DoD
107	Ag	89	He	0.012	ppb	14.5	168.90	0.2	
111	Cd	89	He	0.008	ppb	39.0	12.96	0.2	
118	Sn	159	He	0.134	ppb	8.1	706.71	1	
121	Sb	159	No Gas	0.062	ppb	16.2	1364.92	0.2	
137	Ba	159	No Gas	0.030	ppb	16.3	373.76	0.4	
182	W	159	No Gas	2.687	ppb	1.1	40887.41	1	Fail All Methods□ Fail 6020/DoD
205	Tl	209	No Gas	0.065	ppb	18.3	2242.72	0.2	
208	Pb	209	No Gas	0.057	ppb	19.5	4925.92	0.2	
232	Th	209	No Gas	0.224	ppb	3.9	10402.64	1	
238	U	209	No Gas	0.058	ppb	17.8	2543.12	0.2	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6056035.67	1.0	5961075.87	101.59	29.5	120.4	
Sc	45	No Gas	13053440.06	4.1	13015983.55	100.29	29.5	120.4	
Sc	45	H2	1464753.09	1.1	1430290.9	102.41	29.5	120.4	
Sc	45	He	433623.02	0.6	438046.17	98.99	29.5	120.4	
Ge	72	No Gas	2459648.86	1.6	2458564.83	100.04	29.5	120.4	
Ge	72	H2	503336.15	1.4	491199	102.47	29.5	120.4	
Ge	72	He	252814.44	0.8	255273.97	99.04	29.5	120.4	
Y	89	H2	7552927.87	2.3	7442438.64	101.48	29.5	120.4	
Y	89	He	2153613.28	1.0	2167302.66	99.37	29.5	120.4	
Tb	159	No Gas	21821094.12	3.9	21871384.4	99.77	29.5	120.4	
Tb	159	He	8359524.60	0.6	8589669.11	97.32	29.5	120.4	
Bi	209	No Gas	10114735.84	2.7	10079220.95	100.35	29.5	120.4	

Low Level Initial Calibration Verification (LLICV) Report

Sample Name	PQL
File Name	010LICV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 14:25:31
Sample Type	LLICV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	006CALB.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**admin**

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Rec	%Low	%High
9	Be	6	No Gas	0.227	ppb	13.7	1607.93	0.2	113.5	79.5	120.4
11	B	6	No Gas	4.472	ppb	12.6	23805.93	4	111.8	79.5	120.4
23	Na	45	He	219.525	ppb	0.9	159949.06	200	109.76	79.5	120.4
24	Mg	45	He	21.395	ppb	5.4	8209.60	20	106.98	79.5	120.4
27	Al	45	He	20.079	ppb	1.4	3027.10	20	100.4	79.5	120.4
28	Si	45	H2	95.670	ppb	0.7	22606.59	100	95.67	79.5	120.4
39	K	45	He	226.104	ppb	1.2	89207.38	200	113.05	79.5	120.4
40	Ca	45	H2	20.296	ppb	2.3	46244.35	20	101.48	79.5	120.4
51	V	89	He	1.008	ppb	4.4	5160.02	1	100.8	79.5	120.4
52	Cr	89	He	1.054	ppb	1.3	7302.58	1	105.4	79.5	120.4
55	Mn	89	He	0.429	ppb	4.1	1267.16	0.4	107.25	79.5	120.4
56	Fe	89	H2	23.827	ppb	0.7	160099.45	20	119.14	79.5	120.4
59	Co	89	He	0.220	ppb	5.1	2113.65	0.2	110	79.5	120.4
60	Ni	89	He	0.475	ppb	3.6	1323.45	0.4	118.75	79.5	120.4
63	Cu	89	He	0.648	ppb	4.0	5122.24	0.6	108	79.5	120.4
66	Zn	89	He	2.127	ppb	2.5	2249.16	2	106.35	79.5	120.4
75	As	89	He	1.066	ppb	5.8	701.10	1	106.6	79.5	120.4
78	Se	89	H2	1.153	ppb	1.8	326.66	1	115.3	79.5	120.4
88	Sr	89	He	1.007	ppb	3.5	3329.42	1	100.7	79.5	120.4
95	Mo	89	He	1.456	ppb	3.8	5227.87	1	145.6	79.5	120.4
107	Ag	89	He	0.252	ppb	1.8	2899.31	0.2	126	79.5	120.4
111	Cd	89	He	0.200	ppb	4.8	288.90	0.2	100	79.5	120.4
118	Sn	159	He	1.091	ppb	2.3	3456.13	1	109.1	79.5	120.4
121	Sb	159	No Gas	0.267	ppb	21.9	4706.06	0.2	133.5	79.5	120.4
137	Ba	159	No Gas	0.419	ppb	19.4	3167.23	0.4	104.75	79.5	120.4
182	W	159	No Gas	2.069	ppb	17.9	27787.91	1	206.9	79.5	120.4
205	Tl	209	No Gas	0.245	ppb	13.8	7130.02	0.2	122.5	79.5	120.4
208	Pb	209	No Gas	0.239	ppb	18.3	11755.26	0.2	119.5	79.5	120.4
232	Th	209	No Gas	0.443	ppb	15.6	17511.82	0.2	221.5	79.5	120.4
238	U	209	No Gas	0.236	ppb	18.8	9086.92	0.2	118	79.5	120.4

QC Flag

Low Level Initial Calibration Verification (LLICV) Report

QC Flag
Failed DoD □ Failed 6020/EPA
Failed DoD
Failed DoD □ Failed 6020/EPA
Failed DoD □ Failed 6020/EPA
Failed DoD
Failed DoD □ Failed 6020/EPA

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5438319.95	9.3	5961075.87	91.23	29.5	120.4	
Sc	45	No Gas	11375555.99	14.0	13015983.55	87.4	29.5	120.4	
Sc	45	H2	1469897.91	1.6	1430290.9	102.77	29.5	120.4	
Sc	45	He	433325.85	0.4	438046.17	98.92	29.5	120.4	
Ge	72	No Gas	2215247.50	10.3	2458564.83	90.1	29.5	120.4	
Ge	72	H2	500620.05	0.5	491199	101.92	29.5	120.4	
Ge	72	He	250865.20	0.8	255273.97	98.27	29.5	120.4	
Y	89	H2	7594231.78	0.2	7442438.64	102.04	29.5	120.4	
Y	89	He	2130781.77	2.2	2167302.66	98.31	29.5	120.4	
Tb	159	No Gas	19120560.55	13.6	21871384.4	87.42	29.5	120.4	
Tb	159	He	8433717.93	0.4	8589669.11	98.18	29.5	120.4	
Bi	209	No Gas	8926358.65	11.1	10079220.95	88.56	29.5	120.4	

Interference Check Solution A (ICS-A) Report

Sample Name	ICSA
File Name	011ICSA.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 14:28:05
Sample Type	ICSA
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	006CALB.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**admin**

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Low	%High	QC Flag
Be	9	6	No Gas	0.004	ppb	19.9	40.00	0.2	-50	50	
B	11	6	No Gas	0.398	ppb	8.2	5385.63	4	-50	100	
Na	23	45	He	98109.596	ppb	0.5	59501511.50	100000	80	120	
Mg	24	45	He	97050.716	ppb	0.5	34406622.54	100000	80	120	
Al	27	45	He	98461.178	ppb	0.2	13299765.08	100000	80	120	
Si	28	45	H2	2.928	ppb	17.4	1301.52	100	-50	50	
K	39	45	He	97466.341	ppb	0.2	27504114.14	100000	80	120	
Ca	40	45	H2	100528.570	ppb	0.9	188286188.30	100000	80	120	
V	51	89	He	0.013	ppb	51.6	304.46	1	-50	100	
Cr	52	89	He	0.939	ppb	2.0	6228.26	0.4404	-100	100	
Mn	55	89	He	0.361	ppb	5.7	1017.19	0.0826	100	100	
Fe	56	89	H2	97473.225	ppb	1.3	600179832.02	100000	80	120	
Co	59	89	He	0.210	ppb	1.8	1902.51	0.09288	-50	100	
Ni	60	89	He	0.254	ppb	9.5	693.38	0.114	100	100	
Cu	63	89	He	0.279	ppb	8.2	2389.18	-0.043	100	100	
Zn	66	89	He	2.129	ppb	4.2	2124.68	-0.7632	100	100	DoD
As	75	89	He	0.106	ppb	8.8	82.01	1	-50	100	
Se	78	89	H2	0.265	ppb	12.8	73.67	1	-50	100	
Sr	88	89	He	0.901	ppb	1.4	2818.18	0.0578	100	100	
Mo	95	89	He	2061.139	ppb	0.6	6791304.83	2000	80	120	
Ag	107	89	He	0.019	ppb	18.9	236.68	0.2	-50	50	
Cd	111	89	He	0.382	ppb	1.9	521.13	0.268	100	100	
Sn	118	159	He	0.065	ppb	37.5	481.14	-0.24	100	100	
Sb	121	159	No Gas	0.024	ppb	23.7	543.95	-0.0814	100	100	
Ba	137	159	No Gas	0.039	ppb	16.9	420.48	-0.0794	100	100	
W	182	159	No Gas	0.892	ppb	5.7	14504.34	0.32	-100	100	DoD
Tl	205	209	No Gas	0.011	ppb	13.3	427.15	0.2	-50	50	
Pb	208	209	No Gas	0.039	ppb	2.3	3624.27	-0.06745	100	100	
Th	232	209	No Gas	0.567	ppb	20.3	22452.40	0.2	-50	50	DoD□ 6020/EPA
U	238	209	No Gas	0.005	ppb	12.5	186.88	0.2	-50	50	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5526205.07	2.8	5961075.87	92.7	29.5	120.4	
Sc	45	No Gas	12165744.80	0.8	13015983.55	93.47	29.5	120.4	
Sc	45	H2	1381345.41	1.7	1430290.9	96.58	29.5	120.4	
Sc	45	He	405161.64	0.7	438046.17	92.49	29.5	120.4	
Ge	72	No Gas	2287155.80	1.3	2458564.83	93.03	29.5	120.4	
Ge	72	H2	462425.42	1.9	491199	94.14	29.5	120.4	
Ge	72	He	233163.71	0.5	255273.97	91.34	29.5	120.4	
Y	89	H2	7158098.89	2.0	7442438.64	96.18	29.5	120.4	
Y	89	He	2010367.10	0.7	2167302.66	92.76	29.5	120.4	
Tb	159	No Gas	20357388.45	0.7	21871384.4	93.08	29.5	120.4	
Tb	159	He	7875855.51	0.8	8589669.11	91.69	29.5	120.4	
Bi	209	No Gas	8930422.82	2.3	10079220.95	88.6	29.5	120.4	

Interference Check Solution AB (ICS-AB) Report

Sample Name	ICSAB
File Name	012ICSB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 14:30:38
Sample Type	ICSB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	006CALB.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	**admin**

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Low	%High	QC Flag
9	Be	6	No Gas	16.554	ppb	11.0	121739.09	20	79.5	120.4	
11	B	6	No Gas	16.801	ppb	10.0	83272.54	20	79.5	120.4	
23	Na	45	He	97519.603	ppb	0.9	58933181.52	100000	79.5	120.4	
24	Mg	45	He	95510.513	ppb	0.5	33740975.33	100000	79.5	120.4	
27	Al	45	He	95756.668	ppb	0.3	12888776.20	100000	79.5	120.4	
28	Si	45	H2	491.435	ppb	1.5	103526.47	500	79.5	120.4	
39	K	45	He	95290.343	ppb	0.4	26795586.29	100000	79.5	120.4	
40	Ca	45	H2	100151.171	ppb	1.6	182621128.39	100000	79.5	120.4	
51	V	89	He	19.950	ppb	1.0	91665.87	20	79.5	120.4	
52	Cr	89	He	20.308	ppb	0.9	118096.92	20	79.5	120.4	
55	Mn	89	He	19.606	ppb	0.2	51503.32	20	79.5	120.4	
56	Fe	89	H2	96729.812	ppb	1.0	587767666.96	100000	79.5	120.4	
59	Co	89	He	19.812	ppb	0.6	178659.48	20	79.5	120.4	
60	Ni	89	He	19.289	ppb	1.0	48294.35	20	79.5	120.4	
63	Cu	89	He	19.032	ppb	1.1	126426.68	20	79.5	120.4	
66	Zn	89	He	19.512	ppb	0.4	17104.37	20	79.5	120.4	
75	As	89	He	20.526	ppb	0.4	12401.86	20	79.5	120.4	
78	Se	89	H2	20.588	ppb	0.7	5356.62	20	79.5	120.4	
88	Sr	89	He	20.220	ppb	1.5	61971.83	20	79.5	120.4	
95	Mo	89	He	2085.139	ppb	1.0	6857859.14	2000	79.5	120.4	
107	Ag	89	He	18.548	ppb	0.2	199062.21	20	79.5	120.4	
111	Cd	89	He	19.318	ppb	1.0	26188.36	20	79.5	120.4	
118	Sn	159	He	19.833	ppb	1.7	53703.45	20	79.5	120.4	
121	Sb	159	No Gas	18.137	ppb	8.9	344915.44	20	79.5	120.4	
137	Ba	159	No Gas	17.088	ppb	7.7	136843.44	20	79.5	120.4	
182	W	159	No Gas	21.173	ppb	8.6	285151.90	20	79.5	120.4	
205	Tl	209	No Gas	19.055	ppb	10.3	564355.99	20	79.5	120.4	
208	Pb	209	No Gas	18.464	ppb	10.0	785906.28	20	79.5	120.4	
232	Th	209	No Gas	19.792	ppb	10.6	789621.74	20	79.5	120.4	
238	U	209	No Gas	19.285	ppb	8.7	769016.59	20	79.5	120.4	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5646281.29	3.1	5961075.87	94.72	29.5	120.4	
Sc	45	No Gas	12068320.40	2.4	13015983.55	92.72	29.5	120.4	
Sc	45	H2	1344994.81	2.2	1430290.9	94.04	29.5	120.4	
Sc	45	He	403728.41	0.4	438046.17	92.17	29.5	120.4	
Ge	72	No Gas	2278042.75	3.0	2458564.83	92.66	29.5	120.4	
Ge	72	H2	450305.75	1.2	491199	91.67	29.5	120.4	
Ge	72	He	233096.11	0.3	255273.97	91.31	29.5	120.4	
Y	89	H2	7062763.87	0.7	7442438.64	94.9	29.5	120.4	
Y	89	He	2006759.66	0.9	2167302.66	92.59	29.5	120.4	
Tb	159	No Gas	20629722.47	2.7	21871384.4	94.32	29.5	120.4	
Tb	159	He	7927437.94	1.2	8589669.11	92.29	29.5	120.4	
Bi	209	No Gas	9165789.22	2.9	10079220.95	90.94	29.5	120.4	

Linear Range Sample (LRS) Report

Sample Name	LRS1
File Name	013_LRS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 14:33:16
Sample Type	LRS
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	006CALB.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**admin**

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	%Rec	%Low	%High	QC Flag
9	Be	6	No Gas	83.888	ppb	7.8	639779.37	100	83.89	89.5	110.4	> +/- 10%
11	B	6	No Gas	411.528	ppb	8.2	2027016.50	500	82.31	89.5	110.4	> +/- 10%
51	V	89	He	990.328	ppb	1.3	4435749.97	1000	99.03	89.5	110.4	
52	Cr	89	He	1922.872	ppb	0.7	10856882.51	2000	96.14	89.5	110.4	
55	Mn	89	He	1864.979	ppb	1.4	4781872.09	2000	93.25	89.5	110.4	
59	Co	89	He	1010.490	ppb	1.4	8905513.34	1000	101.05	89.5	110.4	
60	Ni	89	He	1028.972	ppb	0.5	2515167.97	1000	102.9	89.5	110.4	
63	Cu	89	He	2039.890	ppb	0.3	13188600.22	2000	101.99	89.5	110.4	
66	Zn	89	He	2038.912	ppb	1.1	1718091.50	2000	101.95	89.5	110.4	
75	As	89	He	1005.928	ppb	0.7	593184.98	1000	100.59	89.5	110.4	
78	Se	89	H2	1012.892	ppb	0.8	265755.26	1000	101.29	89.5	110.4	
88	Sr	89	He	1935.728	ppb	1.1	5794167.14	2000	96.79	89.5	110.4	
95	Mo	89	He	1035.024	ppb	0.3	3327312.62	1000	103.5	89.5	110.4	
107	Ag	89	He	110.941	ppb	0.9	1163513.37	100	110.94	89.5	110.4	> +/- 10%
111	Cd	89	He	1021.321	ppb	1.2	1353106.04	1000	102.13	89.5	110.4	
118	Sn	159	He	990.025	ppb	1.1	2772136.55	1000	99	89.5	110.4	
121	Sb	159	No Gas	872.066	ppb	5.3	17760524.48	1000	87.21	89.5	110.4	> +/- 10%
137	Ba	159	No Gas	1616.834	ppb	5.5	13859447.19	2000	80.84	89.5	110.4	> +/- 10%
182	W	159	No Gas	948.985	ppb	7.0	13561763.58	1000	94.9	89.5	110.4	
205	Tl	209	No Gas	930.013	ppb	6.2	31674042.72	1000	93	89.5	110.4	
208	Pb	209	No Gas	1734.710	ppb	6.6	84705832.85	2000	86.74	89.5	110.4	> +/- 10%
232	Th	209	No Gas	897.777	ppb	7.2	41169898.45	1000	89.78	89.5	110.4	
238	U	209	No Gas	861.149	ppb	7.2	39486991.02	1000	86.11	89.5	110.4	> +/- 10%

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5849241.07	2.0	5961075.87	98.12	29.5	120.4	
Sc	45	No Gas	12327325.33	1.7	13015983.55	94.71	29.5	120.4	
Ge	72	No Gas	2392358.13	2.5	2458564.83	97.31	29.5	120.4	
Tb	159	No Gas	22081019.67	0.4	21871384.4	100.96	29.5	120.4	
Bi	209	No Gas	10530093.27	1.1	10079220.95	104.47	29.5	120.4	
Sc	45	H2	1325970.78	0.5	1430290.9	92.71	29.5	120.4	
Ge	72	H2	454357.94	1.2	491199	92.5	29.5	120.4	
Y	89	H2	7127892.64	0.9	7442438.64	95.77	29.5	120.4	
Sc	45	He	383935.23	0.6	438046.17	87.65	29.5	120.4	
Ge	72	He	230084.69	0.6	255273.97	90.13	29.5	120.4	
Y	89	He	1961364.90	0.7	2167302.66	90.5	29.5	120.4	
Tb	159	He	8243467.38	0.2	8589669.11	95.97	29.5	120.4	

Sample Report

Sample Name LRS2

File Name 014SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 14:35:27

Sample Type Sample

Total Dilution 1.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.781	ppb	71.2	5393.83	100	
11	B	6	No Gas	9.720	ppb	24.9	46412.48	1000	
23	Na	45	He	190376.190	ppb	1.4	120850797.37	200000	
24	Mg	45	He	188557.190	ppb	1.0	69981858.40	200000	
27	Al	45	He	194672.798	ppb	0.6	27529635.98	200000	
28	Si	45	H2	8773.993	ppb	1.5	1893057.92	10000	
39	K	45	He	193520.323	ppb	1.1	57154528.16	200000	
40	Ca	45	H2	196458.536	ppb	1.6	369093723.39	200000	
51	V	89	He	0.358	ppb	12.7	1947.98	1000	
52	Cr	89	He	0.761	ppb	11.3	5370.74	2000	
55	Mn	89	He	2.103	ppb	3.6	5784.15	2000	
56	Fe	89	H2	96311.643	ppb	0.7	594771804.19	100000	
59	Co	89	He	1.043	ppb	3.3	9744.11	1000	
60	Ni	89	He	2.187	ppb	0.5	5728.05	1000	
63	Cu	89	He	1.501	ppb	4.5	10839.00	2000	
66	Zn	89	He	15.657	ppb	1.6	14278.86	2000	
75	As	89	He	1.207	ppb	6.2	772.44	1000	
78	Se	89	H2	9.611	ppb	13.3	2539.95	1000	
88	Sr	89	He	2.054	ppb	2.2	6572.92	2000	
95	Mo	89	He	10.651	ppb	14.0	36365.34	1000	
107	Ag	89	He	0.399	ppb	4.2	4464.24	100	
111	Cd	89	He	0.159	ppb	17.0	224.08	1000	
118	Sn	159	He	2.556	ppb	12.2	7142.18	1000	
121	Sb	159	No Gas	7.061	ppb	66.4	130925.14	1000	
137	Ba	159	No Gas	11.397	ppb	70.7	88997.58	2000	
182	W	159	No Gas	49.926	ppb	16.7	650520.82	1000	
205	Tl	209	No Gas	2.978	ppb	61.0	84198.68	1000	
208	Pb	209	No Gas	12.050	ppb	67.8	489938.40	2000	
232	Th	209	No Gas	36.357	ppb	31.7	1380060.75	1000	
238	U	209	No Gas	11.616	ppb	66.8	441634.01	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5254913.69	1.2	5961075.87	88.15	29.5	120.4	
Sc	45	No Gas	11356278.48	3.0	13015983.55	87.25	29.5	120.4	
Sc	45	H2	1385948.49	3.5	1430290.9	96.9	29.5	120.4	
Sc	45	He	424154.38	1.3	438046.17	96.83	29.5	120.4	
Ge	72	No Gas	2151633.22	1.5	2458564.83	87.52	29.5	120.4	
Ge	72	H2	451954.06	2.3	491199	92.01	29.5	120.4	
Ge	72	He	241488.50	1.6	255273.97	94.6	29.5	120.4	
Y	89	H2	7178448.40	1.9	7442438.64	96.45	29.5	120.4	
Y	89	He	2079649.97	2.4	2167302.66	95.96	29.5	120.4	
Tb	159	No Gas	20038846.65	0.5	21871384.4	91.62	29.5	120.4	
Tb	159	He	7871339.26	1.5	8589669.11	91.64	29.5	120.4	
Bi	209	No Gas	8696661.25	1.1	10079220.95	86.28	29.5	120.4	

Sample Report

Sample Name	RINSE
File Name	015SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 14:38:06
Sample Type	Sample
Total Dilution	1.0000
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.013	ppb	9.1	110.00	100	
11	B	6	No Gas	0.905	ppb	3.6	8547.25	1000	
23	Na	45	He	92.489	ppb	9.1	75837.65	200000	
24	Mg	45	He	31.561	ppb	4.0	11794.60	200000	
27	Al	45	He	25.459	ppb	3.8	3719.51	200000	
28	Si	45	H2	21.991	ppb	6.1	5730.87	10000	
39	K	45	He	52.222	ppb	13.3	35945.52	200000	
40	Ca	45	H2	40.989	ppb	7.7	87242.58	200000	
51	V	89	He	0.079	ppb	9.6	635.59	1000	
52	Cr	89	He	0.042	ppb	34.9	1090.52	2000	
55	Mn	89	He	0.083	ppb	6.4	299.95	2000	
56	Fe	89	H2	38.352	ppb	9.3	258482.12	100000	
59	Co	89	He	0.034	ppb	14.3	333.36	1000	
60	Ni	89	He	0.030	ppb	8.9	138.89	1000	
63	Cu	89	He	0.148	ppb	17.7	1596.82	2000	
66	Zn	89	He	-0.022	ppb	N/A	280.01	2000	
75	As	89	He	0.466	ppb	1.9	314.37	1000	
78	Se	89	H2	1.512	ppb	4.3	432.82	1000	
88	Sr	89	He	0.050	ppb	15.4	216.68	2000	
95	Mo	89	He	4.670	ppb	2.3	16304.74	1000	
107	Ag	89	He	0.008	ppb	29.7	122.23	100	
111	Cd	89	He	0.028	ppb	9.1	42.22	1000	
118	Sn	159	He	0.777	ppb	5.2	2588.13	1000	
121	Sb	159	No Gas	0.112	ppb	2.6	2349.50	1000	
137	Ba	159	No Gas	0.073	ppb	25.6	734.18	2000	
182	W	159	No Gas	6.437	ppb	2.7	93578.03	1000	
205	Tl	209	No Gas	0.078	ppb	10.7	2639.89	1000	
208	Pb	209	No Gas	0.114	ppb	5.2	7532.63	2000	
232	Th	209	No Gas	0.070	ppb	4.0	3534.44	1000	
238	U	209	No Gas	0.055	ppb	4.0	2379.55	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6101297.54	2.1	5961075.87	102.35	29.5	120.4	
Sc	45	No Gas	13191447.23	0.5	13015983.55	101.35	29.5	120.4	
Sc	45	H2	1466619.05	1.7	1430290.9	102.54	29.5	120.4	
Sc	45	He	423687.08	0.4	438046.17	96.72	29.5	120.4	
Ge	72	No Gas	2499225.18	0.9	2458564.83	101.65	29.5	120.4	
Ge	72	H2	505629.92	0.4	491199	102.94	29.5	120.4	
Ge	72	He	251800.96	0.3	255273.97	98.64	29.5	120.4	
Y	89	H2	7699774.87	0.7	7442438.64	103.46	29.5	120.4	
Y	89	He	2111597.26	0.5	2167302.66	97.43	29.5	120.4	
Tb	159	No Gas	21752209.12	1.4	21871384.4	99.46	29.5	120.4	
Tb	159	He	8543450.22	0.2	8589669.11	99.46	29.5	120.4	
Bi	209	No Gas	9987748.44	0.8	10079220.95	99.09	29.5	120.4	

Sample Report

Sample Name	RINSE
File Name	016SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 14:40:40
Sample Type	Sample
Total Dilution	1.0000
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.006	ppb	84.0	55.56	100	
11	B	6	No Gas	0.570	ppb	14.2	6787.39	1000	
23	Na	45	He	37.213	ppb	4.0	40582.21	200000	
24	Mg	45	He	7.939	ppb	3.0	3022.74	200000	
27	Al	45	He	6.355	ppb	7.8	1015.63	200000	
28	Si	45	H2	19.591	ppb	2.5	5129.95	10000	
39	K	45	He	12.532	ppb	25.1	24112.69	200000	
40	Ca	45	H2	6.083	ppb	3.6	17687.20	200000	
51	V	89	He	0.048	ppb	12.8	484.47	1000	
52	Cr	89	He	0.019	ppb	24.9	944.53	2000	
55	Mn	89	He	0.046	ppb	8.5	197.30	2000	
56	Fe	89	H2	7.519	ppb	5.0	54104.98	100000	
59	Co	89	He	0.013	ppb	17.6	133.34	1000	
60	Ni	89	He	0.011	ppb	22.1	88.89	1000	
63	Cu	89	He	0.095	ppb	7.3	1223.43	2000	
66	Zn	89	He	-0.032	ppb	N/A	270.01	2000	
75	As	89	He	0.266	ppb	3.3	187.02	1000	
78	Se	89	H2	0.701	ppb	7.0	202.32	1000	
88	Sr	89	He	0.019	ppb	58.4	115.56	2000	
95	Mo	89	He	2.826	ppb	2.2	9889.50	1000	
107	Ag	89	He	0.006	ppb	37.3	95.56	100	
111	Cd	89	He	0.014	ppb	26.3	22.22	1000	
118	Sn	159	He	0.435	ppb	8.3	1609.05	1000	
121	Sb	159	No Gas	0.054	ppb	4.6	1258.13	1000	
137	Ba	159	No Gas	0.024	ppb	43.1	333.71	2000	
182	W	159	No Gas	3.437	ppb	4.6	54265.66	1000	
205	Tl	209	No Gas	0.036	ppb	3.7	1378.30	1000	
208	Pb	209	No Gas	0.047	ppb	12.1	4672.24	2000	
232	Th	209	No Gas	0.054	ppb	11.1	3030.44	1000	
238	U	209	No Gas	0.023	ppb	7.3	1067.92	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6076639.60	6.1	5961075.87	101.94	29.5	120.4	
Sc	45	No Gas	13182065.14	1.6	13015983.55	101.28	29.5	120.4	
Sc	45	H2	1450430.77	1.2	1430290.9	101.41	29.5	120.4	
Sc	45	He	421470.88	1.1	438046.17	96.22	29.5	120.4	
Ge	72	No Gas	2505087.61	1.8	2458564.83	101.89	29.5	120.4	
Ge	72	H2	496939.87	1.3	491199	101.17	29.5	120.4	
Ge	72	He	251417.87	1.2	255273.97	98.49	29.5	120.4	
Y	89	H2	7674108.53	1.4	7442438.64	103.11	29.5	120.4	
Y	89	He	2104560.00	1.4	2167302.66	97.11	29.5	120.4	
Tb	159	No Gas	22994603.27	1.2	21871384.4	105.14	29.5	120.4	
Tb	159	He	8606230.57	1.2	8589669.11	100.19	29.5	120.4	
Bi	209	No Gas	10569951.56	4.0	10079220.95	104.87	29.5	120.4	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV
File Name	017_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 14:43:06
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	006CALB.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**admin**

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
9	Be	6	No Gas	21.050	ppb	11.4	162350.01	25	84.2	89.8	110.2	> +/- 10%
11	B	6	No Gas	21.392	ppb	11.4	110149.10	25	85.57	89.8	110.2	> +/- 10%
23	Na	45	He	5098.095	ppb	1.5	3262574.57	5000	101.96	89.8	110.2	
24	Mg	45	He	5158.031	ppb	0.9	1920027.37	5000	103.16	89.8	110.2	
27	Al	45	He	502.339	ppb	2.8	71358.75	500	100.47	89.8	110.2	
28	Si	45	H2	480.596	ppb	0.9	109689.28	500	96.12	89.8	110.2	
39	K	45	He	5005.414	ppb	0.9	1502549.14	5000	100.11	89.8	110.2	
40	Ca	45	H2	4930.238	ppb	0.3	9743940.55	5000	98.6	89.8	110.2	
51	V	89	He	24.746	ppb	1.6	122438.02	25	98.98	89.8	110.2	
52	Cr	89	He	24.952	ppb	1.8	156131.21	25	99.81	89.8	110.2	
55	Mn	89	He	24.383	ppb	1.3	68988.93	25	97.53	89.8	110.2	
56	Fe	89	H2	4968.015	ppb	0.9	32690313.33	5000	99.36	89.8	110.2	
59	Co	89	He	25.372	ppb	1.8	246489.16	25	101.49	89.8	110.2	
60	Ni	89	He	25.459	ppb	2.1	68653.61	25	101.84	89.8	110.2	
63	Cu	89	He	25.445	ppb	1.4	181914.39	25	101.78	89.8	110.2	
66	Zn	89	He	24.962	ppb	1.0	23490.49	25	99.85	89.8	110.2	
75	As	89	He	25.213	ppb	1.4	16407.77	25	100.85	89.8	110.2	
78	Se	89	H2	24.645	ppb	0.7	6942.08	25	98.58	89.8	110.2	
88	Sr	89	He	24.537	ppb	0.8	81022.49	25	98.15	89.8	110.2	
95	Mo	89	He	26.840	ppb	0.5	95259.11	25	107.36	89.8	110.2	
107	Ag	89	He	25.308	ppb	0.8	292631.25	25	101.23	89.8	110.2	
111	Cd	89	He	25.189	ppb	0.7	36793.19	25	100.76	89.8	110.2	
118	Sn	159	He	25.647	ppb	1.4	74835.91	25	102.59	89.8	110.2	
121	Sb	159	No Gas	23.386	ppb	10.3	481251.94	25	93.54	89.8	110.2	
137	Ba	159	No Gas	21.864	ppb	10.3	189436.85	25	87.46	89.8	110.2	> +/- 10%
182	W	159	No Gas	25.631	ppb	7.1	373136.58	25	102.52	89.8	110.2	
205	Tl	209	No Gas	23.866	ppb	10.5	811767.81	25	95.46	89.8	110.2	
208	Pb	209	No Gas	22.866	ppb	9.8	1117340.29	25	91.46	89.8	110.2	
232	Th	209	No Gas	20.700	ppb	10.2	948529.01	25	82.8	89.8	110.2	> +/- 10%
238	U	209	No Gas	21.560	ppb	11.0	987170.83	25	86.24	89.8	110.2	> +/- 10%

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5922176.24	2.9	5961075.87	99.35	29.5	120.4	
Sc	45	No Gas	12879635.22	1.3	13015983.55	98.95	29.5	120.4	
Sc	45	H2	1456681.42	0.1	1430290.9	101.85	29.5	120.4	
Sc	45	He	425397.90	0.7	438046.17	97.11	29.5	120.4	
Ge	72	No Gas	2466949.73	1.4	2458564.83	100.34	29.5	120.4	
Ge	72	H2	497546.03	0.6	491199	101.29	29.5	120.4	
Ge	72	He	252170.16	1.1	255273.97	98.78	29.5	120.4	
Y	89	H2	7647497.80	0.5	7442438.64	102.76	29.5	120.4	
Y	89	He	2162317.64	1.6	2167302.66	99.77	29.5	120.4	
Tb	159	No Gas	22338013.00	2.5	21871384.4	102.13	29.5	120.4	
Tb	159	He	8553574.39	0.9	8589669.11	99.58	29.5	120.4	
Bi	209	No Gas	10524852.19	2.1	10079220.95	104.42	29.5	120.4	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB
File Name	018_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 14:45:34
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	006CALB.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**admin**

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
9	Be	6	No Gas	0.065	ppb	68.7	520.03	0.2	
11	B	6	No Gas	0.664	ppb	7.7	7113.13	4	
23	Na	45	He	27.534	ppb	37.4	35259.11	200	
24	Mg	45	He	10.686	ppb	81.1	4117.14	20	Failed DoD
27	Al	45	He	8.177	ppb	98.9	1297.20	20	
28	Si	45	H2	26.593	ppb	5.2	6658.94	100	
39	K	45	He	12.328	ppb	82.0	24604.00	200	
40	Ca	45	H2	4.135	ppb	3.2	13741.56	20	
51	V	89	He	0.028	ppb	71.3	401.14	1	
52	Cr	89	He	0.031	ppb	129.9	1043.20	1	
55	Mn	89	He	0.046	ppb	93.8	202.64	0.4	
56	Fe	89	H2	7.040	ppb	3.1	50952.79	20	
59	Co	89	He	0.022	ppb	96.1	220.03	0.2	
60	Ni	89	He	0.019	ppb	104.2	113.34	0.4	
63	Cu	89	He	0.077	ppb	64.6	1127.90	0.6	
66	Zn	89	He	-0.080	ppb	N/A	232.23	2	
75	As	89	He	0.219	ppb	19.2	161.02	1	
78	Se	89	H2	0.946	ppb	6.4	271.32	1	Failed DoD
88	Sr	89	He	0.041	ppb	59.6	191.12	1	
95	Mo	89	He	1.890	ppb	8.1	6830.87	1	Fail All Methods□ Failed DoD
107	Ag	89	He	0.012	ppb	55.6	174.46	0.2	
111	Cd	89	He	0.021	ppb	99.5	32.22	0.2	
118	Sn	159	He	0.318	ppb	20.3	1289.00	1	
121	Sb	159	No Gas	0.109	ppb	42.0	2392.90	0.2	Failed DoD
137	Ba	159	No Gas	0.059	ppb	47.3	640.73	0.4	
182	W	159	No Gas	3.811	ppb	3.7	58633.34	1	Fail All Methods□ Failed DoD
205	Tl	209	No Gas	0.085	ppb	50.8	3043.83	0.2	
208	Pb	209	No Gas	0.076	ppb	29.2	6100.82	0.2	
232	Th	209	No Gas	0.528	ppb	7.4	24762.33	1	Failed DoD
238	U	209	No Gas	0.107	ppb	57.6	4953.56	0.2	Failed DoD

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5932767.19	2.0	5961075.87	99.53	29.5	120.4	
Sc	45	No Gas	13077796.19	2.1	13015983.55	100.47	29.5	120.4	
Sc	45	H2	1438598.48	1.9	1430290.9	100.58	29.5	120.4	
Sc	45	He	431218.46	0.8	438046.17	98.44	29.5	120.4	
Ge	72	No Gas	2496227.68	3.4	2458564.83	101.53	29.5	120.4	
Ge	72	H2	499651.82	1.4	491199	101.72	29.5	120.4	
Ge	72	He	255379.53	0.6	255273.97	100.04	29.5	120.4	
Y	89	H2	7673691.91	1.5	7442438.64	103.11	29.5	120.4	
Y	89	He	2159273.02	1.1	2167302.66	99.63	29.5	120.4	
Tb	159	No Gas	22526482.44	2.4	21871384.4	103	29.5	120.4	
Tb	159	He	8767245.56	0.1	8589669.11	102.07	29.5	120.4	
Bi	209	No Gas	10512056.48	2.6	10079220.95	104.29	29.5	120.4	

Prep Blank (PB) Report

Sample Name	PBSOF08IMS1
File Name	019_PB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 14:48:07
Sample Type	PB
Total Dilution	5.0000
Comment	---
ISTD Ref FileName	006CALB.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**admin**

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Be	9	6	No Gas	0.022	ppb	18.1	43.33	0.5	
B	11	6	No Gas	2.022	ppb	12.7	5802.48	10	
Na	23	45	He	156.515	ppb	17.7	36968.74	500	
Mg	24	45	He	48.065	ppb	60.0	3644.00	50	
Al	27	45	He	37.421	ppb	70.7	1175.77	50	
Si	28	45	H2	25.791	ppb	10.9	1838.83	250	
K	39	45	He	74.493	ppb	47.4	24886.36	500	
Ca	40	45	H2	71.916	ppb	2.1	33420.34	50	PB 6020 Fails DoD
V	51	89	He	0.629	ppb	5.2	861.17	2.5	
Cr	52	89	He	1.180	ppb	6.0	2263.12	2.5	
Mn	55	89	He	5.878	ppb	5.1	3309.80	1	PB 6020 Fails DoD□ PB 6020 Fails Non-DoD
Fe	56	89	H2	47.859	ppb	2.4	66826.33	50	
Co	59	89	He	0.122	ppb	93.6	237.80	0.5	
Ni	60	89	He	0.606	ppb	25.3	378.91	1	
Cu	63	89	He	1.232	ppb	13.7	2276.95	1.5	
Zn	66	89	He	12.646	ppb	2.2	2589.21	5	PB 6020 Fails DoD□ PB 6020 Fails Non-DoD
As	75	89	He	1.251	ppb	12.4	177.35	2.5	
Se	78	89	H2	1.954	ppb	11.7	113.17	2.5	
Sr	88	89	He	0.238	ppb	53.8	207.79	2.5	
Mo	95	89	He	7.665	ppb	5.4	5436.84	2.5	PB 6020 Fails DoD□ PB 6020 Fails Non-DoD
Ag	107	89	He	0.053	ppb	47.9	148.89	0.5	
Cd	111	89	He	0.077	ppb	96.0	23.70	0.5	
Sn	118	159	He	40.186	ppb	0.9	23748.33	2.5	PB 6020 Fails DoD□ PB 6020 Fails Non-DoD
Sb	121	159	No Gas	0.305	ppb	11.5	1371.60	0.5	
Ba	137	159	No Gas	0.190	ppb	6.0	450.51	1	
W	182	159	No Gas	10.356	ppb	8.4	33130.11	2.5	PB 6020 Fails DoD□ PB 6020 Fails Non-DoD
Tl	205	209	No Gas	0.137	ppb	13.3	1071.25	0.5	
Pb	208	209	No Gas	0.691	ppb	6.1	9178.25	0.5	PB 6020 Fails DoD
Th	232	209	No Gas	7.218	ppb	7.7	67216.90	2.5	PB 6020 Fails DoD□ PB 6020 Fails Non-DoD
U	238	209	No Gas	0.044	ppb	28.0	410.47	0.5	

QC ISTD Table

Prep Blank (PB) Report

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5919768.62	1.7	5961075.87	99.31	29.5	120.4	
Sc	45	No Gas	12988283.87	2.2	13015983.55	99.79	29.5	120.4	
Sc	45	H2	1425440.68	2.0	1430290.9	99.66	29.5	120.4	
Sc	45	He	422831.98	0.5	438046.17	96.53	29.5	120.4	
Ge	72	No Gas	2464434.69	2.3	2458564.83	100.24	29.5	120.4	
Ge	72	H2	482750.53	2.0	491199	98.28	29.5	120.4	
Ge	72	He	247160.35	0.5	255273.97	96.82	29.5	120.4	
Y	89	H2	7581088.01	1.9	7442438.64	101.86	29.5	120.4	
Y	89	He	2107660.59	0.9	2167302.66	97.25	29.5	120.4	
Tb	159	No Gas	22460336.06	2.0	21871384.4	102.69	29.5	120.4	
Tb	159	He	8576854.94	0.3	8589669.11	99.85	29.5	120.4	
Bi	209	No Gas	10604585.36	0.7	10079220.95	105.21	29.5	120.4	

Laboratory Control Sample (LCS) Report

Sample Name	LCSOOF08IMS1
File Name	020LCSO.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 14:50:36
Sample Type	LCSO
Total Dilution	5.0000
Comment	---
ISTD Ref FileName	006CALB.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**admin**

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Be	9	6	No Gas	43.743	ppb	9.2	66943.10	50	17.5	79.5	120.4	
B	11	6	No Gas	429.935	ppb	8.1	427905.00	500	17.2	79.5	120.4	
Na	23	45	He	8140.134	ppb	0.3	1044711.07	7500	21.71	79.5	120.4	
Mg	24	45	He	5267.315	ppb	1.3	388893.51	5000	21.07	79.5	120.4	
Al	27	45	He	2054.479	ppb	2.2	57899.22	2000	20.54	79.5	120.4	
Si	28	45	H2	934.475	ppb	0.8	42252.61	1000	18.69	79.5	120.4	
K	39	45	He	11302.039	ppb	0.8	684036.50	10000	22.6	79.5	120.4	
Ca	40	45	H2	2614.829	ppb	0.6	1018441.62	2500	20.92	79.5	120.4	
V	51	89	He	518.575	ppb	0.9	501540.08	500	20.74	79.5	120.4	
Cr	52	89	He	211.693	ppb	1.2	258773.21	200	21.17	79.5	120.4	
Mn	55	89	He	518.704	ppb	1.2	287107.63	500	20.75	79.5	120.4	
Fe	56	89	H2	1083.686	ppb	1.4	1411427.13	1000	21.67	79.5	120.4	
Co	59	89	He	541.613	ppb	0.7	1030230.23	500	21.66	79.5	120.4	
Ni	60	89	He	538.363	ppb	0.7	284069.43	500	21.53	79.5	120.4	
Cu	63	89	He	271.911	ppb	0.6	379972.77	250	21.75	79.5	120.4	
Zn	66	89	He	530.712	ppb	0.9	96801.08	500	21.23	79.5	120.4	
As	75	89	He	105.050	ppb	1.3	13387.89	100	21.01	79.5	120.4	
Se	78	89	H2	102.870	ppb	1.1	5718.92	100	20.57	79.5	120.4	
Sr	88	89	He	487.977	ppb	2.2	315278.78	500	19.52	79.5	120.4	
Mo	95	89	He	113.506	ppb	0.8	78890.21	100	22.7	79.5	120.4	
Ag	107	89	He	54.820	ppb	1.4	124110.03	50	21.93	79.5	120.4	
Cd	111	89	He	260.305	ppb	1.5	74431.84	250	20.82	79.5	120.4	
Sn	118	159	He	545.092	ppb	0.5	316094.84	500	21.8	79.5	120.4	
Sb	121	159	No Gas	96.103	ppb	7.2	400835.21	100	19.22	79.5	120.4	
Ba	137	159	No Gas	1685.360	ppb	8.5	2957622.15	2000	16.85	79.5	120.4	DoD
W	182	159	No Gas	113.977	ppb	6.4	336509.81	100	22.8	79.5	120.4	
Tl	205	209	No Gas	100.518	ppb	8.7	684310.64	100	20.1	79.5	120.4	
[Pb]	206	209	No Gas	93.231	ppb	9.8	239503.48	100	18.65	79.5	120.4	
[Pb]	207	209	No Gas	93.944	ppb	10.3	209961.92	100	18.79	79.5	120.4	
Pb	208	209	No Gas	97.610	ppb	9.7	954797.27	100	19.52	79.5	120.4	
Th	232	209	No Gas	94.388	ppb	8.2	865651.83	100	18.88	79.5	120.4	
U	238	209	No Gas	93.947	ppb	7.0	861243.75	100	18.79	79.5	120.4	

QC ISTD Table

Laboratory Control Sample (LCS) Report

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5867081.56	1.5	5961075.87	98.42	29.5	120.4	
Sc	45	No Gas	12759593.73	1.6	13015983.55	98.03	29.5	120.4	
Sc	45	H2	1428330.09	1.4	1430290.9	99.86	29.5	120.4	
Sc	45	He	421786.19	0.6	438046.17	96.29	29.5	120.4	
Ge	72	No Gas	2453540.72	2.1	2458564.83	99.8	29.5	120.4	
Ge	72	H2	476424.14	1.1	491199	96.99	29.5	120.4	
Ge	72	He	247078.37	0.5	255273.97	96.79	29.5	120.4	
Y	89	H2	7545753.20	0.0	7442438.64	101.39	29.5	120.4	
Y	89	He	2116572.37	0.8	2167302.66	97.66	29.5	120.4	
Tb	159	No Gas	22616481.33	1.4	21871384.4	103.41	29.5	120.4	
Tb	159	He	8528294.81	1.4	8589669.11	99.29	29.5	120.4	
Bi	209	No Gas	10533254.76	2.6	10079220.95	104.5	29.5	120.4	

Sample Report

Sample Name SO3356-001

File Name 021SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 14:53:02

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Fail

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	2.214	ppb	9.1	3186.02	100	
11	B	6	No Gas	793.481	ppb	12.0	736812.73	1000	
23	Na	45	He	37522.005	ppb	2.0	4660407.54	200000	
24	Mg	45	He	64048.726	ppb	1.6	4634689.17	200000	
27	Al	45	He	59961.877	ppb	1.5	1653222.01	200000	
28	Si	45	H2	2210.559	ppb	1.2	94278.74	10000	
39	K	45	He	190434.852	ppb	0.7	10981530.42	200000	
40	Ca	45	H2	687882.676	ppb	0.5	253761007.33	200000	
51	V	89	He	104.522	ppb	0.3	98810.05	1000	
52	Cr	89	He	147.855	ppb	0.6	176555.27	2000	
55	Mn	89	He	28424.496	ppb	1.3	15344127.33	2000	>LDR
56	Fe	89	H2	45682.599	ppb	0.9	57359707.69	100000	
59	Co	89	He	30.497	ppb	0.2	56593.36	1000	
60	Ni	89	He	287.776	ppb	0.8	148148.94	1000	
63	Cu	89	He	328.239	ppb	0.2	447314.97	2000	
66	Zn	89	He	4584.650	ppb	0.9	813492.21	2000	
75	As	89	He	31.216	ppb	2.1	3893.64	1000	
78	Se	89	H2	6.554	ppb	4.3	356.16	1000	
88	Sr	89	He	3235.597	ppb	1.2	2039033.27	2000	
95	Mo	89	He	19.413	ppb	2.6	13276.92	1000	
107	Ag	89	He	4.350	ppb	1.4	9633.78	100	
111	Cd	89	He	52.334	ppb	1.5	14599.45	1000	
118	Sn	159	He	53.999	ppb	1.8	30706.92	1000	
121	Sb	159	No Gas	1.874	ppb	5.8	7674.12	1000	
137	Ba	159	No Gas	3741.996	ppb	8.6	6344904.26	2000	
182	W	159	No Gas	19.701	ppb	0.8	58696.45	1000	
205	Tl	209	No Gas	6.483	ppb	6.3	41658.51	1000	
208	Pb	209	No Gas	405.677	ppb	8.8	3726607.18	2000	
232	Th	209	No Gas	20.131	ppb	4.2	174219.25	1000	
238	U	209	No Gas	2.753	ppb	6.6	23819.80	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5510403.75	4.6	5961075.87	92.44	29.5	120.4	
Sc	45	No Gas	12581870.80	2.3	13015983.55	96.66	29.5	120.4	
Sc	45	H2	1360294.42	0.6	1430290.9	95.11	29.5	120.4	
Sc	45	He	413523.95	1.8	438046.17	94.4	29.5	120.4	
Ge	72	No Gas	2392015.63	2.9	2458564.83	97.29	29.5	120.4	
Ge	72	H2	451736.21	1.2	491199	91.97	29.5	120.4	
Ge	72	He	237692.92	0.8	255273.97	93.11	29.5	120.4	
Y	89	H2	7297056.54	0.9	7442438.64	98.05	29.5	120.4	
Y	89	He	2064583.10	0.2	2167302.66	95.26	29.5	120.4	
Tb	159	No Gas	21861528.56	2.7	21871384.4	99.95	29.5	120.4	
Tb	159	He	8284531.33	1.4	8589669.11	96.45	29.5	120.4	
Bi	209	No Gas	9912988.89	3.7	10079220.95	98.35	29.5	120.4	

Sample Report

Sample Name SO3356-002

File Name 022SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 14:55:32

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Fail

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	2.152	ppb	8.8	3138.23	100	
11	B	6	No Gas	834.220	ppb	7.9	785468.44	1000	
23	Na	45	He	38646.332	ppb	3.4	4722989.54	200000	
24	Mg	45	He	65405.921	ppb	4.0	4657154.13	200000	
27	Al	45	He	61860.960	ppb	3.6	1678411.68	200000	
28	Si	45	H2	2227.610	ppb	2.2	95444.08	10000	
39	K	45	He	196462.102	ppb	3.8	11146631.21	200000	
40	Ca	45	H2	690296.361	ppb	2.0	255840502.86	200000	
51	V	89	He	106.284	ppb	3.5	99540.33	1000	
52	Cr	89	He	149.399	ppb	3.2	176742.72	2000	
55	Mn	89	He	28977.964	ppb	3.0	15499034.84	2000	>LDR
56	Fe	89	H2	45481.155	ppb	1.0	57524670.14	100000	
59	Co	89	He	30.863	ppb	3.2	56745.07	1000	
60	Ni	89	He	292.255	ppb	4.4	149033.55	1000	
63	Cu	89	He	333.097	ppb	4.6	449625.16	2000	
66	Zn	89	He	4656.968	ppb	3.6	818627.84	2000	
75	As	89	He	30.887	ppb	3.2	3817.28	1000	
78	Se	89	H2	4.806	ppb	2.3	264.16	1000	
88	Sr	89	He	3311.315	ppb	3.2	2067496.31	2000	
95	Mo	89	He	17.805	ppb	3.9	12075.77	1000	
107	Ag	89	He	4.435	ppb	4.8	9729.36	100	
111	Cd	89	He	53.201	ppb	2.6	14705.88	1000	
118	Sn	159	He	53.045	ppb	3.6	29809.39	1000	
121	Sb	159	No Gas	1.546	ppb	3.0	6425.36	1000	
137	Ba	159	No Gas	3815.270	ppb	7.7	6561424.63	2000	
182	W	159	No Gas	14.737	ppb	6.2	45236.49	1000	
205	Tl	209	No Gas	6.210	ppb	6.4	40232.49	1000	
208	Pb	209	No Gas	415.456	ppb	6.7	3849039.99	2000	
232	Th	209	No Gas	9.080	ppb	6.2	79465.07	1000	
238	U	209	No Gas	2.367	ppb	7.6	20590.09	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5575147.24	2.1	5961075.87	93.53	29.5	120.4	
Sc	45	No Gas	12637943.23	0.3	13015983.55	97.1	29.5	120.4	
Sc	45	H2	1366834.62	1.2	1430290.9	95.56	29.5	120.4	
Sc	45	He	407138.97	2.6	438046.17	92.94	29.5	120.4	
Ge	72	No Gas	2379735.33	1.3	2458564.83	96.79	29.5	120.4	
Ge	72	H2	452454.26	0.6	491199	92.11	29.5	120.4	
Ge	72	He	234614.01	2.4	255273.97	91.91	29.5	120.4	
Y	89	H2	7350445.66	0.8	7442438.64	98.76	29.5	120.4	
Y	89	He	2046706.95	2.7	2167302.66	94.44	29.5	120.4	
Tb	159	No Gas	22153112.73	1.0	21871384.4	101.29	29.5	120.4	
Tb	159	He	8188771.47	2.5	8589669.11	95.33	29.5	120.4	
Bi	209	No Gas	9985671.46	1.6	10079220.95	99.07	29.5	120.4	

Sample Report

Sample Name RINSE

File Name 023SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 14:57:58

Sample Type Sample

Total Dilution 1.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.004	ppb	27.3	41.11	100	
11	B	6	No Gas	3.212	ppb	15.6	18810.75	1000	
23	Na	45	He	13.088	ppb	12.6	25183.25	200000	
24	Mg	45	He	5.232	ppb	7.1	2006.96	200000	
27	Al	45	He	3.196	ppb	12.3	566.70	200000	
28	Si	45	H2	35.519	ppb	5.1	8685.56	10000	
39	K	45	He	13.835	ppb	22.8	24323.19	200000	
40	Ca	45	H2	56.406	ppb	12.0	116081.22	200000	
51	V	89	He	0.000	ppb	N/A	251.13	1000	
52	Cr	89	He	0.004	ppb	221.2	843.87	2000	
55	Mn	89	He	1.503	ppb	8.6	4145.21	2000	
56	Fe	89	H2	6.189	ppb	16.0	45106.85	100000	
59	Co	89	He	0.004	ppb	35.6	46.67	1000	
60	Ni	89	He	0.013	ppb	76.1	92.23	1000	
63	Cu	89	He	0.108	ppb	8.8	1299.00	2000	
66	Zn	89	He	0.095	ppb	23.6	380.02	2000	
75	As	89	He	0.063	ppb	23.2	58.01	1000	
78	Se	89	H2	0.115	ppb	9.3	36.50	1000	
88	Sr	89	He	0.141	ppb	8.6	502.25	2000	
95	Mo	89	He	0.646	ppb	15.1	2351.41	1000	
107	Ag	89	He	0.003	ppb	35.8	60.00	100	
111	Cd	89	He	0.004	ppb	93.8	7.41	1000	
118	Sn	159	He	0.073	ppb	27.7	546.70	1000	
121	Sb	159	No Gas	0.011	ppb	62.4	307.01	1000	
137	Ba	159	No Gas	2.509	ppb	58.9	20290.09	2000	
182	W	159	No Gas	0.874	ppb	14.3	14541.20	1000	
205	Tl	209	No Gas	0.013	ppb	29.0	523.93	1000	
208	Pb	209	No Gas	0.275	ppb	52.7	14770.59	2000	
232	Th	209	No Gas	0.058	ppb	14.4	2980.39	1000	
238	U	209	No Gas	0.003	ppb	59.1	143.50	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5644847.83	8.3	5961075.87	94.7	29.5	120.4	
Sc	45	No Gas	11840306.87	11.0	13015983.55	90.97	29.5	120.4	
Sc	45	H2	1443281.49	1.2	1430290.9	100.91	29.5	120.4	
Sc	45	He	418809.11	4.8	438046.17	95.61	29.5	120.4	
Ge	72	No Gas	2330688.55	8.7	2458564.83	94.8	29.5	120.4	
Ge	72	H2	492934.39	2.2	491199	100.35	29.5	120.4	
Ge	72	He	248794.04	3.1	255273.97	97.46	29.5	120.4	
Y	89	H2	7636892.30	1.5	7442438.64	102.61	29.5	120.4	
Y	89	He	2080958.34	5.3	2167302.66	96.02	29.5	120.4	
Tb	159	No Gas	20937906.91	11.6	21871384.4	95.73	29.5	120.4	
Tb	159	He	8513926.40	5.6	8589669.11	99.12	29.5	120.4	
Bi	209	No Gas	9894928.33	9.0	10079220.95	98.17	29.5	120.4	

Sample Report

Sample Name	RINSE
File Name	024SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 15:00:24
Sample Type	Sample
Total Dilution	1.0000
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.001	ppb	46.2	21.11	100	
11	B	6	No Gas	0.821	ppb	7.0	8185.91	1000	
23	Na	45	He	8.096	ppb	6.3	22345.63	200000	
24	Mg	45	He	1.944	ppb	3.4	815.64	200000	
27	Al	45	He	0.022	ppb	272.4	126.67	200000	
28	Si	45	H2	34.406	ppb	3.3	8371.83	10000	
39	K	45	He	4.395	ppb	37.0	21850.19	200000	
40	Ca	45	H2	2.753	ppb	9.7	11004.64	200000	
51	V	89	He	-0.008	ppb	N/A	218.90	1000	
52	Cr	89	He	-0.014	ppb	N/A	754.55	2000	
55	Mn	89	He	0.163	ppb	9.1	524.58	2000	
56	Fe	89	H2	0.597	ppb	8.0	8328.38	100000	
59	Co	89	He	0.000	ppb	303.6	11.11	1000	
60	Ni	89	He	-0.005	ppb	N/A	48.89	1000	
63	Cu	89	He	0.058	ppb	13.6	981.19	2000	
66	Zn	89	He	-0.075	ppb	N/A	233.34	2000	
75	As	89	He	0.038	ppb	12.2	43.00	1000	
78	Se	89	H2	0.101	ppb	10.4	32.50	1000	
88	Sr	89	He	0.017	ppb	10.6	111.11	2000	
95	Mo	89	He	0.489	ppb	1.9	1846.86	1000	
107	Ag	89	He	0.000	ppb	71.3	35.55	100	
111	Cd	89	He	0.000	ppb	2075.8	1.85	1000	
118	Sn	159	He	0.057	ppb	21.8	507.81	1000	
121	Sb	159	No Gas	0.005	ppb	34.4	223.59	1000	
137	Ba	159	No Gas	0.043	ppb	33.2	507.25	2000	
182	W	159	No Gas	0.650	ppb	5.4	12676.96	1000	
205	Tl	209	No Gas	0.005	ppb	7.9	320.37	1000	
208	Pb	209	No Gas	0.004	ppb	78.6	2596.35	2000	
232	Th	209	No Gas	0.018	ppb	26.6	1374.97	1000	
238	U	209	No Gas	0.002	ppb	69.7	103.45	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6154946.97	2.1	5961075.87	103.25	29.5	120.4	
Sc	45	No Gas	12863559.15	1.3	13015983.55	98.83	29.5	120.4	
Sc	45	H2	1433051.79	0.7	1430290.9	100.19	29.5	120.4	
Sc	45	He	423764.32	0.4	438046.17	96.74	29.5	120.4	
Ge	72	No Gas	2478537.64	1.1	2458564.83	100.81	29.5	120.4	
Ge	72	H2	492426.22	0.7	491199	100.25	29.5	120.4	
Ge	72	He	251128.06	0.4	255273.97	98.38	29.5	120.4	
Y	89	H2	7598206.90	0.9	7442438.64	102.09	29.5	120.4	
Y	89	He	2126924.14	0.8	2167302.66	98.14	29.5	120.4	
Tb	159	No Gas	22807315.49	1.0	21871384.4	104.28	29.5	120.4	
Tb	159	He	8650243.41	0.8	8589669.11	100.71	29.5	120.4	
Bi	209	No Gas	10690979.04	2.1	10079220.95	106.07	29.5	120.4	

Sample Report

Sample Name RINSE

File Name 025SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 15:03:18

Sample Type Sample

Total Dilution 1.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.001	ppb	107.0	18.89	100	
11	B	6	No Gas	0.584	ppb	10.3	7030.84	1000	
23	Na	45	He	6.816	ppb	5.0	21723.84	200000	
24	Mg	45	He	1.806	ppb	12.5	771.19	200000	
27	Al	45	He	0.232	ppb	20.0	157.79	200000	
28	Si	45	H2	32.670	ppb	1.7	7961.08	10000	
39	K	45	He	2.283	ppb	62.0	21414.63	200000	
40	Ca	45	H2	4.440	ppb	2.7	14240.92	200000	
51	V	89	He	-0.006	ppb	N/A	228.90	1000	
52	Cr	89	He	-0.017	ppb	N/A	735.22	2000	
55	Mn	89	He	0.229	ppb	7.3	704.56	2000	
56	Fe	89	H2	0.608	ppb	5.7	8381.92	100000	
59	Co	89	He	0.002	ppb	64.3	22.22	1000	
60	Ni	89	He	0.005	ppb	76.6	74.45	1000	
63	Cu	89	He	0.051	ppb	11.1	925.62	2000	
66	Zn	89	He	-0.058	ppb	N/A	247.79	2000	
75	As	89	He	0.046	ppb	14.3	48.34	1000	
78	Se	89	H2	0.081	ppb	14.6	26.83	1000	
88	Sr	89	He	0.020	ppb	20.8	120.01	2000	
95	Mo	89	He	0.429	ppb	5.2	1632.38	1000	
107	Ag	89	He	0.001	ppb	128.3	46.67	100	
111	Cd	89	He	0.002	ppb	22.0	4.81	1000	
118	Sn	159	He	0.033	ppb	20.8	441.13	1000	
121	Sb	159	No Gas	0.004	ppb	53.5	186.88	1000	
137	Ba	159	No Gas	0.034	ppb	22.4	423.81	2000	
182	W	159	No Gas	0.524	ppb	7.0	10890.30	1000	
205	Tl	209	No Gas	0.005	ppb	18.6	303.67	1000	
208	Pb	209	No Gas	0.000	ppb	752.8	2446.18	2000	
232	Th	209	No Gas	0.009	ppb	17.3	981.15	1000	
238	U	209	No Gas	0.001	ppb	62.0	56.73	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6218957.80	3.4	5961075.87	104.33	29.5	120.4	
Sc	45	No Gas	12926123.06	2.0	13015983.55	99.31	29.5	120.4	
Sc	45	H2	1428854.34	1.5	1430290.9	99.9	29.5	120.4	
Sc	45	He	427502.79	0.3	438046.17	97.59	29.5	120.4	
Ge	72	No Gas	2469162.46	2.9	2458564.83	100.43	29.5	120.4	
Ge	72	H2	488666.57	1.3	491199	99.48	29.5	120.4	
Ge	72	He	251545.97	0.9	255273.97	98.54	29.5	120.4	
Y	89	H2	7579725.55	1.7	7442438.64	101.84	29.5	120.4	
Y	89	He	2119881.98	0.4	2167302.66	97.81	29.5	120.4	
Tb	159	No Gas	22984971.32	2.7	21871384.4	105.09	29.5	120.4	
Tb	159	He	8741415.22	0.6	8589669.11	101.77	29.5	120.4	
Bi	209	No Gas	10809326.55	3.5	10079220.95	107.24	29.5	120.4	

Prep Blank (PB) Report

Sample Name	PBWOF10IMW3
File Name	026_PB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 15:05:45
Sample Type	PB
Total Dilution	5.0000
Comment	---
ISTD Ref FileName	006CALB.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**admin**

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Be	9	6	No Gas	0.007	ppb	20.4	21.11	0.5	
B	11	6	No Gas	3.285	ppb	14.2	7088.64	10	
Na	23	45	He	51.609	ppb	10.0	23284.95	500	
Mg	24	45	He	16.213	ppb	4.7	1271.26	50	
Al	27	45	He	4.857	ppb	13.9	255.57	50	
Si	28	45	H2	7.004	ppb	11.0	987.80	250	
K	39	45	He	23.721	ppb	38.5	21514.87	500	
Ca	40	45	H2	15.272	ppb	9.3	11338.24	50	
V	51	89	He	0.315	ppb	15.9	550.03	2.5	
Cr	52	89	He	0.536	ppb	9.5	1456.48	2.5	
Mn	55	89	He	0.721	ppb	9.8	459.93	1	
Fe	56	89	H2	14.888	ppb	6.9	23263.17	50	
Co	59	89	He	0.017	ppb	53.4	37.78	0.5	
Ni	60	89	He	0.091	ppb	68.6	106.67	1	
Cu	63	89	He	0.817	ppb	10.1	1672.39	1.5	
Zn	66	89	He	0.507	ppb	51.0	384.46	5	
As	75	89	He	0.406	ppb	13.6	69.01	2.5	
Se	78	89	H2	0.377	ppb	36.4	24.67	2.5	
Sr	88	89	He	0.027	ppb	60.3	71.11	2.5	
Mo	95	89	He	2.154	ppb	7.0	1603.49	2.5	
Ag	107	89	He	0.012	ppb	60.1	55.56	0.5	
Cd	111	89	He	0.012	ppb	19.0	5.19	0.5	
Sn	118	159	He	0.838	ppb	5.3	820.06	2.5	
Sb	121	159	No Gas	0.256	ppb	14.3	1198.05	0.5	
Ba	137	159	No Gas	0.075	ppb	39.5	256.96	1	
W	182	159	No Gas	3.066	ppb	9.2	12229.59	2.5	PB 6020 Fails DoD
Tl	205	209	No Gas	0.028	ppb	16.1	333.71	0.5	
Pb	208	209	No Gas	0.194	ppb	11.3	4398.59	0.5	
Th	232	209	No Gas	0.431	ppb	12.9	4629.40	2.5	
U	238	209	No Gas	0.005	ppb	71.2	53.39	0.5	

QC ISTD Table

Prep Blank (PB) Report

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5950722.13	3.6	5961075.87	99.83	29.5	120.4	
Sc	45	No Gas	12888399.72	1.3	13015983.55	99.02	29.5	120.4	
Sc	45	H2	1401737.41	0.9	1430290.9	98	29.5	120.4	
Sc	45	He	415388.06	1.3	438046.17	94.83	29.5	120.4	
Ge	72	No Gas	2449399.63	2.1	2458564.83	99.63	29.5	120.4	
Ge	72	H2	470443.80	1.4	491199	95.77	29.5	120.4	
Ge	72	He	243994.03	0.9	255273.97	95.58	29.5	120.4	
Y	89	H2	7402033.28	1.3	7442438.64	99.46	29.5	120.4	
Y	89	He	2071877.09	0.2	2167302.66	95.6	29.5	120.4	
Tb	159	No Gas	22999121.60	1.4	21871384.4	105.16	29.5	120.4	
Tb	159	He	8536524.25	1.4	8589669.11	99.38	29.5	120.4	
Bi	209	No Gas	10868188.43	2.5	10079220.95	107.83	29.5	120.4	

Laboratory Control Sample (LCS) Report

Sample Name	LCSWOF10IMW3
File Name	027LCSW.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 15:08:16
Sample Type	LCSW
Total Dilution	5.0000
Comment	---
ISTD Ref FileName	006CALB.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**admin**

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Be	9	6	No Gas	41.568	ppb	8.7	66046.56	50	16.63	79.5	120.4	
B	11	6	No Gas	427.424	ppb	9.0	441656.80	500	17.1	79.5	120.4	
Na	23	45	He	8295.931	ppb	1.8	1042073.03	7500	22.12	79.5	120.4	
Mg	24	45	He	5404.408	ppb	1.4	390644.73	5000	21.62	79.5	120.4	
Al	27	45	He	2009.520	ppb	1.5	55451.78	2000	20.1	79.5	120.4	
Si	28	45	H2	973.298	ppb	2.6	43387.17	1000	19.47	0	200	
K	39	45	He	11425.861	ppb	0.8	676824.31	10000	22.85	79.5	120.4	
Ca	40	45	H2	2572.679	ppb	1.5	988791.25	2500	20.58	79.5	120.4	
V	51	89	He	511.673	ppb	0.3	480249.50	500	20.47	79.5	120.4	
Cr	52	89	He	206.570	ppb	0.3	245073.05	200	20.66	79.5	120.4	
Mn	55	89	He	511.267	ppb	0.3	274635.31	500	20.45	79.5	120.4	
Fe	56	89	H2	1033.013	ppb	1.5	1331660.45	1000	20.66	79.5	120.4	
Co	59	89	He	526.009	ppb	1.0	970973.99	500	21.04	79.5	120.4	
Ni	60	89	He	527.531	ppb	0.3	270119.56	500	21.1	79.5	120.4	
Cu	63	89	He	266.528	ppb	0.2	361445.40	250	21.32	79.5	120.4	
Zn	66	89	He	517.475	ppb	0.8	91605.42	500	20.7	79.5	120.4	
As	75	89	He	105.619	ppb	0.6	13062.20	100	21.12	79.5	120.4	
Se	78	89	H2	102.255	ppb	3.3	5624.21	100	20.45	79.5	120.4	
Sr	88	89	He	502.192	ppb	1.6	314897.08	500	20.09	79.5	120.4	
Mo	95	89	He	109.801	ppb	1.1	74065.68	100	21.96	79.5	120.4	
Ag	107	89	He	54.362	ppb	0.1	119437.71	50	21.74	79.5	120.4	
Cd	111	89	He	267.652	ppb	0.3	74273.48	250	21.41	79.5	120.4	
Sn	118	159	He	502.825	ppb	0.8	291709.29	500	20.11	79.5	120.4	
Sb	121	159	No Gas	95.172	ppb	9.0	405359.62	100	19.03	79.5	120.4	
Ba	137	159	No Gas	1596.958	ppb	8.7	2862446.56	2000	15.97	79.5	120.4	DoD
W	182	159	No Gas	105.080	ppb	8.1	317089.40	100	21.02	79.5	120.4	
Tl	205	209	No Gas	101.796	ppb	9.7	704659.84	100	20.36	79.5	120.4	
[Pb]	206	209	No Gas	93.716	ppb	9.8	244827.42	100	18.74	79.5	120.4	
[Pb]	207	209	No Gas	92.937	ppb	9.5	211248.53	100	18.59	79.5	120.4	
Pb	208	209	No Gas	97.502	ppb	9.1	970013.01	100	19.5	79.5	120.4	
Th	232	209	No Gas	90.728	ppb	6.6	846724.44	100	18.15	79.5	120.4	
U	238	209	No Gas	93.852	ppb	5.9	875302.52	100	18.77	79.5	120.4	

QC ISTD Table

Laboratory Control Sample (LCS) Report

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6094432.39	2.4	5961075.87	102.24	29.5	120.4	
Sc	45	No Gas	12903061.46	3.1	13015983.55	99.13	29.5	120.4	
Sc	45	H2	1409268.62	0.8	1430290.9	98.53	29.5	120.4	
Sc	45	He	412955.90	1.0	438046.17	94.27	29.5	120.4	
Ge	72	No Gas	2458094.26	3.0	2458564.83	99.98	29.5	120.4	
Ge	72	H2	470849.47	1.1	491199	95.86	29.5	120.4	
Ge	72	He	243900.76	1.1	255273.97	95.54	29.5	120.4	
Y	89	H2	7469295.54	2.5	7442438.64	100.36	29.5	120.4	
Y	89	He	2053915.32	0.6	2167302.66	94.77	29.5	120.4	
Tb	159	No Gas	23116819.38	2.7	21871384.4	105.69	29.5	120.4	
Tb	159	He	8531064.67	0.4	8589669.11	99.32	29.5	120.4	
Bi	209	No Gas	10717536.53	3.3	10079220.95	106.33	29.5	120.4	

Sample Report

Sample Name RINSE

File Name 028SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 15:10:42

Sample Type Sample

Total Dilution 1.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.039	ppb	78.6	322.24	100	
11	B	6	No Gas	1.644	ppb	15.9	12369.08	1000	
23	Na	45	He	6.020	ppb	12.5	20748.12	200000	
24	Mg	45	He	1.317	ppb	6.7	575.61	200000	
27	Al	45	He	0.026	ppb	692.6	125.56	200000	
28	Si	45	H2	34.177	ppb	2.5	8258.27	10000	
39	K	45	He	4.135	ppb	53.9	21479.88	200000	
40	Ca	45	H2	0.345	ppb	26.4	6279.37	200000	
51	V	89	He	0.025	ppb	41.3	373.35	1000	
52	Cr	89	He	-0.006	ppb	N/A	793.22	2000	
55	Mn	89	He	0.070	ppb	50.4	263.96	2000	
56	Fe	89	H2	0.181	ppb	43.6	5574.01	100000	
59	Co	89	He	0.014	ppb	21.1	137.79	1000	
60	Ni	89	He	0.014	ppb	66.2	97.78	1000	
63	Cu	89	He	0.046	ppb	41.9	878.95	2000	
66	Zn	89	He	-0.064	ppb	N/A	240.01	2000	
75	As	89	He	0.083	ppb	27.2	71.01	1000	
78	Se	89	H2	0.506	ppb	12.7	144.99	1000	
88	Sr	89	He	0.020	ppb	42.2	120.01	2000	
95	Mo	89	He	0.574	ppb	8.9	2119.14	1000	
107	Ag	89	He	0.003	ppb	35.6	68.89	100	
111	Cd	89	He	0.006	ppb	50.3	10.00	1000	
118	Sn	159	He	0.158	ppb	34.7	797.87	1000	
121	Sb	159	No Gas	0.089	ppb	60.7	2022.42	1000	
137	Ba	159	No Gas	1.039	ppb	75.0	9498.92	2000	
182	W	159	No Gas	1.489	ppb	7.4	25256.32	1000	
205	Tl	209	No Gas	0.081	ppb	67.5	3010.54	1000	
208	Pb	209	No Gas	0.054	ppb	80.4	5176.32	2000	
232	Th	209	No Gas	0.382	ppb	6.0	18674.99	1000	
238	U	209	No Gas	0.120	ppb	72.1	5718.33	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6111232.11	3.2	5961075.87	102.52	29.5	120.4	
Sc	45	No Gas	12815898.26	1.9	13015983.55	98.46	29.5	120.4	
Sc	45	H2	1422537.53	1.7	1430290.9	99.46	29.5	120.4	
Sc	45	He	418202.86	2.1	438046.17	95.47	29.5	120.4	
Ge	72	No Gas	2460910.10	2.5	2458564.83	100.1	29.5	120.4	
Ge	72	H2	486650.83	1.0	491199	99.07	29.5	120.4	
Ge	72	He	248151.75	1.0	255273.97	97.21	29.5	120.4	
Y	89	H2	7550005.57	1.6	7442438.64	101.45	29.5	120.4	
Y	89	He	2102326.72	2.4	2167302.66	97	29.5	120.4	
Tb	159	No Gas	22982929.93	2.8	21871384.4	105.08	29.5	120.4	
Tb	159	He	8609438.62	2.1	8589669.11	100.23	29.5	120.4	
Bi	209	No Gas	10881259.63	1.9	10079220.95	107.96	29.5	120.4	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV
File Name	029_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 15:13:11
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	006CALB.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**admin**

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
9	Be	6	No Gas	20.588	ppb	9.9	163219.32	25	82.35	89.8	110.2	> +/- 10%
11	B	6	No Gas	21.151	ppb	10.6	111962.70	25	84.6	89.8	110.2	> +/- 10%
23	Na	45	He	5136.370	ppb	1.6	3224641.30	5000	102.73	89.8	110.2	
24	Mg	45	He	5207.758	ppb	0.5	1901775.23	5000	104.16	89.8	110.2	
27	Al	45	He	497.090	ppb	0.1	69279.51	500	99.42	89.8	110.2	
28	Si	45	H2	483.810	ppb	3.0	106616.53	500	96.76	89.8	110.2	
39	K	45	He	5011.340	ppb	0.9	1475791.02	5000	100.23	89.8	110.2	
40	Ca	45	H2	4915.962	ppb	1.7	9381154.03	5000	98.32	89.8	110.2	
51	V	89	He	25.189	ppb	2.0	120243.72	25	100.76	89.8	110.2	
52	Cr	89	He	25.247	ppb	1.3	152430.23	25	100.99	89.8	110.2	
55	Mn	89	He	24.861	ppb	1.1	67872.93	25	99.44	89.8	110.2	
56	Fe	89	H2	5001.937	ppb	0.9	31818371.83	5000	100.04	89.8	110.2	
59	Co	89	He	25.582	ppb	0.9	239827.80	25	102.33	89.8	110.2	
60	Ni	89	He	25.744	ppb	1.6	66985.91	25	102.98	89.8	110.2	
63	Cu	89	He	25.743	ppb	1.6	177570.23	25	102.97	89.8	110.2	
66	Zn	89	He	25.461	ppb	1.0	23115.38	25	101.84	89.8	110.2	
75	As	89	He	24.940	ppb	0.4	15661.85	25	99.76	89.8	110.2	
78	Se	89	H2	24.321	ppb	3.3	6622.44	25	97.28	89.8	110.2	
88	Sr	89	He	24.626	ppb	0.9	78459.74	25	98.5	89.8	110.2	
95	Mo	89	He	25.295	ppb	1.8	86626.67	25	101.18	89.8	110.2	
107	Ag	89	He	26.031	ppb	2.2	290374.32	25	104.12	89.8	110.2	
111	Cd	89	He	25.828	ppb	0.9	36400.68	25	103.31	89.8	110.2	
118	Sn	159	He	24.699	ppb	1.8	72106.99	25	98.8	89.8	110.2	
121	Sb	159	No Gas	22.633	ppb	9.6	474553.38	25	90.53	89.8	110.2	
137	Ba	159	No Gas	21.253	ppb	8.4	187640.55	25	85.01	89.8	110.2	> +/- 10%
182	W	159	No Gas	23.040	ppb	7.4	341904.33	25	92.16	89.8	110.2	
205	Tl	209	No Gas	23.504	ppb	10.0	813964.36	25	94.02	89.8	110.2	
208	Pb	209	No Gas	22.612	ppb	10.0	1124999.01	25	90.45	89.8	110.2	
232	Th	209	No Gas	21.048	ppb	9.3	981965.99	25	84.19	89.8	110.2	> +/- 10%
238	U	209	No Gas	21.388	ppb	8.7	997261.92	25	85.55	89.8	110.2	> +/- 10%

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6079895.41	3.0	5961075.87	101.99	29.5	120.4	
Sc	45	No Gas	12781024.01	2.2	13015983.55	98.19	29.5	120.4	
Sc	45	H2	1406532.70	0.9	1430290.9	98.34	29.5	120.4	
Sc	45	He	417310.75	0.5	438046.17	95.27	29.5	120.4	
Ge	72	No Gas	2447088.59	3.2	2458564.83	99.53	29.5	120.4	
Ge	72	H2	477597.47	1.7	491199	97.23	29.5	120.4	
Ge	72	He	247533.79	0.6	255273.97	96.97	29.5	120.4	
Y	89	H2	7393120.99	0.6	7442438.64	99.34	29.5	120.4	
Y	89	He	2086354.73	1.5	2167302.66	96.27	29.5	120.4	
Tb	159	No Gas	22739293.00	1.7	21871384.4	103.97	29.5	120.4	
Tb	159	He	8556192.65	0.2	8589669.11	99.61	29.5	120.4	
Bi	209	No Gas	10710482.81	2.1	10079220.95	106.26	29.5	120.4	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB
File Name	030_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 15:15:39
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	006CALB.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**admin**

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
9	Be	6	No Gas	0.082	ppb	74.0	665.60	0.2	
11	B	6	No Gas	0.792	ppb	1.8	7940.24	4	
23	Na	45	He	6.041	ppb	3.3	20788.17	200	
24	Mg	45	He	1.571	ppb	15.0	668.95	20	
27	Al	45	He	-0.102	ppb	N/A	107.78	20	
28	Si	45	H2	26.898	ppb	2.8	6558.75	100	
39	K	45	He	4.256	ppb	3.3	21546.57	200	
40	Ca	45	H2	1.097	ppb	19.5	7623.43	20	
51	V	89	He	-0.012	ppb	N/A	200.01	1	
52	Cr	89	He	-0.005	ppb	N/A	799.88	1	
55	Mn	89	He	0.032	ppb	16.3	158.64	0.4	
56	Fe	89	H2	3.599	ppb	12.8	27196.74	20	
59	Co	89	He	0.007	ppb	22.2	68.90	0.2	
60	Ni	89	He	-0.001	ppb	N/A	57.78	0.4	
63	Cu	89	He	0.025	ppb	23.5	738.94	0.6	
66	Zn	89	He	-0.130	ppb	N/A	181.12	2	
75	As	89	He	0.098	ppb	25.3	80.68	1	
78	Se	89	H2	0.800	ppb	9.3	221.99	1	Failed DoD
88	Sr	89	He	0.001	ppb	187.4	58.89	1	
95	Mo	89	He	0.864	ppb	11.3	3114.92	1	Failed DoD
107	Ag	89	He	0.006	ppb	40.2	94.45	0.2	
111	Cd	89	He	0.004	ppb	63.2	7.78	0.2	
118	Sn	159	He	0.181	ppb	15.3	860.14	1	
121	Sb	159	No Gas	0.089	ppb	62.9	1955.70	0.2	
137	Ba	159	No Gas	0.054	ppb	84.1	594.02	0.4	
182	W	159	No Gas	2.839	ppb	7.1	44363.09	1	Fail All Methods□ Failed DoD
205	Tl	209	No Gas	0.091	ppb	64.1	3307.62	0.2	
208	Pb	209	No Gas	0.053	ppb	67.9	5062.80	0.2	
232	Th	209	No Gas	0.570	ppb	8.3	27136.86	1	Failed DoD
238	U	209	No Gas	0.133	ppb	67.9	6249.25	0.2	Failed DoD

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6078816.47	3.0	5961075.87	101.98	29.5	120.4	
Sc	45	No Gas	12712803.71	1.8	13015983.55	97.67	29.5	120.4	
Sc	45	H2	1403172.76	1.5	1430290.9	98.1	29.5	120.4	
Sc	45	He	418657.03	0.7	438046.17	95.57	29.5	120.4	
Ge	72	No Gas	2440760.10	2.5	2458564.83	99.28	29.5	120.4	
Ge	72	H2	476452.48	1.0	491199	97	29.5	120.4	
Ge	72	He	246966.23	0.6	255273.97	96.75	29.5	120.4	
Y	89	H2	7392307.10	0.8	7442438.64	99.33	29.5	120.4	
Y	89	He	2099914.06	1.1	2167302.66	96.89	29.5	120.4	
Tb	159	No Gas	22487968.55	1.9	21871384.4	102.82	29.5	120.4	
Tb	159	He	8552538.28	0.6	8589669.11	99.57	29.5	120.4	
Bi	209	No Gas	10698946.49	2.5	10079220.95	106.15	29.5	120.4	

Sample Report

Sample Name SO3440-001

File Name 031SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 15:18:06

Sample Type Sample

Total Dilution 20.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.100	ppb	28.7	50.00	100	
11	B	6	No Gas	51.039	ppb	12.8	16833.70	1000	
23	Na	45	He	16824.303	ppb	0.2	538693.28	200000	
24	Mg	45	He	7242.861	ppb	0.4	131456.33	200000	
27	Al	45	He	153.257	ppb	3.6	1180.09	200000	
28	Si	45	H2	6204.319	ppb	1.2	68832.37	10000	
39	K	45	He	10897.478	ppb	0.8	177307.61	200000	
40	Ca	45	H2	30837.426	ppb	0.9	2955929.61	200000	
51	V	89	He	1.123	ppb	17.8	520.03	1000	
52	Cr	89	He	2.935	ppb	2.3	1701.80	2000	
55	Mn	89	He	84.824	ppb	0.4	11618.03	2000	
56	Fe	89	H2	2204.815	ppb	1.3	716346.80	100000	
59	Co	89	He	0.655	ppb	33.9	313.36	1000	
60	Ni	89	He	6.013	ppb	5.9	840.06	1000	
63	Cu	89	He	34.379	ppb	2.7	12359.18	2000	
66	Zn	89	He	257.775	ppb	1.0	11826.50	2000	
75	As	89	He	3.122	ppb	2.3	116.34	1000	
78	Se	89	H2	3.738	ppb	5.6	55.83	1000	
88	Sr	89	He	182.859	ppb	0.5	29116.16	2000	
95	Mo	89	He	12.564	ppb	4.5	2284.72	1000	
107	Ag	89	He	0.068	ppb	9.3	67.78	100	
111	Cd	89	He	2.319	ppb	12.9	164.82	1000	
118	Sn	159	He	2.835	ppb	21.0	747.83	1000	
121	Sb	159	No Gas	2.228	ppb	2.9	2459.65	1000	
137	Ba	159	No Gas	68.127	ppb	9.8	30305.62	2000	
182	W	159	No Gas	17.383	ppb	3.6	15941.11	1000	
205	Tl	209	No Gas	0.195	ppb	15.7	470.54	1000	
208	Pb	209	No Gas	27.832	ppb	10.2	71107.50	2000	
232	Th	209	No Gas	8.798	ppb	11.5	20937.90	1000	
238	U	209	No Gas	0.293	ppb	1.9	687.46	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6056766.29	4.6	5961075.87	101.61	29.5	120.4	
Sc	45	No Gas	12732424.27	2.1	13015983.55	97.82	29.5	120.4	
Sc	45	H2	1411261.89	1.2	1430290.9	98.67	29.5	120.4	
Sc	45	He	414550.23	1.0	438046.17	94.64	29.5	120.4	
Ge	72	No Gas	2471230.80	2.7	2458564.83	100.52	29.5	120.4	
Ge	72	H2	478765.21	0.3	491199	97.47	29.5	120.4	
Ge	72	He	246856.76	0.9	255273.97	96.7	29.5	120.4	
Y	89	H2	7507601.50	1.3	7442438.64	100.88	29.5	120.4	
Y	89	He	2082826.27	1.2	2167302.66	96.1	29.5	120.4	
Tb	159	No Gas	22859078.27	2.5	21871384.4	104.52	29.5	120.4	
Tb	159	He	8564299.94	0.2	8589669.11	99.7	29.5	120.4	
Bi	209	No Gas	10664746.66	3.1	10079220.95	105.81	29.5	120.4	

Sample Report

Sample Name SO3459-001

File Name 032SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 15:20:31

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.022	ppb	32.2	42.22	100	
11	B	6	No Gas	50.242	ppb	9.6	51395.13	1000	
23	Na	45	He	132236.489	ppb	0.4	16268100.45	200000	
24	Mg	45	He	9400.715	ppb	0.5	675643.48	200000	
27	Al	45	He	52.455	ppb	5.1	1555.70	200000	
28	Si	45	H2	2980.381	ppb	1.0	128462.21	10000	
39	K	45	He	2440.236	ppb	0.5	159395.60	200000	
40	Ca	45	H2	34852.277	ppb	0.4	13022164.11	200000	
51	V	89	He	0.377	ppb	7.7	598.93	1000	
52	Cr	89	He	0.727	ppb	8.6	1658.46	2000	
55	Mn	89	He	133.919	ppb	0.6	71463.19	2000	
56	Fe	89	H2	404.681	ppb	0.9	509135.98	100000	
59	Co	89	He	0.883	ppb	6.3	1624.65	1000	
60	Ni	89	He	2.275	ppb	5.6	1214.54	1000	
63	Cu	89	He	1.282	ppb	4.7	2270.27	2000	
66	Zn	89	He	17.236	ppb	3.9	3308.29	2000	
75	As	89	He	1.252	ppb	6.3	171.69	1000	
78	Se	89	H2	0.780	ppb	10.2	45.67	1000	
88	Sr	89	He	171.979	ppb	0.7	107082.72	2000	
95	Mo	89	He	2.052	ppb	3.1	1509.03	1000	
107	Ag	89	He	0.023	ppb	47.7	80.00	100	
111	Cd	89	He	0.037	ppb	17.7	11.85	1000	
118	Sn	159	He	0.958	ppb	13.1	871.17	1000	
121	Sb	159	No Gas	0.406	ppb	11.4	1695.36	1000	
137	Ba	159	No Gas	14.037	ppb	7.2	23316.45	2000	
182	W	159	No Gas	3.555	ppb	3.7	12673.81	1000	
205	Tl	209	No Gas	0.035	ppb	10.6	357.07	1000	
208	Pb	209	No Gas	0.265	ppb	10.6	4765.71	2000	
232	Th	209	No Gas	3.348	ppb	10.7	30013.40	1000	
238	U	209	No Gas	0.036	ppb	15.0	327.04	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5660841.68	3.3	5961075.87	94.96	29.5	120.4	
Sc	45	No Gas	11844222.14	4.2	13015983.55	91	29.5	120.4	
Sc	45	H2	1377172.90	0.6	1430290.9	96.29	29.5	120.4	
Sc	45	He	410619.13	0.4	438046.17	93.74	29.5	120.4	
Ge	72	No Gas	2318723.95	3.6	2458564.83	94.31	29.5	120.4	
Ge	72	H2	459961.66	2.2	491199	93.64	29.5	120.4	
Ge	72	He	242584.37	1.3	255273.97	95.03	29.5	120.4	
Y	89	H2	7251037.97	0.7	7442438.64	97.43	29.5	120.4	
Y	89	He	2039042.66	1.2	2167302.66	94.08	29.5	120.4	
Tb	159	No Gas	21297310.93	3.8	21871384.4	97.38	29.5	120.4	
Tb	159	He	8359421.89	0.6	8589669.11	97.32	29.5	120.4	
Bi	209	No Gas	10120436.02	3.3	10079220.95	100.41	29.5	120.4	

Sample Report

Sample Name SO3459-002

File Name 033SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 15:23:00

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.016	ppb	38.4	32.23	100	
11	B	6	No Gas	156.075	ppb	9.3	149697.11	1000	
23	Na	45	He	98922.739	ppb	0.2	12087083.01	200000	
24	Mg	45	He	21389.511	ppb	0.5	1526187.14	200000	
27	Al	45	He	20.196	ppb	2.6	667.82	200000	
28	Si	45	H2	4080.793	ppb	1.8	177650.29	10000	
39	K	45	He	12858.648	ppb	0.5	749510.50	200000	
40	Ca	45	H2	107620.397	ppb	1.0	40657399.12	200000	
51	V	89	He	0.459	ppb	2.6	671.15	1000	
52	Cr	89	He	0.631	ppb	9.4	1535.15	2000	
55	Mn	89	He	9014.769	ppb	0.5	4774988.47	2000	
56	Fe	89	H2	52015.177	ppb	0.9	65707154.01	100000	
59	Co	89	He	7.140	ppb	1.6	13004.75	1000	
60	Ni	89	He	0.551	ppb	5.2	336.68	1000	
63	Cu	89	He	1.207	ppb	0.7	2155.80	2000	
66	Zn	89	He	4.915	ppb	7.7	1143.42	2000	
75	As	89	He	151.168	ppb	1.1	18432.50	1000	
78	Se	89	H2	0.470	ppb	14.5	29.50	1000	
88	Sr	89	He	575.043	ppb	0.7	355627.12	2000	
95	Mo	89	He	3.830	ppb	3.0	2680.36	1000	
107	Ag	89	He	0.007	ppb	62.6	44.44	100	
111	Cd	89	He	0.003	ppb	197.0	2.59	1000	
118	Sn	159	He	0.803	ppb	10.4	784.50	1000	
121	Sb	159	No Gas	0.331	ppb	12.7	1391.63	1000	
137	Ba	159	No Gas	19.687	ppb	9.3	32382.25	2000	
182	W	159	No Gas	2.472	ppb	10.4	9611.09	1000	
205	Tl	209	No Gas	0.016	ppb	45.3	226.92	1000	
208	Pb	209	No Gas	0.161	ppb	27.9	3711.04	2000	
232	Th	209	No Gas	0.730	ppb	18.2	6826.26	1000	
238	U	209	No Gas	0.070	ppb	7.4	617.37	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5572353.10	3.0	5961075.87	93.48	29.5	120.4	
Sc	45	No Gas	11717367.06	4.4	13015983.55	90.02	29.5	120.4	
Sc	45	H2	1392803.26	1.5	1430290.9	97.38	29.5	120.4	
Sc	45	He	407689.15	0.7	438046.17	93.07	29.5	120.4	
Ge	72	No Gas	2279365.01	3.0	2458564.83	92.71	29.5	120.4	
Ge	72	H2	458374.16	0.2	491199	93.32	29.5	120.4	
Ge	72	He	238399.50	0.9	255273.97	93.39	29.5	120.4	
Y	89	H2	7341042.71	0.7	7442438.64	98.64	29.5	120.4	
Y	89	He	2025837.21	0.6	2167302.66	93.47	29.5	120.4	
Tb	159	No Gas	21156019.55	4.6	21871384.4	96.73	29.5	120.4	
Tb	159	He	8368400.78	0.2	8589669.11	97.42	29.5	120.4	
Bi	209	No Gas	9942016.88	3.4	10079220.95	98.64	29.5	120.4	

Sample Report

Sample Name SO3459-003

File Name 034SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 15:25:24

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.267	ppb	21.0	396.69	100	
11	B	6	No Gas	381.112	ppb	7.9	359361.61	1000	
23	Na	45	He	438486.939	ppb	1.7	52998646.36	200000	
24	Mg	45	He	57302.584	ppb	1.8	4048593.10	200000	
27	Al	45	He	7833.778	ppb	1.9	210990.66	200000	
28	Si	45	H2	14377.857	ppb	1.6	608544.66	10000	
39	K	45	He	23991.136	ppb	2.2	1367790.04	200000	
40	Ca	45	H2	218562.825	ppb	0.9	80492643.80	200000	
51	V	89	He	15.592	ppb	1.3	14563.61	1000	
52	Cr	89	He	20.134	ppb	0.2	24100.76	2000	
55	Mn	89	He	2311.297	ppb	1.2	1215249.12	2000	
56	Fe	89	H2	26261.289	ppb	1.1	32443126.15	100000	
59	Co	89	He	10.598	ppb	1.2	19156.66	1000	
60	Ni	89	He	23.402	ppb	2.4	11785.33	1000	
63	Cu	89	He	18.193	ppb	1.3	24654.73	2000	
66	Zn	89	He	65.033	ppb	6.1	11516.28	2000	
75	As	89	He	39.219	ppb	1.3	4759.67	1000	
78	Se	89	H2	0.529	ppb	22.5	32.00	1000	
88	Sr	89	He	1161.315	ppb	1.1	712776.37	2000	
95	Mo	89	He	10.052	ppb	2.2	6760.83	1000	
107	Ag	89	He	0.052	ppb	18.0	141.12	100	
111	Cd	89	He	0.167	ppb	16.7	47.04	1000	
118	Sn	159	He	1.743	ppb	0.9	1305.66	1000	
121	Sb	159	No Gas	0.595	ppb	12.7	2509.70	1000	
137	Ba	159	No Gas	58.689	ppb	5.4	99934.45	2000	
182	W	159	No Gas	2.632	ppb	8.7	10422.59	1000	
205	Tl	209	No Gas	0.074	ppb	13.0	597.35	1000	
208	Pb	209	No Gas	9.756	ppb	5.6	92078.42	2000	
232	Th	209	No Gas	3.682	ppb	6.1	32344.93	1000	
238	U	209	No Gas	24.170	ppb	5.5	209063.38	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5552976.32	1.9	5961075.87	93.15	29.5	120.4	
Sc	45	No Gas	12353305.47	1.7	13015983.55	94.91	29.5	120.4	
Sc	45	H2	1357981.62	0.9	1430290.9	94.94	29.5	120.4	
Sc	45	He	403755.52	1.0	438046.17	92.17	29.5	120.4	
Ge	72	No Gas	2373880.34	2.8	2458564.83	96.56	29.5	120.4	
Ge	72	H2	443837.33	1.7	491199	90.36	29.5	120.4	
Ge	72	He	234959.46	0.3	255273.97	92.04	29.5	120.4	
Y	89	H2	7179131.90	0.9	7442438.64	96.46	29.5	120.4	
Y	89	He	2010767.02	0.9	2167302.66	92.78	29.5	120.4	
Tb	159	No Gas	21908282.45	1.4	21871384.4	100.17	29.5	120.4	
Tb	159	He	8287956.06	0.3	8589669.11	96.49	29.5	120.4	
Bi	209	No Gas	9928906.89	2.2	10079220.95	98.51	29.5	120.4	

Sample Report

Sample Name SO3459-004

File Name 035SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 15:27:49

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.012	ppb	81.2	27.78	100	
11	B	6	No Gas	83.661	ppb	7.2	85694.09	1000	
23	Na	45	He	52053.325	ppb	1.9	6478977.92	200000	
24	Mg	45	He	8058.445	ppb	0.8	585074.18	200000	
27	Al	45	He	96.395	ppb	1.4	2787.05	200000	
28	Si	45	H2	4952.281	ppb	0.5	212606.84	10000	
39	K	45	He	888.960	ppb	0.4	71448.52	200000	
40	Ca	45	H2	53951.720	ppb	0.3	20117489.70	200000	
51	V	89	He	0.401	ppb	3.8	627.82	1000	
52	Cr	89	He	0.660	ppb	11.3	1595.14	2000	
55	Mn	89	He	219.543	ppb	0.6	118289.22	2000	
56	Fe	89	H2	139.699	ppb	2.2	180358.02	100000	
59	Co	89	He	0.227	ppb	17.3	426.70	1000	
60	Ni	89	He	0.380	ppb	3.5	254.46	1000	
63	Cu	89	He	1.539	ppb	4.8	2642.57	2000	
66	Zn	89	He	5.217	ppb	1.4	1215.65	2000	
75	As	89	He	1.184	ppb	5.6	165.02	1000	
78	Se	89	H2	0.425	ppb	22.6	27.00	1000	
88	Sr	89	He	193.876	ppb	0.3	121927.00	2000	
95	Mo	89	He	1.331	ppb	10.4	1037.86	1000	
107	Ag	89	He	0.013	ppb	18.9	57.78	100	
111	Cd	89	He	0.018	ppb	44.8	6.67	1000	
118	Sn	159	He	0.673	ppb	5.8	714.49	1000	
121	Sb	159	No Gas	0.279	ppb	6.6	1278.14	1000	
137	Ba	159	No Gas	11.947	ppb	5.8	21157.31	2000	
182	W	159	No Gas	1.675	ppb	12.8	7981.53	1000	
205	Tl	209	No Gas	0.020	ppb	19.7	270.31	1000	
208	Pb	209	No Gas	0.356	ppb	6.6	5823.74	2000	
232	Th	209	No Gas	0.781	ppb	1.9	7681.04	1000	
238	U	209	No Gas	0.249	ppb	28.8	2289.48	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5829340.17	2.8	5961075.87	97.79	29.5	120.4	
Sc	45	No Gas	12668818.06	1.4	13015983.55	97.33	29.5	120.4	
Sc	45	H2	1374598.00	0.8	1430290.9	96.11	29.5	120.4	
Sc	45	He	414810.53	0.5	438046.17	94.7	29.5	120.4	
Ge	72	No Gas	2451366.67	2.3	2458564.83	99.71	29.5	120.4	
Ge	72	H2	464519.49	1.8	491199	94.57	29.5	120.4	
Ge	72	He	243486.53	0.4	255273.97	95.38	29.5	120.4	
Y	89	H2	7325780.21	0.7	7442438.64	98.43	29.5	120.4	
Y	89	He	2059461.51	0.6	2167302.66	95.02	29.5	120.4	
Tb	159	No Gas	22685094.38	1.0	21871384.4	103.72	29.5	120.4	
Tb	159	He	8418055.71	1.4	8589669.11	98	29.5	120.4	
Bi	209	No Gas	10502981.36	0.9	10079220.95	104.2	29.5	120.4	

Sample Report

Sample Name RINSE

File Name 036SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 15:30:18

Sample Type Sample

Total Dilution 1.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.002	ppb	37.5	25.55	100	
11	B	6	No Gas	0.595	ppb	4.7	6910.77	1000	
23	Na	45	He	20.332	ppb	8.7	29803.88	200000	
24	Mg	45	He	1.084	ppb	18.4	491.16	200000	
27	Al	45	He	-0.208	ppb	N/A	93.34	200000	
28	Si	45	H2	34.922	ppb	6.1	8375.09	10000	
39	K	45	He	4.095	ppb	54.7	21546.50	200000	
40	Ca	45	H2	3.867	ppb	5.5	12994.18	200000	
51	V	89	He	-0.008	ppb	N/A	217.79	1000	
52	Cr	89	He	-0.018	ppb	N/A	721.22	2000	
55	Mn	89	He	0.048	ppb	23.7	201.96	2000	
56	Fe	89	H2	0.315	ppb	13.9	6341.80	100000	
59	Co	89	He	0.001	ppb	258.6	13.34	1000	
60	Ni	89	He	0.000	ppb	N/A	60.01	1000	
63	Cu	89	He	0.028	ppb	16.7	757.83	2000	
66	Zn	89	He	-0.099	ppb	N/A	208.90	2000	
75	As	89	He	0.019	ppb	53.5	30.67	1000	
78	Se	89	H2	0.032	ppb	4.8	12.83	1000	
88	Sr	89	He	0.013	ppb	41.6	97.78	2000	
95	Mo	89	He	0.182	ppb	7.1	771.16	1000	
107	Ag	89	He	0.001	ppb	277.5	37.78	100	
111	Cd	89	He	0.000	ppb	N/A	1.11	1000	
118	Sn	159	He	0.018	ppb	76.9	385.58	1000	
121	Sb	159	No Gas	0.000	ppb	963.5	120.14	1000	
137	Ba	159	No Gas	0.011	ppb	69.5	226.92	2000	
182	W	159	No Gas	0.198	ppb	22.1	6098.33	1000	
205	Tl	209	No Gas	0.001	ppb	131.1	163.52	1000	
208	Pb	209	No Gas	-0.008	ppb	N/A	2035.68	2000	
232	Th	209	No Gas	0.000	ppb	N/A	537.28	1000	
238	U	209	No Gas	0.001	ppb	42.2	33.37	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6060511.24	4.4	5961075.87	101.67	29.5	120.4	
Sc	45	No Gas	13004493.41	4.4	13015983.55	99.91	29.5	120.4	
Sc	45	H2	1414055.22	1.4	1430290.9	98.86	29.5	120.4	
Sc	45	He	419700.98	1.6	438046.17	95.81	29.5	120.4	
Ge	72	No Gas	2479228.57	4.3	2458564.83	100.84	29.5	120.4	
Ge	72	H2	480819.71	1.1	491199	97.89	29.5	120.4	
Ge	72	He	248134.71	0.9	255273.97	97.2	29.5	120.4	
Y	89	H2	7430669.42	1.4	7442438.64	99.84	29.5	120.4	
Y	89	He	2102135.82	1.4	2167302.66	96.99	29.5	120.4	
Tb	159	No Gas	23191403.54	4.4	21871384.4	106.04	29.5	120.4	
Tb	159	He	8530743.69	0.8	8589669.11	99.31	29.5	120.4	
Bi	209	No Gas	10907454.89	4.9	10079220.95	108.22	29.5	120.4	

Sample Report

Sample Name SO3459-005

File Name 037SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 15:32:49

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.019	ppb	16.0	38.89	100	
11	B	6	No Gas	39.440	ppb	9.3	42525.99	1000	
23	Na	45	He	157238.223	ppb	0.9	19157158.78	200000	
24	Mg	45	He	3600.085	ppb	0.3	256340.97	200000	
27	Al	45	He	936.141	ppb	1.4	25505.74	200000	
28	Si	45	H2	3961.306	ppb	1.9	171042.63	10000	
39	K	45	He	3026.834	ppb	0.6	191092.18	200000	
40	Ca	45	H2	17518.438	ppb	1.5	6569869.35	200000	
51	V	89	He	1.104	ppb	11.7	1273.44	1000	
52	Cr	89	He	1.850	ppb	3.6	2969.78	2000	
55	Mn	89	He	2910.156	ppb	0.9	1548445.46	2000	
56	Fe	89	H2	8495.239	ppb	0.3	10648761.83	100000	
59	Co	89	He	7.811	ppb	1.8	14292.78	1000	
60	Ni	89	He	5.455	ppb	7.0	2825.94	1000	
63	Cu	89	He	2.810	ppb	3.7	4316.38	2000	
66	Zn	89	He	5.771	ppb	8.4	1297.89	2000	
75	As	89	He	6.537	ppb	4.0	818.11	1000	
78	Se	89	H2	0.228	ppb	11.2	16.33	1000	
88	Sr	89	He	101.573	ppb	1.5	63140.61	2000	
95	Mo	89	He	2.301	ppb	2.9	1672.38	1000	
107	Ag	89	He	0.008	ppb	66.3	45.56	100	
111	Cd	89	He	0.062	ppb	27.7	18.89	1000	
118	Sn	159	He	0.639	ppb	21.0	691.16	1000	
121	Sb	159	No Gas	0.255	ppb	6.8	1178.03	1000	
137	Ba	159	No Gas	17.526	ppb	7.9	30920.73	2000	
182	W	159	No Gas	1.576	ppb	9.6	7677.62	1000	
205	Tl	209	No Gas	0.033	ppb	19.6	357.08	1000	
208	Pb	209	No Gas	1.550	ppb	7.3	17611.31	2000	
232	Th	209	No Gas	0.585	ppb	7.0	5938.02	1000	
238	U	209	No Gas	0.055	ppb	22.9	517.26	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5855808.68	3.7	5961075.87	98.23	29.5	120.4	
Sc	45	No Gas	12643442.37	2.4	13015983.55	97.14	29.5	120.4	
Sc	45	H2	1381753.55	2.0	1430290.9	96.61	29.5	120.4	
Sc	45	He	406723.74	0.2	438046.17	92.85	29.5	120.4	
Ge	72	No Gas	2432156.32	2.7	2458564.83	98.93	29.5	120.4	
Ge	72	H2	456680.93	1.3	491199	92.97	29.5	120.4	
Ge	72	He	239678.43	0.0	255273.97	93.89	29.5	120.4	
Y	89	H2	7282212.16	1.6	7442438.64	97.85	29.5	120.4	
Y	89	He	2034979.35	0.5	2167302.66	93.89	29.5	120.4	
Tb	159	No Gas	22660601.61	2.9	21871384.4	103.61	29.5	120.4	
Tb	159	He	8374891.75	0.8	8589669.11	97.5	29.5	120.4	
Bi	209	No Gas	10604182.56	3.0	10079220.95	105.21	29.5	120.4	

Sample Report

Sample Name SO3459-006

File Name 038SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 15:35:16

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.010	ppb	67.2	24.44	100	
11	B	6	No Gas	139.626	ppb	10.1	139003.80	1000	
23	Na	45	He	135263.382	ppb	0.3	16368463.93	200000	
24	Mg	45	He	23724.726	ppb	0.6	1677062.68	200000	
27	Al	45	He	28.369	ppb	12.4	882.28	200000	
28	Si	45	H2	6199.796	ppb	1.9	264322.44	10000	
39	K	45	He	6756.159	ppb	0.5	399438.86	200000	
40	Ca	45	H2	74355.979	ppb	0.7	27551909.59	200000	
51	V	89	He	0.233	ppb	12.8	458.91	1000	
52	Cr	89	He	0.536	ppb	4.5	1417.15	2000	
55	Mn	89	He	1259.299	ppb	0.1	663773.22	2000	
56	Fe	89	H2	13919.541	ppb	1.4	17318574.21	100000	
59	Co	89	He	0.199	ppb	8.8	366.70	1000	
60	Ni	89	He	0.358	ppb	15.9	237.79	1000	
63	Cu	89	He	1.046	ppb	1.3	1931.31	2000	
66	Zn	89	He	0.908	ppb	28.0	443.36	2000	
75	As	89	He	8.798	ppb	3.1	1084.16	1000	
78	Se	89	H2	0.231	ppb	12.6	16.33	1000	
88	Sr	89	He	420.599	ppb	0.2	258829.61	2000	
95	Mo	89	He	2.741	ppb	8.0	1946.88	1000	
107	Ag	89	He	0.010	ppb	40.1	50.00	100	
111	Cd	89	He	-0.004	ppb	N/A	0.74	1000	
118	Sn	159	He	0.738	ppb	9.1	751.16	1000	
121	Sb	159	No Gas	0.250	ppb	10.6	1158.01	1000	
137	Ba	159	No Gas	36.738	ppb	10.4	64854.99	2000	
182	W	159	No Gas	1.120	ppb	19.2	6358.71	1000	
205	Tl	209	No Gas	0.009	ppb	64.9	190.21	1000	
208	Pb	209	No Gas	0.105	ppb	19.6	3360.60	2000	
232	Th	209	No Gas	0.229	ppb	19.8	2616.55	1000	
238	U	209	No Gas	0.290	ppb	5.1	2649.91	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5773770.13	4.2	5961075.87	96.86	29.5	120.4	
Sc	45	No Gas	12495521.23	2.8	13015983.55	96	29.5	120.4	
Sc	45	H2	1366166.89	1.5	1430290.9	95.52	29.5	120.4	
Sc	45	He	403911.68	1.0	438046.17	92.21	29.5	120.4	
Ge	72	No Gas	2392440.01	3.3	2458564.83	97.31	29.5	120.4	
Ge	72	H2	451356.66	0.6	491199	91.89	29.5	120.4	
Ge	72	He	238770.56	0.3	255273.97	93.54	29.5	120.4	
Y	89	H2	7228860.27	0.4	7442438.64	97.13	29.5	120.4	
Y	89	He	2015742.16	0.8	2167302.66	93.01	29.5	120.4	
Tb	159	No Gas	22724686.88	2.4	21871384.4	103.9	29.5	120.4	
Tb	159	He	8413453.14	0.2	8589669.11	97.95	29.5	120.4	
Bi	209	No Gas	10461927.50	3.0	10079220.95	103.8	29.5	120.4	

Sample Report

Sample Name	SO3459-008
File Name	039SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 15:37:45
Sample Type	Sample
Total Dilution	5.0000
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.008	ppb	23.5	22.22	100	
11	B	6	No Gas	48.291	ppb	10.9	50707.19	1000	
23	Na	45	He	127982.050	ppb	1.2	15652576.82	200000	
24	Mg	45	He	9073.658	ppb	0.4	648292.15	200000	
27	Al	45	He	19.433	ppb	13.0	647.82	200000	
28	Si	45	H2	2811.156	ppb	2.1	120233.53	10000	
39	K	45	He	2351.066	ppb	0.4	153387.09	200000	
40	Ca	45	H2	33426.630	ppb	1.4	12390742.59	200000	
51	V	89	He	0.258	ppb	16.2	485.58	1000	
52	Cr	89	He	0.572	ppb	6.3	1467.82	2000	
55	Mn	89	He	107.054	ppb	0.7	56842.75	2000	
56	Fe	89	H2	123.745	ppb	1.5	158550.27	100000	
59	Co	89	He	0.796	ppb	6.9	1457.96	1000	
60	Ni	89	He	2.028	ppb	3.5	1083.42	1000	
63	Cu	89	He	1.939	ppb	1.7	3137.13	2000	
66	Zn	89	He	5.923	ppb	5.7	1320.11	2000	
75	As	89	He	0.593	ppb	12.9	90.34	1000	
78	Se	89	H2	0.302	ppb	17.5	20.17	1000	
88	Sr	89	He	166.304	ppb	0.2	103013.10	2000	
95	Mo	89	He	1.124	ppb	4.4	884.51	1000	
107	Ag	89	He	0.002	ppb	156.1	33.33	100	
111	Cd	89	He	0.053	ppb	9.2	16.30	1000	
118	Sn	159	He	0.577	ppb	6.4	658.93	1000	
121	Sb	159	No Gas	0.318	ppb	12.3	1465.05	1000	
137	Ba	159	No Gas	12.230	ppb	11.3	22003.00	2000	
182	W	159	No Gas	0.994	ppb	9.7	6081.55	1000	
205	Tl	209	No Gas	0.015	ppb	13.9	236.94	1000	
208	Pb	209	No Gas	0.162	ppb	19.9	3934.68	2000	
232	Th	209	No Gas	0.079	ppb	33.6	1258.16	1000	
238	U	209	No Gas	0.021	ppb	14.2	203.56	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5798711.89	4.2	5961075.87	97.28	29.5	120.4	
Sc	45	No Gas	12622928.11	1.2	13015983.55	96.98	29.5	120.4	
Sc	45	H2	1366520.08	2.0	1430290.9	95.54	29.5	120.4	
Sc	45	He	408199.92	0.3	438046.17	93.19	29.5	120.4	
Ge	72	No Gas	2421129.79	1.6	2458564.83	98.48	29.5	120.4	
Ge	72	H2	457391.25	2.3	491199	93.12	29.5	120.4	
Ge	72	He	239406.96	0.2	255273.97	93.78	29.5	120.4	
Y	89	H2	7247572.89	1.4	7442438.64	97.38	29.5	120.4	
Y	89	He	2028338.70	0.3	2167302.66	93.59	29.5	120.4	
Tb	159	No Gas	23050172.71	0.7	21871384.4	105.39	29.5	120.4	
Tb	159	He	8408728.14	0.7	8589669.11	97.89	29.5	120.4	
Bi	209	No Gas	10514714.35	2.2	10079220.95	104.32	29.5	120.4	

Sample Report

Sample Name RINSE

File Name 040SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 15:40:14

Sample Type Sample

Total Dilution 1.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.001	ppb	77.2	16.66	100	
11	B	6	No Gas	0.492	ppb	6.2	5994.78	1000	
23	Na	45	He	21.211	ppb	12.5	29747.41	200000	
24	Mg	45	He	0.813	ppb	15.1	384.47	200000	
27	Al	45	He	-0.251	ppb	N/A	85.56	200000	
28	Si	45	H2	34.531	ppb	4.0	8184.73	10000	
39	K	45	He	5.593	ppb	42.4	21543.26	200000	
40	Ca	45	H2	3.036	ppb	11.0	11259.33	200000	
51	V	89	He	-0.007	ppb	N/A	218.90	1000	
52	Cr	89	He	-0.015	ppb	N/A	727.22	2000	
55	Mn	89	He	0.028	ppb	28.4	143.98	2000	
56	Fe	89	H2	0.125	ppb	26.4	5093.28	100000	
59	Co	89	He	0.002	ppb	33.2	26.67	1000	
60	Ni	89	He	0.000	ppb	1725.1	60.00	1000	
63	Cu	89	He	0.022	ppb	19.8	707.82	2000	
66	Zn	89	He	-0.106	ppb	N/A	200.01	2000	
75	As	89	He	0.018	ppb	45.7	29.67	1000	
78	Se	89	H2	0.022	ppb	83.4	10.00	1000	
88	Sr	89	He	0.005	ppb	190.1	70.00	2000	
95	Mo	89	He	0.115	ppb	16.2	531.14	1000	
107	Ag	89	He	0.001	ppb	85.6	43.34	100	
111	Cd	89	He	-0.001	ppb	N/A	0.74	1000	
118	Sn	159	He	0.003	ppb	171.5	340.02	1000	
121	Sb	159	No Gas	0.001	ppb	58.2	126.81	1000	
137	Ba	159	No Gas	0.004	ppb	227.4	146.83	2000	
182	W	159	No Gas	0.161	ppb	9.1	5029.92	1000	
205	Tl	209	No Gas	0.002	ppb	134.3	193.55	1000	
208	Pb	209	No Gas	-0.009	ppb	N/A	1832.10	2000	
232	Th	209	No Gas	-0.004	ppb	N/A	313.69	1000	
238	U	209	No Gas	0.000	ppb	107.6	16.68	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5692748.01	5.1	5961075.87	95.5	29.5	120.4	
Sc	45	No Gas	11566130.83	7.5	13015983.55	88.86	29.5	120.4	
Sc	45	H2	1396163.22	0.3	1430290.9	97.61	29.5	120.4	
Sc	45	He	411225.33	0.8	438046.17	93.88	29.5	120.4	
Ge	72	No Gas	2287833.38	5.9	2458564.83	93.06	29.5	120.4	
Ge	72	H2	474213.55	1.0	491199	96.54	29.5	120.4	
Ge	72	He	244141.86	0.4	255273.97	95.64	29.5	120.4	
Y	89	H2	7383028.60	0.6	7442438.64	99.2	29.5	120.4	
Y	89	He	2071411.32	0.4	2167302.66	95.58	29.5	120.4	
Tb	159	No Gas	21061473.57	7.4	21871384.4	96.3	29.5	120.4	
Tb	159	He	8492399.04	0.6	8589669.11	98.87	29.5	120.4	
Bi	209	No Gas	9994716.97	7.0	10079220.95	99.16	29.5	120.4	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV
File Name	041_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 15:42:43
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	006CALB.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**admin**

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
9	Be	6	No Gas	21.346	ppb	11.2	161491.44	25	85.38	89.8	110.2	> +/- 10%
11	B	6	No Gas	21.525	ppb	12.3	108674.78	25	86.1	89.8	110.2	> +/- 10%
23	Na	45	He	5150.392	ppb	0.5	3175040.63	5000	103.01	89.8	110.2	
24	Mg	45	He	5235.381	ppb	0.7	1877338.00	5000	104.71	89.8	110.2	
27	Al	45	He	500.028	ppb	0.3	68433.42	500	100.01	89.8	110.2	
28	Si	45	H2	476.978	ppb	3.6	104151.46	500	95.4	89.8	110.2	
39	K	45	He	4988.900	ppb	0.3	1442760.30	5000	99.78	89.8	110.2	
40	Ca	45	H2	4963.543	ppb	0.4	9388687.36	5000	99.27	89.8	110.2	
51	V	89	He	24.851	ppb	1.5	117453.28	25	99.4	89.8	110.2	
52	Cr	89	He	24.909	ppb	1.0	148903.74	25	99.64	89.8	110.2	
55	Mn	89	He	24.759	ppb	0.8	66922.08	25	99.04	89.8	110.2	
56	Fe	89	H2	4913.329	ppb	2.0	31394389.95	5000	98.27	89.8	110.2	
59	Co	89	He	25.507	ppb	1.4	236723.31	25	102.03	89.8	110.2	
60	Ni	89	He	25.295	ppb	1.6	65162.48	25	101.18	89.8	110.2	
63	Cu	89	He	25.436	ppb	0.9	173721.78	25	101.74	89.8	110.2	
66	Zn	89	He	25.384	ppb	2.8	22813.87	25	101.54	89.8	110.2	
75	As	89	He	24.644	ppb	1.7	15321.76	25	98.58	89.8	110.2	
78	Se	89	H2	23.420	ppb	1.6	6406.85	25	93.68	89.8	110.2	
88	Sr	89	He	24.428	ppb	1.5	77048.43	25	97.71	89.8	110.2	
95	Mo	89	He	24.839	ppb	1.4	84215.07	25	99.36	89.8	110.2	
107	Ag	89	He	25.771	ppb	1.1	284642.64	25	103.08	89.8	110.2	
111	Cd	89	He	25.858	ppb	1.2	36076.84	25	103.43	89.8	110.2	
118	Sn	159	He	24.815	ppb	1.3	71182.85	25	99.26	89.8	110.2	
121	Sb	159	No Gas	23.888	ppb	10.5	469838.41	25	95.55	89.8	110.2	
137	Ba	159	No Gas	22.393	ppb	10.4	185419.69	25	89.57	89.8	110.2	> +/- 10%
182	W	159	No Gas	23.851	ppb	8.0	331976.74	25	95.4	89.8	110.2	
205	Tl	209	No Gas	24.598	ppb	10.9	808476.62	25	98.39	89.8	110.2	
208	Pb	209	No Gas	23.654	ppb	10.0	1116635.55	25	94.62	89.8	110.2	
232	Th	209	No Gas	20.790	ppb	9.5	920154.32	25	83.16	89.8	110.2	> +/- 10%
238	U	209	No Gas	22.626	ppb	9.2	1001072.16	25	90.5	89.8	110.2	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5807384.32	4.2	5961075.87	97.42	29.5	120.4	
Sc	45	No Gas	11820899.65	4.5	13015983.55	90.82	29.5	120.4	
Sc	45	H2	1394211.14	2.0	1430290.9	97.48	29.5	120.4	
Sc	45	He	409793.37	0.6	438046.17	93.55	29.5	120.4	
Ge	72	No Gas	2318782.01	4.2	2458564.83	94.31	29.5	120.4	
Ge	72	H2	470533.97	0.4	491199	95.79	29.5	120.4	
Ge	72	He	243137.95	0.6	255273.97	95.25	29.5	120.4	
Y	89	H2	7427684.82	1.9	7442438.64	99.8	29.5	120.4	
Y	89	He	2065481.67	1.3	2167302.66	95.3	29.5	120.4	
Tb	159	No Gas	21350580.93	4.4	21871384.4	97.62	29.5	120.4	
Tb	159	He	8407719.67	1.0	8589669.11	97.88	29.5	120.4	
Bi	209	No Gas	10163343.92	2.7	10079220.95	100.83	29.5	120.4	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB
File Name	042_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 15:45:14
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	006CALB.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**admin**

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
9	Be	6	No Gas	0.047	ppb	61.3	380.02	0.2	
11	B	6	No Gas	0.616	ppb	13.1	6792.95	4	
23	Na	45	He	14.231	ppb	7.2	25497.49	200	
24	Mg	45	He	1.706	ppb	9.8	706.73	20	
27	Al	45	He	-0.009	ppb	N/A	118.89	20	
28	Si	45	H2	26.746	ppb	4.1	6458.68	100	
39	K	45	He	5.930	ppb	22.5	21676.63	200	
40	Ca	45	H2	2.919	ppb	17.3	10975.78	20	
51	V	89	He	-0.009	ppb	N/A	206.68	1	
52	Cr	89	He	-0.017	ppb	N/A	715.23	1	
55	Mn	89	He	0.030	ppb	43.6	148.64	0.4	
56	Fe	89	H2	4.251	ppb	26.6	31147.21	20	
59	Co	89	He	0.006	ppb	13.9	60.00	0.2	
60	Ni	89	He	0.004	ppb	114.9	70.00	0.4	
63	Cu	89	He	0.028	ppb	3.8	743.38	0.6	
66	Zn	89	He	-0.107	ppb	N/A	197.78	2	
75	As	89	He	0.085	ppb	9.4	71.34	1	
78	Se	89	H2	0.698	ppb	24.3	192.99	1	Failed DoD
88	Sr	89	He	0.004	ppb	75.2	66.67	1	
95	Mo	89	He	0.721	ppb	11.7	2577.01	1	Failed DoD
107	Ag	89	He	0.011	ppb	12.2	148.89	0.2	
111	Cd	89	He	0.006	ppb	16.7	9.63	0.2	
118	Sn	159	He	0.115	ppb	28.3	668.93	1	
121	Sb	159	No Gas	0.063	ppb	39.4	1378.29	0.2	
137	Ba	159	No Gas	0.040	ppb	61.4	453.85	0.4	
182	W	159	No Gas	2.239	ppb	14.2	33557.87	1	Fail All Methods□ Failed DoD
205	Tl	209	No Gas	0.063	ppb	47.5	2256.13	0.2	
208	Pb	209	No Gas	0.041	ppb	57.8	4251.76	0.2	
232	Th	209	No Gas	0.522	ppb	6.9	23833.24	1	Failed DoD
238	U	209	No Gas	0.062	ppb	50.2	2833.63	0.2	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5886174.51	10.2	5961075.87	98.74	29.5	120.4	
Sc	45	No Gas	11786407.45	11.9	13015983.55	90.55	29.5	120.4	
Sc	45	H2	1389362.18	1.2	1430290.9	97.14	29.5	120.4	
Sc	45	He	411858.86	0.2	438046.17	94.02	29.5	120.4	
Ge	72	No Gas	2326590.67	9.1	2458564.83	94.63	29.5	120.4	
Ge	72	H2	472365.80	1.2	491199	96.17	29.5	120.4	
Ge	72	He	243450.89	0.3	255273.97	95.37	29.5	120.4	
Y	89	H2	7359390.59	1.1	7442438.64	98.88	29.5	120.4	
Y	89	He	2062073.31	1.4	2167302.66	95.14	29.5	120.4	
Tb	159	No Gas	21405029.12	12.3	21871384.4	97.87	29.5	120.4	
Tb	159	He	8537931.88	0.5	8589669.11	99.4	29.5	120.4	
Bi	209	No Gas	10268174.06	11.1	10079220.95	101.87	29.5	120.4	

Sample Report

Sample Name SO3459-009

File Name 043SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 15:47:43

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.016	ppb	45.6	33.33	100	
11	B	6	No Gas	148.083	ppb	11.3	145548.72	1000	
23	Na	45	He	94366.843	ppb	0.8	11480360.58	200000	
24	Mg	45	He	20448.611	ppb	0.6	1452645.26	200000	
27	Al	45	He	7.124	ppb	13.6	311.13	200000	
28	Si	45	H2	3915.518	ppb	1.9	167022.06	10000	
39	K	45	He	12375.700	ppb	0.3	718913.88	200000	
40	Ca	45	H2	103073.623	ppb	0.7	38148559.43	200000	
51	V	89	He	0.315	ppb	19.0	535.59	1000	
52	Cr	89	He	0.565	ppb	1.6	1453.82	2000	
55	Mn	89	He	8651.879	ppb	0.5	4567591.25	2000	
56	Fe	89	H2	50234.174	ppb	1.2	61826732.47	100000	
59	Co	89	He	7.258	ppb	2.5	13176.00	1000	
60	Ni	89	He	0.485	ppb	11.5	302.24	1000	
63	Cu	89	He	0.957	ppb	5.7	1816.85	2000	
66	Zn	89	He	1.434	ppb	12.8	535.59	2000	
75	As	89	He	143.044	ppb	0.6	17385.06	1000	
78	Se	89	H2	0.978	ppb	10.4	55.50	1000	
88	Sr	89	He	552.301	ppb	0.4	340436.33	2000	
95	Mo	89	He	3.989	ppb	3.1	2777.05	1000	
107	Ag	89	He	0.011	ppb	50.3	53.34	100	
111	Cd	89	He	0.005	ppb	136.7	2.96	1000	
118	Sn	159	He	0.799	ppb	10.0	783.38	1000	
121	Sb	159	No Gas	0.376	ppb	20.6	1555.17	1000	
137	Ba	159	No Gas	19.216	ppb	11.4	31472.75	2000	
182	W	159	No Gas	4.255	ppb	12.2	14420.86	1000	
205	Tl	209	No Gas	0.031	ppb	27.2	330.37	1000	
208	Pb	209	No Gas	0.144	ppb	7.1	3600.91	2000	
232	Th	209	No Gas	8.295	ppb	13.7	72949.22	1000	
238	U	209	No Gas	0.076	ppb	16.8	670.77	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5711131.66	5.1	5961075.87	95.81	29.5	120.4	
Sc	45	No Gas	11671512.04	5.6	13015983.55	89.67	29.5	120.4	
Sc	45	H2	1364501.86	1.0	1430290.9	95.4	29.5	120.4	
Sc	45	He	405894.68	0.3	438046.17	92.66	29.5	120.4	
Ge	72	No Gas	2270436.61	4.8	2458564.83	92.35	29.5	120.4	
Ge	72	H2	453363.25	2.1	491199	92.3	29.5	120.4	
Ge	72	He	238451.24	0.5	255273.97	93.41	29.5	120.4	
Y	89	H2	7152362.53	0.3	7442438.64	96.1	29.5	120.4	
Y	89	He	2019122.52	0.6	2167302.66	93.16	29.5	120.4	
Tb	159	No Gas	21076659.83	6.0	21871384.4	96.37	29.5	120.4	
Tb	159	He	8386454.60	0.3	8589669.11	97.63	29.5	120.4	
Bi	209	No Gas	10061967.65	5.2	10079220.95	99.83	29.5	120.4	

Sample Report

Sample Name SO3459-010

File Name 044SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 15:50:09

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.103	ppb	5.1	157.79	100	
11	B	6	No Gas	364.906	ppb	9.6	343844.85	1000	
23	Na	45	He	423387.203	ppb	1.4	51112511.96	200000	
24	Mg	45	He	54188.406	ppb	0.7	3824232.51	200000	
27	Al	45	He	2543.005	ppb	2.2	68493.93	200000	
28	Si	45	H2	8484.403	ppb	1.4	363950.88	10000	
39	K	45	He	22790.218	ppb	1.2	1298849.21	200000	
40	Ca	45	H2	209983.458	ppb	1.1	78321548.83	200000	
51	V	89	He	5.101	ppb	4.8	4924.35	1000	
52	Cr	89	He	5.731	ppb	1.3	7421.96	2000	
55	Mn	89	He	2214.307	ppb	1.1	1163404.34	2000	
56	Fe	89	H2	9304.610	ppb	1.1	11583394.03	100000	
59	Co	89	He	4.731	ppb	2.4	8549.89	1000	
60	Ni	89	He	11.274	ppb	2.1	5703.61	1000	
63	Cu	89	He	7.452	ppb	1.3	10412.02	2000	
66	Zn	89	He	25.007	ppb	4.5	4600.93	2000	
75	As	89	He	18.082	ppb	0.2	2202.75	1000	
78	Se	89	H2	0.509	ppb	2.7	31.17	1000	
88	Sr	89	He	1116.551	ppb	1.1	684904.57	2000	
95	Mo	89	He	9.010	ppb	0.1	6070.46	1000	
107	Ag	89	He	0.027	ppb	28.7	86.67	100	
111	Cd	89	He	0.041	ppb	25.5	12.96	1000	
118	Sn	159	He	0.956	ppb	8.8	857.84	1000	
121	Sb	159	No Gas	0.600	ppb	7.1	2439.61	1000	
137	Ba	159	No Gas	44.221	ppb	7.8	72563.18	2000	
182	W	159	No Gas	2.418	ppb	5.9	9457.40	1000	
205	Tl	209	No Gas	0.036	ppb	17.8	350.40	1000	
208	Pb	209	No Gas	3.200	ppb	7.1	31126.82	2000	
232	Th	209	No Gas	1.632	ppb	7.2	14364.59	1000	
238	U	209	No Gas	20.241	ppb	8.0	171891.70	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5548914.81	3.3	5961075.87	93.09	29.5	120.4	
Sc	45	No Gas	11775495.08	3.0	13015983.55	90.47	29.5	120.4	
Sc	45	H2	1375348.12	0.8	1430290.9	96.16	29.5	120.4	
Sc	45	He	403270.65	1.7	438046.17	92.06	29.5	120.4	
Ge	72	No Gas	2268076.46	2.7	2458564.83	92.25	29.5	120.4	
Ge	72	H2	450266.45	1.8	491199	91.67	29.5	120.4	
Ge	72	He	236065.38	1.4	255273.97	92.48	29.5	120.4	
Y	89	H2	7232765.53	1.3	7442438.64	97.18	29.5	120.4	
Y	89	He	2009488.28	1.3	2167302.66	92.72	29.5	120.4	
Tb	159	No Gas	21112862.18	2.9	21871384.4	96.53	29.5	120.4	
Tb	159	He	8241280.92	0.9	8589669.11	95.94	29.5	120.4	
Bi	209	No Gas	9760303.08	4.0	10079220.95	96.84	29.5	120.4	

Sample Report

Sample Name SO3459-011

File Name 045SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 15:52:39

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.006	ppb	49.4	17.78	100	
11	B	6	No Gas	83.511	ppb	8.2	83838.70	1000	
23	Na	45	He	52416.163	ppb	0.8	6477072.05	200000	
24	Mg	45	He	7917.049	ppb	1.0	570649.15	200000	
27	Al	45	He	70.646	ppb	6.4	2059.12	200000	
28	Si	45	H2	4730.036	ppb	1.4	206068.64	10000	
39	K	45	He	896.486	ppb	2.4	71359.59	200000	
40	Ca	45	H2	52162.547	ppb	1.9	19733771.37	200000	
51	V	89	He	0.309	ppb	13.3	542.25	1000	
52	Cr	89	He	0.863	ppb	11.0	1841.79	2000	
55	Mn	89	He	89.271	ppb	1.9	48293.99	2000	
56	Fe	89	H2	89.376	ppb	2.8	117930.39	100000	
59	Co	89	He	0.107	ppb	9.3	204.46	1000	
60	Ni	89	He	0.393	ppb	18.6	262.23	1000	
63	Cu	89	He	1.926	ppb	4.8	3178.25	2000	
66	Zn	89	He	11.529	ppb	4.3	2339.17	2000	
75	As	89	He	0.957	ppb	6.5	137.35	1000	
78	Se	89	H2	0.451	ppb	9.9	28.67	1000	
88	Sr	89	He	189.058	ppb	1.5	119285.34	2000	
95	Mo	89	He	1.006	ppb	7.4	821.17	1000	
107	Ag	89	He	0.007	ppb	93.4	45.56	100	
111	Cd	89	He	0.012	ppb	97.9	5.18	1000	
118	Sn	159	He	0.703	ppb	13.2	738.96	1000	
121	Sb	159	No Gas	0.226	ppb	14.5	991.15	1000	
137	Ba	159	No Gas	11.418	ppb	9.4	18908.06	2000	
182	W	159	No Gas	1.654	ppb	7.1	7420.41	1000	
205	Tl	209	No Gas	0.012	ppb	87.9	203.56	1000	
208	Pb	209	No Gas	0.158	ppb	25.3	3711.04	2000	
232	Th	209	No Gas	0.435	ppb	12.7	4302.30	1000	
238	U	209	No Gas	0.206	ppb	10.1	1815.52	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5719365.78	5.0	5961075.87	95.95	29.5	120.4	
Sc	45	No Gas	11746316.21	6.4	13015983.55	90.25	29.5	120.4	
Sc	45	H2	1394962.51	2.1	1430290.9	97.53	29.5	120.4	
Sc	45	He	411829.54	1.2	438046.17	94.02	29.5	120.4	
Ge	72	No Gas	2302338.32	4.6	2458564.83	93.65	29.5	120.4	
Ge	72	H2	465047.31	1.7	491199	94.68	29.5	120.4	
Ge	72	He	242074.75	0.8	255273.97	94.83	29.5	120.4	
Y	89	H2	7389820.60	1.9	7442438.64	99.29	29.5	120.4	
Y	89	He	2066612.28	2.1	2167302.66	95.35	29.5	120.4	
Tb	159	No Gas	21248960.66	6.2	21871384.4	97.15	29.5	120.4	
Tb	159	He	8499908.21	0.8	8589669.11	98.96	29.5	120.4	
Bi	209	No Gas	10032254.82	5.6	10079220.95	99.53	29.5	120.4	

Sample Report

Sample Name SO3459-012

File Name 046SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 15:55:06

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.006	ppb	165.3	18.89	100	
11	B	6	No Gas	40.200	ppb	9.6	42131.36	1000	
23	Na	45	He	156102.986	ppb	0.6	19106219.09	200000	
24	Mg	45	He	3164.362	ppb	0.7	226359.90	200000	
27	Al	45	He	11.541	ppb	18.0	433.36	200000	
28	Si	45	H2	3157.418	ppb	2.0	137276.67	10000	
39	K	45	He	2999.999	ppb	0.4	190448.84	200000	
40	Ca	45	H2	17393.988	ppb	0.7	6559906.09	200000	
51	V	89	He	0.280	ppb	11.1	505.58	1000	
52	Cr	89	He	0.678	ppb	3.8	1591.14	2000	
55	Mn	89	He	2813.090	ppb	0.5	1491442.25	2000	
56	Fe	89	H2	6143.649	ppb	3.2	7690198.37	100000	
59	Co	89	He	6.360	ppb	1.6	11594.52	1000	
60	Ni	89	He	3.156	ppb	10.2	1652.38	1000	
63	Cu	89	He	1.896	ppb	1.8	3078.24	2000	
66	Zn	89	He	1.745	ppb	15.0	592.26	2000	
75	As	89	He	4.836	ppb	4.8	607.41	1000	
78	Se	89	H2	0.245	ppb	13.1	17.17	1000	
88	Sr	89	He	100.867	ppb	1.0	62476.25	2000	
95	Mo	89	He	2.056	ppb	2.6	1503.47	1000	
107	Ag	89	He	0.000	ppb	N/A	28.89	100	
111	Cd	89	He	0.086	ppb	15.1	25.18	1000	
118	Sn	159	He	0.644	ppb	14.2	700.05	1000	
121	Sb	159	No Gas	0.181	ppb	19.7	860.99	1000	
137	Ba	159	No Gas	15.833	ppb	7.3	27784.21	2000	
182	W	159	No Gas	1.730	ppb	29.1	8148.50	1000	
205	Tl	209	No Gas	0.044	ppb	24.4	430.49	1000	
208	Pb	209	No Gas	0.142	ppb	11.8	3701.03	2000	
232	Th	209	No Gas	0.224	ppb	35.1	2566.52	1000	
238	U	209	No Gas	0.041	ppb	30.9	373.76	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5705943.61	5.5	5961075.87	95.72	29.5	120.4	
Sc	45	No Gas	12383415.37	6.9	13015983.55	95.14	29.5	120.4	
Sc	45	H2	1389475.73	0.9	1430290.9	97.15	29.5	120.4	
Sc	45	He	408607.38	1.1	438046.17	93.28	29.5	120.4	
Ge	72	No Gas	2364542.43	4.5	2458564.83	96.18	29.5	120.4	
Ge	72	H2	455644.97	1.4	491199	92.76	29.5	120.4	
Ge	72	He	240363.84	1.1	255273.97	94.16	29.5	120.4	
Y	89	H2	7272382.18	1.2	7442438.64	97.72	29.5	120.4	
Y	89	He	2027617.87	1.6	2167302.66	93.55	29.5	120.4	
Tb	159	No Gas	22554238.55	7.6	21871384.4	103.12	29.5	120.4	
Tb	159	He	8446756.89	0.8	8589669.11	98.34	29.5	120.4	
Bi	209	No Gas	10406572.66	6.1	10079220.95	103.25	29.5	120.4	

Sample Report

Sample Name RINSE

File Name 047SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 15:57:32

Sample Type Sample

Total Dilution 1.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.000	ppb	263.9	12.22	100	
11	B	6	No Gas	0.480	ppb	20.3	6030.38	1000	
23	Na	45	He	26.855	ppb	8.5	33733.73	200000	
24	Mg	45	He	0.743	ppb	22.3	364.48	200000	
27	Al	45	He	-0.261	ppb	N/A	85.56	200000	
28	Si	45	H2	35.455	ppb	4.6	8431.84	10000	
39	K	45	He	4.727	ppb	42.2	21625.08	200000	
40	Ca	45	H2	2.568	ppb	8.3	10429.80	200000	
51	V	89	He	-0.016	ppb	N/A	178.89	1000	
52	Cr	89	He	-0.010	ppb	N/A	759.22	2000	
55	Mn	89	He	0.155	ppb	14.1	492.59	2000	
56	Fe	89	H2	1.150	ppb	17.0	11681.30	100000	
59	Co	89	He	0.001	ppb	43.5	15.55	1000	
60	Ni	89	He	-0.002	ppb	N/A	55.56	1000	
63	Cu	89	He	0.020	ppb	6.0	696.71	2000	
66	Zn	89	He	-0.101	ppb	N/A	205.57	2000	
75	As	89	He	0.016	ppb	94.7	28.33	1000	
78	Se	89	H2	0.021	ppb	57.3	9.83	1000	
88	Sr	89	He	0.010	ppb	85.0	87.78	2000	
95	Mo	89	He	0.127	ppb	8.1	575.59	1000	
107	Ag	89	He	0.000	ppb	N/A	28.89	100	
111	Cd	89	He	0.000	ppb	253.6	2.22	1000	
118	Sn	159	He	-0.003	ppb	N/A	332.24	1000	
121	Sb	159	No Gas	0.003	ppb	47.0	163.52	1000	
137	Ba	159	No Gas	0.012	ppb	32.1	216.91	2000	
182	W	159	No Gas	0.149	ppb	26.3	4926.47	1000	
205	Tl	209	No Gas	0.002	ppb	146.5	186.88	1000	
208	Pb	209	No Gas	-0.009	ppb	N/A	1835.44	2000	
232	Th	209	No Gas	-0.001	ppb	N/A	457.19	1000	
238	U	209	No Gas	0.000	ppb	23.6	10.01	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5800868.47	7.4	5961075.87	97.31	29.5	120.4	
Sc	45	No Gas	11785561.19	7.8	13015983.55	90.55	29.5	120.4	
Sc	45	H2	1404046.44	1.0	1430290.9	98.17	29.5	120.4	
Sc	45	He	417603.98	1.1	438046.17	95.33	29.5	120.4	
Ge	72	No Gas	2329807.09	5.5	2458564.83	94.76	29.5	120.4	
Ge	72	H2	478542.76	1.4	491199	97.42	29.5	120.4	
Ge	72	He	245220.66	0.4	255273.97	96.06	29.5	120.4	
Y	89	H2	7431333.57	0.9	7442438.64	99.85	29.5	120.4	
Y	89	He	2083830.14	1.0	2167302.66	96.15	29.5	120.4	
Tb	159	No Gas	21393398.43	7.4	21871384.4	97.81	29.5	120.4	
Tb	159	He	8684777.30	1.2	8589669.11	101.11	29.5	120.4	
Bi	209	No Gas	10164984.11	7.5	10079220.95	100.85	29.5	120.4	

Sample Report

Sample Name SO3459-013

File Name 048SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 16:00:07

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.008	ppb	93.5	20.00	100	
11	B	6	No Gas	146.089	ppb	9.5	139771.41	1000	
23	Na	45	He	132952.614	ppb	1.1	16029884.01	200000	
24	Mg	45	He	23239.786	ppb	1.4	1636823.53	200000	
27	Al	45	He	9.372	ppb	7.4	368.91	200000	
28	Si	45	H2	6056.278	ppb	1.2	259308.77	10000	
39	K	45	He	6679.482	ppb	0.1	393708.10	200000	
40	Ca	45	H2	72862.838	ppb	0.2	27110547.93	200000	
51	V	89	He	0.255	ppb	24.0	478.92	1000	
52	Cr	89	He	0.474	ppb	3.0	1343.16	2000	
55	Mn	89	He	1224.947	ppb	0.9	644405.61	2000	
56	Fe	89	H2	13551.447	ppb	2.2	16770870.07	100000	
59	Co	89	He	0.229	ppb	18.9	420.04	1000	
60	Ni	89	He	0.315	ppb	8.8	215.57	1000	
63	Cu	89	He	0.825	ppb	7.9	1634.60	2000	
66	Zn	89	He	1.723	ppb	25.3	583.37	2000	
75	As	89	He	7.980	ppb	3.3	983.48	1000	
78	Se	89	H2	0.112	ppb	62.8	10.00	1000	
88	Sr	89	He	415.912	ppb	0.4	255453.80	2000	
95	Mo	89	He	2.279	ppb	2.2	1639.05	1000	
107	Ag	89	He	0.011	ppb	41.6	53.34	100	
111	Cd	89	He	0.003	ppb	71.5	2.59	1000	
118	Sn	159	He	0.563	ppb	7.7	645.60	1000	
121	Sb	159	No Gas	0.220	ppb	6.7	951.10	1000	
137	Ba	159	No Gas	37.040	ppb	12.3	59885.68	2000	
182	W	159	No Gas	1.345	ppb	21.5	6435.50	1000	
205	Tl	209	No Gas	0.005	ppb	60.5	156.84	1000	
208	Pb	209	No Gas	0.110	ppb	28.6	3223.77	2000	
232	Th	209	No Gas	0.140	ppb	12.8	1698.69	1000	
238	U	209	No Gas	0.343	ppb	12.3	2950.35	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5556368.62	6.2	5961075.87	93.21	29.5	120.4	
Sc	45	No Gas	11469663.95	7.7	13015983.55	88.12	29.5	120.4	
Sc	45	H2	1371732.28	0.4	1430290.9	95.91	29.5	120.4	
Sc	45	He	402453.91	0.7	438046.17	91.87	29.5	120.4	
Ge	72	No Gas	2252666.16	6.0	2458564.83	91.63	29.5	120.4	
Ge	72	H2	454167.86	0.7	491199	92.46	29.5	120.4	
Ge	72	He	236200.17	0.7	255273.97	92.53	29.5	120.4	
Y	89	H2	7191976.10	1.4	7442438.64	96.63	29.5	120.4	
Y	89	He	2011882.85	0.7	2167302.66	92.83	29.5	120.4	
Tb	159	No Gas	20892320.80	8.1	21871384.4	95.52	29.5	120.4	
Tb	159	He	8342580.29	0.5	8589669.11	97.12	29.5	120.4	
Bi	209	No Gas	9850044.18	6.9	10079220.95	97.73	29.5	120.4	

Sample Report

Sample Name SO3459-013A

File Name 049SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 16:02:33

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	10.165	ppb	11.5	14449.95	100	
11	B	6	No Gas	337.071	ppb	11.2	312254.28	1000	
23	Na	45	He	141800.839	ppb	1.6	16932065.85	200000	
24	Mg	45	He	24121.573	ppb	1.3	1682700.91	200000	
27	Al	45	He	1052.655	ppb	1.2	28092.86	200000	
28	Si	45	H2	10690.437	ppb	1.8	451019.13	10000	
39	K	45	He	16360.141	ppb	1.5	927032.94	200000	
40	Ca	45	H2	73860.764	ppb	1.5	27109256.54	200000	
51	V	89	He	52.388	ppb	0.9	48158.97	1000	
52	Cr	89	He	52.782	ppb	0.4	61642.96	2000	
55	Mn	89	He	1219.750	ppb	0.3	638734.23	2000	
56	Fe	89	H2	14375.065	ppb	0.8	17581133.43	100000	
59	Co	89	He	10.943	ppb	2.7	19701.97	1000	
60	Ni	89	He	21.186	ppb	0.8	10632.20	1000	
63	Cu	89	He	32.606	ppb	0.7	43584.48	2000	
66	Zn	89	He	105.795	ppb	1.0	18486.23	2000	
75	As	89	He	59.171	ppb	0.6	7142.96	1000	
78	Se	89	H2	51.021	ppb	2.0	2673.14	1000	
88	Sr	89	He	456.900	ppb	0.8	279326.07	2000	
95	Mo	89	He	56.766	ppb	1.0	37398.69	1000	
107	Ag	89	He	11.235	ppb	1.7	24090.03	100	
111	Cd	89	He	11.071	ppb	0.4	2997.03	1000	
118	Sn	159	He	51.479	ppb	0.7	29458.52	1000	
121	Sb	159	No Gas	11.991	ppb	12.4	45173.35	1000	
137	Ba	159	No Gas	56.606	ppb	11.3	89656.52	2000	
182	W	159	No Gas	60.475	ppb	12.5	162177.49	1000	
205	Tl	209	No Gas	11.643	ppb	10.7	72813.47	1000	
208	Pb	209	No Gas	11.200	ppb	10.6	102475.25	2000	
232	Th	209	No Gas	11.978	ppb	11.5	101161.32	1000	
238	U	209	No Gas	11.985	ppb	10.9	100792.21	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5468940.94	7.5	5961075.87	91.74	29.5	120.4	
Sc	45	No Gas	11282861.00	10.1	13015983.55	86.68	29.5	120.4	
Sc	45	H2	1353251.21	1.0	1430290.9	94.61	29.5	120.4	
Sc	45	He	398628.99	1.1	438046.17	91	29.5	120.4	
Ge	72	No Gas	2219555.37	8.3	2458564.83	90.28	29.5	120.4	
Ge	72	H2	445952.77	1.2	491199	90.79	29.5	120.4	
Ge	72	He	234646.26	0.1	255273.97	91.92	29.5	120.4	
Y	89	H2	7106536.44	1.3	7442438.64	95.49	29.5	120.4	
Y	89	He	2002587.66	0.4	2167302.66	92.4	29.5	120.4	
Tb	159	No Gas	20511276.50	10.1	21871384.4	93.78	29.5	120.4	
Tb	159	He	8331242.17	0.5	8589669.11	96.99	29.5	120.4	
Bi	209	No Gas	9695321.75	8.6	10079220.95	96.19	29.5	120.4	

Sample Report

Sample Name SO3459-013L

File Name 050SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 16:04:57

Sample Type Sample

Total Dilution 25.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.336	ppb	79.9	117.79	100	
11	B	6	No Gas	162.049	ppb	2.5	37306.91	1000	
23	Na	45	He	137275.935	ppb	2.4	3346150.25	200000	
24	Mg	45	He	23597.157	ppb	2.4	334764.95	200000	
27	Al	45	He	12.183	ppb	31.3	184.45	200000	
28	Si	45	H2	6289.045	ppb	12.5	54953.29	10000	
39	K	45	He	7028.922	ppb	2.5	98953.38	200000	
40	Ca	45	H2	75693.529	ppb	11.4	5699203.73	200000	
51	V	89	He	0.074	ppb	152.4	260.01	1000	
52	Cr	89	He	0.511	ppb	22.9	920.53	2000	
55	Mn	89	He	1271.596	ppb	1.5	135039.35	2000	
56	Fe	89	H2	13875.754	ppb	12.1	3517791.47	100000	
59	Co	89	He	0.245	ppb	23.6	95.56	1000	
60	Ni	89	He	0.739	ppb	16.5	133.34	1000	
63	Cu	89	He	1.652	ppb	11.7	986.74	2000	
66	Zn	89	He	2.792	ppb	17.3	385.58	2000	
75	As	89	He	9.477	ppb	5.5	249.36	1000	
78	Se	89	H2	6.457	ppb	7.6	74.33	1000	
88	Sr	89	He	430.679	ppb	3.1	53407.06	2000	
95	Mo	89	He	7.453	ppb	6.9	1130.09	1000	
107	Ag	89	He	-0.006	ppb	N/A	26.67	100	
111	Cd	89	He	0.016	ppb	201.2	2.59	1000	
118	Sn	159	He	1.141	ppb	28.5	463.36	1000	
121	Sb	159	No Gas	1.149	ppb	9.0	1067.90	1000	
137	Ba	159	No Gas	37.273	ppb	3.2	13201.31	2000	
182	W	159	No Gas	18.093	ppb	10.8	13635.94	1000	
205	Tl	209	No Gas	0.289	ppb	83.1	537.28	1000	
208	Pb	209	No Gas	0.222	ppb	74.7	2843.31	2000	
232	Th	209	No Gas	0.788	ppb	13.9	2015.76	1000	
238	U	209	No Gas	0.752	ppb	46.9	1415.03	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6123922.61	2.2	5961075.87	102.73	29.5	120.4	
Sc	45	No Gas	12368286.70	1.0	13015983.55	95.02	29.5	120.4	
Sc	45	H2	1397110.56	9.7	1430290.9	97.68	29.5	120.4	
Sc	45	He	405391.78	2.9	438046.17	92.55	29.5	120.4	
Ge	72	No Gas	2409541.88	2.0	2458564.83	98.01	29.5	120.4	
Ge	72	H2	470000.03	4.9	491199	95.68	29.5	120.4	
Ge	72	He	241316.93	2.0	255273.97	94.53	29.5	120.4	
Y	89	H2	7413337.09	9.3	7442438.64	99.61	29.5	120.4	
Y	89	He	2030242.85	2.3	2167302.66	93.68	29.5	120.4	
Tb	159	No Gas	22591156.05	1.7	21871384.4	103.29	29.5	120.4	
Tb	159	He	8465848.49	2.6	8589669.11	98.56	29.5	120.4	
Bi	209	No Gas	10687845.59	1.8	10079220.95	106.04	29.5	120.4	

Sample Report

Sample Name SO3459-013P

File Name 051SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 16:07:28

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	41.542	ppb	9.9	65756.37	100	
11	B	6	No Gas	551.383	ppb	10.4	566383.01	1000	
23	Na	45	He	139229.017	ppb	0.8	16649362.32	200000	
24	Mg	45	He	28481.227	ppb	1.3	1989658.39	200000	
27	Al	45	He	1994.242	ppb	0.8	53193.06	200000	
28	Si	45	H2	7000.733	ppb	0.4	299950.86	10000	
39	K	45	He	16264.503	ppb	0.8	923055.11	200000	
40	Ca	45	H2	75144.707	ppb	0.4	27986052.08	200000	
51	V	89	He	504.286	ppb	0.5	459419.44	1000	
52	Cr	89	He	202.209	ppb	0.3	232868.76	2000	
55	Mn	89	He	1713.844	ppb	0.5	893415.72	2000	
56	Fe	89	H2	14386.289	ppb	0.1	17772052.26	100000	
59	Co	89	He	514.419	ppb	1.1	921663.30	1000	
60	Ni	89	He	507.965	ppb	0.6	252462.54	1000	
63	Cu	89	He	256.636	ppb	1.0	337817.97	2000	
66	Zn	89	He	500.987	ppb	0.3	86092.49	2000	
75	As	89	He	110.187	ppb	1.0	13225.72	1000	
78	Se	89	H2	101.541	ppb	3.6	5368.62	1000	
88	Sr	89	He	903.726	ppb	0.2	549979.63	2000	
95	Mo	89	He	111.460	ppb	0.4	72971.65	1000	
107	Ag	89	He	52.380	ppb	0.3	111705.00	100	
111	Cd	89	He	261.411	ppb	0.2	70411.46	1000	
118	Sn	159	He	493.007	ppb	0.5	279686.99	1000	
121	Sb	159	No Gas	93.580	ppb	9.8	392781.26	1000	
137	Ba	159	No Gas	1587.936	ppb	9.5	2805189.15	2000	
182	W	159	No Gas	103.989	ppb	9.8	309192.00	1000	
205	Tl	209	No Gas	98.547	ppb	11.8	672733.83	1000	
208	Pb	209	No Gas	95.598	ppb	11.2	938002.90	2000	
232	Th	209	No Gas	91.498	ppb	7.8	842458.54	1000	
238	U	209	No Gas	94.471	ppb	7.9	869213.78	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6076210.74	3.6	5961075.87	101.93	29.5	120.4	
Sc	45	No Gas	12565410.49	2.5	13015983.55	96.54	29.5	120.4	
Sc	45	H2	1373069.05	1.1	1430290.9	96	29.5	120.4	
Sc	45	He	399175.09	0.9	438046.17	91.13	29.5	120.4	
Ge	72	No Gas	2400874.07	3.1	2458564.83	97.65	29.5	120.4	
Ge	72	H2	453315.96	1.0	491199	92.29	29.5	120.4	
Ge	72	He	235752.12	1.4	255273.97	92.35	29.5	120.4	
Y	89	H2	7177744.11	1.0	7442438.64	96.44	29.5	120.4	
Y	89	He	1993629.83	0.9	2167302.66	91.99	29.5	120.4	
Tb	159	No Gas	22791335.21	3.6	21871384.4	104.21	29.5	120.4	
Tb	159	He	8342179.46	0.5	8589669.11	97.12	29.5	120.4	
Bi	209	No Gas	10585978.21	4.8	10079220.95	105.03	29.5	120.4	

Sample Report

Sample Name RINSE

File Name 052SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 16:09:54

Sample Type Sample

Total Dilution 1.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.011	ppb	35.2	92.23	100	
11	B	6	No Gas	1.879	ppb	17.6	12937.35	1000	
23	Na	45	He	25.017	ppb	4.4	31947.74	200000	
24	Mg	45	He	1.011	ppb	15.8	453.37	200000	
27	Al	45	He	-0.150	ppb	N/A	98.89	200000	
28	Si	45	H2	34.380	ppb	3.9	8221.50	10000	
39	K	45	He	6.293	ppb	15.0	21646.69	200000	
40	Ca	45	H2	4.240	ppb	12.0	13652.58	200000	
51	V	89	He	0.004	ppb	130.5	267.79	1000	
52	Cr	89	He	-0.002	ppb	N/A	795.88	2000	
55	Mn	89	He	0.076	ppb	10.2	271.95	2000	
56	Fe	89	H2	1.497	ppb	6.1	13909.09	100000	
59	Co	89	He	0.022	ppb	17.6	206.68	1000	
60	Ni	89	He	0.016	ppb	25.9	98.89	1000	
63	Cu	89	He	0.021	ppb	17.7	690.04	2000	
66	Zn	89	He	-0.104	ppb	N/A	200.01	2000	
75	As	89	He	0.081	ppb	4.6	68.01	1000	
78	Se	89	H2	0.449	ppb	1.4	127.16	1000	
88	Sr	89	He	0.025	ppb	10.3	132.23	2000	
95	Mo	89	He	0.370	ppb	4.2	1383.45	1000	
107	Ag	89	He	0.002	ppb	27.4	54.45	100	
111	Cd	89	He	0.003	ppb	14.6	6.30	1000	
118	Sn	159	He	0.074	ppb	28.3	548.92	1000	
121	Sb	159	No Gas	0.034	ppb	31.6	744.19	1000	
137	Ba	159	No Gas	0.350	ppb	27.2	2906.92	2000	
182	W	159	No Gas	1.112	ppb	13.7	17661.88	1000	
205	Tl	209	No Gas	0.034	ppb	30.6	1221.44	1000	
208	Pb	209	No Gas	0.013	ppb	55.7	2806.61	2000	
232	Th	209	No Gas	0.288	ppb	8.7	12954.61	1000	
238	U	209	No Gas	0.027	ppb	23.0	1181.38	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5838649.07	5.3	5961075.87	97.95	29.5	120.4	
Sc	45	No Gas	11360146.52	9.3	13015983.55	87.28	29.5	120.4	
Sc	45	H2	1408535.97	1.2	1430290.9	98.48	29.5	120.4	
Sc	45	He	409347.15	0.6	438046.17	93.45	29.5	120.4	
Ge	72	No Gas	2248998.58	6.7	2458564.83	91.48	29.5	120.4	
Ge	72	H2	476044.24	1.0	491199	96.91	29.5	120.4	
Ge	72	He	243523.45	0.3	255273.97	95.4	29.5	120.4	
Y	89	H2	7434478.28	0.8	7442438.64	99.89	29.5	120.4	
Y	89	He	2051264.02	0.4	2167302.66	94.65	29.5	120.4	
Tb	159	No Gas	20813885.94	9.3	21871384.4	95.16	29.5	120.4	
Tb	159	He	8530554.74	0.4	8589669.11	99.31	29.5	120.4	
Bi	209	No Gas	9968935.36	6.9	10079220.95	98.91	29.5	120.4	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV
File Name	053_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 16:12:24
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	006CALB.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**admin**

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
9	Be	6	No Gas	21.418	ppb	11.2	169025.86	25	85.67	89.8	110.2	> +/- 10%
11	B	6	No Gas	21.824	ppb	11.2	114934.90	25	87.3	89.8	110.2	> +/- 10%
23	Na	45	He	5223.104	ppb	5.3	3127512.53	5000	104.46	89.8	110.2	
24	Mg	45	He	5257.766	ppb	4.8	1831946.57	5000	105.16	89.8	110.2	
27	Al	45	He	508.949	ppb	6.3	67662.84	500	101.79	89.8	110.2	
28	Si	45	H2	479.965	ppb	2.6	104037.31	500	95.99	89.8	110.2	
39	K	45	He	5064.906	ppb	5.9	1422502.17	5000	101.3	89.8	110.2	
40	Ca	45	H2	4968.615	ppb	2.2	9326413.61	5000	99.37	89.8	110.2	
51	V	89	He	25.150	ppb	6.3	114986.10	25	100.6	89.8	110.2	
52	Cr	89	He	25.186	ppb	6.3	145639.82	25	100.74	89.8	110.2	
55	Mn	89	He	25.135	ppb	6.3	65710.90	25	100.54	89.8	110.2	
56	Fe	89	H2	4925.400	ppb	0.8	31044671.70	5000	98.51	89.8	110.2	
59	Co	89	He	25.650	ppb	5.7	230304.53	25	102.6	89.8	110.2	
60	Ni	89	He	25.839	ppb	5.7	64406.38	25	103.36	89.8	110.2	
63	Cu	89	He	25.710	ppb	5.6	169878.27	25	102.84	89.8	110.2	
66	Zn	89	He	25.282	ppb	4.1	21986.96	25	101.13	89.8	110.2	
75	As	89	He	24.902	ppb	5.8	14975.06	25	99.61	89.8	110.2	
78	Se	89	H2	24.042	ppb	1.4	6486.38	25	96.17	89.8	110.2	
88	Sr	89	He	24.844	ppb	5.5	75811.97	25	99.38	89.8	110.2	
95	Mo	89	He	25.191	ppb	7.5	82634.22	25	100.76	89.8	110.2	
107	Ag	89	He	26.080	ppb	5.4	278686.89	25	104.32	89.8	110.2	
111	Cd	89	He	25.999	ppb	6.5	35089.40	25	104	89.8	110.2	
118	Sn	159	He	24.791	ppb	6.0	70119.11	25	99.16	89.8	110.2	
121	Sb	159	No Gas	24.311	ppb	11.1	485068.18	25	97.24	89.8	110.2	
137	Ba	159	No Gas	22.888	ppb	10.8	192283.62	25	91.55	89.8	110.2	
182	W	159	No Gas	24.544	ppb	9.6	346408.94	25	98.18	89.8	110.2	
205	Tl	209	No Gas	25.552	ppb	11.2	843502.82	25	102.21	89.8	110.2	
208	Pb	209	No Gas	24.598	ppb	9.9	1166433.73	25	98.39	89.8	110.2	
232	Th	209	No Gas	22.684	ppb	10.0	1008986.94	25	90.74	89.8	110.2	
238	U	209	No Gas	23.363	ppb	9.4	1038444.93	25	93.45	89.8	110.2	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6064554.76	5.3	5961075.87	101.74	29.5	120.4	
Sc	45	No Gas	11816527.36	6.5	13015983.55	90.78	29.5	120.4	
Sc	45	H2	1383914.06	2.1	1430290.9	96.76	29.5	120.4	
Sc	45	He	398418.65	3.2	438046.17	90.95	29.5	120.4	
Ge	72	No Gas	2317690.55	5.5	2458564.83	94.27	29.5	120.4	
Ge	72	H2	466969.10	1.8	491199	95.07	29.5	120.4	
Ge	72	He	237349.30	1.8	255273.97	92.98	29.5	120.4	
Y	89	H2	7325448.11	1.4	7442438.64	98.43	29.5	120.4	
Y	89	He	2000428.43	4.0	2167302.66	92.3	29.5	120.4	
Tb	159	No Gas	21702013.15	6.2	21871384.4	99.23	29.5	120.4	
Tb	159	He	8297425.15	3.5	8589669.11	96.6	29.5	120.4	
Bi	209	No Gas	10229231.48	5.6	10079220.95	101.49	29.5	120.4	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB
File Name	054_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 16:14:56
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	006CALB.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**admin**

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
9	Be	6	No Gas	0.038	ppb	60.1	334.46	0.2	
11	B	6	No Gas	0.592	ppb	9.7	7306.56	4	
23	Na	45	He	16.163	ppb	6.8	26477.26	200	
24	Mg	45	He	1.131	ppb	20.4	495.60	20	
27	Al	45	He	0.006	ppb	2443.6	120.01	20	
28	Si	45	H2	28.342	ppb	1.3	6812.58	100	
39	K	45	He	4.844	ppb	11.7	21196.15	200	
40	Ca	45	H2	0.985	ppb	10.2	7346.60	20	
51	V	89	He	-0.008	ppb	N/A	214.45	1	
52	Cr	89	He	-0.010	ppb	N/A	757.89	1	
55	Mn	89	He	0.021	ppb	33.2	125.98	0.4	
56	Fe	89	H2	3.180	ppb	11.3	24632.61	20	
59	Co	89	He	0.007	ppb	31.8	68.90	0.2	
60	Ni	89	He	0.002	ppb	113.7	65.56	0.4	
63	Cu	89	He	0.014	ppb	15.6	651.15	0.6	
66	Zn	89	He	-0.123	ppb	N/A	184.45	2	
75	As	89	He	0.103	ppb	16.7	82.68	1	
78	Se	89	H2	0.743	ppb	5.2	207.32	1	Failed DoD
88	Sr	89	He	0.003	ppb	112.4	62.23	1	
95	Mo	89	He	0.708	ppb	9.4	2539.22	1	Failed DoD
107	Ag	89	He	0.008	ppb	7.2	113.34	0.2	
111	Cd	89	He	0.005	ppb	52.7	9.26	0.2	
118	Sn	159	He	0.116	ppb	26.4	667.82	1	
121	Sb	159	No Gas	0.059	ppb	32.5	1391.63	0.2	
137	Ba	159	No Gas	0.043	ppb	33.1	520.59	0.4	
182	W	159	No Gas	2.417	ppb	2.9	39769.28	1	Fail All Methods□ Failed DoD
205	Tl	209	No Gas	0.048	ppb	38.4	1862.25	0.2	
208	Pb	209	No Gas	0.021	ppb	65.4	3547.50	0.2	
232	Th	209	No Gas	0.482	ppb	3.7	23679.20	1	
238	U	209	No Gas	0.066	ppb	53.8	3180.74	0.2	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6417100.00	2.1	5961075.87	107.65	29.5	120.4	
Sc	45	No Gas	12714166.63	2.6	13015983.55	97.68	29.5	120.4	
Sc	45	H2	1390746.32	0.5	1430290.9	97.24	29.5	120.4	
Sc	45	He	408594.13	0.5	438046.17	93.28	29.5	120.4	
Ge	72	No Gas	2455653.69	3.2	2458564.83	99.88	29.5	120.4	
Ge	72	H2	480516.68	0.4	491199	97.83	29.5	120.4	
Ge	72	He	243850.36	0.4	255273.97	95.52	29.5	120.4	
Y	89	H2	7425134.51	0.2	7442438.64	99.77	29.5	120.4	
Y	89	He	2069485.80	0.9	2167302.66	95.49	29.5	120.4	
Tb	159	No Gas	23401250.76	2.5	21871384.4	106.99	29.5	120.4	
Tb	159	He	8513207.86	0.7	8589669.11	99.11	29.5	120.4	
Bi	209	No Gas	11010652.56	1.3	10079220.95	109.24	29.5	120.4	

Sample Report

Sample Name SO3459-013S

File Name 055SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 16:17:25

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	40.660	ppb	11.2	66387.28	100	
11	B	6	No Gas	541.216	ppb	10.9	573562.18	1000	
23	Na	45	He	140564.243	ppb	0.3	16918812.38	200000	
24	Mg	45	He	28647.232	ppb	0.7	2014254.02	200000	
27	Al	45	He	1986.967	ppb	0.9	53346.10	200000	
28	Si	45	H2	7221.004	ppb	2.2	302702.17	10000	
39	K	45	He	16264.915	ppb	0.9	929121.40	200000	
40	Ca	45	H2	76380.424	ppb	1.7	27835113.75	200000	
51	V	89	He	498.793	ppb	0.6	457970.82	1000	
52	Cr	89	He	200.231	ppb	0.9	232399.34	2000	
55	Mn	89	He	1709.631	ppb	0.7	898206.98	2000	
56	Fe	89	H2	14428.480	ppb	0.3	17646410.37	100000	
59	Co	89	He	503.926	ppb	1.1	909919.08	1000	
60	Ni	89	He	502.862	ppb	1.4	251869.36	1000	
63	Cu	89	He	253.448	ppb	0.7	336256.64	2000	
66	Zn	89	He	499.410	ppb	0.6	86492.80	2000	
75	As	89	He	110.739	ppb	1.2	13396.24	1000	
78	Se	89	H2	101.401	ppb	2.6	5308.10	1000	
88	Sr	89	He	900.787	ppb	0.4	552493.46	2000	
95	Mo	89	He	111.787	ppb	0.9	73761.51	1000	
107	Ag	89	He	51.921	ppb	0.9	111591.40	100	
111	Cd	89	He	259.810	ppb	0.7	70527.74	1000	
118	Sn	159	He	491.402	ppb	1.3	281493.02	1000	
121	Sb	159	No Gas	93.711	ppb	7.6	394370.68	1000	
137	Ba	159	No Gas	1601.352	ppb	8.0	2835540.18	2000	
182	W	159	No Gas	107.380	ppb	7.1	320023.08	1000	
205	Tl	209	No Gas	98.853	ppb	6.9	675715.05	1000	
208	Pb	209	No Gas	95.815	ppb	7.6	941294.52	2000	
232	Th	209	No Gas	101.788	ppb	5.6	937582.21	1000	
238	U	209	No Gas	95.334	ppb	4.8	877653.19	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6272504.47	4.2	5961075.87	105.22	29.5	120.4	
Sc	45	No Gas	12409025.77	1.9	13015983.55	95.34	29.5	120.4	
Sc	45	H2	1343721.68	1.2	1430290.9	93.95	29.5	120.4	
Sc	45	He	401767.69	1.0	438046.17	91.72	29.5	120.4	
Ge	72	No Gas	2373107.53	3.2	2458564.83	96.52	29.5	120.4	
Ge	72	H2	450818.33	0.3	491199	91.78	29.5	120.4	
Ge	72	He	235978.67	0.8	255273.97	92.44	29.5	120.4	
Y	89	H2	7106336.35	1.0	7442438.64	95.48	29.5	120.4	
Y	89	He	2009323.70	1.4	2167302.66	92.71	29.5	120.4	
Tb	159	No Gas	22822765.49	2.0	21871384.4	104.35	29.5	120.4	
Tb	159	He	8423385.15	0.6	8589669.11	98.06	29.5	120.4	
Bi	209	No Gas	10571369.02	2.9	10079220.95	104.88	29.5	120.4	

Prep Blank (PB) Report

Sample Name	PBWOF17IMW1
File Name	056_PB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 16:19:49
Sample Type	PB
Total Dilution	5.0000
Comment	---
ISTD Ref FileName	006CALB.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**admin**

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Be	9	6	No Gas	0.230	ppb	66.6	363.35	0.5	
B	11	6	No Gas	11.837	ppb	17.7	15468.97	10	PB 6020 Fails DoD
Na	23	45	He	166.583	ppb	7.6	36616.86	500	
Mg	24	45	He	27.468	ppb	9.4	2035.86	50	
Al	27	45	He	10.245	ppb	12.9	394.46	50	
Si	28	45	H2	48.054	ppb	8.7	2673.22	250	
K	39	45	He	31.150	ppb	28.3	21388.10	500	
Ca	40	45	H2	63.682	ppb	5.6	28593.95	50	PB 6020 Fails DoD
V	51	89	He	0.425	ppb	2.2	641.15	2.5	
Cr	52	89	He	0.503	ppb	11.8	1389.16	2.5	
Mn	55	89	He	1.086	ppb	12.0	644.57	1	PB 6020 Fails DoD
Fe	56	89	H2	29.569	ppb	7.5	40547.41	50	
Co	59	89	He	0.231	ppb	12.1	426.71	0.5	
Ni	60	89	He	0.315	ppb	7.4	217.79	1	
Cu	63	89	He	0.725	ppb	13.7	1515.70	1.5	
Zn	66	89	He	1.500	ppb	5.8	550.03	5	
As	75	89	He	0.647	ppb	21.3	97.01	2.5	
Se	78	89	H2	2.712	ppb	7.5	146.82	2.5	PB 6020 Fails DoD
Sr	88	89	He	0.415	ppb	22.1	310.02	2.5	
Mo	95	89	He	2.194	ppb	14.3	1596.82	2.5	
Ag	107	89	He	0.035	ppb	31.9	104.45	0.5	
Cd	111	89	He	0.084	ppb	40.8	24.82	0.5	
Sn	118	159	He	1.117	ppb	11.0	967.85	2.5	
Sb	121	159	No Gas	0.704	ppb	51.8	2933.70	0.5	PB 6020 Fails DoD
Ba	137	159	No Gas	6.553	ppb	71.8	11176.26	1	PB 6020 Fails DoD PB 6020 Fails Non-DoD
W	182	159	No Gas	9.962	ppb	10.0	30901.96	2.5	PB 6020 Fails DoD PB 6020 Fails Non-DoD
Tl	205	209	No Gas	0.541	ppb	70.9	3761.70	0.5	PB 6020 Fails DoD
Pb	208	209	No Gas	0.472	ppb	50.0	6871.84	0.5	
Th	232	209	No Gas	10.593	ppb	8.3	96303.35	2.5	PB 6020 Fails DoD PB 6020 Fails Non-DoD
U	238	209	No Gas	0.777	ppb	76.0	7007.58	0.5	PB 6020 Fails DoD

QC ISTD Table

Prep Blank (PB) Report

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5875426.83	2.5	5961075.87	98.56	29.5	120.4	
Sc	45	No Gas	11803243.35	5.2	13015983.55	90.68	29.5	120.4	
Sc	45	H2	1347921.68	0.7	1430290.9	94.24	29.5	120.4	
Sc	45	He	404773.18	0.4	438046.17	92.4	29.5	120.4	
Ge	72	No Gas	2295287.63	4.4	2458564.83	93.36	29.5	120.4	
Ge	72	H2	454248.33	1.8	491199	92.48	29.5	120.4	
Ge	72	He	237111.42	0.8	255273.97	92.89	29.5	120.4	
Y	89	H2	7151865.73	0.5	7442438.64	96.1	29.5	120.4	
Y	89	He	2030379.45	0.8	2167302.66	93.68	29.5	120.4	
Tb	159	No Gas	21729882.87	4.9	21871384.4	99.35	29.5	120.4	
Tb	159	He	8412387.65	0.4	8589669.11	97.94	29.5	120.4	
Bi	209	No Gas	10397740.60	4.1	10079220.95	103.16	29.5	120.4	

Laboratory Control Sample (LCS) Report

Sample Name	LCSWOF17IMW1
File Name	057LCSW.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 16:22:23
Sample Type	LCSW
Total Dilution	5.0000
Comment	---
ISTD Ref FileName	006CALB.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**admin**

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Be	9	6	No Gas	46.274	ppb	14.1	68693.39	50	18.51	79.5	120.4	
B	11	6	No Gas	468.837	ppb	14.4	452263.97	500	18.75	79.5	120.4	
Na	23	45	He	8519.849	ppb	1.3	1047602.88	7500	22.72	79.5	120.4	
Mg	24	45	He	5475.285	ppb	0.3	387614.05	5000	21.9	79.5	120.4	
Al	27	45	He	2124.757	ppb	0.6	57416.03	2000	21.25	79.5	120.4	
Si	28	45	H2	1014.865	ppb	2.5	43835.78	1000	20.3	0	200	
K	39	45	He	11591.539	ppb	0.2	672159.94	10000	23.18	79.5	120.4	DoD
Ca	40	45	H2	2629.069	ppb	1.8	979602.32	2500	21.03	79.5	120.4	
V	51	89	He	510.662	ppb	0.7	470406.26	500	20.43	79.5	120.4	
Cr	52	89	He	209.218	ppb	0.6	243600.48	200	20.92	79.5	120.4	
Mn	55	89	He	516.615	ppb	1.1	272347.79	500	20.66	79.5	120.4	
Fe	56	89	H2	1048.047	ppb	1.8	1308892.43	1000	20.96	79.5	120.4	
Co	59	89	He	530.952	ppb	0.3	961945.31	500	21.24	79.5	120.4	
Ni	60	89	He	530.956	ppb	0.6	266834.99	500	21.24	79.5	120.4	
Cu	63	89	He	267.864	ppb	1.3	356500.40	250	21.43	79.5	120.4	
Zn	66	89	He	525.456	ppb	1.3	91292.15	500	21.02	79.5	120.4	
As	75	89	He	105.597	ppb	0.9	12817.30	100	21.12	79.5	120.4	
Se	78	89	H2	103.204	ppb	2.1	5500.84	100	20.64	79.5	120.4	
Sr	88	89	He	509.298	ppb	0.3	313433.25	500	20.37	79.5	120.4	
Mo	95	89	He	111.408	ppb	1.4	73748.17	100	22.28	79.5	120.4	
Ag	107	89	He	55.008	ppb	1.1	118612.20	50	22	79.5	120.4	
Cd	111	89	He	273.254	ppb	1.2	74418.31	250	21.86	79.5	120.4	
Sn	118	159	He	503.406	ppb	0.3	292119.50	500	20.14	79.5	120.4	
Sb	121	159	No Gas	112.420	ppb	18.0	415859.28	100	22.48	79.5	120.4	
Ba	137	159	No Gas	1865.041	ppb	16.6	2906857.28	2000	18.65	79.5	120.4	
W	182	159	No Gas	127.166	ppb	17.6	332775.23	100	25.43	79.5	120.4	6020□ DoD
Tl	205	209	No Gas	117.481	ppb	15.7	738235.94	100	23.5	79.5	120.4	DoD
[Pb]	206	209	No Gas	107.935	ppb	14.9	256098.57	100	21.59	79.5	120.4	
[Pb]	207	209	No Gas	106.902	ppb	14.1	220822.20	100	21.38	79.5	120.4	
Pb	208	209	No Gas	112.225	ppb	14.7	1013964.71	100	22.44	79.5	120.4	
Th	232	209	No Gas	103.721	ppb	11.0	880111.68	100	20.74	79.5	120.4	
U	238	209	No Gas	107.660	ppb	12.1	912094.75	100	21.53	79.5	120.4	

QC ISTD Table

Laboratory Control Sample (LCS) Report

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5730318.82	9.2	5961075.87	96.13	29.5	120.4	
Sc	45	No Gas	11129063.57	11.0	13015983.55	85.5	29.5	120.4	
Sc	45	H2	1366666.12	1.7	1430290.9	95.55	29.5	120.4	
Sc	45	He	404425.35	0.9	438046.17	92.32	29.5	120.4	
Ge	72	No Gas	2185899.52	8.3	2458564.83	88.91	29.5	120.4	
Ge	72	H2	451518.15	1.3	491199	91.92	29.5	120.4	
Ge	72	He	238465.38	0.8	255273.97	93.42	29.5	120.4	
Y	89	H2	7236066.07	1.6	7442438.64	97.23	29.5	120.4	
Y	89	He	2015949.50	1.4	2167302.66	93.02	29.5	120.4	
Tb	159	No Gas	20308458.86	11.4	21871384.4	92.85	29.5	120.4	
Tb	159	He	8533151.61	0.7	8589669.11	99.34	29.5	120.4	
Bi	209	No Gas	9790271.59	8.7	10079220.95	97.13	29.5	120.4	

Sample Report

Sample Name SO3505-001

File Name 058SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 16:43:26

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.045	ppb	31.5	77.78	100	
11	B	6	No Gas	64.045	ppb	12.5	66637.67	1000	
23	Na	45	He	58685.440	ppb	1.3	7007603.03	200000	
24	Mg	45	He	32508.063	ppb	0.5	2264693.89	200000	
27	Al	45	He	125.055	ppb	3.7	3434.99	200000	
28	Si	45	H2	7306.107	ppb	2.3	308949.31	10000	
39	K	45	He	14763.919	ppb	1.2	837346.16	200000	
40	Ca	45	H2	100657.270	ppb	2.2	37002414.45	200000	
51	V	89	He	3.619	ppb	4.5	3522.79	1000	
52	Cr	89	He	1.482	ppb	6.0	2477.78	2000	
55	Mn	89	He	2524.634	ppb	1.4	1310751.35	2000	
56	Fe	89	H2	55189.528	ppb	0.5	67481744.37	100000	
59	Co	89	He	8.306	ppb	1.8	14828.94	1000	
60	Ni	89	He	5.979	ppb	2.2	3016.00	1000	
63	Cu	89	He	2.970	ppb	3.8	4420.87	2000	
66	Zn	89	He	3.590	ppb	14.0	894.51	2000	
75	As	89	He	60.904	ppb	2.2	7289.71	1000	
78	Se	89	H2	1.059	ppb	3.9	59.33	1000	
88	Sr	89	He	853.964	ppb	0.7	517613.22	2000	
95	Mo	89	He	3.616	ppb	7.9	2488.10	1000	
107	Ag	89	He	0.015	ppb	91.9	60.00	100	
111	Cd	89	He	0.012	ppb	109.2	4.82	1000	
118	Sn	159	He	0.559	ppb	8.9	641.15	1000	
121	Sb	159	No Gas	0.423	ppb	10.9	1808.83	1000	
137	Ba	159	No Gas	105.197	ppb	11.4	178348.55	2000	
182	W	159	No Gas	1.035	ppb	14.5	5881.24	1000	
205	Tl	209	No Gas	0.025	ppb	45.4	300.34	1000	
208	Pb	209	No Gas	1.000	ppb	12.4	11975.63	2000	
232	Th	209	No Gas	2.548	ppb	22.5	23579.58	1000	
238	U	209	No Gas	0.244	ppb	11.2	2216.02	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5858307.37	6.2	5961075.87	98.28	29.5	120.4	
Sc	45	No Gas	11741568.34	6.8	13015983.55	90.21	29.5	120.4	
Sc	45	H2	1355829.83	2.7	1430290.9	94.79	29.5	120.4	
Sc	45	He	398060.58	0.3	438046.17	90.87	29.5	120.4	
Ge	72	No Gas	2300773.27	5.8	2458564.83	93.58	29.5	120.4	
Ge	72	H2	451845.73	1.4	491199	91.99	29.5	120.4	
Ge	72	He	232792.66	0.3	255273.97	91.19	29.5	120.4	
Y	89	H2	7106042.82	1.7	7442438.64	95.48	29.5	120.4	
Y	89	He	1985670.99	0.5	2167302.66	91.62	29.5	120.4	
Tb	159	No Gas	21902498.56	6.9	21871384.4	100.14	29.5	120.4	
Tb	159	He	8310527.79	0.3	8589669.11	96.75	29.5	120.4	
Bi	209	No Gas	10416597.17	5.7	10079220.95	103.35	29.5	120.4	

Sample Report

Sample Name	RINSE
File Name	059SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 16:45:50
Sample Type	Sample
Total Dilution	1.0000
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.001	ppb	105.7	15.56	100	
11	B	6	No Gas	0.328	ppb	15.9	5611.29	1000	
23	Na	45	He	13.363	ppb	10.1	24474.72	200000	
24	Mg	45	He	2.985	ppb	14.3	1144.57	200000	
27	Al	45	He	-0.099	ppb	N/A	104.45	200000	
28	Si	45	H2	35.970	ppb	6.9	8475.28	10000	
39	K	45	He	3.681	ppb	61.9	20618.95	200000	
40	Ca	45	H2	13.076	ppb	8.7	30163.07	200000	
51	V	89	He	-0.020	ppb	N/A	152.23	1000	
52	Cr	89	He	-0.016	ppb	N/A	707.22	2000	
55	Mn	89	He	0.231	ppb	10.5	679.89	2000	
56	Fe	89	H2	10.634	ppb	11.7	70846.24	100000	
59	Co	89	He	0.004	ppb	11.0	42.22	1000	
60	Ni	89	He	0.002	ppb	36.6	64.45	1000	
63	Cu	89	He	0.014	ppb	74.0	634.48	2000	
66	Zn	89	He	-0.114	ppb	N/A	188.90	2000	
75	As	89	He	0.038	ppb	17.6	41.34	1000	
78	Se	89	H2	0.015	ppb	61.2	8.17	1000	
88	Sr	89	He	0.072	ppb	9.9	276.68	2000	
95	Mo	89	He	0.078	ppb	23.9	394.47	1000	
107	Ag	89	He	0.000	ppb	151.9	34.44	100	
111	Cd	89	He	0.000	ppb	456.6	2.22	1000	
118	Sn	159	He	0.001	ppb	1616.2	334.46	1000	
121	Sb	159	No Gas	0.002	ppb	137.7	156.85	1000	
137	Ba	159	No Gas	0.093	ppb	62.8	921.07	2000	
182	W	159	No Gas	0.068	ppb	15.0	4001.78	1000	
205	Tl	209	No Gas	0.001	ppb	125.6	170.19	1000	
208	Pb	209	No Gas	-0.004	ppb	N/A	2189.21	2000	
232	Th	209	No Gas	0.007	ppb	6.0	884.37	1000	
238	U	209	No Gas	0.001	ppb	60.3	50.05	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6131739.54	4.7	5961075.87	102.86	29.5	120.4	
Sc	45	No Gas	11922660.89	4.0	13015983.55	91.6	29.5	120.4	
Sc	45	H2	1392250.35	1.6	1430290.9	97.34	29.5	120.4	
Sc	45	He	403830.19	0.7	438046.17	92.19	29.5	120.4	
Ge	72	No Gas	2319274.90	3.8	2458564.83	94.33	29.5	120.4	
Ge	72	H2	472629.67	0.3	491199	96.22	29.5	120.4	
Ge	72	He	238387.94	1.3	255273.97	93.39	29.5	120.4	
Y	89	H2	7282133.70	0.4	7442438.64	97.85	29.5	120.4	
Y	89	He	2024851.38	0.8	2167302.66	93.43	29.5	120.4	
Tb	159	No Gas	22326883.28	2.7	21871384.4	102.08	29.5	120.4	
Tb	159	He	8473476.75	1.7	8589669.11	98.65	29.5	120.4	
Bi	209	No Gas	10726263.28	5.3	10079220.95	106.42	29.5	120.4	

Sample Report

Sample Name SO3505-002

File Name 060SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 16:48:19

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.386	ppb	3.8	606.70	100	
11	B	6	No Gas	50.023	ppb	11.4	53358.82	1000	
23	Na	45	He	92790.574	ppb	1.3	10918489.57	200000	
24	Mg	45	He	9527.577	ppb	0.6	654646.33	200000	
27	Al	45	He	12979.789	ppb	0.5	339903.11	200000	
28	Si	45	H2	15932.191	ppb	0.6	677837.01	10000	
39	K	45	He	2998.618	ppb	1.7	182878.53	200000	
40	Ca	45	H2	33492.739	ppb	1.9	12405567.18	200000	
51	V	89	He	20.556	ppb	1.8	18699.80	1000	
52	Cr	89	He	23.683	ppb	2.0	27572.01	2000	
55	Mn	89	He	1245.897	ppb	1.6	640348.99	2000	
56	Fe	89	H2	30211.645	ppb	0.9	37602781.46	100000	
59	Co	89	He	17.465	ppb	2.7	30849.66	1000	
60	Ni	89	He	28.705	ppb	2.8	14119.87	1000	
63	Cu	89	He	26.338	ppb	1.4	34662.99	2000	
66	Zn	89	He	58.020	ppb	1.8	10076.22	2000	
75	As	89	He	14.514	ppb	0.8	1733.30	1000	
78	Se	89	H2	0.459	ppb	10.6	28.50	1000	
88	Sr	89	He	149.102	ppb	1.2	89513.68	2000	
95	Mo	89	He	1.451	ppb	2.5	1067.86	1000	
107	Ag	89	He	0.032	ppb	40.7	94.45	100	
111	Cd	89	He	0.147	ppb	15.5	40.74	1000	
118	Sn	159	He	0.734	ppb	12.1	730.05	1000	
121	Sb	159	No Gas	0.505	ppb	4.5	2125.89	1000	
137	Ba	159	No Gas	69.691	ppb	6.3	117606.59	2000	
182	W	159	No Gas	1.187	ppb	16.0	6271.91	1000	
205	Tl	209	No Gas	0.142	ppb	9.0	1094.61	1000	
208	Pb	209	No Gas	11.203	ppb	6.4	111096.59	2000	
232	Th	209	No Gas	5.199	ppb	8.6	47878.25	1000	
238	U	209	No Gas	0.650	ppb	11.5	5924.79	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5908983.78	6.3	5961075.87	99.13	29.5	120.4	
Sc	45	No Gas	11789397.94	4.6	13015983.55	90.58	29.5	120.4	
Sc	45	H2	1365181.70	1.0	1430290.9	95.45	29.5	120.4	
Sc	45	He	392611.90	3.1	438046.17	89.63	29.5	120.4	
Ge	72	No Gas	2273722.97	4.0	2458564.83	92.48	29.5	120.4	
Ge	72	H2	453311.70	1.4	491199	92.29	29.5	120.4	
Ge	72	He	232389.61	2.5	255273.97	91.04	29.5	120.4	
Y	89	H2	7233337.93	1.6	7442438.64	97.19	29.5	120.4	
Y	89	He	1966392.66	4.1	2167302.66	90.73	29.5	120.4	
Tb	159	No Gas	21716619.54	3.8	21871384.4	99.29	29.5	120.4	
Tb	159	He	8188629.60	2.8	8589669.11	95.33	29.5	120.4	
Bi	209	No Gas	10471329.29	5.0	10079220.95	103.89	29.5	120.4	

Sample Report

Sample Name SO3505-002A

File Name 061SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 16:50:52

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Fail

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	8.205	ppb	8.3	14265.28	100	
11	B	6	No Gas	195.395	ppb	8.5	223078.62	1000	
23	Na	45	He	94650.857	ppb	2.1	12062083.01	200000	
24	Mg	45	He	9718.381	ppb	2.6	723189.85	200000	
27	Al	45	He	12962.645	ppb	2.5	367598.32	200000	
28	Si	45	H2	17115.016	ppb	2.2	775746.26	10000	
39	K	45	He	13161.572	ppb	2.3	799575.25	200000	
40	Ca	45	H2	31140.564	ppb	1.0	12289758.43	200000	
51	V	89	He	66.931	ppb	2.8	64923.79	1000	
52	Cr	89	He	70.242	ppb	2.7	86380.67	2000	
55	Mn	89	He	1174.866	ppb	2.8	649893.72	2000	
56	Fe	89	H2	28514.082	ppb	1.3	37624324.25	100000	
59	Co	89	He	26.176	ppb	1.9	49780.14	1000	
60	Ni	89	He	46.057	ppb	2.5	24346.38	1000	
63	Cu	89	He	53.774	ppb	2.6	75562.71	2000	
66	Zn	89	He	150.487	ppb	3.5	27647.19	2000	
75	As	89	He	59.803	ppb	3.1	7625.25	1000	
78	Se	89	H2	45.750	ppb	1.6	2586.79	1000	
88	Sr	89	He	184.004	ppb	2.6	118867.91	2000	
95	Mo	89	He	50.611	ppb	3.5	35233.06	1000	
107	Ag	89	He	10.472	ppb	4.4	23715.94	100	
111	Cd	89	He	10.370	ppb	4.1	2964.81	1000	
118	Sn	159	He	46.969	ppb	2.7	28370.66	1000	
121	Sb	159	No Gas	9.220	ppb	8.2	43754.04	1000	
137	Ba	159	No Gas	72.860	ppb	8.2	145224.54	2000	
182	W	159	No Gas	45.690	ppb	8.0	155125.54	1000	
205	Tl	209	No Gas	9.009	ppb	9.2	70884.72	1000	
208	Pb	209	No Gas	17.929	ppb	7.8	204635.93	2000	
232	Th	209	No Gas	16.043	ppb	6.6	170278.19	1000	
238	U	209	No Gas	9.564	ppb	7.2	101163.09	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6666967.93	4.3	5961075.87	111.84	29.5	120.4	
Sc	45	No Gas	14033766.92	3.9	13015983.55	107.82	29.5	120.4	
Sc	45	H2	1454665.67	1.1	1430290.9	101.7	29.5	120.4	
Sc	45	He	425303.04	2.0	438046.17	97.09	29.5	120.4	
Ge	72	No Gas	2681051.63	4.1	2458564.83	109.05	29.5	120.4	
Ge	72	H2	479199.40	1.9	491199	97.56	29.5	120.4	
Ge	72	He	246128.54	2.0	255273.97	96.42	29.5	120.4	
Y	89	H2	7668063.78	0.8	7442438.64	103.03	29.5	120.4	
Y	89	He	2116381.48	2.5	2167302.66	97.65	29.5	120.4	
Tb	159	No Gas	25682480.73	3.2	21871384.4	117.43	29.5	120.4	
Tb	159	He	8787163.20	1.7	8589669.11	102.3	29.5	120.4	
Bi	209	No Gas	12152006.58	3.4	10079220.95	120.56	29.5	120.4	6020/DoD

Sample Report

Sample Name SO3505-002L

File Name 062SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 16:53:20

Sample Type Sample

Total Dilution 25.0000

Sample QC Pass/Fial Fail

ISTD QC Pass/Fail Fail

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	197.039	ppb	110.5	2061.58	100	
11	B	6	No Gas	9173.750	ppb	29.8	47905.88	1000	
23	Na	45	He	100353198.445	ppb	11.3	2448120.69	200000	>LDR
24	Mg	45	He	10394926.462	ppb	11.5	148290.76	200000	>LDR
27	Al	45	He	14184205.969	ppb	11.2	77085.42	200000	>LDR
28	Si	45	H2	14260738.727	ppb	9.0	158065.71	10000	>LDR
39	K	45	He	4902361.276	ppb	10.7	55641.25	200000	
40	Ca	45	H2	30070932.612	ppb	7.6	2904652.35	200000	>LDR
51	V	89	He	10316.940	ppb	7.8	4223.07	1000	
52	Cr	89	He	12886.978	ppb	8.4	6648.46	2000	
55	Mn	89	He	618645.014	ppb	4.3	144688.73	2000	>LDR
56	Fe	89	H2	12612190.677	ppb	3.9	8658143.78	100000	>LDR
59	Co	89	He	8692.735	ppb	0.8	6977.88	1000	
60	Ni	89	He	15307.881	ppb	9.5	3418.35	1000	
63	Cu	89	He	14251.667	ppb	2.6	8392.94	2000	
66	Zn	89	He	32572.715	ppb	4.2	2503.67	2000	
75	As	89	He	7909.339	ppb	6.8	425.72	1000	
78	Se	89	H2	2518.315	ppb	9.3	74.00	1000	
88	Sr	89	He	75689.860	ppb	5.3	20679.40	2000	>LDR
95	Mo	89	He	3474.988	ppb	13.9	1015.63	1000	
107	Ag	89	He	56.543	ppb	40.1	53.33	100	
111	Cd	89	He	123.360	ppb	12.8	14.82	1000	
118	Sn	159	He	6087.861	ppb	4.6	354.47	1000	
121	Sb	159	No Gas	1188.495	ppb	29.5	7085.53	1000	
137	Ba	159	No Gas	38599.069	ppb	88.7	45119.43	2000	
182	W	159	No Gas	10468.104	ppb	55.9	31247.77	1000	
205	Tl	209	No Gas	348.433	ppb	96.9	10035.08	1000	
208	Pb	209	No Gas	2242.990	ppb	27.4	51626.11	2000	
232	Th	209	No Gas	1080.993	ppb	24.0	29560.16	1000	
238	U	209	No Gas	419.991	ppb	77.9	15114.16	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	138326.92	61.0	5961075.87	2.32	29.5	120.4	6020/DoD□ EPA
Sc	45	No Gas	129993.81	118.3	13015983.55	1	29.5	120.4	6020/DoD□ EPA
Sc	45	H2	1785.45	5.1	1430290.9	0.12	29.5	120.4	6020/DoD□ EPA
Sc	45	He	407.80	2.9	438046.17	0.09	29.5	120.4	6020/DoD□ EPA
Ge	72	No Gas	23636.52	115.2	2458564.83	0.96	29.5	120.4	6020/DoD□ EPA
Ge	72	H2	493.89	22.4	491199	0.1	29.5	120.4	6020/DoD□ EPA
Ge	72	He	289.27	10.0	255273.97	0.11	29.5	120.4	6020/DoD□ EPA
Y	89	H2	19950.26	0.5	7442438.64	0.27	29.5	120.4	6020/DoD□ EPA
Y	89	He	4464.27	7.1	2167302.66	0.21	29.5	120.4	6020/DoD□ EPA
Tb	159	No Gas	180158.56	130.4	21871384.4	0.82	29.5	120.4	6020/DoD□ EPA
Tb	159	He	4281.98	1.7	8589669.11	0.05	29.5	120.4	6020/DoD□ EPA
Bi	209	No Gas	139428.94	92.7	10079220.95	1.38	29.5	120.4	6020/DoD□ EPA

Sample Report

Sample Name SO3505-002P

File Name 063SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 16:55:56

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Fail

ISTD QC Pass/Fail Fail

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	896.677	ppb	4.4	62358.61	100	>LDR
11	B	6	No Gas	9901.398	ppb	3.2	444305.33	1000	>LDR
23	Na	45	He	42173728.013	ppb	5.4	11418794.02	200000	>LDR
24	Mg	45	He	6240666.627	ppb	5.9	987894.51	200000	>LDR
27	Al	45	He	6816341.273	ppb	5.5	411143.44	200000	>LDR
28	Si	45	H2	5803452.640	ppb	5.1	709760.63	10000	>LDR
39	K	45	He	5932841.830	ppb	9.8	745752.39	200000	>LDR
40	Ca	45	H2	11834410.071	ppb	5.0	12602804.12	200000	>LDR
51	V	89	He	61666.345	ppb	2.7	463143.79	1000	>LDR
52	Cr	89	He	26487.217	ppb	2.6	250761.26	2000	>LDR
55	Mn	89	He	195220.090	ppb	3.3	839363.41	2000	>LDR
56	Fe	89	H2	3020425.048	ppb	0.6	35268592.35	100000	>LDR
59	Co	89	He	62332.358	ppb	2.5	921218.49	1000	>LDR
60	Ni	89	He	63248.498	ppb	2.3	259243.65	1000	>LDR
63	Cu	89	He	33678.278	ppb	2.1	365121.94	2000	>LDR
66	Zn	89	He	65847.848	ppb	2.1	93033.91	2000	>LDR
75	As	89	He	13430.668	ppb	1.8	13281.22	1000	>LDR
78	Se	89	H2	9779.447	ppb	0.2	4886.32	1000	>LDR
88	Sr	89	He	74885.725	ppb	2.8	375858.78	2000	>LDR
95	Mo	89	He	12494.862	ppb	1.8	67355.37	1000	>LDR
107	Ag	89	He	6142.756	ppb	2.8	108024.94	100	>LDR
111	Cd	89	He	29785.146	ppb	1.8	66177.70	1000	>LDR
118	Sn	159	He	790699.064	ppb	11.7	261541.42	1000	>LDR
121	Sb	159	No Gas	77216.149	ppb	53.4	348136.60	1000	>LDR
137	Ba	159	No Gas	1402605.426	ppb	53.1	2665654.49	2000	>LDR
182	W	159	No Gas	84475.696	ppb	52.1	270016.63	1000	>LDR
205	Tl	209	No Gas	9740.415	ppb	10.7	628526.52	1000	>LDR
208	Pb	209	No Gas	10510.943	ppb	11.1	972311.98	2000	>LDR
232	Th	209	No Gas	9285.004	ppb	7.0	807225.70	1000	>LDR
238	U	209	No Gas	9168.889	ppb	7.6	797011.45	1000	>LDR

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	266611.99	9.6	5961075.87	4.47	29.5	120.4	6020/DoD□ EPA
Sc	45	No Gas	68990.65	31.9	13015983.55	0.53	29.5	120.4	6020/DoD□ EPA
Sc	45	H2	3928.27	1.3	1430290.9	0.27	29.5	120.4	6020/DoD□ EPA
Sc	45	He	906.73	6.4	438046.17	0.21	29.5	120.4	6020/DoD□ EPA
Ge	72	No Gas	9914.99	30.7	2458564.83	0.4	29.5	120.4	6020/DoD□ EPA
Ge	72	H2	627.38	10.4	491199	0.13	29.5	120.4	6020/DoD□ EPA
Ge	72	He	578.17	5.3	255273.97	0.23	29.5	120.4	6020/DoD□ EPA
Y	89	H2	67865.81	2.5	7442438.64	0.91	29.5	120.4	6020/DoD□ EPA
Y	89	He	16448.31	1.6	2167302.66	0.76	29.5	120.4	6020/DoD□ EPA
Tb	159	No Gas	32358.55	72.2	21871384.4	0.15	29.5	120.4	6020/DoD□ EPA
Tb	159	He	4912.24	11.2	8589669.11	0.06	29.5	120.4	6020/DoD□ EPA
Bi	209	No Gas	99897.69	3.8	10079220.95	0.99	29.5	120.4	6020/DoD□ EPA

Sample Report

Sample Name RINSE

File Name 064SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 16:58:27

Sample Type Sample

Total Dilution 1.0000

Sample QC Pass/Fial Fail

ISTD QC Pass/Fail Fail

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	64.016	ppb	84.3	8890.73	100	
11	B	6	No Gas	892.444	ppb	53.4	75334.43	1000	
23	Na	45	He	231314.156	ppb	9.2	29243.49	200000	>LDR
24	Mg	45	He	7281.301	ppb	47.6	548.95	200000	
27	Al	45	He	7221.735	ppb	47.2	208.90	200000	
28	Si	45	H2	122515.634	ppb	10.3	8976.30	10000	>LDR
39	K	45	He	325687.398	ppb	7.1	19059.33	200000	>LDR
40	Ca	45	H2	15334.926	ppb	21.9	9711.50	200000	
51	V	89	He	441.337	ppb	29.4	381.13	1000	
52	Cr	89	He	562.370	ppb	10.3	596.57	2000	
55	Mn	89	He	949.315	ppb	35.0	470.60	2000	
56	Fe	89	H2	19785.396	ppb	2.9	26003.65	100000	
59	Co	89	He	237.081	ppb	67.1	413.38	1000	
60	Ni	89	He	318.205	ppb	35.0	150.01	1000	
63	Cu	89	He	595.304	ppb	9.8	721.16	2000	
66	Zn	89	He	465.401	ppb	7.7	74.45	2000	
75	As	89	He	497.236	ppb	21.2	54.68	1000	
78	Se	89	H2	1957.598	ppb	3.9	109.67	1000	>LDR
88	Sr	89	He	285.738	ppb	41.7	165.56	2000	
95	Mo	89	He	1957.114	ppb	23.7	1184.54	1000	>LDR
107	Ag	89	He	35.681	ppb	44.3	73.34	100	
111	Cd	89	He	108.693	ppb	49.9	28.15	1000	
118	Sn	159	He	1117.368	ppb	8.6	545.59	1000	>LDR
121	Sb	159	No Gas	6019.331	ppb	87.8	48387.67	1000	>LDR
137	Ba	159	No Gas	112415.005	ppb	88.9	380514.90	2000	>LDR
182	W	159	No Gas	9995.121	ppb	56.3	54321.07	1000	>LDR
205	Tl	209	No Gas	901.486	ppb	83.5	87716.83	1000	
208	Pb	209	No Gas	983.973	ppb	83.6	137282.09	2000	
232	Th	209	No Gas	1074.184	ppb	77.2	140137.79	1000	>LDR
238	U	209	No Gas	920.385	ppb	84.4	120650.42	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	89812.77	33.4	5961075.87	1.51	29.5	120.4	6020/DoD□ EPA
Sc	45	No Gas	17371.97	46.6	13015983.55	0.13	29.5	120.4	6020/DoD□ EPA
Sc	45	H2	473.87	10.0	1430290.9	0.03	29.5	120.4	6020/DoD□ EPA
Sc	45	He	84.45	9.9	438046.17	0.02	29.5	120.4	6020/DoD□ EPA
Ge	72	No Gas	3451.03	26.3	2458564.83	0.14	29.5	120.4	6020/DoD□ EPA
Ge	72	H2	140.16	21.4	491199	0.03	29.5	120.4	6020/DoD□ EPA
Ge	72	He	82.60	8.5	255273.97	0.03	29.5	120.4	6020/DoD□ EPA
Y	89	H2	1525.12	8.4	7442438.64	0.02	29.5	120.4	6020/DoD□ EPA
Y	89	He	370.02	13.3	2167302.66	0.02	29.5	120.4	6020/DoD□ EPA
Tb	159	No Gas	8003.22	28.2	21871384.4	0.04	29.5	120.4	6020/DoD□ EPA
Tb	159	He	1431.25	12.3	8589669.11	0.02	29.5	120.4	6020/DoD□ EPA
Bi	209	No Gas	28381.87	10.7	10079220.95	0.28	29.5	120.4	6020/DoD□ EPA

Continuing Calibration Verification (CCV) Report

Sample Name	CCV
File Name	065_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 17:01:07
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	006CALB.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Fail
Operator	**admin**

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
9	Be	6	No Gas	2042.838	ppb	26.0	165220.51	25	8171.35	89.8	110.2	> +/- 10%
11	B	6	No Gas	2110.101	ppb	24.4	110780.80	25	8440.4	89.8	110.2	> +/- 10%
23	Na	45	He	38015130.818	ppb	19.6	3516908.64	5000	760302.62	89.8	110.2	> +/- 10%
24	Mg	45	He	38277270.098	ppb	20.0	2069653.41	5000	765545.4	89.8	110.2	> +/- 10%
27	Al	45	He	3685872.608	ppb	19.7	75961.67	500	737174.52	89.8	110.2	> +/- 10%
28	Si	45	H2	1397186.882	ppb	27.3	111078.08	500	279437.38	89.8	110.2	> +/- 10%
39	K	45	He	37109309.982	ppb	18.9	1598148.17	5000	742186.2	89.8	110.2	> +/- 10%
40	Ca	45	H2	14149412.248	ppb	28.1	9786070.06	5000	282988.24	89.8	110.2	> +/- 10%
51	V	89	He	231995.652	ppb	7.6	130064.59	25	927982.61	89.8	110.2	> +/- 10%
52	Cr	89	He	233002.554	ppb	7.8	164638.24	25	932010.22	89.8	110.2	> +/- 10%
55	Mn	89	He	230799.413	ppb	8.9	74012.90	25	923197.65	89.8	110.2	> +/- 10%
56	Fe	89	H2	29908036.327	ppb	25.0	32675429.90	5000	598160.73	89.8	110.2	> +/- 10%
59	Co	89	He	233610.162	ppb	7.5	257733.83	25	934440.65	89.8	110.2	> +/- 10%
60	Ni	89	He	233999.595	ppb	8.4	71557.27	25	935998.38	89.8	110.2	> +/- 10%
63	Cu	89	He	235244.356	ppb	7.4	190389.52	25	940977.42	89.8	110.2	> +/- 10%
66	Zn	89	He	236300.991	ppb	7.7	24922.46	25	945203.96	89.8	110.2	> +/- 10%
75	As	89	He	229370.933	ppb	8.0	16925.71	25	917483.73	89.8	110.2	> +/- 10%
78	Se	89	H2	144317.385	ppb	27.1	6738.59	25	577269.54	89.8	110.2	> +/- 10%
88	Sr	89	He	230092.721	ppb	7.8	86198.21	25	920370.88	89.8	110.2	> +/- 10%
95	Mo	89	He	230869.600	ppb	7.2	92919.61	25	923478.4	89.8	110.2	> +/- 10%
107	Ag	89	He	239825.089	ppb	8.3	314691.07	25	959300.36	89.8	110.2	> +/- 10%
111	Cd	89	He	235907.143	ppb	7.0	39135.69	25	943628.57	89.8	110.2	> +/- 10%
118	Sn	159	He	202477.547	ppb	3.5	79314.90	25	809910.19	89.8	110.2	> +/- 10%
121	Sb	159	No Gas	76516.052	ppb	112.2	477641.19	25	306064.21	89.8	110.2	> +/- 10%
137	Ba	159	No Gas	72478.189	ppb	111.1	194193.64	25	289912.76	89.8	110.2	> +/- 10%
182	W	159	No Gas	75135.676	ppb	110.3	338543.05	25	300542.7	89.8	110.2	> +/- 10%
205	Tl	209	No Gas	8421.790	ppb	46.6	777357.36	25	33687.16	89.8	110.2	> +/- 10%
208	Pb	209	No Gas	8763.793	ppb	49.1	1146842.03	25	35055.17	89.8	110.2	> +/- 10%
232	Th	209	No Gas	7942.990	ppb	50.0	975740.51	25	31771.96	89.8	110.2	> +/- 10%
238	U	209	No Gas	8227.008	ppb	47.5	1015898.46	25	32908.03	89.8	110.2	> +/- 10%

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	63724.36	22.0	5961075.87	1.07	29.5	120.4	6020/DoD□ EPA
Sc	45	No Gas	21022.33	70.0	13015983.55	0.16	29.5	120.4	6020/DoD□ EPA
Sc	45	H2	523.93	14.3	1430290.9	0.04	29.5	120.4	6020/DoD□ EPA
Sc	45	He	63.33	18.2	438046.17	0.01	29.5	120.4	6020/DoD□ EPA
Ge	72	No Gas	5751.29	51.7	2458564.83	0.23	29.5	120.4	6020/DoD□ EPA
Ge	72	H2	256.95	9.8	491199	0.05	29.5	120.4	6020/DoD□ EPA
Ge	72	He	187.41	10.6	255273.97	0.07	29.5	120.4	6020/DoD□ EPA
Y	89	H2	1294.85	12.0	7442438.64	0.02	29.5	120.4	6020/DoD□ EPA
Y	89	He	246.68	9.5	2167302.66	0.01	29.5	120.4	6020/DoD□ EPA
Tb	159	No Gas	19293.47	114.1	21871384.4	0.09	29.5	120.4	6020/DoD□ EPA
Tb	159	He	1154.54	4.5	8589669.11	0.01	29.5	120.4	6020/DoD□ EPA
Bi	209	No Gas	31511.98	36.0	10079220.95	0.31	29.5	120.4	6020/DoD□ EPA

Continuing Calibration Blank (CCB) Report

Sample Name	CCB
File Name	066_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 17:03:36
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	006CALB.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Fail
Operator	**admin**

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
9	Be	6	No Gas	0.124	ppb	81.6	1173.45	0.2	Failed DoD
11	B	6	No Gas	0.625	ppb	24.7	8302.70	4	
23	Na	45	He	8206.648	ppb	171.0	24728.82	200	Fail All Methods□ Failed DoD
24	Mg	45	He	388.379	ppb	170.8	684.51	20	Fail All Methods□ Failed DoD
27	Al	45	He	151.314	ppb	166.9	275.57	20	Fail All Methods□ Failed DoD
28	Si	45	H2	38.311	ppb	42.5	6902.75	100	
39	K	45	He	14719.560	ppb	171.4	20497.39	200	Fail All Methods□ Failed DoD
40	Ca	45	H2	8.243	ppb	102.5	14517.59	20	
51	V	89	He	12.669	ppb	172.3	210.01	1	Fail All Methods□ Failed DoD
52	Cr	89	He	24.047	ppb	172.0	611.24	1	Fail All Methods□ Failed DoD
55	Mn	89	He	13.010	ppb	170.3	202.63	0.4	Fail All Methods□ Failed DoD
56	Fe	89	H2	12.541	ppb	82.5	56904.92	20	Failed DoD
59	Co	89	He	3.135	ppb	172.1	75.56	0.2	Fail All Methods□ Failed DoD
60	Ni	89	He	4.676	ppb	170.5	80.00	0.4	Fail All Methods□ Failed DoD
63	Cu	89	He	24.567	ppb	171.2	771.16	0.6	Fail All Methods□ Failed DoD
66	Zn	89	He	12.012	ppb	160.2	368.91	2	Fail All Methods□ Failed DoD
75	As	89	He	42.245	ppb	171.6	85.68	1	Fail All Methods□ Failed DoD
78	Se	89	H2	1.249	ppb	29.6	269.16	1	Fail All Methods□ Failed DoD
88	Sr	89	He	4.365	ppb	170.5	85.56	1	Fail All Methods□ Failed DoD
95	Mo	89	He	252.436	ppb	171.4	2884.88	1	Fail All Methods□ Failed DoD
107	Ag	89	He	2.718	ppb	171.4	113.34	0.2	Fail All Methods□ Failed DoD
111	Cd	89	He	1.037	ppb	168.5	10.00	0.2	Fail All Methods□ Failed DoD
118	Sn	159	He	57.559	ppb	171.3	670.05	1	Fail All Methods□ Failed DoD
121	Sb	159	No Gas	0.140	ppb	70.8	3387.73	0.2	Failed DoD
137	Ba	159	No Gas	0.101	ppb	68.2	1121.32	0.4	
182	W	159	No Gas	2.586	ppb	16.2	45750.75	1	Fail All Methods□ Failed DoD
205	Tl	209	No Gas	0.148	ppb	78.1	5988.76	0.2	Failed DoD
208	Pb	209	No Gas	0.094	ppb	82.2	8056.92	0.2	
232	Th	209	No Gas	0.500	ppb	14.3	27036.65	1	Failed DoD
238	U	209	No Gas	0.208	ppb	78.7	11096.75	0.2	Fail All Methods□ Failed DoD

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	7126626.79	7.5	5961075.87	119.55	29.5	120.4	
Sc	45	No Gas	13871926.54	4.5	13015983.55	106.58	29.5	120.4	
Sc	45	H2	1188552.66	38.2	1430290.9	83.1	29.5	120.4	
Sc	45	He	150706.14	130.6	438046.17	34.4	29.5	120.4	EPA
Ge	72	No Gas	2681712.74	5.9	2458564.83	109.08	29.5	120.4	
Ge	72	H2	395431.49	42.8	491199	80.5	29.5	120.4	
Ge	72	He	92191.57	125.7	255273.97	36.11	29.5	120.4	EPA
Y	89	H2	6246286.17	38.2	7442438.64	83.93	29.5	120.4	
Y	89	He	753453.59	130.0	2167302.66	34.76	29.5	120.4	EPA
Tb	159	No Gas	25359849.62	5.1	21871384.4	115.95	29.5	120.4	
Tb	159	He	3161803.79	129.1	8589669.11	36.81	29.5	120.4	EPA
Bi	209	No Gas	12164580.61	7.4	10079220.95	120.69	29.5	120.4	6020/DoD

Sample Report

Sample Name SO3505-002

File Name 067SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 17:06:06

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.399	ppb	12.8	595.59	100	
11	B	6	No Gas	53.436	ppb	10.0	54301.20	1000	
23	Na	45	He	92519.231	ppb	0.6	11206135.84	200000	
24	Mg	45	He	9536.624	ppb	0.7	674518.26	200000	
27	Al	45	He	13018.079	ppb	0.9	350878.78	200000	
28	Si	45	H2	15862.292	ppb	2.2	676185.17	10000	
39	K	45	He	3019.703	ppb	1.1	189455.20	200000	
40	Ca	45	H2	33587.078	ppb	0.9	12466688.29	200000	
51	V	89	He	20.002	ppb	0.9	19023.44	1000	
52	Cr	89	He	23.085	ppb	1.0	28120.71	2000	
55	Mn	89	He	1232.307	ppb	0.5	662170.04	2000	
56	Fe	89	H2	30091.455	ppb	1.4	37493620.63	100000	
59	Co	89	He	17.374	ppb	1.0	32092.23	1000	
60	Ni	89	He	28.952	ppb	1.4	14887.28	1000	
63	Cu	89	He	26.293	ppb	1.6	36171.04	2000	
66	Zn	89	He	58.456	ppb	3.1	10613.28	2000	
75	As	89	He	14.279	ppb	2.2	1782.65	1000	
78	Se	89	H2	1.225	ppb	5.9	69.33	1000	
88	Sr	89	He	147.916	ppb	0.6	92828.65	2000	
95	Mo	89	He	2.503	ppb	3.4	1824.63	1000	
107	Ag	89	He	0.046	ppb	11.4	130.01	100	
111	Cd	89	He	0.147	ppb	8.2	42.59	1000	
118	Sn	159	He	0.985	ppb	4.4	886.73	1000	
121	Sb	159	No Gas	0.592	ppb	7.4	2386.24	1000	
137	Ba	159	No Gas	73.386	ppb	7.9	119138.51	2000	
182	W	159	No Gas	4.827	ppb	5.8	15870.83	1000	
205	Tl	209	No Gas	0.171	ppb	12.1	1221.44	1000	
208	Pb	209	No Gas	11.798	ppb	9.2	110739.84	2000	
232	Th	209	No Gas	13.084	ppb	11.5	113504.37	1000	
238	U	209	No Gas	0.705	ppb	13.4	6098.34	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5653550.96	5.9	5961075.87	94.84	29.5	120.4	
Sc	45	No Gas	11545726.36	6.0	13015983.55	88.7	29.5	120.4	
Sc	45	H2	1368254.98	2.2	1430290.9	95.66	29.5	120.4	
Sc	45	He	404116.57	1.0	438046.17	92.25	29.5	120.4	
Ge	72	No Gas	2244150.22	4.9	2458564.83	91.28	29.5	120.4	
Ge	72	H2	455225.40	0.7	491199	92.68	29.5	120.4	
Ge	72	He	238121.14	0.8	255273.97	93.28	29.5	120.4	
Y	89	H2	7240227.78	0.9	7442438.64	97.28	29.5	120.4	
Y	89	He	2054957.09	0.7	2167302.66	94.82	29.5	120.4	
Tb	159	No Gas	20929883.30	7.0	21871384.4	95.7	29.5	120.4	
Tb	159	He	8360521.61	0.2	8589669.11	97.33	29.5	120.4	
Bi	209	No Gas	9947710.59	7.4	10079220.95	98.7	29.5	120.4	

Sample Report

Sample Name SO3505-002A

File Name 068SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 17:08:39

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	10.740	ppb	12.0	14981.56	100	
11	B	6	No Gas	250.338	ppb	12.1	228385.18	1000	
23	Na	45	He	100230.055	ppb	0.6	12257873.90	200000	
24	Mg	45	He	10343.605	ppb	1.0	738759.70	200000	
27	Al	45	He	13729.796	ppb	0.4	373695.62	200000	
28	Si	45	H2	18739.071	ppb	1.3	800958.65	10000	
39	K	45	He	14063.571	ppb	0.9	818652.71	200000	
40	Ca	45	H2	34165.940	ppb	1.3	12713799.95	200000	
51	V	89	He	71.326	ppb	0.4	66225.45	1000	
52	Cr	89	He	74.747	ppb	0.8	87954.17	2000	
55	Mn	89	He	1249.871	ppb	1.0	661930.91	2000	
56	Fe	89	H2	30876.052	ppb	1.3	38367509.49	100000	
59	Co	89	He	28.147	ppb	0.9	51239.12	1000	
60	Ni	89	He	49.161	ppb	1.2	24876.25	1000	
63	Cu	89	He	57.519	ppb	1.1	77342.47	2000	
66	Zn	89	He	162.618	ppb	2.4	28582.35	2000	
75	As	89	He	65.334	ppb	0.7	7974.83	1000	
78	Se	89	H2	49.999	ppb	2.3	2662.47	1000	
88	Sr	89	He	195.369	ppb	1.1	120825.61	2000	
95	Mo	89	He	54.880	ppb	0.7	36570.87	1000	
107	Ag	89	He	11.299	ppb	2.0	24501.77	100	
111	Cd	89	He	11.002	ppb	0.6	3012.22	1000	
118	Sn	159	He	51.522	ppb	1.3	29436.29	1000	
121	Sb	159	No Gas	12.189	ppb	16.2	44747.94	1000	
137	Ba	159	No Gas	97.375	ppb	16.4	150260.26	2000	
182	W	159	No Gas	62.334	ppb	15.7	163009.30	1000	
205	Tl	209	No Gas	12.023	ppb	13.6	72915.61	1000	
208	Pb	209	No Gas	23.623	ppb	13.1	207149.22	2000	
232	Th	209	No Gas	22.634	ppb	11.7	184993.29	1000	
238	U	209	No Gas	12.400	ppb	13.4	101067.94	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5364195.73	7.2	5961075.87	89.99	29.5	120.4	
Sc	45	No Gas	11089193.07	10.7	13015983.55	85.2	29.5	120.4	
Sc	45	H2	1371629.94	1.3	1430290.9	95.9	29.5	120.4	
Sc	45	He	408080.24	0.7	438046.17	93.16	29.5	120.4	
Ge	72	No Gas	2144752.28	9.1	2458564.83	87.24	29.5	120.4	
Ge	72	H2	451905.78	1.1	491199	92	29.5	120.4	
Ge	72	He	236803.38	1.1	255273.97	92.76	29.5	120.4	
Y	89	H2	7222041.58	1.7	7442438.64	97.04	29.5	120.4	
Y	89	He	2025368.13	0.5	2167302.66	93.45	29.5	120.4	
Tb	159	No Gas	20068106.37	10.8	21871384.4	91.76	29.5	120.4	
Tb	159	He	8318240.85	1.4	8589669.11	96.84	29.5	120.4	
Bi	209	No Gas	9415554.49	8.7	10079220.95	93.42	29.5	120.4	

Sample Report

Sample Name SO3505-002L

File Name 069SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 17:11:06

Sample Type Sample

Total Dilution 25.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.652	ppb	19.4	206.67	100	
11	B	6	No Gas	70.698	ppb	6.2	17485.57	1000	
23	Na	45	He	93904.764	ppb	2.1	2338651.98	200000	
24	Mg	45	He	9613.395	ppb	1.3	139090.18	200000	
27	Al	45	He	13134.977	ppb	1.0	72479.36	200000	
28	Si	45	H2	16091.954	ppb	1.2	139487.92	10000	
39	K	45	He	3148.456	ppb	4.4	56238.05	200000	
40	Ca	45	H2	34422.146	ppb	1.0	2592074.96	200000	
51	V	89	He	20.812	ppb	5.1	4160.77	1000	
52	Cr	89	He	24.350	ppb	2.4	6581.03	2000	
55	Mn	89	He	1275.819	ppb	0.7	137365.91	2000	
56	Fe	89	H2	30657.904	ppb	1.5	7788998.10	100000	
59	Co	89	He	17.445	ppb	4.9	6457.52	1000	
60	Ni	89	He	30.897	ppb	2.0	3229.38	1000	
63	Cu	89	He	27.563	ppb	1.3	8032.60	2000	
66	Zn	89	He	63.416	ppb	2.9	2534.76	2000	
75	As	89	He	16.133	ppb	10.6	417.72	1000	
78	Se	89	H2	7.323	ppb	6.0	83.67	1000	
88	Sr	89	He	152.298	ppb	2.0	19185.07	2000	
95	Mo	89	He	7.400	ppb	11.3	1136.76	1000	
107	Ag	89	He	0.120	ppb	15.5	82.23	100	
111	Cd	89	He	0.249	ppb	64.0	15.56	1000	
118	Sn	159	He	1.176	ppb	9.7	471.14	1000	
121	Sb	159	No Gas	1.656	ppb	9.6	1445.02	1000	
137	Ba	159	No Gas	71.866	ppb	7.3	24537.03	2000	
182	W	159	No Gas	21.161	ppb	9.5	14958.80	1000	
205	Tl	209	No Gas	0.416	ppb	24.4	694.13	1000	
208	Pb	209	No Gas	11.602	ppb	10.7	24784.12	2000	
232	Th	209	No Gas	5.361	ppb	3.0	10282.52	1000	
238	U	209	No Gas	0.965	ppb	26.3	1768.81	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5797555.69	3.5	5961075.87	97.26	29.5	120.4	
Sc	45	No Gas	12131728.07	3.6	13015983.55	93.21	29.5	120.4	
Sc	45	H2	1385393.11	0.5	1430290.9	96.86	29.5	120.4	
Sc	45	He	413131.94	1.2	438046.17	94.31	29.5	120.4	
Ge	72	No Gas	2361317.09	2.6	2458564.83	96.04	29.5	120.4	
Ge	72	H2	469032.29	1.3	491199	95.49	29.5	120.4	
Ge	72	He	243869.69	0.8	255273.97	95.53	29.5	120.4	
Y	89	H2	7378854.90	0.9	7442438.64	99.15	29.5	120.4	
Y	89	He	2058024.76	1.3	2167302.66	94.96	29.5	120.4	
Tb	159	No Gas	21901474.81	2.9	21871384.4	100.14	29.5	120.4	
Tb	159	He	8543580.63	1.0	8589669.11	99.46	29.5	120.4	
Bi	209	No Gas	10444313.22	3.9	10079220.95	103.62	29.5	120.4	

Sample Report

Sample Name SO3505-002P

File Name 070SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 17:13:31

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	38.175	ppb	7.7	58257.37	100	
11	B	6	No Gas	421.358	ppb	8.4	418172.47	1000	
23	Na	45	He	85182.326	ppb	0.5	10446919.05	200000	
24	Mg	45	He	12629.080	ppb	0.3	904350.55	200000	
27	Al	45	He	13806.454	ppb	0.7	376739.22	200000	
28	Si	45	H2	16531.598	ppb	1.9	701397.93	10000	
39	K	45	He	12202.640	ppb	0.4	714769.65	200000	
40	Ca	45	H2	31686.779	ppb	0.8	11705843.02	200000	
51	V	89	He	451.991	ppb	0.8	423106.73	1000	
52	Cr	89	He	195.557	ppb	0.7	231423.34	2000	
55	Mn	89	He	1491.810	ppb	0.1	799087.88	2000	
56	Fe	89	H2	26001.956	ppb	1.9	32561721.41	100000	
59	Co	89	He	461.220	ppb	1.3	849041.19	1000	
60	Ni	89	He	466.429	ppb	1.6	238181.93	1000	
63	Cu	89	He	246.553	ppb	0.6	333496.17	2000	
66	Zn	89	He	485.986	ppb	0.8	85813.94	2000	
75	As	89	He	100.216	ppb	0.4	12361.84	1000	
78	Se	89	H2	86.369	ppb	1.9	4630.89	1000	
88	Sr	89	He	551.062	ppb	0.5	344593.76	2000	
95	Mo	89	He	92.390	ppb	0.6	62174.34	1000	
107	Ag	89	He	45.250	ppb	1.4	99149.52	100	
111	Cd	89	He	221.369	ppb	0.1	61266.56	1000	
118	Sn	159	He	420.916	ppb	0.4	239150.60	1000	
121	Sb	159	No Gas	81.761	ppb	7.0	327894.48	1000	
137	Ba	159	No Gas	1503.183	ppb	7.4	2536607.25	2000	
182	W	159	No Gas	88.921	ppb	7.3	252976.31	1000	
205	Tl	209	No Gas	87.988	ppb	6.7	585986.48	1000	
208	Pb	209	No Gas	95.018	ppb	6.5	909387.90	2000	
232	Th	209	No Gas	88.852	ppb	7.4	797246.42	1000	
238	U	209	No Gas	87.165	ppb	7.6	781446.34	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5850905.59	2.3	5961075.87	98.15	29.5	120.4	
Sc	45	No Gas	12179581.55	2.4	13015983.55	93.57	29.5	120.4	
Sc	45	H2	1361581.24	1.1	1430290.9	95.2	29.5	120.4	
Sc	45	He	409131.48	1.0	438046.17	93.4	29.5	120.4	
Ge	72	No Gas	2325700.18	1.7	2458564.83	94.6	29.5	120.4	
Ge	72	H2	457695.69	1.3	491199	93.18	29.5	120.4	
Ge	72	He	238566.79	0.9	255273.97	93.46	29.5	120.4	
Y	89	H2	7276802.07	0.4	7442438.64	97.77	29.5	120.4	
Y	89	He	2048471.20	1.2	2167302.66	94.52	29.5	120.4	
Tb	159	No Gas	21746713.15	3.4	21871384.4	99.43	29.5	120.4	
Tb	159	He	8352893.49	0.7	8589669.11	97.24	29.5	120.4	
Bi	209	No Gas	10292013.52	1.7	10079220.95	102.11	29.5	120.4	

Sample Report

Sample Name SO3505-002S

File Name 071SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 17:16:02

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	43.537	ppb	6.9	66219.60	100	
11	B	6	No Gas	495.893	ppb	8.5	489823.08	1000	
23	Na	45	He	101859.655	ppb	1.0	12384157.37	200000	
24	Mg	45	He	15173.877	ppb	0.6	1077405.91	200000	
27	Al	45	He	17199.342	ppb	0.6	465356.80	200000	
28	Si	45	H2	19656.978	ppb	2.0	842365.94	10000	
39	K	45	He	13919.197	ppb	1.5	805678.08	200000	
40	Ca	45	H2	37296.882	ppb	0.2	13917890.49	200000	
51	V	89	He	535.835	ppb	0.5	497587.14	1000	
52	Cr	89	He	232.751	ppb	0.3	273104.90	2000	
55	Mn	89	He	1775.367	ppb	0.5	943386.15	2000	
56	Fe	89	H2	29954.076	ppb	0.4	37571624.05	100000	
59	Co	89	He	544.737	ppb	0.3	994887.47	1000	
60	Ni	89	He	547.127	ppb	0.7	277183.13	1000	
63	Cu	89	He	290.776	ppb	0.9	390087.32	2000	
66	Zn	89	He	579.888	ppb	0.9	101526.41	2000	
75	As	89	He	118.193	ppb	0.8	14461.39	1000	
78	Se	89	H2	105.162	ppb	1.6	5646.89	1000	
88	Sr	89	He	660.096	ppb	0.4	409492.42	2000	
95	Mo	89	He	111.702	ppb	1.4	74543.87	1000	
107	Ag	89	He	53.119	ppb	1.1	115465.43	100	
111	Cd	89	He	264.770	ppb	0.6	72693.14	1000	
118	Sn	159	He	503.977	ppb	0.7	282683.31	1000	
121	Sb	159	No Gas	95.995	ppb	6.4	384834.74	1000	
137	Ba	159	No Gas	1723.362	ppb	6.6	2906877.03	2000	
182	W	159	No Gas	113.895	ppb	7.1	323049.68	1000	
205	Tl	209	No Gas	106.213	ppb	7.3	689754.05	1000	
208	Pb	209	No Gas	113.544	ppb	7.5	1059185.64	2000	
232	Th	209	No Gas	111.665	ppb	4.8	976724.82	1000	
238	U	209	No Gas	97.526	ppb	2.4	852753.07	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5824685.89	2.5	5961075.87	97.71	29.5	120.4	
Sc	45	No Gas	12269106.38	2.2	13015983.55	94.26	29.5	120.4	
Sc	45	H2	1375474.20	0.9	1430290.9	96.17	29.5	120.4	
Sc	45	He	405690.18	0.5	438046.17	92.61	29.5	120.4	
Ge	72	No Gas	2332887.91	1.9	2458564.83	94.89	29.5	120.4	
Ge	72	H2	450966.68	1.0	491199	91.81	29.5	120.4	
Ge	72	He	236105.26	0.5	255273.97	92.49	29.5	120.4	
Y	89	H2	7288839.62	0.8	7442438.64	97.94	29.5	120.4	
Y	89	He	2032198.01	0.9	2167302.66	93.77	29.5	120.4	
Tb	159	No Gas	21723480.09	2.3	21871384.4	99.32	29.5	120.4	
Tb	159	He	8248216.54	0.6	8589669.11	96.02	29.5	120.4	
Bi	209	No Gas	10034818.32	1.3	10079220.95	99.56	29.5	120.4	

Sample Report

Sample Name RINSE

File Name 072SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 17:18:27

Sample Type Sample

Total Dilution 1.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.038	ppb	68.3	294.46	100	
11	B	6	No Gas	1.931	ppb	23.1	12997.47	1000	
23	Na	45	He	20.819	ppb	6.8	29553.14	200000	
24	Mg	45	He	1.046	ppb	33.6	468.93	200000	
27	Al	45	He	2.146	ppb	54.5	414.59	200000	
28	Si	45	H2	27.793	ppb	7.6	6719.90	10000	
39	K	45	He	4.957	ppb	26.9	21394.70	200000	
40	Ca	45	H2	3.821	ppb	2.4	12742.80	200000	
51	V	89	He	0.034	ppb	13.9	406.69	1000	
52	Cr	89	He	0.009	ppb	22.1	862.54	2000	
55	Mn	89	He	0.141	ppb	8.4	447.26	2000	
56	Fe	89	H2	4.077	ppb	9.0	30300.91	100000	
59	Co	89	He	0.024	ppb	12.7	231.13	1000	
60	Ni	89	He	0.037	ppb	6.2	152.23	1000	
63	Cu	89	He	0.202	ppb	11.1	1912.42	2000	
66	Zn	89	He	0.198	ppb	25.1	465.58	2000	
75	As	89	He	0.090	ppb	8.0	74.01	1000	
78	Se	89	H2	0.505	ppb	6.2	141.99	1000	
88	Sr	89	He	0.030	ppb	25.5	146.67	2000	
95	Mo	89	He	0.379	ppb	6.4	1412.35	1000	
107	Ag	89	He	0.005	ppb	42.6	78.89	100	
111	Cd	89	He	0.012	ppb	41.0	18.89	1000	
118	Sn	159	He	0.100	ppb	11.3	623.37	1000	
121	Sb	159	No Gas	0.103	ppb	51.9	2115.90	1000	
137	Ba	159	No Gas	1.242	ppb	76.2	10335.01	2000	
182	W	159	No Gas	1.574	ppb	12.0	24286.98	1000	
205	Tl	209	No Gas	0.091	ppb	67.2	3053.94	1000	
208	Pb	209	No Gas	0.067	ppb	73.5	5303.17	2000	
232	Th	209	No Gas	0.489	ppb	9.8	21706.68	1000	
238	U	209	No Gas	0.129	ppb	76.2	5588.20	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5759678.85	5.6	5961075.87	96.62	29.5	120.4	
Sc	45	No Gas	11638186.73	7.1	13015983.55	89.41	29.5	120.4	
Sc	45	H2	1396055.90	0.5	1430290.9	97.61	29.5	120.4	
Sc	45	He	411809.65	0.5	438046.17	94.01	29.5	120.4	
Ge	72	No Gas	2289971.66	5.3	2458564.83	93.14	29.5	120.4	
Ge	72	H2	476255.69	0.5	491199	96.96	29.5	120.4	
Ge	72	He	242582.47	1.0	255273.97	95.03	29.5	120.4	
Y	89	H2	7406834.12	0.8	7442438.64	99.52	29.5	120.4	
Y	89	He	2050475.70	0.5	2167302.66	94.61	29.5	120.4	
Tb	159	No Gas	21125172.60	7.4	21871384.4	96.59	29.5	120.4	
Tb	159	He	8506312.86	0.5	8589669.11	99.03	29.5	120.4	
Bi	209	No Gas	9965924.43	5.5	10079220.95	98.88	29.5	120.4	

Sample Report

Sample Name SO3505-003

File Name 073SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 17:20:58

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.032	ppb	25.6	53.34	100	
11	B	6	No Gas	54.946	ppb	12.5	53203.48	1000	
23	Na	45	He	133787.202	ppb	0.8	16347744.46	200000	
24	Mg	45	He	4774.042	ppb	0.6	340847.75	200000	
27	Al	45	He	32.031	ppb	3.6	990.08	200000	
28	Si	45	H2	4341.173	ppb	1.3	183746.76	10000	
39	K	45	He	1996.696	ppb	0.7	133139.39	200000	
40	Ca	45	H2	40664.835	ppb	2.2	14944012.28	200000	
51	V	89	He	0.361	ppb	14.4	578.92	1000	
52	Cr	89	He	0.843	ppb	3.7	1779.13	2000	
55	Mn	89	He	431.009	ppb	0.9	228006.31	2000	
56	Fe	89	H2	83.517	ppb	0.5	106780.82	100000	
59	Co	89	He	0.553	ppb	10.9	1011.22	1000	
60	Ni	89	He	1.421	ppb	9.8	774.50	1000	
63	Cu	89	He	1.291	ppb	8.1	2263.60	2000	
66	Zn	89	He	5.827	ppb	5.0	1300.11	2000	
75	As	89	He	0.537	ppb	13.9	83.34	1000	
78	Se	89	H2	0.945	ppb	9.9	53.67	1000	
88	Sr	89	He	181.031	ppb	1.0	111817.58	2000	
95	Mo	89	He	1.066	ppb	6.9	843.39	1000	
107	Ag	89	He	0.021	ppb	37.7	74.45	100	
111	Cd	89	He	0.062	ppb	30.8	18.52	1000	
118	Sn	159	He	0.669	ppb	10.4	707.82	1000	
121	Sb	159	No Gas	0.292	ppb	7.9	1221.42	1000	
137	Ba	159	No Gas	22.875	ppb	6.7	36716.65	2000	
182	W	159	No Gas	2.788	ppb	22.9	10145.29	1000	
205	Tl	209	No Gas	0.054	ppb	35.8	453.85	1000	
208	Pb	209	No Gas	0.214	ppb	37.4	4068.14	2000	
232	Th	209	No Gas	5.470	ppb	15.7	46351.78	1000	
238	U	209	No Gas	0.108	ppb	19.8	911.07	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5415779.55	8.6	5961075.87	90.85	29.5	120.4	
Sc	45	No Gas	11461684.51	11.5	13015983.55	88.06	29.5	120.4	
Sc	45	H2	1354777.65	1.4	1430290.9	94.72	29.5	120.4	
Sc	45	He	407844.12	0.8	438046.17	93.11	29.5	120.4	
Ge	72	No Gas	2228675.90	10.4	2458564.83	90.65	29.5	120.4	
Ge	72	H2	455446.04	0.2	491199	92.72	29.5	120.4	
Ge	72	He	238819.10	0.7	255273.97	93.55	29.5	120.4	
Y	89	H2	7141180.30	0.5	7442438.64	95.95	29.5	120.4	
Y	89	He	2022695.42	0.9	2167302.66	93.33	29.5	120.4	
Tb	159	No Gas	20706914.00	11.2	21871384.4	94.68	29.5	120.4	
Tb	159	He	8370365.64	0.8	8589669.11	97.45	29.5	120.4	
Bi	209	No Gas	9724367.05	10.2	10079220.95	96.48	29.5	120.4	

Sample Report

Sample Name SO3505-004

File Name 074SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 17:23:30

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.023	ppb	41.2	44.45	100	
11	B	6	No Gas	49.190	ppb	9.6	52483.45	1000	
23	Na	45	He	137738.006	ppb	0.2	16786049.62	200000	
24	Mg	45	He	4871.289	ppb	0.9	346879.81	200000	
27	Al	45	He	31.793	ppb	5.4	981.19	200000	
28	Si	45	H2	4327.823	ppb	0.5	182820.42	10000	
39	K	45	He	1967.404	ppb	0.2	131134.88	200000	
40	Ca	45	H2	39939.012	ppb	0.5	14648424.92	200000	
51	V	89	He	0.373	ppb	13.4	591.15	1000	
52	Cr	89	He	0.764	ppb	3.4	1691.80	2000	
55	Mn	89	He	447.520	ppb	0.9	237244.22	2000	
56	Fe	89	H2	55.311	ppb	1.1	72554.92	100000	
59	Co	89	He	0.570	ppb	11.4	1044.56	1000	
60	Ni	89	He	1.378	ppb	1.7	754.49	1000	
63	Cu	89	He	1.038	ppb	6.9	1931.31	2000	
66	Zn	89	He	6.058	ppb	10.5	1342.34	2000	
75	As	89	He	0.478	ppb	4.8	76.34	1000	
78	Se	89	H2	0.642	ppb	1.8	38.00	1000	
88	Sr	89	He	178.388	ppb	0.4	110420.28	2000	
95	Mo	89	He	0.684	ppb	17.7	591.15	1000	
107	Ag	89	He	0.015	ppb	53.1	62.23	100	
111	Cd	89	He	0.053	ppb	16.5	16.30	1000	
118	Sn	159	He	0.538	ppb	8.7	632.26	1000	
121	Sb	159	No Gas	0.261	ppb	6.5	1188.05	1000	
137	Ba	159	No Gas	20.250	ppb	10.7	35270.25	2000	
182	W	159	No Gas	1.205	ppb	12.4	6512.25	1000	
205	Tl	209	No Gas	0.034	ppb	61.3	367.08	1000	
208	Pb	209	No Gas	0.130	ppb	12.9	3654.30	2000	
232	Th	209	No Gas	0.462	ppb	14.5	4799.64	1000	
238	U	209	No Gas	0.102	ppb	18.8	944.43	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5896589.66	3.2	5961075.87	98.92	29.5	120.4	
Sc	45	No Gas	12401165.00	1.8	13015983.55	95.28	29.5	120.4	
Sc	45	H2	1351984.34	1.3	1430290.9	94.53	29.5	120.4	
Sc	45	He	406793.69	0.8	438046.17	92.87	29.5	120.4	
Ge	72	No Gas	2392791.43	1.9	2458564.83	97.32	29.5	120.4	
Ge	72	H2	452788.56	0.7	491199	92.18	29.5	120.4	
Ge	72	He	238516.56	0.7	255273.97	93.44	29.5	120.4	
Y	89	H2	7184488.72	1.3	7442438.64	96.53	29.5	120.4	
Y	89	He	2027035.30	1.1	2167302.66	93.53	29.5	120.4	
Tb	159	No Gas	22381240.77	2.0	21871384.4	102.33	29.5	120.4	
Tb	159	He	8351682.79	0.3	8589669.11	97.23	29.5	120.4	
Bi	209	No Gas	10592551.76	1.6	10079220.95	105.09	29.5	120.4	

Sample Report

Sample Name SO3505-005

File Name 075SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 17:25:55

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.013	ppb	69.7	30.00	100	
11	B	6	No Gas	50.751	ppb	9.5	54128.49	1000	
23	Na	45	He	8738.260	ppb	1.3	1067799.80	200000	
24	Mg	45	He	6346.362	ppb	0.4	446643.78	200000	
27	Al	45	He	41.522	ppb	8.0	1230.11	200000	
28	Si	45	H2	7249.882	ppb	1.4	310158.81	10000	
39	K	45	He	3956.306	ppb	0.7	240920.76	200000	
40	Ca	45	H2	132139.452	ppb	0.9	49142074.27	200000	
51	V	89	He	0.388	ppb	3.3	597.81	1000	
52	Cr	89	He	0.656	ppb	9.0	1545.14	2000	
55	Mn	89	He	265.897	ppb	0.7	139165.38	2000	
56	Fe	89	H2	6544.360	ppb	1.9	8089000.02	100000	
59	Co	89	He	1.252	ppb	3.3	2258.11	1000	
60	Ni	89	He	1.268	ppb	5.0	690.04	1000	
63	Cu	89	He	1.204	ppb	1.6	2125.78	2000	
66	Zn	89	He	2.852	ppb	17.0	774.50	2000	
75	As	89	He	3.429	ppb	3.2	430.39	1000	
78	Se	89	H2	0.526	ppb	12.9	31.83	1000	
88	Sr	89	He	578.236	ppb	0.7	353175.23	2000	
95	Mo	89	He	0.615	ppb	8.7	538.92	1000	
107	Ag	89	He	0.010	ppb	8.1	51.11	100	
111	Cd	89	He	0.062	ppb	26.9	18.52	1000	
118	Sn	159	He	0.393	ppb	19.6	550.03	1000	
121	Sb	159	No Gas	0.474	ppb	6.0	2095.84	1000	
137	Ba	159	No Gas	21.655	ppb	8.5	38291.70	2000	
182	W	159	No Gas	0.866	ppb	2.1	5617.51	1000	
205	Tl	209	No Gas	0.032	ppb	35.7	353.73	1000	
208	Pb	209	No Gas	0.194	ppb	13.9	4311.81	2000	
232	Th	209	No Gas	0.238	ppb	12.9	2756.72	1000	
238	U	209	No Gas	0.685	ppb	6.1	6365.47	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5901360.58	2.7	5961075.87	99	29.5	120.4	
Sc	45	No Gas	12463939.75	1.4	13015983.55	95.76	29.5	120.4	
Sc	45	H2	1371236.79	0.9	1430290.9	95.87	29.5	120.4	
Sc	45	He	402060.30	0.5	438046.17	91.78	29.5	120.4	
Ge	72	No Gas	2392355.11	2.2	2458564.83	97.31	29.5	120.4	
Ge	72	H2	450964.02	1.9	491199	91.81	29.5	120.4	
Ge	72	He	236529.38	0.4	255273.97	92.66	29.5	120.4	
Y	89	H2	7179677.50	0.2	7442438.64	96.47	29.5	120.4	
Y	89	He	2000757.59	0.2	2167302.66	92.32	29.5	120.4	
Tb	159	No Gas	22716151.05	1.3	21871384.4	103.86	29.5	120.4	
Tb	159	He	8347614.74	0.6	8589669.11	97.18	29.5	120.4	
Bi	209	No Gas	10665000.56	2.1	10079220.95	105.81	29.5	120.4	

Sample Report

Sample Name RINSE

File Name 076SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 17:28:23

Sample Type Sample

Total Dilution 1.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.004	ppb	65.4	43.33	100	
11	B	6	No Gas	0.363	ppb	10.8	5911.42	1000	
23	Na	45	He	19.399	ppb	3.9	28590.04	200000	
24	Mg	45	He	0.617	ppb	18.6	313.36	200000	
27	Al	45	He	0.400	ppb	6.6	174.46	200000	
28	Si	45	H2	23.668	ppb	23.8	5607.43	10000	
39	K	45	He	4.911	ppb	47.5	21314.64	200000	
40	Ca	45	H2	8.865	ppb	6.0	21983.86	200000	
51	V	89	He	-0.008	ppb	N/A	208.90	1000	
52	Cr	89	He	-0.010	ppb	N/A	751.22	2000	
55	Mn	89	He	0.083	ppb	8.4	291.28	2000	
56	Fe	89	H2	1.354	ppb	18.5	12854.13	100000	
59	Co	89	He	0.006	ppb	49.3	62.23	1000	
60	Ni	89	He	0.025	ppb	23.4	123.34	1000	
63	Cu	89	He	0.192	ppb	2.6	1841.30	2000	
66	Zn	89	He	0.178	ppb	30.0	446.69	2000	
75	As	89	He	0.020	ppb	34.3	30.67	1000	
78	Se	89	H2	0.017	ppb	30.0	8.67	1000	
88	Sr	89	He	0.033	ppb	8.1	157.79	2000	
95	Mo	89	He	0.074	ppb	3.0	385.57	1000	
107	Ag	89	He	0.002	ppb	87.6	53.33	100	
111	Cd	89	He	0.003	ppb	78.5	5.55	1000	
118	Sn	159	He	0.018	ppb	105.1	384.46	1000	
121	Sb	159	No Gas	0.014	ppb	21.2	407.13	1000	
137	Ba	159	No Gas	0.051	ppb	84.2	590.70	2000	
182	W	159	No Gas	0.099	ppb	24.7	4609.38	1000	
205	Tl	209	No Gas	0.003	ppb	59.6	250.28	1000	
208	Pb	209	No Gas	-0.009	ppb	N/A	1982.30	2000	
232	Th	209	No Gas	0.001	ppb	270.9	600.71	1000	
238	U	209	No Gas	0.004	ppb	72.1	196.89	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6256800.64	3.6	5961075.87	104.96	29.5	120.4	
Sc	45	No Gas	12740482.22	3.3	13015983.55	97.88	29.5	120.4	
Sc	45	H2	1379074.22	18.0	1430290.9	96.42	29.5	120.4	
Sc	45	He	410533.00	0.5	438046.17	93.72	29.5	120.4	
Ge	72	No Gas	2396540.86	2.8	2458564.83	97.48	29.5	120.4	
Ge	72	H2	479071.17	11.5	491199	97.53	29.5	120.4	
Ge	72	He	242113.94	0.1	255273.97	94.84	29.5	120.4	
Y	89	H2	7367846.18	18.0	7442438.64	99	29.5	120.4	
Y	89	He	2046014.10	0.8	2167302.66	94.4	29.5	120.4	
Tb	159	No Gas	23199857.99	2.7	21871384.4	106.07	29.5	120.4	
Tb	159	He	8499802.37	0.3	8589669.11	98.95	29.5	120.4	
Bi	209	No Gas	10918498.53	2.9	10079220.95	108.33	29.5	120.4	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV
File Name	077_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 17:30:58
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	006CALB.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**admin**

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
9	Be	6	No Gas	20.489	ppb	10.5	165421.39	25	81.96	89.8	110.2	> +/- 10%
11	B	6	No Gas	20.655	ppb	10.7	111450.45	25	82.62	89.8	110.2	> +/- 10%
23	Na	45	He	5231.737	ppb	1.1	3204583.79	5000	104.63	89.8	110.2	
24	Mg	45	He	5250.635	ppb	1.4	1870968.76	5000	105.01	89.8	110.2	
27	Al	45	He	511.536	ppb	0.6	69564.32	500	102.31	89.8	110.2	
28	Si	45	H2	488.946	ppb	2.3	105903.02	500	97.79	89.8	110.2	
39	K	45	He	5056.172	ppb	0.4	1452800.68	5000	101.12	89.8	110.2	
40	Ca	45	H2	4956.185	ppb	0.9	9298010.97	5000	99.12	89.8	110.2	
51	V	89	He	25.117	ppb	1.0	117835.95	25	100.47	89.8	110.2	
52	Cr	89	He	25.126	ppb	1.0	149082.37	25	100.5	89.8	110.2	
55	Mn	89	He	25.196	ppb	0.8	67599.18	25	100.78	89.8	110.2	
56	Fe	89	H2	4998.147	ppb	0.2	31281866.18	5000	99.96	89.8	110.2	
59	Co	89	He	25.379	ppb	1.8	233785.80	25	101.52	89.8	110.2	
60	Ni	89	He	25.506	ppb	2.3	65214.88	25	102.02	89.8	110.2	
63	Cu	89	He	25.483	ppb	1.5	172743.06	25	101.93	89.8	110.2	
66	Zn	89	He	25.466	ppb	1.4	22719.22	25	101.86	89.8	110.2	
75	As	89	He	24.583	ppb	0.4	15170.58	25	98.33	89.8	110.2	
78	Se	89	H2	24.064	ppb	0.3	6447.20	25	96.26	89.8	110.2	
88	Sr	89	He	24.951	ppb	2.1	78107.82	25	99.8	89.8	110.2	
95	Mo	89	He	24.991	ppb	0.5	84119.24	25	99.96	89.8	110.2	
107	Ag	89	He	26.097	ppb	1.5	286098.53	25	104.39	89.8	110.2	
111	Cd	89	He	25.715	ppb	1.7	35610.43	25	102.86	89.8	110.2	
118	Sn	159	He	24.956	ppb	1.4	71564.06	25	99.82	89.8	110.2	
121	Sb	159	No Gas	22.848	ppb	9.7	476809.60	25	91.39	89.8	110.2	
137	Ba	159	No Gas	21.316	ppb	9.5	187319.16	25	85.26	89.8	110.2	> +/- 10%
182	W	159	No Gas	22.493	ppb	7.4	332369.55	25	89.97	89.8	110.2	
205	Tl	209	No Gas	24.081	ppb	10.5	830187.80	25	96.32	89.8	110.2	
208	Pb	209	No Gas	23.040	ppb	10.1	1141019.95	25	92.16	89.8	110.2	
232	Th	209	No Gas	20.684	ppb	6.7	961118.53	25	82.74	89.8	110.2	> +/- 10%
238	U	209	No Gas	21.746	ppb	8.9	1009428.66	25	86.98	89.8	110.2	> +/- 10%

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6194640.67	2.5	5961075.87	103.92	29.5	120.4	
Sc	45	No Gas	12505772.21	1.9	13015983.55	96.08	29.5	120.4	
Sc	45	H2	1382881.83	1.7	1430290.9	96.69	29.5	120.4	
Sc	45	He	407225.08	0.7	438046.17	92.96	29.5	120.4	
Ge	72	No Gas	2396753.83	2.5	2458564.83	97.49	29.5	120.4	
Ge	72	H2	467389.22	0.5	491199	95.15	29.5	120.4	
Ge	72	He	240167.16	1.0	255273.97	94.08	29.5	120.4	
Y	89	H2	7273759.54	1.1	7442438.64	97.73	29.5	120.4	
Y	89	He	2050238.73	1.5	2167302.66	94.6	29.5	120.4	
Tb	159	No Gas	22641192.16	1.7	21871384.4	103.52	29.5	120.4	
Tb	159	He	8404909.32	0.7	8589669.11	97.85	29.5	120.4	
Bi	209	No Gas	10664901.51	2.0	10079220.95	105.81	29.5	120.4	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB
File Name	078_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 17:33:25
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	006CALB.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**admin**

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
9	Be	6	No Gas	0.054	ppb	66.5	450.03	0.2	
11	B	6	No Gas	0.543	ppb	6.1	6795.19	4	
23	Na	45	He	14.845	ppb	0.7	25708.01	200	
24	Mg	45	He	1.011	ppb	13.0	453.37	20	
27	Al	45	He	0.136	ppb	64.9	137.78	20	
28	Si	45	H2	26.634	ppb	2.1	6395.21	100	
39	K	45	He	6.561	ppb	53.0	21713.44	200	
40	Ca	45	H2	1.592	ppb	8.0	8428.36	20	
51	V	89	He	-0.004	ppb	N/A	231.12	1	
52	Cr	89	He	-0.008	ppb	N/A	764.55	1	
55	Mn	89	He	0.019	ppb	34.0	121.31	0.4	
56	Fe	89	H2	3.572	ppb	11.1	26715.44	20	
59	Co	89	He	0.007	ppb	45.9	75.56	0.2	
60	Ni	89	He	0.001	ppb	247.8	61.11	0.4	
63	Cu	89	He	0.022	ppb	19.9	697.82	0.6	
66	Zn	89	He	-0.030	ppb	N/A	265.56	2	
75	As	89	He	0.094	ppb	20.4	76.34	1	
78	Se	89	H2	0.834	ppb	9.9	228.32	1	Failed DoD
88	Sr	89	He	0.012	ppb	52.6	91.11	1	
95	Mo	89	He	0.691	ppb	13.4	2469.20	1	Failed DoD
107	Ag	89	He	0.009	ppb	11.5	126.67	0.2	
111	Cd	89	He	0.006	ppb	39.1	10.00	0.2	
118	Sn	159	He	0.169	ppb	48.2	810.80	1	
121	Sb	159	No Gas	0.071	ppb	47.6	1601.89	0.2	
137	Ba	159	No Gas	0.051	ppb	76.7	573.99	0.4	
182	W	159	No Gas	2.577	ppb	9.4	40894.35	1	Fail All Methods□ Failed DoD
205	Tl	209	No Gas	0.075	ppb	68.5	2740.15	0.2	
208	Pb	209	No Gas	0.039	ppb	65.3	4315.14	0.2	
232	Th	209	No Gas	0.524	ppb	2.2	24959.68	1	Failed DoD
238	U	209	No Gas	0.102	ppb	71.9	4763.32	0.2	Failed DoD

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6194745.46	1.9	5961075.87	103.92	29.5	120.4	
Sc	45	No Gas	12520608.60	1.3	13015983.55	96.19	29.5	120.4	
Sc	45	H2	1380698.87	1.5	1430290.9	96.53	29.5	120.4	
Sc	45	He	409170.22	0.2	438046.17	93.41	29.5	120.4	
Ge	72	No Gas	2404464.20	2.2	2458564.83	97.8	29.5	120.4	
Ge	72	H2	473616.90	1.4	491199	96.42	29.5	120.4	
Ge	72	He	241761.73	0.5	255273.97	94.71	29.5	120.4	
Y	89	H2	7312710.52	1.6	7442438.64	98.26	29.5	120.4	
Y	89	He	2055238.53	1.3	2167302.66	94.83	29.5	120.4	
Tb	159	No Gas	22684913.55	2.5	21871384.4	103.72	29.5	120.4	
Tb	159	He	8392525.08	0.8	8589669.11	97.7	29.5	120.4	
Bi	209	No Gas	10702103.29	2.3	10079220.95	106.18	29.5	120.4	

Sample Report

Sample Name SO3505-006

File Name 079SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 17:35:54

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.024	ppb	32.4	47.78	100	
11	B	6	No Gas	227.009	ppb	8.9	229879.90	1000	
23	Na	45	He	134798.893	ppb	0.3	16220952.46	200000	
24	Mg	45	He	3154.679	ppb	0.4	221838.65	200000	
27	Al	45	He	70.190	ppb	1.9	1996.90	200000	
28	Si	45	H2	7134.643	ppb	1.3	300714.93	10000	
39	K	45	He	1308.030	ppb	1.6	92617.50	200000	
40	Ca	45	H2	30075.146	ppb	1.1	11023564.83	200000	
51	V	89	He	0.593	ppb	21.5	785.61	1000	
52	Cr	89	He	2.881	ppb	2.8	4109.87	2000	
55	Mn	89	He	5.265	ppb	0.4	2822.44	2000	
56	Fe	89	H2	138.856	ppb	3.2	173288.64	100000	
59	Co	89	He	0.176	ppb	15.2	322.25	1000	
60	Ni	89	He	2.647	ppb	4.1	1377.90	1000	
63	Cu	89	He	2.132	ppb	3.5	3350.53	2000	
66	Zn	89	He	17.831	ppb	6.6	3350.53	2000	
75	As	89	He	0.699	ppb	22.6	102.01	1000	
78	Se	89	H2	0.912	ppb	12.6	51.50	1000	
88	Sr	89	He	144.314	ppb	0.7	88212.00	2000	
95	Mo	89	He	1.406	ppb	1.2	1057.86	1000	
107	Ag	89	He	0.035	ppb	23.9	103.34	100	
111	Cd	89	He	0.064	ppb	5.7	18.89	1000	
118	Sn	159	He	0.612	ppb	23.8	668.93	1000	
121	Sb	159	No Gas	1.037	ppb	5.8	4355.55	1000	
137	Ba	159	No Gas	11.747	ppb	8.3	20368.52	2000	
182	W	159	No Gas	3.549	ppb	5.7	13204.92	1000	
205	Tl	209	No Gas	0.051	ppb	10.9	480.55	1000	
208	Pb	209	No Gas	0.740	ppb	8.9	9558.80	2000	
232	Th	209	No Gas	7.206	ppb	4.4	66460.99	1000	
238	U	209	No Gas	0.122	ppb	7.5	1124.64	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5927143.97	2.6	5961075.87	99.43	29.5	120.4	
Sc	45	No Gas	12243582.11	2.1	13015983.55	94.07	29.5	120.4	
Sc	45	H2	1350994.58	1.6	1430290.9	94.46	29.5	120.4	
Sc	45	He	401658.13	0.5	438046.17	91.69	29.5	120.4	
Ge	72	No Gas	2356973.51	2.1	2458564.83	95.87	29.5	120.4	
Ge	72	H2	447417.19	1.7	491199	91.09	29.5	120.4	
Ge	72	He	235373.37	0.5	255273.97	92.2	29.5	120.4	
Y	89	H2	7079025.70	1.3	7442438.64	95.12	29.5	120.4	
Y	89	He	2001392.85	0.7	2167302.66	92.34	29.5	120.4	
Tb	159	No Gas	22205009.95	1.1	21871384.4	101.53	29.5	120.4	
Tb	159	He	8282313.84	1.0	8589669.11	96.42	29.5	120.4	
Bi	209	No Gas	10505729.32	2.0	10079220.95	104.23	29.5	120.4	

Sample Report

Sample Name SO3505-007

File Name 080SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 17:38:25

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.050	ppb	18.4	85.56	100	
11	B	6	No Gas	29.253	ppb	7.0	32591.12	1000	
23	Na	45	He	30980.710	ppb	1.4	3762978.55	200000	
24	Mg	45	He	8098.275	ppb	0.5	572766.05	200000	
27	Al	45	He	1116.216	ppb	0.5	30192.68	200000	
28	Si	45	H2	5817.307	ppb	0.8	248974.26	10000	
39	K	45	He	2961.124	ppb	0.8	186149.16	200000	
40	Ca	45	H2	61078.741	ppb	0.4	22714319.38	200000	
51	V	89	He	1.981	ppb	5.0	2050.23	1000	
52	Cr	89	He	3.344	ppb	3.1	4633.93	2000	
55	Mn	89	He	7427.738	ppb	2.0	3879591.49	2000	
56	Fe	89	H2	25251.798	ppb	0.6	31303022.33	100000	
59	Co	89	He	9.358	ppb	4.2	16804.52	1000	
60	Ni	89	He	5.595	ppb	5.4	2843.73	1000	
63	Cu	89	He	2.621	ppb	0.5	3988.49	2000	
66	Zn	89	He	7.585	ppb	9.4	1585.71	2000	
75	As	89	He	7.695	ppb	0.3	942.14	1000	
78	Se	89	H2	0.446	ppb	13.1	27.67	1000	
88	Sr	89	He	241.637	ppb	0.4	147392.10	2000	
95	Mo	89	He	1.041	ppb	11.4	816.72	1000	
107	Ag	89	He	0.022	ppb	13.6	76.67	100	
111	Cd	89	He	0.025	ppb	34.0	8.52	1000	
118	Sn	159	He	0.456	ppb	25.8	586.70	1000	
121	Sb	159	No Gas	0.359	ppb	1.2	1598.56	1000	
137	Ba	159	No Gas	29.297	ppb	5.5	51313.51	2000	
182	W	159	No Gas	1.793	ppb	5.2	8265.35	1000	
205	Tl	209	No Gas	0.020	ppb	18.3	270.31	1000	
208	Pb	209	No Gas	1.428	ppb	4.1	16385.86	2000	
232	Th	209	No Gas	0.971	ppb	9.0	9477.64	1000	
238	U	209	No Gas	0.161	ppb	9.6	1491.78	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5864546.74	2.5	5961075.87	98.38	29.5	120.4	
Sc	45	No Gas	12336131.11	0.6	13015983.55	94.78	29.5	120.4	
Sc	45	H2	1370963.45	1.4	1430290.9	95.85	29.5	120.4	
Sc	45	He	404082.48	0.7	438046.17	92.25	29.5	120.4	
Ge	72	No Gas	2374246.61	0.9	2458564.83	96.57	29.5	120.4	
Ge	72	H2	456505.74	0.8	491199	92.94	29.5	120.4	
Ge	72	He	236997.70	1.1	255273.97	92.84	29.5	120.4	
Y	89	H2	7203110.88	1.2	7442438.64	96.78	29.5	120.4	
Y	89	He	1997712.94	0.5	2167302.66	92.18	29.5	120.4	
Tb	159	No Gas	22500287.72	0.8	21871384.4	102.88	29.5	120.4	
Tb	159	He	8369542.86	1.4	8589669.11	97.44	29.5	120.4	
Bi	209	No Gas	10576048.39	2.0	10079220.95	104.93	29.5	120.4	

Sample Report

Sample Name SO3505-008

File Name 081SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 17:40:52

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.027	ppb	5.4	48.89	100	
11	B	6	No Gas	203.920	ppb	10.4	196687.35	1000	
23	Na	45	He	380105.841	ppb	7.2	46778482.25	200000	
24	Mg	45	He	14940.725	ppb	7.0	1074917.22	200000	
27	Al	45	He	241.321	ppb	5.2	6740.80	200000	
28	Si	45	H2	6338.432	ppb	1.1	270110.94	10000	
39	K	45	He	1721.361	ppb	7.6	118459.07	200000	
40	Ca	45	H2	57787.617	ppb	0.7	21402802.46	200000	
51	V	89	He	0.500	ppb	4.0	712.26	1000	
52	Cr	89	He	0.853	ppb	12.9	1798.46	2000	
55	Mn	89	He	1450.529	ppb	8.2	769700.89	2000	
56	Fe	89	H2	598.430	ppb	1.9	738533.82	100000	
59	Co	89	He	0.874	ppb	9.2	1600.20	1000	
60	Ni	89	He	7.024	ppb	9.0	3611.71	1000	
63	Cu	89	He	1.171	ppb	11.0	2114.68	2000	
66	Zn	89	He	11.722	ppb	15.0	2326.96	2000	
75	As	89	He	0.646	ppb	8.9	97.01	1000	
78	Se	89	H2	0.229	ppb	22.8	16.00	1000	
88	Sr	89	He	434.167	ppb	7.7	269027.05	2000	
95	Mo	89	He	0.787	ppb	4.6	662.26	1000	
107	Ag	89	He	0.048	ppb	15.9	134.45	100	
111	Cd	89	He	0.480	ppb	14.8	132.97	1000	
118	Sn	159	He	0.368	ppb	21.9	538.92	1000	
121	Sb	159	No Gas	0.200	ppb	22.5	921.06	1000	
137	Ba	159	No Gas	34.886	ppb	8.6	59791.50	2000	
182	W	159	No Gas	1.173	ppb	10.7	6325.36	1000	
205	Tl	209	No Gas	0.035	ppb	36.3	353.73	1000	
208	Pb	209	No Gas	0.344	ppb	13.8	5489.97	2000	
232	Th	209	No Gas	0.429	ppb	18.9	4282.22	1000	
238	U	209	No Gas	0.046	ppb	9.5	410.47	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5637209.77	2.7	5961075.87	94.57	29.5	120.4	
Sc	45	No Gas	12217075.29	2.9	13015983.55	93.86	29.5	120.4	
Sc	45	H2	1365462.93	1.5	1430290.9	95.47	29.5	120.4	
Sc	45	He	412038.31	5.1	438046.17	94.06	29.5	120.4	
Ge	72	No Gas	2325628.75	3.2	2458564.83	94.59	29.5	120.4	
Ge	72	H2	457124.28	1.7	491199	93.06	29.5	120.4	
Ge	72	He	238825.82	3.8	255273.97	93.56	29.5	120.4	
Y	89	H2	7132877.37	1.2	7442438.64	95.84	29.5	120.4	
Y	89	He	2036223.53	6.3	2167302.66	93.95	29.5	120.4	
Tb	159	No Gas	22056861.34	2.8	21871384.4	100.85	29.5	120.4	
Tb	159	He	8383702.79	4.2	8589669.11	97.6	29.5	120.4	
Bi	209	No Gas	10118662.37	3.4	10079220.95	100.39	29.5	120.4	

Sample Report

Sample Name SO3505-009

File Name 082SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 17:43:20

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.018	ppb	39.0	37.78	100	
11	B	6	No Gas	48.377	ppb	11.9	52418.70	1000	
23	Na	45	He	53624.319	ppb	0.5	6558728.55	200000	
24	Mg	45	He	17710.072	ppb	1.4	1263527.30	200000	
27	Al	45	He	419.873	ppb	2.5	11530.87	200000	
28	Si	45	H2	7685.475	ppb	1.3	330197.42	10000	
39	K	45	He	2497.616	ppb	1.9	161489.64	200000	
40	Ca	45	H2	45109.950	ppb	0.9	16853051.41	200000	
51	V	89	He	0.864	ppb	4.4	1053.41	1000	
52	Cr	89	He	1.233	ppb	4.0	2254.44	2000	
55	Mn	89	He	378.011	ppb	0.6	201887.77	2000	
56	Fe	89	H2	1289.289	ppb	1.0	1615472.88	100000	
59	Co	89	He	1.935	ppb	4.0	3556.28	1000	
60	Ni	89	He	3.515	ppb	2.5	1847.97	1000	
63	Cu	89	He	2.744	ppb	3.3	4241.90	2000	
66	Zn	89	He	8.832	ppb	5.6	1839.08	2000	
75	As	89	He	1.020	ppb	10.5	143.35	1000	
78	Se	89	H2	0.217	ppb	16.5	15.67	1000	
88	Sr	89	He	209.628	ppb	0.3	130702.11	2000	
95	Mo	89	He	1.336	ppb	6.7	1032.30	1000	
107	Ag	89	He	0.013	ppb	15.8	57.78	100	
111	Cd	89	He	0.041	ppb	40.9	12.97	1000	
118	Sn	159	He	0.379	ppb	26.2	545.59	1000	
121	Sb	159	No Gas	0.236	ppb	2.0	1097.93	1000	
137	Ba	159	No Gas	9.323	ppb	10.9	16542.20	2000	
182	W	159	No Gas	0.834	ppb	19.8	5517.41	1000	
205	Tl	209	No Gas	0.019	ppb	13.0	263.63	1000	
208	Pb	209	No Gas	0.311	ppb	14.4	5433.21	2000	
232	Th	209	No Gas	0.253	ppb	16.8	2876.89	1000	
238	U	209	No Gas	0.092	ppb	5.9	854.32	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5984648.50	3.4	5961075.87	100.4	29.5	120.4	
Sc	45	No Gas	12541579.89	2.8	13015983.55	96.36	29.5	120.4	
Sc	45	H2	1377185.38	0.3	1430290.9	96.29	29.5	120.4	
Sc	45	He	407618.60	0.7	438046.17	93.05	29.5	120.4	
Ge	72	No Gas	2397278.00	3.0	2458564.83	97.51	29.5	120.4	
Ge	72	H2	456591.37	0.7	491199	92.95	29.5	120.4	
Ge	72	He	239316.89	0.8	255273.97	93.75	29.5	120.4	
Y	89	H2	7263388.45	1.0	7442438.64	97.59	29.5	120.4	
Y	89	He	2041866.78	1.1	2167302.66	94.21	29.5	120.4	
Tb	159	No Gas	22705549.94	2.3	21871384.4	103.81	29.5	120.4	
Tb	159	He	8404881.61	0.9	8589669.11	97.85	29.5	120.4	
Bi	209	No Gas	10601777.03	2.0	10079220.95	105.18	29.5	120.4	

Sample Report

Sample Name	RINSE
File Name	083SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 17:45:49
Sample Type	Sample
Total Dilution	1.0000
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.002	ppb	92.3	25.56	100	
11	B	6	No Gas	0.443	ppb	20.4	5771.32	1000	
23	Na	45	He	26.910	ppb	6.7	33058.22	200000	
24	Mg	45	He	1.385	ppb	13.8	586.73	200000	
27	Al	45	He	0.047	ppb	176.7	125.56	200000	
28	Si	45	H2	23.836	ppb	6.5	5797.62	10000	
39	K	45	He	6.495	ppb	40.0	21671.67	200000	
40	Ca	45	H2	6.889	ppb	11.1	18349.18	200000	
51	V	89	He	-0.012	ppb	N/A	193.34	1000	
52	Cr	89	He	-0.006	ppb	N/A	775.88	2000	
55	Mn	89	He	0.112	ppb	15.3	370.61	2000	
56	Fe	89	H2	0.692	ppb	6.6	8675.61	100000	
59	Co	89	He	0.002	ppb	62.8	22.22	1000	
60	Ni	89	He	0.022	ppb	56.4	115.56	1000	
63	Cu	89	He	0.183	ppb	7.8	1795.74	2000	
66	Zn	89	He	0.168	ppb	17.9	441.13	2000	
75	As	89	He	0.000	ppb	1548.3	18.67	1000	
78	Se	89	H2	0.016	ppb	39.6	8.50	1000	
88	Sr	89	He	0.014	ppb	25.9	98.89	2000	
95	Mo	89	He	0.060	ppb	11.4	342.24	1000	
107	Ag	89	He	0.000	ppb	621.5	33.34	100	
111	Cd	89	He	-0.001	ppb	N/A	0.74	1000	
118	Sn	159	He	-0.005	ppb	N/A	315.57	1000	
121	Sb	159	No Gas	0.015	ppb	28.2	373.76	1000	
137	Ba	159	No Gas	0.008	ppb	29.1	170.19	2000	
182	W	159	No Gas	0.112	ppb	39.7	4228.82	1000	
205	Tl	209	No Gas	0.001	ppb	34.1	156.84	1000	
208	Pb	209	No Gas	-0.005	ppb	N/A	1955.58	2000	
232	Th	209	No Gas	-0.001	ppb	N/A	457.19	1000	
238	U	209	No Gas	0.001	ppb	54.1	33.37	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5723873.00	8.3	5961075.87	96.02	29.5	120.4	
Sc	45	No Gas	11266566.59	10.2	13015983.55	86.56	29.5	120.4	
Sc	45	H2	1381138.21	0.4	1430290.9	96.56	29.5	120.4	
Sc	45	He	408681.39	0.4	438046.17	93.3	29.5	120.4	
Ge	72	No Gas	2213538.07	8.3	2458564.83	90.03	29.5	120.4	
Ge	72	H2	473210.38	1.4	491199	96.34	29.5	120.4	
Ge	72	He	242299.44	0.2	255273.97	94.92	29.5	120.4	
Y	89	H2	7365546.54	1.1	7442438.64	98.97	29.5	120.4	
Y	89	He	2061921.90	1.0	2167302.66	95.14	29.5	120.4	
Tb	159	No Gas	20536584.42	10.1	21871384.4	93.9	29.5	120.4	
Tb	159	He	8437810.64	1.2	8589669.11	98.23	29.5	120.4	
Bi	209	No Gas	9793099.84	9.8	10079220.95	97.16	29.5	120.4	

Sample Report

Sample Name SO3505-010

File Name 084SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 17:48:19

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.010	ppb	29.2	25.56	100	
11	B	6	No Gas	84.864	ppb	11.2	87426.89	1000	
23	Na	45	He	248678.857	ppb	1.0	30020008.53	200000	
24	Mg	45	He	13629.627	ppb	1.8	961754.01	200000	
27	Al	45	He	156.742	ppb	2.3	4330.81	200000	
28	Si	45	H2	6070.331	ppb	0.9	259175.71	10000	
39	K	45	He	1597.863	ppb	0.9	109219.81	200000	
40	Ca	45	H2	42223.446	ppb	1.7	15668471.71	200000	
51	V	89	He	0.498	ppb	9.8	695.60	1000	
52	Cr	89	He	0.931	ppb	3.4	1854.46	2000	
55	Mn	89	He	366.478	ppb	0.6	191026.79	2000	
56	Fe	89	H2	473.174	ppb	1.1	588977.17	100000	
59	Co	89	He	1.527	ppb	1.6	2740.48	1000	
60	Ni	89	He	4.073	ppb	0.3	2080.23	1000	
63	Cu	89	He	1.607	ppb	1.5	2647.02	2000	
66	Zn	89	He	3.735	ppb	4.1	922.29	2000	
75	As	89	He	0.728	ppb	14.8	105.01	1000	
78	Se	89	H2	0.195	ppb	31.8	14.33	1000	
88	Sr	89	He	304.308	ppb	0.7	185145.56	2000	
95	Mo	89	He	0.433	ppb	24.9	417.80	1000	
107	Ag	89	He	0.018	ppb	14.1	67.78	100	
111	Cd	89	He	0.123	ppb	19.7	34.81	1000	
118	Sn	159	He	0.216	ppb	11.0	448.92	1000	
121	Sb	159	No Gas	0.227	ppb	8.4	1037.86	1000	
137	Ba	159	No Gas	12.931	ppb	9.9	22390.83	2000	
182	W	159	No Gas	0.754	ppb	18.9	5160.15	1000	
205	Tl	209	No Gas	0.008	ppb	79.3	186.88	1000	
208	Pb	209	No Gas	0.183	ppb	12.4	4088.19	2000	
232	Th	209	No Gas	0.143	ppb	21.4	1822.18	1000	
238	U	209	No Gas	0.029	ppb	33.7	270.31	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5866643.26	2.8	5961075.87	98.42	29.5	120.4	
Sc	45	No Gas	12369957.96	2.4	13015983.55	95.04	29.5	120.4	
Sc	45	H2	1367868.09	1.0	1430290.9	95.64	29.5	120.4	
Sc	45	He	403132.91	0.8	438046.17	92.03	29.5	120.4	
Ge	72	No Gas	2363260.31	3.0	2458564.83	96.12	29.5	120.4	
Ge	72	H2	455055.42	1.0	491199	92.64	29.5	120.4	
Ge	72	He	236601.86	0.9	255273.97	92.69	29.5	120.4	
Y	89	H2	7183013.49	1.2	7442438.64	96.51	29.5	120.4	
Y	89	He	1992816.84	1.0	2167302.66	91.95	29.5	120.4	
Tb	159	No Gas	22202946.89	3.0	21871384.4	101.52	29.5	120.4	
Tb	159	He	8334930.92	0.7	8589669.11	97.03	29.5	120.4	
Bi	209	No Gas	10387835.28	3.2	10079220.95	103.06	29.5	120.4	

Sample Report

Sample Name SO3505-011

File Name 085SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 17:50:47

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.016	ppb	14.9	33.33	100	
11	B	6	No Gas	40.193	ppb	10.8	42596.45	1000	
23	Na	45	He	63468.362	ppb	0.5	7660218.39	200000	
24	Mg	45	He	12191.589	ppb	0.2	858656.74	200000	
27	Al	45	He	206.944	ppb	5.2	5669.11	200000	
28	Si	45	H2	5865.518	ppb	2.5	251447.65	10000	
39	K	45	He	4459.579	ppb	0.6	269313.34	200000	
40	Ca	45	H2	93104.259	ppb	2.3	34680404.48	200000	
51	V	89	He	0.899	ppb	4.8	1064.53	1000	
52	Cr	89	He	0.933	ppb	7.4	1862.46	2000	
55	Mn	89	He	4024.639	ppb	0.6	2104006.94	2000	
56	Fe	89	H2	43162.097	ppb	3.2	54095742.59	100000	
59	Co	89	He	7.031	ppb	1.4	12639.92	1000	
60	Ni	89	He	3.156	ppb	3.9	1630.15	1000	
63	Cu	89	He	1.865	ppb	5.9	2994.88	2000	
66	Zn	89	He	6.096	ppb	7.7	1331.23	2000	
75	As	89	He	6.701	ppb	2.4	823.45	1000	
78	Se	89	H2	0.252	ppb	40.8	17.50	1000	
88	Sr	89	He	414.539	ppb	0.7	253027.46	2000	
95	Mo	89	He	0.831	ppb	3.3	680.04	1000	
107	Ag	89	He	0.010	ppb	60.9	50.00	100	
111	Cd	89	He	0.064	ppb	10.6	18.89	1000	
118	Sn	159	He	0.321	ppb	17.7	506.70	1000	
121	Sb	159	No Gas	1.111	ppb	11.8	4539.20	1000	
137	Ba	159	No Gas	42.485	ppb	9.8	71508.67	2000	
182	W	159	No Gas	0.435	ppb	40.5	4158.70	1000	
205	Tl	209	No Gas	0.005	ppb	32.7	156.84	1000	
208	Pb	209	No Gas	0.777	ppb	7.3	9542.18	2000	
232	Th	209	No Gas	0.153	ppb	25.7	1868.90	1000	
238	U	209	No Gas	0.812	ppb	6.9	7143.39	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5764840.42	4.0	5961075.87	96.71	29.5	120.4	
Sc	45	No Gas	11938824.44	3.2	13015983.55	91.72	29.5	120.4	
Sc	45	H2	1373434.74	2.0	1430290.9	96.02	29.5	120.4	
Sc	45	He	402406.34	0.8	438046.17	91.86	29.5	120.4	
Ge	72	No Gas	2295257.81	3.2	2458564.83	93.36	29.5	120.4	
Ge	72	H2	452158.56	1.6	491199	92.05	29.5	120.4	
Ge	72	He	236355.97	0.7	255273.97	92.59	29.5	120.4	
Y	89	H2	7287216.18	2.9	7442438.64	97.91	29.5	120.4	
Y	89	He	1999432.76	0.9	2167302.66	92.25	29.5	120.4	
Tb	159	No Gas	21682631.34	4.1	21871384.4	99.14	29.5	120.4	
Tb	159	He	8316876.96	0.8	8589669.11	96.82	29.5	120.4	
Bi	209	No Gas	10100196.30	3.6	10079220.95	100.21	29.5	120.4	

Sample Report

Sample Name SO3505-012

File Name 086SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 17:53:17

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.016	ppb	36.0	33.34	100	
11	B	6	No Gas	57.826	ppb	10.2	59219.81	1000	
23	Na	45	He	166605.400	ppb	3.0	19785968.40	200000	
24	Mg	45	He	11296.195	ppb	3.0	783920.33	200000	
27	Al	45	He	145.695	ppb	7.2	3964.09	200000	
28	Si	45	H2	3696.772	ppb	0.2	157281.43	10000	
39	K	45	He	2751.581	ppb	2.5	171115.50	200000	
40	Ca	45	H2	47442.954	ppb	0.4	17513444.88	200000	
51	V	89	He	0.378	ppb	5.5	575.59	1000	
52	Cr	89	He	0.657	ppb	6.5	1514.48	2000	
55	Mn	89	He	8.189	ppb	25.7	4239.91	2000	
56	Fe	89	H2	233.054	ppb	0.4	290954.99	100000	
59	Co	89	He	0.176	ppb	15.8	315.58	1000	
60	Ni	89	He	2.227	ppb	3.0	1143.42	1000	
63	Cu	89	He	1.578	ppb	3.5	2564.77	2000	
66	Zn	89	He	8.988	ppb	1.6	1791.29	2000	
75	As	89	He	0.433	ppb	12.7	68.34	1000	
78	Se	89	H2	0.228	ppb	22.0	16.00	1000	
88	Sr	89	He	240.984	ppb	3.0	144106.93	2000	
95	Mo	89	He	0.412	ppb	16.2	397.80	1000	
107	Ag	89	He	0.012	ppb	97.0	53.33	100	
111	Cd	89	He	0.093	ppb	15.7	26.29	1000	
118	Sn	159	He	0.346	ppb	20.3	514.47	1000	
121	Sb	159	No Gas	0.252	ppb	6.5	1104.62	1000	
137	Ba	159	No Gas	20.283	ppb	7.9	33967.97	2000	
182	W	159	No Gas	0.437	ppb	32.2	4125.27	1000	
205	Tl	209	No Gas	0.014	ppb	51.1	216.91	1000	
208	Pb	209	No Gas	0.166	ppb	18.9	3791.13	2000	
232	Th	209	No Gas	0.118	ppb	22.4	1548.49	1000	
238	U	209	No Gas	0.437	ppb	7.5	3828.21	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5716248.70	3.1	5961075.87	95.89	29.5	120.4	
Sc	45	No Gas	11924292.41	3.8	13015983.55	91.61	29.5	120.4	
Sc	45	H2	1360768.71	1.0	1430290.9	95.14	29.5	120.4	
Sc	45	He	396711.05	2.9	438046.17	90.56	29.5	120.4	
Ge	72	No Gas	2308096.53	2.8	2458564.83	93.88	29.5	120.4	
Ge	72	H2	452548.30	0.2	491199	92.13	29.5	120.4	
Ge	72	He	233997.30	1.1	255273.97	91.67	29.5	120.4	
Y	89	H2	7151754.57	0.3	7442438.64	96.09	29.5	120.4	
Y	89	He	1959612.16	3.0	2167302.66	90.42	29.5	120.4	
Tb	159	No Gas	21536025.79	4.4	21871384.4	98.47	29.5	120.4	
Tb	159	He	8201979.95	2.2	8589669.11	95.49	29.5	120.4	
Bi	209	No Gas	10042284.12	3.2	10079220.95	99.63	29.5	120.4	

Sample Report

Sample Name SO3505-012A

File Name 087SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 17:55:41

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	9.691	ppb	3.8	14793.58	100	
11	B	6	No Gas	233.597	ppb	7.0	233421.32	1000	
23	Na	45	He	172449.726	ppb	1.6	20581390.04	200000	
24	Mg	45	He	12255.114	ppb	2.9	854540.36	200000	
27	Al	45	He	1158.697	ppb	0.5	30905.35	200000	
28	Si	45	H2	8157.168	ppb	0.8	348641.93	10000	
39	K	45	He	13923.912	ppb	1.0	791641.07	200000	
40	Ca	45	H2	47150.591	ppb	0.6	17525226.54	200000	
51	V	89	He	52.981	ppb	1.9	47795.47	1000	
52	Cr	89	He	53.424	ppb	1.5	61223.15	2000	
55	Mn	89	He	26.784	ppb	2.2	13828.94	2000	
56	Fe	89	H2	1213.260	ppb	0.7	1494712.78	100000	
59	Co	89	He	11.182	ppb	2.4	19757.55	1000	
60	Ni	89	He	22.847	ppb	1.3	11249.39	1000	
63	Cu	89	He	33.657	ppb	1.8	44135.20	2000	
66	Zn	89	He	117.881	ppb	1.0	20184.07	2000	
75	As	89	He	52.528	ppb	4.3	6223.74	1000	
78	Se	89	H2	49.876	ppb	1.5	2625.80	1000	
88	Sr	89	He	283.660	ppb	1.9	170208.92	2000	
95	Mo	89	He	54.787	ppb	2.5	35426.83	1000	
107	Ag	89	He	11.377	ppb	1.5	23941.90	100	
111	Cd	89	He	11.356	ppb	1.7	3017.04	1000	
118	Sn	159	He	51.990	ppb	2.2	29283.75	1000	
121	Sb	159	No Gas	10.630	ppb	6.8	44427.01	1000	
137	Ba	159	No Gas	37.796	ppb	6.8	66436.83	2000	
182	W	159	No Gas	53.371	ppb	6.3	159155.99	1000	
205	Tl	209	No Gas	10.446	ppb	8.7	71501.85	1000	
208	Pb	209	No Gas	10.152	ppb	7.8	101828.61	2000	
232	Th	209	No Gas	10.843	ppb	6.8	100312.61	1000	
238	U	209	No Gas	10.844	ppb	7.3	99791.22	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5846551.76	1.5	5961075.87	98.08	29.5	120.4	
Sc	45	No Gas	12521764.45	1.7	13015983.55	96.2	29.5	120.4	
Sc	45	H2	1370135.93	0.4	1430290.9	95.79	29.5	120.4	
Sc	45	He	398518.16	1.7	438046.17	90.98	29.5	120.4	
Ge	72	No Gas	2389776.07	2.2	2458564.83	97.2	29.5	120.4	
Ge	72	H2	449892.62	0.9	491199	91.59	29.5	120.4	
Ge	72	He	234369.92	0.8	255273.97	91.81	29.5	120.4	
Y	89	H2	7139862.21	0.3	7442438.64	95.93	29.5	120.4	
Y	89	He	1965581.31	1.2	2167302.66	90.69	29.5	120.4	
Tb	159	No Gas	22616432.16	2.2	21871384.4	103.41	29.5	120.4	
Tb	159	He	8203565.16	2.0	8589669.11	95.51	29.5	120.4	
Bi	209	No Gas	10571170.69	2.4	10079220.95	104.88	29.5	120.4	

Sample Report

Sample Name RINSE

File Name 088SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 17:58:08

Sample Type Sample

Total Dilution 1.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.003	ppb	100.1	36.67	100	
11	B	6	No Gas	0.626	ppb	6.5	7349.89	1000	
23	Na	45	He	36.671	ppb	5.2	39016.20	200000	
24	Mg	45	He	0.819	ppb	21.3	384.48	200000	
27	Al	45	He	0.128	ppb	122.1	136.67	200000	
28	Si	45	H2	23.986	ppb	5.8	5831.04	10000	
39	K	45	He	9.153	ppb	2.9	22422.45	200000	
40	Ca	45	H2	4.261	ppb	4.9	13440.11	200000	
51	V	89	He	-0.017	ppb	N/A	173.34	1000	
52	Cr	89	He	-0.009	ppb	N/A	761.89	2000	
55	Mn	89	He	0.085	ppb	9.5	299.95	2000	
56	Fe	89	H2	0.573	ppb	5.2	7847.69	100000	
59	Co	89	He	0.002	ppb	85.3	24.45	1000	
60	Ni	89	He	0.018	ppb	18.7	105.56	1000	
63	Cu	89	He	0.180	ppb	5.9	1783.51	2000	
66	Zn	89	He	0.151	ppb	32.4	427.80	2000	
75	As	89	He	0.029	ppb	57.3	36.34	1000	
78	Se	89	H2	0.200	ppb	7.4	57.83	1000	
88	Sr	89	He	0.009	ppb	71.0	83.33	2000	
95	Mo	89	He	0.171	ppb	16.7	718.93	1000	
107	Ag	89	He	0.000	ppb	106.0	34.44	100	
111	Cd	89	He	0.000	ppb	N/A	1.48	1000	
118	Sn	159	He	-0.005	ppb	N/A	318.91	1000	
121	Sb	159	No Gas	0.012	ppb	13.7	367.09	1000	
137	Ba	159	No Gas	0.010	ppb	37.8	216.91	2000	
182	W	159	No Gas	0.466	ppb	7.8	10102.00	1000	
205	Tl	209	No Gas	0.003	ppb	142.7	243.61	1000	
208	Pb	209	No Gas	-0.009	ppb	N/A	1975.61	2000	
232	Th	209	No Gas	0.010	ppb	32.1	1024.52	1000	
238	U	209	No Gas	0.006	ppb	49.6	276.98	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6298329.10	1.0	5961075.87	105.66	29.5	120.4	
Sc	45	No Gas	12617457.54	1.4	13015983.55	96.94	29.5	120.4	
Sc	45	H2	1382373.86	1.6	1430290.9	96.65	29.5	120.4	
Sc	45	He	408612.21	0.5	438046.17	93.28	29.5	120.4	
Ge	72	No Gas	2410231.29	1.9	2458564.83	98.03	29.5	120.4	
Ge	72	H2	469312.62	1.3	491199	95.54	29.5	120.4	
Ge	72	He	242390.60	0.9	255273.97	94.95	29.5	120.4	
Y	89	H2	7301154.70	1.7	7442438.64	98.1	29.5	120.4	
Y	89	He	2070058.51	0.2	2167302.66	95.51	29.5	120.4	
Tb	159	No Gas	23118808.54	1.1	21871384.4	105.7	29.5	120.4	
Tb	159	He	8500357.86	0.6	8589669.11	98.96	29.5	120.4	
Bi	209	No Gas	10868261.21	1.3	10079220.95	107.83	29.5	120.4	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV
File Name	089_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 18:00:42
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	006CALB.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	**admin**

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
9	Be	6	No Gas	23.662	ppb	15.7	175393.39	25	94.65	89.8	110.2	
11	B	6	No Gas	23.572	ppb	16.9	116261.26	25	94.29	89.8	110.2	
23	Na	45	He	5229.266	ppb	2.0	3202719.77	5000	104.59	89.8	110.2	
24	Mg	45	He	5275.474	ppb	2.4	1879526.93	5000	105.51	89.8	110.2	
27	Al	45	He	505.443	ppb	2.6	68724.57	500	101.09	89.8	110.2	
28	Si	45	H2	492.460	ppb	1.6	107468.14	500	98.49	89.8	110.2	
39	K	45	He	5022.597	ppb	1.0	1443200.56	5000	100.45	89.8	110.2	
40	Ca	45	H2	5043.685	ppb	0.5	9532891.66	5000	100.87	89.8	110.2	
51	V	89	He	24.847	ppb	1.0	116690.58	25	99.39	89.8	110.2	
52	Cr	89	He	25.090	ppb	0.9	149020.43	25	100.36	89.8	110.2	
55	Mn	89	He	25.033	ppb	0.7	67227.35	25	100.13	89.8	110.2	
56	Fe	89	H2	4994.481	ppb	0.4	31546548.56	5000	99.89	89.8	110.2	
59	Co	89	He	25.267	ppb	1.8	232985.08	25	101.07	89.8	110.2	
60	Ni	89	He	25.414	ppb	1.3	65051.75	25	101.66	89.8	110.2	
63	Cu	89	He	25.362	ppb	2.5	172083.04	25	101.45	89.8	110.2	
66	Zn	89	He	25.138	ppb	0.9	22452.02	25	100.55	89.8	110.2	
75	As	89	He	24.708	ppb	0.8	15262.01	25	98.83	89.8	110.2	
78	Se	89	H2	24.120	ppb	2.0	6521.73	25	96.48	89.8	110.2	
88	Sr	89	He	24.950	ppb	1.1	78195.03	25	99.8	89.8	110.2	
95	Mo	89	He	24.913	ppb	1.8	83935.20	25	99.65	89.8	110.2	
107	Ag	89	He	26.091	ppb	1.3	286319.17	25	104.36	89.8	110.2	
111	Cd	89	He	25.850	ppb	1.4	35834.35	25	103.4	89.8	110.2	
118	Sn	159	He	24.625	ppb	1.0	71949.09	25	98.5	89.8	110.2	
121	Sb	159	No Gas	26.916	ppb	14.7	499012.80	25	107.66	89.8	110.2	
137	Ba	159	No Gas	25.259	ppb	14.7	197144.81	25	101.04	89.8	110.2	
182	W	159	No Gas	27.023	ppb	14.7	354169.44	25	108.09	89.8	110.2	
205	Tl	209	No Gas	27.299	ppb	17.7	847036.68	25	109.2	89.8	110.2	
208	Pb	209	No Gas	27.001	ppb	15.0	1206202.12	25	108	89.8	110.2	
232	Th	209	No Gas	23.933	ppb	16.9	1001627.23	25	95.73	89.8	110.2	
238	U	209	No Gas	26.153	ppb	16.7	1093631.01	25	104.61	89.8	110.2	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5747158.78	11.8	5961075.87	96.41	29.5	120.4	
Sc	45	No Gas	11122106.40	11.1	13015983.55	85.45	29.5	120.4	
Sc	45	H2	1393104.07	0.6	1430290.9	97.4	29.5	120.4	
Sc	45	He	407245.63	1.7	438046.17	92.97	29.5	120.4	
Ge	72	No Gas	2183671.91	8.7	2458564.83	88.82	29.5	120.4	
Ge	72	H2	469410.01	1.6	491199	95.56	29.5	120.4	
Ge	72	He	240182.42	1.1	255273.97	94.09	29.5	120.4	
Y	89	H2	7340606.76	0.3	7442438.64	98.63	29.5	120.4	
Y	89	He	2052264.62	1.3	2167302.66	94.69	29.5	120.4	
Tb	159	No Gas	20310978.86	11.3	21871384.4	92.87	29.5	120.4	
Tb	159	He	8562905.29	0.6	8589669.11	99.69	29.5	120.4	
Bi	209	No Gas	9718865.40	11.4	10079220.95	96.42	29.5	120.4	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB
File Name	090_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 18:03:06
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	006CALB.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**admin**

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
9	Be	6	No Gas	0.041	ppb	62.5	360.02	0.2	
11	B	6	No Gas	0.425	ppb	16.2	6469.45	4	
23	Na	45	He	23.608	ppb	6.8	30867.11	200	
24	Mg	45	He	1.207	ppb	26.8	520.05	20	
27	Al	45	He	0.036	ppb	384.1	123.34	20	
28	Si	45	H2	27.621	ppb	5.1	6635.63	100	
39	K	45	He	4.702	ppb	41.5	21042.74	200	
40	Ca	45	H2	1.843	ppb	21.0	8934.23	20	
51	V	89	He	-0.009	ppb	N/A	210.01	1	
52	Cr	89	He	-0.008	ppb	N/A	763.22	1	
55	Mn	89	He	0.029	ppb	5.9	147.30	0.4	
56	Fe	89	H2	4.019	ppb	13.0	29691.46	20	
59	Co	89	He	0.007	ppb	11.4	66.67	0.2	
60	Ni	89	He	0.012	ppb	17.7	90.00	0.4	
63	Cu	89	He	0.010	ppb	63.9	620.04	0.6	
66	Zn	89	He	-0.062	ppb	N/A	237.79	2	
75	As	89	He	0.099	ppb	5.0	79.68	1	
78	Se	89	H2	0.877	ppb	13.0	241.16	1	Failed DoD
88	Sr	89	He	0.008	ppb	63.7	77.78	1	
95	Mo	89	He	0.686	ppb	10.2	2454.76	1	Failed DoD
107	Ag	89	He	0.009	ppb	15.4	123.34	0.2	
111	Cd	89	He	0.003	ppb	41.2	5.93	0.2	
118	Sn	159	He	0.107	ppb	27.4	648.93	1	
121	Sb	159	No Gas	0.061	ppb	40.7	1431.69	0.2	
137	Ba	159	No Gas	0.037	ppb	31.7	457.18	0.4	
182	W	159	No Gas	2.515	ppb	0.4	40864.60	1	Fail All Methods□ Failed DoD
205	Tl	209	No Gas	0.069	ppb	52.9	2596.56	0.2	
208	Pb	209	No Gas	0.030	ppb	82.8	4014.78	0.2	
232	Th	209	No Gas	0.532	ppb	6.4	26130.26	1	Failed DoD
238	U	209	No Gas	0.070	ppb	45.9	3357.65	0.2	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6483632.68	1.6	5961075.87	108.77	29.5	120.4	
Sc	45	No Gas	12563638.09	1.1	13015983.55	96.52	29.5	120.4	
Sc	45	H2	1386351.68	0.5	1430290.9	96.93	29.5	120.4	
Sc	45	He	406429.23	0.2	438046.17	92.78	29.5	120.4	
Ge	72	No Gas	2415250.94	2.0	2458564.83	98.24	29.5	120.4	
Ge	72	H2	478374.44	1.6	491199	97.39	29.5	120.4	
Ge	72	He	240534.37	0.3	255273.97	94.23	29.5	120.4	
Y	89	H2	7350721.45	1.4	7442438.64	98.77	29.5	120.4	
Y	89	He	2058732.45	0.3	2167302.66	94.99	29.5	120.4	
Tb	159	No Gas	23183203.26	1.0	21871384.4	106	29.5	120.4	
Tb	159	He	8594240.78	0.9	8589669.11	100.05	29.5	120.4	
Bi	209	No Gas	11025347.04	1.0	10079220.95	109.39	29.5	120.4	

Sample Report

Sample Name SO35O5-012L

File Name 091SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 18:05:36

Sample Type Sample

Total Dilution 25.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.093	ppb	28.4	42.22	100	
11	B	6	No Gas	55.505	ppb	12.2	16151.81	1000	
23	Na	45	He	163582.693	ppb	7.3	4008266.93	200000	
24	Mg	45	He	11117.956	ppb	7.5	158722.17	200000	
27	Al	45	He	174.480	ppb	16.2	1067.94	200000	
28	Si	45	H2	4429.971	ppb	3.1	38883.15	10000	
39	K	45	He	2788.633	ppb	10.1	51429.55	200000	
40	Ca	45	H2	48918.517	ppb	2.0	3681026.61	200000	
51	V	89	He	0.059	ppb	648.8	260.01	1000	
52	Cr	89	He	0.727	ppb	11.1	983.19	2000	
55	Mn	89	He	7.318	ppb	11.6	854.54	2000	
56	Fe	89	H2	254.523	ppb	2.2	68735.57	100000	
59	Co	89	He	0.278	ppb	29.7	108.90	1000	
60	Ni	89	He	2.330	ppb	9.9	297.79	1000	
63	Cu	89	He	2.568	ppb	11.2	1247.88	2000	
66	Zn	89	He	11.677	ppb	22.8	703.37	2000	
75	As	89	He	1.563	ppb	17.0	57.01	1000	
78	Se	89	H2	3.496	ppb	8.9	42.00	1000	
88	Sr	89	He	234.779	ppb	6.2	29496.15	2000	
95	Mo	89	He	6.344	ppb	8.7	994.52	1000	
107	Ag	89	He	0.102	ppb	30.1	74.45	100	
111	Cd	89	He	0.068	ppb	29.6	5.56	1000	
118	Sn	159	He	1.419	ppb	41.8	502.25	1000	
121	Sb	159	No Gas	1.159	ppb	8.5	1101.27	1000	
137	Ba	159	No Gas	19.980	ppb	15.1	7286.85	2000	
182	W	159	No Gas	14.787	ppb	10.0	11972.29	1000	
205	Tl	209	No Gas	0.088	ppb	19.6	263.63	1000	
208	Pb	209	No Gas	0.182	ppb	38.9	2826.63	2000	
232	Th	209	No Gas	9.091	ppb	12.8	17872.86	1000	
238	U	209	No Gas	0.462	ppb	14.0	887.70	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6454066.18	3.7	5961075.87	108.27	29.5	120.4	
Sc	45	No Gas	12542256.50	1.6	13015983.55	96.36	29.5	120.4	
Sc	45	H2	1385604.03	1.7	1430290.9	96.88	29.5	120.4	
Sc	45	He	408102.57	2.3	438046.17	93.16	29.5	120.4	
Ge	72	No Gas	2413542.99	1.9	2458564.83	98.17	29.5	120.4	
Ge	72	H2	476406.34	1.4	491199	96.99	29.5	120.4	
Ge	72	He	242297.46	1.6	255273.97	94.92	29.5	120.4	
Y	89	H2	7357547.60	2.0	7442438.64	98.86	29.5	120.4	
Y	89	He	2055679.57	1.8	2167302.66	94.85	29.5	120.4	
Tb	159	No Gas	23139110.49	2.3	21871384.4	105.8	29.5	120.4	
Tb	159	He	8595405.78	2.1	8589669.11	100.07	29.5	120.4	
Bi	209	No Gas	10955268.21	3.0	10079220.95	108.69	29.5	120.4	

Sample Report

Sample Name SO3505-012P

File Name 092SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 18:08:07

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	39.275	ppb	12.5	65286.62	100	
11	B	6	No Gas	449.014	ppb	12.2	485182.59	1000	
23	Na	45	He	175610.254	ppb	0.5	21066984.57	200000	
24	Mg	45	He	16894.064	ppb	1.0	1184184.72	200000	
27	Al	45	He	2246.170	ppb	0.2	60102.05	200000	
28	Si	45	H2	5008.799	ppb	2.5	208668.35	10000	
39	K	45	He	13921.515	ppb	0.8	795613.76	200000	
40	Ca	45	H2	52099.736	ppb	2.9	18852367.36	200000	
51	V	89	He	508.735	ppb	0.8	462250.41	1000	
52	Cr	89	He	204.812	ppb	0.1	235237.57	2000	
55	Mn	89	He	510.325	ppb	0.6	265374.38	2000	
56	Fe	89	H2	1224.659	ppb	2.2	1497044.77	100000	
59	Co	89	He	514.890	ppb	0.6	920105.00	1000	
60	Ni	89	He	512.212	ppb	1.4	253895.08	1000	
63	Cu	89	He	261.242	ppb	0.9	342964.01	2000	
66	Zn	89	He	517.439	ppb	0.5	88674.01	2000	
75	As	89	He	102.288	ppb	1.0	12247.72	1000	
78	Se	89	H2	101.268	ppb	4.5	5285.43	1000	
88	Sr	89	He	733.277	ppb	0.2	445090.71	2000	
95	Mo	89	He	109.737	ppb	0.6	71655.80	1000	
107	Ag	89	He	52.309	ppb	0.7	111256.42	100	
111	Cd	89	He	261.103	ppb	1.0	70141.22	1000	
118	Sn	159	He	492.801	ppb	1.1	280329.72	1000	
121	Sb	159	No Gas	89.319	ppb	11.2	382714.89	1000	
137	Ba	159	No Gas	1538.504	ppb	11.2	2773836.42	2000	
182	W	159	No Gas	101.960	ppb	10.9	309549.20	1000	
205	Tl	209	No Gas	96.995	ppb	11.1	675913.46	1000	
208	Pb	209	No Gas	93.131	ppb	10.8	932750.76	2000	
232	Th	209	No Gas	96.599	ppb	7.9	907256.59	1000	
238	U	209	No Gas	93.536	ppb	8.1	877866.82	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6386729.99	4.0	5961075.87	107.14	29.5	120.4	
Sc	45	No Gas	12623175.23	3.7	13015983.55	96.98	29.5	120.4	
Sc	45	H2	1333997.49	1.1	1430290.9	93.27	29.5	120.4	
Sc	45	He	400525.25	1.1	438046.17	91.43	29.5	120.4	
Ge	72	No Gas	2405502.08	2.9	2458564.83	97.84	29.5	120.4	
Ge	72	H2	449073.78	0.6	491199	91.42	29.5	120.4	
Ge	72	He	233439.45	1.1	255273.97	91.45	29.5	120.4	
Y	89	H2	7084988.96	0.7	7442438.64	95.2	29.5	120.4	
Y	89	He	1988384.81	1.0	2167302.66	91.74	29.5	120.4	
Tb	159	No Gas	23276396.88	3.5	21871384.4	106.42	29.5	120.4	
Tb	159	He	8364707.30	0.8	8589669.11	97.38	29.5	120.4	
Bi	209	No Gas	10784443.34	2.3	10079220.95	107	29.5	120.4	

Sample Report

Sample Name SO3505-012S

File Name 093SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 18:10:33

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	41.490	ppb	8.6	68870.74	100	
11	B	6	No Gas	470.486	ppb	9.1	507452.60	1000	
23	Na	45	He	178641.145	ppb	0.9	21207471.93	200000	
24	Mg	45	He	17064.663	ppb	0.6	1183773.20	200000	
27	Al	45	He	2291.963	ppb	0.6	60687.35	200000	
28	Si	45	H2	4905.603	ppb	0.3	204812.90	10000	
39	K	45	He	14211.553	ppb	0.1	803327.04	200000	
40	Ca	45	H2	51174.138	ppb	0.4	18556542.36	200000	
51	V	89	He	518.980	ppb	1.2	467796.30	1000	
52	Cr	89	He	208.966	ppb	1.4	238076.94	2000	
55	Mn	89	He	521.128	ppb	0.3	268852.85	2000	
56	Fe	89	H2	1258.574	ppb	0.9	1527108.42	100000	
59	Co	89	He	525.570	ppb	1.0	931755.73	1000	
60	Ni	89	He	521.691	ppb	1.0	256550.59	1000	
63	Cu	89	He	266.225	ppb	0.8	346739.95	2000	
66	Zn	89	He	529.068	ppb	1.3	89938.60	2000	
75	As	89	He	105.754	ppb	0.5	12562.03	1000	
78	Se	89	H2	105.674	ppb	2.0	5474.83	1000	
88	Sr	89	He	745.076	ppb	0.8	448655.99	2000	
95	Mo	89	He	113.302	ppb	0.8	73396.28	1000	
107	Ag	89	He	53.556	ppb	1.7	113001.31	100	
111	Cd	89	He	267.845	ppb	1.3	71380.24	1000	
118	Sn	159	He	501.784	ppb	1.0	284214.74	1000	
121	Sb	159	No Gas	95.198	ppb	8.1	403028.42	1000	
137	Ba	159	No Gas	1629.407	ppb	8.4	2902632.82	2000	
182	W	159	No Gas	112.674	ppb	6.5	337747.03	1000	
205	Tl	209	No Gas	103.309	ppb	8.3	717433.37	1000	
208	Pb	209	No Gas	98.151	ppb	8.4	979437.44	2000	
232	Th	209	No Gas	105.056	ppb	5.9	982972.66	1000	
238	U	209	No Gas	96.778	ppb	3.4	905228.64	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6366362.07	2.2	5961075.87	106.8	29.5	120.4	
Sc	45	No Gas	12477067.67	2.3	13015983.55	95.86	29.5	120.4	
Sc	45	H2	1336752.15	0.4	1430290.9	93.46	29.5	120.4	
Sc	45	He	396365.60	0.6	438046.17	90.48	29.5	120.4	
Ge	72	No Gas	2380965.28	2.7	2458564.83	96.84	29.5	120.4	
Ge	72	H2	449617.87	0.5	491199	91.53	29.5	120.4	
Ge	72	He	232871.45	1.2	255273.97	91.22	29.5	120.4	
Y	89	H2	7033097.38	1.0	7442438.64	94.5	29.5	120.4	
Y	89	He	1972699.15	1.1	2167302.66	91.02	29.5	120.4	
Tb	159	No Gas	22965607.71	2.0	21871384.4	105	29.5	120.4	
Tb	159	He	8329407.65	1.0	8589669.11	96.97	29.5	120.4	
Bi	209	No Gas	10739456.79	1.9	10079220.95	106.55	29.5	120.4	

Sample Report

Sample Name SO3505-013

File Name 094SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 18:12:59

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.050	ppb	34.5	87.78	100	
11	B	6	No Gas	308.404	ppb	6.4	312308.70	1000	
23	Na	45	He	131067.816	ppb	1.2	15805880.63	200000	
24	Mg	45	He	13452.756	ppb	0.5	947748.22	200000	
27	Al	45	He	51.162	ppb	8.3	1490.14	200000	
28	Si	45	H2	4456.397	ppb	2.8	186724.39	10000	
39	K	45	He	11227.672	ppb	0.8	648616.54	200000	
40	Ca	45	H2	17790.943	ppb	2.1	6476309.07	200000	
51	V	89	He	1.099	ppb	7.1	1242.32	1000	
52	Cr	89	He	0.751	ppb	2.1	1647.81	2000	
55	Mn	89	He	12.865	ppb	1.1	6771.76	2000	
56	Fe	89	H2	142.756	ppb	3.1	178436.02	100000	
59	Co	89	He	0.234	ppb	21.8	424.48	1000	
60	Ni	89	He	0.416	ppb	24.9	264.46	1000	
63	Cu	89	He	0.816	ppb	2.4	1607.93	2000	
66	Zn	89	He	2.665	ppb	11.4	738.93	2000	
75	As	89	He	1.110	ppb	8.7	150.69	1000	
78	Se	89	H2	2.659	ppb	32.5	142.50	1000	
88	Sr	89	He	121.060	ppb	1.4	73709.68	2000	
95	Mo	89	He	16.424	ppb	0.2	10865.79	1000	
107	Ag	89	He	0.035	ppb	33.8	103.34	100	
111	Cd	89	He	0.076	ppb	33.3	22.22	1000	
118	Sn	159	He	1.013	ppb	4.8	907.84	1000	
121	Sb	159	No Gas	0.369	ppb	6.6	1585.21	1000	
137	Ba	159	No Gas	1.527	ppb	23.6	2693.31	2000	
182	W	159	No Gas	6.947	ppb	7.4	22464.90	1000	
205	Tl	209	No Gas	0.116	ppb	17.8	904.39	1000	
208	Pb	209	No Gas	0.283	ppb	11.8	5006.05	2000	
232	Th	209	No Gas	9.948	ppb	9.3	89631.82	1000	
238	U	209	No Gas	0.248	ppb	10.4	2236.03	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5953202.73	4.0	5961075.87	99.87	29.5	120.4	
Sc	45	No Gas	11763874.81	5.1	13015983.55	90.38	29.5	120.4	
Sc	45	H2	1341569.94	2.1	1430290.9	93.8	29.5	120.4	
Sc	45	He	402525.74	0.6	438046.17	91.89	29.5	120.4	
Ge	72	No Gas	2298106.39	3.8	2458564.83	93.47	29.5	120.4	
Ge	72	H2	451608.88	1.5	491199	91.94	29.5	120.4	
Ge	72	He	235882.80	0.5	255273.97	92.4	29.5	120.4	
Y	89	H2	7098447.10	1.9	7442438.64	95.38	29.5	120.4	
Y	89	He	1993203.56	1.4	2167302.66	91.97	29.5	120.4	
Tb	159	No Gas	21765837.17	5.0	21871384.4	99.52	29.5	120.4	
Tb	159	He	8408765.78	0.3	8589669.11	97.89	29.5	120.4	
Bi	209	No Gas	10305371.36	4.8	10079220.95	102.24	29.5	120.4	

Sample Report

Sample Name	RINSE
File Name	095SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 18:15:30
Sample Type	Sample
Total Dilution	1.0000
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.001	ppb	91.2	22.22	100	
11	B	6	No Gas	0.970	ppb	6.9	9536.81	1000	
23	Na	45	He	31.399	ppb	4.1	35861.56	200000	
24	Mg	45	He	0.793	ppb	12.7	375.59	200000	
27	Al	45	He	0.102	ppb	77.6	133.34	200000	
28	Si	45	H2	48.961	ppb	3.1	11173.59	10000	
39	K	45	He	5.220	ppb	44.4	21343.05	200000	
40	Ca	45	H2	1.358	ppb	12.1	7975.84	200000	
51	V	89	He	-0.009	ppb	N/A	207.79	1000	
52	Cr	89	He	-0.014	ppb	N/A	727.89	2000	
55	Mn	89	He	0.047	ppb	74.1	194.74	2000	
56	Fe	89	H2	0.157	ppb	22.8	5220.16	100000	
59	Co	89	He	0.007	ppb	23.0	75.56	1000	
60	Ni	89	He	0.009	ppb	56.7	83.34	1000	
63	Cu	89	He	0.017	ppb	57.9	666.71	2000	
66	Zn	89	He	-0.005	ppb	N/A	288.90	2000	
75	As	89	He	0.035	ppb	58.0	40.00	1000	
78	Se	89	H2	0.089	ppb	10.7	27.83	1000	
88	Sr	89	He	0.012	ppb	2.2	91.11	2000	
95	Mo	89	He	0.188	ppb	6.8	776.72	1000	
107	Ag	89	He	0.002	ppb	49.6	52.22	100	
111	Cd	89	He	0.002	ppb	92.3	4.81	1000	
118	Sn	159	He	0.010	ppb	49.6	364.46	1000	
121	Sb	159	No Gas	0.003	ppb	9.7	180.20	1000	
137	Ba	159	No Gas	0.018	ppb	17.1	286.99	2000	
182	W	159	No Gas	0.294	ppb	13.3	7550.70	1000	
205	Tl	209	No Gas	0.002	ppb	92.3	223.59	1000	
208	Pb	209	No Gas	-0.014	ppb	N/A	1755.35	2000	
232	Th	209	No Gas	0.009	ppb	22.0	994.49	1000	
238	U	209	No Gas	0.002	ppb	38.5	80.09	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6546310.30	2.6	5961075.87	109.82	29.5	120.4	
Sc	45	No Gas	12709994.13	1.6	13015983.55	97.65	29.5	120.4	
Sc	45	H2	1378165.17	1.2	1430290.9	96.36	29.5	120.4	
Sc	45	He	409364.61	0.7	438046.17	93.45	29.5	120.4	
Ge	72	No Gas	2418047.42	2.8	2458564.83	98.35	29.5	120.4	
Ge	72	H2	467337.99	0.7	491199	95.14	29.5	120.4	
Ge	72	He	241655.40	0.6	255273.97	94.67	29.5	120.4	
Y	89	H2	7271995.18	0.3	7442438.64	97.71	29.5	120.4	
Y	89	He	2063380.05	1.3	2167302.66	95.2	29.5	120.4	
Tb	159	No Gas	23198759.65	2.0	21871384.4	106.07	29.5	120.4	
Tb	159	He	8564835.92	0.4	8589669.11	99.71	29.5	120.4	
Bi	209	No Gas	11092856.32	1.8	10079220.95	110.06	29.5	120.4	

Sample Report

Sample Name SO3505-016

File Name 096SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 18:18:00

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.010	ppb	121.4	27.78	100	
11	B	6	No Gas	49.684	ppb	10.1	56039.97	1000	
23	Na	45	He	96941.568	ppb	1.1	11687341.72	200000	
24	Mg	45	He	5493.355	ppb	0.6	386821.31	200000	
27	Al	45	He	13.803	ppb	12.9	487.80	200000	
28	Si	45	H2	3704.901	ppb	1.9	155892.53	10000	
39	K	45	He	1613.394	ppb	0.3	109857.84	200000	
40	Ca	45	H2	32316.812	ppb	1.5	11800706.63	200000	
51	V	89	He	0.280	ppb	8.0	503.36	1000	
52	Cr	89	He	0.616	ppb	3.1	1511.81	2000	
55	Mn	89	He	745.367	ppb	0.2	393362.59	2000	
56	Fe	89	H2	20.709	ppb	2.6	29567.42	100000	
59	Co	89	He	0.415	ppb	5.8	760.07	1000	
60	Ni	89	He	0.987	ppb	7.0	554.48	1000	
63	Cu	89	He	1.041	ppb	4.5	1926.88	2000	
66	Zn	89	He	1.219	ppb	14.3	497.81	2000	
75	As	89	He	0.333	ppb	14.1	58.34	1000	
78	Se	89	H2	0.540	ppb	2.4	32.33	1000	
88	Sr	89	He	135.394	ppb	0.5	83445.63	2000	
95	Mo	89	He	0.752	ppb	13.5	634.49	1000	
107	Ag	89	He	0.018	ppb	15.3	67.78	100	
111	Cd	89	He	0.052	ppb	6.3	15.93	1000	
118	Sn	159	He	0.429	ppb	15.1	580.03	1000	
121	Sb	159	No Gas	0.197	ppb	13.1	947.77	1000	
137	Ba	159	No Gas	22.998	ppb	8.7	41284.07	2000	
182	W	159	No Gas	1.396	ppb	4.4	7283.56	1000	
205	Tl	209	No Gas	0.031	ppb	26.5	357.07	1000	
208	Pb	209	No Gas	0.055	ppb	20.6	3020.21	2000	
232	Th	209	No Gas	0.656	ppb	10.0	6819.55	1000	
238	U	209	No Gas	0.025	ppb	23.7	250.28	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6239646.25	4.1	5961075.87	104.67	29.5	120.4	
Sc	45	No Gas	12517847.82	3.2	13015983.55	96.17	29.5	120.4	
Sc	45	H2	1345842.29	1.3	1430290.9	94.1	29.5	120.4	
Sc	45	He	402279.57	0.9	438046.17	91.83	29.5	120.4	
Ge	72	No Gas	2408852.49	3.8	2458564.83	97.98	29.5	120.4	
Ge	72	H2	449506.25	1.1	491199	91.51	29.5	120.4	
Ge	72	He	236188.71	1.1	255273.97	92.52	29.5	120.4	
Y	89	H2	7132146.48	0.4	7442438.64	95.83	29.5	120.4	
Y	89	He	2018026.43	1.5	2167302.66	93.11	29.5	120.4	
Tb	159	No Gas	23067472.43	2.7	21871384.4	105.47	29.5	120.4	
Tb	159	He	8488428.55	0.7	8589669.11	98.82	29.5	120.4	
Bi	209	No Gas	10961016.05	3.2	10079220.95	108.75	29.5	120.4	

Sample Report

Sample Name SO3505-016A

File Name 097SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 18:20:27

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	9.150	ppb	12.6	14644.60	100	
11	B	6	No Gas	223.726	ppb	10.2	234714.49	1000	
23	Na	45	He	105267.386	ppb	0.3	12660579.61	200000	
24	Mg	45	He	6445.997	ppb	0.5	452820.53	200000	
27	Al	45	He	1048.168	ppb	1.7	28164.57	200000	
28	Si	45	H2	8300.436	ppb	1.3	349582.42	10000	
39	K	45	He	12815.317	ppb	0.7	735389.06	200000	
40	Ca	45	H2	32384.076	ppb	1.6	11863188.99	200000	
51	V	89	He	51.877	ppb	1.7	47700.57	1000	
52	Cr	89	He	52.623	ppb	1.0	61471.50	2000	
55	Mn	89	He	755.317	ppb	1.4	395620.99	2000	
56	Fe	89	H2	1066.418	ppb	2.5	1307874.39	100000	
59	Co	89	He	11.321	ppb	0.5	20385.04	1000	
60	Ni	89	He	22.224	ppb	0.6	11152.61	1000	
63	Cu	89	He	33.317	ppb	1.9	44530.74	2000	
66	Zn	89	He	108.609	ppb	1.5	18975.73	2000	
75	As	89	He	51.683	ppb	1.1	6243.09	1000	
78	Se	89	H2	50.779	ppb	2.4	2660.47	1000	
88	Sr	89	He	183.964	ppb	0.3	112525.62	2000	
95	Mo	89	He	54.537	ppb	0.8	35942.54	1000	
107	Ag	89	He	11.350	ppb	1.6	24341.40	100	
111	Cd	89	He	11.217	ppb	2.2	3037.04	1000	
118	Sn	159	He	51.103	ppb	0.9	29591.07	1000	
121	Sb	159	No Gas	10.535	ppb	7.9	45005.27	1000	
137	Ba	159	No Gas	40.886	ppb	8.4	73448.46	2000	
182	W	159	No Gas	54.117	ppb	7.7	164908.23	1000	
205	Tl	209	No Gas	10.678	ppb	9.2	75750.48	1000	
208	Pb	209	No Gas	10.286	ppb	7.2	106908.44	2000	
232	Th	209	No Gas	11.442	ppb	9.5	109665.55	1000	
238	U	209	No Gas	10.455	ppb	8.5	99694.37	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6144085.01	3.4	5961075.87	103.07	29.5	120.4	
Sc	45	No Gas	12536044.35	1.8	13015983.55	96.31	29.5	120.4	
Sc	45	H2	1350338.06	1.7	1430290.9	94.41	29.5	120.4	
Sc	45	He	401334.07	0.6	438046.17	91.62	29.5	120.4	
Ge	72	No Gas	2418185.94	2.7	2458564.83	98.36	29.5	120.4	
Ge	72	H2	446492.41	1.1	491199	90.9	29.5	120.4	
Ge	72	He	236437.03	0.2	255273.97	92.62	29.5	120.4	
Y	89	H2	7106561.73	1.5	7442438.64	95.49	29.5	120.4	
Y	89	He	2003063.29	0.8	2167302.66	92.42	29.5	120.4	
Tb	159	No Gas	23117185.77	1.8	21871384.4	105.7	29.5	120.4	
Tb	159	He	8429118.42	0.9	8589669.11	98.13	29.5	120.4	
Bi	209	No Gas	10953293.32	2.0	10079220.95	108.67	29.5	120.4	

Sample Report

Sample Name SO3505-016L

File Name 098SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 18:23:00

Sample Type Sample

Total Dilution 20.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.109	ppb	51.3	56.67	100	
11	B	6	No Gas	48.857	ppb	7.4	17208.54	1000	
23	Na	45	He	79016.090	ppb	0.9	2432763.51	200000	
24	Mg	45	He	4454.334	ppb	1.7	79730.06	200000	
27	Al	45	He	10.722	ppb	8.8	192.23	200000	
28	Si	45	H2	3524.902	ppb	1.8	38193.87	10000	
39	K	45	He	1363.628	ppb	3.0	39214.26	200000	
40	Ca	45	H2	26165.823	ppb	1.2	2431840.80	200000	
51	V	89	He	-0.032	ppb	N/A	241.12	1000	
52	Cr	89	He	0.474	ppb	20.5	946.53	2000	
55	Mn	89	He	611.272	ppb	1.3	81764.78	2000	
56	Fe	89	H2	19.831	ppb	6.2	10439.04	100000	
59	Co	89	He	0.364	ppb	6.1	173.35	1000	
60	Ni	89	He	1.282	ppb	15.9	222.23	1000	
63	Cu	89	He	1.648	ppb	4.4	1104.53	2000	
66	Zn	89	He	1.531	ppb	50.5	357.79	2000	
75	As	89	He	1.176	ppb	24.5	54.34	1000	
78	Se	89	H2	5.037	ppb	19.2	71.50	1000	
88	Sr	89	He	110.985	ppb	0.7	17369.28	2000	
95	Mo	89	He	3.799	ppb	9.5	774.50	1000	
107	Ag	89	He	0.024	ppb	60.7	42.22	100	
111	Cd	89	He	0.109	ppb	42.9	9.26	1000	
118	Sn	159	He	0.617	ppb	31.7	425.58	1000	
121	Sb	159	No Gas	0.745	ppb	7.4	921.06	1000	
137	Ba	159	No Gas	18.871	ppb	11.5	8692.62	2000	
182	W	159	No Gas	11.366	ppb	1.6	11788.59	1000	
205	Tl	209	No Gas	0.109	ppb	28.9	337.05	1000	
208	Pb	209	No Gas	-0.134	ppb	N/A	2149.15	2000	
232	Th	209	No Gas	0.464	ppb	23.0	1685.35	1000	
238	U	209	No Gas	0.171	ppb	27.0	423.82	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6393615.16	4.0	5961075.87	107.26	29.5	120.4	
Sc	45	No Gas	12634841.58	2.9	13015983.55	97.07	29.5	120.4	
Sc	45	H2	1367813.16	0.5	1430290.9	95.63	29.5	120.4	
Sc	45	He	408697.97	1.1	438046.17	93.3	29.5	120.4	
Ge	72	No Gas	2431303.07	3.9	2458564.83	98.89	29.5	120.4	
Ge	72	H2	463967.90	0.2	491199	94.46	29.5	120.4	
Ge	72	He	240334.80	1.0	255273.97	94.15	29.5	120.4	
Y	89	H2	7272419.30	0.4	7442438.64	97.72	29.5	120.4	
Y	89	He	2044728.75	1.1	2167302.66	94.34	29.5	120.4	
Tb	159	No Gas	23432170.48	3.1	21871384.4	107.14	29.5	120.4	
Tb	159	He	8578326.26	1.5	8589669.11	99.87	29.5	120.4	
Bi	209	No Gas	11110726.17	3.3	10079220.95	110.23	29.5	120.4	

Sample Report

Sample Name SO3505-016P

File Name 099SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 18:25:28

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	40.193	ppb	9.9	66170.66	100	
11	B	6	No Gas	455.608	ppb	10.8	487355.61	1000	
23	Na	45	He	106368.946	ppb	2.1	12633365.63	200000	
24	Mg	45	He	10911.165	ppb	2.2	756867.95	200000	
27	Al	45	He	2130.734	ppb	1.5	56426.53	200000	
28	Si	45	H2	4713.490	ppb	0.2	195384.39	10000	
39	K	45	He	13084.261	ppb	1.5	741112.81	200000	
40	Ca	45	H2	34834.547	ppb	1.4	12540549.26	200000	
51	V	89	He	513.372	ppb	3.2	469154.59	1000	
52	Cr	89	He	206.834	ppb	3.3	238920.49	2000	
55	Mn	89	He	1262.792	ppb	2.3	660486.07	2000	
56	Fe	89	H2	1056.894	ppb	0.9	1285111.08	100000	
59	Co	89	He	525.301	ppb	2.3	944288.52	1000	
60	Ni	89	He	523.206	ppb	3.2	260856.08	1000	
63	Cu	89	He	266.780	ppb	2.3	352316.57	2000	
66	Zn	89	He	517.559	ppb	2.4	89218.46	2000	
75	As	89	He	103.717	ppb	2.2	12491.97	1000	
78	Se	89	H2	103.266	ppb	0.8	5359.29	1000	
88	Sr	89	He	632.965	ppb	3.0	386435.78	2000	
95	Mo	89	He	110.030	ppb	2.4	72273.50	1000	
107	Ag	89	He	53.641	ppb	3.2	114751.69	100	
111	Cd	89	He	267.313	ppb	2.9	72229.17	1000	
118	Sn	159	He	499.803	ppb	1.3	284428.89	1000	
121	Sb	159	No Gas	91.064	ppb	7.2	393077.53	1000	
137	Ba	159	No Gas	1567.323	ppb	8.5	2846945.75	2000	
182	W	159	No Gas	102.325	ppb	7.1	312908.76	1000	
205	Tl	209	No Gas	99.104	ppb	9.0	688766.08	1000	
208	Pb	209	No Gas	95.738	ppb	8.6	956123.64	2000	
232	Th	209	No Gas	91.870	ppb	7.8	860168.26	1000	
238	U	209	No Gas	95.508	ppb	5.7	893461.29	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6315262.23	3.4	5961075.87	105.94	29.5	120.4	
Sc	45	No Gas	12723380.33	1.2	13015983.55	97.75	29.5	120.4	
Sc	45	H2	1326995.49	1.0	1430290.9	92.78	29.5	120.4	
Sc	45	He	396442.38	2.2	438046.17	90.5	29.5	120.4	
Ge	72	No Gas	2415096.10	2.4	2458564.83	98.23	29.5	120.4	
Ge	72	H2	446676.43	1.3	491199	90.94	29.5	120.4	
Ge	72	He	233688.55	1.0	255273.97	91.54	29.5	120.4	
Y	89	H2	7044505.04	1.3	7442438.64	94.65	29.5	120.4	
Y	89	He	2000920.49	2.5	2167302.66	92.32	29.5	120.4	
Tb	159	No Gas	23388171.32	1.4	21871384.4	106.94	29.5	120.4	
Tb	159	He	8369291.96	1.5	8589669.11	97.43	29.5	120.4	
Bi	209	No Gas	10744758.55	3.5	10079220.95	106.6	29.5	120.4	

Sample Report

Sample Name RINSE

File Name 100SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 18:27:55

Sample Type Sample

Total Dilution 1.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.026	ppb	69.2	233.35	100	
11	B	6	No Gas	1.327	ppb	17.6	11368.28	1000	
23	Na	45	He	22.351	ppb	4.0	30011.24	200000	
24	Mg	45	He	0.239	ppb	60.3	175.57	200000	
27	Al	45	He	-0.085	ppb	N/A	106.67	200000	
28	Si	45	H2	49.314	ppb	8.6	10809.43	10000	
39	K	45	He	4.274	ppb	17.5	20860.86	200000	
40	Ca	45	H2	1.269	ppb	22.4	7506.69	200000	
51	V	89	He	0.011	ppb	48.2	298.90	1000	
52	Cr	89	He	-0.012	ppb	N/A	741.22	2000	
55	Mn	89	He	0.049	ppb	7.9	199.97	2000	
56	Fe	89	H2	-0.042	ppb	N/A	3841.47	100000	
59	Co	89	He	0.018	ppb	12.7	171.13	1000	
60	Ni	89	He	0.020	ppb	24.6	111.12	1000	
63	Cu	89	He	0.014	ppb	41.3	647.81	2000	
66	Zn	89	He	0.016	ppb	246.5	305.57	2000	
75	As	89	He	0.063	ppb	19.5	57.01	1000	
78	Se	89	H2	0.483	ppb	13.0	128.99	1000	
88	Sr	89	He	0.023	ppb	48.0	126.67	2000	
95	Mo	89	He	0.311	ppb	8.6	1184.54	1000	
107	Ag	89	He	0.002	ppb	50.3	51.11	100	
111	Cd	89	He	0.008	ppb	50.2	13.33	1000	
118	Sn	159	He	0.103	ppb	27.1	630.04	1000	
121	Sb	159	No Gas	0.059	ppb	51.1	1398.32	1000	
137	Ba	159	No Gas	0.710	ppb	80.3	6643.48	2000	
182	W	159	No Gas	1.225	ppb	6.5	21756.33	1000	
205	Tl	209	No Gas	0.060	ppb	64.9	2309.53	1000	
208	Pb	209	No Gas	0.027	ppb	95.9	3887.95	2000	
232	Th	209	No Gas	0.349	ppb	1.9	17425.01	1000	
238	U	209	No Gas	0.087	ppb	74.0	4275.90	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6463079.63	1.9	5961075.87	108.42	29.5	120.4	
Sc	45	No Gas	12688321.42	1.7	13015983.55	97.48	29.5	120.4	
Sc	45	H2	1325899.63	2.6	1430290.9	92.7	29.5	120.4	
Sc	45	He	405227.61	0.4	438046.17	92.51	29.5	120.4	
Ge	72	No Gas	2417929.77	2.2	2458564.83	98.35	29.5	120.4	
Ge	72	H2	455766.06	1.4	491199	92.79	29.5	120.4	
Ge	72	He	239719.60	0.5	255273.97	93.91	29.5	120.4	
Y	89	H2	7045498.48	2.1	7442438.64	94.67	29.5	120.4	
Y	89	He	2054093.09	0.3	2167302.66	94.78	29.5	120.4	
Tb	159	No Gas	23435887.43	2.2	21871384.4	107.15	29.5	120.4	
Tb	159	He	8503315.08	1.7	8589669.11	98.99	29.5	120.4	
Bi	209	No Gas	11095583.84	2.0	10079220.95	110.08	29.5	120.4	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV
File Name	101_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 18:30:31
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	006CALB.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**admin**

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
9	Be	6	No Gas	19.676	ppb	8.9	165602.41	25	78.7	89.8	110.2	> +/- 10%
11	B	6	No Gas	20.023	ppb	10.0	112754.79	25	80.09	89.8	110.2	> +/- 10%
23	Na	45	He	5181.215	ppb	1.1	3157078.56	5000	103.62	89.8	110.2	
24	Mg	45	He	5267.554	ppb	0.6	1867195.93	5000	105.35	89.8	110.2	
27	Al	45	He	508.316	ppb	1.7	68758.00	500	101.66	89.8	110.2	
28	Si	45	H2	484.928	ppb	0.6	102770.29	500	96.99	89.8	110.2	
39	K	45	He	5032.224	ppb	1.0	1438340.72	5000	100.64	89.8	110.2	
40	Ca	45	H2	4964.759	ppb	0.6	9111692.92	5000	99.3	89.8	110.2	
51	V	89	He	24.920	ppb	0.8	115582.09	25	99.68	89.8	110.2	
52	Cr	89	He	25.153	ppb	1.1	147537.74	25	100.61	89.8	110.2	
55	Mn	89	He	25.148	ppb	1.0	66700.39	25	100.59	89.8	110.2	
56	Fe	89	H2	4979.411	ppb	1.1	30576775.70	5000	99.59	89.8	110.2	
59	Co	89	He	25.577	ppb	1.1	232937.44	25	102.31	89.8	110.2	
60	Ni	89	He	25.695	ppb	0.9	64959.22	25	102.78	89.8	110.2	
63	Cu	89	He	25.520	ppb	0.7	171034.40	25	102.08	89.8	110.2	
66	Zn	89	He	25.284	ppb	2.9	22299.60	25	101.14	89.8	110.2	
75	As	89	He	24.418	ppb	0.3	14897.57	25	97.67	89.8	110.2	
78	Se	89	H2	24.017	ppb	0.8	6313.31	25	96.07	89.8	110.2	
88	Sr	89	He	24.902	ppb	0.2	77080.99	25	99.61	89.8	110.2	
95	Mo	89	He	25.035	ppb	0.6	83302.85	25	100.14	89.8	110.2	
107	Ag	89	He	26.196	ppb	1.4	283914.39	25	104.78	89.8	110.2	
111	Cd	89	He	25.823	ppb	1.4	35353.44	25	103.29	89.8	110.2	
118	Sn	159	He	24.625	ppb	0.7	71811.74	25	98.5	89.8	110.2	
121	Sb	159	No Gas	22.454	ppb	9.8	476090.63	25	89.82	89.8	110.2	
137	Ba	159	No Gas	21.316	ppb	8.6	190333.69	25	85.26	89.8	110.2	> +/- 10%
182	W	159	No Gas	22.872	ppb	7.6	343302.13	25	91.49	89.8	110.2	
205	Tl	209	No Gas	23.339	ppb	8.9	825342.87	25	93.36	89.8	110.2	
208	Pb	209	No Gas	23.011	ppb	10.3	1168915.12	25	92.04	89.8	110.2	
232	Th	209	No Gas	21.360	ppb	9.9	1017739.50	25	85.44	89.8	110.2	> +/- 10%
238	U	209	No Gas	21.649	ppb	10.0	1030944.39	25	86.6	89.8	110.2	> +/- 10%

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6450399.76	1.7	5961075.87	108.21	29.5	120.4	
Sc	45	No Gas	12435353.88	3.3	13015983.55	95.54	29.5	120.4	
Sc	45	H2	1352709.51	0.6	1430290.9	94.58	29.5	120.4	
Sc	45	He	405097.89	1.3	438046.17	92.48	29.5	120.4	
Ge	72	No Gas	2390264.53	3.4	2458564.83	97.22	29.5	120.4	
Ge	72	H2	456695.25	0.2	491199	92.98	29.5	120.4	
Ge	72	He	238613.69	0.3	255273.97	93.47	29.5	120.4	
Y	89	H2	7136828.71	0.9	7442438.64	95.89	29.5	120.4	
Y	89	He	2026834.52	1.2	2167302.66	93.52	29.5	120.4	
Tb	159	No Gas	23005335.21	2.9	21871384.4	105.18	29.5	120.4	
Tb	159	He	8546254.25	0.1	8589669.11	99.49	29.5	120.4	
Bi	209	No Gas	10944955.51	3.0	10079220.95	108.59	29.5	120.4	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB
File Name	102_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 18:32:55
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	006CALB.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**admin**

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
9	Be	6	No Gas	0.120	ppb	77.4	1042.32	0.2	Failed DoD
11	B	6	No Gas	0.496	ppb	45.7	7076.47	4	
23	Na	45	He	17.638	ppb	6.0	27102.36	200	
24	Mg	45	He	0.523	ppb	16.5	275.58	20	
27	Al	45	He	-0.124	ppb	N/A	101.11	20	
28	Si	45	H2	48.231	ppb	4.8	10732.58	100	
39	K	45	He	3.846	ppb	75.4	20699.04	200	
40	Ca	45	H2	1.130	ppb	50.0	7354.40	20	
51	V	89	He	-0.014	ppb	N/A	184.45	1	
52	Cr	89	He	-0.014	ppb	N/A	731.22	1	
55	Mn	89	He	0.013	ppb	69.6	103.32	0.4	
56	Fe	89	H2	3.613	ppb	21.8	26207.55	20	
59	Co	89	He	0.004	ppb	86.8	46.67	0.2	
60	Ni	89	He	0.010	ppb	57.3	85.56	0.4	
63	Cu	89	He	0.009	ppb	99.5	616.70	0.6	
66	Zn	89	He	-0.056	ppb	N/A	242.23	2	
75	As	89	He	0.108	ppb	32.4	85.34	1	
78	Se	89	H2	0.883	ppb	10.1	234.82	1	Failed DoD
88	Sr	89	He	-0.001	ppb	N/A	50.00	1	
95	Mo	89	He	0.691	ppb	15.9	2469.21	1	Failed DoD
107	Ag	89	He	0.005	ppb	15.4	85.56	0.2	
111	Cd	89	He	0.004	ppb	60.4	6.67	0.2	
118	Sn	159	He	0.116	ppb	20.7	673.38	1	
121	Sb	159	No Gas	0.152	ppb	62.3	3431.08	0.2	Failed DoD
137	Ba	159	No Gas	0.096	ppb	80.8	1011.19	0.4	
182	W	159	No Gas	3.326	ppb	6.2	55732.74	1	Fail All Methods□ Failed DoD
205	Tl	209	No Gas	0.146	ppb	70.9	5487.76	0.2	Failed DoD
208	Pb	209	No Gas	0.089	ppb	80.3	7265.78	0.2	
232	Th	209	No Gas	0.668	ppb	5.2	34307.91	1	Failed DoD
238	U	209	No Gas	0.214	ppb	69.8	10548.13	0.2	Fail All Methods□ Failed DoD

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6748167.88	7.4	5961075.87	113.2	29.5	120.4	
Sc	45	No Gas	13317314.14	11.0	13015983.55	102.32	29.5	120.4	
Sc	45	H2	1342932.47	1.6	1430290.9	93.89	29.5	120.4	
Sc	45	He	404493.27	0.6	438046.17	92.34	29.5	120.4	
Ge	72	No Gas	2484316.68	6.3	2458564.83	101.05	29.5	120.4	
Ge	72	H2	456035.94	1.4	491199	92.84	29.5	120.4	
Ge	72	He	239122.14	0.7	255273.97	93.67	29.5	120.4	
Y	89	H2	7100918.59	1.5	7442438.64	95.41	29.5	120.4	
Y	89	He	2057753.23	0.8	2167302.66	94.95	29.5	120.4	
Tb	159	No Gas	24454853.25	11.0	21871384.4	111.81	29.5	120.4	
Tb	159	He	8580473.69	0.8	8589669.11	99.89	29.5	120.4	
Bi	209	No Gas	11598032.20	9.0	10079220.95	115.07	29.5	120.4	

Sample Report

Sample Name SO3505-016S

File Name 103SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 18:35:25

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	45.200	ppb	10.6	70474.89	100	
11	B	6	No Gas	503.458	ppb	12.0	509694.34	1000	
23	Na	45	He	106003.051	ppb	0.7	12687585.05	200000	
24	Mg	45	He	11078.608	ppb	1.1	774436.45	200000	
27	Al	45	He	2156.040	ppb	1.0	57534.44	200000	
28	Si	45	H2	4784.088	ppb	0.6	199062.00	10000	
39	K	45	He	13148.193	ppb	0.3	750345.29	200000	
40	Ca	45	H2	35094.313	ppb	0.2	12683256.34	200000	
51	V	89	He	520.490	ppb	1.4	473267.16	1000	
52	Cr	89	He	211.065	ppb	1.4	242568.82	2000	
55	Mn	89	He	1269.691	ppb	1.6	660622.72	2000	
56	Fe	89	H2	1090.500	ppb	1.4	1310329.54	100000	
59	Co	89	He	537.257	ppb	1.8	960731.08	1000	
60	Ni	89	He	531.652	ppb	1.6	263729.58	1000	
63	Cu	89	He	269.609	ppb	1.9	354184.06	2000	
66	Zn	89	He	527.422	ppb	1.3	90445.18	2000	
75	As	89	He	105.543	ppb	1.4	12645.45	1000	
78	Se	89	H2	106.178	ppb	1.4	5445.98	1000	
88	Sr	89	He	646.556	ppb	1.2	392738.90	2000	
95	Mo	89	He	112.625	ppb	0.6	73601.05	1000	
107	Ag	89	He	54.732	ppb	1.5	116499.04	100	
111	Cd	89	He	270.498	ppb	1.2	72720.64	1000	
118	Sn	159	He	508.089	ppb	0.3	290622.89	1000	
121	Sb	159	No Gas	107.246	ppb	13.8	410665.39	1000	
137	Ba	159	No Gas	1839.669	ppb	13.0	2966606.11	2000	
182	W	159	No Gas	125.283	ppb	14.5	339168.50	1000	
205	Tl	209	No Gas	113.954	ppb	13.4	726731.24	1000	
208	Pb	209	No Gas	109.648	ppb	12.9	1004908.84	2000	
232	Th	209	No Gas	116.265	ppb	12.9	998564.56	1000	
238	U	209	No Gas	108.639	ppb	10.9	933455.82	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5997937.31	6.9	5961075.87	100.62	29.5	120.4	
Sc	45	No Gas	11286425.51	9.1	13015983.55	86.71	29.5	120.4	
Sc	45	H2	1332097.84	0.9	1430290.9	93.13	29.5	120.4	
Sc	45	He	399396.75	0.3	438046.17	91.18	29.5	120.4	
Ge	72	No Gas	2207397.11	7.8	2458564.83	89.78	29.5	120.4	
Ge	72	H2	445529.48	1.0	491199	90.7	29.5	120.4	
Ge	72	He	233221.05	0.4	255273.97	91.36	29.5	120.4	
Y	89	H2	6961938.67	0.9	7442438.64	93.54	29.5	120.4	
Y	89	He	1990043.75	1.4	2167302.66	91.82	29.5	120.4	
Tb	159	No Gas	20909251.49	9.1	21871384.4	95.6	29.5	120.4	
Tb	159	He	8411167.17	0.3	8589669.11	97.92	29.5	120.4	
Bi	209	No Gas	9919241.70	8.4	10079220.95	98.41	29.5	120.4	

Sample Report

Sample Name SO3505-017

File Name 104SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 18:37:56

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.154	ppb	49.1	234.45	100	
11	B	6	No Gas	57.167	ppb	12.2	58149.29	1000	
23	Na	45	He	134544.185	ppb	0.9	16045647.27	200000	
24	Mg	45	He	4798.870	ppb	0.9	334397.06	200000	
27	Al	45	He	14.467	ppb	9.0	500.03	200000	
28	Si	45	H2	4320.481	ppb	1.3	178858.50	10000	
39	K	45	He	1939.164	ppb	1.0	126757.22	200000	
40	Ca	45	H2	39194.669	ppb	1.4	14085615.76	200000	
51	V	89	He	0.480	ppb	17.9	681.15	1000	
52	Cr	89	He	0.637	ppb	10.0	1521.15	2000	
55	Mn	89	He	408.274	ppb	1.8	213423.49	2000	
56	Fe	89	H2	24.552	ppb	4.4	33443.71	100000	
59	Co	89	He	0.668	ppb	16.0	1206.81	1000	
60	Ni	89	He	1.301	ppb	6.6	705.60	1000	
63	Cu	89	He	1.585	ppb	2.9	2625.90	2000	
66	Zn	89	He	1.835	ppb	4.6	598.92	2000	
75	As	89	He	0.811	ppb	9.3	115.34	1000	
78	Se	89	H2	3.017	ppb	18.6	158.32	1000	
88	Sr	89	He	176.465	ppb	1.4	107706.10	2000	
95	Mo	89	He	2.008	ppb	6.3	1451.24	1000	
107	Ag	89	He	0.029	ppb	18.8	90.00	100	
111	Cd	89	He	0.147	ppb	7.5	41.48	1000	
118	Sn	159	He	1.151	ppb	6.9	980.07	1000	
121	Sb	159	No Gas	0.648	ppb	24.1	2523.06	1000	
137	Ba	159	No Gas	25.453	ppb	12.7	40359.72	2000	
182	W	159	No Gas	9.334	ppb	14.5	27376.74	1000	
205	Tl	209	No Gas	0.339	ppb	55.6	2269.44	1000	
208	Pb	209	No Gas	0.316	ppb	32.7	5062.76	2000	
232	Th	209	No Gas	12.078	ppb	13.3	102904.88	1000	
238	U	209	No Gas	0.486	ppb	48.7	4168.90	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5706896.54	9.7	5961075.87	95.74	29.5	120.4	
Sc	45	No Gas	11091387.46	12.2	13015983.55	85.21	29.5	120.4	
Sc	45	H2	1325073.35	3.2	1430290.9	92.64	29.5	120.4	
Sc	45	He	398064.47	0.2	438046.17	90.87	29.5	120.4	
Ge	72	No Gas	2178625.49	10.2	2458564.83	88.61	29.5	120.4	
Ge	72	H2	445202.32	2.2	491199	90.64	29.5	120.4	
Ge	72	He	233819.27	0.3	255273.97	91.6	29.5	120.4	
Y	89	H2	6956311.95	1.7	7442438.64	93.47	29.5	120.4	
Y	89	He	1998810.67	0.6	2167302.66	92.23	29.5	120.4	
Tb	159	No Gas	20578360.11	12.3	21871384.4	94.09	29.5	120.4	
Tb	159	He	8351938.63	1.1	8589669.11	97.23	29.5	120.4	
Bi	209	No Gas	9825684.40	11.0	10079220.95	97.48	29.5	120.4	

Sample Report

Sample Name SO3505-018

File Name 105SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 18:40:23

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.023	ppb	21.7	42.22	100	
11	B	6	No Gas	53.060	ppb	12.2	53464.56	1000	
23	Na	45	He	135177.152	ppb	1.3	16095274.71	200000	
24	Mg	45	He	4820.322	ppb	0.6	335369.87	200000	
27	Al	45	He	13.992	ppb	1.0	486.69	200000	
28	Si	45	H2	4328.799	ppb	1.3	178759.64	10000	
39	K	45	He	1968.693	ppb	0.5	128196.26	200000	
40	Ca	45	H2	39627.350	ppb	1.2	14208115.90	200000	
51	V	89	He	0.285	ppb	11.8	501.14	1000	
52	Cr	89	He	0.733	ppb	4.2	1625.14	2000	
55	Mn	89	He	415.494	ppb	0.9	216236.70	2000	
56	Fe	89	H2	30.262	ppb	0.8	40185.85	100000	
59	Co	89	He	0.469	ppb	7.1	844.54	1000	
60	Ni	89	He	1.154	ppb	19.9	628.93	1000	
63	Cu	89	He	0.955	ppb	8.9	1786.85	2000	
66	Zn	89	He	1.799	ppb	11.2	590.03	2000	
75	As	89	He	0.373	ppb	23.9	62.34	1000	
78	Se	89	H2	0.788	ppb	9.9	44.17	1000	
88	Sr	89	He	177.223	ppb	1.9	107683.74	2000	
95	Mo	89	He	0.932	ppb	13.6	742.27	1000	
107	Ag	89	He	0.020	ppb	67.6	71.12	100	
111	Cd	89	He	0.067	ppb	24.7	19.63	1000	
118	Sn	159	He	0.584	ppb	3.8	663.38	1000	
121	Sb	159	No Gas	0.307	ppb	23.5	1234.79	1000	
137	Ba	159	No Gas	29.697	ppb	39.1	47049.98	2000	
182	W	159	No Gas	2.592	ppb	19.8	9517.57	1000	
205	Tl	209	No Gas	0.028	ppb	3.4	300.34	1000	
208	Pb	209	No Gas	0.058	ppb	37.6	2699.82	2000	
232	Th	209	No Gas	1.054	ppb	20.9	9360.68	1000	
238	U	209	No Gas	0.101	ppb	22.1	854.32	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5612973.14	7.5	5961075.87	94.16	29.5	120.4	
Sc	45	No Gas	11041042.95	9.2	13015983.55	84.83	29.5	120.4	
Sc	45	H2	1321683.45	0.8	1430290.9	92.41	29.5	120.4	
Sc	45	He	397456.26	0.8	438046.17	90.73	29.5	120.4	
Ge	72	No Gas	2174150.87	6.9	2458564.83	88.43	29.5	120.4	
Ge	72	H2	441541.41	0.2	491199	89.89	29.5	120.4	
Ge	72	He	233848.42	0.4	255273.97	91.61	29.5	120.4	
Y	89	H2	6941236.41	1.2	7442438.64	93.27	29.5	120.4	
Y	89	He	1989972.99	1.2	2167302.66	91.82	29.5	120.4	
Tb	159	No Gas	20342325.95	10.4	21871384.4	93.01	29.5	120.4	
Tb	159	He	8415038.42	1.5	8589669.11	97.97	29.5	120.4	
Bi	209	No Gas	9724084.99	7.8	10079220.95	96.48	29.5	120.4	

Sample Report

Sample Name RINSE

File Name 106SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 18:42:51

Sample Type Sample

Total Dilution 1.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.001	ppb	14.8	21.11	100	
11	B	6	No Gas	0.454	ppb	32.8	5962.56	1000	
23	Na	45	He	28.364	ppb	10.3	33988.24	200000	
24	Mg	45	He	0.483	ppb	7.5	264.47	200000	
27	Al	45	He	0.053	ppb	148.1	126.67	200000	
28	Si	45	H2	48.268	ppb	4.1	10899.55	10000	
39	K	45	He	3.442	ppb	52.0	20832.51	200000	
40	Ca	45	H2	5.071	ppb	11.4	14749.30	200000	
51	V	89	He	-0.011	ppb	N/A	197.79	1000	
52	Cr	89	He	-0.014	ppb	N/A	729.89	2000	
55	Mn	89	He	0.042	ppb	4.7	181.30	2000	
56	Fe	89	H2	-0.015	ppb	N/A	4111.86	100000	
59	Co	89	He	0.007	ppb	14.4	71.12	1000	
60	Ni	89	He	0.007	ppb	46.0	77.78	1000	
63	Cu	89	He	0.009	ppb	79.9	614.48	2000	
66	Zn	89	He	0.025	ppb	170.5	314.46	2000	
75	As	89	He	0.019	ppb	31.2	30.00	1000	
78	Se	89	H2	0.047	ppb	14.7	16.67	1000	
88	Sr	89	He	0.017	ppb	82.4	107.78	2000	
95	Mo	89	He	0.101	ppb	8.4	481.14	1000	
107	Ag	89	He	0.002	ppb	35.6	46.67	100	
111	Cd	89	He	0.002	ppb	36.0	5.18	1000	
118	Sn	159	He	0.014	ppb	69.3	380.02	1000	
121	Sb	159	No Gas	0.004	ppb	62.8	173.53	1000	
137	Ba	159	No Gas	0.034	ppb	14.1	373.76	2000	
182	W	159	No Gas	0.240	ppb	10.2	5881.26	1000	
205	Tl	209	No Gas	0.002	ppb	136.9	176.87	1000	
208	Pb	209	No Gas	-0.013	ppb	N/A	1625.20	2000	
232	Th	209	No Gas	0.004	ppb	13.9	700.80	1000	
238	U	209	No Gas	0.002	ppb	20.3	80.09	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5876776.72	8.9	5961075.87	98.59	29.5	120.4	
Sc	45	No Gas	11009345.20	11.3	13015983.55	84.58	29.5	120.4	
Sc	45	H2	1363000.37	1.8	1430290.9	95.3	29.5	120.4	
Sc	45	He	409366.66	1.2	438046.17	93.45	29.5	120.4	
Ge	72	No Gas	2190908.78	8.1	2458564.83	89.11	29.5	120.4	
Ge	72	H2	466849.91	1.6	491199	95.04	29.5	120.4	
Ge	72	He	241609.87	1.2	255273.97	94.65	29.5	120.4	
Y	89	H2	7222643.43	1.0	7442438.64	97.05	29.5	120.4	
Y	89	He	2058271.65	1.3	2167302.66	94.97	29.5	120.4	
Tb	159	No Gas	20287964.00	10.5	21871384.4	92.76	29.5	120.4	
Tb	159	He	8623210.71	1.5	8589669.11	100.39	29.5	120.4	
Bi	209	No Gas	9946329.11	9.3	10079220.95	98.68	29.5	120.4	

Sample Report

Sample Name	RINSE
File Name	107SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 18:45:26
Sample Type	Sample
Total Dilution	1.0000
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.003	ppb	65.0	31.11	100	
11	B	6	No Gas	0.320	ppb	37.1	5344.50	1000	
23	Na	45	He	19.945	ppb	2.9	28617.04	200000	
24	Mg	45	He	0.256	ppb	64.2	182.24	200000	
27	Al	45	He	-0.219	ppb	N/A	88.89	200000	
28	Si	45	H2	47.066	ppb	1.4	10512.32	10000	
39	K	45	He	2.179	ppb	130.0	20310.37	200000	
40	Ca	45	H2	0.814	ppb	21.1	6797.44	200000	
51	V	89	He	-0.016	ppb	N/A	174.45	1000	
52	Cr	89	He	-0.013	ppb	N/A	734.55	2000	
55	Mn	89	He	0.024	ppb	18.9	132.65	2000	
56	Fe	89	H2	-0.004	ppb	N/A	4118.53	100000	
59	Co	89	He	0.007	ppb	70.6	73.34	1000	
60	Ni	89	He	0.011	ppb	49.0	86.67	1000	
63	Cu	89	He	-0.006	ppb	N/A	512.25	2000	
66	Zn	89	He	-0.028	ppb	N/A	267.79	2000	
75	As	89	He	0.005	ppb	13.6	21.67	1000	
78	Se	89	H2	0.036	ppb	22.3	13.50	1000	
88	Sr	89	He	0.004	ppb	68.9	66.67	2000	
95	Mo	89	He	0.084	ppb	12.5	424.47	1000	
107	Ag	89	He	0.001	ppb	69.6	45.56	100	
111	Cd	89	He	0.003	ppb	1.7	5.56	1000	
118	Sn	159	He	-0.011	ppb	N/A	302.24	1000	
121	Sb	159	No Gas	0.005	ppb	43.0	196.89	1000	
137	Ba	159	No Gas	0.017	ppb	22.9	240.28	2000	
182	W	159	No Gas	0.239	ppb	24.2	5924.66	1000	
205	Tl	209	No Gas	0.001	ppb	78.3	156.84	1000	
208	Pb	209	No Gas	-0.014	ppb	N/A	1558.46	2000	
232	Th	209	No Gas	0.006	ppb	82.4	734.18	1000	
238	U	209	No Gas	0.001	ppb	30.1	63.41	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5909979.15	9.1	5961075.87	99.14	29.5	120.4	
Sc	45	No Gas	11138962.53	11.8	13015983.55	85.58	29.5	120.4	
Sc	45	H2	1345497.79	1.5	1430290.9	94.07	29.5	120.4	
Sc	45	He	406177.87	1.6	438046.17	92.72	29.5	120.4	
Ge	72	No Gas	2198246.87	9.8	2458564.83	89.41	29.5	120.4	
Ge	72	H2	457871.12	1.2	491199	93.21	29.5	120.4	
Ge	72	He	239535.25	0.7	255273.97	93.83	29.5	120.4	
Y	89	H2	7111902.12	1.3	7442438.64	95.56	29.5	120.4	
Y	89	He	2060299.21	1.2	2167302.66	95.06	29.5	120.4	
Tb	159	No Gas	20568612.06	12.1	21871384.4	94.04	29.5	120.4	
Tb	159	He	8528780.36	1.1	8589669.11	99.29	29.5	120.4	
Bi	209	No Gas	9974957.62	11.5	10079220.95	98.97	29.5	120.4	

Prep Blank (PB) Report

Sample Name	PBWOF18IMW1
File Name	108_PB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 18:47:52
Sample Type	PB
Total Dilution	5.0000
Comment	---
ISTD Ref FileName	006CALB.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	**admin**

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Be	9	6	No Gas	0.004	ppb	120.5	17.78	0.5	
B	11	6	No Gas	1.540	ppb	9.4	5653.52	10	
Na	23	45	He	112.649	ppb	4.2	29981.41	500	
Mg	24	45	He	17.069	ppb	5.8	1295.71	50	
Al	27	45	He	6.410	ppb	23.6	290.01	50	
Si	28	45	H2	195.625	ppb	1.0	8685.56	250	
K	39	45	He	17.330	ppb	39.5	20537.23	500	
Ca	40	45	H2	14.492	ppb	4.1	10403.04	50	
V	51	89	He	0.156	ppb	38.2	391.13	2.5	
Cr	52	89	He	0.418	ppb	12.4	1290.50	2.5	
Mn	55	89	He	0.638	ppb	6.8	406.60	1	
Fe	56	89	H2	8.569	ppb	1.3	14490.26	50	
Co	59	89	He	0.047	ppb	24.2	91.12	0.5	
Ni	60	89	He	0.135	ppb	27.9	126.67	1	
Cu	63	89	He	0.466	ppb	8.0	1168.98	1.5	
Zn	66	89	He	0.526	ppb	50.6	380.02	5	
As	75	89	He	0.163	ppb	23.8	38.00	2.5	
Se	78	89	H2	0.233	ppb	8.8	16.00	2.5	
Sr	88	89	He	0.049	ppb	67.3	83.34	2.5	
Mo	95	89	He	0.336	ppb	13.8	361.13	2.5	
Ag	107	89	He	0.016	ppb	53.7	63.33	0.5	
Cd	111	89	He	0.003	ppb	197.8	2.59	0.5	
Sn	118	159	He	0.446	ppb	9.5	585.59	2.5	
Sb	121	159	No Gas	0.175	ppb	16.3	850.98	0.5	
Ba	137	159	No Gas	0.119	ppb	15.6	333.71	1	
W	182	159	No Gas	0.893	ppb	6.1	5751.01	2.5	
Tl	205	209	No Gas	0.010	ppb	79.4	210.24	0.5	
Pb	208	209	No Gas	0.047	ppb	74.0	2966.83	0.5	
Th	232	209	No Gas	0.340	ppb	18.2	3834.88	2.5	
U	238	209	No Gas	0.007	ppb	72.4	70.08	0.5	

QC ISTD Table

Prep Blank (PB) Report

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6290544.96	2.8	5961075.87	105.53	29.5	120.4	
Sc	45	No Gas	12494112.01	1.7	13015983.55	95.99	29.5	120.4	
Sc	45	H2	1320711.55	2.3	1430290.9	92.34	29.5	120.4	
Sc	45	He	403401.32	1.2	438046.17	92.09	29.5	120.4	
Ge	72	No Gas	2397353.96	1.5	2458564.83	97.51	29.5	120.4	
Ge	72	H2	445660.69	1.6	491199	90.73	29.5	120.4	
Ge	72	He	235922.29	0.7	255273.97	92.42	29.5	120.4	
Y	89	H2	7044764.51	2.2	7442438.64	94.66	29.5	120.4	
Y	89	He	2030461.72	0.7	2167302.66	93.69	29.5	120.4	
Tb	159	No Gas	22936059.10	2.4	21871384.4	104.87	29.5	120.4	
Tb	159	He	8435690.92	1.0	8589669.11	98.21	29.5	120.4	
Bi	209	No Gas	11078865.04	3.0	10079220.95	109.92	29.5	120.4	

Laboratory Control Sample (LCS) Report

Sample Name	LCSWOF18IMW1
File Name	109LCSW.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 18:50:21
Sample Type	LCSW
Total Dilution	5.0000
Comment	---
ISTD Ref FileName	006CALB.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**admin**

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Be	9	6	No Gas	35.697	ppb	8.9	58956.90	50	14.28	79.5	120.4	6020□ DoD
B	11	6	No Gas	366.590	ppb	9.8	394293.99	500	14.66	79.5	120.4	6020
Na	23	45	He	7415.134	ppb	0.8	910540.13	7500	19.77	79.5	120.4	
Mg	24	45	He	4778.583	ppb	0.6	337039.78	5000	19.11	79.5	120.4	
Al	27	45	He	1856.691	ppb	1.7	49995.04	2000	18.57	79.5	120.4	
Si	28	45	H2	1059.660	ppb	1.4	45154.97	1000	21.19	0	200	
K	39	45	He	10179.315	ppb	0.4	590468.03	10000	20.36	79.5	120.4	
Ca	40	45	H2	2273.308	ppb	1.4	836859.70	2500	18.19	79.5	120.4	
V	51	89	He	449.370	ppb	1.2	413058.76	500	17.97	79.5	120.4	
Cr	52	89	He	183.122	ppb	1.0	212838.45	200	18.31	79.5	120.4	
Mn	55	89	He	455.995	ppb	0.8	239872.27	500	18.24	79.5	120.4	
Fe	56	89	H2	940.612	ppb	1.7	1154781.92	1000	18.81	79.5	120.4	
Co	59	89	He	468.628	ppb	0.8	847106.68	500	18.75	79.5	120.4	
Ni	60	89	He	465.650	ppb	0.4	233503.05	500	18.63	79.5	120.4	
Cu	63	89	He	235.256	ppb	0.7	312483.84	250	18.82	79.5	120.4	
Zn	66	89	He	451.414	ppb	0.4	78289.86	500	18.06	79.5	120.4	
As	75	89	He	91.362	ppb	1.9	11066.94	100	18.27	79.5	120.4	
Se	78	89	H2	91.300	ppb	2.6	4782.44	100	18.26	79.5	120.4	
Sr	88	89	He	445.269	ppb	0.6	273409.38	500	17.81	79.5	120.4	
Mo	95	89	He	96.157	ppb	0.8	63532.91	100	19.23	79.5	120.4	
Ag	107	89	He	48.119	ppb	1.1	103529.79	50	19.25	79.5	120.4	
Cd	111	89	He	238.548	ppb	0.6	64825.74	250	19.08	79.5	120.4	
Sn	118	159	He	442.646	ppb	0.6	255642.37	500	17.71	79.5	120.4	
Sb	121	159	No Gas	83.880	ppb	7.5	357249.06	100	16.78	79.5	120.4	DoD
Ba	137	159	No Gas	1432.193	ppb	8.7	2566544.76	2000	14.32	79.5	120.4	6020□ DoD
W	182	159	No Gas	91.892	ppb	6.4	277619.17	100	18.38	79.5	120.4	
Tl	205	209	No Gas	89.244	ppb	8.4	633460.85	100	17.85	79.5	120.4	
[Pb]	206	209	No Gas	83.134	ppb	9.1	222726.55	100	16.63	79.5	120.4	DoD
[Pb]	207	209	No Gas	83.427	ppb	8.6	194494.13	100	16.68	79.5	120.4	DoD
Pb	208	209	No Gas	87.160	ppb	9.2	889185.75	100	17.43	79.5	120.4	DoD
Th	232	209	No Gas	79.392	ppb	8.5	759157.04	100	15.88	79.5	120.4	6020□ DoD
U	238	209	No Gas	87.508	ppb	8.3	836069.11	100	17.5	79.5	120.4	

QC ISTD Table

Laboratory Control Sample (LCS) Report

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6334066.19	2.3	5961075.87	106.26	29.5	120.4	
Sc	45	No Gas	12482624.27	1.6	13015983.55	95.9	29.5	120.4	
Sc	45	H2	1348987.60	1.7	1430290.9	94.32	29.5	120.4	
Sc	45	He	402927.72	1.0	438046.17	91.98	29.5	120.4	
Ge	72	No Gas	2391472.12	2.8	2458564.83	97.27	29.5	120.4	
Ge	72	H2	449769.24	0.9	491199	91.57	29.5	120.4	
Ge	72	He	235357.76	0.6	255273.97	92.2	29.5	120.4	
Y	89	H2	7110714.58	1.7	7442438.64	95.54	29.5	120.4	
Y	89	He	2011380.91	0.6	2167302.66	92.81	29.5	120.4	
Tb	159	No Gas	23085446.60	0.9	21871384.4	105.55	29.5	120.4	
Tb	159	He	8491695.15	1.3	8589669.11	98.86	29.5	120.4	
Bi	209	No Gas	10978509.58	2.6	10079220.95	108.92	29.5	120.4	

Sample Report

Sample Name SO3681-001

File Name 110SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 18:52:53

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.081	ppb	40.8	144.45	100	
11	B	6	No Gas	105.173	ppb	9.7	114963.53	1000	
23	Na	45	He	11950.508	ppb	7.8	1473669.57	200000	
24	Mg	45	He	6235.903	ppb	7.4	444707.59	200000	
27	Al	45	He	12.354	ppb	11.2	454.47	200000	
28	Si	45	H2	8499.808	ppb	2.5	353334.47	10000	
39	K	45	He	8216.172	ppb	8.6	485653.02	200000	
40	Ca	45	H2	44830.526	ppb	1.4	16208711.43	200000	
51	V	89	He	0.557	ppb	8.4	767.83	1000	
52	Cr	89	He	0.702	ppb	14.3	1631.14	2000	
55	Mn	89	He	1885.574	ppb	7.7	1006665.29	2000	
56	Fe	89	H2	61928.314	ppb	0.5	74977956.15	100000	
59	Co	89	He	16.559	ppb	9.0	30384.52	1000	
60	Ni	89	He	6.031	ppb	9.4	3127.14	1000	
63	Cu	89	He	0.884	ppb	6.3	1739.06	2000	
66	Zn	89	He	5.544	ppb	10.9	1262.33	2000	
75	As	89	He	1394.341	ppb	8.3	171175.87	1000	
78	Se	89	H2	2.089	ppb	2.8	112.17	1000	
88	Sr	89	He	332.463	ppb	8.0	207225.61	2000	
95	Mo	89	He	2.679	ppb	13.0	1932.44	1000	
107	Ag	89	He	0.029	ppb	30.9	92.22	100	
111	Cd	89	He	0.056	ppb	67.3	17.04	1000	
118	Sn	159	He	1.316	ppb	12.0	1094.62	1000	
121	Sb	159	No Gas	0.407	ppb	10.4	1852.22	1000	
137	Ba	159	No Gas	41.072	ppb	8.4	73908.40	2000	
182	W	159	No Gas	6.529	ppb	6.7	22715.59	1000	
205	Tl	209	No Gas	0.173	ppb	43.8	1381.64	1000	
208	Pb	209	No Gas	0.220	ppb	12.5	4725.65	2000	
232	Th	209	No Gas	11.194	ppb	6.4	107965.70	1000	
238	U	209	No Gas	1.365	ppb	4.0	13114.99	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6279304.97	2.6	5961075.87	105.34	29.5	120.4	
Sc	45	No Gas	12557816.75	1.6	13015983.55	96.48	29.5	120.4	
Sc	45	H2	1332779.35	0.3	1430290.9	93.18	29.5	120.4	
Sc	45	He	407819.27	2.0	438046.17	93.1	29.5	120.4	
Ge	72	No Gas	2425994.55	1.9	2458564.83	98.68	29.5	120.4	
Ge	72	H2	445140.07	1.2	491199	90.62	29.5	120.4	
Ge	72	He	239077.54	1.6	255273.97	93.66	29.5	120.4	
Y	89	H2	7035930.84	0.6	7442438.64	94.54	29.5	120.4	
Y	89	He	2044014.49	2.3	2167302.66	94.31	29.5	120.4	
Tb	159	No Gas	23157938.82	1.7	21871384.4	105.88	29.5	120.4	
Tb	159	He	8518732.72	2.0	8589669.11	99.17	29.5	120.4	
Bi	209	No Gas	11019087.87	1.9	10079220.95	109.32	29.5	120.4	

Sample Report

Sample Name SO3681-001A

File Name 111SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 18:55:20

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	9.057	ppb	9.2	14689.05	100	
11	B	6	No Gas	276.746	ppb	10.4	293059.16	1000	
23	Na	45	He	22949.662	ppb	0.7	2761475.28	200000	
24	Mg	45	He	7325.785	ppb	0.3	512500.62	200000	
27	Al	45	He	1080.415	ppb	1.6	28911.17	200000	
28	Si	45	H2	13151.538	ppb	1.6	542822.26	10000	
39	K	45	He	18299.279	ppb	1.2	1037432.98	200000	
40	Ca	45	H2	44279.137	ppb	1.4	15905475.60	200000	
51	V	89	He	53.749	ppb	1.0	49333.93	1000	
52	Cr	89	He	54.268	ppb	1.0	63265.78	2000	
55	Mn	89	He	1900.870	ppb	1.6	993867.80	2000	
56	Fe	89	H2	60127.133	ppb	1.3	72462550.00	100000	
59	Co	89	He	27.675	ppb	2.1	49735.71	1000	
60	Ni	89	He	28.267	ppb	2.3	14144.27	1000	
63	Cu	89	He	34.236	ppb	1.6	45667.66	2000	
66	Zn	89	He	113.811	ppb	2.5	19833.67	2000	
75	As	89	He	1452.638	ppb	0.7	174691.05	1000	
78	Se	89	H2	52.582	ppb	0.6	2715.14	1000	
88	Sr	89	He	383.836	ppb	0.6	234356.57	2000	
95	Mo	89	He	57.849	ppb	1.6	38051.62	1000	
107	Ag	89	He	11.968	ppb	1.5	25623.67	100	
111	Cd	89	He	11.793	ppb	1.5	3188.19	1000	
118	Sn	159	He	53.218	ppb	1.8	30790.45	1000	
121	Sb	159	No Gas	10.478	ppb	8.1	44590.65	1000	
137	Ba	159	No Gas	55.759	ppb	8.3	99748.11	2000	
182	W	159	No Gas	55.310	ppb	8.4	167834.04	1000	
205	Tl	209	No Gas	10.845	ppb	11.0	76304.75	1000	
208	Pb	209	No Gas	10.624	ppb	10.0	109439.09	2000	
232	Th	209	No Gas	14.057	ppb	10.0	133517.38	1000	
238	U	209	No Gas	11.644	ppb	9.9	110149.28	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6219302.88	2.8	5961075.87	104.33	29.5	120.4	
Sc	45	No Gas	12567316.35	2.1	13015983.55	96.55	29.5	120.4	
Sc	45	H2	1324179.71	1.2	1430290.9	92.58	29.5	120.4	
Sc	45	He	399684.56	0.6	438046.17	91.24	29.5	120.4	
Ge	72	No Gas	2399851.07	3.1	2458564.83	97.61	29.5	120.4	
Ge	72	H2	444219.51	1.5	491199	90.44	29.5	120.4	
Ge	72	He	234424.81	0.9	255273.97	91.83	29.5	120.4	
Y	89	H2	7003438.35	0.7	7442438.64	94.1	29.5	120.4	
Y	89	He	1999944.57	1.9	2167302.66	92.28	29.5	120.4	
Tb	159	No Gas	23036529.38	2.4	21871384.4	105.33	29.5	120.4	
Tb	159	He	8426645.22	0.4	8589669.11	98.1	29.5	120.4	
Bi	209	No Gas	10875403.14	3.0	10079220.95	107.9	29.5	120.4	

Sample Report

Sample Name RINSE

File Name 112SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 18:57:45

Sample Type Sample

Total Dilution 1.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.008	ppb	37.5	80.00	100	
11	B	6	No Gas	0.859	ppb	15.4	8781.86	1000	
23	Na	45	He	13.396	ppb	8.8	24788.99	200000	
24	Mg	45	He	0.348	ppb	27.0	215.58	200000	
27	Al	45	He	-0.148	ppb	N/A	98.89	200000	
28	Si	45	H2	47.803	ppb	3.5	10639.01	10000	
39	K	45	He	3.611	ppb	71.0	20847.48	200000	
40	Ca	45	H2	2.348	ppb	10.5	9566.90	200000	
51	V	89	He	-0.015	ppb	N/A	181.12	1000	
52	Cr	89	He	-0.013	ppb	N/A	733.22	2000	
55	Mn	89	He	0.076	ppb	8.6	271.96	2000	
56	Fe	89	H2	6.397	ppb	16.2	43232.55	100000	
59	Co	89	He	0.007	ppb	47.8	75.56	1000	
60	Ni	89	He	0.010	ppb	34.8	84.45	1000	
63	Cu	89	He	0.032	ppb	123.4	764.68	2000	
66	Zn	89	He	-0.058	ppb	N/A	240.01	2000	
75	As	89	He	0.914	ppb	12.2	581.75	1000	
78	Se	89	H2	0.271	ppb	14.0	74.83	1000	
88	Sr	89	He	0.019	ppb	22.3	112.23	2000	
95	Mo	89	He	0.193	ppb	9.2	788.94	1000	
107	Ag	89	He	0.002	ppb	47.2	47.78	100	
111	Cd	89	He	0.000	ppb	N/A	1.11	1000	
118	Sn	159	He	0.017	ppb	103.1	383.35	1000	
121	Sb	159	No Gas	0.012	ppb	63.5	373.76	1000	
137	Ba	159	No Gas	0.038	ppb	57.1	470.53	2000	
182	W	159	No Gas	0.656	ppb	6.2	12917.78	1000	
205	Tl	209	No Gas	0.011	ppb	46.3	530.60	1000	
208	Pb	209	No Gas	-0.010	ppb	N/A	1988.97	2000	
232	Th	209	No Gas	0.017	ppb	15.9	1381.63	1000	
238	U	209	No Gas	0.015	ppb	72.5	730.85	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6439999.25	2.0	5961075.87	108.03	29.5	120.4	
Sc	45	No Gas	12628554.67	1.5	13015983.55	97.02	29.5	120.4	
Sc	45	H2	1341910.66	1.1	1430290.9	93.82	29.5	120.4	
Sc	45	He	408668.90	0.5	438046.17	93.29	29.5	120.4	
Ge	72	No Gas	2418080.16	2.0	2458564.83	98.35	29.5	120.4	
Ge	72	H2	458363.68	1.3	491199	93.32	29.5	120.4	
Ge	72	He	239965.47	0.2	255273.97	94	29.5	120.4	
Y	89	H2	7107101.43	0.9	7442438.64	95.49	29.5	120.4	
Y	89	He	2052546.06	0.8	2167302.66	94.71	29.5	120.4	
Tb	159	No Gas	23084894.10	2.4	21871384.4	105.55	29.5	120.4	
Tb	159	He	8538736.96	0.5	8589669.11	99.41	29.5	120.4	
Bi	209	No Gas	11018519.28	2.2	10079220.95	109.32	29.5	120.4	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV
File Name	113_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 19:00:20
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	006CALB.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**admin**

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
9	Be	6	No Gas	19.672	ppb	10.8	163725.05	25	78.69	89.8	110.2	> +/- 10%
11	B	6	No Gas	20.127	ppb	10.5	112079.69	25	80.51	89.8	110.2	> +/- 10%
23	Na	45	He	5220.086	ppb	0.7	3167828.92	5000	104.4	89.8	110.2	
24	Mg	45	He	5274.713	ppb	0.8	1862008.51	5000	105.49	89.8	110.2	
27	Al	45	He	507.403	ppb	0.2	68360.57	500	101.48	89.8	110.2	
28	Si	45	H2	487.571	ppb	1.6	102349.01	500	97.51	89.8	110.2	
39	K	45	He	5034.198	ppb	1.0	1433085.29	5000	100.68	89.8	110.2	
40	Ca	45	H2	4988.903	ppb	1.1	9069821.53	5000	99.78	89.8	110.2	
51	V	89	He	24.800	ppb	0.3	115443.41	25	99.2	89.8	110.2	
52	Cr	89	He	25.082	ppb	0.3	147658.42	25	100.33	89.8	110.2	
55	Mn	89	He	25.166	ppb	1.3	66987.02	25	100.66	89.8	110.2	
56	Fe	89	H2	5008.564	ppb	0.5	30513054.90	5000	100.17	89.8	110.2	
59	Co	89	He	25.427	ppb	0.7	232408.12	25	101.71	89.8	110.2	
60	Ni	89	He	25.396	ppb	0.8	64433.78	25	101.58	89.8	110.2	
63	Cu	89	He	25.294	ppb	1.0	170129.13	25	101.18	89.8	110.2	
66	Zn	89	He	25.225	ppb	1.4	22329.60	25	100.9	89.8	110.2	
75	As	89	He	24.911	ppb	1.4	15251.00	25	99.64	89.8	110.2	
78	Se	89	H2	24.498	ppb	1.4	6388.85	25	97.99	89.8	110.2	
88	Sr	89	He	24.975	ppb	0.3	77582.46	25	99.9	89.8	110.2	
95	Mo	89	He	25.094	ppb	1.8	83804.74	25	100.38	89.8	110.2	
107	Ag	89	He	26.219	ppb	1.4	285172.44	25	104.88	89.8	110.2	
111	Cd	89	He	25.886	ppb	0.4	35569.20	25	103.54	89.8	110.2	
118	Sn	159	He	24.621	ppb	0.4	71487.82	25	98.48	89.8	110.2	
121	Sb	159	No Gas	22.315	ppb	9.7	474293.75	25	89.26	89.8	110.2	> +/- 10%
137	Ba	159	No Gas	21.140	ppb	9.3	189202.76	25	84.56	89.8	110.2	> +/- 10%
182	W	159	No Gas	22.841	ppb	7.1	343731.54	25	91.36	89.8	110.2	
205	Tl	209	No Gas	23.417	ppb	10.0	823958.86	25	93.67	89.8	110.2	
208	Pb	209	No Gas	22.695	ppb	10.1	1147193.50	25	90.78	89.8	110.2	
232	Th	209	No Gas	20.075	ppb	7.5	951830.02	25	80.3	89.8	110.2	> +/- 10%
238	U	209	No Gas	21.771	ppb	9.3	1031345.93	25	87.08	89.8	110.2	> +/- 10%

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6388088.28	2.5	5961075.87	107.16	29.5	120.4	
Sc	45	No Gas	12562351.28	1.6	13015983.55	96.51	29.5	120.4	
Sc	45	H2	1340163.29	2.0	1430290.9	93.7	29.5	120.4	
Sc	45	He	403423.84	1.0	438046.17	92.1	29.5	120.4	
Ge	72	No Gas	2411385.31	1.7	2458564.83	98.08	29.5	120.4	
Ge	72	H2	457784.24	1.5	491199	93.2	29.5	120.4	
Ge	72	He	238184.23	0.6	255273.97	93.31	29.5	120.4	
Y	89	H2	7080271.11	1.2	7442438.64	95.13	29.5	120.4	
Y	89	He	2034070.89	1.0	2167302.66	93.85	29.5	120.4	
Tb	159	No Gas	23062936.33	1.9	21871384.4	105.45	29.5	120.4	
Tb	159	He	8509103.90	0.5	8589669.11	99.06	29.5	120.4	
Bi	209	No Gas	10885353.30	1.8	10079220.95	108	29.5	120.4	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB
File Name	114_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 19:02:48
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	006CALB.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**admin**

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
9	Be	6	No Gas	0.083	ppb	75.4	723.39	0.2	
11	B	6	No Gas	0.456	ppb	13.0	6603.98	4	
23	Na	45	He	11.180	ppb	34.5	24053.32	200	
24	Mg	45	He	0.916	ppb	8.7	431.15	20	
27	Al	45	He	-0.118	ppb	N/A	105.56	20	
28	Si	45	H2	48.972	ppb	5.0	10819.38	100	
39	K	45	He	1.255	ppb	647.9	20697.47	200	
40	Ca	45	H2	1.276	ppb	7.2	7580.10	20	
51	V	89	He	-0.015	ppb	N/A	181.12	1	
52	Cr	89	He	-0.012	ppb	N/A	759.22	1	
55	Mn	89	He	0.020	ppb	15.0	125.31	0.4	
56	Fe	89	H2	4.167	ppb	10.4	29484.09	20	
59	Co	89	He	0.007	ppb	40.1	68.90	0.2	
60	Ni	89	He	0.012	ppb	86.1	91.12	0.4	
63	Cu	89	He	-0.001	ppb	N/A	560.03	0.6	
66	Zn	89	He	-0.020	ppb	N/A	281.12	2	
75	As	89	He	0.290	ppb	35.2	200.36	1	
78	Se	89	H2	0.828	ppb	10.3	219.66	1	Failed DoD
88	Sr	89	He	0.016	ppb	76.8	104.45	1	
95	Mo	89	He	0.636	ppb	33.5	2318.08	1	Failed DoD
107	Ag	89	He	0.008	ppb	10.6	118.90	0.2	
111	Cd	89	He	0.005	ppb	37.5	9.26	0.2	
118	Sn	159	He	0.091	ppb	56.6	616.70	1	
121	Sb	159	No Gas	0.096	ppb	63.3	2192.69	0.2	
137	Ba	159	No Gas	0.063	ppb	77.2	694.13	0.4	
182	W	159	No Gas	2.623	ppb	7.0	42458.10	1	Fail All Methods□ Failed DoD
205	Tl	209	No Gas	0.096	ppb	69.5	3624.75	0.2	
208	Pb	209	No Gas	0.051	ppb	74.8	5136.27	0.2	
232	Th	209	No Gas	0.526	ppb	8.0	25946.42	1	Failed DoD
238	U	209	No Gas	0.145	ppb	66.1	7087.45	0.2	Failed DoD

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6445836.23	4.0	5961075.87	108.13	29.5	120.4	
Sc	45	No Gas	12554212.21	2.4	13015983.55	96.45	29.5	120.4	
Sc	45	H2	1334601.60	2.4	1430290.9	93.31	29.5	120.4	
Sc	45	He	421547.11	7.4	438046.17	96.23	29.5	120.4	
Ge	72	No Gas	2419012.34	3.8	2458564.83	98.39	29.5	120.4	
Ge	72	H2	457558.64	2.1	491199	93.15	29.5	120.4	
Ge	72	He	245644.51	6.0	255273.97	96.23	29.5	120.4	
Y	89	H2	7075508.86	1.2	7442438.64	95.07	29.5	120.4	
Y	89	He	2110504.52	6.6	2167302.66	97.38	29.5	120.4	
Tb	159	No Gas	23145429.38	2.5	21871384.4	105.83	29.5	120.4	
Tb	159	He	8849443.41	7.7	8589669.11	103.02	29.5	120.4	
Bi	209	No Gas	11062285.44	3.0	10079220.95	109.75	29.5	120.4	

Sample Report

Sample Name SO3681-001L

File Name 115SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 19:05:15

Sample Type Sample

Total Dilution 25.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.093	ppb	53.9	40.00	100	
11	B	6	No Gas	104.109	ppb	10.7	25414.25	1000	
23	Na	45	He	12816.641	ppb	0.4	325091.67	200000	
24	Mg	45	He	6297.626	ppb	1.1	88796.39	200000	
27	Al	45	He	15.823	ppb	13.4	202.23	200000	
28	Si	45	H2	8855.839	ppb	1.9	73809.34	10000	
39	K	45	He	8223.670	ppb	2.0	111653.84	200000	
40	Ca	45	H2	43195.493	ppb	0.4	3114171.69	200000	
51	V	89	He	0.117	ppb	84.3	267.79	1000	
52	Cr	89	He	0.815	ppb	24.8	989.85	2000	
55	Mn	89	He	1937.129	ppb	0.9	205301.65	2000	
56	Fe	89	H2	58694.910	ppb	0.7	14256640.82	100000	
59	Co	89	He	16.237	ppb	1.2	5919.45	1000	
60	Ni	89	He	6.564	ppb	0.9	721.16	1000	
63	Cu	89	He	1.623	ppb	9.5	977.85	2000	
66	Zn	89	He	8.013	ppb	2.6	566.70	2000	
75	As	89	He	1389.194	ppb	0.5	33866.32	1000	
78	Se	89	H2	3.339	ppb	14.4	38.67	1000	
88	Sr	89	He	328.412	ppb	1.8	40669.94	2000	
95	Mo	89	He	7.091	ppb	2.5	1078.97	1000	
107	Ag	89	He	0.061	ppb	32.0	55.56	100	
111	Cd	89	He	0.043	ppb	73.0	4.07	1000	
118	Sn	159	He	1.200	ppb	29.6	468.91	1000	
121	Sb	159	No Gas	1.119	ppb	13.8	994.49	1000	
137	Ba	159	No Gas	39.411	ppb	8.6	13264.74	2000	
182	W	159	No Gas	15.766	ppb	1.8	11681.87	1000	
205	Tl	209	No Gas	0.089	ppb	15.3	253.62	1000	
208	Pb	209	No Gas	0.047	ppb	102.7	2449.50	2000	
232	Th	209	No Gas	8.241	ppb	8.2	15610.58	1000	
238	U	209	No Gas	1.267	ppb	10.7	2322.83	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6139768.30	2.8	5961075.87	103	29.5	120.4	
Sc	45	No Gas	11783691.51	3.2	13015983.55	90.53	29.5	120.4	
Sc	45	H2	1326943.07	1.3	1430290.9	92.77	29.5	120.4	
Sc	45	He	402446.01	0.6	438046.17	91.87	29.5	120.4	
Ge	72	No Gas	2296831.75	2.5	2458564.83	93.42	29.5	120.4	
Ge	72	H2	450643.44	0.6	491199	91.74	29.5	120.4	
Ge	72	He	236693.97	0.3	255273.97	92.72	29.5	120.4	
Y	89	H2	7056148.29	1.1	7442438.64	94.81	29.5	120.4	
Y	89	He	2026107.05	0.6	2167302.66	93.49	29.5	120.4	
Tb	159	No Gas	21507793.29	4.3	21871384.4	98.34	29.5	120.4	
Tb	159	He	8454878.76	0.2	8589669.11	98.43	29.5	120.4	
Bi	209	No Gas	10501777.87	3.9	10079220.95	104.19	29.5	120.4	

Sample Report

Sample Name SO3681-001P

File Name 116SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 19:07:47

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	40.789	ppb	9.5	68389.66	100	
11	B	6	No Gas	525.605	ppb	9.5	572125.89	1000	
23	Na	45	He	21740.083	ppb	1.5	2617524.49	200000	
24	Mg	45	He	12595.659	ppb	0.5	881400.24	200000	
27	Al	45	He	2143.450	ppb	1.4	57254.44	200000	
28	Si	45	H2	10352.481	ppb	1.0	420856.76	10000	
39	K	45	He	19099.556	ppb	2.9	1082200.20	200000	
40	Ca	45	H2	51651.112	ppb	0.8	18267615.84	200000	
51	V	89	He	513.508	ppb	1.8	470380.41	1000	
52	Cr	89	He	209.325	ppb	0.8	242381.90	2000	
55	Mn	89	He	2669.092	ppb	1.8	1398979.31	2000	
56	Fe	89	H2	69008.311	ppb	1.2	81661104.06	100000	
59	Co	89	He	549.021	ppb	2.4	989030.02	1000	
60	Ni	89	He	525.329	ppb	1.9	262527.03	1000	
63	Cu	89	He	267.617	ppb	1.2	354225.34	2000	
66	Zn	89	He	551.744	ppb	1.5	95306.82	2000	
75	As	89	He	1688.825	ppb	1.0	203591.71	1000	
78	Se	89	H2	105.381	ppb	2.0	5338.61	1000	
88	Sr	89	He	886.287	ppb	1.2	542352.04	2000	
95	Mo	89	He	112.874	ppb	1.0	74306.73	1000	
107	Ag	89	He	54.532	ppb	1.9	116930.43	100	
111	Cd	89	He	269.083	ppb	1.3	72878.52	1000	
118	Sn	159	He	512.908	ppb	1.3	290021.84	1000	
121	Sb	159	No Gas	94.909	ppb	7.4	399473.87	1000	
137	Ba	159	No Gas	1652.909	ppb	8.0	2927403.39	2000	
182	W	159	No Gas	108.139	ppb	7.5	322296.06	1000	
205	Tl	209	No Gas	100.802	ppb	7.0	708812.87	1000	
208	Pb	209	No Gas	98.056	ppb	8.1	990829.50	2000	
232	Th	209	No Gas	98.341	ppb	2.5	931506.11	1000	
238	U	209	No Gas	94.976	ppb	4.4	899047.45	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6429010.24	2.0	5961075.87	107.85	29.5	120.4	
Sc	45	No Gas	12435080.47	1.5	13015983.55	95.54	29.5	120.4	
Sc	45	H2	1303850.15	1.3	1430290.9	91.16	29.5	120.4	
Sc	45	He	399817.31	0.8	438046.17	91.27	29.5	120.4	
Ge	72	No Gas	2376541.30	1.9	2458564.83	96.66	29.5	120.4	
Ge	72	H2	438362.93	0.5	491199	89.24	29.5	120.4	
Ge	72	He	234697.24	0.6	255273.97	91.94	29.5	120.4	
Y	89	H2	6877867.47	1.8	7442438.64	92.41	29.5	120.4	
Y	89	He	2004873.60	1.4	2167302.66	92.51	29.5	120.4	
Tb	159	No Gas	22822734.66	2.1	21871384.4	104.35	29.5	120.4	
Tb	159	He	8315689.39	0.9	8589669.11	96.81	29.5	120.4	
Bi	209	No Gas	10862706.80	1.2	10079220.95	107.77	29.5	120.4	

Sample Report

Sample Name SO3681-001S

File Name 117SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 19:10:10

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	41.087	ppb	8.8	67594.37	100	
11	B	6	No Gas	529.379	ppb	10.0	565238.82	1000	
23	Na	45	He	21770.514	ppb	1.0	2602013.88	200000	
24	Mg	45	He	12637.817	ppb	2.1	877782.56	200000	
27	Al	45	He	2130.153	ppb	1.1	56488.03	200000	
28	Si	45	H2	10133.197	ppb	0.9	420005.16	10000	
39	K	45	He	19113.628	ppb	1.4	1075277.33	200000	
40	Ca	45	H2	51262.777	ppb	1.0	18484610.14	200000	
51	V	89	He	516.164	ppb	1.9	471820.31	1000	
52	Cr	89	He	208.294	ppb	0.9	240690.45	2000	
55	Mn	89	He	2639.454	ppb	1.3	1380622.87	2000	
56	Fe	89	H2	67419.902	ppb	1.3	81081460.27	100000	
59	Co	89	He	549.649	ppb	2.2	988100.10	1000	
60	Ni	89	He	526.755	ppb	1.4	262702.30	1000	
63	Cu	89	He	267.715	ppb	1.0	353613.28	2000	
66	Zn	89	He	521.121	ppb	1.1	89849.03	2000	
75	As	89	He	1703.674	ppb	0.9	204957.35	1000	
78	Se	89	H2	106.328	ppb	1.9	5474.83	1000	
88	Sr	89	He	878.335	ppb	0.3	536434.49	2000	
95	Mo	89	He	112.684	ppb	1.8	74021.99	1000	
107	Ag	89	He	54.305	ppb	1.5	116204.61	100	
111	Cd	89	He	266.201	ppb	1.3	71947.72	1000	
118	Sn	159	He	503.414	ppb	0.9	287670.44	1000	
121	Sb	159	No Gas	93.540	ppb	7.9	396720.33	1000	
137	Ba	159	No Gas	1638.807	ppb	8.3	2924480.16	2000	
182	W	159	No Gas	114.294	ppb	8.7	343052.87	1000	
205	Tl	209	No Gas	102.514	ppb	10.8	708143.02	1000	
208	Pb	209	No Gas	97.615	ppb	10.0	969003.53	2000	
232	Th	209	No Gas	105.586	ppb	8.1	982788.71	1000	
238	U	209	No Gas	96.867	ppb	4.5	901957.04	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6310424.68	3.0	5961075.87	105.86	29.5	120.4	
Sc	45	No Gas	12505619.97	2.8	13015983.55	96.08	29.5	120.4	
Sc	45	H2	1329260.85	0.7	1430290.9	92.94	29.5	120.4	
Sc	45	He	396897.21	1.1	438046.17	90.61	29.5	120.4	
Ge	72	No Gas	2390382.15	4.0	2458564.83	97.23	29.5	120.4	
Ge	72	H2	439607.03	0.5	491199	89.5	29.5	120.4	
Ge	72	He	233634.46	0.4	255273.97	91.52	29.5	120.4	
Y	89	H2	6989201.82	0.5	7442438.64	93.91	29.5	120.4	
Y	89	He	2000749.33	1.7	2167302.66	92.32	29.5	120.4	
Tb	159	No Gas	23012236.88	2.9	21871384.4	105.22	29.5	120.4	
Tb	159	He	8403268.63	0.8	8589669.11	97.83	29.5	120.4	
Bi	209	No Gas	10694025.63	3.4	10079220.95	106.1	29.5	120.4	

Sample Report

Sample Name SO3681-002

File Name 118SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 19:12:36

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.148	ppb	69.5	250.01	100	
11	B	6	No Gas	43.706	ppb	5.6	49011.92	1000	
23	Na	45	He	6352.956	ppb	1.1	777627.86	200000	
24	Mg	45	He	3067.508	ppb	0.6	215056.07	200000	
27	Al	45	He	9.983	ppb	4.8	383.35	200000	
28	Si	45	H2	7596.848	ppb	1.0	311613.76	10000	
39	K	45	He	3888.333	ppb	0.7	236154.82	200000	
40	Ca	45	H2	25501.437	ppb	1.3	9098117.64	200000	
51	V	89	He	0.272	ppb	16.5	492.25	1000	
52	Cr	89	He	0.695	ppb	5.3	1591.81	2000	
55	Mn	89	He	2447.447	ppb	0.6	1282190.27	2000	
56	Fe	89	H2	38836.776	ppb	1.1	46523243.69	100000	
59	Co	89	He	14.129	ppb	0.2	25447.09	1000	
60	Ni	89	He	6.427	ppb	4.4	3267.17	1000	
63	Cu	89	He	1.054	ppb	3.9	1930.21	2000	
66	Zn	89	He	5.488	ppb	9.7	1228.99	2000	
75	As	89	He	3037.432	ppb	0.4	365947.83	1000	
78	Se	89	H2	2.473	ppb	16.4	130.50	1000	
88	Sr	89	He	171.931	ppb	1.0	105195.58	2000	
95	Mo	89	He	4.240	ppb	8.1	2920.43	1000	
107	Ag	89	He	0.025	ppb	12.7	83.34	100	
111	Cd	89	He	0.072	ppb	25.2	21.11	1000	
118	Sn	159	He	1.114	ppb	6.3	962.29	1000	
121	Sb	159	No Gas	0.648	ppb	16.7	2860.16	1000	
137	Ba	159	No Gas	15.788	ppb	8.5	28285.64	2000	
182	W	159	No Gas	7.883	ppb	3.1	26530.32	1000	
205	Tl	209	No Gas	0.311	ppb	51.7	2386.27	1000	
208	Pb	209	No Gas	0.348	ppb	27.4	6060.70	2000	
232	Th	209	No Gas	9.269	ppb	3.6	89778.33	1000	
238	U	209	No Gas	1.252	ppb	13.0	12082.99	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6137129.83	3.2	5961075.87	102.95	29.5	120.4	
Sc	45	No Gas	12565415.29	1.9	13015983.55	96.54	29.5	120.4	
Sc	45	H2	1314681.41	1.2	1430290.9	91.92	29.5	120.4	
Sc	45	He	400441.68	0.6	438046.17	91.42	29.5	120.4	
Ge	72	No Gas	2419643.68	2.9	2458564.83	98.42	29.5	120.4	
Ge	72	H2	438985.93	0.7	491199	89.37	29.5	120.4	
Ge	72	He	235244.37	0.5	255273.97	92.15	29.5	120.4	
Y	89	H2	6961765.27	1.5	7442438.64	93.54	29.5	120.4	
Y	89	He	2003584.99	0.4	2167302.66	92.45	29.5	120.4	
Tb	159	No Gas	22954831.88	2.3	21871384.4	104.95	29.5	120.4	
Tb	159	He	8378619.60	0.2	8589669.11	97.54	29.5	120.4	
Bi	209	No Gas	11049776.26	3.2	10079220.95	109.63	29.5	120.4	

Sample Report

Sample Name	RINSE
File Name	119SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 19:15:09
Sample Type	Sample
Total Dilution	1.0000
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.004	ppb	16.9	43.34	100	
11	B	6	No Gas	0.539	ppb	5.6	6958.59	1000	
23	Na	45	He	9.287	ppb	9.9	22211.85	200000	
24	Mg	45	He	0.261	ppb	56.4	184.46	200000	
27	Al	45	He	-0.058	ppb	N/A	111.12	200000	
28	Si	45	H2	47.127	ppb	4.4	10545.64	10000	
39	K	45	He	1.772	ppb	157.7	20261.91	200000	
40	Ca	45	H2	1.056	ppb	5.7	7253.22	200000	
51	V	89	He	-0.011	ppb	N/A	196.68	1000	
52	Cr	89	He	-0.012	ppb	N/A	737.89	2000	
55	Mn	89	He	0.096	ppb	22.5	326.61	2000	
56	Fe	89	H2	3.775	ppb	9.1	27510.87	100000	
59	Co	89	He	0.007	ppb	55.9	73.34	1000	
60	Ni	89	He	0.006	ppb	54.4	74.45	1000	
63	Cu	89	He	0.007	ppb	115.8	601.15	2000	
66	Zn	89	He	-0.067	ppb	N/A	233.34	2000	
75	As	89	He	1.578	ppb	9.4	994.48	1000	
78	Se	89	H2	0.082	ppb	15.5	25.83	1000	
88	Sr	89	He	0.014	ppb	78.5	97.78	2000	
95	Mo	89	He	0.151	ppb	4.7	650.04	1000	
107	Ag	89	He	0.001	ppb	72.7	38.89	100	
111	Cd	89	He	0.002	ppb	110.3	4.44	1000	
118	Sn	159	He	0.012	ppb	95.1	368.91	1000	
121	Sb	159	No Gas	0.004	ppb	39.9	206.90	1000	
137	Ba	159	No Gas	0.026	ppb	33.9	357.07	2000	
182	W	159	No Gas	0.271	ppb	14.4	7123.26	1000	
205	Tl	209	No Gas	0.004	ppb	30.0	283.65	1000	
208	Pb	209	No Gas	-0.011	ppb	N/A	1898.84	2000	
232	Th	209	No Gas	0.012	ppb	24.9	1134.67	1000	
238	U	209	No Gas	0.002	ppb	46.3	93.44	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6362727.45	2.7	5961075.87	106.74	29.5	120.4	
Sc	45	No Gas	12571171.77	2.0	13015983.55	96.58	29.5	120.4	
Sc	45	H2	1348464.62	1.1	1430290.9	94.28	29.5	120.4	
Sc	45	He	407526.05	1.4	438046.17	93.03	29.5	120.4	
Ge	72	No Gas	2402461.39	2.7	2458564.83	97.72	29.5	120.4	
Ge	72	H2	459422.02	0.6	491199	93.53	29.5	120.4	
Ge	72	He	240152.20	1.1	255273.97	94.08	29.5	120.4	
Y	89	H2	7184021.63	1.0	7442438.64	96.53	29.5	120.4	
Y	89	He	2057331.90	0.5	2167302.66	94.93	29.5	120.4	
Tb	159	No Gas	22953195.49	1.3	21871384.4	104.95	29.5	120.4	
Tb	159	He	8503994.39	1.1	8589669.11	99	29.5	120.4	
Bi	209	No Gas	10896070.27	2.2	10079220.95	108.1	29.5	120.4	

Sample Report

Sample Name SO3681-003

File Name 120SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 19:17:45

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.013	ppb	15.2	31.11	100	
11	B	6	No Gas	10.783	ppb	9.4	15119.52	1000	
23	Na	45	He	6015.905	ppb	0.5	739147.98	200000	
24	Mg	45	He	748.324	ppb	1.3	52663.91	200000	
27	Al	45	He	21.570	ppb	5.2	694.49	200000	
28	Si	45	H2	2287.748	ppb	0.5	94121.81	10000	
39	K	45	He	1147.312	ppb	0.9	83586.64	200000	
40	Ca	45	H2	8445.778	ppb	1.7	3011205.58	200000	
51	V	89	He	0.263	ppb	13.9	484.47	1000	
52	Cr	89	He	0.630	ppb	3.8	1517.81	2000	
55	Mn	89	He	177.590	ppb	1.1	93145.66	2000	
56	Fe	89	H2	146.257	ppb	1.5	179036.33	100000	
59	Co	89	He	0.162	ppb	13.7	297.80	1000	
60	Ni	89	He	0.367	ppb	8.6	241.12	1000	
63	Cu	89	He	1.349	ppb	5.4	2321.40	2000	
66	Zn	89	He	2.805	ppb	0.5	767.83	2000	
75	As	89	He	5.326	ppb	9.0	659.76	1000	
78	Se	89	H2	0.429	ppb	7.0	25.83	1000	
88	Sr	89	He	52.283	ppb	2.4	32043.75	2000	
95	Mo	89	He	0.791	ppb	6.2	655.60	1000	
107	Ag	89	He	0.014	ppb	24.4	57.78	100	
111	Cd	89	He	0.010	ppb	82.0	4.44	1000	
118	Sn	159	He	0.389	ppb	1.1	553.37	1000	
121	Sb	159	No Gas	0.219	ppb	9.7	1037.87	1000	
137	Ba	159	No Gas	4.406	ppb	12.7	7961.33	2000	
182	W	159	No Gas	1.374	ppb	10.6	7169.94	1000	
205	Tl	209	No Gas	0.018	ppb	38.9	263.63	1000	
208	Pb	209	No Gas	0.119	ppb	20.9	3660.98	2000	
232	Th	209	No Gas	0.613	ppb	7.3	6388.83	1000	
238	U	209	No Gas	0.033	ppb	9.8	323.70	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6166899.55	2.9	5961075.87	103.45	29.5	120.4	
Sc	45	No Gas	12512968.99	1.2	13015983.55	96.14	29.5	120.4	
Sc	45	H2	1312489.71	0.5	1430290.9	91.76	29.5	120.4	
Sc	45	He	401464.59	0.5	438046.17	91.65	29.5	120.4	
Ge	72	No Gas	2406210.84	2.0	2458564.83	97.87	29.5	120.4	
Ge	72	H2	442214.31	0.7	491199	90.03	29.5	120.4	
Ge	72	He	236421.95	1.1	255273.97	92.61	29.5	120.4	
Y	89	H2	6953647.62	0.6	7442438.64	93.43	29.5	120.4	
Y	89	He	2004588.88	0.4	2167302.66	92.49	29.5	120.4	
Tb	159	No Gas	22920926.88	2.0	21871384.4	104.8	29.5	120.4	
Tb	159	He	8434946.40	0.2	8589669.11	98.2	29.5	120.4	
Bi	209	No Gas	10926909.02	2.1	10079220.95	108.41	29.5	120.4	

Sample Report

Sample Name SO3681-004

File Name 121SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 19:20:19

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.010	ppb	38.2	26.66	100	
11	B	6	No Gas	9.997	ppb	5.7	14138.46	1000	
23	Na	45	He	10242.814	ppb	0.8	1237259.21	200000	
24	Mg	45	He	3318.746	ppb	1.9	231399.47	200000	
27	Al	45	He	21.133	ppb	9.0	677.82	200000	
28	Si	45	H2	4405.305	ppb	0.6	183973.45	10000	
39	K	45	He	2653.835	ppb	1.1	166452.05	200000	
40	Ca	45	H2	27675.633	ppb	0.9	10036756.10	200000	
51	V	89	He	0.173	ppb	34.7	401.13	1000	
52	Cr	89	He	0.597	ppb	8.3	1477.15	2000	
55	Mn	89	He	1063.100	ppb	0.8	556080.06	2000	
56	Fe	89	H2	3106.218	ppb	0.5	3773312.01	100000	
59	Co	89	He	0.264	ppb	6.1	480.04	1000	
60	Ni	89	He	0.807	ppb	9.1	460.03	1000	
63	Cu	89	He	0.903	ppb	3.5	1727.95	2000	
66	Zn	89	He	2.798	ppb	11.9	764.50	2000	
75	As	89	He	87.555	ppb	1.7	10547.82	1000	
78	Se	89	H2	0.213	ppb	17.4	15.00	1000	
88	Sr	89	He	114.172	ppb	1.1	69759.85	2000	
95	Mo	89	He	1.018	ppb	11.3	802.28	1000	
107	Ag	89	He	0.013	ppb	35.6	55.56	100	
111	Cd	89	He	0.020	ppb	98.2	7.04	1000	
118	Sn	159	He	0.540	ppb	7.2	638.93	1000	
121	Sb	159	No Gas	0.218	ppb	18.5	1037.87	1000	
137	Ba	159	No Gas	15.329	ppb	4.1	27512.37	2000	
182	W	159	No Gas	0.857	ppb	9.4	5667.57	1000	
205	Tl	209	No Gas	0.018	ppb	26.1	260.30	1000	
208	Pb	209	No Gas	0.107	ppb	26.8	3517.49	2000	
232	Th	209	No Gas	0.228	ppb	4.6	2713.35	1000	
238	U	209	No Gas	0.114	ppb	25.2	1084.61	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6092321.12	2.5	5961075.87	102.2	29.5	120.4	
Sc	45	No Gas	12520646.14	1.4	13015983.55	96.19	29.5	120.4	
Sc	45	H2	1336619.83	0.9	1430290.9	93.45	29.5	120.4	
Sc	45	He	398339.09	1.8	438046.17	90.94	29.5	120.4	
Ge	72	No Gas	2397117.16	1.8	2458564.83	97.5	29.5	120.4	
Ge	72	H2	447190.83	1.4	491199	91.04	29.5	120.4	
Ge	72	He	235735.01	1.1	255273.97	92.35	29.5	120.4	
Y	89	H2	7052226.66	0.9	7442438.64	94.76	29.5	120.4	
Y	89	He	2000461.34	1.4	2167302.66	92.3	29.5	120.4	
Tb	159	No Gas	23021057.71	1.8	21871384.4	105.26	29.5	120.4	
Tb	159	He	8423424.18	1.7	8589669.11	98.06	29.5	120.4	
Bi	209	No Gas	10869893.68	2.8	10079220.95	107.84	29.5	120.4	

Sample Report

Sample Name SO3681-005

File Name 122SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 19:22:52

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.010	ppb	15.6	25.56	100	
11	B	6	No Gas	27.085	ppb	4.8	30731.30	1000	
23	Na	45	He	206329.514	ppb	0.5	24843606.06	200000	
24	Mg	45	He	2059.292	ppb	0.8	144977.03	200000	
27	Al	45	He	6.778	ppb	12.7	298.90	200000	
28	Si	45	H2	5651.570	ppb	0.4	230418.23	10000	
39	K	45	He	3610.893	ppb	0.4	221578.76	200000	
40	Ca	45	H2	17810.944	ppb	0.9	6313020.32	200000	
51	V	89	He	0.162	ppb	33.5	392.25	1000	
52	Cr	89	He	0.565	ppb	5.0	1443.82	2000	
55	Mn	89	He	63.000	ppb	1.8	33100.01	2000	
56	Fe	89	H2	713.282	ppb	1.6	850630.68	100000	
59	Co	89	He	0.755	ppb	6.7	1366.84	1000	
60	Ni	89	He	1.628	ppb	3.8	871.17	1000	
63	Cu	89	He	0.958	ppb	5.5	1804.63	2000	
66	Zn	89	He	3.581	ppb	15.1	902.29	2000	
75	As	89	He	68.173	ppb	0.9	8238.67	1000	
78	Se	89	H2	0.705	ppb	8.8	39.67	1000	
88	Sr	89	He	156.268	ppb	1.8	95704.98	2000	
95	Mo	89	He	0.951	ppb	5.6	761.16	1000	
107	Ag	89	He	0.020	ppb	11.9	71.11	100	
111	Cd	89	He	0.024	ppb	35.1	8.15	1000	
118	Sn	159	He	0.448	ppb	21.9	582.26	1000	
121	Sb	159	No Gas	0.338	ppb	1.2	1495.10	1000	
137	Ba	159	No Gas	58.412	ppb	4.5	100970.29	2000	
182	W	159	No Gas	0.632	ppb	25.5	4826.33	1000	
205	Tl	209	No Gas	0.050	ppb	19.0	477.21	1000	
208	Pb	209	No Gas	0.034	ppb	56.4	2703.14	2000	
232	Th	209	No Gas	0.167	ppb	12.2	2069.18	1000	
238	U	209	No Gas	0.010	ppb	16.9	96.78	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5915744.13	2.2	5961075.87	99.24	29.5	120.4	
Sc	45	No Gas	12341521.82	1.6	13015983.55	94.82	29.5	120.4	
Sc	45	H2	1305885.81	0.6	1430290.9	91.3	29.5	120.4	
Sc	45	He	402038.18	0.7	438046.17	91.78	29.5	120.4	
Ge	72	No Gas	2371557.36	2.2	2458564.83	96.46	29.5	120.4	
Ge	72	H2	437402.18	0.5	491199	89.05	29.5	120.4	
Ge	72	He	235026.20	0.3	255273.97	92.07	29.5	120.4	
Y	89	H2	6898090.92	0.1	7442438.64	92.69	29.5	120.4	
Y	89	He	2005545.07	0.8	2167302.66	92.54	29.5	120.4	
Tb	159	No Gas	22243366.34	1.3	21871384.4	101.7	29.5	120.4	
Tb	159	He	8365314.94	0.4	8589669.11	97.39	29.5	120.4	
Bi	209	No Gas	10547201.20	0.8	10079220.95	104.64	29.5	120.4	

Sample Report

Sample Name SO3681-006

File Name 123SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 19:25:27

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.010	ppb	65.8	25.56	100	
11	B	6	No Gas	110.209	ppb	4.4	116637.95	1000	
23	Na	45	He	20802.860	ppb	0.3	2507611.04	200000	
24	Mg	45	He	8404.861	ppb	0.2	588655.06	200000	
27	Al	45	He	18.909	ppb	3.6	621.15	200000	
28	Si	45	H2	9033.025	ppb	1.3	369907.28	10000	
39	K	45	He	6214.142	ppb	0.8	365533.85	200000	
40	Ca	45	H2	57615.059	ppb	1.2	20520930.39	200000	
51	V	89	He	0.138	ppb	37.9	371.13	1000	
52	Cr	89	He	0.556	ppb	16.5	1436.48	2000	
55	Mn	89	He	7877.261	ppb	0.3	4143056.08	2000	
56	Fe	89	H2	10241.265	ppb	1.1	12314907.81	100000	
59	Co	89	He	11.940	ppb	0.5	21593.56	1000	
60	Ni	89	He	2.076	ppb	9.6	1098.97	1000	
63	Cu	89	He	3.023	ppb	2.1	4548.69	2000	
66	Zn	89	He	4.200	ppb	9.3	1011.19	2000	
75	As	89	He	162.456	ppb	0.9	19667.00	1000	
78	Se	89	H2	0.086	ppb	40.5	8.33	1000	
88	Sr	89	He	454.088	ppb	0.4	278850.63	2000	
95	Mo	89	He	0.931	ppb	6.0	750.05	1000	
107	Ag	89	He	0.012	ppb	32.8	55.56	100	
111	Cd	89	He	0.231	ppb	4.9	64.45	1000	
118	Sn	159	He	0.435	ppb	15.5	576.70	1000	
121	Sb	159	No Gas	0.242	ppb	4.3	1134.64	1000	
137	Ba	159	No Gas	17.068	ppb	6.3	30405.09	2000	
182	W	159	No Gas	0.436	ppb	13.6	4382.30	1000	
205	Tl	209	No Gas	0.013	ppb	9.4	223.59	1000	
208	Pb	209	No Gas	0.177	ppb	17.2	4191.65	2000	
232	Th	209	No Gas	0.116	ppb	12.9	1635.28	1000	
238	U	209	No Gas	4.920	ppb	6.2	46197.55	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6082708.59	2.0	5961075.87	102.04	29.5	120.4	
Sc	45	No Gas	12488624.23	1.4	13015983.55	95.95	29.5	120.4	
Sc	45	H2	1313123.74	1.0	1430290.9	91.81	29.5	120.4	
Sc	45	He	400141.81	0.3	438046.17	91.35	29.5	120.4	
Ge	72	No Gas	2410488.95	1.8	2458564.83	98.04	29.5	120.4	
Ge	72	H2	438660.56	0.9	491199	89.3	29.5	120.4	
Ge	72	He	235285.41	0.5	255273.97	92.17	29.5	120.4	
Y	89	H2	6986036.36	0.6	7442438.64	93.87	29.5	120.4	
Y	89	He	2011584.99	1.2	2167302.66	92.82	29.5	120.4	
Tb	159	No Gas	22862006.33	1.6	21871384.4	104.53	29.5	120.4	
Tb	159	He	8394343.56	0.7	8589669.11	97.73	29.5	120.4	
Bi	209	No Gas	10784139.70	2.1	10079220.95	106.99	29.5	120.4	

Sample Report

Sample Name RINSE

File Name 124SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 19:27:58

Sample Type Sample

Total Dilution 1.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.002	ppb	114.4	24.45	100	
11	B	6	No Gas	0.392	ppb	1.0	6180.43	1000	
23	Na	45	He	14.818	ppb	4.5	25333.85	200000	
24	Mg	45	He	0.261	ppb	34.7	182.24	200000	
27	Al	45	He	-0.097	ppb	N/A	104.45	200000	
28	Si	45	H2	47.240	ppb	2.6	10589.04	10000	
39	K	45	He	3.481	ppb	63.3	20542.06	200000	
40	Ca	45	H2	2.578	ppb	3.1	10052.78	200000	
51	V	89	He	-0.019	ppb	N/A	161.12	1000	
52	Cr	89	He	-0.013	ppb	N/A	726.56	2000	
55	Mn	89	He	0.277	ppb	7.7	807.88	2000	
56	Fe	89	H2	1.386	ppb	5.4	12673.17	100000	
59	Co	89	He	0.005	ppb	42.8	51.11	1000	
60	Ni	89	He	0.009	ppb	63.4	81.11	1000	
63	Cu	89	He	0.001	ppb	353.8	556.70	2000	
66	Zn	89	He	-0.001	ppb	N/A	288.90	2000	
75	As	89	He	0.228	ppb	6.7	158.02	1000	
78	Se	89	H2	0.020	ppb	4.8	9.17	1000	
88	Sr	89	He	0.025	ppb	10.5	132.23	2000	
95	Mo	89	He	0.032	ppb	21.4	244.46	1000	
107	Ag	89	He	0.003	ppb	29.5	58.89	100	
111	Cd	89	He	0.000	ppb	231.1	2.22	1000	
118	Sn	159	He	-0.029	ppb	N/A	248.90	1000	
121	Sb	159	No Gas	0.000	ppb	N/A	110.12	1000	
137	Ba	159	No Gas	0.015	ppb	15.7	260.29	2000	
182	W	159	No Gas	0.031	ppb	91.8	3607.87	1000	
205	Tl	209	No Gas	0.001	ppb	117.8	176.87	1000	
208	Pb	209	No Gas	-0.018	ppb	N/A	1578.47	2000	
232	Th	209	No Gas	-0.003	ppb	N/A	427.16	1000	
238	U	209	No Gas	0.003	ppb	88.9	170.19	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6370617.37	3.7	5961075.87	106.87	29.5	120.4	
Sc	45	No Gas	12610454.18	2.1	13015983.55	96.88	29.5	120.4	
Sc	45	H2	1350621.37	0.2	1430290.9	94.43	29.5	120.4	
Sc	45	He	403441.29	1.0	438046.17	92.1	29.5	120.4	
Ge	72	No Gas	2428914.56	2.9	2458564.83	98.79	29.5	120.4	
Ge	72	H2	459012.37	0.3	491199	93.45	29.5	120.4	
Ge	72	He	238722.49	1.0	255273.97	93.52	29.5	120.4	
Y	89	H2	7141338.95	0.8	7442438.64	95.95	29.5	120.4	
Y	89	He	2040319.78	1.0	2167302.66	94.14	29.5	120.4	
Tb	159	No Gas	23260843.26	3.1	21871384.4	106.35	29.5	120.4	
Tb	159	He	8496672.51	1.0	8589669.11	98.92	29.5	120.4	
Bi	209	No Gas	11090573.31	3.4	10079220.95	110.03	29.5	120.4	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV
File Name	125_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 19:30:38
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	006CALB.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**admin**

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
9	Be	6	No Gas	21.783	ppb	6.7	180933.00	25	87.13	89.8	110.2	> +/- 10%
11	B	6	No Gas	21.912	ppb	7.2	121394.98	25	87.65	89.8	110.2	> +/- 10%
23	Na	45	He	5207.272	ppb	1.6	3162410.58	5000	104.15	89.8	110.2	
24	Mg	45	He	5268.599	ppb	1.0	1861395.27	5000	105.37	89.8	110.2	
27	Al	45	He	505.905	ppb	1.0	68214.65	500	101.18	89.8	110.2	
28	Si	45	H2	496.370	ppb	2.9	104029.49	500	99.27	89.8	110.2	
39	K	45	He	5053.013	ppb	1.2	1439478.81	5000	101.06	89.8	110.2	
40	Ca	45	H2	5036.963	ppb	0.7	9144573.13	5000	100.74	89.8	110.2	
51	V	89	He	25.016	ppb	1.2	116442.03	25	100.06	89.8	110.2	
52	Cr	89	He	25.020	ppb	1.1	147289.60	25	100.08	89.8	110.2	
55	Mn	89	He	25.078	ppb	1.2	66750.61	25	100.31	89.8	110.2	
56	Fe	89	H2	5058.016	ppb	1.3	30652665.96	5000	101.16	89.8	110.2	
59	Co	89	He	25.584	ppb	1.3	233830.07	25	102.34	89.8	110.2	
60	Ni	89	He	25.588	ppb	0.7	64920.41	25	102.35	89.8	110.2	
63	Cu	89	He	25.291	ppb	0.9	170115.19	25	101.16	89.8	110.2	
66	Zn	89	He	25.408	ppb	2.1	22489.91	25	101.63	89.8	110.2	
75	As	89	He	24.720	ppb	1.6	15134.19	25	98.88	89.8	110.2	
78	Se	89	H2	24.823	ppb	1.9	6439.20	25	99.29	89.8	110.2	
88	Sr	89	He	24.957	ppb	0.4	77526.79	25	99.83	89.8	110.2	
95	Mo	89	He	25.058	ppb	1.8	83666.78	25	100.23	89.8	110.2	
107	Ag	89	He	26.085	ppb	1.7	283709.40	25	104.34	89.8	110.2	
111	Cd	89	He	25.911	ppb	1.4	35601.13	25	103.64	89.8	110.2	
118	Sn	159	He	24.619	ppb	1.2	71475.51	25	98.48	89.8	110.2	
121	Sb	159	No Gas	24.340	ppb	3.8	517350.52	25	97.36	89.8	110.2	
137	Ba	159	No Gas	23.029	ppb	3.7	206111.58	25	92.12	89.8	110.2	
182	W	159	No Gas	24.457	ppb	3.3	367735.55	25	97.83	89.8	110.2	
205	Tl	209	No Gas	25.765	ppb	5.0	912734.55	25	103.06	89.8	110.2	
208	Pb	209	No Gas	24.899	ppb	5.7	1266686.13	25	99.6	89.8	110.2	
232	Th	209	No Gas	21.953	ppb	7.9	1047130.01	25	87.81	89.8	110.2	> +/- 10%
238	U	209	No Gas	23.875	ppb	6.6	1138398.54	25	95.5	89.8	110.2	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6372590.91	3.0	5961075.87	106.9	29.5	120.4	
Sc	45	No Gas	12562719.46	1.7	13015983.55	96.52	29.5	120.4	
Sc	45	H2	1338148.79	1.1	1430290.9	93.56	29.5	120.4	
Sc	45	He	403770.65	1.3	438046.17	92.18	29.5	120.4	
Ge	72	No Gas	2406267.41	2.4	2458564.83	97.87	29.5	120.4	
Ge	72	H2	455127.77	1.9	491199	92.66	29.5	120.4	
Ge	72	He	238269.70	0.9	255273.97	93.34	29.5	120.4	
Y	89	H2	7043653.93	1.0	7442438.64	94.64	29.5	120.4	
Y	89	He	2034135.05	1.4	2167302.66	93.86	29.5	120.4	
Tb	159	No Gas	23039861.33	0.6	21871384.4	105.34	29.5	120.4	
Tb	159	He	8509471.96	1.4	8589669.11	99.07	29.5	120.4	
Bi	209	No Gas	10952748.09	2.3	10079220.95	108.67	29.5	120.4	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB
File Name	126_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 19:33:06
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	006CALB.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**admin**

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
9	Be	6	No Gas	0.055	ppb	73.7	485.59	0.2	
11	B	6	No Gas	0.442	ppb	1.4	6592.85	4	
23	Na	45	He	11.991	ppb	4.0	23645.64	200	
24	Mg	45	He	0.593	ppb	29.1	300.03	20	
27	Al	45	He	-0.272	ppb	N/A	81.11	20	
28	Si	45	H2	48.489	ppb	3.3	10822.80	100	
39	K	45	He	2.245	ppb	83.6	20215.13	200	
40	Ca	45	H2	0.727	ppb	14.7	6646.23	20	
51	V	89	He	-0.022	ppb	N/A	146.67	1	
52	Cr	89	He	-0.010	ppb	N/A	746.55	1	
55	Mn	89	He	0.043	ppb	17.6	182.63	0.4	
56	Fe	89	H2	3.207	ppb	13.0	23753.63	20	
59	Co	89	He	0.005	ppb	56.2	55.56	0.2	
60	Ni	89	He	0.006	ppb	175.4	74.45	0.4	
63	Cu	89	He	0.000	ppb	3936.5	547.81	0.6	
66	Zn	89	He	-0.071	ppb	N/A	226.68	2	
75	As	89	He	0.203	ppb	24.6	142.02	1	
78	Se	89	H2	0.779	ppb	9.9	207.82	1	Failed DoD
88	Sr	89	He	0.009	ppb	38.8	81.11	1	
95	Mo	89	He	0.670	ppb	12.5	2370.29	1	Failed DoD
107	Ag	89	He	0.005	ppb	21.5	88.89	0.2	
111	Cd	89	He	0.005	ppb	37.0	8.15	0.2	
118	Sn	159	He	0.083	ppb	5.9	575.59	1	
121	Sb	159	No Gas	0.074	ppb	53.3	1692.01	0.2	
137	Ba	159	No Gas	0.034	ppb	84.9	430.49	0.4	
182	W	159	No Gas	2.542	ppb	5.5	40863.83	1	Fail All Methods□ Failed DoD
205	Tl	209	No Gas	0.072	ppb	63.6	2753.48	0.2	
208	Pb	209	No Gas	0.036	ppb	65.1	4345.22	0.2	
232	Th	209	No Gas	0.503	ppb	2.7	24769.14	1	Failed DoD
238	U	209	No Gas	0.100	ppb	61.8	4873.48	0.2	Failed DoD

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6516866.69	3.6	5961075.87	109.32	29.5	120.4	
Sc	45	No Gas	12509281.97	2.7	13015983.55	96.11	29.5	120.4	
Sc	45	H2	1347381.24	1.5	1430290.9	94.2	29.5	120.4	
Sc	45	He	403823.54	0.9	438046.17	92.19	29.5	120.4	
Ge	72	No Gas	2405758.18	3.6	2458564.83	97.85	29.5	120.4	
Ge	72	H2	458819.90	2.0	491199	93.41	29.5	120.4	
Ge	72	He	238124.85	0.8	255273.97	93.28	29.5	120.4	
Y	89	H2	7108632.91	2.1	7442438.64	95.51	29.5	120.4	
Y	89	He	2034245.32	1.3	2167302.66	93.86	29.5	120.4	
Tb	159	No Gas	22947055.21	3.1	21871384.4	104.92	29.5	120.4	
Tb	159	He	8559798.27	1.0	8589669.11	99.65	29.5	120.4	
Bi	209	No Gas	11044996.58	3.4	10079220.95	109.58	29.5	120.4	

Sample Report

Sample Name SO3681-007

File Name 127SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 19:35:37

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.014	ppb	22.7	32.22	100	
11	B	6	No Gas	32.960	ppb	7.0	36611.94	1000	
23	Na	45	He	104029.785	ppb	1.1	12382890.37	200000	
24	Mg	45	He	2604.052	ppb	0.8	181102.77	200000	
27	Al	45	He	8.798	ppb	22.2	348.91	200000	
28	Si	45	H2	6977.443	ppb	0.2	284024.03	10000	
39	K	45	He	4560.034	ppb	1.0	271385.59	200000	
40	Ca	45	H2	17078.861	ppb	1.3	6046481.02	200000	
51	V	89	He	0.173	ppb	1.9	402.24	1000	
52	Cr	89	He	0.569	ppb	7.9	1447.15	2000	
55	Mn	89	He	1779.013	ppb	1.0	932313.18	2000	
56	Fe	89	H2	13689.224	ppb	1.3	16299032.00	100000	
59	Co	89	He	16.948	ppb	1.3	30532.91	1000	
60	Ni	89	He	5.026	ppb	3.2	2568.11	1000	
63	Cu	89	He	0.617	ppb	13.7	1353.45	2000	
66	Zn	89	He	6.475	ppb	10.6	1400.12	2000	
75	As	89	He	291.854	ppb	0.8	35190.06	1000	
78	Se	89	H2	0.751	ppb	19.5	42.00	1000	
88	Sr	89	He	154.984	ppb	1.8	94856.83	2000	
95	Mo	89	He	3.865	ppb	5.7	2674.81	1000	
107	Ag	89	He	0.016	ppb	70.7	62.22	100	
111	Cd	89	He	0.035	ppb	11.6	11.11	1000	
118	Sn	159	He	0.419	ppb	10.8	568.92	1000	
121	Sb	159	No Gas	0.276	ppb	4.4	1194.72	1000	
137	Ba	159	No Gas	29.143	ppb	5.5	48482.58	2000	
182	W	159	No Gas	3.509	ppb	8.7	12593.68	1000	
205	Tl	209	No Gas	0.074	ppb	10.6	620.71	1000	
208	Pb	209	No Gas	0.071	ppb	28.1	2970.13	2000	
232	Th	209	No Gas	7.869	ppb	8.8	70709.08	1000	
238	U	209	No Gas	0.025	ppb	31.5	226.92	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5927418.25	4.0	5961075.87	99.44	29.5	120.4	
Sc	45	No Gas	11734073.24	5.3	13015983.55	90.15	29.5	120.4	
Sc	45	H2	1304519.14	2.1	1430290.9	91.21	29.5	120.4	
Sc	45	He	397205.04	0.4	438046.17	90.68	29.5	120.4	
Ge	72	No Gas	2289499.63	4.3	2458564.83	93.12	29.5	120.4	
Ge	72	H2	434318.78	2.9	491199	88.42	29.5	120.4	
Ge	72	He	233098.94	0.7	255273.97	91.31	29.5	120.4	
Y	89	H2	6919205.52	2.3	7442438.64	92.97	29.5	120.4	
Y	89	He	2004314.05	1.0	2167302.66	92.48	29.5	120.4	
Tb	159	No Gas	21409278.57	5.2	21871384.4	97.89	29.5	120.4	
Tb	159	He	8408081.47	0.7	8589669.11	97.89	29.5	120.4	
Bi	209	No Gas	10257711.31	4.1	10079220.95	101.77	29.5	120.4	

Sample Report

Sample Name SO3681-008

File Name 128SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 19:38:14

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.014	ppb	30.9	31.11	100	
11	B	6	No Gas	118.527	ppb	11.6	117254.80	1000	
23	Na	45	He	18530.280	ppb	1.0	2243044.45	200000	
24	Mg	45	He	6659.956	ppb	0.7	468059.40	200000	
27	Al	45	He	8.497	ppb	13.4	344.46	200000	
28	Si	45	H2	8362.352	ppb	1.2	342775.13	10000	
39	K	45	He	6348.741	ppb	0.4	374306.90	200000	
40	Ca	45	H2	53987.079	ppb	2.3	19243846.80	200000	
51	V	89	He	0.130	ppb	34.1	363.35	1000	
52	Cr	89	He	0.598	ppb	8.7	1486.48	2000	
55	Mn	89	He	7545.211	ppb	0.4	3967313.66	2000	
56	Fe	89	H2	6444.527	ppb	1.5	7701113.45	100000	
59	Co	89	He	6.841	ppb	2.9	12368.54	1000	
60	Ni	89	He	2.171	ppb	2.0	1145.65	1000	
63	Cu	89	He	0.710	ppb	12.0	1482.36	2000	
66	Zn	89	He	3.814	ppb	1.4	944.51	2000	
75	As	89	He	96.404	ppb	1.9	11674.51	1000	
78	Se	89	H2	0.302	ppb	18.0	19.33	1000	
88	Sr	89	He	920.131	ppb	1.0	564808.30	2000	
95	Mo	89	He	1.376	ppb	6.8	1043.41	1000	
107	Ag	89	He	0.015	ppb	78.8	60.00	100	
111	Cd	89	He	0.010	ppb	108.2	4.45	1000	
118	Sn	159	He	0.473	ppb	11.8	598.93	1000	
121	Sb	159	No Gas	0.279	ppb	11.1	1158.01	1000	
137	Ba	159	No Gas	39.499	ppb	14.8	62808.45	2000	
182	W	159	No Gas	1.633	ppb	22.4	7096.53	1000	
205	Tl	209	No Gas	0.020	ppb	42.0	253.62	1000	
208	Pb	209	No Gas	0.068	ppb	4.8	2846.64	2000	
232	Th	209	No Gas	0.768	ppb	10.8	7100.02	1000	
238	U	209	No Gas	3.757	ppb	14.9	32141.44	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5730710.67	8.3	5961075.87	96.14	29.5	120.4	
Sc	45	No Gas	11268637.30	10.0	13015983.55	86.58	29.5	120.4	
Sc	45	H2	1314278.26	1.8	1430290.9	91.89	29.5	120.4	
Sc	45	He	401524.31	0.9	438046.17	91.66	29.5	120.4	
Ge	72	No Gas	2204874.67	8.0	2458564.83	89.68	29.5	120.4	
Ge	72	H2	443142.94	1.0	491199	90.22	29.5	120.4	
Ge	72	He	233989.15	0.8	255273.97	91.66	29.5	120.4	
Y	89	H2	6942035.49	1.4	7442438.64	93.28	29.5	120.4	
Y	89	He	2010997.43	1.0	2167302.66	92.79	29.5	120.4	
Tb	159	No Gas	20637549.69	9.9	21871384.4	94.36	29.5	120.4	
Tb	159	He	8397535.08	1.6	8589669.11	97.76	29.5	120.4	
Bi	209	No Gas	9905131.03	9.1	10079220.95	98.27	29.5	120.4	

Sample Report

Sample Name SO3681-009

File Name 129SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 19:40:46

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.014	ppb	37.5	30.00	100	
11	B	6	No Gas	12.720	ppb	14.0	15795.84	1000	
23	Na	45	He	2451.943	ppb	1.2	308943.39	200000	
24	Mg	45	He	1009.171	ppb	0.5	70540.13	200000	
27	Al	45	He	17.634	ppb	17.7	585.59	200000	
28	Si	45	H2	5103.562	ppb	16.1	218577.11	10000	
39	K	45	He	1509.775	ppb	1.9	103181.45	200000	
40	Ca	45	H2	6735.107	ppb	16.5	2510198.56	200000	
51	V	89	He	0.122	ppb	21.8	354.46	1000	
52	Cr	89	He	0.552	ppb	1.1	1425.82	2000	
55	Mn	89	He	2997.901	ppb	0.7	1569395.99	2000	
56	Fe	89	H2	16120.511	ppb	17.2	20114332.37	100000	
59	Co	89	He	2.903	ppb	2.1	5230.24	1000	
60	Ni	89	He	2.194	ppb	5.3	1152.31	1000	
63	Cu	89	He	0.636	ppb	6.2	1376.79	2000	
66	Zn	89	He	4.096	ppb	1.5	988.97	2000	
75	As	89	He	1324.686	ppb	0.7	159489.38	1000	
78	Se	89	H2	0.154	ppb	29.2	12.33	1000	
88	Sr	89	He	33.062	ppb	0.3	20256.65	2000	
95	Mo	89	He	4.916	ppb	2.6	3361.66	1000	
107	Ag	89	He	0.010	ppb	41.9	50.00	100	
111	Cd	89	He	0.003	ppb	74.1	2.59	1000	
118	Sn	159	He	0.353	ppb	9.8	527.81	1000	
121	Sb	159	No Gas	0.278	ppb	13.3	1158.02	1000	
137	Ba	159	No Gas	4.886	ppb	13.3	7854.47	2000	
182	W	159	No Gas	1.216	ppb	12.5	6004.80	1000	
205	Tl	209	No Gas	0.008	ppb	106.0	176.87	1000	
208	Pb	209	No Gas	0.096	ppb	43.4	3090.27	2000	
232	Th	209	No Gas	0.364	ppb	13.7	3644.62	1000	
238	U	209	No Gas	0.018	ppb	26.3	163.52	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5720566.46	9.7	5961075.87	95.97	29.5	120.4	
Sc	45	No Gas	11154868.85	11.5	13015983.55	85.7	29.5	120.4	
Sc	45	H2	1380896.08	8.7	1430290.9	96.55	29.5	120.4	
Sc	45	He	398911.30	0.5	438046.17	91.07	29.5	120.4	
Ge	72	No Gas	2185904.02	9.9	2458564.83	88.91	29.5	120.4	
Ge	72	H2	459355.10	6.1	491199	93.52	29.5	120.4	
Ge	72	He	233931.04	0.3	255273.97	91.64	29.5	120.4	
Y	89	H2	7304112.61	8.4	7442438.64	98.14	29.5	120.4	
Y	89	He	2002116.95	0.4	2167302.66	92.38	29.5	120.4	
Tb	159	No Gas	20627948.44	11.8	21871384.4	94.31	29.5	120.4	
Tb	159	He	8361263.00	0.6	8589669.11	97.34	29.5	120.4	
Bi	209	No Gas	9925443.64	10.1	10079220.95	98.47	29.5	120.4	

Sample Report

Sample Name RINSE

File Name 130SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 19:43:21

Sample Type Sample

Total Dilution 1.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.002	ppb	17.5	24.44	100	
11	B	6	No Gas	0.165	ppb	25.2	5019.93	1000	
23	Na	45	He	10.545	ppb	10.0	22833.60	200000	
24	Mg	45	He	0.071	ppb	122.5	115.56	200000	
27	Al	45	He	-0.267	ppb	N/A	82.22	200000	
28	Si	45	H2	48.641	ppb	1.0	10896.32	10000	
39	K	45	He	1.314	ppb	142.2	20006.70	200000	
40	Ca	45	H2	-0.155	ppb	N/A	5051.08	200000	
51	V	89	He	-0.022	ppb	N/A	147.78	1000	
52	Cr	89	He	-0.019	ppb	N/A	697.23	2000	
55	Mn	89	He	0.097	ppb	24.9	327.28	2000	
56	Fe	89	H2	1.235	ppb	15.7	11738.13	100000	
59	Co	89	He	0.001	ppb	82.0	15.56	1000	
60	Ni	89	He	-0.004	ppb	N/A	48.89	1000	
63	Cu	89	He	-0.005	ppb	N/A	517.81	2000	
66	Zn	89	He	-0.042	ppb	N/A	253.35	2000	
75	As	89	He	0.698	ppb	12.6	446.72	1000	
78	Se	89	H2	0.016	ppb	26.7	8.17	1000	
88	Sr	89	He	0.000	ppb	N/A	53.34	2000	
95	Mo	89	He	0.069	ppb	2.9	368.91	1000	
107	Ag	89	He	0.001	ppb	90.4	37.78	100	
111	Cd	89	He	0.000	ppb	N/A	1.11	1000	
118	Sn	159	He	-0.015	ppb	N/A	292.24	1000	
121	Sb	159	No Gas	0.000	ppb	N/A	113.46	1000	
137	Ba	159	No Gas	0.000	ppb	N/A	123.48	2000	
182	W	159	No Gas	0.085	ppb	17.7	4395.69	1000	
205	Tl	209	No Gas	0.001	ppb	100.1	190.21	1000	
208	Pb	209	No Gas	-0.017	ppb	N/A	1601.83	2000	
232	Th	209	No Gas	-0.001	ppb	N/A	520.60	1000	
238	U	209	No Gas	0.000	ppb	15.2	10.01	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6446549.92	3.7	5961075.87	108.14	29.5	120.4	
Sc	45	No Gas	12548943.81	2.8	13015983.55	96.41	29.5	120.4	
Sc	45	H2	1352152.83	1.4	1430290.9	94.54	29.5	120.4	
Sc	45	He	404920.00	1.3	438046.17	92.44	29.5	120.4	
Ge	72	No Gas	2416309.69	3.0	2458564.83	98.28	29.5	120.4	
Ge	72	H2	461833.55	1.6	491199	94.02	29.5	120.4	
Ge	72	He	237582.59	0.7	255273.97	93.07	29.5	120.4	
Y	89	H2	7132488.90	1.0	7442438.64	95.84	29.5	120.4	
Y	89	He	2044284.40	2.2	2167302.66	94.32	29.5	120.4	
Tb	159	No Gas	23164271.88	3.0	21871384.4	105.91	29.5	120.4	
Tb	159	He	8595687.65	1.0	8589669.11	100.07	29.5	120.4	
Bi	209	No Gas	11063837.61	4.2	10079220.95	109.77	29.5	120.4	

Sample Report

Sample Name RINSE

File Name 131SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 19:45:51

Sample Type Sample

Total Dilution 1.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.000	ppb	2502.2	11.11	100	
11	B	6	No Gas	0.181	ppb	22.1	5121.07	1000	
23	Na	45	He	9.425	ppb	4.5	22121.61	200000	
24	Mg	45	He	0.064	ppb	305.1	113.34	200000	
27	Al	45	He	-0.248	ppb	N/A	84.45	200000	
28	Si	45	H2	47.076	ppb	0.8	10498.84	10000	
39	K	45	He	2.727	ppb	42.9	20375.43	200000	
40	Ca	45	H2	-0.435	ppb	N/A	4509.77	200000	
51	V	89	He	-0.025	ppb	N/A	132.23	1000	
52	Cr	89	He	-0.019	ppb	N/A	695.22	2000	
55	Mn	89	He	0.054	ppb	37.7	213.96	2000	
56	Fe	89	H2	0.123	ppb	20.0	4886.33	100000	
59	Co	89	He	0.001	ppb	34.8	17.78	1000	
60	Ni	89	He	0.003	ppb	179.2	66.67	1000	
63	Cu	89	He	-0.002	ppb	N/A	533.36	2000	
66	Zn	89	He	0.011	ppb	391.4	300.02	2000	
75	As	89	He	0.286	ppb	7.9	194.02	1000	
78	Se	89	H2	0.012	ppb	43.9	7.00	1000	
88	Sr	89	He	0.005	ppb	20.5	67.78	2000	
95	Mo	89	He	0.056	ppb	25.5	326.68	1000	
107	Ag	89	He	0.000	ppb	N/A	27.78	100	
111	Cd	89	He	-0.001	ppb	N/A	0.74	1000	
118	Sn	159	He	-0.018	ppb	N/A	281.12	1000	
121	Sb	159	No Gas	-0.002	ppb	N/A	76.75	1000	
137	Ba	159	No Gas	-0.006	ppb	N/A	70.08	2000	
182	W	159	No Gas	0.077	ppb	13.9	4282.20	1000	
205	Tl	209	No Gas	0.000	ppb	1141.7	143.50	1000	
208	Pb	209	No Gas	-0.018	ppb	N/A	1575.15	2000	
232	Th	209	No Gas	-0.003	ppb	N/A	437.16	1000	
238	U	209	No Gas	0.000	ppb	10.6	10.01	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6467075.44	2.9	5961075.87	108.49	29.5	120.4	
Sc	45	No Gas	12529165.91	2.5	13015983.55	96.26	29.5	120.4	
Sc	45	H2	1343430.90	0.7	1430290.9	93.93	29.5	120.4	
Sc	45	He	404293.19	0.8	438046.17	92.29	29.5	120.4	
Ge	72	No Gas	2395279.62	2.8	2458564.83	97.43	29.5	120.4	
Ge	72	H2	458384.30	0.8	491199	93.32	29.5	120.4	
Ge	72	He	237837.46	0.5	255273.97	93.17	29.5	120.4	
Y	89	H2	7100761.55	0.1	7442438.64	95.41	29.5	120.4	
Y	89	He	2042979.31	1.5	2167302.66	94.26	29.5	120.4	
Tb	159	No Gas	23133338.27	2.9	21871384.4	105.77	29.5	120.4	
Tb	159	He	8487864.67	1.0	8589669.11	98.81	29.5	120.4	
Bi	209	No Gas	11097735.47	2.9	10079220.95	110.11	29.5	120.4	

Prep Blank (PB) Report

Sample Name	PBWOF21IMW2
File Name	132_PB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 19:48:32
Sample Type	PB
Total Dilution	5.0000
Comment	---
ISTD Ref FileName	006CALB.d
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass
Operator	**admin**

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Be	9	6	No Gas	0.004	ppb	277.5	16.67	0.5	
B	11	6	No Gas	1.558	ppb	3.6	5631.28	10	
Na	23	45	He	67.749	ppb	5.6	24347.66	500	
Mg	24	45	He	15.369	ppb	7.0	1164.58	50	
Al	27	45	He	6.125	ppb	20.7	280.01	50	
Si	28	45	H2	197.486	ppb	6.1	8715.61	250	
K	39	45	He	8.020	ppb	188.9	19839.90	500	
Ca	40	45	H2	13.477	ppb	2.6	9986.06	50	
V	51	89	He	0.154	ppb	35.3	384.46	2.5	
Cr	52	89	He	0.646	ppb	4.8	1536.48	2.5	
Mn	55	89	He	0.748	ppb	1.6	459.26	1	
Fe	56	89	H2	24.438	ppb	1.0	33303.13	50	
Co	59	89	He	0.026	ppb	61.8	53.34	0.5	
Ni	60	89	He	0.210	ppb	23.0	162.23	1	
Cu	63	89	He	0.402	ppb	15.2	1068.97	1.5	
Zn	66	89	He	1.032	ppb	9.9	462.25	5	
As	75	89	He	1.478	ppb	2.6	196.02	2.5	
Se	78	89	H2	0.045	ppb	79.0	6.17	2.5	
Sr	88	89	He	0.052	ppb	85.1	84.45	2.5	
Mo	95	89	He	0.286	ppb	32.6	323.35	2.5	
Ag	107	89	He	0.006	ppb	56.8	41.11	0.5	
Cd	111	89	He	0.001	ppb	464.4	1.85	0.5	
Sn	118	159	He	0.580	ppb	19.0	665.60	2.5	
Sb	121	159	No Gas	0.148	ppb	18.9	737.51	0.5	
Ba	137	159	No Gas	0.019	ppb	130.9	156.85	1	
W	182	159	No Gas	0.522	ppb	2.0	4639.34	2.5	
Tl	205	209	No Gas	-0.002	ppb	N/A	120.14	0.5	
Pb	208	209	No Gas	0.048	ppb	38.2	2940.11	0.5	
Th	232	209	No Gas	0.204	ppb	10.6	2509.73	2.5	
U	238	209	No Gas	0.000	ppb	612.7	10.01	0.5	

QC ISTD Table

Prep Blank (PB) Report

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6241704.56	2.5	5961075.87	104.71	29.5	120.4	
Sc	45	No Gas	12439981.83	1.5	13015983.55	95.57	29.5	120.4	
Sc	45	H2	1313700.37	0.3	1430290.9	91.85	29.5	120.4	
Sc	45	He	399866.25	0.7	438046.17	91.28	29.5	120.4	
Ge	72	No Gas	2378782.34	2.0	2458564.83	96.75	29.5	120.4	
Ge	72	H2	442421.86	0.9	491199	90.07	29.5	120.4	
Ge	72	He	233050.73	0.6	255273.97	91.29	29.5	120.4	
Y	89	H2	6956286.82	0.7	7442438.64	93.47	29.5	120.4	
Y	89	He	2004169.22	0.3	2167302.66	92.47	29.5	120.4	
Tb	159	No Gas	22881581.88	1.5	21871384.4	104.62	29.5	120.4	
Tb	159	He	8469788.14	0.3	8589669.11	98.6	29.5	120.4	
Bi	209	No Gas	10952554.36	2.1	10079220.95	108.66	29.5	120.4	

Laboratory Control Sample (LCS) Report

Sample Name	LCSWOF21IMW2
File Name	133LCSW.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 19:51:04
Sample Type	LCSW
Total Dilution	5.0000
Comment	---
ISTD Ref FileName	006CALB.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**admin**

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Be	9	6	No Gas	44.165	ppb	4.3	72659.54	50	17.67	79.5	120.4	
B	11	6	No Gas	449.575	ppb	4.7	480785.90	500	17.98	79.5	120.4	
Na	23	45	He	8360.706	ppb	1.5	1018430.88	7500	22.3	79.5	120.4	
Mg	24	45	He	5520.233	ppb	0.5	387016.91	5000	22.08	79.5	120.4	
Al	27	45	He	2171.152	ppb	0.7	58100.13	2000	21.71	79.5	120.4	
Si	28	45	H2	1200.417	ppb	1.9	49738.67	1000	24.01	0	200	
K	39	45	He	11632.968	ppb	0.9	667937.27	10000	23.27	79.5	120.4	DoD
Ca	40	45	H2	2653.797	ppb	0.4	950664.72	2500	21.23	79.5	120.4	
V	51	89	He	516.186	ppb	1.2	474071.75	500	20.65	79.5	120.4	
Cr	52	89	He	209.888	ppb	1.5	243642.64	200	20.99	79.5	120.4	
Mn	55	89	He	522.964	ppb	1.2	274881.96	500	20.92	79.5	120.4	
Fe	56	89	H2	1101.085	ppb	1.8	1327216.91	1000	22.02	79.5	120.4	
Co	59	89	He	537.407	ppb	2.4	970577.97	500	21.5	79.5	120.4	
Ni	60	89	He	534.727	ppb	1.3	267922.98	500	21.39	79.5	120.4	
Cu	63	89	He	269.425	ppb	1.5	357512.48	250	21.55	79.5	120.4	
Zn	66	89	He	520.298	ppb	1.5	90120.75	500	20.81	79.5	120.4	
As	75	89	He	106.163	ppb	0.7	12849.66	100	21.23	79.5	120.4	
Se	78	89	H2	105.564	ppb	3.1	5430.82	100	21.11	79.5	120.4	
Sr	88	89	He	514.347	ppb	1.6	315570.02	500	20.57	79.5	120.4	
Mo	95	89	He	112.235	ppb	1.1	74076.53	100	22.45	79.5	120.4	
Ag	107	89	He	55.199	ppb	2.1	118658.68	50	22.08	79.5	120.4	
Cd	111	89	He	272.293	ppb	1.5	73935.96	250	21.78	79.5	120.4	
Sn	118	159	He	507.920	ppb	0.7	291274.60	500	20.32	79.5	120.4	
Sb	121	159	No Gas	101.986	ppb	5.0	431577.08	100	20.4	79.5	120.4	
Ba	137	159	No Gas	1750.411	ppb	4.9	3117097.95	2000	17.5	79.5	120.4	
W	182	159	No Gas	114.526	ppb	5.2	343014.42	100	22.9	79.5	120.4	
Tl	205	209	No Gas	109.568	ppb	5.3	770222.88	100	21.91	79.5	120.4	
[Pb]	206	209	No Gas	100.820	ppb	5.6	267415.88	100	20.16	79.5	120.4	
[Pb]	207	209	No Gas	101.065	ppb	4.9	233254.27	100	20.21	79.5	120.4	
Pb	208	209	No Gas	105.481	ppb	5.0	1065403.13	100	21.1	79.5	120.4	
Th	232	209	No Gas	95.273	ppb	6.7	901967.75	100	19.06	79.5	120.4	
U	238	209	No Gas	99.330	ppb	5.5	939949.32	100	19.87	79.5	120.4	

QC ISTD Table

Laboratory Control Sample (LCS) Report

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6306211.82	2.3	5961075.87	105.79	29.5	120.4	
Sc	45	No Gas	12477709.15	0.8	13015983.55	95.86	29.5	120.4	
Sc	45	H2	1313662.93	2.0	1430290.9	91.85	29.5	120.4	
Sc	45	He	400520.83	1.5	438046.17	91.43	29.5	120.4	
Ge	72	No Gas	2389183.42	1.0	2458564.83	97.18	29.5	120.4	
Ge	72	H2	441916.42	1.1	491199	89.97	29.5	120.4	
Ge	72	He	234015.89	0.7	255273.97	91.67	29.5	120.4	
Y	89	H2	6983941.40	1.3	7442438.64	93.84	29.5	120.4	
Y	89	He	2010089.00	1.8	2167302.66	92.75	29.5	120.4	
Tb	159	No Gas	22949031.60	2.3	21871384.4	104.93	29.5	120.4	
Tb	159	He	8432996.05	1.1	8589669.11	98.18	29.5	120.4	
Bi	209	No Gas	10870333.60	2.6	10079220.95	107.85	29.5	120.4	

Sample Report

Sample Name SO3742-001

File Name 134SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 19:53:39

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.073	ppb	40.1	127.78	100	
11	B	6	No Gas	11.760	ppb	3.5	15952.65	1000	
23	Na	45	He	85534.545	ppb	0.2	10267136.36	200000	
24	Mg	45	He	2159.276	ppb	0.4	151403.08	200000	
27	Al	45	He	9.149	ppb	20.3	361.13	200000	
28	Si	45	H2	4487.113	ppb	2.1	184252.54	10000	
39	K	45	He	3493.335	ppb	1.0	214138.62	200000	
40	Ca	45	H2	14043.147	ppb	1.3	5010801.56	200000	
51	V	89	He	0.338	ppb	15.2	551.14	1000	
52	Cr	89	He	0.600	ppb	7.4	1479.15	2000	
55	Mn	89	He	6.807	ppb	2.4	3623.82	2000	
56	Fe	89	H2	21.636	ppb	0.7	29904.96	100000	
59	Co	89	He	0.114	ppb	29.8	211.13	1000	
60	Ni	89	He	2.122	ppb	7.5	1114.53	1000	
63	Cu	89	He	1.068	ppb	6.9	1943.53	2000	
66	Zn	89	He	2.554	ppb	5.8	722.27	2000	
75	As	89	He	1.425	ppb	5.7	189.02	1000	
78	Se	89	H2	2.004	ppb	5.6	106.33	1000	
88	Sr	89	He	94.812	ppb	0.6	57882.52	2000	
95	Mo	89	He	1.421	ppb	11.5	1065.64	1000	
107	Ag	89	He	0.021	ppb	41.7	74.45	100	
111	Cd	89	He	0.039	ppb	79.6	12.22	1000	
118	Sn	159	He	1.386	ppb	5.4	1122.31	1000	
121	Sb	159	No Gas	0.588	ppb	8.5	2593.14	1000	
137	Ba	159	No Gas	67.723	ppb	4.3	120395.03	2000	
182	W	159	No Gas	5.671	ppb	8.6	19891.20	1000	
205	Tl	209	No Gas	0.234	ppb	13.3	1778.80	1000	
208	Pb	209	No Gas	0.126	ppb	27.9	3704.36	2000	
232	Th	209	No Gas	9.690	ppb	8.4	92282.68	1000	
238	U	209	No Gas	0.198	ppb	28.6	1885.62	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6092578.46	3.4	5961075.87	102.21	29.5	120.4	
Sc	45	No Gas	12467911.12	1.5	13015983.55	95.79	29.5	120.4	
Sc	45	H2	1314450.51	0.8	1430290.9	91.9	29.5	120.4	
Sc	45	He	400424.48	0.3	438046.17	91.41	29.5	120.4	
Ge	72	No Gas	2386931.95	2.5	2458564.83	97.09	29.5	120.4	
Ge	72	H2	444529.13	1.1	491199	90.5	29.5	120.4	
Ge	72	He	233886.74	0.3	255273.97	91.62	29.5	120.4	
Y	89	H2	6946026.82	0.6	7442438.64	93.33	29.5	120.4	
Y	89	He	1998371.22	0.5	2167302.66	92.21	29.5	120.4	
Tb	159	No Gas	22883316.88	2.5	21871384.4	104.63	29.5	120.4	
Tb	159	He	8418503.83	0.4	8589669.11	98.01	29.5	120.4	
Bi	209	No Gas	10861947.82	2.4	10079220.95	107.77	29.5	120.4	

Sample Report

Sample Name SO3742-002

File Name 135SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 19:56:08

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.053	ppb	27.5	90.00	100	
11	B	6	No Gas	6.158	ppb	9.7	9823.70	1000	
23	Na	45	He	4136.690	ppb	1.0	515973.60	200000	
24	Mg	45	He	774.411	ppb	0.8	54779.05	200000	
27	Al	45	He	11.906	ppb	8.9	437.80	200000	
28	Si	45	H2	4706.041	ppb	2.0	193912.64	10000	
39	K	45	He	838.759	ppb	1.4	66684.25	200000	
40	Ca	45	H2	3981.050	ppb	1.7	1429412.22	200000	
51	V	89	He	0.196	ppb	13.8	426.69	1000	
52	Cr	89	He	0.531	ppb	2.9	1413.82	2000	
55	Mn	89	He	4853.878	ppb	1.7	2562224.37	2000	
56	Fe	89	H2	10382.290	ppb	1.0	12589547.33	100000	
59	Co	89	He	4.000	ppb	1.3	7264.63	1000	
60	Ni	89	He	1.430	ppb	0.2	777.83	1000	
63	Cu	89	He	0.513	ppb	6.0	1225.65	2000	
66	Zn	89	He	2.264	ppb	14.1	678.93	2000	
75	As	89	He	161.424	ppb	2.5	19613.23	1000	
78	Se	89	H2	0.303	ppb	18.2	19.67	1000	
88	Sr	89	He	36.397	ppb	1.4	22483.49	2000	
95	Mo	89	He	1.489	ppb	7.8	1122.31	1000	
107	Ag	89	He	0.011	ppb	61.7	52.22	100	
111	Cd	89	He	0.048	ppb	24.9	14.82	1000	
118	Sn	159	He	0.893	ppb	8.2	843.39	1000	
121	Sb	159	No Gas	0.316	ppb	4.4	1374.95	1000	
137	Ba	159	No Gas	7.994	ppb	12.2	13572.09	2000	
182	W	159	No Gas	1.253	ppb	17.8	6475.60	1000	
205	Tl	209	No Gas	0.028	ppb	61.5	317.03	1000	
208	Pb	209	No Gas	0.060	ppb	17.5	2903.39	2000	
232	Th	209	No Gas	0.876	ppb	11.6	8469.09	1000	
238	U	209	No Gas	0.504	ppb	9.3	4552.58	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5871626.89	4.9	5961075.87	98.5	29.5	120.4	
Sc	45	No Gas	11849609.09	4.7	13015983.55	91.04	29.5	120.4	
Sc	45	H2	1319182.17	0.8	1430290.9	92.23	29.5	120.4	
Sc	45	He	403546.55	1.2	438046.17	92.12	29.5	120.4	
Ge	72	No Gas	2313156.30	3.8	2458564.83	94.09	29.5	120.4	
Ge	72	H2	440540.17	0.8	491199	89.69	29.5	120.4	
Ge	72	He	234289.58	0.6	255273.97	91.78	29.5	120.4	
Y	89	H2	7044915.66	0.7	7442438.64	94.66	29.5	120.4	
Y	89	He	2019252.54	1.9	2167302.66	93.17	29.5	120.4	
Tb	159	No Gas	21748425.51	4.2	21871384.4	99.44	29.5	120.4	
Tb	159	He	8449899.59	1.2	8589669.11	98.37	29.5	120.4	
Bi	209	No Gas	10385454.78	4.3	10079220.95	103.04	29.5	120.4	

Sample Report

Sample Name	RINSE
File Name	136SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 19:58:44
Sample Type	Sample
Total Dilution	1.0000
Sample QC Pass/Fial	Pass
ISTD QC Pass/Fail	Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.002	ppb	25.6	27.78	100	
11	B	6	No Gas	0.269	ppb	11.5	5172.22	1000	
23	Na	45	He	9.052	ppb	11.5	21957.94	200000	
24	Mg	45	He	0.145	ppb	104.3	142.23	200000	
27	Al	45	He	-0.150	ppb	N/A	97.78	200000	
28	Si	45	H2	47.802	ppb	2.0	10599.05	10000	
39	K	45	He	2.954	ppb	57.2	20493.79	200000	
40	Ca	45	H2	0.046	ppb	228.6	5360.11	200000	
51	V	89	He	-0.013	ppb	N/A	188.90	1000	
52	Cr	89	He	-0.009	ppb	N/A	758.55	2000	
55	Mn	89	He	0.247	ppb	9.7	736.55	2000	
56	Fe	89	H2	1.090	ppb	9.1	10829.59	100000	
59	Co	89	He	0.005	ppb	64.4	48.89	1000	
60	Ni	89	He	0.010	ppb	18.1	84.45	1000	
63	Cu	89	He	-0.003	ppb	N/A	531.14	2000	
66	Zn	89	He	-0.017	ppb	N/A	277.79	2000	
75	As	89	He	0.152	ppb	12.4	112.68	1000	
78	Se	89	H2	0.027	ppb	33.9	11.00	1000	
88	Sr	89	He	0.011	ppb	35.6	90.00	2000	
95	Mo	89	He	0.053	ppb	32.2	318.91	1000	
107	Ag	89	He	0.001	ppb	263.7	36.67	100	
111	Cd	89	He	0.000	ppb	722.7	1.85	1000	
118	Sn	159	He	-0.014	ppb	N/A	294.46	1000	
121	Sb	159	No Gas	0.004	ppb	80.9	173.53	1000	
137	Ba	159	No Gas	0.011	ppb	15.5	210.24	2000	
182	W	159	No Gas	0.098	ppb	41.7	4255.48	1000	
205	Tl	209	No Gas	0.001	ppb	232.0	150.17	1000	
208	Pb	209	No Gas	-0.015	ppb	N/A	1585.16	2000	
232	Th	209	No Gas	0.003	ppb	38.1	667.43	1000	
238	U	209	No Gas	0.001	ppb	43.2	50.06	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	5972571.01	3.3	5961075.87	100.19	29.5	120.4	
Sc	45	No Gas	11637424.10	6.4	13015983.55	89.41	29.5	120.4	
Sc	45	H2	1337155.27	1.7	1430290.9	93.49	29.5	120.4	
Sc	45	He	405384.32	0.7	438046.17	92.54	29.5	120.4	
Ge	72	No Gas	2283141.26	4.8	2458564.83	92.86	29.5	120.4	
Ge	72	H2	457854.87	1.3	491199	93.21	29.5	120.4	
Ge	72	He	239033.68	0.9	255273.97	93.64	29.5	120.4	
Y	89	H2	7118774.30	1.7	7442438.64	95.65	29.5	120.4	
Y	89	He	2063429.43	0.7	2167302.66	95.21	29.5	120.4	
Tb	159	No Gas	21487348.01	6.5	21871384.4	98.24	29.5	120.4	
Tb	159	He	8559752.65	1.0	8589669.11	99.65	29.5	120.4	
Bi	209	No Gas	10246069.67	3.7	10079220.95	101.66	29.5	120.4	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV
File Name	137_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 20:01:18
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	006CALB.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**admin**

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
9	Be	6	No Gas	21.128	ppb	6.1	176443.17	25	84.51	89.8	110.2	> +/- 10%
11	B	6	No Gas	21.405	ppb	5.8	119338.49	25	85.62	89.8	110.2	> +/- 10%
23	Na	45	He	5236.563	ppb	0.6	3186854.29	5000	104.73	89.8	110.2	
24	Mg	45	He	5244.361	ppb	1.6	1856581.50	5000	104.89	89.8	110.2	
27	Al	45	He	511.946	ppb	1.6	69166.06	500	102.39	89.8	110.2	
28	Si	45	H2	491.072	ppb	0.6	103408.18	500	98.21	89.8	110.2	
39	K	45	He	5092.005	ppb	0.7	1453473.52	5000	101.84	89.8	110.2	
40	Ca	45	H2	4999.961	ppb	0.9	9118553.61	5000	100	89.8	110.2	
51	V	89	He	24.820	ppb	2.4	115753.39	25	99.28	89.8	110.2	
52	Cr	89	He	25.067	ppb	1.3	147851.72	25	100.27	89.8	110.2	
55	Mn	89	He	25.130	ppb	2.0	67016.61	25	100.52	89.8	110.2	
56	Fe	89	H2	5008.276	ppb	1.3	30567837.18	5000	100.17	89.8	110.2	
59	Co	89	He	25.463	ppb	2.2	233172.69	25	101.85	89.8	110.2	
60	Ni	89	He	25.442	ppb	1.7	64673.57	25	101.77	89.8	110.2	
63	Cu	89	He	25.266	ppb	1.5	170272.13	25	101.06	89.8	110.2	
66	Zn	89	He	25.222	ppb	1.2	22369.73	25	100.89	89.8	110.2	
75	As	89	He	24.836	ppb	0.4	15236.65	25	99.34	89.8	110.2	
78	Se	89	H2	24.375	ppb	1.4	6368.50	25	97.5	89.8	110.2	
88	Sr	89	He	25.314	ppb	2.0	78785.20	25	101.26	89.8	110.2	
95	Mo	89	He	25.329	ppb	1.9	84738.05	25	101.32	89.8	110.2	
107	Ag	89	He	26.108	ppb	1.2	284539.07	25	104.43	89.8	110.2	
111	Cd	89	He	26.080	ppb	1.5	35904.54	25	104.32	89.8	110.2	
118	Sn	159	He	24.871	ppb	0.6	71609.71	25	99.48	89.8	110.2	
121	Sb	159	No Gas	23.940	ppb	5.9	509846.83	25	95.76	89.8	110.2	
137	Ba	159	No Gas	22.706	ppb	5.5	203621.79	25	90.82	89.8	110.2	
182	W	159	No Gas	23.601	ppb	5.7	355683.57	25	94.4	89.8	110.2	
205	Tl	209	No Gas	25.750	ppb	6.0	895119.13	25	103	89.8	110.2	
208	Pb	209	No Gas	24.673	ppb	5.8	1231899.37	25	98.69	89.8	110.2	
232	Th	209	No Gas	21.457	ppb	7.2	1004617.25	25	85.83	89.8	110.2	> +/- 10%
238	U	209	No Gas	23.603	ppb	6.8	1104448.06	25	94.41	89.8	110.2	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6403964.78	2.3	5961075.87	107.43	29.5	120.4	
Sc	45	No Gas	12639564.33	1.4	13015983.55	97.11	29.5	120.4	
Sc	45	H2	1344172.30	0.6	1430290.9	93.98	29.5	120.4	
Sc	45	He	404588.80	1.1	438046.17	92.36	29.5	120.4	
Ge	72	No Gas	2419925.13	2.6	2458564.83	98.43	29.5	120.4	
Ge	72	H2	452495.01	0.3	491199	92.12	29.5	120.4	
Ge	72	He	237668.29	0.6	255273.97	93.1	29.5	120.4	
Y	89	H2	7093552.89	0.6	7442438.64	95.31	29.5	120.4	
Y	89	He	2038178.67	1.4	2167302.66	94.04	29.5	120.4	
Tb	159	No Gas	23099327.43	1.9	21871384.4	105.61	29.5	120.4	
Tb	159	He	8438384.11	0.6	8589669.11	98.24	29.5	120.4	
Bi	209	No Gas	10748490.09	1.7	10079220.95	106.64	29.5	120.4	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB
File Name	138_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 20:03:55
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	006CALB.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**admin**

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
9	Be	6	No Gas	0.024	ppb	51.4	216.68	0.2	
11	B	6	No Gas	0.365	ppb	11.8	6091.50	4	
23	Na	45	He	9.820	ppb	9.9	22532.68	200	
24	Mg	45	He	0.568	ppb	29.9	293.36	20	
27	Al	45	He	-0.156	ppb	N/A	97.78	20	
28	Si	45	H2	48.794	ppb	3.3	10715.89	100	
39	K	45	He	3.657	ppb	139.7	20784.14	200	
40	Ca	45	H2	0.498	ppb	12.9	6128.21	20	
51	V	89	He	-0.009	ppb	N/A	205.56	1	
52	Cr	89	He	-0.005	ppb	N/A	778.55	1	
55	Mn	89	He	0.035	ppb	46.1	161.97	0.4	
56	Fe	89	H2	2.774	ppb	11.4	20992.55	20	
59	Co	89	He	0.005	ppb	42.9	51.11	0.2	
60	Ni	89	He	0.007	ppb	190.8	77.78	0.4	
63	Cu	89	He	0.004	ppb	301.2	577.81	0.6	
66	Zn	89	He	-0.052	ppb	N/A	245.57	2	
75	As	89	He	0.149	ppb	9.9	110.34	1	
78	Se	89	H2	0.658	ppb	14.9	175.16	1	Failed DoD
88	Sr	89	He	0.004	ppb	67.0	66.67	1	
95	Mo	89	He	0.619	ppb	8.8	2219.16	1	Failed DoD
107	Ag	89	He	0.007	ppb	12.0	104.45	0.2	
111	Cd	89	He	0.002	ppb	2.6	4.44	0.2	
118	Sn	159	He	0.105	ppb	13.6	637.82	1	
121	Sb	159	No Gas	0.040	ppb	16.5	974.46	0.2	
137	Ba	159	No Gas	0.018	ppb	37.8	283.66	0.4	
182	W	159	No Gas	2.111	ppb	4.5	34648.66	1	Fail All Methods□ Failed DoD
205	Tl	209	No Gas	0.033	ppb	28.4	1294.84	0.2	
208	Pb	209	No Gas	0.011	ppb	64.6	3046.88	0.2	
232	Th	209	No Gas	0.459	ppb	1.9	22488.98	1	
238	U	209	No Gas	0.040	ppb	44.4	1908.99	0.2	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6433237.96	2.8	5961075.87	107.92	29.5	120.4	
Sc	45	No Gas	12590348.24	2.1	13015983.55	96.73	29.5	120.4	
Sc	45	H2	1325793.53	0.2	1430290.9	92.69	29.5	120.4	
Sc	45	He	407500.10	2.0	438046.17	93.03	29.5	120.4	
Ge	72	No Gas	2410506.80	1.7	2458564.83	98.05	29.5	120.4	
Ge	72	H2	455725.72	1.1	491199	92.78	29.5	120.4	
Ge	72	He	239672.81	0.7	255273.97	93.89	29.5	120.4	
Y	89	H2	7070190.62	0.7	7442438.64	95	29.5	120.4	
Y	89	He	2051068.16	1.6	2167302.66	94.64	29.5	120.4	
Tb	159	No Gas	23073316.32	1.4	21871384.4	105.5	29.5	120.4	
Tb	159	He	8507267.51	0.6	8589669.11	99.04	29.5	120.4	
Bi	209	No Gas	10969962.70	1.4	10079220.95	108.84	29.5	120.4	

Sample Report

Sample Name SO3742-003

File Name 139SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 20:06:31

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.014	ppb	11.3	33.33	100	
11	B	6	No Gas	27.252	ppb	7.6	32599.93	1000	
23	Na	45	He	47280.948	ppb	1.4	5706844.93	200000	
24	Mg	45	He	1511.464	ppb	2.3	106451.82	200000	
27	Al	45	He	8.726	ppb	8.0	351.13	200000	
28	Si	45	H2	6508.134	ppb	1.9	268160.83	10000	
39	K	45	He	1975.985	ppb	1.3	130114.28	200000	
40	Ca	45	H2	31471.702	ppb	1.6	11274057.89	200000	
51	V	89	He	0.226	ppb	16.9	453.36	1000	
52	Cr	89	He	0.595	ppb	13.9	1488.56	2000	
55	Mn	89	He	430.383	ppb	0.6	227184.19	2000	
56	Fe	89	H2	384.050	ppb	0.9	461818.35	100000	
59	Co	89	He	0.149	ppb	9.1	275.57	1000	
60	Ni	89	He	0.249	ppb	20.1	183.34	1000	
63	Cu	89	He	0.581	ppb	5.5	1315.67	2000	
66	Zn	89	He	1.165	ppb	29.4	488.92	2000	
75	As	89	He	102.445	ppb	0.9	12450.58	1000	
78	Se	89	H2	0.751	ppb	7.0	42.17	1000	
88	Sr	89	He	158.085	ppb	0.6	97437.81	2000	
95	Mo	89	He	3.719	ppb	5.3	2597.01	1000	
107	Ag	89	He	0.016	ppb	41.5	63.34	100	
111	Cd	89	He	-0.001	ppb	N/A	1.48	1000	
118	Sn	159	He	1.188	ppb	13.0	1004.52	1000	
121	Sb	159	No Gas	0.212	ppb	15.4	1011.16	1000	
137	Ba	159	No Gas	36.199	ppb	4.2	64581.92	2000	
182	W	159	No Gas	4.213	ppb	7.8	15603.75	1000	
205	Tl	209	No Gas	0.018	ppb	29.9	263.63	1000	
208	Pb	209	No Gas	0.072	ppb	23.0	3207.09	2000	
232	Th	209	No Gas	7.412	ppb	2.7	71567.83	1000	
238	U	209	No Gas	8.307	ppb	6.6	79527.59	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6246890.42	3.3	5961075.87	104.79	29.5	120.4	
Sc	45	No Gas	12521425.05	2.6	13015983.55	96.2	29.5	120.4	
Sc	45	H2	1320307.99	0.5	1430290.9	92.31	29.5	120.4	
Sc	45	He	402167.39	1.1	438046.17	91.81	29.5	120.4	
Ge	72	No Gas	2419336.93	3.4	2458564.83	98.4	29.5	120.4	
Ge	72	H2	443524.92	0.5	491199	90.29	29.5	120.4	
Ge	72	He	235369.60	1.2	255273.97	92.2	29.5	120.4	
Y	89	H2	6927641.93	0.4	7442438.64	93.08	29.5	120.4	
Y	89	He	2018294.71	0.5	2167302.66	93.12	29.5	120.4	
Tb	159	No Gas	22948944.66	2.6	21871384.4	104.93	29.5	120.4	
Tb	159	He	8383365.50	0.5	8589669.11	97.6	29.5	120.4	
Bi	209	No Gas	10996438.24	2.9	10079220.95	109.1	29.5	120.4	

Sample Report

Sample Name SO3742-004

File Name 140SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 20:09:05

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.015	ppb	42.5	35.56	100	
11	B	6	No Gas	7.549	ppb	6.3	11897.50	1000	
23	Na	45	He	5724.836	ppb	2.3	709086.35	200000	
24	Mg	45	He	1149.739	ppb	0.5	81428.68	200000	
27	Al	45	He	7.873	ppb	21.6	330.02	200000	
28	Si	45	H2	3303.729	ppb	2.6	135367.51	10000	
39	K	45	He	1889.500	ppb	1.1	125937.59	200000	
40	Ca	45	H2	8573.816	ppb	1.8	3051286.41	200000	
51	V	89	He	0.231	ppb	5.8	460.02	1000	
52	Cr	89	He	0.458	ppb	9.5	1332.49	2000	
55	Mn	89	He	376.776	ppb	0.5	199601.76	2000	
56	Fe	89	H2	8087.601	ppb	1.6	9690911.51	100000	
59	Co	89	He	0.241	ppb	8.5	444.48	1000	
60	Ni	89	He	0.415	ppb	6.7	267.79	1000	
63	Cu	89	He	0.992	ppb	9.1	1867.97	2000	
66	Zn	89	He	1.749	ppb	9.1	592.26	2000	
75	As	89	He	4.111	ppb	7.4	518.40	1000	
78	Se	89	H2	0.318	ppb	13.6	20.17	1000	
88	Sr	89	He	87.988	ppb	1.2	54445.23	2000	
95	Mo	89	He	1.208	ppb	0.4	938.96	1000	
107	Ag	89	He	0.014	ppb	27.2	58.89	100	
111	Cd	89	He	0.007	ppb	34.8	3.70	1000	
118	Sn	159	He	0.694	ppb	5.7	726.71	1000	
121	Sb	159	No Gas	0.243	ppb	7.1	1168.02	1000	
137	Ba	159	No Gas	18.404	ppb	7.6	33727.14	2000	
182	W	159	No Gas	1.416	ppb	19.0	7483.83	1000	
205	Tl	209	No Gas	0.003	ppb	160.6	160.18	1000	
208	Pb	209	No Gas	0.047	ppb	21.5	2943.44	2000	
232	Th	209	No Gas	0.665	ppb	13.0	6903.00	1000	
238	U	209	No Gas	0.050	ppb	17.4	483.89	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6232084.47	2.6	5961075.87	104.55	29.5	120.4	
Sc	45	No Gas	12757074.96	3.7	13015983.55	98.01	29.5	120.4	
Sc	45	H2	1310483.97	2.8	1430290.9	91.62	29.5	120.4	
Sc	45	He	404254.82	0.8	438046.17	92.29	29.5	120.4	
Ge	72	No Gas	2422097.69	3.3	2458564.83	98.52	29.5	120.4	
Ge	72	H2	442927.57	1.4	491199	90.17	29.5	120.4	
Ge	72	He	235749.42	0.7	255273.97	92.35	29.5	120.4	
Y	89	H2	6962825.29	2.8	7442438.64	93.56	29.5	120.4	
Y	89	He	2025539.29	1.4	2167302.66	93.46	29.5	120.4	
Tb	159	No Gas	23554027.70	3.5	21871384.4	107.69	29.5	120.4	
Tb	159	He	8420631.61	1.3	8589669.11	98.03	29.5	120.4	
Bi	209	No Gas	10984034.59	3.9	10079220.95	108.98	29.5	120.4	

Sample Report

Sample Name SO3742-006

File Name 141SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 20:11:39

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.007	ppb	79.3	21.11	100	
11	B	6	No Gas	25.110	ppb	6.8	29770.41	1000	
23	Na	45	He	48736.733	ppb	4.5	5786872.24	200000	
24	Mg	45	He	1983.659	ppb	3.5	137455.71	200000	
27	Al	45	He	8.389	ppb	6.6	336.69	200000	
28	Si	45	H2	7950.497	ppb	0.9	328871.85	10000	
39	K	45	He	2783.742	ppb	4.2	172517.28	200000	
40	Ca	45	H2	13789.133	ppb	1.2	4963512.91	200000	
51	V	89	He	0.164	ppb	15.2	387.80	1000	
52	Cr	89	He	0.562	ppb	18.4	1416.49	2000	
55	Mn	89	He	1184.523	ppb	4.7	611174.46	2000	
56	Fe	89	H2	19787.321	ppb	1.7	23749072.40	100000	
59	Co	89	He	9.191	ppb	2.6	16315.08	1000	
60	Ni	89	He	5.453	ppb	8.3	2737.03	1000	
63	Cu	89	He	0.464	ppb	28.9	1131.20	2000	
66	Zn	89	He	2.111	ppb	15.3	637.82	2000	
75	As	89	He	2221.104	ppb	4.3	263563.29	1000	
78	Se	89	H2	0.203	ppb	35.8	14.33	1000	
88	Sr	89	He	114.753	ppb	4.7	69165.64	2000	
95	Mo	89	He	5.547	ppb	3.9	3721.76	1000	
107	Ag	89	He	0.012	ppb	96.7	53.34	100	
111	Cd	89	He	0.009	ppb	50.0	4.07	1000	
118	Sn	159	He	0.734	ppb	11.8	743.39	1000	
121	Sb	159	No Gas	0.205	ppb	14.6	977.80	1000	
137	Ba	159	No Gas	7.773	ppb	6.7	13896.17	2000	
182	W	159	No Gas	0.906	ppb	2.8	5767.76	1000	
205	Tl	209	No Gas	0.017	ppb	51.7	256.96	1000	
208	Pb	209	No Gas	0.033	ppb	17.9	2769.90	2000	
232	Th	209	No Gas	0.316	ppb	17.5	3541.17	1000	
238	U	209	No Gas	0.020	ppb	5.2	193.55	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6126477.41	3.3	5961075.87	102.77	29.5	120.4	
Sc	45	No Gas	12528526.94	1.8	13015983.55	96.25	29.5	120.4	
Sc	45	H2	1326036.94	1.5	1430290.9	92.71	29.5	120.4	
Sc	45	He	395972.23	3.0	438046.17	90.4	29.5	120.4	
Ge	72	No Gas	2394209.00	2.4	2458564.83	97.38	29.5	120.4	
Ge	72	H2	445861.97	0.9	491199	90.77	29.5	120.4	
Ge	72	He	231545.55	3.1	255273.97	90.7	29.5	120.4	
Y	89	H2	6975739.29	2.0	7442438.64	93.73	29.5	120.4	
Y	89	He	1975180.99	3.3	2167302.66	91.14	29.5	120.4	
Tb	159	No Gas	22840048.55	2.1	21871384.4	104.43	29.5	120.4	
Tb	159	He	8343360.71	2.8	8589669.11	97.13	29.5	120.4	
Bi	209	No Gas	10851339.29	2.4	10079220.95	107.66	29.5	120.4	

Sample Report

Sample Name RINSE

File Name 142SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 20:14:15

Sample Type Sample

Total Dilution 1.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.002	ppb	34.9	28.89	100	
11	B	6	No Gas	0.247	ppb	34.3	5083.28	1000	
23	Na	45	He	11.058	ppb	12.2	23101.04	200000	
24	Mg	45	He	0.248	ppb	38.3	177.79	200000	
27	Al	45	He	-0.225	ppb	N/A	87.78	200000	
28	Si	45	H2	48.351	ppb	1.9	10669.19	10000	
39	K	45	He	3.373	ppb	89.7	20548.90	200000	
40	Ca	45	H2	0.882	ppb	12.4	6847.45	200000	
51	V	89	He	-0.018	ppb	N/A	164.45	1000	
52	Cr	89	He	-0.010	ppb	N/A	747.22	2000	
55	Mn	89	He	0.074	ppb	16.3	265.29	2000	
56	Fe	89	H2	2.670	ppb	11.5	20243.77	100000	
59	Co	89	He	0.003	ppb	42.6	31.11	1000	
60	Ni	89	He	0.007	ppb	109.5	75.56	1000	
63	Cu	89	He	0.001	ppb	667.7	555.59	2000	
66	Zn	89	He	0.000	ppb	3390.4	291.13	2000	
75	As	89	He	1.086	ppb	14.1	685.09	1000	
78	Se	89	H2	0.021	ppb	78.2	9.33	1000	
88	Sr	89	He	0.007	ppb	63.0	75.56	2000	
95	Mo	89	He	0.075	ppb	6.4	391.13	1000	
107	Ag	89	He	0.001	ppb	170.7	36.67	100	
111	Cd	89	He	-0.001	ppb	N/A	0.74	1000	
118	Sn	159	He	0.001	ppb	2960.9	335.61	1000	
121	Sb	159	No Gas	-0.001	ppb	N/A	83.43	1000	
137	Ba	159	No Gas	0.006	ppb	123.3	156.84	2000	
182	W	159	No Gas	0.093	ppb	5.1	4115.32	1000	
205	Tl	209	No Gas	0.001	ppb	350.5	143.50	1000	
208	Pb	209	No Gas	-0.016	ppb	N/A	1495.05	2000	
232	Th	209	No Gas	0.001	ppb	79.7	543.95	1000	
238	U	209	No Gas	0.001	ppb	51.3	33.37	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6015807.37	6.6	5961075.87	100.92	29.5	120.4	
Sc	45	No Gas	11469918.47	7.1	13015983.55	88.12	29.5	120.4	
Sc	45	H2	1331473.77	1.3	1430290.9	93.09	29.5	120.4	
Sc	45	He	404255.37	1.6	438046.17	92.29	29.5	120.4	
Ge	72	No Gas	2255435.82	5.1	2458564.83	91.74	29.5	120.4	
Ge	72	H2	457838.06	2.6	491199	93.21	29.5	120.4	
Ge	72	He	239544.00	1.1	255273.97	93.84	29.5	120.4	
Y	89	H2	7035389.62	1.4	7442438.64	94.53	29.5	120.4	
Y	89	He	2046055.26	1.7	2167302.66	94.41	29.5	120.4	
Tb	159	No Gas	21046433.85	6.9	21871384.4	96.23	29.5	120.4	
Tb	159	He	8510154.60	1.0	8589669.11	99.07	29.5	120.4	
Bi	209	No Gas	10089869.62	6.8	10079220.95	100.11	29.5	120.4	

Sample Report

Sample Name RINSE

File Name 143SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 20:16:45

Sample Type Sample

Total Dilution 1.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.001	ppb	110.1	15.56	100	
11	B	6	No Gas	0.105	ppb	57.7	4647.57	1000	
23	Na	45	He	8.359	ppb	17.5	21459.78	200000	
24	Mg	45	He	0.171	ppb	95.0	151.12	200000	
27	Al	45	He	-0.190	ppb	N/A	92.23	200000	
28	Si	45	H2	48.635	ppb	5.5	10836.18	10000	
39	K	45	He	2.236	ppb	112.2	20223.57	200000	
40	Ca	45	H2	-0.171	ppb	N/A	4996.62	200000	
51	V	89	He	-0.019	ppb	N/A	157.78	1000	
52	Cr	89	He	-0.012	ppb	N/A	733.89	2000	
55	Mn	89	He	0.035	ppb	12.7	161.97	2000	
56	Fe	89	H2	0.374	ppb	3.1	6392.00	100000	
59	Co	89	He	0.002	ppb	50.6	20.00	1000	
60	Ni	89	He	0.009	ppb	139.1	81.12	1000	
63	Cu	89	He	-0.005	ppb	N/A	513.36	2000	
66	Zn	89	He	-0.036	ppb	N/A	257.79	2000	
75	As	89	He	0.377	ppb	4.4	249.03	1000	
78	Se	89	H2	0.017	ppb	23.3	8.33	1000	
88	Sr	89	He	0.007	ppb	28.4	74.45	2000	
95	Mo	89	He	0.053	ppb	21.0	313.35	1000	
107	Ag	89	He	0.001	ppb	93.2	40.00	100	
111	Cd	89	He	0.000	ppb	N/A	1.11	1000	
118	Sn	159	He	-0.006	ppb	N/A	314.46	1000	
121	Sb	159	No Gas	0.001	ppb	236.2	123.47	1000	
137	Ba	159	No Gas	-0.001	ppb	N/A	116.80	2000	
182	W	159	No Gas	0.082	ppb	23.7	4308.89	1000	
205	Tl	209	No Gas	0.000	ppb	N/A	126.81	1000	
208	Pb	209	No Gas	-0.018	ppb	N/A	1525.08	2000	
232	Th	209	No Gas	-0.001	ppb	N/A	520.60	1000	
238	U	209	No Gas	0.001	ppb	94.6	36.71	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6384613.40	3.9	5961075.87	107.11	29.5	120.4	
Sc	45	No Gas	12519913.64	2.8	13015983.55	96.19	29.5	120.4	
Sc	45	H2	1344922.43	0.2	1430290.9	94.03	29.5	120.4	
Sc	45	He	404050.12	0.8	438046.17	92.24	29.5	120.4	
Ge	72	No Gas	2397557.94	3.7	2458564.83	97.52	29.5	120.4	
Ge	72	H2	459213.99	0.8	491199	93.49	29.5	120.4	
Ge	72	He	237786.90	0.8	255273.97	93.15	29.5	120.4	
Y	89	H2	7069164.54	0.4	7442438.64	94.98	29.5	120.4	
Y	89	He	2033930.98	1.6	2167302.66	93.85	29.5	120.4	
Tb	159	No Gas	22877140.77	3.1	21871384.4	104.6	29.5	120.4	
Tb	159	He	8481391.61	1.3	8589669.11	98.74	29.5	120.4	
Bi	209	No Gas	10852773.43	3.5	10079220.95	107.67	29.5	120.4	

Sample Report

Sample Name SO3742-008

File Name 144SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 20:19:26

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Fail

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.004	ppb	65.0	17.78	100	
11	B	6	No Gas	99.206	ppb	6.8	107781.07	1000	
23	Na	45	He	45383.936	ppb	0.8	5442612.68	200000	
24	Mg	45	He	11180.959	ppb	1.1	781777.67	200000	
27	Al	45	He	13.240	ppb	14.0	468.92	200000	
28	Si	45	H2	8696.477	ppb	1.4	353798.26	10000	
39	K	45	He	7952.256	ppb	0.8	461603.63	200000	
40	Ca	45	H2	85265.007	ppb	0.9	30165553.44	200000	
51	V	89	He	0.247	ppb	6.4	466.69	1000	
52	Cr	89	He	1.049	ppb	1.8	1988.45	2000	
55	Mn	89	He	10730.208	ppb	0.9	5586968.34	2000	>LDR
56	Fe	89	H2	6310.574	ppb	0.6	7524657.83	100000	
59	Co	89	He	14.239	ppb	0.9	25487.14	1000	
60	Ni	89	He	12.403	ppb	3.0	6212.71	1000	
63	Cu	89	He	5.892	ppb	2.0	8268.30	2000	
66	Zn	89	He	4.692	ppb	2.4	1085.64	2000	
75	As	89	He	48.606	ppb	2.2	5836.87	1000	
78	Se	89	H2	0.029	ppb	109.5	5.33	1000	
88	Sr	89	He	877.410	ppb	0.7	533323.31	2000	
95	Mo	89	He	0.930	ppb	10.8	741.16	1000	
107	Ag	89	He	0.013	ppb	43.3	56.67	100	
111	Cd	89	He	0.126	ppb	17.8	35.55	1000	
118	Sn	159	He	0.662	ppb	2.7	702.27	1000	
121	Sb	159	No Gas	0.206	ppb	9.8	977.79	1000	
137	Ba	159	No Gas	65.383	ppb	4.3	115727.72	2000	
182	W	159	No Gas	0.549	ppb	16.1	4699.46	1000	
205	Tl	209	No Gas	0.005	ppb	58.9	166.85	1000	
208	Pb	209	No Gas	0.317	ppb	8.4	5560.01	2000	
232	Th	209	No Gas	0.224	ppb	10.6	2639.93	1000	
238	U	209	No Gas	4.750	ppb	7.3	44342.42	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6222662.34	1.9	5961075.87	104.39	29.5	120.4	
Sc	45	No Gas	12439125.67	2.3	13015983.55	95.57	29.5	120.4	
Sc	45	H2	1304380.58	0.8	1430290.9	91.2	29.5	120.4	
Sc	45	He	399516.98	1.1	438046.17	91.2	29.5	120.4	
Ge	72	No Gas	2365921.31	2.6	2458564.83	96.23	29.5	120.4	
Ge	72	H2	431995.26	0.5	491199	87.95	29.5	120.4	
Ge	72	He	231481.03	0.8	255273.97	90.68	29.5	120.4	
Y	89	H2	6926177.08	0.4	7442438.64	93.06	29.5	120.4	
Y	89	He	1991353.76	1.3	2167302.66	91.88	29.5	120.4	
Tb	159	No Gas	22780604.94	1.7	21871384.4	104.16	29.5	120.4	
Tb	159	He	8347963.28	0.1	8589669.11	97.19	29.5	120.4	
Bi	209	No Gas	10722627.87	2.3	10079220.95	106.38	29.5	120.4	

Sample Report

Sample Name SO3743-002

File Name 145SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 20:21:53

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.040	ppb	13.0	72.22	100	
11	B	6	No Gas	10.285	ppb	3.4	14256.35	1000	
23	Na	45	He	226748.269	ppb	1.0	26963295.47	200000	
24	Mg	45	He	4572.640	ppb	0.8	317848.22	200000	
27	Al	45	He	13.125	ppb	8.9	463.36	200000	
28	Si	45	H2	10039.872	ppb	1.7	406606.01	10000	
39	K	45	He	7708.566	ppb	0.5	445345.89	200000	
40	Ca	45	H2	42220.630	ppb	0.6	14875966.72	200000	
51	V	89	He	0.401	ppb	11.6	604.48	1000	
52	Cr	89	He	0.760	ppb	1.7	1651.80	2000	
55	Mn	89	He	7461.869	ppb	1.0	3872855.34	2000	
56	Fe	89	H2	28632.892	ppb	1.9	33650305.37	100000	
59	Co	89	He	3.210	ppb	5.5	5732.67	1000	
60	Ni	89	He	0.925	ppb	4.8	514.47	1000	
63	Cu	89	He	0.647	ppb	4.0	1380.12	2000	
66	Zn	89	He	2.875	ppb	15.0	772.27	2000	
75	As	89	He	50.278	ppb	1.5	6018.63	1000	
78	Se	89	H2	0.116	ppb	34.8	9.67	1000	
88	Sr	89	He	863.335	ppb	0.7	523133.08	2000	
95	Mo	89	He	0.250	ppb	25.2	296.68	1000	
107	Ag	89	He	0.015	ppb	5.9	61.11	100	
111	Cd	89	He	0.003	ppb	72.7	2.59	1000	
118	Sn	159	He	0.742	ppb	12.2	743.38	1000	
121	Sb	159	No Gas	0.374	ppb	7.2	1675.29	1000	
137	Ba	159	No Gas	111.768	ppb	6.3	196718.10	2000	
182	W	159	No Gas	0.235	ppb	13.5	3754.70	1000	
205	Tl	209	No Gas	0.001	ppb	634.0	140.15	1000	
208	Pb	209	No Gas	0.045	ppb	65.0	2819.95	2000	
232	Th	209	No Gas	0.128	ppb	13.6	1722.07	1000	
238	U	209	No Gas	0.034	ppb	53.0	323.71	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6014721.02	2.0	5961075.87	100.9	29.5	120.4	
Sc	45	No Gas	12505975.64	1.0	13015983.55	96.08	29.5	120.4	
Sc	45	H2	1298776.46	0.3	1430290.9	90.81	29.5	120.4	
Sc	45	He	397101.59	1.1	438046.17	90.65	29.5	120.4	
Ge	72	No Gas	2374230.24	1.7	2458564.83	96.57	29.5	120.4	
Ge	72	H2	432901.36	2.0	491199	88.13	29.5	120.4	
Ge	72	He	230880.28	0.4	255273.97	90.44	29.5	120.4	
Y	89	H2	6829598.11	0.6	7442438.64	91.77	29.5	120.4	
Y	89	He	1985053.84	0.4	2167302.66	91.59	29.5	120.4	
Tb	159	No Gas	22662699.94	1.1	21871384.4	103.62	29.5	120.4	
Tb	159	He	8300455.64	0.2	8589669.11	96.63	29.5	120.4	
Bi	209	No Gas	10585039.46	0.9	10079220.95	105.02	29.5	120.4	

Sample Report

Sample Name SO3743-003

File Name 146SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 20:24:24

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.003	ppb	141.7	15.55	100	
11	B	6	No Gas	1.405	ppb	9.5	5521.24	1000	
23	Na	45	He	518.765	ppb	4.0	78601.15	200000	
24	Mg	45	He	25.208	ppb	12.0	1860.26	200000	
27	Al	45	He	13.767	ppb	4.0	485.58	200000	
28	Si	45	H2	461.315	ppb	22.1	19629.15	10000	
39	K	45	He	28.797	ppb	61.3	21069.49	200000	
40	Ca	45	H2	263.783	ppb	22.4	99800.43	200000	
51	V	89	He	0.134	ppb	36.3	368.91	1000	
52	Cr	89	He	0.575	ppb	4.7	1467.15	2000	
55	Mn	89	He	1.927	ppb	8.6	1085.18	2000	
56	Fe	89	H2	34.820	ppb	8.0	46795.71	100000	
59	Co	89	He	0.031	ppb	20.8	62.23	1000	
60	Ni	89	He	0.110	ppb	50.0	113.34	1000	
63	Cu	89	He	0.876	ppb	11.9	1709.06	2000	
66	Zn	89	He	1.049	ppb	39.5	470.03	2000	
75	As	89	He	0.968	ppb	4.8	135.69	1000	
78	Se	89	H2	0.032	ppb	161.0	5.67	1000	
88	Sr	89	He	0.427	ppb	0.3	316.68	2000	
95	Mo	89	He	0.187	ppb	11.4	261.13	1000	
107	Ag	89	He	0.013	ppb	51.3	57.78	100	
111	Cd	89	He	-0.005	ppb	N/A	0.37	1000	
118	Sn	159	He	1.012	ppb	5.5	911.18	1000	
121	Sb	159	No Gas	0.193	ppb	19.4	934.41	1000	
137	Ba	159	No Gas	0.484	ppb	18.1	994.50	2000	
182	W	159	No Gas	0.127	ppb	141.2	3507.71	1000	
205	Tl	209	No Gas	-0.004	ppb	N/A	106.79	1000	
208	Pb	209	No Gas	0.032	ppb	56.2	2776.56	2000	
232	Th	209	No Gas	0.093	ppb	17.0	1445.03	1000	
238	U	209	No Gas	0.003	ppb	69.1	36.71	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6300114.27	1.2	5961075.87	105.69	29.5	120.4	
Sc	45	No Gas	12578697.94	1.5	13015983.55	96.64	29.5	120.4	
Sc	45	H2	1344236.35	11.7	1430290.9	93.98	29.5	120.4	
Sc	45	He	401372.09	1.2	438046.17	91.63	29.5	120.4	
Ge	72	No Gas	2394334.09	2.1	2458564.83	97.39	29.5	120.4	
Ge	72	H2	450673.01	5.7	491199	91.75	29.5	120.4	
Ge	72	He	233326.04	0.8	255273.97	91.4	29.5	120.4	
Y	89	H2	7159314.74	11.9	7442438.64	96.2	29.5	120.4	
Y	89	He	2021856.10	2.3	2167302.66	93.29	29.5	120.4	
Tb	159	No Gas	23139456.04	1.8	21871384.4	105.8	29.5	120.4	
Tb	159	He	8442559.87	0.9	8589669.11	98.29	29.5	120.4	
Bi	209	No Gas	10941095.40	1.7	10079220.95	108.55	29.5	120.4	

Sample Report

Sample Name SO3743-005

File Name 147SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 20:27:02

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.008	ppb	47.9	23.33	100	
11	B	6	No Gas	13.041	ppb	3.7	17445.52	1000	
23	Na	45	He	162763.540	ppb	1.1	19233944.93	200000	
24	Mg	45	He	2297.927	ppb	0.6	158746.05	200000	
27	Al	45	He	10.591	ppb	15.1	393.36	200000	
28	Si	45	H2	9432.144	ppb	1.8	379392.37	10000	
39	K	45	He	28220.066	ppb	0.4	1568985.10	200000	
40	Ca	45	H2	22031.326	ppb	0.7	7712307.73	200000	
51	V	89	He	2.333	ppb	5.5	2364.73	1000	
52	Cr	89	He	1.434	ppb	10.1	2431.11	2000	
55	Mn	89	He	1121.188	ppb	0.7	584207.78	2000	
56	Fe	89	H2	86965.704	ppb	2.7	102073896.13	100000	
59	Co	89	He	1.600	ppb	6.9	2871.61	1000	
60	Ni	89	He	3.153	ppb	4.8	1623.49	1000	
63	Cu	89	He	0.759	ppb	2.8	1532.36	2000	
66	Zn	89	He	9.088	ppb	6.1	1839.07	2000	
75	As	89	He	310.083	ppb	1.2	37169.74	1000	
78	Se	89	H2	0.136	ppb	45.2	10.67	1000	
88	Sr	89	He	146.775	ppb	0.5	89323.39	2000	
95	Mo	89	He	1.769	ppb	6.1	1290.11	1000	
107	Ag	89	He	0.006	ppb	78.4	41.11	100	
111	Cd	89	He	-0.004	ppb	N/A	0.74	1000	
118	Sn	159	He	0.722	ppb	9.8	724.49	1000	
121	Sb	159	No Gas	0.221	ppb	9.6	1027.86	1000	
137	Ba	159	No Gas	79.990	ppb	3.9	140004.39	2000	
182	W	159	No Gas	0.372	ppb	32.5	4128.63	1000	
205	Tl	209	No Gas	-0.005	ppb	N/A	96.77	1000	
208	Pb	209	No Gas	0.058	ppb	16.5	2950.11	2000	
232	Th	209	No Gas	0.091	ppb	21.2	1381.65	1000	
238	U	209	No Gas	0.014	ppb	16.8	136.82	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6156747.94	2.0	5961075.87	103.28	29.5	120.4	
Sc	45	No Gas	12422308.22	1.0	13015983.55	95.44	29.5	120.4	
Sc	45	H2	1290040.79	1.7	1430290.9	90.19	29.5	120.4	
Sc	45	He	394539.04	1.3	438046.17	90.07	29.5	120.4	
Ge	72	No Gas	2375673.17	0.8	2458564.83	96.63	29.5	120.4	
Ge	72	H2	435407.91	0.4	491199	88.64	29.5	120.4	
Ge	72	He	230866.88	0.8	255273.97	90.44	29.5	120.4	
Y	89	H2	6823941.72	2.4	7442438.64	91.69	29.5	120.4	
Y	89	He	1992742.78	1.2	2167302.66	91.95	29.5	120.4	
Tb	159	No Gas	22522794.11	0.3	21871384.4	102.98	29.5	120.4	
Tb	159	He	8214049.60	0.6	8589669.11	95.63	29.5	120.4	
Bi	209	No Gas	10614735.19	1.1	10079220.95	105.31	29.5	120.4	

Sample Report

Sample Name RINSE

File Name 148SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 20:29:34

Sample Type Sample

Total Dilution 1.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.001	ppb	101.6	21.11	100	
11	B	6	No Gas	0.119	ppb	23.9	4809.87	1000	
23	Na	45	He	19.978	ppb	5.8	28509.99	200000	
24	Mg	45	He	0.084	ppb	40.1	120.01	200000	
27	Al	45	He	-0.215	ppb	N/A	88.89	200000	
28	Si	45	H2	48.803	ppb	3.1	10635.83	10000	
39	K	45	He	1.729	ppb	65.8	20100.15	200000	
40	Ca	45	H2	0.940	ppb	13.9	6871.90	200000	
51	V	89	He	-0.023	ppb	N/A	140.01	1000	
52	Cr	89	He	-0.019	ppb	N/A	699.89	2000	
55	Mn	89	He	0.086	ppb	5.6	299.28	2000	
56	Fe	89	H2	7.512	ppb	17.5	49226.34	100000	
59	Co	89	He	0.003	ppb	85.6	33.34	1000	
60	Ni	89	He	0.002	ppb	363.1	64.45	1000	
63	Cu	89	He	-0.005	ppb	N/A	517.81	2000	
66	Zn	89	He	0.015	ppb	274.1	305.57	2000	
75	As	89	He	0.232	ppb	13.4	162.02	1000	
78	Se	89	H2	0.009	ppb	53.2	6.33	1000	
88	Sr	89	He	0.012	ppb	74.9	92.23	2000	
95	Mo	89	He	0.025	ppb	36.4	223.34	1000	
107	Ag	89	He	0.000	ppb	1369.0	30.00	100	
111	Cd	89	He	-0.001	ppb	N/A	0.37	1000	
118	Sn	159	He	-0.025	ppb	N/A	261.12	1000	
121	Sb	159	No Gas	-0.002	ppb	N/A	80.09	1000	
137	Ba	159	No Gas	0.017	ppb	22.5	283.66	2000	
182	W	159	No Gas	-0.029	ppb	N/A	2740.05	1000	
205	Tl	209	No Gas	0.000	ppb	N/A	126.81	1000	
208	Pb	209	No Gas	-0.019	ppb	N/A	1545.09	2000	
232	Th	209	No Gas	-0.004	ppb	N/A	393.78	1000	
238	U	209	No Gas	0.000	ppb	N/A	6.67	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6499840.45	4.0	5961075.87	109.04	29.5	120.4	
Sc	45	No Gas	12841594.58	4.6	13015983.55	98.66	29.5	120.4	
Sc	45	H2	1315808.48	1.3	1430290.9	92	29.5	120.4	
Sc	45	He	404414.72	1.2	438046.17	92.32	29.5	120.4	
Ge	72	No Gas	2426591.66	4.5	2458564.83	98.7	29.5	120.4	
Ge	72	H2	453050.27	1.5	491199	92.23	29.5	120.4	
Ge	72	He	237876.82	1.0	255273.97	93.18	29.5	120.4	
Y	89	H2	6983111.10	1.5	7442438.64	93.83	29.5	120.4	
Y	89	He	2059821.91	1.7	2167302.66	95.04	29.5	120.4	
Tb	159	No Gas	23501846.87	4.7	21871384.4	107.45	29.5	120.4	
Tb	159	He	8535963.69	1.0	8589669.11	99.37	29.5	120.4	
Bi	209	No Gas	11154984.80	3.6	10079220.95	110.67	29.5	120.4	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV
File Name	149_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 20:32:14
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	006CALB.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**admin**

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
9	Be	6	No Gas	21.772	ppb	5.7	178437.36	25	87.09	89.8	110.2	> +/- 10%
11	B	6	No Gas	21.951	ppb	4.3	119999.04	25	87.8	89.8	110.2	> +/- 10%
23	Na	45	He	5160.376	ppb	1.2	3142976.46	5000	103.21	89.8	110.2	
24	Mg	45	He	5252.734	ppb	0.2	1861001.33	5000	105.05	89.8	110.2	
27	Al	45	He	514.062	ppb	0.8	69507.29	500	102.81	89.8	110.2	
28	Si	45	H2	492.528	ppb	1.9	102308.95	500	98.51	89.8	110.2	
39	K	45	He	5069.770	ppb	0.4	1448250.96	5000	101.4	89.8	110.2	
40	Ca	45	H2	5062.881	ppb	1.3	9107793.55	5000	101.26	89.8	110.2	
51	V	89	He	24.865	ppb	0.5	116009.30	25	99.46	89.8	110.2	
52	Cr	89	He	25.138	ppb	1.4	148325.59	25	100.55	89.8	110.2	
55	Mn	89	He	25.191	ppb	0.9	67207.43	25	100.76	89.8	110.2	
56	Fe	89	H2	5076.616	ppb	1.2	30389782.67	5000	101.53	89.8	110.2	
59	Co	89	He	25.318	ppb	1.1	231939.34	25	101.27	89.8	110.2	
60	Ni	89	He	25.371	ppb	2.0	64517.46	25	101.48	89.8	110.2	
63	Cu	89	He	25.341	ppb	0.1	170843.30	25	101.36	89.8	110.2	
66	Zn	89	He	25.282	ppb	0.7	22429.82	25	101.13	89.8	110.2	
75	As	89	He	24.560	ppb	0.7	15071.80	25	98.24	89.8	110.2	
78	Se	89	H2	24.653	ppb	1.2	6317.48	25	98.61	89.8	110.2	
88	Sr	89	He	25.150	ppb	0.2	78303.52	25	100.6	89.8	110.2	
95	Mo	89	He	25.170	ppb	1.1	84237.47	25	100.68	89.8	110.2	
107	Ag	89	He	26.156	ppb	1.3	285162.20	25	104.62	89.8	110.2	
111	Cd	89	He	25.778	ppb	0.6	35502.72	25	103.11	89.8	110.2	
118	Sn	159	He	25.117	ppb	1.2	72103.31	25	100.47	89.8	110.2	
121	Sb	159	No Gas	24.487	ppb	7.2	508255.09	25	97.95	89.8	110.2	
137	Ba	159	No Gas	23.211	ppb	6.2	202878.98	25	92.84	89.8	110.2	
182	W	159	No Gas	24.105	ppb	6.1	354061.76	25	96.42	89.8	110.2	
205	Tl	209	No Gas	25.448	ppb	4.2	904333.94	25	101.79	89.8	110.2	
208	Pb	209	No Gas	24.420	ppb	3.5	1246458.12	25	97.68	89.8	110.2	
232	Th	209	No Gas	21.867	ppb	5.5	1046694.52	25	87.47	89.8	110.2	> +/- 10%
238	U	209	No Gas	23.241	ppb	2.3	1111829.23	25	92.96	89.8	110.2	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6282849.71	2.8	5961075.87	105.4	29.5	120.4	
Sc	45	No Gas	12461830.45	2.8	13015983.55	95.74	29.5	120.4	
Sc	45	H2	1326053.14	1.2	1430290.9	92.71	29.5	120.4	
Sc	45	He	404874.49	0.4	438046.17	92.43	29.5	120.4	
Ge	72	No Gas	2378864.22	3.9	2458564.83	96.76	29.5	120.4	
Ge	72	H2	450807.47	1.7	491199	91.78	29.5	120.4	
Ge	72	He	237496.60	0.5	255273.97	93.04	29.5	120.4	
Y	89	H2	6957994.88	1.7	7442438.64	93.49	29.5	120.4	
Y	89	He	2038682.26	0.2	2167302.66	94.07	29.5	120.4	
Tb	159	No Gas	22528325.50	3.2	21871384.4	103	29.5	120.4	
Tb	159	He	8414256.33	0.9	8589669.11	97.96	29.5	120.4	
Bi	209	No Gas	10981279.02	0.8	10079220.95	108.95	29.5	120.4	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB
File Name	150_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 20:34:45
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	006CALB.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**admin**

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
9	Be	6	No Gas	0.065	ppb	52.2	566.70	0.2	
11	B	6	No Gas	0.341	ppb	11.4	6030.35	4	
23	Na	45	He	13.419	ppb	8.7	24364.41	200	
24	Mg	45	He	0.959	ppb	20.9	426.71	20	
27	Al	45	He	-0.128	ppb	N/A	100.01	20	
28	Si	45	H2	48.983	ppb	2.7	10822.84	100	
39	K	45	He	2.957	ppb	45.0	20305.36	200	
40	Ca	45	H2	0.889	ppb	29.2	6876.35	20	
51	V	89	He	-0.020	ppb	N/A	153.34	1	
52	Cr	89	He	-0.015	ppb	N/A	714.56	1	
55	Mn	89	He	0.045	ppb	23.3	187.97	0.4	
56	Fe	89	H2	4.058	ppb	15.3	28838.88	20	
59	Co	89	He	0.006	ppb	81.4	60.01	0.2	
60	Ni	89	He	0.012	ppb	65.1	90.01	0.4	
63	Cu	89	He	0.001	ppb	171.5	548.92	0.6	
66	Zn	89	He	-0.056	ppb	N/A	238.90	2	
75	As	89	He	0.159	ppb	2.6	115.01	1	
78	Se	89	H2	0.748	ppb	13.9	198.82	1	Failed DoD
88	Sr	89	He	0.008	ppb	38.5	76.67	1	
95	Mo	89	He	0.583	ppb	12.9	2073.57	1	Failed DoD
107	Ag	89	He	0.007	ppb	12.5	108.89	0.2	
111	Cd	89	He	0.004	ppb	40.8	7.78	0.2	
118	Sn	159	He	0.083	ppb	10.3	565.59	1	
121	Sb	159	No Gas	0.073	ppb	52.5	1692.04	0.2	
137	Ba	159	No Gas	0.042	ppb	56.5	507.25	0.4	
182	W	159	No Gas	2.396	ppb	6.5	39042.85	1	Fail All Methods□ Failed DoD
205	Tl	209	No Gas	0.070	ppb	46.9	2653.28	0.2	
208	Pb	209	No Gas	0.039	ppb	74.4	4482.06	0.2	
232	Th	209	No Gas	0.493	ppb	5.8	24130.50	1	
238	U	209	No Gas	0.098	ppb	59.7	4733.26	0.2	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6501862.83	3.7	5961075.87	109.07	29.5	120.4	
Sc	45	No Gas	12521176.57	2.4	13015983.55	96.2	29.5	120.4	
Sc	45	H2	1334410.65	0.9	1430290.9	93.3	29.5	120.4	
Sc	45	He	401501.35	2.4	438046.17	91.66	29.5	120.4	
Ge	72	No Gas	2408648.43	3.1	2458564.83	97.97	29.5	120.4	
Ge	72	H2	459746.99	0.6	491199	93.6	29.5	120.4	
Ge	72	He	236848.43	2.2	255273.97	92.78	29.5	120.4	
Y	89	H2	7082422.48	0.9	7442438.64	95.16	29.5	120.4	
Y	89	He	2030642.78	3.6	2167302.66	93.69	29.5	120.4	
Tb	159	No Gas	23129461.04	3.3	21871384.4	105.75	29.5	120.4	
Tb	159	He	8424991.61	3.8	8589669.11	98.08	29.5	120.4	
Bi	209	No Gas	10965181.25	3.3	10079220.95	108.79	29.5	120.4	

Sample Report

Sample Name SO3743-005A

File Name 151SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 20:37:24

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	18.497	ppb	5.4	29746.93	100	
11	B	6	No Gas	372.088	ppb	5.4	389520.94	1000	
23	Na	45	He	178277.620	ppb	0.5	21323641.64	200000	
24	Mg	45	He	4344.868	ppb	0.7	303728.56	200000	
27	Al	45	He	2019.624	ppb	2.2	53890.35	200000	
28	Si	45	H2	18155.655	ppb	2.4	736862.52	10000	
39	K	45	He	47402.268	ppb	1.3	2654443.62	200000	
40	Ca	45	H2	23476.375	ppb	0.7	8297358.42	200000	
51	V	89	He	103.442	ppb	0.8	94308.02	1000	
52	Cr	89	He	102.408	ppb	1.7	118151.98	2000	
55	Mn	89	He	1134.710	ppb	1.0	590711.84	2000	
56	Fe	89	H2	85382.323	ppb	2.0	100768449.07	100000	
59	Co	89	He	22.762	ppb	0.7	40732.85	1000	
60	Ni	89	He	44.052	ppb	3.5	21913.41	1000	
63	Cu	89	He	62.460	ppb	1.8	82504.68	2000	
66	Zn	89	He	215.843	ppb	1.1	37199.31	2000	
75	As	89	He	401.111	ppb	1.2	48033.54	1000	
78	Se	89	H2	102.008	ppb	2.3	5154.55	1000	
88	Sr	89	He	243.967	ppb	0.5	148318.34	2000	
95	Mo	89	He	107.918	ppb	1.1	70557.95	1000	
107	Ag	89	He	21.816	ppb	2.8	46467.25	100	
111	Cd	89	He	21.952	ppb	4.0	5904.69	1000	
118	Sn	159	He	99.957	ppb	1.4	56910.96	1000	
121	Sb	159	No Gas	21.645	ppb	5.9	89860.35	1000	
137	Ba	159	No Gas	116.496	ppb	6.2	203444.83	2000	
182	W	159	No Gas	113.304	ppb	5.9	332665.65	1000	
205	Tl	209	No Gas	21.787	ppb	5.3	148003.88	1000	
208	Pb	209	No Gas	21.078	ppb	5.7	207400.65	2000	
232	Th	209	No Gas	35.073	ppb	7.0	321574.36	1000	
238	U	209	No Gas	21.916	ppb	6.4	200190.03	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6164698.39	3.2	5961075.87	103.42	29.5	120.4	
Sc	45	No Gas	12468438.10	2.9	13015983.55	95.79	29.5	120.4	
Sc	45	H2	1302507.14	1.4	1430290.9	91.07	29.5	120.4	
Sc	45	He	399346.35	1.2	438046.17	91.17	29.5	120.4	
Ge	72	No Gas	2372969.03	3.7	2458564.83	96.52	29.5	120.4	
Ge	72	H2	436647.64	1.0	491199	88.89	29.5	120.4	
Ge	72	He	232102.36	1.3	255273.97	90.92	29.5	120.4	
Y	89	H2	6860526.43	2.1	7442438.64	92.18	29.5	120.4	
Y	89	He	1991018.01	1.5	2167302.66	91.87	29.5	120.4	
Tb	159	No Gas	22502643.27	3.3	21871384.4	102.89	29.5	120.4	
Tb	159	He	8334917.79	1.7	8589669.11	97.03	29.5	120.4	
Bi	209	No Gas	10498811.67	3.9	10079220.95	104.16	29.5	120.4	

Sample Report

Sample Name SO3743-005L

File Name 152SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 20:39:56

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.053	ppb	56.4	100.00	100	
11	B	6	No Gas	6.763	ppb	6.8	11472.70	1000	
23	Na	45	He	32888.368	ppb	0.5	4009327.83	200000	
24	Mg	45	He	466.625	ppb	1.3	33216.32	200000	
27	Al	45	He	2.240	ppb	18.1	178.90	200000	
28	Si	45	H2	2083.985	ppb	31.4	85807.79	10000	
39	K	45	He	6340.407	ppb	0.5	377682.51	200000	
40	Ca	45	H2	4520.079	ppb	30.9	1615296.71	200000	
51	V	89	He	0.389	ppb	13.0	605.59	1000	
52	Cr	89	He	0.345	ppb	4.2	1200.50	2000	
55	Mn	89	He	230.811	ppb	1.1	122241.36	2000	
56	Fe	89	H2	17312.201	ppb	31.7	20666295.36	100000	
59	Co	89	He	0.379	ppb	3.9	695.63	1000	
60	Ni	89	He	0.699	ppb	9.1	411.13	1000	
63	Cu	89	He	0.293	ppb	1.3	934.51	2000	
66	Zn	89	He	1.919	ppb	7.8	621.15	2000	
75	As	89	He	64.428	ppb	1.7	7860.42	1000	
78	Se	89	H2	2.095	ppb	3.8	117.83	1000	
88	Sr	89	He	30.417	ppb	0.7	18849.01	2000	
95	Mo	89	He	1.817	ppb	10.4	1342.33	1000	
107	Ag	89	He	0.012	ppb	44.4	54.45	100	
111	Cd	89	He	0.000	ppb	530.3	1.85	1000	
118	Sn	159	He	0.213	ppb	42.7	454.47	1000	
121	Sb	159	No Gas	0.215	ppb	9.5	1024.52	1000	
137	Ba	159	No Gas	16.704	ppb	5.1	29893.85	2000	
182	W	159	No Gas	5.612	ppb	7.6	19810.97	1000	
205	Tl	209	No Gas	0.046	ppb	66.0	470.53	1000	
208	Pb	209	No Gas	-0.019	ppb	N/A	2269.29	2000	
232	Th	209	No Gas	0.243	ppb	11.3	2886.92	1000	
238	U	209	No Gas	0.091	ppb	56.7	884.37	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6448488.57	2.2	5961075.87	108.18	29.5	120.4	
Sc	45	No Gas	12658120.49	2.4	13015983.55	97.25	29.5	120.4	
Sc	45	H2	1390124.78	26.8	1430290.9	97.19	29.5	120.4	
Sc	45	He	405645.19	0.5	438046.17	92.6	29.5	120.4	
Ge	72	No Gas	2429612.99	2.9	2458564.83	98.82	29.5	120.4	
Ge	72	H2	476263.08	18.6	491199	96.96	29.5	120.4	
Ge	72	He	237984.97	0.7	255273.97	93.23	29.5	120.4	
Y	89	H2	7351265.43	26.8	7442438.64	98.77	29.5	120.4	
Y	89	He	2024678.58	1.6	2167302.66	93.42	29.5	120.4	
Tb	159	No Gas	22971023.55	2.4	21871384.4	105.03	29.5	120.4	
Tb	159	He	8477745.29	0.2	8589669.11	98.7	29.5	120.4	
Bi	209	No Gas	10988235.04	2.7	10079220.95	109.02	29.5	120.4	

Sample Report

Sample Name SO3743-005P

File Name 153SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 20:42:29

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	42.825	ppb	6.4	70782.85	100	
11	B	6	No Gas	447.495	ppb	5.4	480885.18	1000	
23	Na	45	He	166496.331	ppb	2.3	19698597.49	200000	
24	Mg	45	He	7537.312	ppb	1.7	521091.02	200000	
27	Al	45	He	2099.779	ppb	2.5	55414.96	200000	
28	Si	45	H2	10188.020	ppb	1.2	417276.39	10000	
39	K	45	He	37890.194	ppb	1.8	2102442.79	200000	
40	Ca	45	H2	23874.962	ppb	0.8	8510246.12	200000	
51	V	89	He	512.502	ppb	2.3	462182.39	1000	
52	Cr	89	He	204.661	ppb	2.5	233298.10	2000	
55	Mn	89	He	1611.348	ppb	1.9	831544.58	2000	
56	Fe	89	H2	84951.877	ppb	0.8	100420702.17	100000	
59	Co	89	He	521.115	ppb	2.0	924297.85	1000	
60	Ni	89	He	513.934	ppb	1.9	252861.88	1000	
63	Cu	89	He	263.095	ppb	1.8	342840.35	2000	
66	Zn	89	He	525.314	ppb	2.2	89346.10	2000	
75	As	89	He	410.395	ppb	2.3	48718.42	1000	
78	Se	89	H2	102.864	ppb	0.6	5206.73	1000	
88	Sr	89	He	649.277	ppb	1.5	391190.09	2000	
95	Mo	89	He	110.148	ppb	2.8	71386.58	1000	
107	Ag	89	He	52.710	ppb	1.8	111279.42	100	
111	Cd	89	He	265.617	ppb	2.0	70821.78	1000	
118	Sn	159	He	499.132	ppb	1.7	279448.29	1000	
121	Sb	159	No Gas	99.697	ppb	3.9	413821.67	1000	
137	Ba	159	No Gas	1771.716	ppb	5.1	3094110.46	2000	
182	W	159	No Gas	112.503	ppb	4.7	330515.45	1000	
205	Tl	209	No Gas	105.191	ppb	4.6	717027.96	1000	
208	Pb	209	No Gas	102.138	ppb	5.1	1000314.41	2000	
232	Th	209	No Gas	99.097	ppb	2.3	910260.63	1000	
238	U	209	No Gas	98.418	ppb	5.1	903035.51	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6336553.26	2.1	5961075.87	106.3	29.5	120.4	
Sc	45	No Gas	12451821.69	2.0	13015983.55	95.67	29.5	120.4	
Sc	45	H2	1313784.03	2.8	1430290.9	91.85	29.5	120.4	
Sc	45	He	395013.36	0.8	438046.17	90.18	29.5	120.4	
Ge	72	No Gas	2372817.16	2.6	2458564.83	96.51	29.5	120.4	
Ge	72	H2	439092.38	2.5	491199	89.39	29.5	120.4	
Ge	72	He	229594.16	1.0	255273.97	89.94	29.5	120.4	
Y	89	H2	6870089.48	2.1	7442438.64	92.31	29.5	120.4	
Y	89	He	1973882.45	1.5	2167302.66	91.08	29.5	120.4	
Tb	159	No Gas	22503003.00	2.1	21871384.4	102.89	29.5	120.4	
Tb	159	He	8233973.63	1.3	8589669.11	95.86	29.5	120.4	
Bi	209	No Gas	10536633.14	1.8	10079220.95	104.54	29.5	120.4	

Sample Report

Sample Name SO3743-005S

File Name 154SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 20:45:00

Sample Type Sample

Total Dilution 5.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	44.573	ppb	5.7	72922.76	100	
11	B	6	No Gas	472.334	ppb	4.0	502134.67	1000	
23	Na	45	He	172016.886	ppb	2.5	20327080.74	200000	
24	Mg	45	He	7782.881	ppb	2.4	537443.24	200000	
27	Al	45	He	2173.928	ppb	4.1	57291.31	200000	
28	Si	45	H2	10119.391	ppb	8.9	430909.32	10000	
39	K	45	He	39152.184	ppb	2.5	2169251.99	200000	
40	Ca	45	H2	23781.421	ppb	9.9	8806726.40	200000	
51	V	89	He	529.907	ppb	2.9	477513.80	1000	
52	Cr	89	He	211.933	ppb	2.7	241392.05	2000	
55	Mn	89	He	1667.051	ppb	2.5	859648.62	2000	
56	Fe	89	H2	83702.392	ppb	9.6	102811785.66	100000	
59	Co	89	He	541.553	ppb	2.5	959839.37	1000	
60	Ni	89	He	531.522	ppb	2.1	261331.65	1000	
63	Cu	89	He	271.650	ppb	2.5	353702.89	2000	
66	Zn	89	He	543.861	ppb	2.7	92426.66	2000	
75	As	89	He	424.891	ppb	2.7	50400.51	1000	
78	Se	89	H2	103.239	ppb	8.7	5432.31	1000	
88	Sr	89	He	671.029	ppb	3.2	403942.03	2000	
95	Mo	89	He	116.078	ppb	2.3	75171.67	1000	
107	Ag	89	He	54.754	ppb	2.7	115504.07	100	
111	Cd	89	He	274.237	ppb	2.4	73068.55	1000	
118	Sn	159	He	512.774	ppb	3.7	289594.42	1000	
121	Sb	159	No Gas	104.881	ppb	2.1	429983.34	1000	
137	Ba	159	No Gas	1860.844	ppb	3.0	3210409.85	2000	
182	W	159	No Gas	125.009	ppb	1.7	362455.81	1000	
205	Tl	209	No Gas	111.891	ppb	3.6	748692.44	1000	
208	Pb	209	No Gas	107.813	ppb	4.1	1036368.65	2000	
232	Th	209	No Gas	112.857	ppb	1.7	1017183.07	1000	
238	U	209	No Gas	103.535	ppb	3.6	932612.51	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6268673.77	1.2	5961075.87	105.16	29.5	120.4	
Sc	45	No Gas	12235245.65	1.2	13015983.55	94	29.5	120.4	
Sc	45	H2	1372101.74	8.2	1430290.9	95.93	29.5	120.4	
Sc	45	He	394622.11	1.6	438046.17	90.09	29.5	120.4	
Ge	72	No Gas	2341509.55	1.8	2458564.83	95.24	29.5	120.4	
Ge	72	H2	451875.97	5.5	491199	91.99	29.5	120.4	
Ge	72	He	230958.82	0.9	255273.97	90.47	29.5	120.4	
Y	89	H2	7178925.65	8.8	7442438.64	96.46	29.5	120.4	
Y	89	He	1972546.13	1.4	2167302.66	91.01	29.5	120.4	
Tb	159	No Gas	22213676.06	1.3	21871384.4	101.57	29.5	120.4	
Tb	159	He	8309256.96	2.2	8589669.11	96.74	29.5	120.4	
Bi	209	No Gas	10338691.45	0.7	10079220.95	102.57	29.5	120.4	

Sample Report

Sample Name RINSE

File Name 155SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 20:47:35

Sample Type Sample

Total Dilution 1.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.009	ppb	17.9	87.78	100	
11	B	6	No Gas	1.133	ppb	5.9	10295.11	1000	
23	Na	45	He	22.722	ppb	9.2	30064.76	200000	
24	Mg	45	He	0.369	ppb	25.0	220.02	200000	
27	Al	45	He	-0.181	ppb	N/A	93.34	200000	
28	Si	45	H2	49.691	ppb	4.5	10956.44	10000	
39	K	45	He	4.679	ppb	44.2	20859.08	200000	
40	Ca	45	H2	0.856	ppb	9.8	6807.43	200000	
51	V	89	He	-0.009	ppb	N/A	204.45	1000	
52	Cr	89	He	-0.006	ppb	N/A	767.89	2000	
55	Mn	89	He	0.089	ppb	8.2	304.62	2000	
56	Fe	89	H2	6.620	ppb	5.5	44286.05	100000	
59	Co	89	He	0.015	ppb	26.0	140.01	1000	
60	Ni	89	He	0.021	ppb	38.4	111.12	1000	
63	Cu	89	He	0.011	ppb	41.9	616.70	2000	
66	Zn	89	He	-0.022	ppb	N/A	268.90	2000	
75	As	89	He	0.292	ppb	6.9	196.35	1000	
78	Se	89	H2	0.446	ppb	11.6	119.83	1000	
88	Sr	89	He	0.020	ppb	53.7	114.45	2000	
95	Mo	89	He	0.337	ppb	11.8	1257.88	1000	
107	Ag	89	He	0.003	ppb	19.9	66.67	100	
111	Cd	89	He	0.008	ppb	26.7	13.33	1000	
118	Sn	159	He	0.102	ppb	19.5	634.49	1000	
121	Sb	159	No Gas	0.037	ppb	27.7	887.70	1000	
137	Ba	159	No Gas	0.244	ppb	34.6	2299.43	2000	
182	W	159	No Gas	1.093	ppb	2.4	19255.96	1000	
205	Tl	209	No Gas	0.025	ppb	30.1	1031.21	1000	
208	Pb	209	No Gas	-0.002	ppb	N/A	2366.09	2000	
232	Th	209	No Gas	0.266	ppb	0.9	13098.19	1000	
238	U	209	No Gas	0.028	ppb	38.2	1348.27	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6458395.62	4.3	5961075.87	108.34	29.5	120.4	
Sc	45	No Gas	12472630.53	3.0	13015983.55	95.83	29.5	120.4	
Sc	45	H2	1333107.59	1.5	1430290.9	93.21	29.5	120.4	
Sc	45	He	403043.74	1.1	438046.17	92.01	29.5	120.4	
Ge	72	No Gas	2390623.32	3.4	2458564.83	97.24	29.5	120.4	
Ge	72	H2	460214.95	1.2	491199	93.69	29.5	120.4	
Ge	72	He	237628.06	1.1	255273.97	93.09	29.5	120.4	
Y	89	H2	7055384.72	0.9	7442438.64	94.8	29.5	120.4	
Y	89	He	2029969.64	1.9	2167302.66	93.66	29.5	120.4	
Tb	159	No Gas	22869712.44	3.0	21871384.4	104.56	29.5	120.4	
Tb	159	He	8593846.54	1.1	8589669.11	100.05	29.5	120.4	
Bi	209	No Gas	10839009.98	3.2	10079220.95	107.54	29.5	120.4	

Prep Blank (PB) Report

Sample Name	PBWOF25IMW1
File Name	156_PBE.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 20:50:10
Sample Type	PB200.8
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	006CALB.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**admin**

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
Be	9	6	No Gas	0.003	ppb	33.5	35.56	0.1	
B	11	6	No Gas	0.760	ppb	26.4	8250.40	2	
Na	23	45	He	25.624	ppb	3.6	31696.93	100	
Mg	24	45	He	11.993	ppb	5.5	4303.18	10	200.8 PB Fails DoD
Al	27	45	He	7.305	ppb	4.4	1094.53	10	
Si	28	45	H2	83.423	ppb	2.2	17810.85	50	200.8 PB Fails DoD
K	39	45	He	3.403	ppb	26.8	20422.14	100	
Ca	40	45	H2	4.475	ppb	2.2	13238.84	10	
V	51	89	He	-0.013	ppb	N/A	186.68	0.5	
Cr	52	89	He	0.016	ppb	38.5	892.53	0.5	
Mn	55	89	He	0.130	ppb	6.3	412.60	0.2	
Fe	56	89	H2	5.185	ppb	0.7	35451.01	10	
Co	59	89	He	0.009	ppb	19.0	91.12	0.1	
Ni	60	89	He	0.087	ppb	12.6	277.79	0.2	
Cu	63	89	He	0.025	ppb	9.5	714.49	0.3	
Zn	66	89	He	0.274	ppb	5.5	526.69	1	
As	75	89	He	0.157	ppb	3.5	114.01	0.5	
Se	78	89	H2	0.079	ppb	12.0	24.33	0.5	
Sr	88	89	He	0.018	ppb	42.6	107.78	0.5	
Mo	95	89	He	0.148	ppb	11.7	631.15	0.5	
Ag	107	89	He	0.003	ppb	49.0	60.00	0.1	
Cd	111	89	He	0.002	ppb	108.0	4.45	0.1	
Sn	118	159	He	0.104	ppb	21.5	628.93	0.5	
Sb	121	159	No Gas	0.030	ppb	47.4	714.16	0.1	
Ba	137	159	No Gas	0.039	ppb	20.1	470.53	0.2	
W	182	159	No Gas	0.372	ppb	64.8	8338.84	0.5	
Tl	205	209	No Gas	0.002	ppb	26.1	210.24	0.1	
[Pb]	206	209	No Gas	-0.007	ppb	N/A	550.64	0.1	
[Pb]	207	209	No Gas	-0.009	ppb	N/A	433.83	0.1	
Pb	208	209	No Gas	-0.005	ppb	N/A	2205.89	0.1	
Th	232	209	No Gas	0.148	ppb	45.9	7404.05	0.5	
U	238	209	No Gas	0.003	ppb	40.2	136.82	0.1	

QC ISTD Table

Prep Blank (PB) Report

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6520216.70	12.5	5961075.87	109.38	29.5	120.4	
Sc	45	No Gas	12563267.20	16.0	13015983.55	96.52	29.5	120.4	
Sc	45	H2	1322065.37	0.9	1430290.9	92.43	29.5	120.4	
Sc	45	He	401424.85	0.7	438046.17	91.64	29.5	120.4	
Ge	72	No Gas	2403852.18	11.7	2458564.83	97.77	29.5	120.4	
Ge	72	H2	453610.36	0.6	491199	92.35	29.5	120.4	
Ge	72	He	235500.02	0.1	255273.97	92.25	29.5	120.4	
Y	89	H2	7029862.32	0.6	7442438.64	94.46	29.5	120.4	
Y	89	He	2028969.05	1.2	2167302.66	93.62	29.5	120.4	
Tb	159	No Gas	23086327.85	15.7	21871384.4	105.55	29.5	120.4	
Tb	159	He	8424713.07	1.5	8589669.11	98.08	29.5	120.4	
Bi	209	No Gas	11008725.63	14.0	10079220.95	109.22	29.5	120.4	

Laboratory Control Sample (LCS) Report

Sample Name	LCSWOF25IMW1
File Name	157_LCS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 20:52:45
Sample Type	LCS
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	006CALB.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**admin**

QC Analyte Table

Name	Mass	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
Be	9	6	No Gas	41.800	ppb	7.8	375400.22	50	83.6	79.5	120.4	> +/- 15% (EPA)
B	11	6	No Gas	402.229	ppb	7.9	2333149.18	500	80.45	79.5	120.4	> +/- 15% (EPA)
Na	23	45	He	7987.014	ppb	2.5	4747468.08	7500	106.49	79.5	120.4	
Mg	24	45	He	5377.790	ppb	1.6	1862476.90	5000	107.56	79.5	120.4	
Al	27	45	He	2158.417	ppb	3.5	284982.79	2000	107.92	79.5	120.4	
Si	28	45	H2	1090.288	ppb	0.8	227127.45	1000	109.03	79.5	120.4	
K	39	45	He	10428.328	ppb	3.4	2892635.60	10000	104.28	79.5	120.4	
Ca	40	45	H2	2614.492	ppb	1.4	4735640.17	2500	104.58	79.5	120.4	
V	51	89	He	520.000	ppb	3.4	2364661.67	500	104	79.5	120.4	
Cr	52	89	He	198.575	ppb	4.0	1139058.30	200	99.29	79.5	120.4	
Mn	55	89	He	498.097	ppb	4.1	1296743.11	500	99.62	79.5	120.4	
Fe	56	89	H2	1062.914	ppb	1.3	6378496.87	1000	106.29	79.5	120.4	
Co	59	89	He	521.834	ppb	4.1	4668953.89	500	104.37	79.5	120.4	
Ni	60	89	He	522.265	ppb	4.1	1296192.76	500	104.45	79.5	120.4	
Cu	63	89	He	258.453	ppb	4.4	1696957.49	250	103.38	79.5	120.4	
Zn	66	89	He	511.456	ppb	3.6	437723.49	500	102.29	79.5	120.4	
As	75	89	He	101.884	ppb	3.7	61009.50	100	101.88	79.5	120.4	
Se	78	89	H2	102.679	ppb	1.2	26350.83	100	102.68	79.5	120.4	
Sr	88	89	He	520.103	ppb	1.3	1580347.69	500	104.02	79.5	120.4	
Mo	95	89	He	105.969	ppb	4.4	346026.54	100	105.97	79.5	120.4	
Ag	107	89	He	53.131	ppb	2.8	565626.44	50	106.26	79.5	120.4	
Cd	111	89	He	266.385	ppb	3.2	358300.13	250	106.55	79.5	120.4	
Sn	118	159	He	517.693	ppb	4.2	1456551.07	500	103.54	79.5	120.4	
Sb	121	159	No Gas	101.839	ppb	9.7	2007039.81	100	101.84	79.5	120.4	
Ba	137	159	No Gas	1881.948	ppb	9.0	15614568.39	2000	94.1	79.5	120.4	
W	182	159	No Gas	103.567	ppb	8.2	1435617.10	100	103.57	79.5	120.4	
Tl	205	209	No Gas	105.594	ppb	7.1	3438705.98	100	105.59	79.5	120.4	
Pb	208	209	No Gas	102.815	ppb	8.8	4799591.58	100	102.81	79.5	120.4	
Th	232	209	No Gas	106.756	ppb	9.6	4677201.05	100	106.76	79.5	120.4	
U	238	209	No Gas	104.530	ppb	8.5	4580627.97	100	104.53	79.5	120.4	

QC ISTD Table

Laboratory Control Sample (LCS) Report

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6898427.92	5.2	5961075.87	115.72	29.5	120.4	
Sc	45	No Gas	11675616.87	6.2	13015983.55	89.7	29.5	120.4	
Sc	45	H2	1334441.84	1.2	1430290.9	93.3	29.5	120.4	
Sc	45	He	395763.76	3.0	438046.17	90.35	29.5	120.4	
Ge	72	No Gas	2277051.03	5.6	2458564.83	92.62	29.5	120.4	
Ge	72	H2	451576.76	2.8	491199	91.93	29.5	120.4	
Ge	72	He	232095.23	3.1	255273.97	90.92	29.5	120.4	
Y	89	H2	6970634.51	0.3	7442438.64	93.66	29.5	120.4	
Y	89	He	1990710.27	3.1	2167302.66	91.85	29.5	120.4	
Tb	159	No Gas	21450330.79	6.5	21871384.4	98.07	29.5	120.4	
Tb	159	He	8282786.34	2.6	8589669.11	96.43	29.5	120.4	
Bi	209	No Gas	10093258.74	6.2	10079220.95	100.14	29.5	120.4	

Sample Report

Sample Name SO3873-001

File Name 158SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 20:55:05

Sample Type Sample

Total Dilution 1.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.182	ppb	70.4	1562.40	100	
11	B	6	No Gas	8.627	ppb	15.0	51306.89	1000	
23	Na	45	He	2872.495	ppb	1.4	1768731.21	200000	
24	Mg	45	He	1108.600	ppb	0.8	395517.95	200000	
27	Al	45	He	8.589	ppb	8.9	1285.66	200000	
28	Si	45	H2	6182.539	ppb	0.6	1289751.40	10000	
39	K	45	He	910.470	ppb	0.5	278085.07	200000	
40	Ca	45	H2	3786.118	ppb	0.2	6881508.30	200000	
51	V	89	He	0.223	ppb	17.8	1293.44	1000	
52	Cr	89	He	0.167	ppb	4.0	1795.79	2000	
55	Mn	89	He	3.605	ppb	0.9	9754.95	2000	
56	Fe	89	H2	6.860	ppb	1.3	46174.06	100000	
59	Co	89	He	0.115	ppb	33.9	1064.57	1000	
60	Ni	89	He	0.313	ppb	15.1	860.06	1000	
63	Cu	89	He	0.347	ppb	6.0	2903.74	2000	
66	Zn	89	He	2.269	ppb	11.6	2293.60	2000	
75	As	89	He	0.634	ppb	3.6	410.05	1000	
78	Se	89	H2	2.768	ppb	11.4	729.32	1000	
88	Sr	89	He	28.491	ppb	0.6	89406.28	2000	
95	Mo	89	He	1.818	ppb	8.9	6259.44	1000	
107	Ag	89	He	0.019	ppb	58.0	236.68	100	
111	Cd	89	He	0.059	ppb	23.1	83.71	1000	
118	Sn	159	He	1.764	ppb	6.8	5446.87	1000	
121	Sb	159	No Gas	0.366	ppb	50.9	7848.28	1000	
137	Ba	159	No Gas	5.217	ppb	62.8	46541.71	2000	
182	W	159	No Gas	8.887	ppb	8.7	135063.99	1000	
205	Tl	209	No Gas	0.234	ppb	58.0	8503.08	1000	
208	Pb	209	No Gas	0.275	ppb	58.8	16557.05	2000	
232	Th	209	No Gas	3.139	ppb	4.1	151023.67	1000	
238	U	209	No Gas	0.596	ppb	66.7	28663.84	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6490584.63	1.6	5961075.87	108.88	29.5	120.4	
Sc	45	No Gas	12623310.05	1.4	13015983.55	96.98	29.5	120.4	
Sc	45	H2	1339398.15	0.2	1430290.9	93.65	29.5	120.4	
Sc	45	He	407654.89	1.1	438046.17	93.06	29.5	120.4	
Ge	72	No Gas	2406612.93	1.7	2458564.83	97.89	29.5	120.4	
Ge	72	H2	463409.94	1.1	491199	94.34	29.5	120.4	
Ge	72	He	239856.97	0.3	255273.97	93.96	29.5	120.4	
Y	89	H2	7121523.25	0.9	7442438.64	95.69	29.5	120.4	
Y	89	He	2054955.44	0.6	2167302.66	94.82	29.5	120.4	
Tb	159	No Gas	22949297.44	0.5	21871384.4	104.93	29.5	120.4	
Tb	159	He	8533399.39	0.3	8589669.11	99.34	29.5	120.4	
Bi	209	No Gas	10998374.24	1.2	10079220.95	109.12	29.5	120.4	

Sample Report

Sample Name SO3873-001A

File Name 159SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 20:57:38

Sample Type Sample

Total Dilution 1.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	1.870	ppb	6.4	15684.57	100	
11	B	6	No Gas	39.185	ppb	6.9	215795.68	1000	
23	Na	45	He	5238.350	ppb	1.1	3182949.95	200000	
24	Mg	45	He	1331.996	ppb	0.5	470910.07	200000	
27	Al	45	He	220.400	ppb	1.2	29800.73	200000	
28	Si	45	H2	6864.895	ppb	2.6	1450801.93	10000	
39	K	45	He	2938.911	ppb	1.1	845851.38	200000	
40	Ca	45	H2	3901.945	ppb	1.6	7185451.84	200000	
51	V	89	He	10.318	ppb	1.9	48669.53	1000	
52	Cr	89	He	10.528	ppb	0.4	63088.83	2000	
55	Mn	89	He	7.516	ppb	1.3	20260.20	2000	
56	Fe	89	H2	219.685	ppb	1.1	1353817.77	100000	
59	Co	89	He	2.276	ppb	3.1	21023.96	1000	
60	Ni	89	He	4.396	ppb	2.6	11316.10	1000	
63	Cu	89	He	6.699	ppb	0.8	45925.46	2000	
66	Zn	89	He	23.371	ppb	1.3	20921.85	2000	
75	As	89	He	10.656	ppb	2.1	6601.62	1000	
78	Se	89	H2	10.492	ppb	1.3	2761.98	1000	
88	Sr	89	He	38.807	ppb	0.9	121755.62	2000	
95	Mo	89	He	11.115	ppb	1.4	37573.74	1000	
107	Ag	89	He	2.304	ppb	1.7	25344.35	100	
111	Cd	89	He	2.304	ppb	4.0	3199.68	1000	
118	Sn	159	He	10.916	ppb	0.8	32025.58	1000	
121	Sb	159	No Gas	2.235	ppb	5.1	47640.82	1000	
137	Ba	159	No Gas	4.550	ppb	5.5	40855.40	2000	
182	W	159	No Gas	12.152	ppb	6.7	184420.49	1000	
205	Tl	209	No Gas	2.235	ppb	6.6	79377.13	1000	
208	Pb	209	No Gas	2.192	ppb	5.7	113901.93	2000	
232	Th	209	No Gas	4.303	ppb	3.8	206170.34	1000	
238	U	209	No Gas	2.220	ppb	7.2	105978.89	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6431960.95	4.0	5961075.87	107.9	29.5	120.4	
Sc	45	No Gas	12727645.12	2.2	13015983.55	97.78	29.5	120.4	
Sc	45	H2	1357224.00	1.1	1430290.9	94.89	29.5	120.4	
Sc	45	He	403957.37	0.4	438046.17	92.22	29.5	120.4	
Ge	72	No Gas	2410935.67	2.0	2458564.83	98.06	29.5	120.4	
Ge	72	H2	460495.92	0.5	491199	93.75	29.5	120.4	
Ge	72	He	238969.05	0.2	255273.97	93.61	29.5	120.4	
Y	89	H2	7141153.61	0.9	7442438.64	95.95	29.5	120.4	
Y	89	He	2054970.28	0.4	2167302.66	94.82	29.5	120.4	
Tb	159	No Gas	23082362.43	3.3	21871384.4	105.54	29.5	120.4	
Tb	159	He	8547761.40	0.1	8589669.11	99.51	29.5	120.4	
Bi	209	No Gas	10972157.40	3.3	10079220.95	108.86	29.5	120.4	

Sample Report

Sample Name RINSE

File Name 160SMPL.d

Data Path Name D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b

Acq Time 6/29/2021 21:00:15

Sample Type Sample

Total Dilution 1.0000

Sample QC Pass/Fial Pass

ISTD QC Pass/Fail Pass

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	LDR	QC Flag
9	Be	6	No Gas	0.006	ppb	43.9	61.11	100	
11	B	6	No Gas	0.997	ppb	4.5	9526.79	1000	
23	Na	45	He	14.908	ppb	13.3	25825.35	200000	
24	Mg	45	He	0.247	ppb	37.9	180.02	200000	
27	Al	45	He	-0.133	ppb	N/A	101.11	200000	
28	Si	45	H2	50.303	ppb	2.1	11090.06	10000	
39	K	45	He	2.202	ppb	80.7	20545.64	200000	
40	Ca	45	H2	0.425	ppb	24.3	6029.26	200000	
51	V	89	He	0.013	ppb	37.0	313.35	1000	
52	Cr	89	He	-0.020	ppb	N/A	699.89	2000	
55	Mn	89	He	0.025	ppb	27.7	137.98	2000	
56	Fe	89	H2	0.535	ppb	15.7	7366.80	100000	
59	Co	89	He	0.019	ppb	16.6	186.68	1000	
60	Ni	89	He	0.009	ppb	76.0	83.34	1000	
63	Cu	89	He	0.000	ppb	1197.8	557.81	2000	
66	Zn	89	He	0.011	ppb	228.4	303.35	2000	
75	As	89	He	0.136	ppb	23.8	102.68	1000	
78	Se	89	H2	0.379	ppb	11.3	102.33	1000	
88	Sr	89	He	0.017	ppb	30.8	108.89	2000	
95	Mo	89	He	0.457	ppb	12.8	1686.84	1000	
107	Ag	89	He	0.005	ppb	18.4	90.00	100	
111	Cd	89	He	0.006	ppb	11.3	9.63	1000	
118	Sn	159	He	0.275	ppb	9.3	1135.65	1000	
121	Sb	159	No Gas	0.015	ppb	16.8	413.80	1000	
137	Ba	159	No Gas	0.056	ppb	17.8	610.70	2000	
182	W	159	No Gas	1.216	ppb	7.2	20830.36	1000	
205	Tl	209	No Gas	0.007	ppb	26.3	400.45	1000	
208	Pb	209	No Gas	-0.006	ppb	N/A	2159.15	2000	
232	Th	209	No Gas	0.025	ppb	8.7	1748.76	1000	
238	U	209	No Gas	0.009	ppb	11.8	417.15	1000	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6442507.54	2.6	5961075.87	108.08	29.5	120.4	
Sc	45	No Gas	12470930.59	0.9	13015983.55	95.81	29.5	120.4	
Sc	45	H2	1333367.21	1.2	1430290.9	93.22	29.5	120.4	
Sc	45	He	410793.37	2.9	438046.17	93.78	29.5	120.4	
Ge	72	No Gas	2401319.28	1.7	2458564.83	97.67	29.5	120.4	
Ge	72	H2	460727.32	1.3	491199	93.8	29.5	120.4	
Ge	72	He	241045.08	1.9	255273.97	94.43	29.5	120.4	
Y	89	H2	7067855.47	1.6	7442438.64	94.97	29.5	120.4	
Y	89	He	2068529.60	2.8	2167302.66	95.44	29.5	120.4	
Tb	159	No Gas	22595804.11	0.5	21871384.4	103.31	29.5	120.4	
Tb	159	He	8564163.06	2.6	8589669.11	99.7	29.5	120.4	
Bi	209	No Gas	10916879.93	1.5	10079220.95	108.31	29.5	120.4	

Continuing Calibration Verification (CCV) Report

Sample Name	CCV
File Name	161_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 21:02:51
Sample Type	CCV
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	006CALB.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**admin**

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	ExpVal	% Rec	%Low	%High	QC Flag
9	Be	6	No Gas	21.590	ppb	6.0	178456.27	25	86.36	89.8	110.2	> +/- 10%
11	B	6	No Gas	22.174	ppb	5.4	122226.32	25	88.7	89.8	110.2	> +/- 10%
23	Na	45	He	5284.650	ppb	3.7	3187441.70	5000	105.69	89.8	110.2	
24	Mg	45	He	5352.679	ppb	3.1	1878423.63	5000	107.05	89.8	110.2	
27	Al	45	He	519.887	ppb	3.5	69620.32	500	103.98	89.8	110.2	
28	Si	45	H2	497.067	ppb	0.5	103768.39	500	99.41	89.8	110.2	
39	K	45	He	5183.470	ppb	4.5	1465907.06	5000	103.67	89.8	110.2	
40	Ca	45	H2	5063.291	ppb	1.0	9153609.65	5000	101.27	89.8	110.2	
51	V	89	He	25.228	ppb	3.5	116971.92	25	100.91	89.8	110.2	
52	Cr	89	He	25.343	ppb	3.6	148602.35	25	101.37	89.8	110.2	
55	Mn	89	He	25.274	ppb	4.4	67001.69	25	101.1	89.8	110.2	
56	Fe	89	H2	5073.166	ppb	1.8	30633129.76	5000	101.46	89.8	110.2	
59	Co	89	He	25.528	ppb	3.3	232426.46	25	102.11	89.8	110.2	
60	Ni	89	He	25.760	ppb	3.3	65103.28	25	103.04	89.8	110.2	
63	Cu	89	He	25.765	ppb	4.0	172597.82	25	103.06	89.8	110.2	
66	Zn	89	He	25.651	ppb	5.2	22606.73	25	102.6	89.8	110.2	
75	As	89	He	24.997	ppb	3.8	15243.98	25	99.99	89.8	110.2	
78	Se	89	H2	25.127	ppb	2.0	6494.55	25	100.51	89.8	110.2	
88	Sr	89	He	25.566	ppb	3.4	79105.81	25	102.26	89.8	110.2	
95	Mo	89	He	25.752	ppb	3.5	85648.10	25	103.01	89.8	110.2	
107	Ag	89	He	26.412	ppb	3.5	286172.24	25	105.65	89.8	110.2	
111	Cd	89	He	26.246	ppb	4.1	35918.67	25	104.98	89.8	110.2	
118	Sn	159	He	25.490	ppb	3.3	73181.65	25	101.96	89.8	110.2	
121	Sb	159	No Gas	24.303	ppb	2.4	509076.00	25	97.21	89.8	110.2	
137	Ba	159	No Gas	23.031	ppb	2.3	203130.37	25	92.12	89.8	110.2	
182	W	159	No Gas	25.375	ppb	1.4	375864.66	25	101.5	89.8	110.2	
205	Tl	209	No Gas	25.620	ppb	6.1	880457.60	25	102.48	89.8	110.2	
208	Pb	209	No Gas	25.122	ppb	4.5	1240271.33	25	100.49	89.8	110.2	
232	Th	209	No Gas	22.438	ppb	6.6	1038548.69	25	89.75	89.8	110.2	> +/- 10%
238	U	209	No Gas	23.932	ppb	7.8	1106818.94	25	95.73	89.8	110.2	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6340190.12	2.8	5961075.87	106.36	29.5	120.4	
Sc	45	No Gas	12384035.58	0.7	13015983.55	95.14	29.5	120.4	
Sc	45	H2	1332637.04	1.7	1430290.9	93.17	29.5	120.4	
Sc	45	He	401234.80	2.5	438046.17	91.6	29.5	120.4	
Ge	72	No Gas	2382230.98	0.7	2458564.83	96.9	29.5	120.4	
Ge	72	H2	455593.53	1.7	491199	92.75	29.5	120.4	
Ge	72	He	235312.21	2.6	255273.97	92.18	29.5	120.4	
Y	89	H2	7018983.94	1.9	7442438.64	94.31	29.5	120.4	
Y	89	He	2027323.27	2.7	2167302.66	93.54	29.5	120.4	
Tb	159	No Gas	22700867.44	0.7	21871384.4	103.79	29.5	120.4	
Tb	159	He	8419218.97	2.1	8589669.11	98.02	29.5	120.4	
Bi	209	No Gas	10629477.85	2.5	10079220.95	105.46	29.5	120.4	

Continuing Calibration Blank (CCB) Report

Sample Name	CCB
File Name	162_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\2021\06-JUN\LOF29C.b
Acq Time	6/29/2021 21:05:27
Sample Type	CCB
Total Dilution	1.0000
Comment	---
ISTD Ref FileName	006CALB.d
Sample QC Pass/Fial	Fail
ISTD QC Pass/Fail	Pass
Operator	**admin**

QC Analyte Table

Mass	Name	ISTD	Tune	Conc.	Units	RSD	CPS	Limit	QC Flag
9	Be	6	No Gas	0.025	ppb	39.7	221.12	0.2	
11	B	6	No Gas	0.686	ppb	5.1	7831.29	4	
23	Na	45	He	13.058	ppb	9.4	24360.93	200	
24	Mg	45	He	0.736	ppb	10.8	351.15	20	
27	Al	45	He	-0.216	ppb	N/A	88.89	20	
28	Si	45	H2	48.898	ppb	2.9	10832.87	100	
39	K	45	He	3.307	ppb	50.2	20574.00	200	
40	Ca	45	H2	0.271	ppb	32.4	5771.40	20	
51	V	89	He	-0.004	ppb	N/A	226.68	1	
52	Cr	89	He	-0.011	ppb	N/A	734.56	1	
55	Mn	89	He	0.016	ppb	35.5	109.98	0.4	
56	Fe	89	H2	2.471	ppb	5.6	19127.71	20	
59	Co	89	He	0.015	ppb	14.2	140.01	0.2	
60	Ni	89	He	0.009	ppb	38.5	82.23	0.4	
63	Cu	89	He	0.000	ppb	1617.2	547.81	0.6	
66	Zn	89	He	-0.005	ppb	N/A	284.46	2	
75	As	89	He	0.155	ppb	8.7	113.01	1	
78	Se	89	H2	0.736	ppb	7.9	195.32	1	Failed DoD
88	Sr	89	He	0.012	ppb	47.5	90.00	1	
95	Mo	89	He	0.645	ppb	8.5	2284.72	1	Failed DoD
107	Ag	89	He	0.007	ppb	14.8	100.00	0.2	
111	Cd	89	He	0.007	ppb	34.2	11.48	0.2	
118	Sn	159	He	0.199	ppb	11.7	903.40	1	
121	Sb	159	No Gas	0.049	ppb	21.4	1127.98	0.2	
137	Ba	159	No Gas	0.052	ppb	30.0	573.99	0.4	
182	W	159	No Gas	2.433	ppb	4.0	38343.11	1	Fail All Methods□ Failed DoD
205	Tl	209	No Gas	0.035	ppb	36.3	1351.59	0.2	
208	Pb	209	No Gas	0.014	ppb	90.0	3073.59	0.2	
232	Th	209	No Gas	0.438	ppb	2.7	20850.96	1	
238	U	209	No Gas	0.040	ppb	56.4	1892.32	0.2	

QC ISTD Table

Name	Mass	Tune Mode	CPS	CPS RSD	Ref CPS	% Rec	%QC Low	%QC High	QC Flag
Li	6	No Gas	6435103.47	3.0	5961075.87	107.95	29.5	120.4	
Sc	45	No Gas	12344097.83	2.6	13015983.55	94.84	29.5	120.4	
Sc	45	H2	1337705.72	0.5	1430290.9	93.53	29.5	120.4	
Sc	45	He	404973.72	0.4	438046.17	92.45	29.5	120.4	
Ge	72	No Gas	2374035.18	2.1	2458564.83	96.56	29.5	120.4	
Ge	72	H2	461973.09	1.2	491199	94.05	29.5	120.4	
Ge	72	He	237909.92	0.7	255273.97	93.2	29.5	120.4	
Y	89	H2	7064529.86	1.0	7442438.64	94.92	29.5	120.4	
Y	89	He	2031495.25	1.0	2167302.66	93.73	29.5	120.4	
Tb	159	No Gas	22428094.67	2.0	21871384.4	102.55	29.5	120.4	
Tb	159	He	8448746.06	1.2	8589669.11	98.36	29.5	120.4	
Bi	209	No Gas	10637169.81	2.4	10079220.95	105.54	29.5	120.4	

Logbooks and Supporting Documents

Katahdin Analytical Services, Inc.

Reagents and Consumables Information:

HNO3: MSR238 HCL: MSR235 Digestion Vessels: MLD 260@0054

1:1 HNO3: MR3063 1:1 HCL: MR3062

Metals Preparation Benchsheet

Method: 3010

Pipet **LCS/Spiking Information:**

M11 CLPP-SPK-1 (ID/Vol): MS2328 / 0.05 mL

M21 CLPP-SPK-INT1 (ID/Vol): MW20240 / 0.5 mL

M21 CLPP-SPK-INT2 (ID/Vol): MW20241 / 0.5 mL

— Spike (ID/Vol): — / — mL

Heat Source ID : A

Start Time: 9:51 /Temp. 94 °C

End Time: 17:22 /Temp. 97 °C

Thermometer ID/Pos: ALC 30 / 97

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Bottle	pH <2
LCSWOF21ICW2	OF21ICW2	0.05	L	0.05	L	AQ	IC	SF	06/21/2021	—	—
PBWOF21ICW2	OF21ICW2		L		L	AQ	IC	SF	06/21/2021	—	—
SO3731-001	OF21ICW2		L		L	AQ	IC	SF	06/21/2021	A	V
SO3742-001	OF21ICW2		L		L	AQ	IC	SF	06/21/2021	C	
SO3742-002	OF21ICW2		L		L	AQ	IC	SF	06/21/2021	C	
SO3742-003	OF21ICW2		L		L	AQ	IC	SF	06/21/2021	C	
SO3742-004	OF21ICW2		L		L	AQ	IC	SF	06/21/2021	C	
SO3742-005	OF21ICW2		L		L	AQ	IC	SF	06/21/2021	C	
SO3742-006	OF21ICW2		L		L	AQ	IC	SF	06/21/2021	C	
SO3742-007	OF21ICW2		L		L	AQ	IC	SF	06/21/2021	A	
SO3742-008	OF21ICW2		L		L	AQ	IC	SF	06/21/2021	A	
SO3743-002	OF21ICW2		L		L	AQ	IC	SF	06/21/2021	I	
SO3743-003	OF21ICW2		L		L	AQ	IC	SF	06/21/2021	I	
SO3743-004	OF21ICW2		L		L	AQ	IC	SF	06/21/2021	I	
SO3743-005	OF21ICW2		L		L	AQ	IC	SF	06/21/2021	KY	
SO3743-005P	OF21ICW2		L		L	AQ	IC	SF	06/21/2021		
SO3743-005S	OF21ICW2		L		L	AQ	IC	SF	06/21/2021		

SF 6/21/21

REVIEWED

EP 6/22/21

KATAHDIN ANALYTICAL METALS SECTION

Client IDs verified SF

QA-064-Revision 5 -12/07/2018 Digestion performed by: SF On: 6/21/21 Page: OF084 Revision: 00

Katahdin Analytical Services, Inc.

Metals Preparation Benchsheet

Reagents and Consumables Information:

Method: 3010-MS

HNO3: MSR2238 **HCL:** MSR2235 **Digestion Vessels:** MLO 2600000054

1:1 HNO3: MR3063 **1:1 HCL:** MR3062

Pipet	LCS/Spiking Information:
M11	CLPP-SPK-1 (ID/Vol): MS2328 / 0.05 mL
M11	CLPP-SPK-INT1 (ID/Vol): MW20240 / 0.5 mL
M11	CLPP-SPK-INT2 (ID/Vol): MW20241 / 0.5 mL
—	— Spike (ID/Vol): — / — mL

Heat Source ID : A
Start Time: 9:50 **/Temp.** 94 **°C**
End Time: 12:22 **/Temp.** 92 **°C**
Thermometer ID/Pos: ALC30 / 5:2

Sample ID	Batch ID	Initial Wt/Vol	Initial Units	Final Vol	Final Units	MX	Meth	Anal.	Date	Bottle	pH <2
LCSWOF21IMW2	OF21IMW2	0.05	L	0.05	L	AQ	IM	SF	06/21/2021	—	—
PBWOF21IMW2	OF21IMW2		L		L	AQ	IM	SF	06/21/2021	—	—
SO3742-001	OF21IMW2		L		L	AQ	IM	SF	06/21/2021	AC	✓ SF 6/22/21
SO3742-002	OF21IMW2		L		L	AQ	IM	SF	06/21/2021	C	
SO3742-003	OF21IMW2		L		L	AQ	IM	SF	06/21/2021	C	
SO3742-004	OF21IMW2		L		L	AQ	IM	SF	06/21/2021	C	
SO3742-005	OF21IMW2		L		L	AQ	IM	SF	06/21/2021	C	
SO3742-006	OF21IMW2		L		L	AQ	IM	SF	06/21/2021	C	
SO3742-007	OF21IMW2		L		L	AQ	IM	SF	06/21/2021	A	
SO3742-008	OF21IMW2		L		L	AQ	IM	SF	06/21/2021	A	
SO3743-002	OF21IMW2		L		L	AQ	IM	SF	06/21/2021	I	
SO3743-003	OF21IMW2		L		L	AQ	IM	SF	06/21/2021	I	
SO3743-004	OF21IMW2		L		L	AQ	IM	SF	06/21/2021	I	
SO3743-005	OF21IMW2		L		L	AQ	IM	SF	06/21/2021	Y	
SO3743-005P	OF21IMW2		L		L	AQ	IM	SF	06/21/2021		
SO3743-005S	OF21IMW2		L		L	AQ	IM	SF	06/21/2021		

Client IDs verified - SF

REVIEWED
EP 6/22/21
KATAHDIN ANALYTICAL
METALS SECTION

Digestion performed by: SF **On:** 6/21/21

CONVENTIONAL AND PHYSICAL ANALYTICAL DATA

QC Summary Section

Quality Control Report

Blank Sample Summary Report

Alkalinity

Samp Type	QC Batch	Anal. Method	Anal. Date	Prep. Date	Result	PQL	LOD
MBLANK	WG301194	SM2320B	21-JUN-21	N/A	J 1.5 mg/L	5.0 mg/L	4.0

Nitrate+Nitrite As N

Samp Type	QC Batch	Anal. Method	Anal. Date	Prep. Date	Result	PQL	LOD
MBLANK	WG301299	EPA 353.2	23-JUN-21	N/A	U 0.025 mg/L	0.050 mg/L	0.025
MBLANK	WG301653	EPA 353.2	29-JUN-21	N/A	U 0.025 mg/L	0.050 mg/L	0.025

Sulfate

Samp Type	QC Batch	Anal. Method	Anal. Date	Prep. Date	Result	PQL	LOD
MBLANK	WG301594	SW846 9056A	28-JUN-21	N/A	J 0.082 mg/L	1.0 mg/L	0.50

Sulfide-Iodometric

Samp Type	QC Batch	Anal. Method	Anal. Date	Prep. Date	Result	PQL	LOD
MBLANK	WG301289	SW846 9034 Mod.	23-JUN-21	N/A	J 0.89 mg/L	1.0 mg/L	0.80

Total Organic Carbon (1)

Samp Type	QC Batch	Anal. Method	Anal. Date	Prep. Date	Result	PQL	LOD
MBLANK	WG301562	SW846 9060A	28-JUN-21	N/A	J 0.56 mg/L	1.0 mg/L	0.50

Quality Control Report

Laboratory Control Sample Summary Report

Alkalinity

Lab Sample Id	Samp Type	QC Batch	Analysis Date	Prep Date	Units	Spike Amt.	Result	Recovery	Acceptance Range	RPD
WG301194-2	LCS	WG301194	21-JUN-21	N/A	mg/L	120	130	110	80-120	
WG301194-5	LCSD	WG301194	21-JUN-21	N/A	mg/L	120	130	111	80-120	1

Nitrate+Nitrite As N

Lab Sample Id	Samp Type	QC Batch	Analysis Date	Prep Date	Units	Spike Amt.	Result	Recovery	Acceptance Range	RPD
WG301299-2	LCS	WG301299	23-JUN-21	N/A	mg/L	1	0.98	98	90-110	
WG301653-2	LCS	WG301653	29-JUN-21	N/A	mg/L	1	0.98	98	90-110	

Sulfate

Lab Sample Id	Samp Type	QC Batch	Analysis Date	Prep Date	Units	Spike Amt.	Result	Recovery	Acceptance Range	RPD
WG301594-2	LCS	WG301594	28-JUN-21	N/A	mg/L	3.75	3.52	93.9	90-110	

Sulfide-Iodometric

Lab Sample Id	Samp Type	QC Batch	Analysis Date	Prep Date	Units	Spike Amt.	Result	Recovery	Acceptance Range	RPD
WG301289-2	LCS	WG301289	23-JUN-21	N/A	mg/L	9.78	10.	108	80-120	
WG301289-3	LCSD	WG301289	23-JUN-21	N/A	mg/L	9.78	10.	107	80-120	1

Total Organic Carbon (1)

Lab Sample Id	Samp Type	QC Batch	Analysis Date	Prep Date	Units	Spike Amt.	Result	Recovery	Acceptance Range	RPD
WG301562-2	LCS	WG301562	28-JUN-21	N/A	mg/L	50	51.	102	80-120	
WG301562-3	LCSD	WG301562	28-JUN-21	N/A	mg/L	50	51.	102	80-120	1

Quality Control Report

Matrix Spike Sample Summary Report

Alkalinity

Matrix Spike Sample ID	Sample Type	Original Sample ID	QC Batch	Analysis Date	Result Units	Spike Amount	Sample Result	MS Result	Recovery (%)	Recovery Limit
WG301194-3	MS	SO3743-5	WG301194	21-JUN-21	mg/L	120	220	280	70*	75 - 125
WG301194-4	MSD	SO3743-5	WG301194	21-JUN-21	mg/L	120	220	240	41*	75 - 125

Nitrate+Nitrite As N

Matrix Spike Sample ID	Sample Type	Original Sample ID	QC Batch	Analysis Date	Result Units	Spike Amount	Sample Result	MS Result	Recovery (%)	Recovery Limit
WG301653-3	MS	SO3743-5	WG301653	29-JUN-21	mg/L	1	U 0.025	0.99	99	90 - 110
WG301653-4	MSD	SO3743-5	WG301653	29-JUN-21	mg/L	1	U 0.025	0.99	99	90 - 110

Sulfate

Matrix Spike Sample ID	Sample Type	Original Sample ID	QC Batch	Analysis Date	Result Units	Spike Amount	Sample Result	MS Result	Recovery (%)	Recovery Limit
WG301594-3	MS	SO3743-5	WG301594	28-JUN-21	mg/L	3.75	13	* 16.	84.7*	90 - 110
WG301594-4	MSD	SO3743-5	WG301594	29-JUN-21	mg/L	3.75	13	17.	91.3	90 - 110

Sulfide-Iodometric

Matrix Spike Sample ID	Sample Type	Original Sample ID	QC Batch	Analysis Date	Result Units	Spike Amount	Sample Result	MS Result	Recovery (%)	Recovery Limit
WG301289-4	MS	SO3743-5	WG301289	23-JUN-21	mg/L	9.78	U 0.80	8.5	87	75 - 125
WG301289-5	MSD	SO3743-5	WG301289	23-JUN-21	mg/L	9.78	U 0.80	10.	104	75 - 125

Total Organic Carbon (1)

Matrix Spike Sample ID	Sample Type	Original Sample ID	QC Batch	Analysis Date	Result Units	Spike Amount	Sample Result	MS Result	Recovery (%)	Recovery Limit
WG301562-4	MS	SO3743-5	WG301562	28-JUN-21	mg/L	100	17.	120	105	75 - 125
WG301562-5	MSD	SO3743-5	WG301562	28-JUN-21	mg/L	100	17.	120	102	75 - 125

Sample Data Section

KATAHDIN ANALYTICAL SERVICES – INORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL "U" LOQ or "U" LOD, where the rate of false negatives is <1%.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), but above the Method Detection Limit (MDL).

I-7 The laboratory's Practical Quantitation Level (PQL) or LOQ could not be achieved for this parameter due to sample composition, matrix effects, sample volume, or quantity used for analysis.

A-4 Please refer to cover letter or narrative for further information.

H_ Please note that the regulatory holding time for _____ is "analyze immediately". Ideally, this analysis must be performed in the field at the time of sample collection. _____ for this sample was not performed at the time of sample collection. The analysis was performed as soon as possible after receipt by the laboratory.

H1 - pH H2 - DO H3 - sulfite H4 - residual chlorine

T1 The client did not provide the full volume of at least one liter for analysis of TSS. Therefore, the PQL of 2.5 mg/L could not be achieved.

T2 The client provided the required volume of at least one liter for analysis of TSS, but the laboratory could not filter the full one liter volume due to the sample matrix. Therefore, the PQL of 2.5 mg/L could not be achieved.

M1 The matrix spike and/or matrix spike duplicate recovery performed on this sample was outside of the laboratory acceptance criteria. Sample matrix is suspected. The laboratory criteria was met for the Laboratory Control Sample (LCS) analyzed concurrently with this sample.

M2 The matrix spike and/or matrix spike duplicate recovery was outside of the laboratory acceptance criteria. The native sample concentration is greater than four times the spike added concentration so the spike added could not be distinguished from the native sample concentration.

R1 The relative percent difference (RPD) between the duplicate analyses performed on this sample was outside of the laboratory acceptance criteria (when both values are greater than ten times the PQL).

MCL	Maximum Contaminant Level	NL	No limit
NFL	No Free Liquid Present	FLP	Free Liquid Present
NOD	No Odor Detected	TON	Threshold Odor Number

D-1 As required by Method 5210B, APHA Standard Methods for the Examination of Water and Wastewater (21st edition), the BOD value reported for this sample is 'qualified' because the check standard run concurrently with the sample analysis did not meet the criteria specified in the method (198 +/- 30.5 mg/L). These results may not be reportable for compliance purposes.

D-2 The measured final dissolved oxygen concentrations of all dilutions were less than the method-specified limit of 1 mg/L. The reported BOD result was calculated assuming a final oxygen concentration equal to 1 mg/L. The reported value should be considered a minimum value.

D-3 The dilution water used to prepare this sample did not meet the method and/or regulatory criteria of less than 0.2 or 0.4 mg/L dissolved oxygen (DO) uptake over the five day period of incubation. These results may not be reportable for compliance purposes.

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: Heather Levesque, PMP
SERES Engineering & Services, LLC
669 Marina Drive
Charleston,SC 29492

Lab Sample ID: SO3743-2
Report Date: 06-JUL-21
Project: Fort Devens 2021 LTM
SDG: SO3743

Sample Description	Matrix	Date Sampled	Date Received
G6M-04-02X-SPR21	AQ	17-JUN-21 12:15:00	18-JUN-21

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Alkalinity	120 mg/L	5.0	0.23	4.0	STDM 2320B	WG301194	21-JUN-21 12:45:29	N/A	N/A	
Nitrate+Nitrite As N	U0.12 mg/L	0.25	0.076	0.12	EPA 353.2	WG301299	23-JUN-21 12:01:31	N/A	N/A	I-7
Sulfate	1.1 mg/L	1.0	0.064	0.50	SW846 9056A	WG301594	28-JUN-21 23:19:00	N/A	N/A	
Sulfide-Iodometric	J0.89 mg/L	1.0	0.69	0.80	SW846 9034 MOD	WG301289	23-JUN-21 13:40:00	N/A	N/A	

Katahdin
ANALYTICAL SERVICES

Report of Analytical Results

Client: Heather Levesque, PMP
SERES Engineering & Services, LLC
669 Marina Drive
Charleston,SC 29492

Lab Sample ID: SO3743-5
Report Date: 06-JUL-21
Project: Fort Devens 2021 LTM
SDG: SO3743

Sample Description	Matrix	Date Sampled	Date Received
G6M-04-10A-SPR21	AQ	17-JUN-21 10:30:00	18-JUN-21

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Alkalinity	220 mg/L	5.0	0.23	4.0	STDM 2320B	WG301194	21-JUN-21 12:53:52	N/A	N/A	
Nitrate+Nitrite As N	U0.025 mg/L	0.050	.0152	0.025	EPA 353.2	WG301653	29-JUN-21 14:15:24	N/A	N/A	
Sulfate	13 mg/L	1.0	0.064	0.50	SW846 9056A	WG301594	28-JUN-21 23:34:00	N/A	N/A	
Sulfide-Iodometric	U0.80 mg/L	1.0	0.69	0.80	SW846 9034 MOD	WG301289	23-JUN-21 13:40:00	N/A	N/A	
Total Organic Carbon (1)	17. mg/L	1.0	0.10	0.50	SW846 9060A	WG301562	28-JUN-21 16:55:08	N/A	N/A	

Raw Data Section

WET CHEMISTRY BATCH REPORT
Jun 22 2021, 11:14 am
Batch: WG301194 Run ID 1: R570298 Run ID 2: NONE

Parameter: Alkalinity

Date Analyzed: 21-JUN-21

Analyst Initials: ZL

Prep Date: N/A

Prep Method: N/A

Prep Chemist: N/A

Sample	Samp Type	Method	Initial Amt.	Final Amt.	Rpt. DF	Result	Rpt Result	TS(%)	PQL	MDL	Adj PQL	RPD	%Rec
SO3742-1	SAMP	STDM 2320B	50.0mL	50.0mL	1	12.259	12. mg/L	NA	5	0.23	5.0		
SO3742-2	SAMP	STDM 2320B	50.0mL	50.0mL	1	38.303	38. mg/L	NA	5	0.23	5.0		
SO3742-3	SAMP	STDM 2320B	50.0mL	50.0mL	1	135.957	140 mg/L	NA	5	0.23	5.0		
SO3742-4	SAMP	STDM 2320B	50.0mL	50.0mL	1	36.006	36. mg/L	NA	5	0.23	5.0		
SO3742-6	SAMP	STDM 2320B	50.0mL	50.0mL	1	57.372	57. mg/L	NA	5	0.23	5.0		
SO3742-8	SAMP	STDM 2320B	50.0mL	50.0mL	1	98.941	99. mg/L	NA	5	0.23	5.0		
SO3743-2	SAMP	STDM 2320B	50.0mL	50.0mL	1	125.813	120 mg/L	NA	5	0.23	5.0		
SO3743-5	SAMP	STDM 2320B	50.0mL	50.0mL	1	219.533	220 mg/L	NA	5	0.23	5.0		
WG301194-1	MBLANK	STDM 2320B	50.0mL	50.0mL	1	1.533	J1.5 mg/L	NA	5	0.23	5.0		
WG301194-2	LCS	STDM 2320B	50.0mL	50.0mL	1	132.248	130 mg/L	NA	5	0.23	5.0		110
WG301194-3	MS	STDM 2320B	50.0mL	50.0mL	1	277.466	280 mg/L	NA	5	0.23	5.0		70
WG301194-4	MSD	STDM 2320B	50.0mL	50.0mL	1	242.982	240 mg/L	NA	5	0.23	5.0	13	41
WG301194-5	LCSD	STDM 2320B	50.0mL	50.0mL	1	133.422	130 mg/L	NA	5	0.23	5.0	1	111

Comments:

SO3742-1	Anions please report Cl & SO4
SO3742-2	Anions please report Cl & SO4
SO3742-3	Anions please report Cl & SO4
SO3742-4	Anions please report Cl & SO4
SO3742-6	Anions please report Cl & SO4
SO3742-8	Anions please report Cl & SO4
SO3743-2	Anions = SO4, client cancelled TOC on 06/22/2021.
SO3743-5	MS/MSD Anions = SO4
WG301194-1	SO3743-5
WG301194-2	SO3743-5
WG301194-3	SO3743-5
WG301194-4	SO3743-5
WG301194-5	SO3743-5

Entered by: ZL Date: 6/22/21 Accepted by: [signature] Date: 06/23/21

LIG30194 R570298

KATAHDIN ANALYTICAL SERVICES

ALKALINITY, BICARBONATE, CARBONATE, FREE CO2 - DL 25 AUTOTITRATOR

Analysis: EPA 310.1 SM2320B **Calculations:** SM 4500-CO2 D

pH Probe ID: DGIII-SL	
Alkalinity Acid Reagent: W20088	**Buffer pH 4 ID:** SWL4740
Acid Concentration: 0.02N	**Buffer pH 7 ID:** SWL4739
Alkalinity Check Standard: W20092 TV=125mg/L	**Buffer pH 10 ID:** SWL4718
Alkalinity MS: W20066 TV=120mg/L	**Pipette IDs:** L14

Sample ID	Run #	Volume (mL)	Sample ID	Run #	Volume (mL)	Comments - Must indicate which sample
CCV	1	50				
CCB	2					
LCS	3					
LCSD	4	"				
3742-1	1	50				
-1MS	2	44				-1MS Fail Low
-2	3	50				
-3	4					
-4	5					
-5	6					
-6	7					
-7	8					
CCV	9					
CCB	10	"				
-8	1	50				
3743-2	2					
-3	3					
-4	4					
-5	5	"				
-5MS	6	44				
-5MSD	7	"				
CCV	8	50				
CCB	9	"				

Analyst: [signature]	**Date:** 6/21/21
Checked By: [signature]	**Date:** 6/23/21

Start time: 6/21/2021 11:26

Results

No.	Comment / ID	Start time	Rx	Result	Unit	Name RECOVERY
1/4	CCV	6/21/2021 11:27:59 AM	R1 =	79.903	mg/L	P Alkalinity- pH8.2
			R2 =	121.544	mg/L	Total Alka 0.972352 97.2%
			R3 =	10.485	pH	pH
			R4 =	21	oC	TEMPERATURE
2/4	CCB	6/21/2021 11:31:16 AM	R1 =	0	mg/L	P Alkalinity- pH8.2
			R2 =	1.533	mg/L	Total Alkalinity
			R3 =	5.363	pH	pH
			R4 =	22.5	oC	TEMPERATURE
3/4	LCS	6/21/2021 11:33:30 AM	R1 =	84.735	mg/L	P Alkalinity- pH8.2
			R2 =	132.248	mg/L	Total Alkalinity
			R3 =	10.636	pH	pH
			R4 =	22.2	oC	TEMPERATURE
4/4	LCSD	6/21/2021 11:36:46 AM	R1 =	86.929	mg/L	P Alkalinity- pH8.2
			R2 =	133.422	mg/L	Total Alkalinity
			R3 =	10.637	pH	pH
			R4 =	22.1	oC	TEMPERATURE
1/10	SO3742-1	6/21/2021 11:57:46 AM	R1 =	0	mg/L	P Alkalinity- pH8.2
			R2 =	12.259	mg/L	Total Alkalinity
			R3 =	5.493	pH	pH
			R4 =	16.6	oC	TEMPERATURE
2/10	SO3742-1 MS	6/21/2021 11:59:47 AM	R1 =	0	mg/L	P Alkalinity- pH8.2
			R2 =	18.07	mg/L	Total Alkalinity
			R3 =	5.708	pH	pH
			R4 =	15.6	oC	TEMPERATURE
3/10	SO3742-2	6/21/2021 12:01:46 PM	R1 =	0	mg/L	P Alkalinity- pH8.2
			R2 =	38.303	mg/L	Total Alkalinity
			R3 =	5.898	pH	pH
			R4 =	15.9	oC	TEMPERATURE
4/10	SO3742-3	6/21/2021 12:04:01 PM	R1 =	0	mg/L	P Alkalinity- pH8.2
			R2 =	135.957	mg/L	Total Alkalinity
			R3 =	6.488	pH	pH
			R4 =	16.1	oC	TEMPERATURE
5/10	SO3742-4	6/21/2021 12:07:07 PM	R1 =	0	mg/L	P Alkalinity- pH8.2
			R2 =	36.006	mg/L	Total Alkalinity
			R3 =	5.959	pH	pH
			R4 =	16.4	oC	TEMPERATURE
6/10	SO3742-5	6/21/2021 12:09:15 PM	R1 =	0	mg/L	P Alkalinity- pH8.2
			R2 =	125.686	mg/L	Total Alkalinity
			R3 =	6.094	pH	pH
			R4 =	16.7	oC	TEMPERATURE
7/10	SO3742-6	6/21/2021 12:12:07 PM	R1 =	0	mg/L	P Alkalinity- pH8.2
			R2 =	57.372	mg/L	Total Alkalinity
			R3 =	5.979	pH	pH
			R4 =	16.9	oC	TEMPERATURE
8/10	SO3742-7	6/21/2021 12:14:30 PM	R1 =	0	mg/L	P Alkalinity- pH8.2
			R2 =	119.834	mg/L	Total Alkalinity
			R3 =	6.182	pH	pH
			R4 =	17.1	oC	TEMPERATURE
9/10	CCV	6/21/2021 12:17:18 PM	R1 =	89.968	mg/L	P Alkalinity- pH8.2
			R2 =	133.814	mg/L	Total Alka 1.070512 107%
			R3 =	10.593	pH	pH
			R4 =	20.9	oC	TEMPERATURE
10/10	CCB	6/21/2021 12:20:36 PM	R1 =	0	mg/L	P Alkalinity- pH8.2
			R2 =	1.729	mg/L	Total Alkalinity
			R3 =	5.514	pH	pH
			R4 =	21.8	oC	TEMPERATURE
1/9	SO3742-8	6/21/2021 12:42:46 PM	R1 =	0	mg/L	P Alkalinity- pH8.2
			R2 =	98.941	mg/L	Total Alkalinity

			R3 =	5.968	pH	pH	
			R4 =	18.3	oC	TEMPERATURE	
2/9	SO3743-2	6/21/2021 12:45:29 PM	R1 =	0	mg/L	P Alkalinity- pH8.2	
			R2 =	125.813	mg/L	Total Alkalinity	
			R3 =	5.977	pH	pH	
			R4 =	18.2	oC	TEMPERATURE	
3/9	SO3743-3	6/21/2021 12:48:53 PM	R1 =	0	mg/L	P Alkalinity- pH8.2	
			R2 =	2.606	mg/L	Total Alkalinity	
			R3 =	6.061	pH	pH	
			R4 =	18.4	oC	TEMPERATURE	
4/9	SO3743-4	6/21/2021 12:51:12 PM	R1 =	0	mg/L	P Alkalinity- pH8.2	
			R2 =	35.906	mg/L	Total Alkalinity	
			R3 =	5.836	pH	pH	
			R4 =	18.4	oC	TEMPERATURE	
5/9	SO3743-5	6/21/2021 12:53:52 PM	R1 =	0	mg/L	P Alkalinity- pH8.2	
			R2 =	219.533	mg/L	Total Alkalinity	
			R3 =	6.087	pH	pH	
			R4 =	18.2	oC	TEMPERATURE	
6/9	SO3743-5 MS	6/21/2021 12:57:57 PM	R1 =	0	mg/L	P Alkalinity- pH8.2	
			R2 =	277.466	mg/L	Total Alkalinity	
			R3 =	6.266	pH	pH	
			R4 =	18.7	oC	TEMPERATURE	
7/9	SO3743-5 MSD	6/21/2021 1:02:26 PM	R1 =	0	mg/L	P Alkalinity- pH8.2	
			R2 =	242.982	mg/L	Total Alkalinity	
			R3 =	6.3	pH	pH	
			R4 =	19	oC	TEMPERATURE	
8/9	CCV	6/21/2021 1:06:42 PM	R1 =	96.469	mg/L	P Alkalinity- pH8.2	
			R2 =	132.691	mg/L	Total Alka 1.061528	106%
			R3 =	10.58	pH	pH	
			R4 =	21.2	oC	TEMPERATURE	
9/9	CCB	6/21/2021 1:09:58 PM	R1 =	0	mg/L	P Alkalinity- pH8.2	
			R2 =	1.724	mg/L	Total Alkalinity	
			R3 =	5.533	pH	pH	
			R4 =	22.3	oC	TEMPERATURE	
Start time:	6/21/2021 9:05						
Results							
No.	Comment / ID	Start time	Rx	Result	Unit	Name	
Calibration data							
	Number of segments	1					
	Slope	-57.70 mV/pH					
	Zero point	6.999 pH					
	Calibration temperature	21.0 oC					

WET CHEMISTRY BATCH REPORT
Jun 23 2021, 03:48 pm
Batch: WG301298 Run ID 1: R570438 Run ID 2: R570440

Parameter: Nitrate As N

Prep Date: N/A

Date Analyzed: 23-JUN-21

Prep Method: N/A

Analyst Initials: SS

Prep Chemist: N/A

Sample	Samp Type	Method	Initial Amt.	Final Amt.	Rpt. DF	Result	Rpt Result	TS(%)	PQL	MDL	Adj PQL	RPD	%Rec
SO3789-1	SAMP	EPA 353.2	5.0000mL	5.0000mL	1	.248	0.25 mg/L	NA	.05	.0152	0.050		
WG301298-1	MBLANK	EPA 353.2	5.0000mL	5.0000mL	1	0	U0.025 mg/L	NA	.05	.0152	0.050		
WG301298-2	LCS	EPA 353.2	5.0000mL	5.0000mL	1	.979	0.98 mg/L	NA	.05	.0152	0.050		98
WG301298-3	DUP	EPA 353.2	5.0000mL	5.0000mL	1	.245	0.24 mg/L	NA	.05	.0152	0.050	1	
WG301298-4	MS	EPA 353.2	5.0000mL	5.0000mL	1	.774	0.77 mg/L	NA	.05	.0152	0.050		105

Comments:

WG301298-1	SO3789-1
WG301298-2	SO3789-1
WG301298-3	SO3789-1
WG301298-4	SO3789-1

Entered by: SS Date: 6/23/21 Accepted by: Date: 06/24/21

WET CHEMISTRY BATCH REPORT
Jun 23 2021, 04:08 pm
Batch: WG301299 Run ID 1: R570439 Run ID 2: R570441

Parameter: Nitrate+Nitrite As N
Prep Date: N/A

Date Analyzed: 23-JUN-21
Prep Method: N/A

Analyst Initials: SS
Prep Chemist: N/A

Sample	Samp Type	Method	Initial Amt.	Final Amt.	Rpt. DF	Result	Rpt Result	TS(%)	PQL	MDL	Adj PQL	RPD	%Rec
SO3743-2	SAMP	EPA 353.2	5.0000mL	5.0000mL	5	-.193 I-7	U0.12 mg/L	NA	.05	0.076	0.25		
SO3813-10	SAMP	EPA 353.2	5.0000mL	5.0000mL	10	-.0773 I-7	U0.50 mg/L	NA	.05	0.15	0.50		
SO3813-11	SAMP	EPA 353.2	5.0000mL	5.0000mL	5	-.04795 I-7	U0.25 mg/L	NA	.05	0.076	0.25		
SO3813-2	SAMP	EPA 353.2	5.0000mL	5.0000mL	10	-.38 I-7	U0.50 mg/L	NA	.05	0.15	0.50		
SO3813-3	SAMP	EPA 353.2	5.0000mL	5.0000mL	5	-.12 I-7	U0.25 mg/L	NA	.05	0.076	0.25		
SO3813-4	SAMP	EPA 353.2	5.0000mL	5.0000mL	5	-.122 I-7	U0.25 mg/L	NA	.05	0.076	0.25		
SO3813-5	SAMP	EPA 353.2	5.0000mL	5.0000mL	1	-.0213	U0.050 mg/L	NA	.05	.0152	0.050		
SO3813-6	SAMP	EPA 353.2	5.0000mL	5.0000mL	10	-.356 I-7	U0.50 mg/L	NA	.05	0.15	0.50		
SO3813-7	SAMP	EPA 353.2	5.0000mL	5.0000mL	1	.00638	U0.050 mg/L	NA	.05	.0152	0.050		
SO3813-8	SAMP	EPA 353.2	5.0000mL	5.0000mL	1	-.0244	U0.050 mg/L	NA	.05	.0152	0.050		
SO3813-9	SAMP	EPA 353.2	5.0000mL	5.0000mL	5	-.1415 I-7	U0.25 mg/L	NA	.05	0.076	0.25		
WG301299-1	MBLANK	EPA 353.2	5.0000mL	5.0000mL	1	-.0166	U0.025 mg/L	NA	.05	.0152	0.050		
WG301299-2	LCS	EPA 353.2	5.0000mL	5.0000mL	1	.979	0.98 mg/L	NA	.05	.0152	0.050		98
WG301299-3	MS	EPA 353.2	5.0000mL	5.0000mL	10	8.04	8.0 mg/L	NA	.05	0.15	0.50		80

Comments:

SO3743-2 Anions = SO4, client cancelled TOC on 06/22/2021.
WG301299-1 SO3813-2
WG301299-2 SO3813-2
WG301299-3 SO3813-2

Entered by: SS Date: 6/23/21 Accepted by: Date: 06/24/21

KATAHDIN ANALYTICAL SERVICES, LLC.
Wet Chemistry Analysis Run Information Sheet

Analyte: NO3, NO2, and NO3+NO2	**Analyst:** SS
Instrument: LACHAT	**Analysis Date:** 6/23/21

Were pHs of all samples adjusted to 5-9 prior to analysis?

Circle one: (Yes) No **pH Paper Lot ID:** 6003003

Were all samples checked for the presence of chlorine prior to analysis?

Circle one: (Yes) No

Analytical Method (Check all that apply):

☑ EPA 353.2 ☐ SM 4500 F ☐ Other

WG301298 → R570438 NOx: WG301299 → R570439

Reagent Information:

Reagent Name	Reagent ID	Expiration Date
Ammonium Chloride Buffer	**W20093**	**7/17/2021**
Sulfanilamide Color Reagent	**W20083**	**7/10/2021**
Carrier	**DI Water**	
Cadmium Reduction Column	**S/N: SWL4699**	

Standards Information:

Standard Name	Concentration (mg/L)	ID	Expiration Date
Nitrate CCV	0.5	W20108	7/23/21
Nitrite CCV	0.5	W20098	7/18/21
Nitrate ICV/LCS	1.0	W20091	7/17/21
Nitrite ICV/LCS	1.0	W20034	6/26/21
Standard #1	2.0	W20099	7/18/21
Standard #2	1.0	W20100	7/18/21
Standard #3	0.5	W20098	7/18/21
Standard #4	0.25	W20101	7/18/21
Standard# 5	0.05	W20102	7/18/21
Standard #6	0.0	DI water	N/A
Nitrate Standard	100.0	W20037	5/27/2022
Nitrite Standard	100.0	W19308	9/3/2021

Notes:

1. Matrix Spiking: To 5mL Sample Alliquot add 0.025 mL of Nitrate Standard and 0.025mL Nitrite Standard

*Sample labels were verified. SS 6/23/21

Comments: Pipettes: W5, W3, W9, W8

MS: 200uL, 5mL 5x, 10x, & 20x Dilutions: 1mL, 5mL

2x, 4x Dilutions: 5mL 25x, 50x, 100x, 200x Dilutions: 200uL, 5mL

250x, 500x, 1000x, 2000x, 2500x Dilutions: 200uL, 1ml, 5mL

Author: wetchem

Date : 6/23/2021

Original Run Filename: OM_6-23-2021_11-13-48AM.OMN Created: 6/23/2021 11:13:48 AM
Original Run Author's Signature: [wetchem]
Current Run Filename: OM_6-23-2021_11-13-48AM.OMN Last Modified: 6/23/2021 12:19:00 PM
Current Run Author's Signature: [wetchem]
Description: Default New Run

(margin note)	Sample	Channel 1			Channel 2			Detection Time	MDF
		NITRATE/NITRITE			NITRITE				
		Conc. (mg/L)	Area (V.s)	Height (V)	Conc. (mg/L)	Area (V.s)	Height (V)		
	STD 2.0	2.00	17.6	1.46	2.00	24.9	2.20	6/23/2021@11:14:51 AM	
	STD 1.0	1.00	9.39	0.791	1.00	13.0	1.16	6/23/2021@11:16:01 AM	
	STD .5	0.500	4.90	0.417	0.500	6.83	0.615	6/23/2021@11:17:11 AM	
	STD .25	0.250	2.47	0.211	0.250	3.39	0.306	6/23/2021@11:18:22 AM	
	STD.05	0.0500	0.569	0.0475	0.0500	0.717	0.0623	6/23/2021@11:19:34 AM	
	STD 0.0	0.00	0.114	9.44e-3	0.00	7.24e-3	1.08e-3	6/23/2021@11:20:45 AM	
100.8%	CCV NO3	0.504	4.71	0.402	-0.0210	-3.63e-3	1.35e-3	6/23/2021@11:23:51 AM	
	Known Conc:	0.500			0.500				
	Calibration:	Table/Fig. : 1			Table/Fig. : 2				
106.8%	CCV NO2	0.533	4.96	0.422	0.534	6.91	0.623	6/23/2021@11:25:01 AM	
	Known Conc:	0.500			0.500				
	CCB	-0.0253	0.0590	4.60e-3	-0.0221	-0.0163	-1.32e-3	6/23/2021@11:26:13 AM	
	Known Conc:	0.00			0.00				
	BLANK	-0.0166	0.135	0.0112	-0.0188	0.0246	1.78e-3	6/23/2021@11:27:23 AM	
	Known Conc:	0.00			0.00				
	NO3 LCS	0.979	8.88	0.749	-0.0224	-0.0206	-1.54e-3	6/23/2021@11:28:32 AM	
	Known Conc:	1.00			1.00				
	NO2 LCS	1.02	9.28	0.785	1.01	12.8	1.14	6/23/2021@11:29:42 AM	
	Known Conc:	1.00			1.00				
	SO3789-1	0.388	3.69	0.309	0.140	2.00	0.174	6/23/2021@11:30:53 AM	
	SO3789-1 DUP	0.384	3.66	0.308	0.139	1.99	0.173	6/23/2021@11:32:03 AM	
	SO3789-1 MS	1.43	12.8	1.07	0.656	8.42	0.745	6/23/2021@11:33:14 AM	
	SO3813-2	-0.103	-0.620	-0.0352	0.0246	0.564	0.0387	6/23/2021@11:34:24 AM	
	SO3813-2 MS	0.245	2.43	0.178	0.231	3.13	0.235	6/23/2021@11:35:35 AM	
	SO3813-10	-0.0681	-0.317	-0.0212	0.101	1.51	0.112	6/23/2021@11:36:46 AM	
	SO3813-11	0.0257	0.507	0.0408	0.0505	0.886	0.0792	6/23/2021@11:37:55 AM	
101%	CCV NO3	0.505	4.71	0.397	-0.0180	0.0339	1.48e-3	6/23/2021@11:39:07 AM	
	Known Conc:	0.500			0.500				
107.4%	CCV NO2	0.535	4.98	0.421	0.537	6.94	0.611	6/23/2021@11:40:18 AM	
	Known Conc:	0.500			0.500				
	CCB	-0.0259	0.0543	4.55e-3	-0.0213	-6.44e-3	-1.15e-3	6/23/2021@11:41:32 AM	
	Known Conc:	0.00			0.00				
	SO3813-3	-0.0518	-0.173	-9.07e-3	-0.0106	0.126	9.57e-3	6/23/2021@11:42:42 AM	
	SO3813-4	-0.0522	-0.177	-0.0100	-5.15e-4	0.252	0.0167	6/23/2021@11:43:52 AM	
	SO3813-5	-0.0213	0.0941	7.10e-3	-0.0161	0.0584	4.47e-3	6/23/2021@11:45:02 AM	
	SO3813-6	-0.105	-0.641	-0.0368	0.0431	0.794	0.0534	6/23/2021@11:46:13 AM	
	SO3813-7	6.38e-3	0.337	0.0274	-0.0184	0.0296	3.48e-3	6/23/2021@11:47:23 AM	
	SO3813-8	-0.0244	0.0673	5.10e-3	-0.0216	-0.0102	-1.40e-3	6/23/2021@11:48:32 AM	
	SO3813-9	-0.0716	-0.348	-0.0204	0.0173	0.473	0.0348	6/23/2021@11:49:43 AM	
Mis-prepped rerun below — SS 6/23/21	SO3743-5	-0.0424	-0.0908	-0.0138	0.133	1.91	0.651	6/23/2021@11:50:54 AM	
	SO3743-2	-0.0688	-0.323	-0.0212	3.47e-3	0.301	0.0202	6/23/2021@11:52:04 AM	
	SO3743-3	-0.0263	0.0506	4.25e-3	-0.0244	-0.0450	-6.03e-3	6/23/2021@11:53:15 AM	
98.8%	CCV NO3	0.494	4.62	0.409	-0.0207	9.10e-4	7.77e-4	6/23/2021@11:54:27 AM	
	Known Conc:	0.500			0.500				
105.8%	CCV NO2	0.524	4.88	0.429	0.529	6.85	0.627	6/23/2021@11:55:37 AM	
	Known Conc:	0.500			0.500				
	CCB	-0.0258	0.0547	4.35e-3	-0.0193	0.0175	1.69e-3	6/23/2021@11:56:49 AM	
	Known Conc:	0.00			0.00				
	SO3743-4	0.911	8.27	0.726	-0.0237	-0.0362	-5.13e-3	6/23/2021@11:58:00 AM	
	SO3830-1	0.0860	1.04	0.0887	-0.0212	-5.78e-3	-1.04e-3	6/23/2021@11:59:10 AM	
	SO3743-5	-0.0216	0.0919	7.67e-3	0.0475	0.849	0.167	6/23/2021@12:00:21 PM	
	SO3743-2	-0.193	-0.0575	-2.87e-3	-0.0760	0.0689	4.91e-3	6/23/2021@12:01:30 PM	5.00
	SO3813-9	-0.141	0.0332	3.96e-3	-0.0464	0.143	0.0114	6/23/2021@12:02:40 PM	5.00
	SO3813-6	-0.356	-0.0312	-2.30e-3	-0.0910	0.145	0.0111	6/23/2021@12:03:50 PM	10.00
	SO3813-4	-0.122	0.0670	6.31e-3	-0.0755	0.0701	5.52e-3	6/23/2021@12:05:02 PM	5.00
	SO3813-3	-0.120	0.0707	6.37e-3	-0.0844	0.0482	3.86e-3	6/23/2021@12:06:14 PM	5.00
	SO3813-2	-0.380	-0.0520	-2.61e-3	-0.118	0.111	7.34e-3	6/23/2021@12:07:24 PM	10.00
	SO3813-2 MS	8.04	7.34	0.606	4.13	5.39	0.469	6/23/2021@12:08:35 PM	10.00

Author: wetchem

Date : 6/23/2021

100.27
106%
rerun on next smear
SS 6/23/21

CCV NO3	0.501	4.68	0.396	-0.0212	-5.35e-3	1.32e-3	6/23/2021@12:09:46 PM	
Known Conc:	0.500			0.500				
CCV NO2	0.527	4.91	0.423	0.530	6.85	0.611	6/23/2021@12:10:56 PM	
Known Conc:	0.500			0.500				
CCB	-0.0263	0.0502	4.35e-3	-0.0207	1.14e-3	8.18e-4	6/23/2021@12:12:09 PM	
Known Conc:	0.00			0.00				
SO3813-10	-0.195	0.110	9.60e-3	0.0797	0.357	0.0289	6/23/2021@12:13:20 PM	10.00
SO3813-11	-0.0428	0.206	0.0156	-0.0258	0.194	0.0157	6/23/2021@12:14:30 PM	5.00

Table : 1 (NITRATE/NITRITE)

	Known Conc. (mg/L)	Rep.	Peak Area (V.s)	Peak Height (V)	% RSD	% Residual	Det. Conc (mg/L)	Detection Date	Detection Time
1	2.00	1	17.6	1.46	0.0	1.2	1.97	6/23/2021	11:14:51 AM
2	1.00	1	9.39	0.791	0.0	-3.7	1.04	6/23/2021	11:16:01 AM
3	0.500	1	4.90	0.417	0.0	-4.9	0.526	6/23/2021	11:17:11 AM
4	0.250	1	2.47	0.211	0.0	0.5	0.249	6/23/2021	11:18:22 AM
5	0.0500	1	0.569	0.0475	0.0	21.7	0.0327	6/23/2021	11:19:34 AM
6	0.00	1	0.114	9.44e-3			-0.0190	6/23/2021	11:20:45 AM

Figure : 1 (NITRATE/NITRITE)

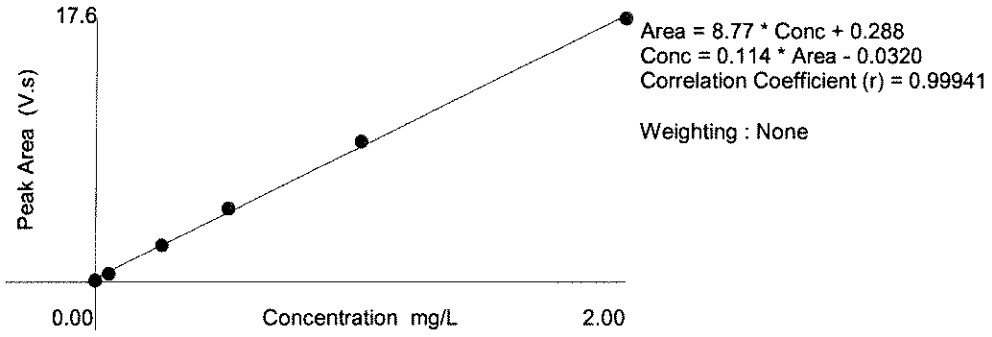


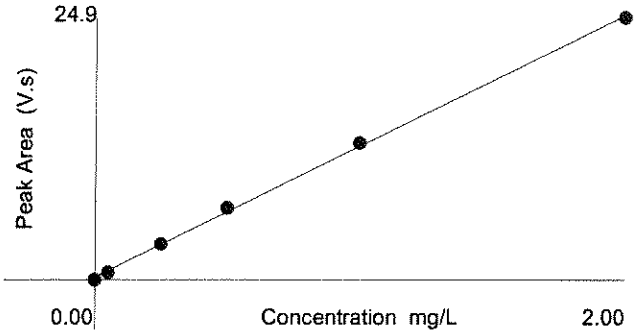
Table : 2 (NITRITE)

	Known Conc. (mg/L)	Rep.	Peak Area (V.s)	Peak Height (V)	% RSD	% Residual	Det. Conc (mg/L)	Detection Date	Detection Time
1	2.00	1	24.9	2.20	0.0	0.9	1.98	6/23/2021	11:14:51 AM
2	1.00	1	13.0	1.16	0.0	-2.2	1.02	6/23/2021	11:16:03 AM
3	0.500	1	6.83	0.615	0.0	-5.4	0.528	6/23/2021	11:17:12 AM
4	0.250	1	3.39	0.306	0.0	-0.6	0.252	6/23/2021	11:18:24 AM
5	0.0500	1	0.717	0.0623	0.0	19.1	0.0369	6/23/2021	11:19:36 AM
6	0.00	1	7.24e-3	1.08e-3			-0.0202	6/23/2021	11:20:47 AM

Author: wetchem

Date : 6/23/2021

Figure : 2 (NITRITE)



Area = 12.4 * Conc + 0.264
Conc = 0.0804 * Area - 0.0207
Correlation Coefficient (r) = 0.99961

Weighting : None

Author: wetchem

Date : 6/23/2021

Original Run Filename: OM_6-23-2021_01-16-35PM.OMN Created: 6/23/2021 1:16:35 PM
Original Run Author's Signature: [wetchem]
Current Run Filename: OM_6-23-2021_01-16-35PM.OMN Last Modified: 6/23/2021 1:34:32 PM
Current Run Author's Signature: [wetchem]
Description: Default New Run

Sample	Channel 1 NITRATE/NITRITE			Channel 2 NITRITE			Detection Time	MDF
	Conc. (mg/L)	Area (V.s)	Height (V)	Conc. (mg/L)	Area (V.s)	Height (V)		
CCV NO3	0.490	4.58	0.397	-0.0200	8.95e-3	1.20e-3	6/23/2021@1:17:40 PM	
Known Conc:	0.500			0.500				
Calibration:				Table/Fig. : 1				
CCV NO2	0.513	4.78	0.422	0.542	7.00	0.623	6/23/2021@1:18:49 PM	
Known Conc:	0.500			0.500				
Calibration:	Table/Fig. : 2							
CCB	-0.0222	0.0863	4.77e-3	-0.0192	0.0190	1.52e-3	6/23/2021@1:20:01 PM	
Known Conc:	0.00			0.00				
BLANK	-0.0140	0.159	0.0112	-0.0201	8.53e-3	1.08e-3	6/23/2021@1:21:12 PM	
Known Conc:	0.00			0.00				
NO3 LCS	0.985	8.93	0.761	-0.0186	0.0263	1.95e-3	6/23/2021@1:22:23 PM	
Known Conc:	1.00			1.00				
NO2 LCS	1.02	9.26	0.792	1.02	13.0	1.15	6/23/2021@1:23:32 PM	
Known Conc:	1.00			1.00				
SO3835-1	-0.0196	0.109	8.94e-3	-0.0133	0.0924	7.67e-3	6/23/2021@1:24:42 PM	
SO3813-10	-0.0773	0.213	0.0163	0.155	0.451	0.0368	6/23/2021@1:25:53 PM	10.00
SO3813-11	-0.0479	0.197	0.0144	-0.0307	0.182	0.0147	6/23/2021@1:27:02 PM	5.00
CCV NO3	0.501	4.68	0.401	-0.0195	0.0155	9.98e-4	6/23/2021@1:30:06 PM	
Known Conc:	0.500			0.500				
CCV NO2	0.531	4.94	0.421	0.542	7.01	0.625	6/23/2021@1:31:16 PM	
Known Conc:	0.500			0.500				
CCB	-0.0261	0.0520	4.05e-3	-0.0183	0.0303	1.36e-3	6/23/2021@1:32:28 PM	
Known Conc:	0.00			0.00				

98%
108.4%
100.2%
108.4%

Table : 1 (NITRITE)

	Known Conc. (mg/L)	Rep.	Peak Area (V.s)	Peak Height (V)	% RSD	% Residual	Det. Conc (mg/L)	Detection Date	Detection Time
1	2.00	1	24.9	2.20	0.0	0.9	1.98	6/23/2021	11:14:51 AM
2	1.00	1	13.0	1.16	0.0	-2.2	1.02	6/23/2021	11:16:03 AM
3	0.500	1	6.83	0.615	0.0	-5.4	0.528	6/23/2021	11:17:12 AM
4	0.250	1	3.39	0.306	0.0	-0.6	0.252	6/23/2021	11:18:24 AM
5	0.0500	1	0.717	0.0623	0.0	19.1	0.0369	6/23/2021	11:19:36 AM
6	0.00	1	7.24e-3	1.08e-3			-0.0202	6/23/2021	11:20:47 AM

Figure : 1 (NITRITE)

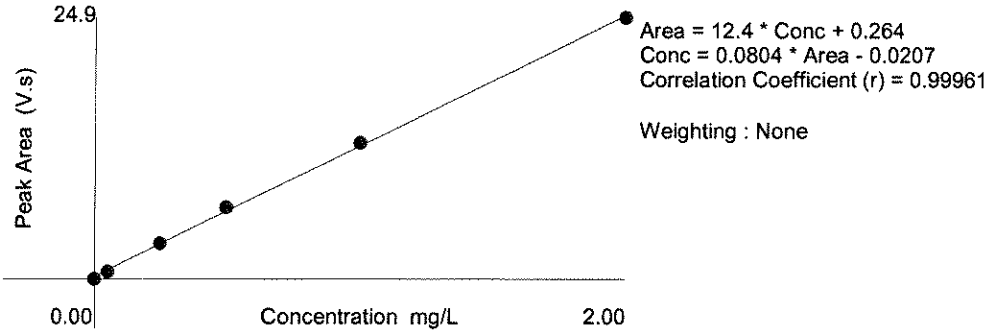
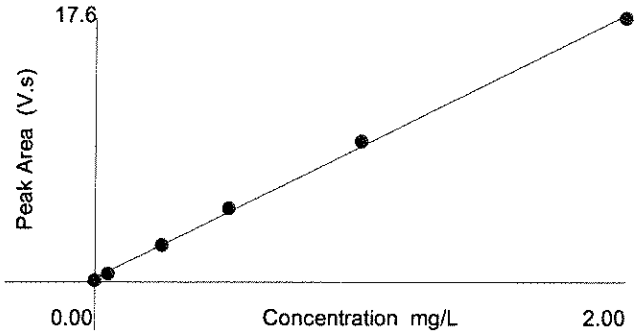


Table : 2 (NITRATE/NITRITE)

	Known Conc. (mg/L)	Rep.	Peak Area (V.s)	Peak Height (V)	% RSD	% Residual	Det. Conc (mg/L)	Detection Date	Detection Time
1	2.00	1	17.6	1.46	0.0	1.2	1.97	6/23/2021	11:14:51 AM
2	1.00	1	9.39	0.791	0.0	-3.7	1.04	6/23/2021	11:16:01 AM
3	0.500	1	4.90	0.417	0.0	-4.9	0.526	6/23/2021	11:17:11 AM
4	0.250	1	2.47	0.211	0.0	0.5	0.249	6/23/2021	11:18:22 AM
5	0.0500	1	0.569	0.0475	0.0	21.7	0.0327	6/23/2021	11:19:34 AM
6	0.00	1	0.114	9.44e-3			-0.0190	6/23/2021	11:20:45 AM

Figure : 2 (NITRATE/NITRITE)



Area = 8.77 * Conc + 0.288
Conc = 0.114 * Area - 0.0320
Correlation Coefficient (r) = 0.99941

Weighting : None

WET CHEMISTRY BATCH REPORT
Jun 30 2021, 11:38 am
Batch: WG301653 Run ID 1: R571019 Run ID 2: R571024

Parameter: Nitrate+Nitrite As N
Prep Date: N/A

Date Analyzed: 29-JUN-21
Prep Method: N/A

Analyst Initials: SS
Prep Chemist: N/A

Sample	Samp Type	Method	Initial Amt.	Final Amt.	Rpt. DF	Result	Rpt Result	TS(%)	PQL	MDL	Adj PQL	RPD	%Rec
SO3743-5	SAMP	EPA 353.2	5.0000mL	5.0000mL	1	-.00718	U0.025 mg/L	NA	.05	.0152	0.050		
WG301653-1	MBLANK	EPA 353.2	5.0000mL	5.0000mL	1	-.013	U0.025 mg/L	NA	.05	.0152	0.050		
WG301653-2	LCS	EPA 353.2	5.0000mL	5.0000mL	1	.981	0.98 mg/L	NA	.05	.0152	0.050		98
WG301653-3	MS	EPA 353.2	5.0000mL	5.0000mL	1	.987	0.99 mg/L	NA	.05	.0152	0.050		99
WG301653-4	MSD	EPA 353.2	5.0000mL	5.0000mL	1	.986	0.99 mg/L	NA	.05	.0152	0.050	0	99

Comments:

SO3743-5	MS/MSD Anions = SO4
WG301653-1	SO3743-5
WG301653-2	SO3743-5
WG301653-3	SO3743-5
WG301653-4	SO3743-5

Entered by: SS Date: 6/30/21 Accepted by: [signature] Date 06/30/21

WET CHEMISTRY BATCH REPORT
Jun 30 2021, 11:39 am
Batch: WG301654 Run ID 1: R571020 Run ID 2: R571025

Parameter: Nitrate As N
Prep Date: N/A

Date Analyzed: 29-JUN-21
Prep Method: N/A

Analyst Initials: SS
Prep Chemist: N/A

Sample	Samp Type	Method	Initial Amt.	Final Amt.	Rpt. DF	Result	Rpt Result	TS(%)	PQL	MDL	Adj PQL	RPD	%Rec
SO4003-1	SAMP	EPA 353.2	5.0000mL	5.0000mL	1	.617	0.62 mg/L	NA	.05	.0152	0.050		
SO4003-2	SAMP	EPA 353.2	5.0000mL	5.0000mL	1	.618	0.62 mg/L	NA	.05	.0152	0.050		
WG301654-1	MBLANK	EPA 353.2	5.0000mL	5.0000mL	1	0	U0.025 mg/L	NA	.05	.0152	0.050		
WG301654-2	LCS	EPA 353.2	5.0000mL	5.0000mL	1	.981	0.98 mg/L	NA	.05	.0152	0.050		98

Comments:

WG301654-1 SO4003-1
WG301654-2 SO4003-1

Entered by: SS Date: 6/30/21 Accepted by: [signature] Date: 06/30/21

WET CHEMISTRY BATCH REPORT
Jun 30 2021, 11:39 am
Batch: WG301655 Run ID 1: R571022 Run ID 2: R571026

Parameter: Nitrate As N
Prep Date: N/A

Date Analyzed: 29-JUN-21
Prep Method: N/A

Analyst Initials: SS
Prep Chemist: N/A

Sample	Samp Type	Method	Initial Amt.	Final Amt.	Rpt. DF	Result	Rpt Result	TS(%)	PQL	MDL	Adj PQL	RPD	%Rec
SO3998-1	SAMP	EPA 353.2	5.0000mL	5.0000mL	1	.0104	U0.050 mg/L	NA	.05	0.0040	0.050		
SO3999-1	SAMP	EPA 353.2	5.0000mL	5.0000mL	1	.036	U0.050 mg/L	NA	.05	0.0040	0.050		
SO4000-1	SAMP	EPA 353.2	5.0000mL	5.0000mL	1	.428	0.43 mg/L	NA	.05	0.0040	0.050		
SO4011-1	SAMP	EPA 353.2	5.0000mL	5.0000mL	1	1.02	1.0 mg/L	NA	.05	0.0040	0.050		
SO4012-1	SAMP	EPA 353.2	5.0000mL	5.0000mL	1	0	U0.050 mg/L	NA	.05	0.0040	0.050		
WG301655-1	MBLANK	EPA 353.2	5.0000mL	5.0000mL	1	0	U0.025 mg/L	NA	.05	0.0040	0.050		
WG301655-2	LCS	EPA 353.2	5.0000mL	5.0000mL	1	.981	0.98 mg/L	NA	.05	0.0040	0.050		98

Comments:

WG301655-1	SO3998-1
WG301655-2	SO3998-1
WG301655-3	SO3998-1

Entered by: SS Date: 6/30/21 Accepted by: [signature] Date: 06/30/21

WET CHEMISTRY BATCH REPORT
Jun 30 2021, 11:39 am
Batch: WG301655 Run ID 1: R571022 Run ID 2: R571026

Parameter: Nitrite As N
Prep Date: N/A

Date Analyzed: 29-JUN-21
Prep Method: N/A

Analyst Initials: SS
Prep Chemist: N/A

Sample	Samp Type	Method	Initial Amt.	Final Amt.	Rpt. DF	Result	Rpt Result	TS(%)	PQL	MDL	Adj PQL	RPD	%Rec
SO3998-1	SAMP	EPA 353.2	5.0000mL	5.0000mL	1	.0306	U0.050 mg/L	NA	.05	0.0030	0.050		
SO3999-1	SAMP	EPA 353.2	5.0000mL	5.0000mL	1	-.0179	U0.050 mg/L	NA	.05	0.0030	0.050		
SO4000-1	SAMP	EPA 353.2	5.0000mL	5.0000mL	1	-.0203	U0.050 mg/L	NA	.05	0.0030	0.050		
SO4011-1	SAMP	EPA 353.2	5.0000mL	5.0000mL	1	-.0205	U0.050 mg/L	NA	.05	0.0030	0.050		
SO4012-1	SAMP	EPA 353.2	5.0000mL	5.0000mL	1	-.0196	U0.050 mg/L	NA	.05	0.0030	0.050		
WG301655-1	MBLANK	EPA 353.2	5.0000mL	5.0000mL	1	-.0209	U0.025 mg/L	NA	.05	0.0030	0.050		
WG301655-3	LCS	EPA 353.2	5.0000mL	5.0000mL	1	.998	1.0 mg/L	NA	.05	0.0030	0.050		100

Comments:

WG301655-1	SO3998-1
WG301655-2	SO3998-1
WG301655-3	SO3998-1

Entered by: SS Date: 6/30/21 Accepted by: [signature] Date: 06/30/21 J

KATAHDIN ANALYTICAL SERVICES, LLC.
Wet Chemistry Analysis Run Information Sheet

Analyte: NO3, NO2, and NO3+NO2	**Analyst:** SS
Instrument: LACHAT	**Analysis Date:** 6/29/21

Were pHs of all samples adjusted to 5-9 prior to analysis?

Circle one: (Yes) No **pH Paper Lot ID:** 60083003

Were all samples checked for the presence of chlorine prior to analysis?

Circle one: (Yes) No Hw: WG 301655 → R571022

Analytical Method (Check all that apply):

[✓] EPA 353.2 [ ] SM 4500 F [ ] Other

WG301653 → R571019 WG301654 → R571020

Reagent Information:

Reagent Name	Reagent ID	Expiration Date
Ammonium Chloride Buffer	**W20093**	**7/17/2021**
Sulfanilamide Color Reagent	**W20111**	**7/23/2021**
Carrier	**DI Water**	
Cadmium Reduction Column	**S/N: SWL4699**	

Standards Information:

Standard Name	Concentration (mg/L)	ID	Expiration Date
Nitrate CCV	0.5	W20108	7/23/21
Nitrite CCV	0.5	W20098	7/18/21
Nitrate ICV/LCS	1.0	W20091	7/17/21
Nitrite ICV/LCS	1.0	W20125	7/29/21
Standard #1	2.0	W20099	7/18/21
Standard #2	1.0	W20100	7/18/21
Standard #3	0.5	W20098	7/18/21
Standard #4	0.25	W20101	7/18/21
Standard# 5	0.05	W20102	7/18/21
Standard #6	0.0	DI water	N/A
Nitrate Standard	100.0	W20037	5/27/2022
Nitrite Standard	100.0	W19308	9/3/2021

Notes:

1. Matrix Spiking: To 5mL Sample Alliquot add 0.025 mL of Nitrate Standard and 0.025mL Nitrite Standard

* Sample logins were verified. 6/29/21

Comments: Pipettes: W5, W3, W9, W8

MS: 200uL, 5mL 5x, 10x, & 20x Dilutions: 1mL, 5mL

2x, 4x Dilutions: 5mL 25x, 50x, 100x, 200x Dilutions: 200uL, 5mL

250x, 500x, 1000x, 2000x, 2500x Dilutions: 200uL, 1ml, 5mL

Author: wetchem

Date : 6/29/2021

Original Run Filename: OM_6-29-2021_02-07-15PM.OMN Created: 6/29/2021 2:07:15 PM
Original Run Author's Signature: [wetchem]
Current Run Filename: OM_6-29-2021_02-07-15PM.OMN Last Modified: 6/29/2021 2:34:43 PM
Current Run Author's Signature: [wetchem]
Description: Default New Run

Sample	Channel 1 NITRATE/NITRITE			Channel 2 NITRITE			Detection Time	MDF
	Conc. (mg/L)	Area (V.s)	Height (V)	Conc. (mg/L)	Area (V.s)	Height (V)		
CCV NO3	0.497	4.57	0.414	-0.0211	0.0133	1.31e-3	6/29/2021@2:08:18 PM	
Known Conc:	0.500			0.500				
Calibration:	Table/Fig. : 1			Table/Fig. : 2				
CCV NO2	0.514	4.72	0.430	0.538	7.33	0.645	6/29/2021@2:09:28 PM	
Known Conc:	0.500			0.500				
CCB	-0.0220	0.0412	3.02e-3	-0.0190	0.0403	2.13e-3	6/29/2021@2:10:40 PM	
Known Conc:	0.00			0.00				
BLANK	-0.0130	0.120	0.0105	-0.0209	0.0159	1.39e-3	6/29/2021@2:11:50 PM	
Known Conc:	0.00			0.00				
NO3 LCS	0.981	8.79	0.786	-0.0194	0.0351	2.44e-3	6/29/2021@2:13:00 PM	
Known Conc:	1.00			1.00				
NO2 LCS	0.980	8.78	0.791	0.998	13.4	1.17	6/29/2021@2:14:10 PM	
Known Conc:	1.00			1.00				
SO3743-5	-7.18e-3	0.171	0.0120	0.0331	0.723	0.124	6/29/2021@2:15:22 PM	
SO3743-5 MS	0.987	8.84	0.811	0.566	7.69	0.646	6/29/2021@2:16:34 PM	
SO3743-5 MSD	0.986	8.83	0.801	0.566	7.70	0.646	6/29/2021@2:17:45 PM	
SO3998-1	0.0410	0.591	0.0498	0.0306	0.689	0.0532	6/29/2021@2:18:55 PM	
SO3999-1	0.0360	0.547	0.0476	-0.0179	0.0546	4.08e-3	6/29/2021@2:20:07 PM	
SO4003-1	0.617	5.61	0.504	-0.0243	-0.0290	-1.43e-3	6/29/2021@2:21:17 PM	
SO4003-2	0.618	5.63	0.502	-0.0224	-3.77e-3	-1.03e-3	6/29/2021@2:22:27 PM	
CCV NO3	0.488	4.49	0.407	-0.0240	-0.0249	-1.43e-3	6/29/2021@2:23:39 PM	
Known Conc:	0.500			0.500				
CCV NO2	0.511	4.69	0.424	0.539	7.34	0.636	6/29/2021@2:24:48 PM	
Known Conc:	0.500			0.500				
CCB	-0.0229	0.0338	2.73e-3	-0.0197	0.0305	2.67e-3	6/29/2021@2:26:00 PM	
Known Conc:	0.00			0.00				
SO4000-1	0.428	3.97	0.357	-0.0203	0.0233	1.43e-3	6/29/2021@2:27:10 PM	
CCV NO3	0.490	4.50	0.408	-0.0192	0.0380	3.15e-3	6/29/2021@2:30:16 PM	
Known Conc:	0.500			0.500				
CCV NO2	0.509	4.67	0.426	0.536	7.31	0.634	6/29/2021@2:31:25 PM	
Known Conc:	0.500			0.500				
CCB	-0.0228	0.0343	2.99e-3	-0.0200	0.0272	2.47e-3	6/29/2021@2:32:38 PM	
Known Conc:	0.00			0.00				

99.4%
107.6%
97.6%
107.5%
75%
107.2%

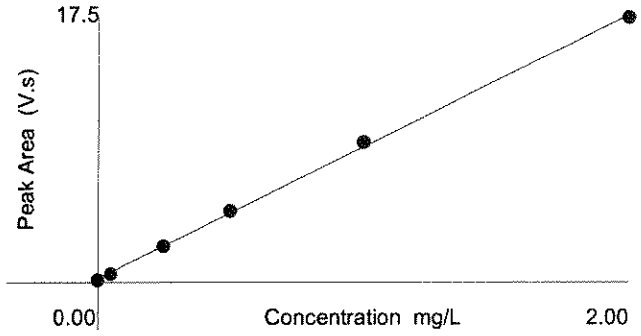
Table : 1 (NITRATE/NITRITE)

	Known Conc. (mg/L)	Rep.	Peak Area (V.s)	Peak Height (V)	% RSD	% Residual	Det. Conc (mg/L)	Detection Date	Detection Time
1	2.00	1	17.5	1.51	0.0	1.0	1.98	6/29/2021	9:09:10 AM
2	1.00	1	9.24	0.822	0.0	-3.3	1.03	6/29/2021	9:10:19 AM
3	0.500	1	4.72	0.421	0.0	-2.7	0.514	6/29/2021	9:11:29 AM
4	0.250	1	2.39	0.211	0.0	1.2	0.247	6/29/2021	9:12:39 AM
5	0.0500	1	0.548	0.0479	0.0	18.6	0.0361	6/29/2021	9:13:50 AM
6	0.00	1	0.145	0.0127			-0.0101	6/29/2021	9:15:01 AM

Author: wetchem

Date : 6/29/2021

Figure : 1 (NITRATE/NITRITE)



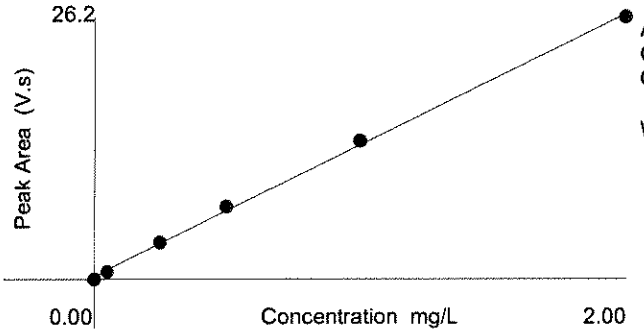
Area = 8.72 * Conc + 0.237
Conc = 0.115 * Area - 0.0267
Correlation Coefficient (r) = 0.99965

Weighting : None

Table : 2 (NITRITE)

	Known Conc. (mg/L)	Rep.	Peak Area (V.s)	Peak Height (V)	% RSD	% Residual	Det. Conc (mg/L)	Detection Date	Detection Time
1	2.00	1	26.2	2.19	0.0	1.1	1.98	6/29/2021	9:09:11 AM
2	1.00	1	13.8	1.18	0.0	-2.9	1.03	6/29/2021	9:10:21 AM
3	0.500	1	7.21	0.614	0.0	-5.5	0.529	6/29/2021	9:11:31 AM
4	0.250	1	3.63	0.308	0.0	-1.8	0.255	6/29/2021	9:12:41 AM
5	0.0500	1	0.739	0.0622	0.0	22.3	0.0344	6/29/2021	9:13:52 AM
6	0.00	1	-0.0271	-1.45e-3			-0.0241	6/29/2021	9:15:03 AM

Figure : 2 (NITRITE)



Area = 13.1 * Conc + 0.298
Conc = 0.0764 * Area - 0.0221
Correlation Coefficient (r) = 0.99946

Weighting : None

Author: wetchem Date : 6/29/2021

Original Run Filename: OM_6-29-2021_03-24-32PM.OMN Created: 6/29/2021 3:24:32 PM
Original Run Author's Signature: [wetchem]
Current Run Filename: OM_6-29-2021_03-24-32PM.OMN Last Modified: 6/29/2021 3:37:46 PM
Current Run Author's Signature: [wetchem]
Description: Default New Run

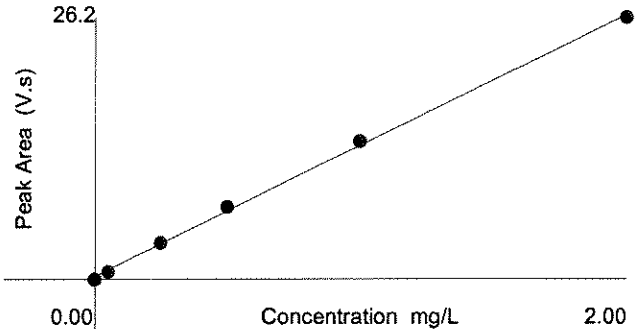
Sample	Channel 1 NITRATE/NITRITE			Channel 2 NITRITE			Detection Time	MDF
	Conc. (mg/L)	Area (V.s)	Height (V)	Conc. (mg/L)	Area (V.s)	Height (V)		
CCV NO3	0.495	4.55	0.411	-0.0220	5.48e-4	7.10e-4	6/29/2021@3:25:36 PM	
Known Conc:	0.500			0.500				
Calibration:				Table/Fig. : 1				
CCV NO2	0.520	4.77	0.433	0.536	7.30	0.636	6/29/2021@3:26:45 PM	
Known Conc:	0.500			0.500				
Calibration:	Table/Fig. : 2							
CCB	-0.0219	0.0419	3.07e-3	-0.0212	0.0115	1.70e-3	6/29/2021@3:27:57 PM	
Known Conc:	0.00			0.00				
SO4011-1	1.02	9.14	0.822	-0.0205	0.0202	1.23e-3	6/29/2021@3:29:06 PM	
SO4012-1	-5.32e-3	0.187	0.0162	-0.0196	0.0319	2.33e-3	6/29/2021@3:30:16 PM	
CCV NO3	0.498	4.58	0.415	-0.0206	0.0197	1.64e-3	6/29/2021@3:33:20 PM	
Known Conc:	0.500			0.500				
CCV NO2	0.517	4.74	0.434	0.533	7.27	0.632	6/29/2021@3:34:30 PM	
Known Conc:	0.500			0.500				
CCB	-0.0228	0.0343	2.94e-3	-0.0193	0.0359	2.66e-3	6/29/2021@3:35:43 PM	
Known Conc:	0.00			0.00				

99%
107.2%
99.6%
106.6%

Table : 1 (NITRITE)

	Known Conc. (mg/L)	Rep.	Peak Area (V.s)	Peak Height (V)	% RSD	% Residual	Det. Conc (mg/L)	Detection Date	Detection Time
1	2.00	1	26.2	2.19	0.0	1.1	1.98	6/29/2021	9:09:11 AM
2	1.00	1	13.8	1.18	0.0	-2.9	1.03	6/29/2021	9:10:21 AM
3	0.500	1	7.21	0.614	0.0	-5.5	0.529	6/29/2021	9:11:31 AM
4	0.250	1	3.63	0.308	0.0	-1.8	0.255	6/29/2021	9:12:41 AM
5	0.0500	1	0.739	0.0622	0.0	22.3	0.0344	6/29/2021	9:13:52 AM
6	0.00	1	-0.0271	-1.45e-3			-0.0241	6/29/2021	9:15:03 AM

Figure : 1 (NITRITE)



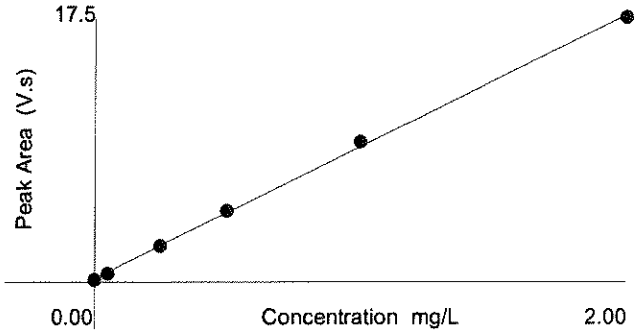
Area = 13.1 * Conc + 0.298
Conc = 0.0764 * Area - 0.0221
Correlation Coefficient (r) = 0.99946

Weighting : None

Table : 2 (NITRATE/NITRITE)

	Known Conc. (mg/L)	Rep.	Peak Area (V.s)	Peak Height (V)	% RSD	% Residual	Det. Conc (mg/L)	Detection Date	Detection Time
1	2.00	1	17.5	1.51	0.0	1.0	1.98	6/29/2021	9:09:10 AM
2	1.00	1	9.24	0.822	0.0	-3.3	1.03	6/29/2021	9:10:19 AM
3	0.500	1	4.72	0.421	0.0	-2.7	0.514	6/29/2021	9:11:29 AM
4	0.250	1	2.39	0.211	0.0	1.2	0.247	6/29/2021	9:12:39 AM
5	0.0500	1	0.548	0.0479	0.0	18.6	0.0361	6/29/2021	9:13:50 AM
6	0.00	1	0.145	0.0127			-0.0101	6/29/2021	9:15:01 AM

Figure : 2 (NITRATE/NITRITE)



Area = 8.72 * Conc + 0.237
Conc = 0.115 * Area - 0.0267
Correlation Coefficient (r) = 0.99965

Weighting : None

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Wet Chemistry Batch Report

Analyst Initials: SS/ZF
Date Analyzed: 28-JUN-21

Batch: WG301591
Prep Method: E300.0
Prep Chemist: SS/ZF

Sample	Samp Type	Method	Parameter	DF	Result	Rpt. Result	Units	PQL	Adj. PQL	MDL	Adj. MDL	RPD	Rec.
SO3601-4DLC	SAMP	EPA 300.0	Sulfate	1	1.1763	1.2	mg/L	1	1.0	.0637	0.064		
WG301591-1	MBLANK	EPA 300.0	Sulfate	1	.0815	J 0.082	mg/L	1	1.0	.0637	0.064		
WG301591-2	LCS	EPA 300.0	Sulfate	1	3.5188	3.52	mg/L	1	1.0	.0637	0.064		93.9
WG301591-3	MS	EPA 300.0	Sulfate	1	4.6508	4.6	mg/L	1	1.0	.0637	0.064		92.6
WG301591-4	MSD	EPA 300.0	Sulfate	1	4.6716	4.7	mg/L	1	1.0	.0637	0.064	0	93.2

Comments:

SO3601-4	MS/MSD, E300ANI
WG301591-1	SO3601-4
WG301591-2	SO3601-4
WG301591-3	SO3601-4
WG301591-4	SO3601-4

Entered by: SS Date: 6/30/21 Accepted by: Date: 07/01/21

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Wet Chemistry Batch Report

Analyst Initials: SS/ZF
Date Analyzed: 28-JUN-21

Batch: WG301593
Prep Method: E300.0
Prep Chemist: SS/ZF

Sample	Samp Type	Method	Parameter	DF	Result		Rpt. Result	Units	PQL	Adj. PQL	MDL	Adj. MDL	RPD	Rec.
SO3835-1DLC	SAMP	EPA 300.0	Chloride	5	40.6272		41.	mg/L	2	10.	.0993	0.50		
SO3918-1DLC	SAMP	EPA 300.0	Chloride	2	35.0812		35.	mg/L	2	4.0	.0993	0.20		
SO3964-1	SAMP	EPA 300.0	Chloride	1	10.8549		11.	mg/L	2	2.0	.0993	.0993		
SO3964-1	SAMP	EPA 300.0	Nitrate as N	1	.1165		0.12	mg/L	.05	0.050	.0174	.0174		
SO3964-1	SAMP	EPA 300.0	Nitrite as N	1	.177		0.18	mg/L	.05	0.050	.0092	.00922		
WG301593-1	MBLANK	EPA 300.0	Chloride	1	.081	U	1.0	mg/L	2	2.0	.0993	.0993		
WG301593-1	MBLANK	EPA 300.0	Nitrate as N	1	.0387	J	0.039	mg/L	.05	0.050	.0174	.0174		
WG301593-1	MBLANK	EPA 300.0	Nitrite as N	1	.0193	J	0.019	mg/L	.05	0.050	.0092	.00922		
WG301593-2	LCS	EPA 300.0	Chloride	1	3.6265		3.63	mg/L	2	2.0	.0993	.0993		96.8
WG301593-2	LCS	EPA 300.0	Nitrate as N	1	.8177		0.818	mg/L	.05	0.050	.0174	.0174		96.8
WG301593-2	LCS	EPA 300.0	Nitrite as N	1	1.1724		1.17	mg/L	.05	0.050	.0092	.00922		103.

Comments:

SO3918-1	anions: NO3, NO2, Cl
SO3964-1	anions: NO3, NO2, Cl
WG301593-1	SO3835-1
WG301593-2	SO3835-1

Entered by: SS Date: 6/30/21 Accepted by: Date: 07/01/21

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Wet Chemistry Batch Report

Analyst Initials: SS/ZF
Date Analyzed: 28-JUN-21
29-JUN-21

Batch: WG301594
Prep Method: N/A
Prep Chemist: SS/ZF

Sample	Samp Type	Method	Parameter	DF	Result		Rpt. Result	Units	PQL	Adj. PQL	MDL	Adj. MDL	RPD	Rec.
SO3681-1	SAMP	SW846 9056A	Chloride	1	16.4752		16	mg/L	2	2.0	.0993	.0993		
SO3681-1	SAMP	SW846 9056A	Sulfate	1	4.8925		4.9	mg/L	1	1.0	.0637	0.064		
SO3681-2	SAMP	SW846 9056A	Chloride	1	6.6505		6.6	mg/L	2	2.0	.0993	.0993		
SO3681-2	SAMP	SW846 9056A	Sulfate	1	5.1837		5.2	mg/L	1	1.0	.0637	0.064		
SO3681-3	SAMP	SW846 9056A	Chloride	1	1.5509	J	1.6	mg/L	2	2.0	.0993	.0993		
SO3681-3	SAMP	SW846 9056A	Sulfate	1	2.634		2.6	mg/L	1	1.0	.0637	0.064		
SO3681-4	SAMP	SW846 9056A	Chloride	1	1.3161	J	1.3	mg/L	2	2.0	.0993	.0993		
SO3681-4	SAMP	SW846 9056A	Sulfate	1	24.4088		24	mg/L	1	1.0	.0637	0.064		
SO3681-5	SAMP	SW846 9056A	Sulfate	1	12.3919		12	mg/L	1	1.0	.0637	0.064		
SO3681-6	SAMP	SW846 9056A	Sulfate	1	15.5469		16	mg/L	1	1.0	.0637	0.064		
SO3681-7	SAMP	SW846 9056A	Sulfate	1	6.3728		6.4	mg/L	1	1.0	.0637	0.064		
SO3681-8	SAMP	SW846 9056A	Sulfate	1	9.7271		9.7	mg/L	1	1.0	.0637	0.064		
SO3681-9	SAMP	SW846 9056A	Chloride	1	1.6999	J	1.7	mg/L	2	2.0	.0993	.0993		
SO3681-9	SAMP	SW846 9056A	Sulfate	1	3.17		3.2	mg/L	1	1.0	.0637	0.064		
SO3742-1	SAMP	SW846 9056A	Sulfate	1	4.9669		5.0	mg/L	1	1.0	.0637	0.064		
SO3742-2	SAMP	SW846 9056A	Chloride	1	2.1824		2.2	mg/L	2	2.0	.0993	.0993		
SO3742-2	SAMP	SW846 9056A	Sulfate	1	2.4427		2.4	mg/L	1	1.0	.0637	0.064		
SO3742-3	SAMP	SW846 9056A	Chloride	1	3.2556		3.2	mg/L	2	2.0	.0993	.0993		
SO3742-3	SAMP	SW846 9056A	Sulfate	1	31.8471		32	mg/L	1	1.0	.0637	0.064		
SO3742-4	SAMP	SW846 9056A	Chloride	1	2.7042		2.7	mg/L	2	2.0	.0993	.0993		
SO3742-4	SAMP	SW846 9056A	Sulfate	1	2.7746		2.8	mg/L	1	1.0	.0637	0.064		
SO3742-6	SAMP	SW846 9056A	Sulfate	1	6.3462		6.3	mg/L	1	1.0	.0637	0.064		
SO3742-8	SAMP	SW846 9056A	Sulfate	1	6.4978		6.5	mg/L	1	1.0	.0637	0.064		
SO3743-2	SAMP	SW846 9056A	Sulfate	1	1.0743		1.1	mg/L	1	1.0	.0637	0.064		
SO3743-5	SAMP	SW846 9056A	Sulfate	1	13.1793		13	mg/L	1	1.0	.0637	0.064		
SO3808-1	SAMP	SW846 9056A	Chloride	1	18.6707		19	mg/L	2	2.0	.0993	.0993		
SO3808-1	SAMP	SW846 9056A	Sulfate	1	4.1009		4.1	mg/L	1	1.0	.0637	0.064		
SO3808-2	SAMP	SW846 9056A	Chloride	1	16.5551		16	mg/L	2	2.0	.0993	.0993		
SO3808-2	SAMP	SW846 9056A	Sulfate	1	3.5844		3.6	mg/L	1	1.0	.0637	0.064		
SO3914-1DLC	SAMP	SW846 9056A	Sulfate	1	6.274		6.3	mg/L	1	1.0	.0637	0.064		
WG301594-1	MBLANK	SW846 9056A	Chloride	1	.081	U	1.0	mg/L	2	2.0	.0993	.0993		
WG301594-1	MBLANK	SW846 9056A	Sulfate	1	.0815	J	0.082	mg/L	1	1.0	.0637	0.064		
WG301594-2	LCS	SW846 9056A	Chloride	1	3.6265		3.63	mg/L	2	2.0	.0993	.0993		96.8
WG301594-2	LCS	SW846 9056A	Sulfate	1	3.5188		3.52	mg/L	1	1.0	.0637	0.064		93.9
WG301594-3	MS	SW846 9056A	Sulfate	1	16.3565	*	16.	mg/L	1	1.0	.0637	0.064		84.7
WG301594-4	MSD	SW846 9056A	Sulfate	1	16.6049		17.	mg/L	1	1.0	.0637	0.064	2	91.3

Comments:

SO3681-1	SW9056-ANIONS rep
SO3681-2	SW9056-ANIONS rep
SO3681-3	SW9056-ANIONS rep
SO3681-4	SW9056-ANIONS rep
SO3681-5	SW9056-ANIONS rep
SO3681-6	SW9056-ANIONS rep
SO3681-7	SW9056-ANIONS rep

Entered by: SS Date: 6/30/21 Accepted by: Date: 07/01/21

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Wet Chemistry Batch Report

Analyst Initials: SS/ZF
Date Analyzed: 28-JUN-21
29-JUN-21

Batch: WG301594
Prep Method: N/A
Prep Chemist: SS/ZF

Sample	Samp Type	Method	Parameter	DF	Result	Rpt. Result	Units	PQL	Adj. PQL	MDL	Adj. MDL	RPD	Rec.
SO3681-8		SW9056-ANIONS rep											
SO3681-9		SW9056-ANIONS rep											
SO3742-1		Anions please report C											
SO3742-2		Anions please report C											
SO3742-3		Anions please report C											
SO3742-4		Anions please report C											
SO3742-6		Anions please report C											
SO3742-8		Anions please report C											
SO3743-2		Anions = SO4, client s											
SO3743-5		MS/MSD Anions = S											
SO3808-1		Anions = Cl & SO4											
SO3808-2		Anions = Cl & SO4											
SO3914-1		SW9056-ANIONS= C											
WG301594-1		SO3743-5											
WG301594-2		SO3743-5											
WG301594-3		SO3743-5											
WG301594-4		SO3743-5											

Entered by: SS Date: 6/30/21 Accepted by: Date: 07/01/21

IC STANDARDS PREPARATION

Fill sheet in completely, file with each batch of samples analyzed.

ıL MIX ID: W20122	Expiration Date:07/12/21	ICAL Date: 04/26/21

ıALYTE	INITIAL AMOUNT (mL)	OF	STOCK CONC. (mg/L)	TO	FINAL VOLUME(mL)	=	FINAL CONC.(mg/L)
Cl	2.0	OF	1000	TO	100	=	20
)2 (as N)	0.8	OF	1000			=	8
)3 (as N)	0.8	OF	1000			=	8
Br	4.0	OF	1000			=	40
SO4	4.0	OF	1000			=	40
F	1.0	OF	1000			=	10
)4 (as P)	1	OF	1000			=	10

WORKING STANDARDS Standards prepared on each day of use

).	INITIAL AMOUNT (mL)	OF	Final Volume (mL)	FINAL CONC. (mg/L)							STD ID*
				Cl	NO2	NO3	Br	SO4	PO4	F	
7	1	ICAL	1	20	8	8	40	40	10	10	IC7-042621
6	0.5	IC7	1	10	4	4	20	20	5	5	IC6-042621
5	0.25	IC7	1	5	2	2	10	10	2.5	2.5	IC5-042621
4	0.25	IC6	1	2.5	1	1	5	5	1.25	1.25	IC4-042621
3	0.1	IC6	1	1	0.4	0.4	2	2	0.5	.5	IC3-042621
2	0.1	IC3	1	0.1	0.04	0.04	0.2	0.2	0.05	.05	IC2-042621
:V	0.5	IC7	1	10	4	4	20	20	5	5	CCV-062821

*** STD ID is prefix followed by the date of preparation (ie. IC6-020216)**

S/MATRIX SPIKE MIX ID: W20121	Expiration Date:071221

7.5 mL of High Purity multi-element IC standard solution "A" and 7.5 mL of High Purity multi-element standard solution "B" diluted to 100 mL. For MS, add 0.05 mL of mix to 1.0 mL of sample. For LCS, add 0.05 mL of mix to 1.0 mL of DI water.

Final Concentrations (mg/L):

CI	NO2 (as N)	NO3 (as N)	Br	SO4	PO4 (as P)	F	STD ID*
.75	1.14	0.845	3.75	3.75	1.22	3.75	IC-LCS-062821

*** STD ID is prefix followed by the date of preparation (ie. IC-LCS-020216)**

Comments:
2x dil = 0.5mL 1x→1.0mL
20x dil = 0.05mL 1x→1.0mL

Pipettes: W3, W5
5x dil = 0.2mL 1x→1.0mL
50x dil = 0.02mL 1x→1.0mL

10x dil = 0.1mL 1x→1.0mL
100x dil = 0.1mL 10x→1.0mL

Katahdin Analytical Services **ION CHROMATOGRAPHY RUNLOG** Dionex ICS-2100 (Instrument IC-3)

Analysis Date: 06/28/21	**Analytical Column S/N:** 191122078	**Calibration Date:** 04/26/21
Analysis Sequence: 062821A	**Guard Column S/N:** 191120342	**Calibration Sequence:** 042621ACal
Analyst: SS/ZF	**Suppressor S/N:** 180825029	☐ If box at left is checked, continued from previous page. Refer to previous page for header information.

Reporting / Reanalysis Codes:
✓ Report without manipulation
S Report, peak automatically reintegrated with SmartPeak
M Report, peak manually integrated
A Report, peak manually assigned
R Do not report, reanalyze sample

Method Codes:
E EPA 300.0
SW SW846 9056A

Katahdin Sample Number	Dilution Factor	Method Code	F	Cl	NO_2	SO_4	Br	NO_3	PO_4	Comments
Blank	1									Not reported
Blank	1									
Blank	1									
CCV	1		✓	✓	A	✓	A	A		
CCB	1		M	M	M	M	MA	MA		
LCS	1		✓	✓	A	✓	A	A		
SO 3601-4	1	E				✓				
3601-4 MS	1	E				✓				
3601-4 MSD	1	E				✓				
3964-1	1	E DW		✓	✓			A		
3835-1	5	E IW		✓						
3918-1	2	E DW		✓						
3914-1	1	S				✓				
CCV	1		✓	✓	A	✓	A	A		
CCB	1		M	M	M	M	MA	MA		
3681-1	1	S		✓		✓				
-2	1			✓		✓				
-3	1			✓		✓				
-4	1			✓		✓				
-5	1			R		✓				Cl 20x
-6	1			R		✓				Cl 5x
-7	1			R		✓				Cl 10x

E: WG301591 → LS71036
EW: WG801593 → RS71038
S: WG301594 → RS71037

WL-069-Revision 1 – 04/12/20016

Reviewed by: [signature] Review Date: 07/01/21

QAWL1005 - 000239

0000091

Katahdin Analytical Services **ION CHROMATOGRAPHY RUNLOG** Dionex ICS-2100 (Instrument IC-3)

Analysis Date:	**Analytical Column S/N:**	**Calibration Date:**
Analysis Sequence:	**Guard Column S/N:**	**Calibration Sequence:**
Analyst:	**Suppressor S/N:**	☑ If box at left is checked, continued from previous page. Refer to previous page for header information.

Reporting / Reanalysis Codes: ✓ Report without manipulation; **S** Report, peak automatically reintegrated with SmartPeak; **M** Report, peak manually integrated; **A** Report, peak manually assigned; **R** Do not report, reanalyze sample

Method Codes: **E** EPA 300.0; **SW** SW846 9056A

Katahdin Sample Number	Dilution Factor	Method Code	Report or Reanalyze (enter appropriate code): F	Cl	NO_2	SO_4	Br	NO_3	PO_4	Comments
SB 3681-8	1	S		R		✓				Cl 2X
-9	1	〃		✓		✓				
3742-1	1	S		R		✓				Cl 10X
CCV	1		✓	✓	A	✓	A	A		
CCB	1		M	M	M	M	MA	MA		
3742-2	1	S		✓		✓				
-3	1	〃		✓		✓				
-4	1	〃		✓		✓				
-6	1	〃		R		✓				Cl 5X
-8	1	〃		R		✓				Cl 10X
3743-2	1	S				✓				
-5	1	〃				✓				
3743-5 MS	1	〃				✓				
3743-5 MSD	1	〃				✓				
3808-1	1	〃		✓		✓				
CCV	1		✓	✓	A	✓	A	A		
CCB	1		M	M	M	M	MA	MA		
3808-2	1	S		✓		✓				
LOD	1		✓	✓	✓	✓	A	A		
LOQ	1		✓	✓	✓	✓	A	A		
CCV	1		✓	✓	A	✓	A	A		
CCB	1		M	M	M	M	MA	MA		

Reviewed by: _____ Review Date: 07/6/21

QAWL1005 - 000239

Sequence Overview

Sequence Details

Name:	**062821A REPROC**	*Created On:*	**10/Feb/16 13:48:22**
Directory:	**Instrument Data\ICS-2100\2021\06-JUN**	*Created By:*	**Katahdin Analytical**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**30/Jun/21 13:03:23**
No. of Injections:	**44**	*Updated By:*	**Katahdin Analytical**

Injection Details

No.	Injection Name	Position	Type	Level	Inject Time	Status
1	BLANK	1	Unknown		28/Jun/21 15:19:38	Finished
2	BLANK	2	Unknown		28/Jun/21 15:34:24	Finished
3	BLANK	3	Unknown		28/Jun/21 15:49:25	Finished
4	CCV	4	Check Standard	06	28/Jun/21 16:04:25	Finished
5	CCB	5	Unknown		28/Jun/21 16:19:25	Finished
6	LCS	6	Check Standard	07	28/Jun/21 16:34:26	Finished
7	SO3601-4	7	Unknown		28/Jun/21 16:49:27	Finished
8	SO3601-4 MS	8	Unknown		28/Jun/21 17:04:28	Finished
9	SO3601-4 MSD	9	Unknown		28/Jun/21 17:19:28	Finished
10	SO3964-1	10	Unknown		28/Jun/21 17:34:29	Finished
11	SO3835-1	11	Unknown		28/Jun/21 17:49:30	Finished
12	SO3918-1	12	Unknown		28/Jun/21 18:04:31	Finished
13	SO3914-1	13	Unknown		28/Jun/21 18:19:31	Finished
14	CCV	14	Check Standard	06	28/Jun/21 18:34:32	Finished
15	CCB	15	Unknown		28/Jun/21 18:49:33	Finished
16	SO3681-1	16	Unknown		28/Jun/21 19:04:33	Finished
17	SO3681-2	17	Unknown		28/Jun/21 19:19:34	Finished
18	SO3681-3	18	Unknown		28/Jun/21 19:34:35	Finished
19	SO3681-4	19	Unknown		28/Jun/21 19:49:35	Finished
20	SO3681-5	20	Unknown		28/Jun/21 20:04:36	Finished
21	SO3681-6	21	Unknown		28/Jun/21 20:19:36	Finished
22	SO3681-7	22	Unknown		28/Jun/21 20:34:37	Finished
23	SO3681-8	23	Unknown		28/Jun/21 20:49:37	Finished
24	SO3681-9	24	Unknown		28/Jun/21 21:04:38	Finished
25	SO3742-1	25	Unknown		28/Jun/21 21:19:39	Finished
26	CCV	26	Check Standard	06	28/Jun/21 21:34:39	Finished
27	CCB	27	Unknown		28/Jun/21 21:49:41	Finished
28	SO3742-2	28	Unknown		28/Jun/21 22:04:41	Finished
29	SO3742-3	29	Unknown		28/Jun/21 22:19:42	Finished
30	SO3742-4	30	Unknown		28/Jun/21 22:34:43	Finished
31	SO3742-6	31	Unknown		28/Jun/21 22:49:43	Finished
32	SO3742-8	32	Unknown		28/Jun/21 23:04:44	Finished
33	SO3743-2	33	Unknown		28/Jun/21 23:19:45	Finished
34	SO3743-5	34	Unknown		28/Jun/21 23:34:46	Finished
35	SO3743-5 MS	35	Unknown		28/Jun/21 23:49:47	Finished
36	SO3743-5 MSD	36	Unknown		29/Jun/21 00:04:47	Finished
37	SO3808-1	37	Unknown		29/Jun/21 00:19:48	Finished
38	CCV	38	Check Standard	06	29/Jun/21 00:34:49	Finished
39	CCB	39	Unknown		29/Jun/21 00:49:49	Finished
40	SO3808-2	40	Unknown		29/Jun/21 01:04:50	Finished
41	LOD	41	Unknown		29/Jun/21 01:19:51	Finished
42	LOQ	42	Unknown		29/Jun/21 01:34:51	Finished

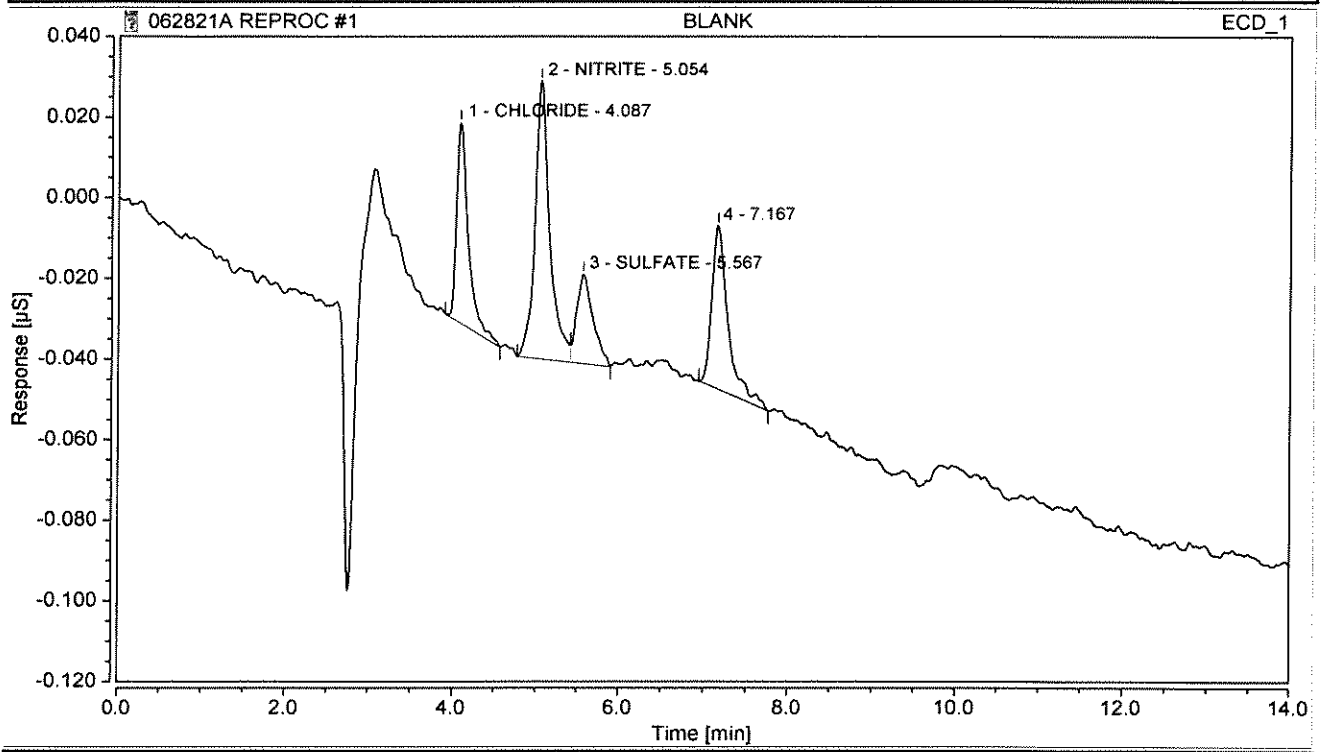
43	CCV	43	Check Standard	06	29/Jun/21 01:49:52	Finished
44	CCB	44	Unknown		29/Jun/21 02:04:52	Finished

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**13.99**
Vial Number:	**1**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 15:19**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

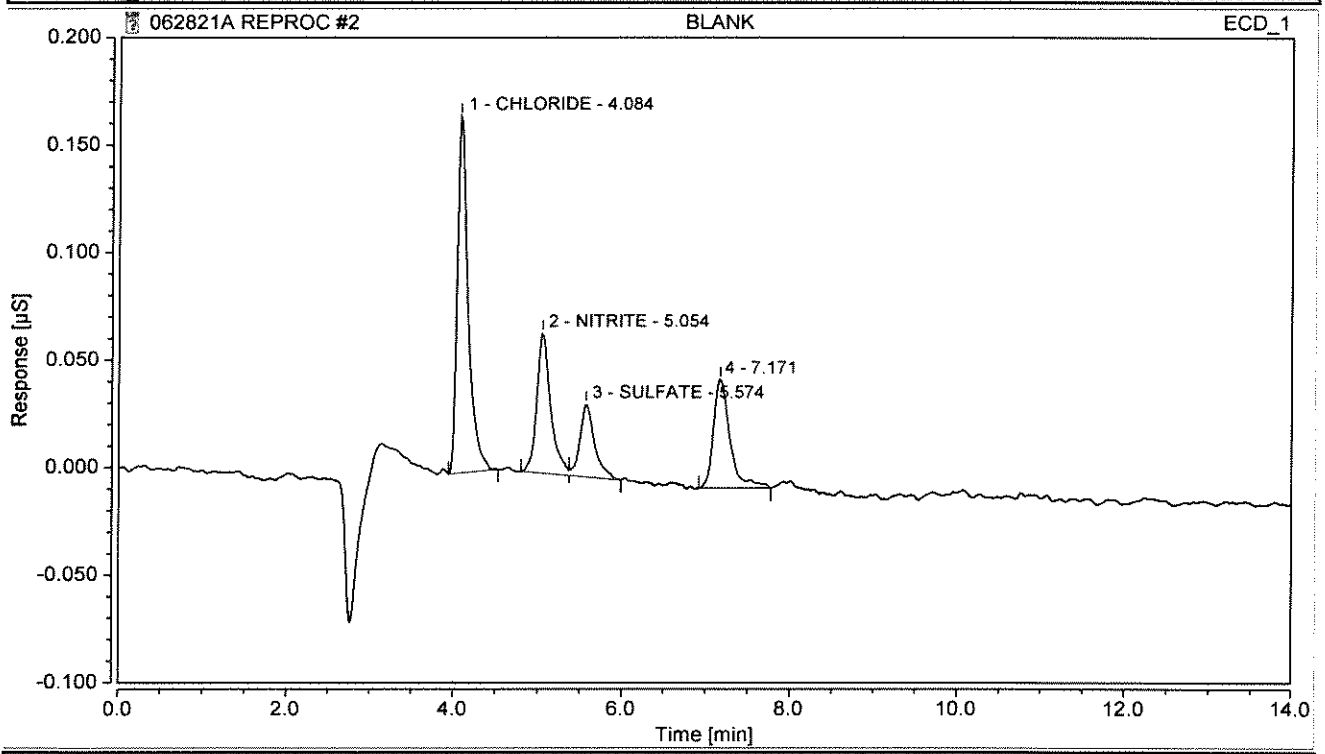
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
n.a.	FLUORIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1	CHLORIDE	4.087	0.008	0.050	21.86	27.40	0.0500	n.a.
2	NITRITE	5.054	0.014	0.069	39.57	38.02	0.0207	n.a.
3	SULFATE	5.567	0.005	0.022	13.81	12.21	0.0208	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NITRATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.027**	**0.141**	**75.24**	**77.63**		

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**13.99**
Vial Number:	**2**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMltest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 15:34**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

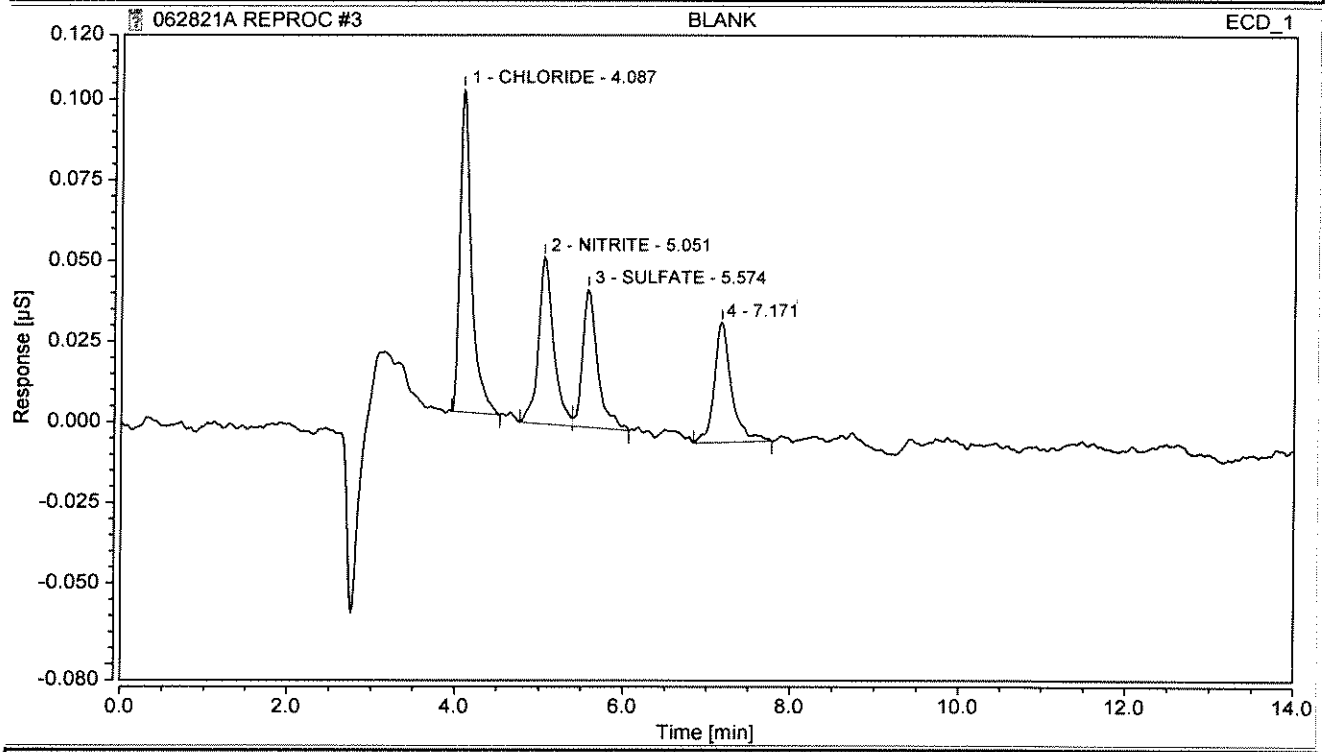
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
n.a.	FLUORIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1	CHLORIDE	4.084	0.025	0.166	44.29	52.55	0.1019	n.a.
2	NITRITE	5.054	0.013	0.065	22.58	20.67	0.0182	n.a.
3	SULFATE	5.574	0.007	0.034	12.34	10.76	0.0286	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NITRATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.044**	**0.265**	**79.20**	**83.98**		

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**13.99**
Vial Number:	**3**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMltest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 15:49**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

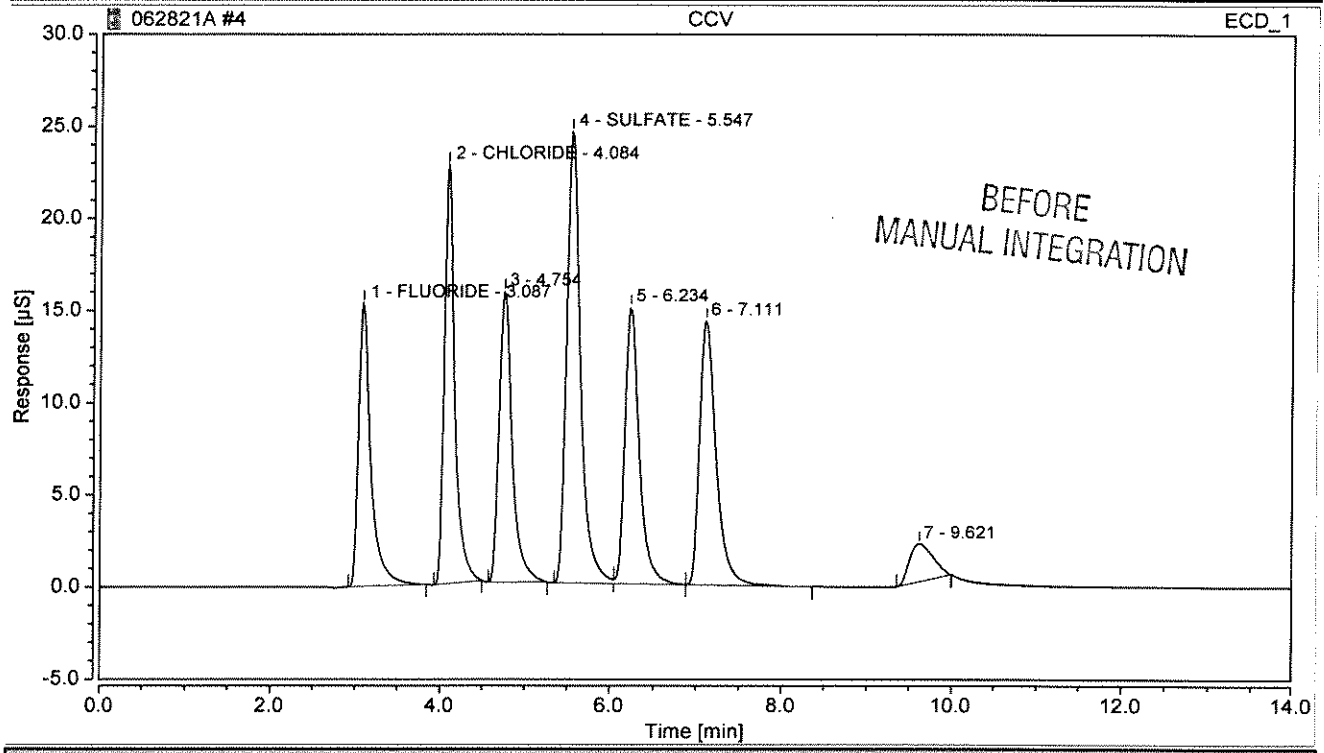
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
n.a.	FLUORIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1	CHLORIDE	4.087	0.016	0.100	35.32	43.17	0.0740	n.a.
2	NITRITE	5.051	0.011	0.052	24.43	22.32	0.0157	n.a.
3	SULFATE	5.574	0.009	0.043	19.89	18.46	0.0367	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NITRATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.035**	**0.195**	**79.64**	**83.95**		

Chromatogram and Results

Injection Details

Injection Name:	**CCV**	*Run Time (min):*	**13.98**
Vial Number:	**4**	*Injection Volume:*	**200.00**
Injection Type:	**Check Standard**	*Channel:*	**ECD_1**
Calibration Level:	**06**	*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 16:04**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

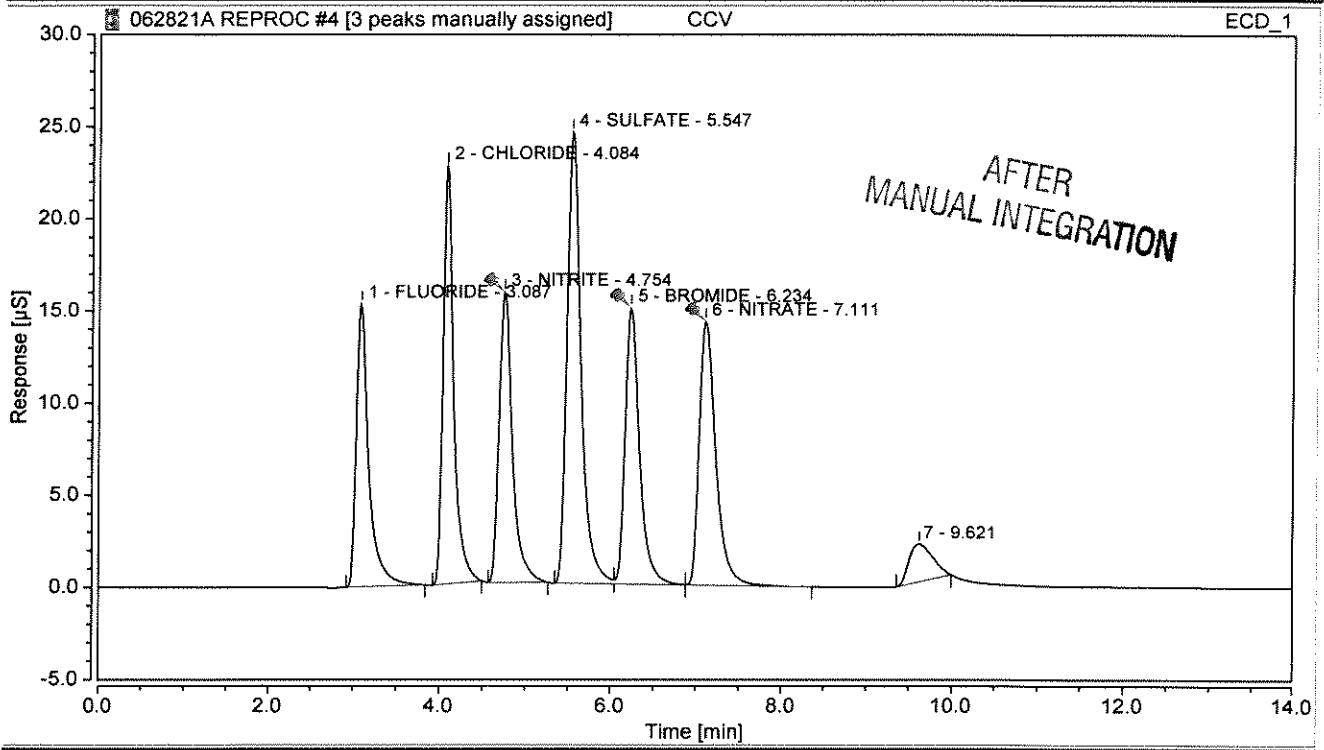
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.087	2.578	15.383	12.83	14.00	4.9026	-1.9476
2	CHLORIDE	4.084	3.255	22.750	16.20	20.71	10.0303	0.3029
n.a.	NITRITE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4	SULFATE	5.547	4.681	24.508	23.30	22.31	19.3761	-3.1196
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NITRATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**10.514**	**62.642**	**52.33**	**57.03**		

Chromatogram and Results

Injection Details

Injection Name:	**CCV**	*Run Time (min):*	**13.98**
Vial Number:	**4**	*Injection Volume:*	**200.00**
Injection Type:	**Check Standard**	*Channel:*	**ECD_1**
Calibration Level:	**06**	*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 16:04**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

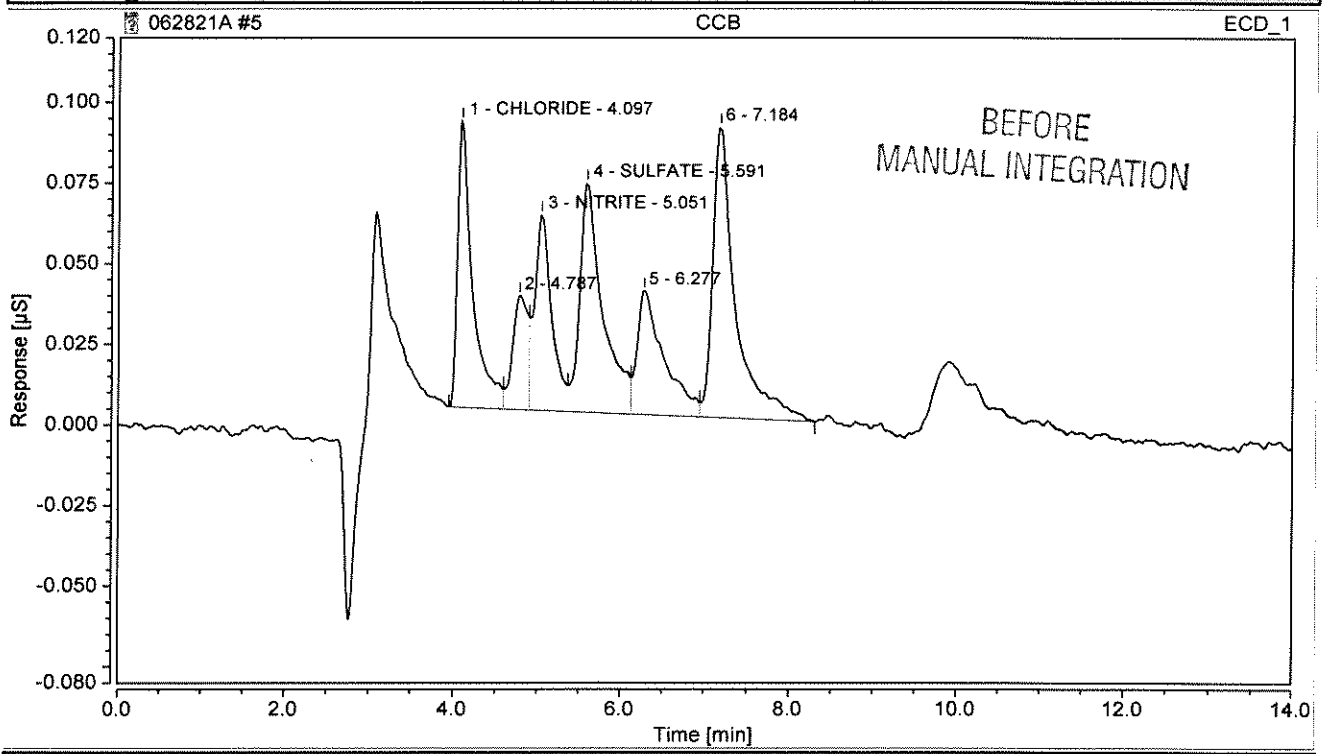
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.087	2.578	15.383	12.83	14.00	4.9026	-1.9476
2	CHLORIDE	4.084	3.255	22.750	16.20	20.71	10.0303	0.3029
3	NITRITE	4.754	2.810	15.778	13.99	14.36	4.0434	1.0859
4	SULFATE	5.547	4.681	24.508	23.30	22.31	19.3761	-3.1196
5	BROMIDE	6.234	2.891	15.029	14.39	13.68	20.4863	2.4313
6	NITRATE	7.111	3.217	14.336	16.01	13.05	3.9081	-2.2984
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**19.432**	**107.784**	**96.72**	**98.12**		

Chromatogram and Results

Injection Details

Injection Name:	**CCB**	*Run Time (min):*	**13.99**
Vial Number:	**5**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMitest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 16:19**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

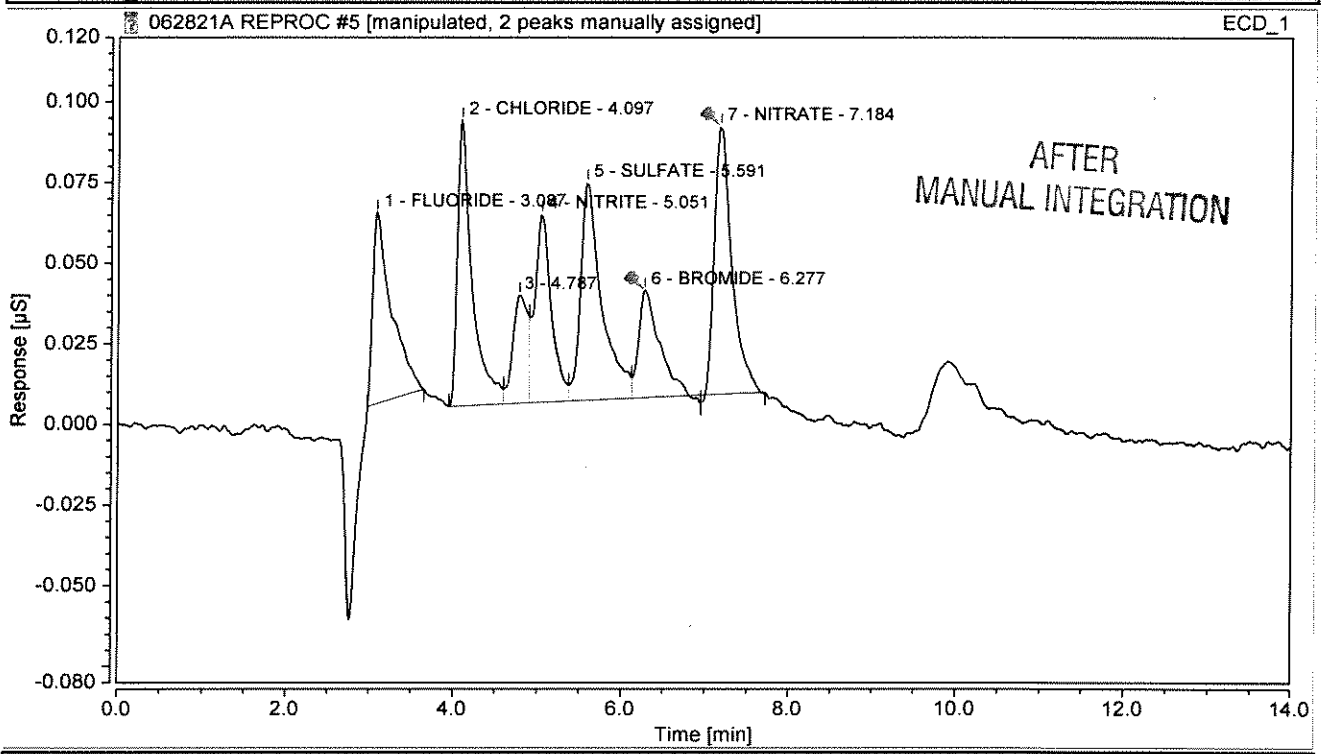
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
n.a.	FLUORIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1	CHLORIDE	4.097	0.018	0.089	17.50	23.08	0.0824	n.a.
3	NITRITE	5.051	0.015	0.061	13.86	15.79	0.0211	n.a.
4	SULFATE	5.591	0.023	0.071	21.48	18.48	0.0939	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NITRATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.056**	**0.221**	**52.84**	**57.35**		

Chromatogram and Results

Injection Details

Injection Name:	**CCB**	*Run Time (min):*	**13.99**
Vial Number:	**5**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMltest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 16:19**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

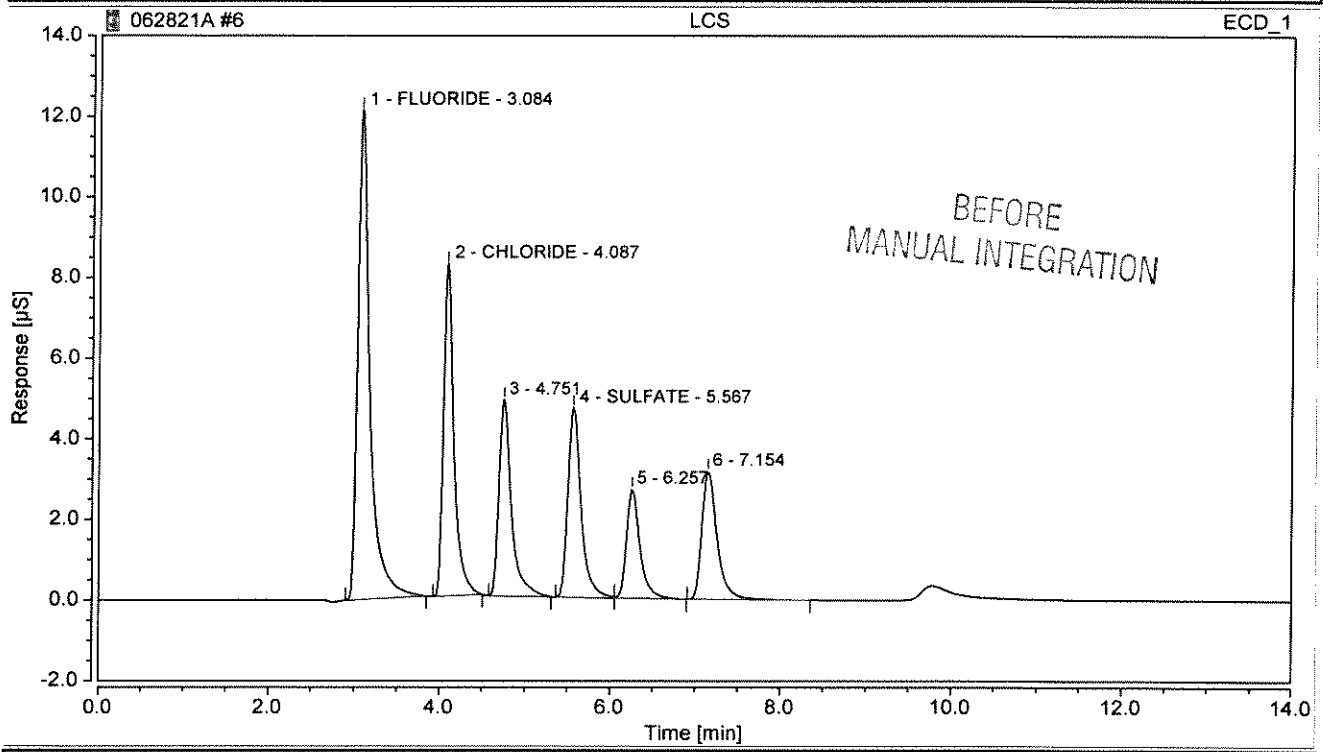
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.087	0.015	0.059	14.90	14.00	0.0292	n.a.
2	CHLORIDE	4.097	0.018	0.089	17.49	20.90	0.0810	n.a.
4	NITRITE	5.051	0.013	0.058	13.02	13.77	0.0193	n.a.
5	SULFATE	5.591	0.020	0.068	19.12	15.94	0.0815	n.a.
6	BROMIDE	6.277	0.010	0.033	9.42	7.86	0.0454	n.a.
7	NITRATE	7.184	0.020	0.083	19.39	19.61	0.0387	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.096**	**0.390**	**93.35**	**92.08**		

Chromatogram and Results

Injection Details

Injection Name:	**LCS**	*Run Time (min):*	**13.98**
Vial Number:	**6**	*Injection Volume:*	**200.00**
Injection Type:	**Check Standard**	*Channel:*	**ECD_1**
Calibration Level:	**07**	*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMltest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 16:34**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

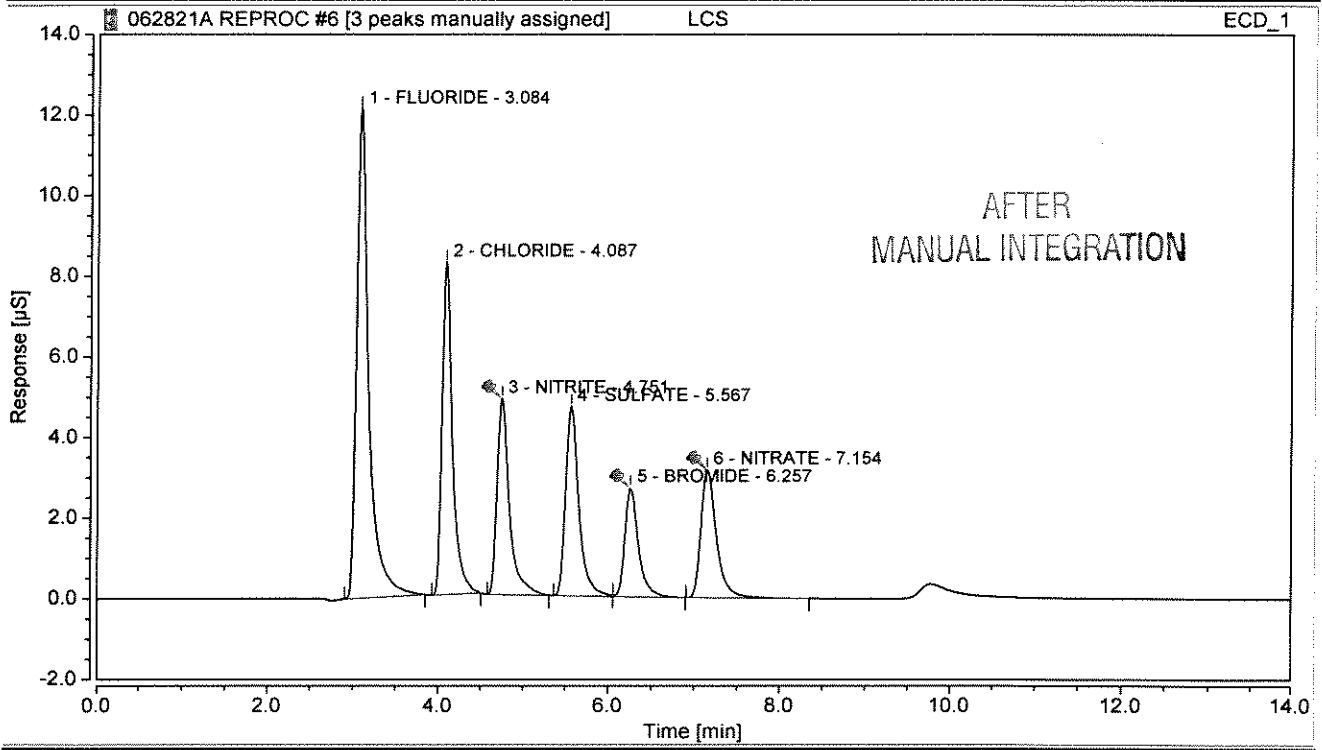
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.084	2.019	12.134	33.57	33.89	3.8404	2.4095
2	CHLORIDE	4.087	1.172	8.245	19.48	23.03	3.6265	-3.2947
n.a.	NITRITE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4	SULFATE	5.567	0.850	4.694	14.14	13.11	3.5188	-6.1644
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NITRATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**4.041**	**25.073**	**67.19**	**70.02**		

Chromatogram and Results

Injection Details

Injection Name:	**LCS**	*Run Time (min):*	**13.98**
Vial Number:	**6**	*Injection Volume:*	**200.00**
Injection Type:	**Check Standard**	*Channel:*	**ECD_1**
Calibration Level:	**07**	*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 16:34**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

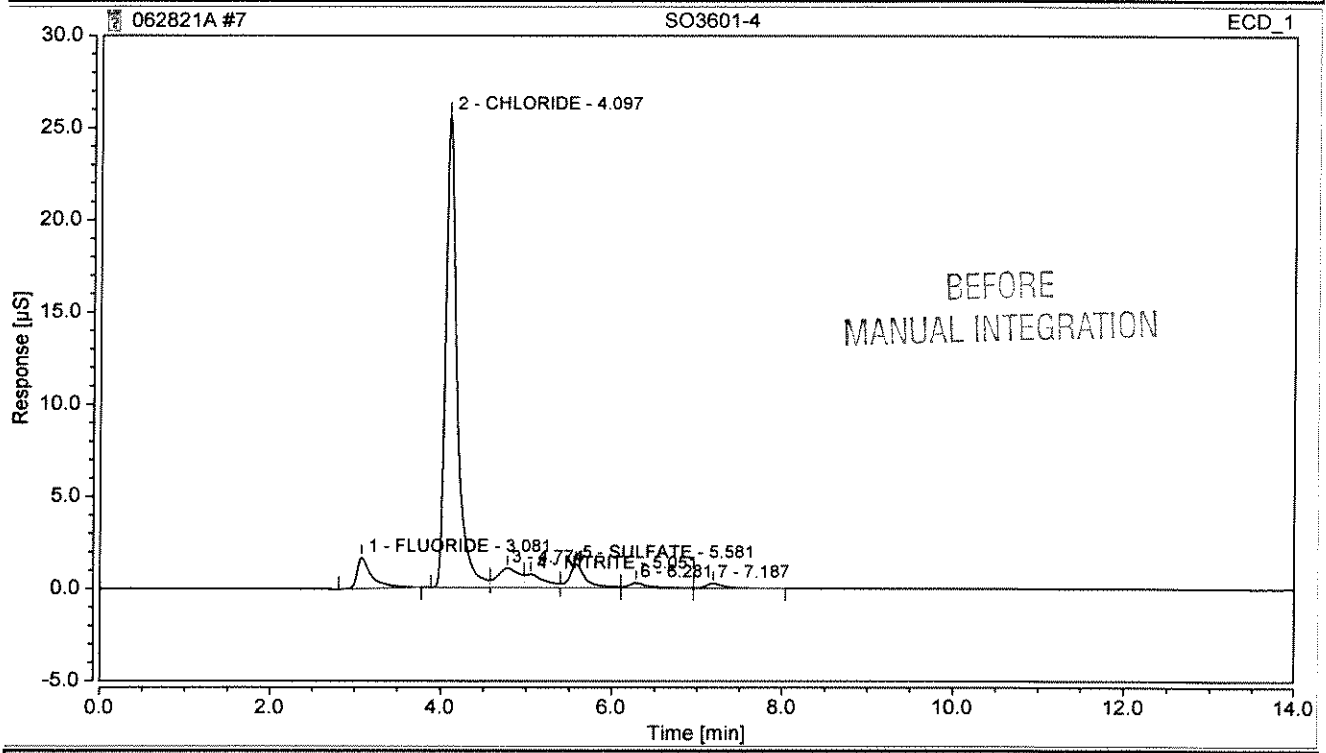
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.084	2.019	12.134	33.57	33.89	3.8404	2.4095
2	CHLORIDE	4.087	1.172	8.245	19.48	23.03	3.6265	-3.2947
3	NITRITE	4.751	0.815	4.862	13.55	13.58	1.1724	2.8396
4	SULFATE	5.567	0.850	4.694	14.14	13.11	3.5188	-6.1644
5	BROMIDE	6.257	0.495	2.699	8.23	7.54	3.6794	-1.8832
6	NITRATE	7.154	0.664	3.173	11.03	8.86	0.8177	-3.2264
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**6.014**	**35.806**	**100.00**	**100.00**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3601-4**	*Run Time (min):*	**13.99**
Vial Number:	**7**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 16:49**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

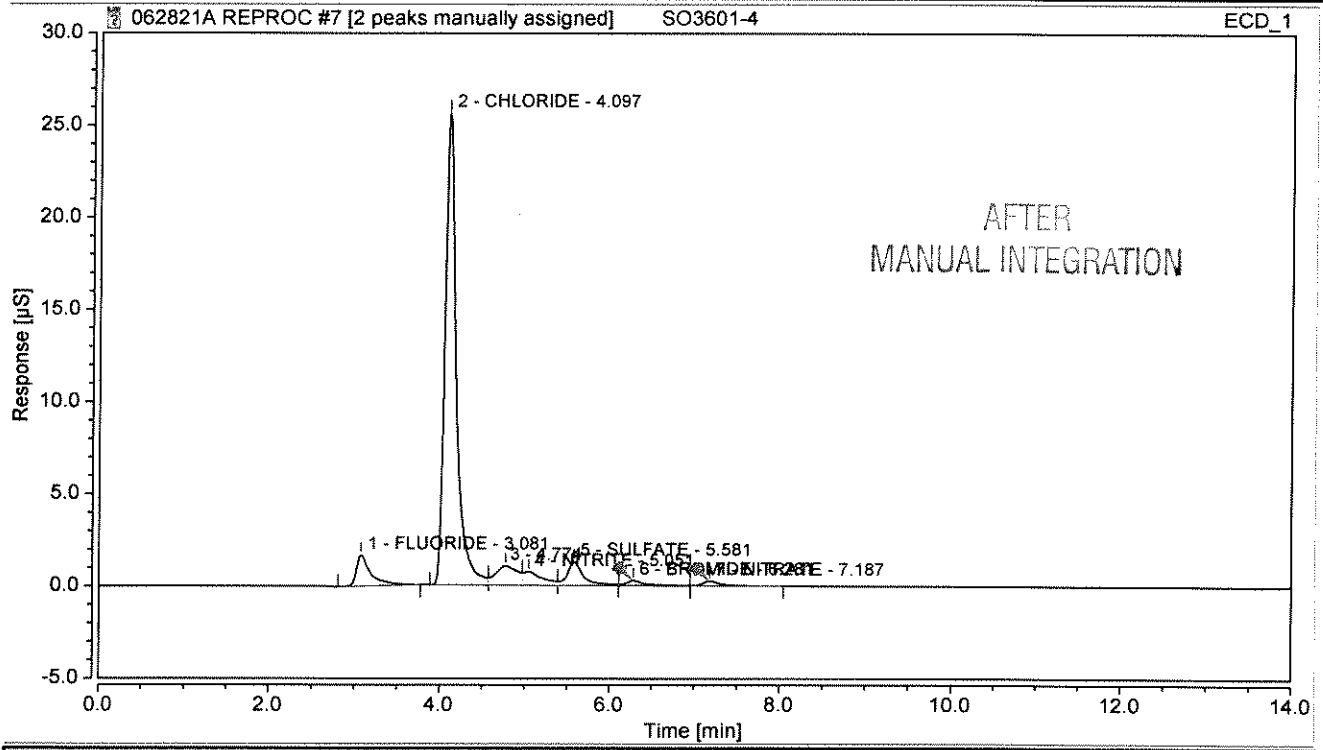
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.081	0.330	1.694	6.29	5.48	0.6274	n.a.
2	CHLORIDE	4.097	3.987	25.628	76.10	82.85	12.2812	n.a.
4	NITRITE	5.051	0.198	0.730	3.77	2.36	0.2842	n.a.
5	SULFATE	5.581	0.284	1.298	5.42	4.20	1.1763	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NITRATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**4.799**	**29.349**	**91.59**	**94.88**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3601-4**	*Run Time (min):*	**13.99**
Vial Number:	**7**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 16:49**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

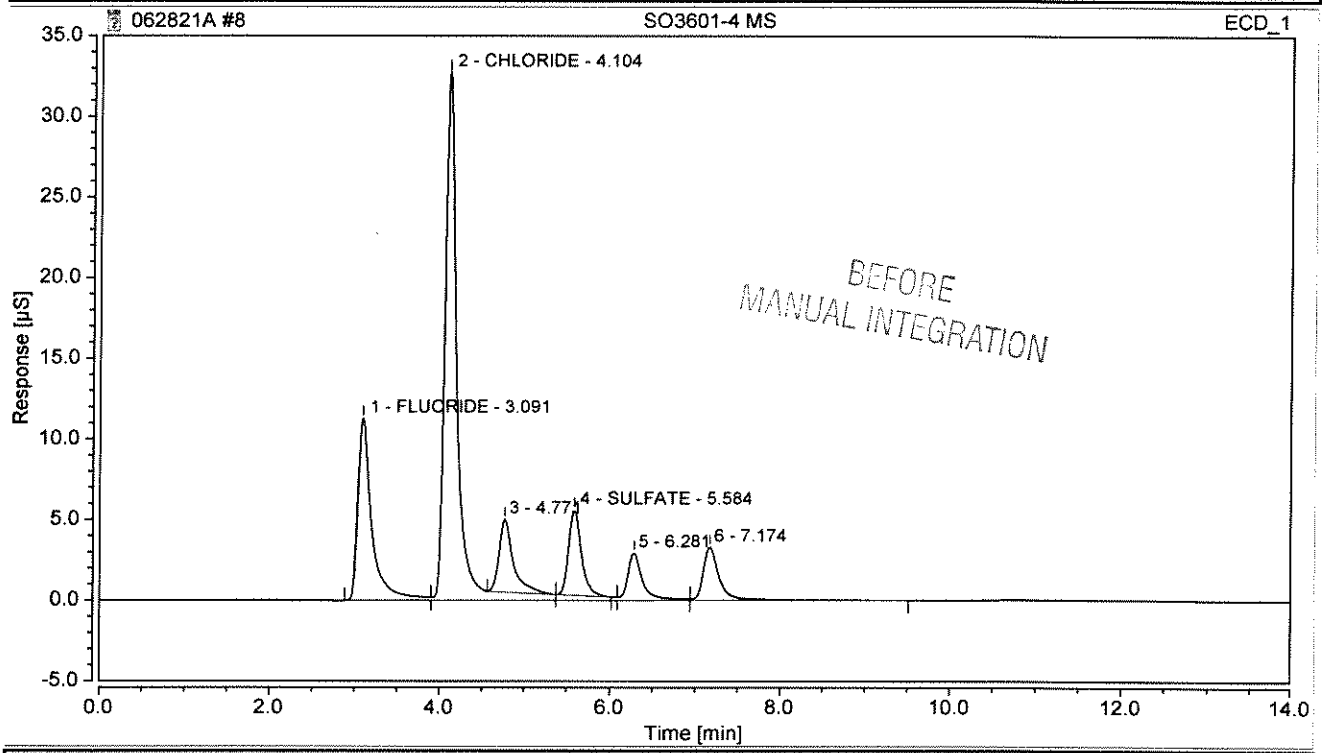
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.081	0.330	1.694	6.29	5.48	0.6274	n.a.
2	CHLORIDE	4.097	3.987	25.628	76.10	82.85	12.2812	n.a.
4	NITRITE	5.051	0.198	0.730	3.77	2.36	0.2842	n.a.
5	SULFATE	5.581	0.284	1.298	5.42	4.20	1.1763	n.a.
6	BROMIDE	6.281	0.071	0.276	1.35	0.89	0.3758	n.a.
7	NITRATE	7.187	0.061	0.260	1.16	0.84	0.0883	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**4.931**	**29.885**	**94.10**	**96.61**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3601-4 MS**	*Run Time (min):*	**13.98**
Vial Number:	**8**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 17:04**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

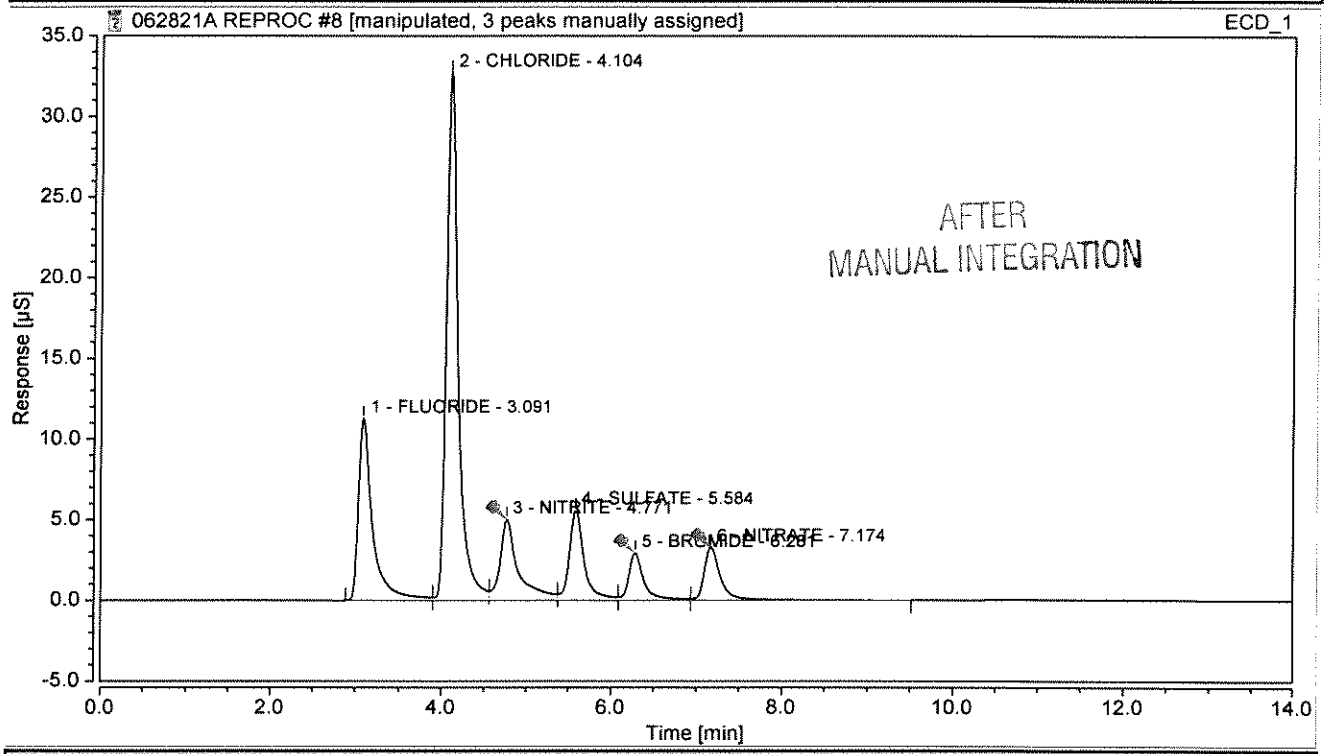
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.091	2.158	11.289	19.30	18.79	4.1053	n.a.
2	CHLORIDE	4.104	5.860	32.744	52.39	54.51	18.0366	n.a.
n.a.	NITRITE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4	SULFATE	5.584	0.922	5.277	8.24	8.78	3.8166	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NITRATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**8.941**	**49.309**	**79.94**	**82.08**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3601-4 MS**	*Run Time (min):*	**13.98**
Vial Number:	**8**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 17:04**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

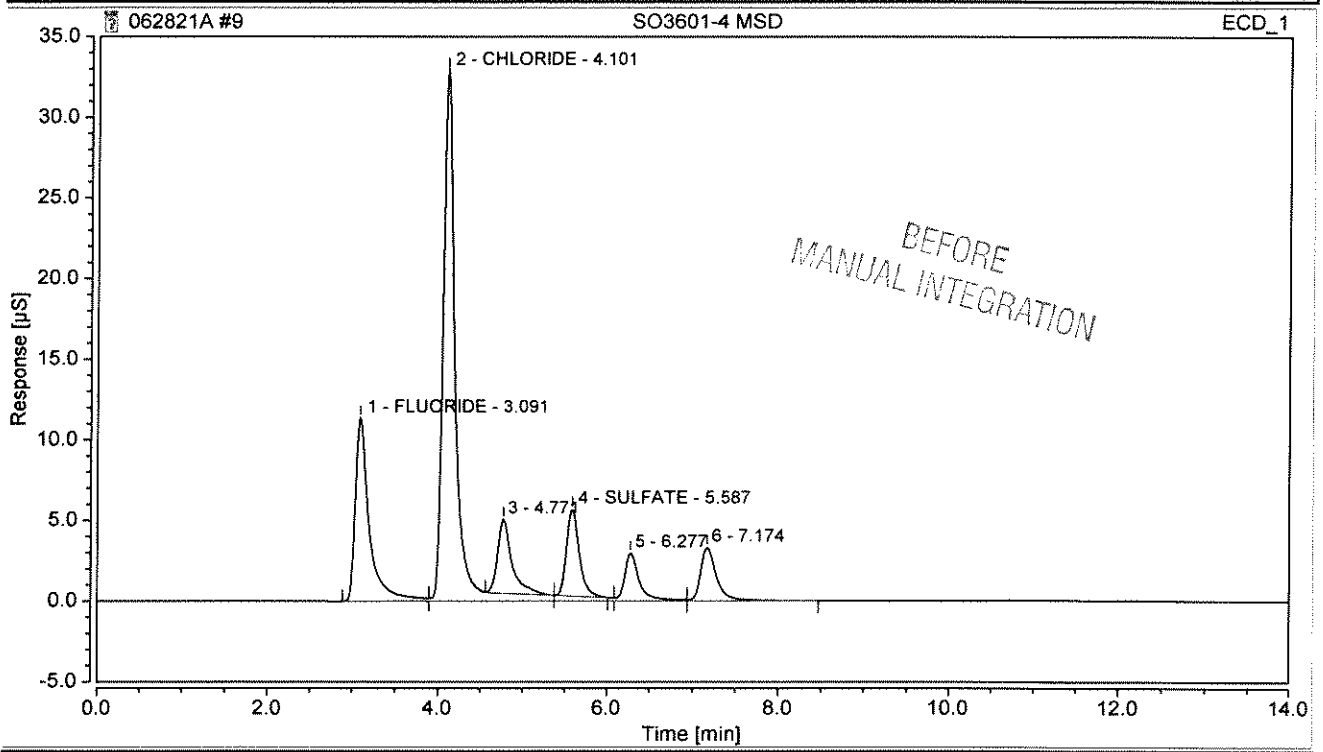
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.091	2.158	11.289	19.30	18.54	4.1053	n.a.
2	CHLORIDE	4.104	5.285	32.744	47.26	53.77	16.2700	n.a.
3	NITRITE	4.771	1.263	5.031	11.29	8.26	1.8171	n.a.
4	SULFATE	5.584	1.124	5.594	10.05	9.19	4.6508	n.a.
5	BROMIDE	6.281	0.605	2.948	5.41	4.84	4.0185	n.a.
6	NITRATE	7.174	0.749	3.292	6.70	5.41	0.9212	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**11.184**	**60.898**	**100.00**	**100.00**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3601-4 MSD**	*Run Time (min):*	**13.99**
Vial Number:	**9**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMltest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 17:19**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

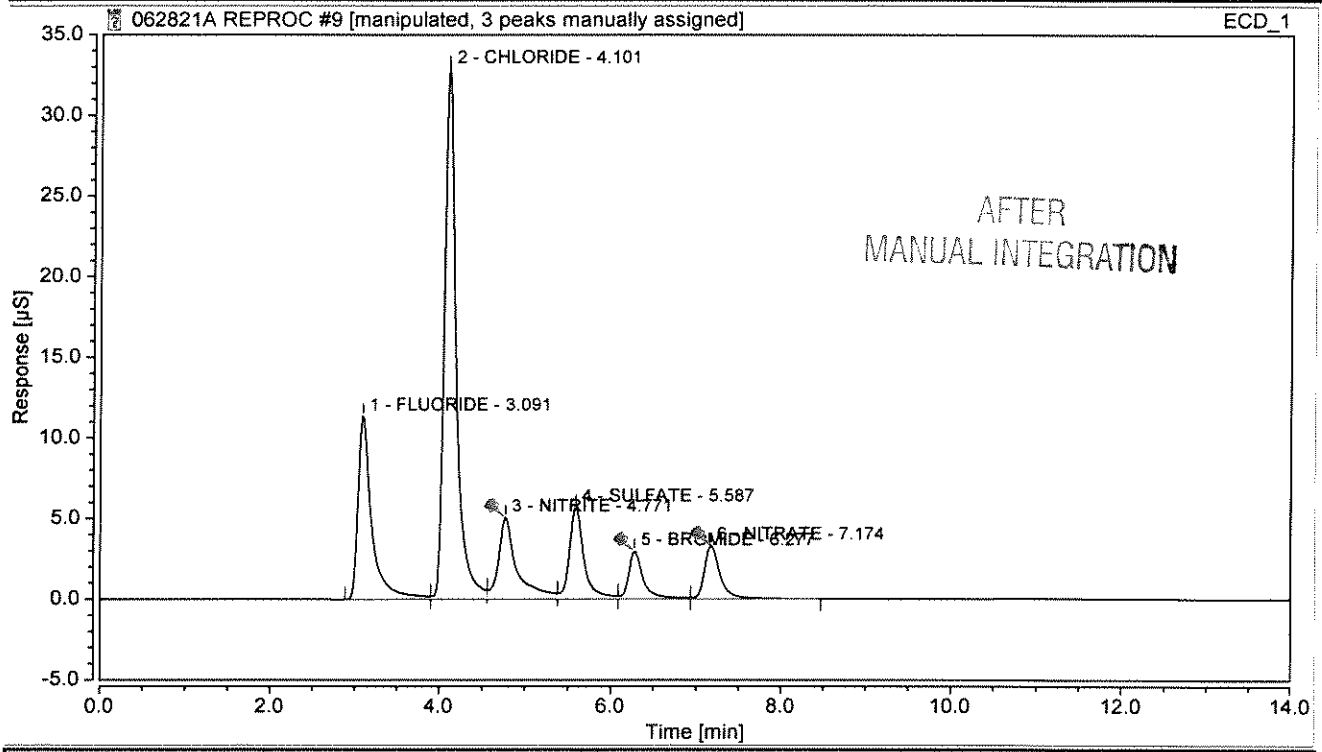
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.091	2.180	11.367	19.51	18.78	4.1457	n.a.
2	CHLORIDE	4.101	5.846	32.913	52.34	54.37	17.9943	n.a.
n.a.	NITRITE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4	SULFATE	5.587	0.936	5.389	8.38	8.90	3.8744	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NITRATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**8.962**	**49.669**	**80.23**	**82.06**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3601-4 MSD**	*Run Time (min):*	**13.99**
Vial Number:	**9**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 17:19**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

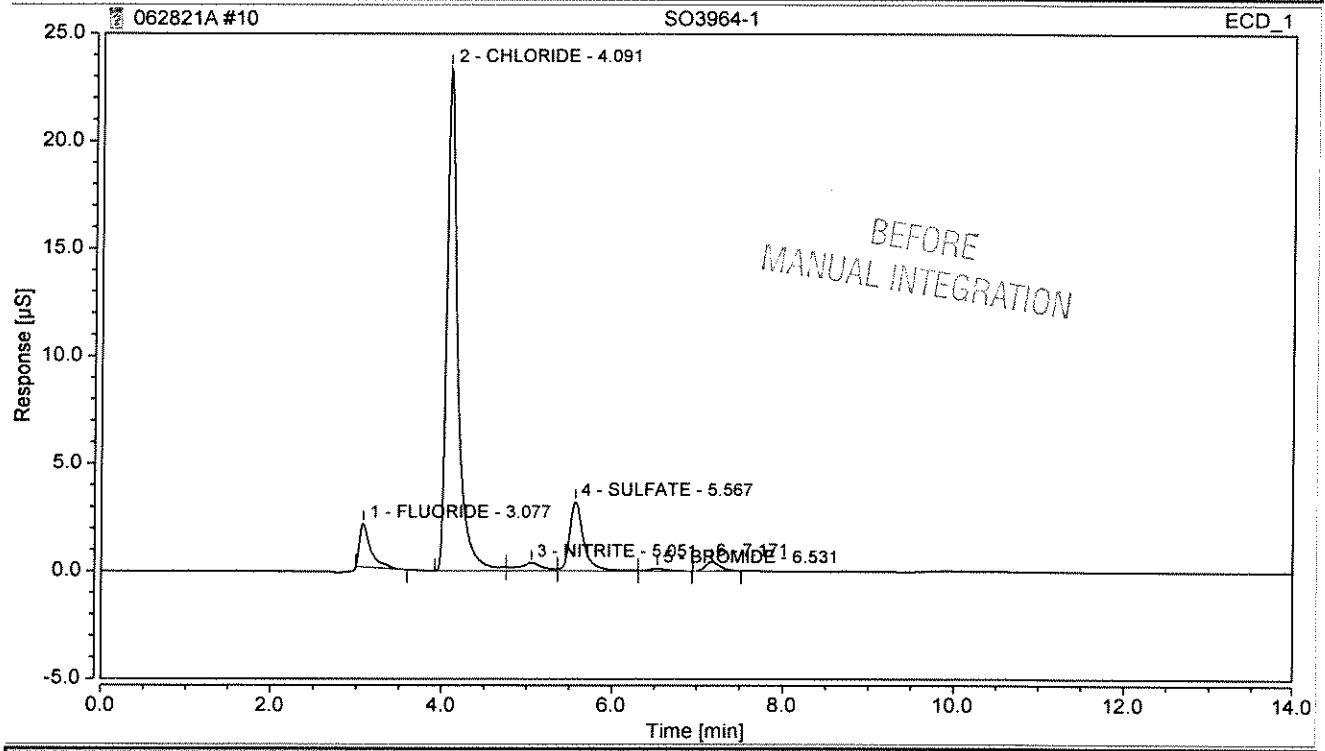
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.091	2.180	11.367	19.51	18.53	4.1457	n.a.
2	CHLORIDE	4.101	5.288	32.913	47.34	53.67	16.2783	n.a.
3	NITRITE	4.771	1.261	5.070	11.29	8.27	1.8149	n.a.
4	SULFATE	5.587	1.129	5.695	10.11	9.29	4.6716	n.a.
5	BROMIDE	6.277	0.599	2.970	5.36	4.84	4.0484	n.a.
6	NITRATE	7.174	0.714	3.315	6.39	5.40	0.8784	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**11.170**	**61.329**	**100.00**	**100.00**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3964-1**	*Run Time (min):*	**13.97**
Vial Number:	**10**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 17:34**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

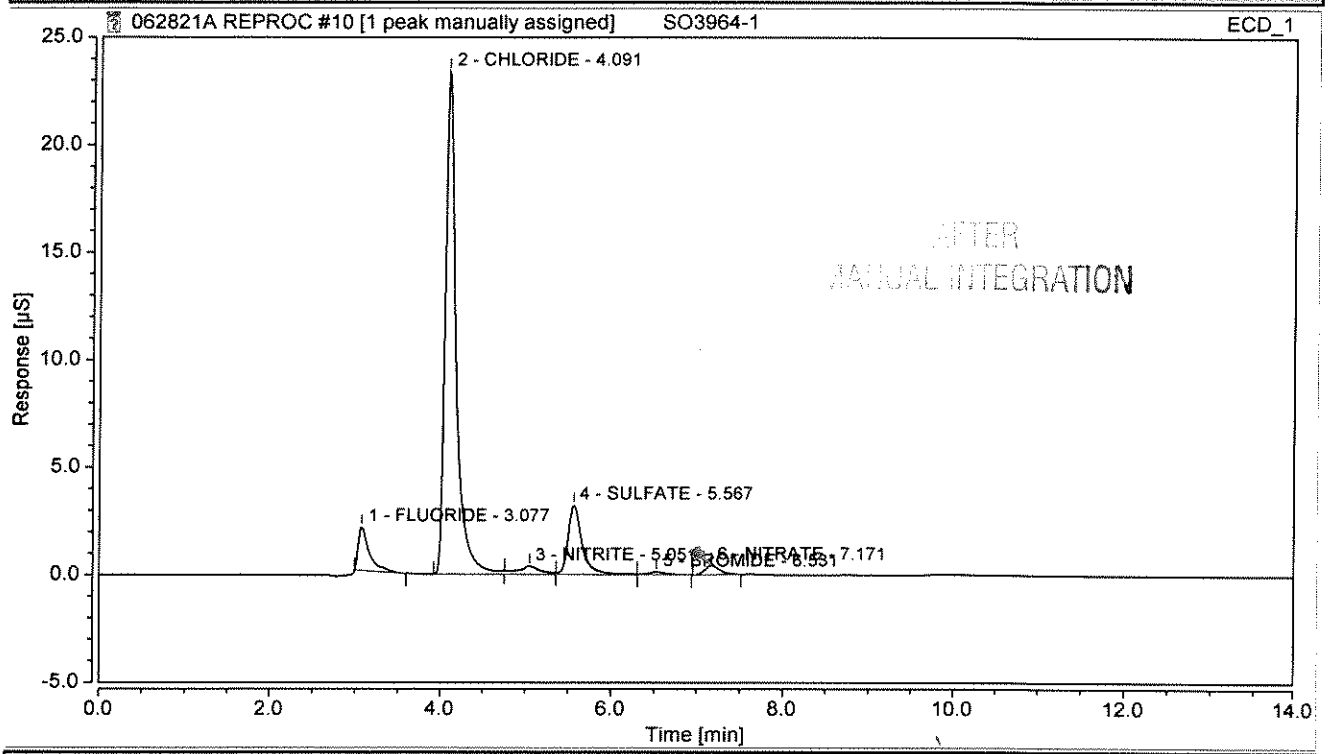
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.077	0.306	2.032	6.54	6.86	0.5821	n.a.
2	CHLORIDE	4.091	3.523	23.404	75.31	79.06	10.8549	n.a.
3	NITRITE	5.051	0.123	0.383	2.63	1.29	0.1770	n.a.
4	SULFATE	5.567	0.612	3.230	13.08	10.91	2.5332	n.a.
5	BROMIDE	6.531	0.030	0.120	0.63	0.40	0.1633	n.a.
n.a.	NITRATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**4.594**	**29.169**	**98.20**	**98.54**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3964-1**	*Run Time (min):*	**13.97**
Vial Number:	**10**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 17:34**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

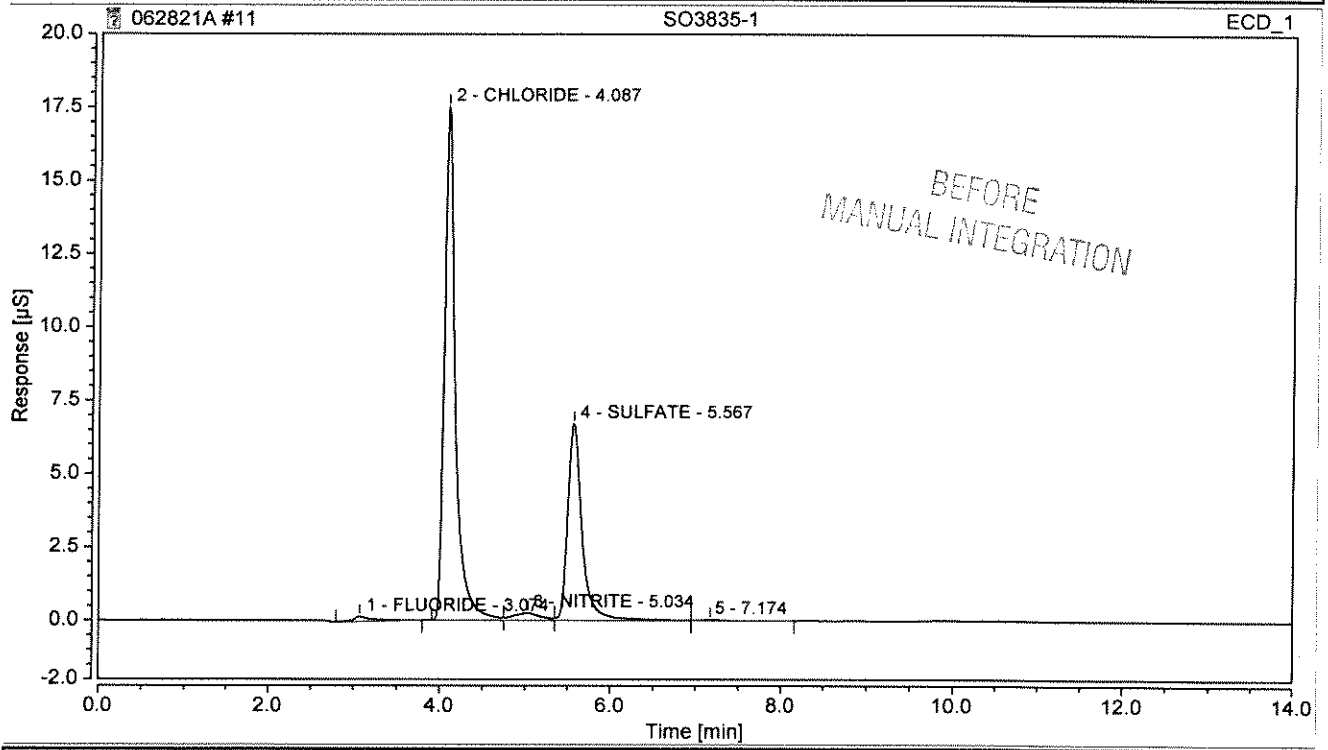
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.077	0.306	2.032	6.54	6.86	0.5821	n.a.
2	CHLORIDE	4.091	3.523	23.404	75.31	79.06	10.8549	n.a.
3	NITRITE	5.051	0.123	0.383	2.63	1.29	0.1770	n.a.
4	SULFATE	5.567	0.612	3.230	13.08	10.91	2.5332	n.a.
5	BROMIDE	6.531	0.030	0.120	0.63	0.40	0.1633	n.a.
6	NITRATE	7.171	0.084	0.433	1.80	1.46	0.1165	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**4.678**	**29.602**	**100.00**	**100.00**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3835-1**	*Run Time (min):*	**13.99**
Vial Number:	**11**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMitest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**5.0**
Injection Date/Time:	**28/Jun/21 17:49**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

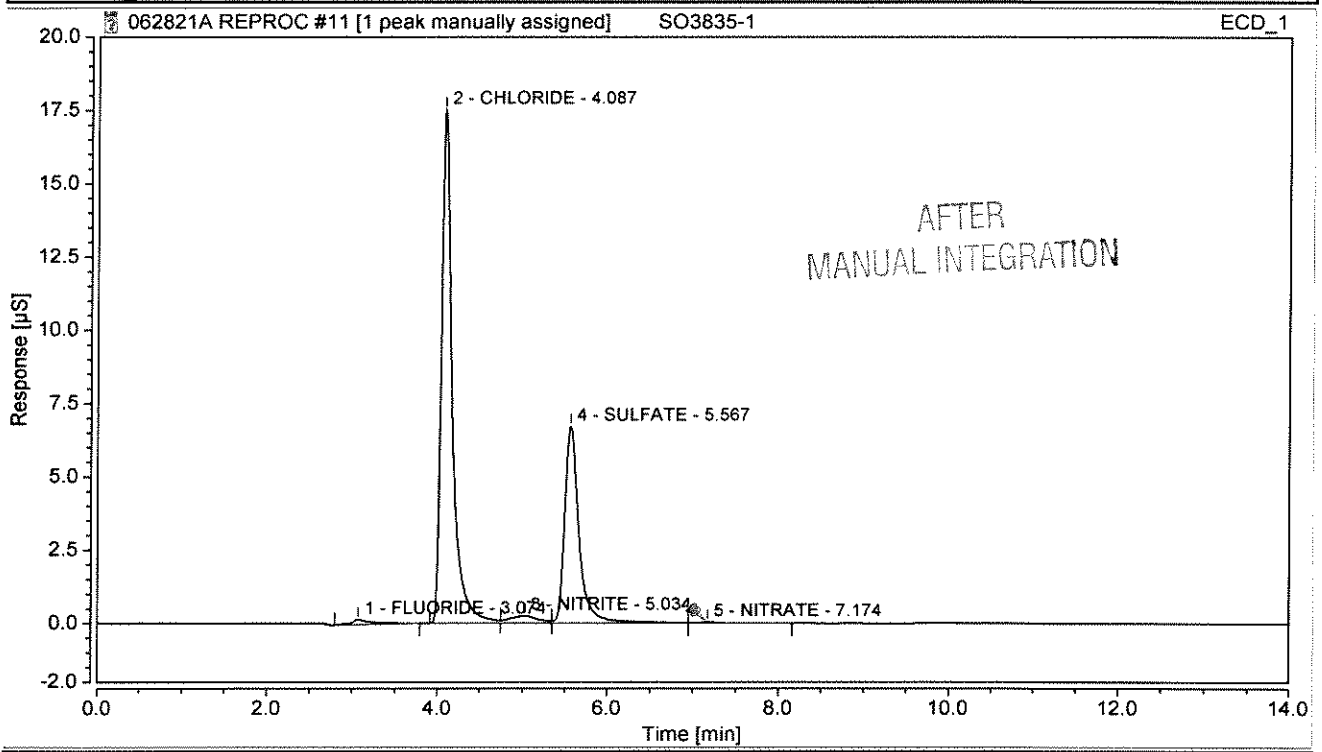
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.074	0.049	0.171	1.19	0.69	0.4635	n.a.
2	CHLORIDE	4.087	2.635	17.519	64.23	70.95	40.6272	n.a.
3	NITRITE	5.034	0.096	0.252	2.33	1.02	0.6876	n.a.
4	SULFATE	5.567	1.311	6.714	31.95	27.19	27.1332	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NITRATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**4.091**	**24.657**	**99.70**	**99.85**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3835-1**	*Run Time (min):*	**13.99**
Vial Number:	**11**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**5.0**
Injection Date/Time:	**28/Jun/21 17:49**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

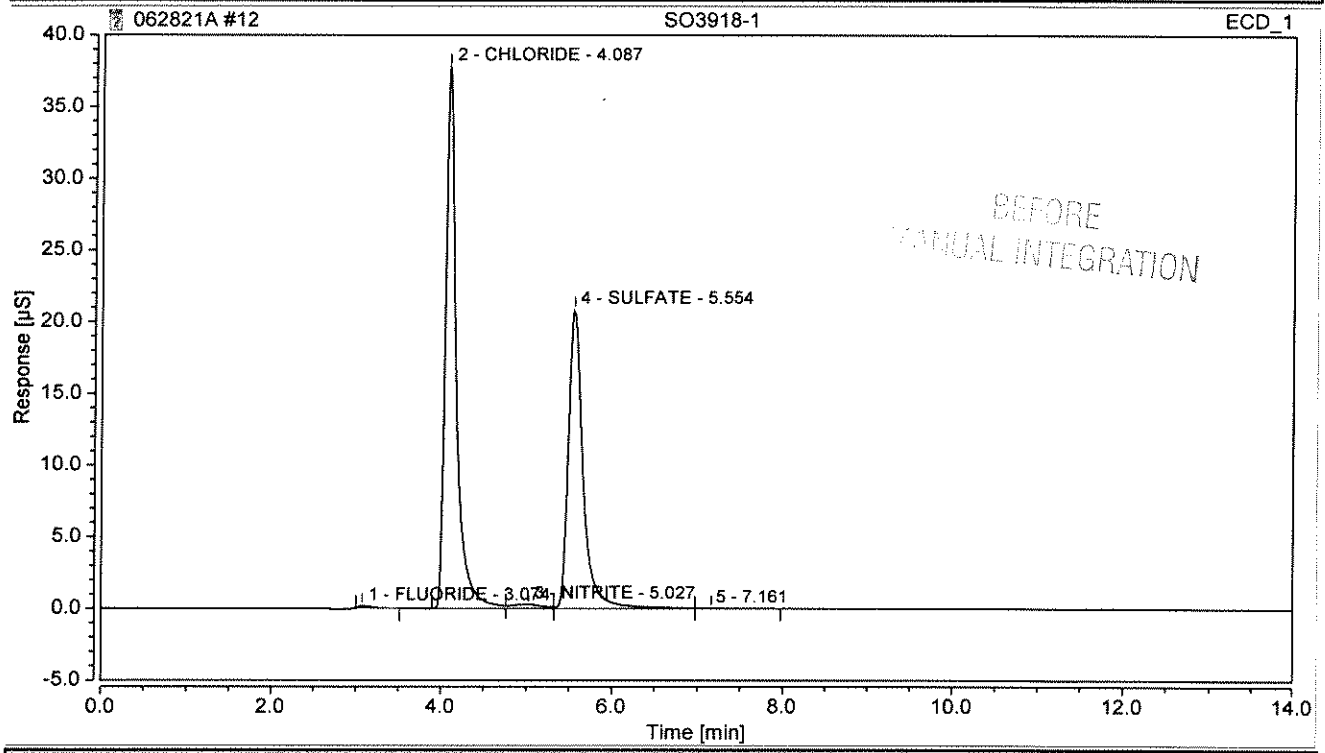
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.074	0.049	0.171	1.19	0.69	0.4635	n.a.
2	CHLORIDE	4.087	2.635	17.519	64.23	70.95	40.6272	n.a.
3	NITRITE	5.034	0.096	0.252	2.33	1.02	0.6876	n.a.
4	SULFATE	5.567	1.311	6.714	31.95	27.19	27.1332	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5	NITRATE	7.174	0.012	0.037	0.30	0.15	0.1474	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**4.103**	**24.693**	**100.00**	**100.00**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3918-1**	*Run Time (min):*	**13.98**
Vial Number:	**12**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMltest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**2.0**
Injection Date/Time:	**28/Jun/21 18:04**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

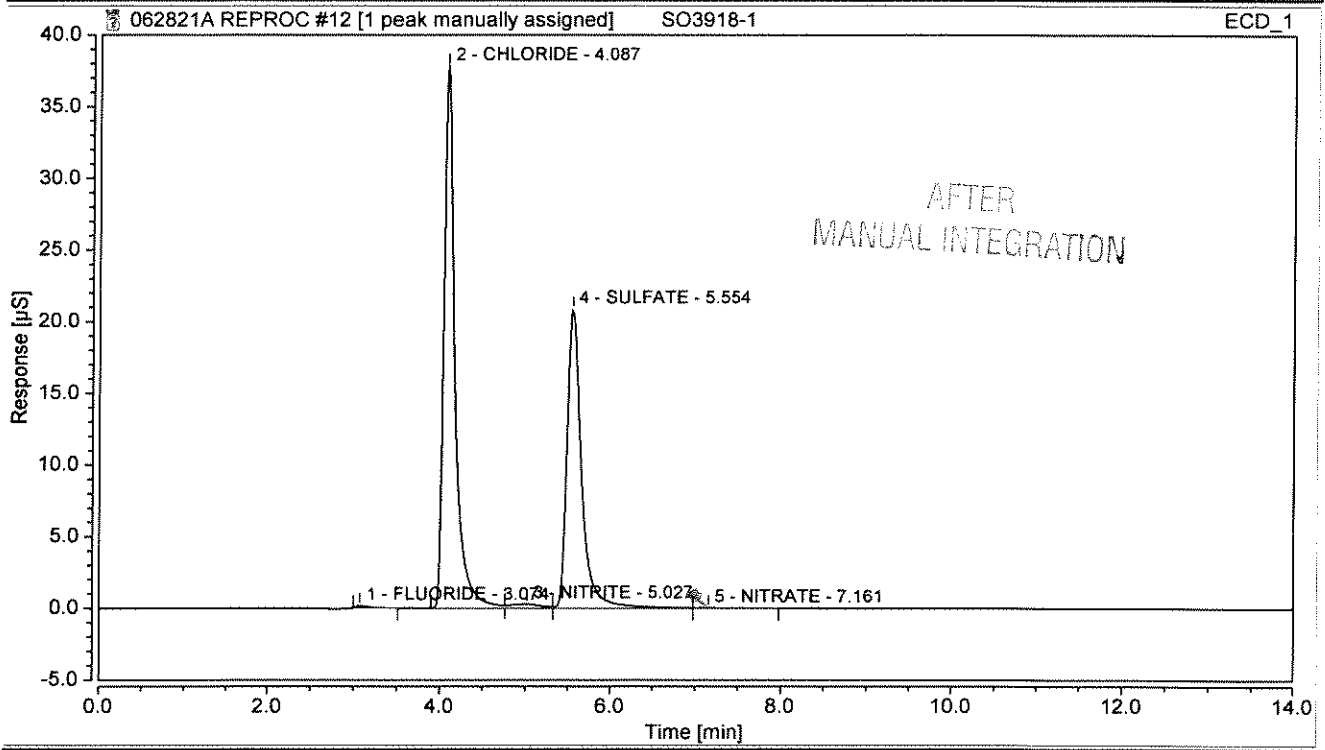
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.074	0.024	0.150	0.24	0.25	0.0928	n.a.
2	CHLORIDE	4.087	5.699	37.826	56.86	63.93	35.0812	n.a.
3	NITRITE	5.027	0.115	0.289	1.14	0.49	0.3296	n.a.
4	SULFATE	5.554	4.171	20.875	41.62	35.28	34.5299	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NITRATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**10.009**	**59.139**	**99.88**	**99.95**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3918-1**	*Run Time (min):*	**13.98**
Vial Number:	**12**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**2.0**
Injection Date/Time:	**28/Jun/21 18:04**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

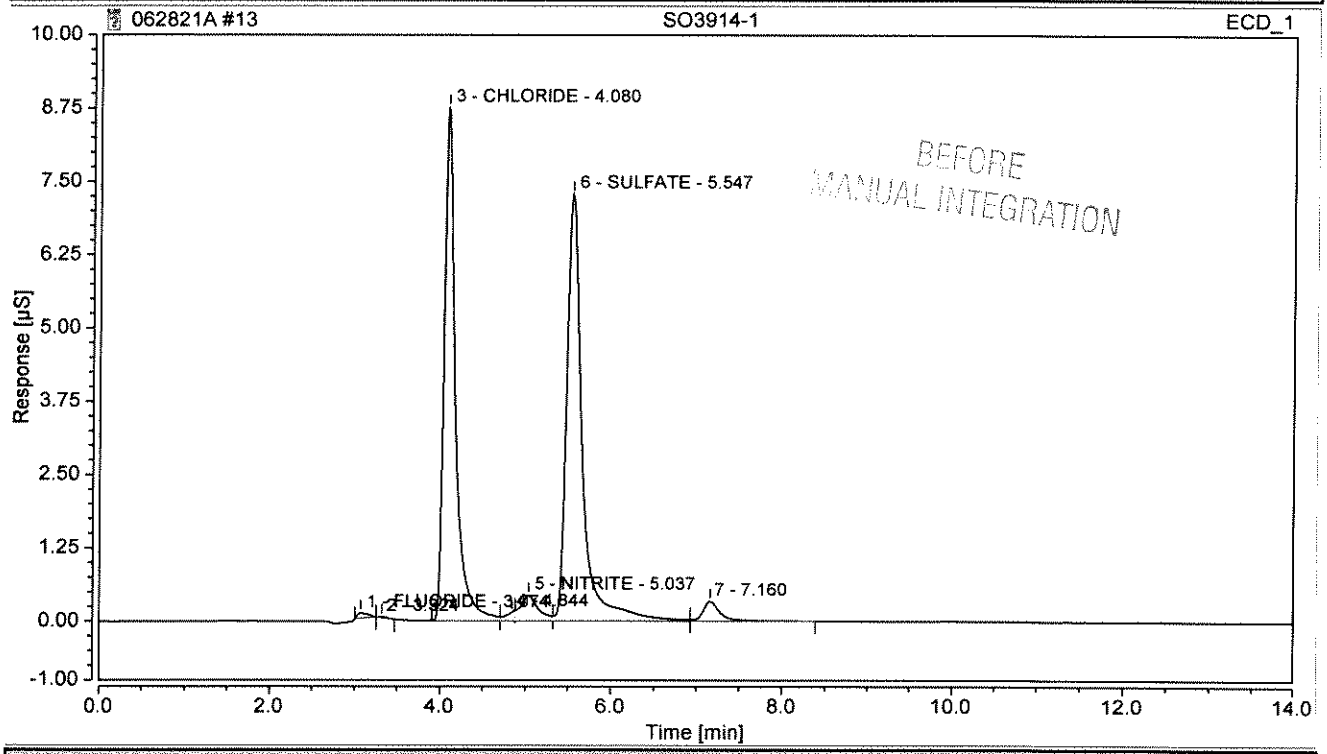
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.074	0.024	0.150	0.24	0.25	0.0928	n.a.
2	CHLORIDE	4.087	5.699	37.826	56.86	63.93	35.0812	n.a.
3	NITRITE	5.027	0.115	0.289	1.14	0.49	0.3296	n.a.
4	SULFATE	5.554	4.171	20.875	41.62	35.28	34.5299	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5	NITRATE	7.161	0.012	0.029	0.12	0.05	0.0591	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**10.021**	**59.168**	**100.00**	**100.00**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3914-1**	*Run Time (min):*	**13.98**
Vial Number:	**13**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 18:19**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

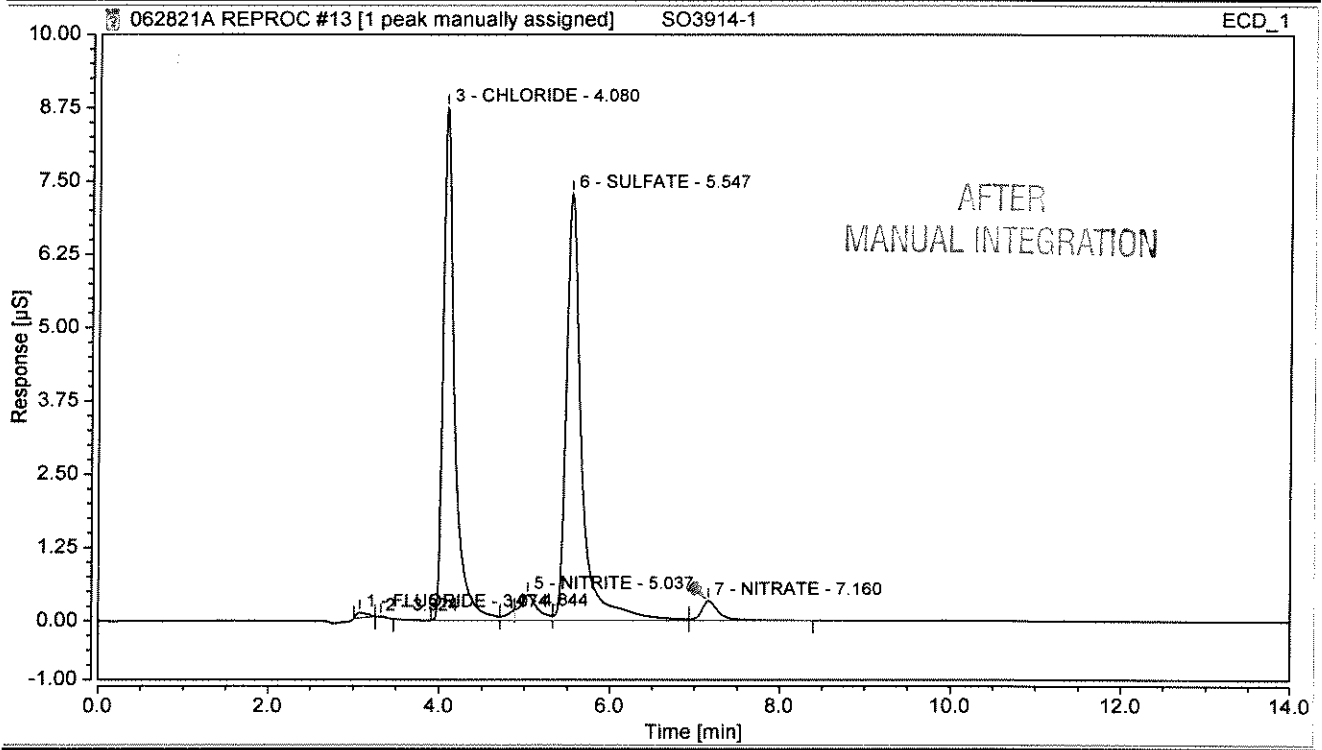
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.074	0.013	0.092	0.43	0.54	0.0250	n.a.
3	CHLORIDE	4.080	1.350	8.754	43.76	51.27	4.1749	n.a.
5	NITRITE	5.037	0.104	0.436	3.39	2.55	0.1503	n.a.
6	SULFATE	5.547	1.516	7.285	49.13	42.67	6.2740	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NITRATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**2.983**	**16.567**	**96.70**	**97.03**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3914-1**	*Run Time (min):*	**13.98**
Vial Number:	**13**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 18:19**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

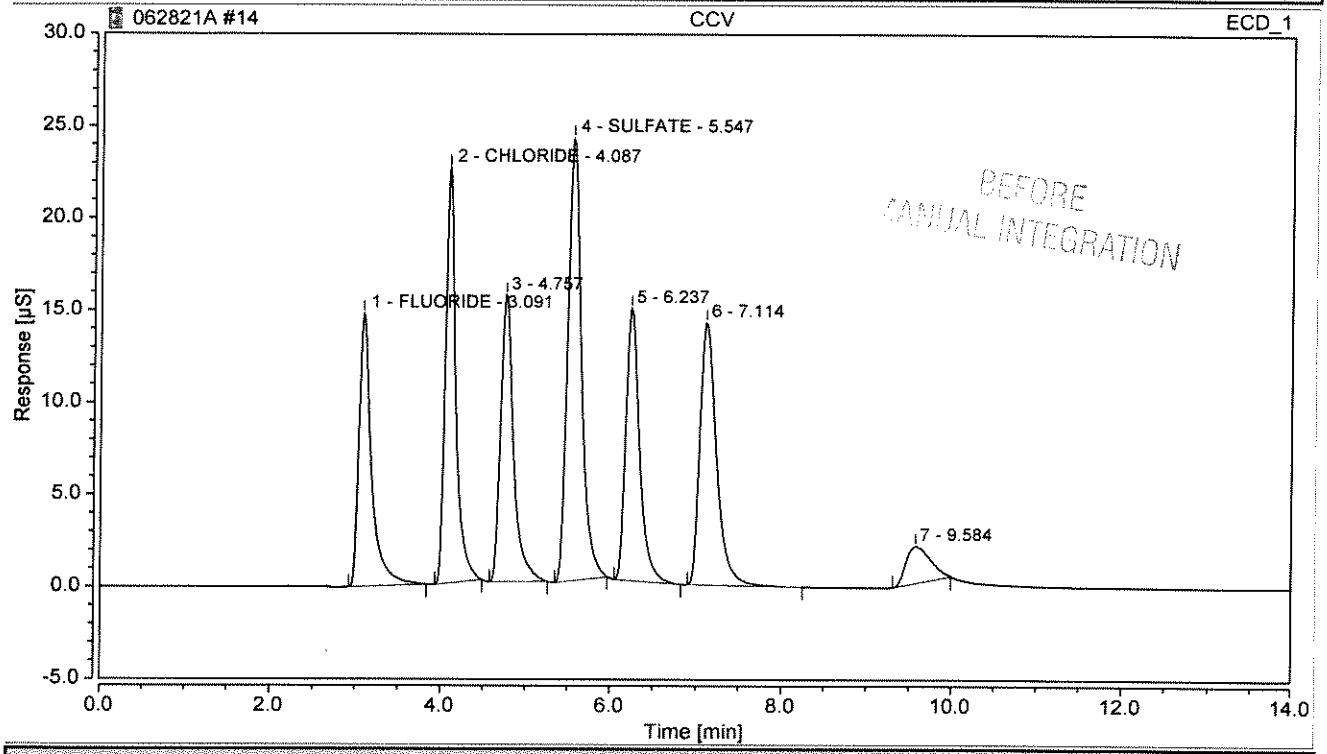
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.074	0.013	0.092	0.43	0.54	0.0250	n.a.
3	CHLORIDE	4.080	1.350	8.754	43.76	51.27	4.1749	n.a.
5	NITRITE	5.037	0.104	0.436	3.39	2.55	0.1503	n.a.
6	SULFATE	5.547	1.516	7.285	49.13	42.67	6.2740	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
7	NITRATE	7.160	0.081	0.340	2.64	1.99	0.1129	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**3.065**	**16.907**	**99.34**	**99.02**		

Chromatogram and Results

Injection Details

Injection Name:	**CCV**	*Run Time (min):*	**13.98**
Vial Number:	**14**	*Injection Volume:*	**200.00**
Injection Type:	**Check Standard**	*Channel:*	**ECD_1**
Calibration Level:	**06**	*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 18:34**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

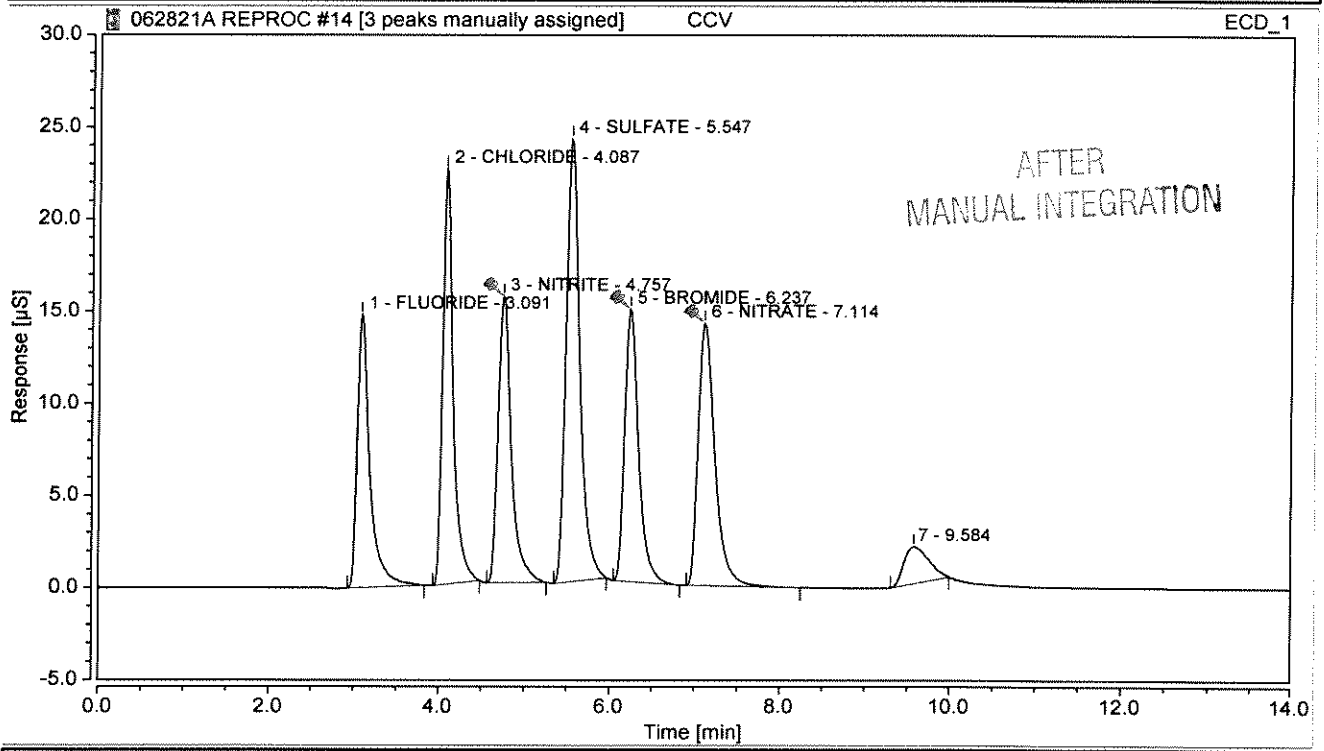
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.091	2.547	14.819	12.94	13.72	4.8436	-3.1276
2	CHLORIDE	4.087	3.223	22.556	16.37	20.89	9.9319	-0.6808
n.a.	NITRITE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4	SULFATE	5.547	4.496	24.041	22.84	22.26	18.6088	-6.9559
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NITRATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**10.266**	**61.416**	**52.14**	**56.88**		

Chromatogram and Results

Injection Details

Injection Name:	**CCV**	*Run Time (min):*	**13.98**
Vial Number:	**14**	*Injection Volume:*	**200.00**
Injection Type:	**Check Standard**	*Channel:*	**ECD_1**
Calibration Level:	**06**	*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMltest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 18:34**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

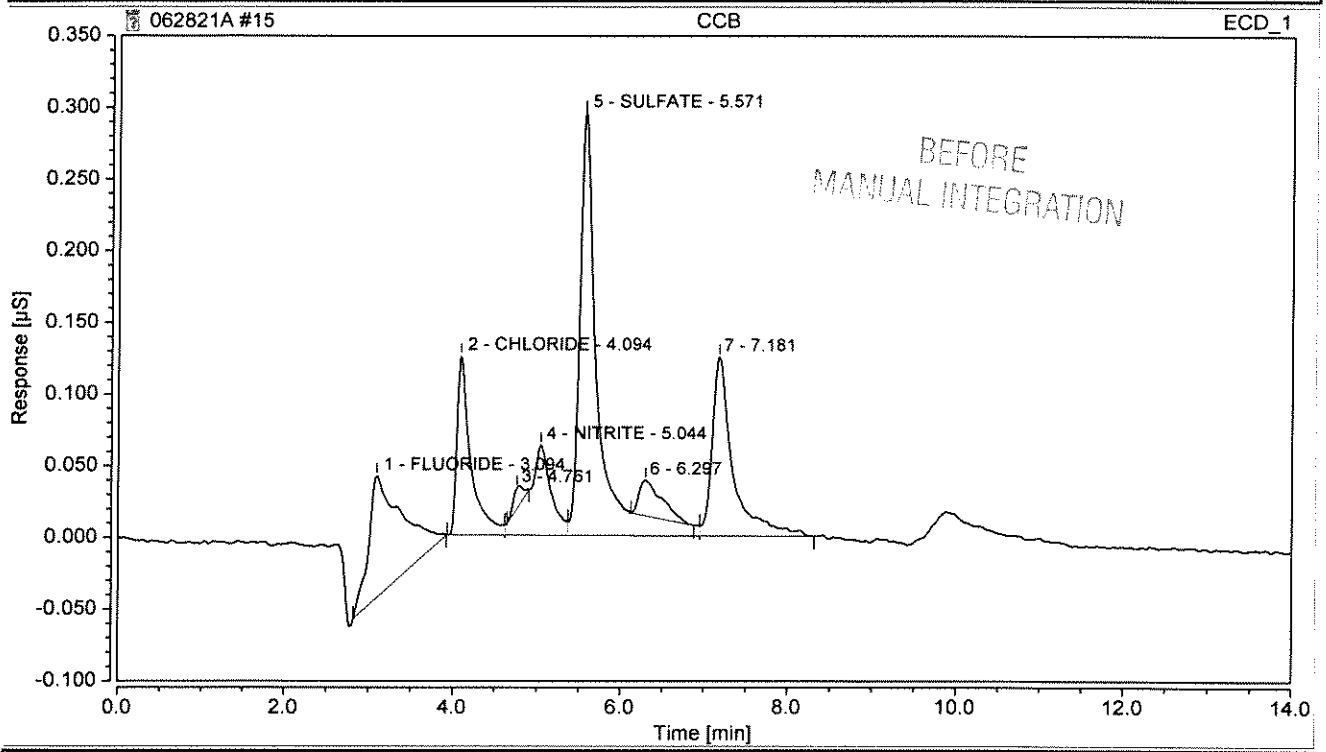
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.091	2.547	14.819	12.94	13.72	4.8436	-3.1276
2	CHLORIDE	4.087	3.223	22.556	16.37	20.89	9.9319	-0.6808
3	NITRITE	4.757	2.780	15.546	14.12	14.40	4.0012	0.0288
4	SULFATE	5.547	4.496	24.041	22.84	22.26	18.6088	-6.9559
5	BROMIDE	6.237	2.781	14.771	14.13	13.68	20.1347	0.6736
6	NITRATE	7.114	3.185	14.240	16.18	13.19	3.8692	-3.2704
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**19.012**	**105.972**	**96.57**	**98.14**		

Chromatogram and Results

Injection Details

Injection Name:	**CCB**	*Run Time (min):*	**13.99**
Vial Number:	**15**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 18:49**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

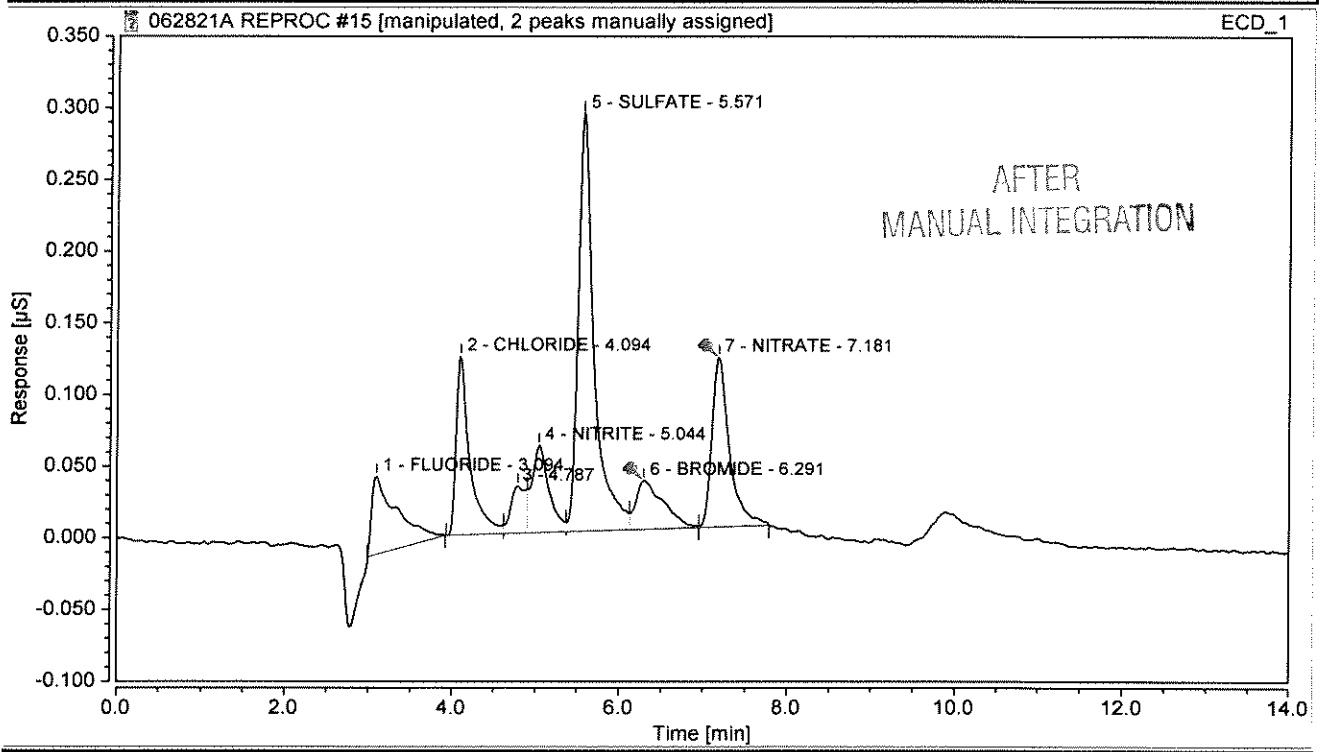
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.094	0.037	0.085	18.28	11.63	0.0712	n.a.
2	CHLORIDE	4.094	0.024	0.125	11.92	17.10	0.1006	n.a.
4	NITRITE	5.044	0.021	0.063	10.29	8.60	0.0303	n.a.
5	SULFATE	5.571	0.076	0.295	37.02	40.26	0.3138	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NITRATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.159**	**0.568**	**77.51**	**77.59**		

Chromatogram and Results

Injection Details

Injection Name:	**CCB**	*Run Time (min):*	**13.99**
Vial Number:	**15**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 18:49**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

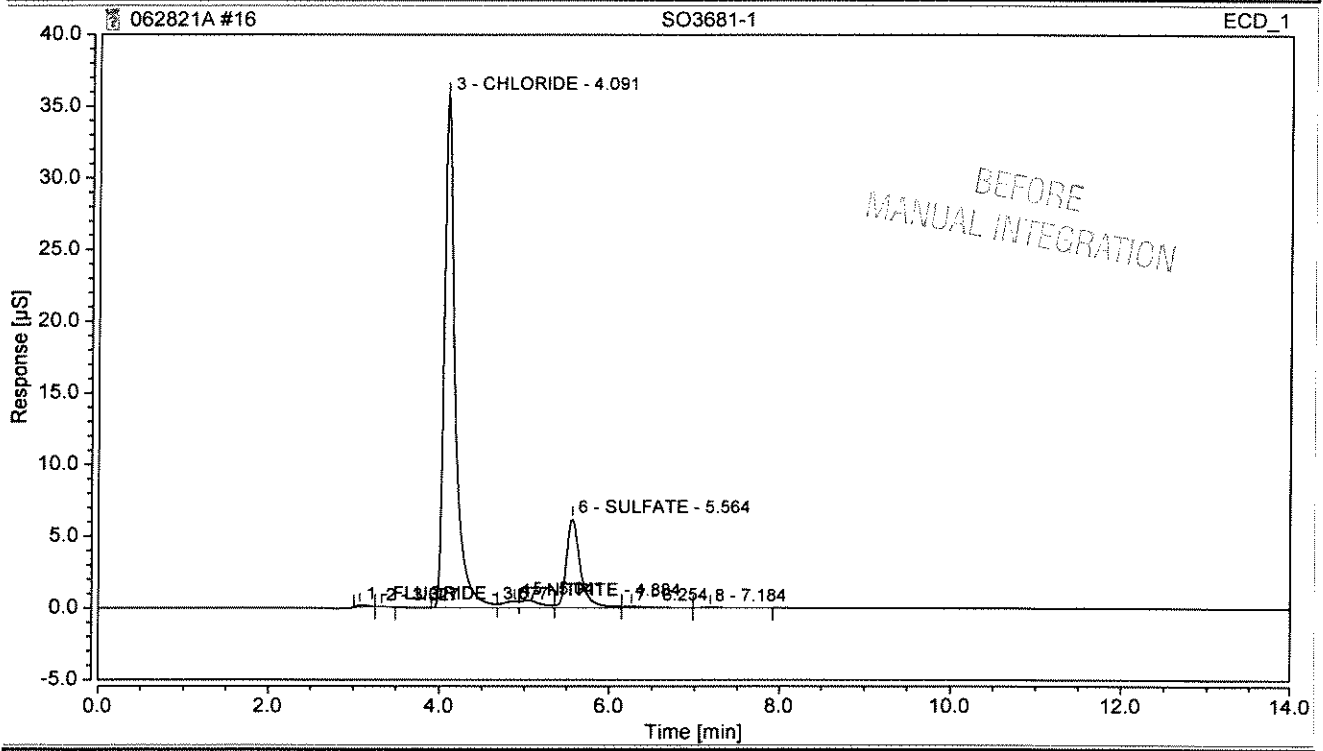
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.094	0.019	0.055	11.13	7.63	0.0359	n.a.
2	CHLORIDE	4.094	0.024	0.125	14.13	17.42	0.0991	n.a.
4	NITRITE	5.044	0.015	0.061	8.62	8.47	0.0210	n.a.
5	SULFATE	5.571	0.064	0.291	37.67	40.66	0.2641	n.a.
6	BROMIDE	6.291	0.013	0.034	7.69	4.74	0.0463	n.a.
7	NITRATE	7.181	0.028	0.118	16.79	16.51	0.0489	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.163**	**0.684**	**96.04**	**95.43**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3681-1**	*Run Time (min):*	**13.98**
Vial Number:	**16**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 19:04**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

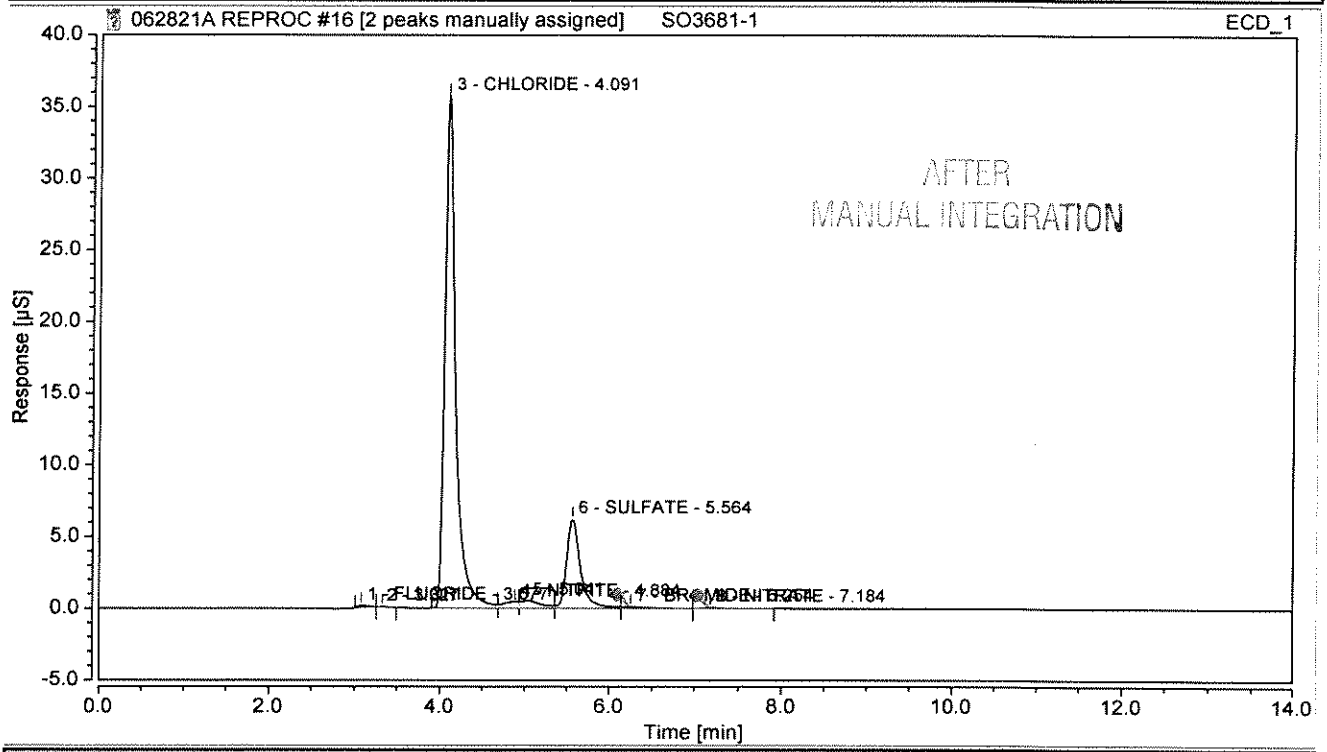
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.077	0.018	0.133	0.26	0.31	0.0337	n.a.
3	CHLORIDE	4.091	5.352	35.755	78.12	82.62	16.4752	n.a.
4	NITRITE	4.884	0.095	0.449	1.38	1.04	0.1360	n.a.
6	SULFATE	5.564	1.182	6.220	17.25	14.37	4.8925	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NITRATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**6.646**	**42.556**	**97.02**	**98.34**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3681-1**	*Run Time (min):*	**13.98**
Vial Number:	**16**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 19:04**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

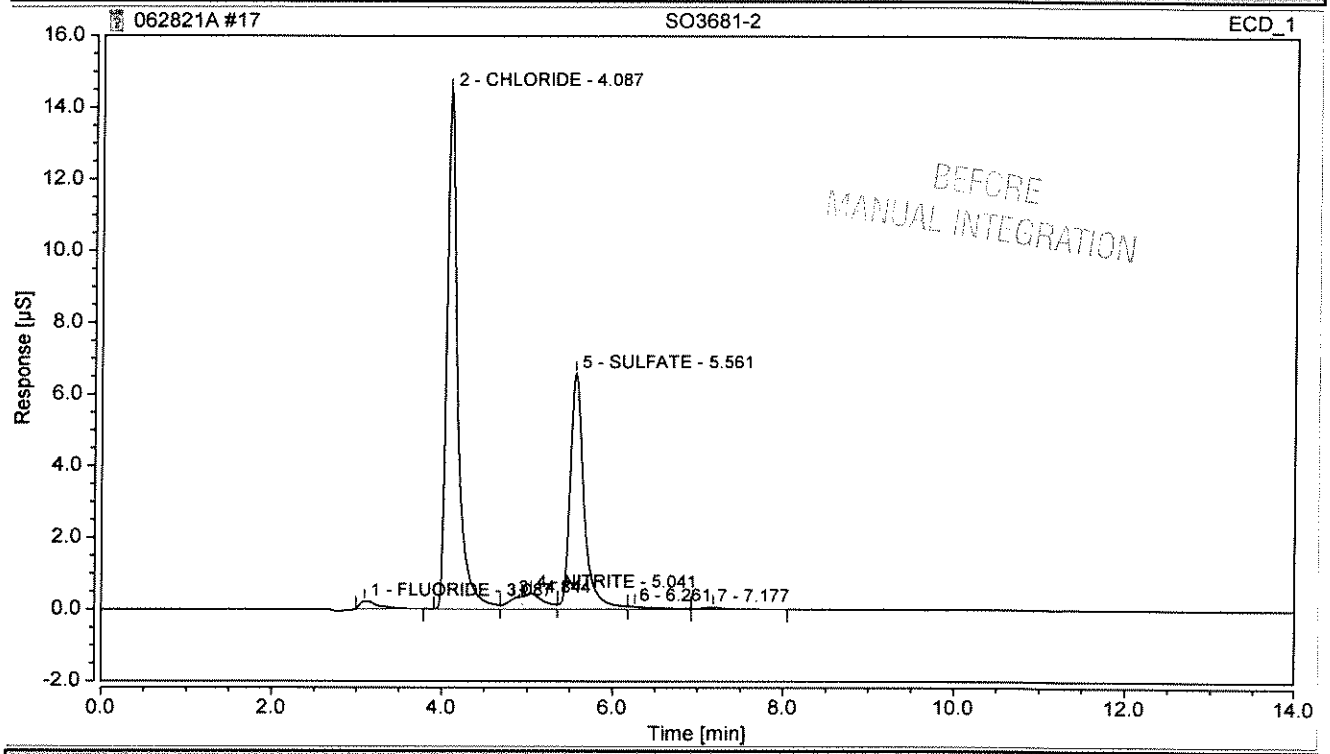
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.077	0.018	0.133	0.26	0.31	0.0337	n.a.
3	CHLORIDE	4.091	5.352	35.755	78.12	82.62	16.4752	n.a.
4	NITRITE	4.884	0.095	0.449	1.38	1.04	0.1360	n.a.
6	SULFATE	5.564	1.182	6.220	17.25	14.37	4.8925	n.a.
7	BROMIDE	6.254	0.039	0.106	0.56	0.24	0.1438	n.a.
8	NITRATE	7.184	0.016	0.052	0.23	0.12	0.0334	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**6.701**	**42.714**	**97.81**	**98.70**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3681-2**	*Run Time (min):*	**13.98**
Vial Number:	**17**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 19:19**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

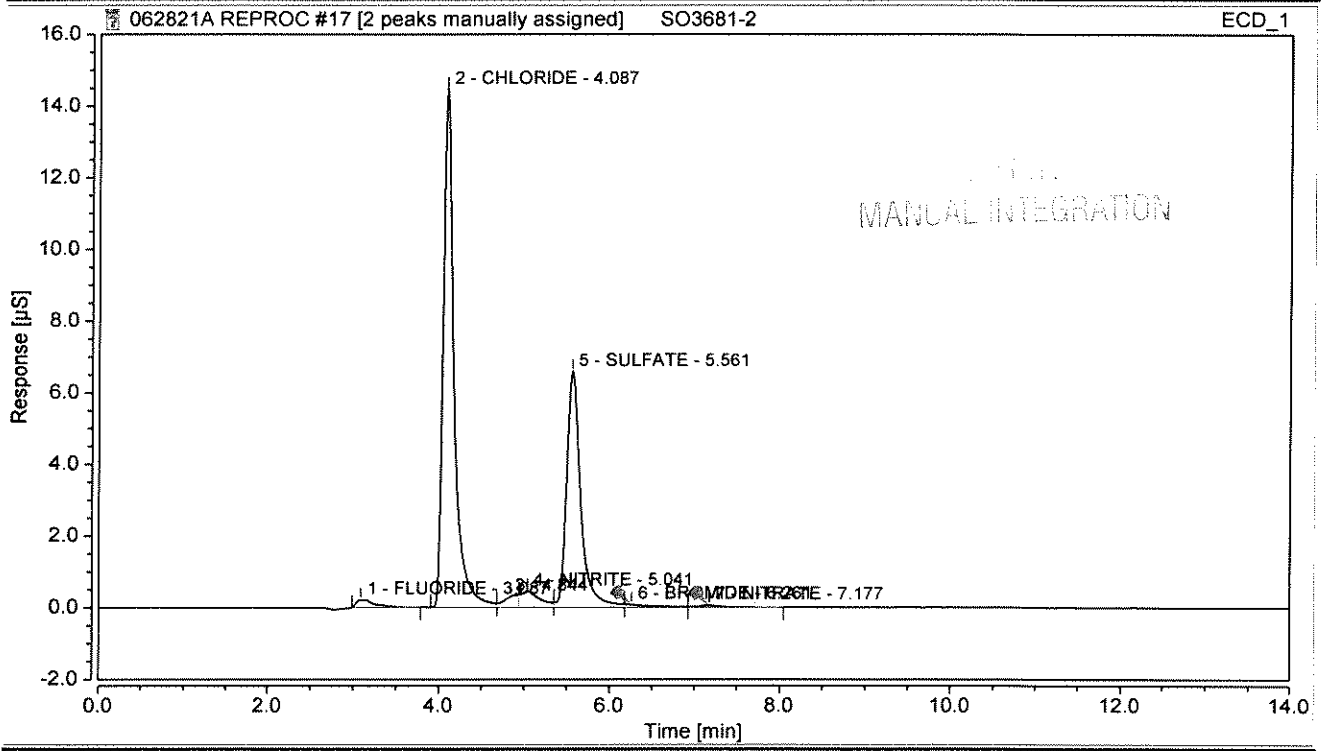
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.087	0.054	0.206	1.47	0.93	0.1028	n.a.
2	CHLORIDE	4.087	2.155	14.449	58.51	65.38	6.6505	n.a.
4	NITRITE	5.041	0.117	0.445	3.17	2.01	0.1682	n.a.
5	SULFATE	5.561	1.252	6.575	34.00	29.75	5.1837	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NITRATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**3.579**	**21.676**	**97.14**	**98.09**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3681-2**	*Run Time (min):*	**13.98**
Vial Number:	**17**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 19:19**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

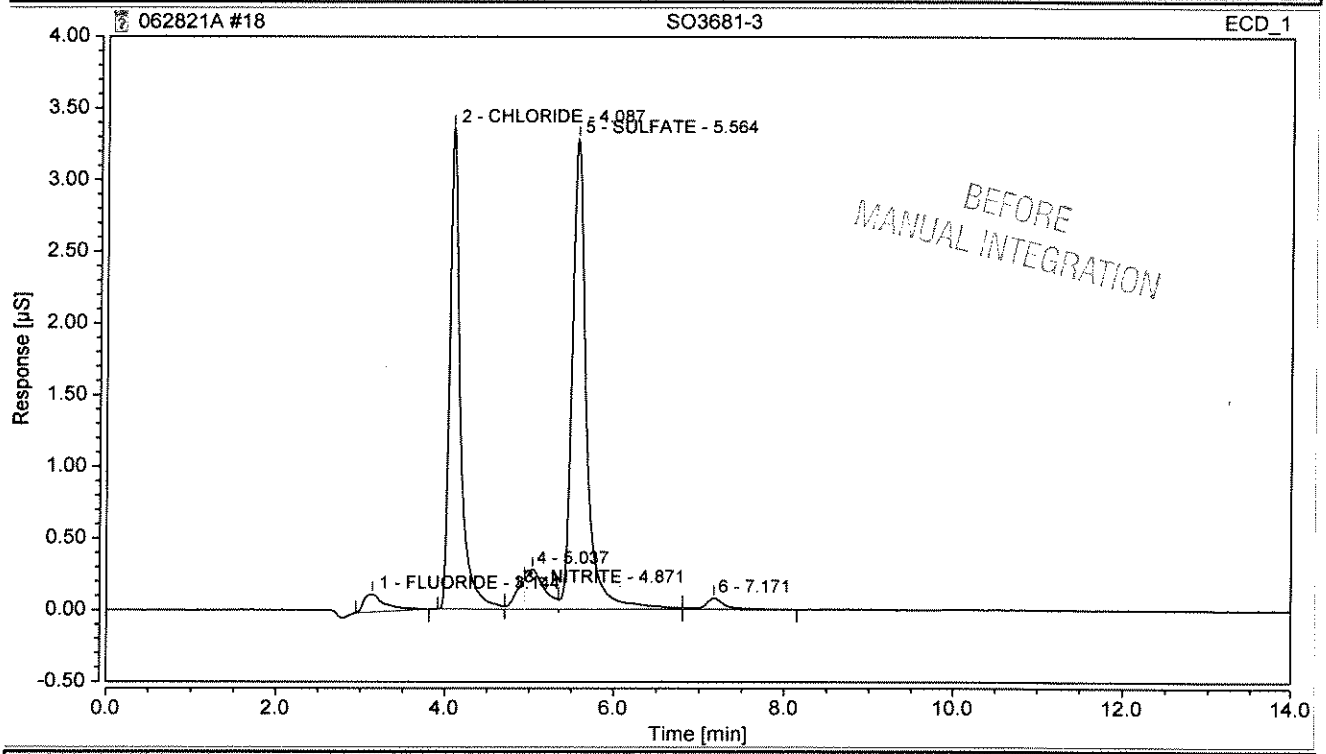
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.087	0.054	0.206	1.47	0.93	0.1028	n.a.
2	CHLORIDE	4.087	2.155	14.449	58.51	65.38	6.6505	n.a.
4	NITRITE	5.041	0.117	0.445	3.17	2.01	0.1682	n.a.
5	SULFATE	5.561	1.252	6.575	34.00	29.75	5.1837	n.a.
6	BROMIDE	6.261	0.029	0.074	0.78	0.33	0.1005	n.a.
7	NITRATE	7.177	0.017	0.056	0.45	0.25	0.0346	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**3.624**	**21.805**	**98.37**	**98.67**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3681-3**	*Run Time (min):*	**13.98**
Vial Number:	**18**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 19:34**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

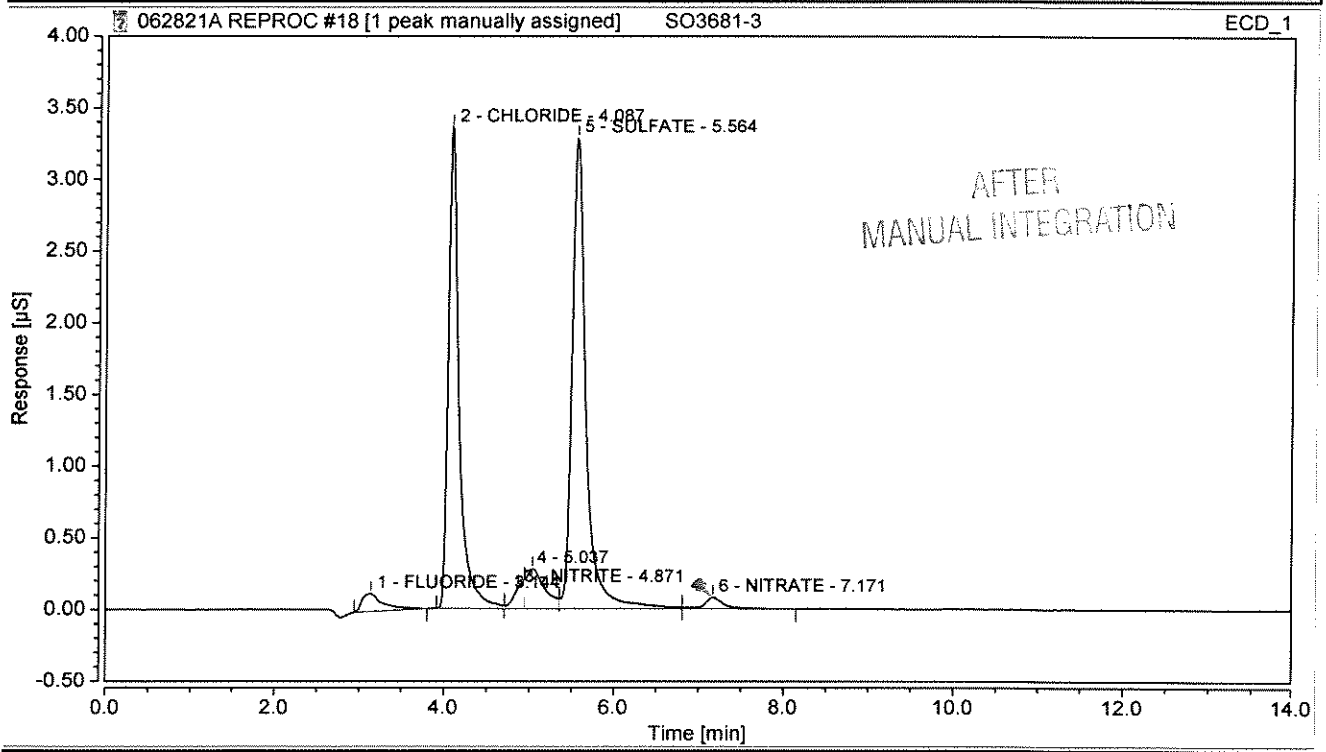
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.144	0.037	0.125	2.86	1.72	0.0699	n.a.
2	CHLORIDE	4.087	0.496	3.358	38.62	46.20	1.5509	n.a.
3	NITRITE	4.871	0.024	0.146	1.83	2.01	0.0339	n.a.
5	SULFATE	5.564	0.636	3.283	49.53	45.18	2.6340	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NITRATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**1.193**	**6.912**	**92.84**	**95.10**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3681-3**	*Run Time (min):*	**13.98**
Vial Number:	**18**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 19:34**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

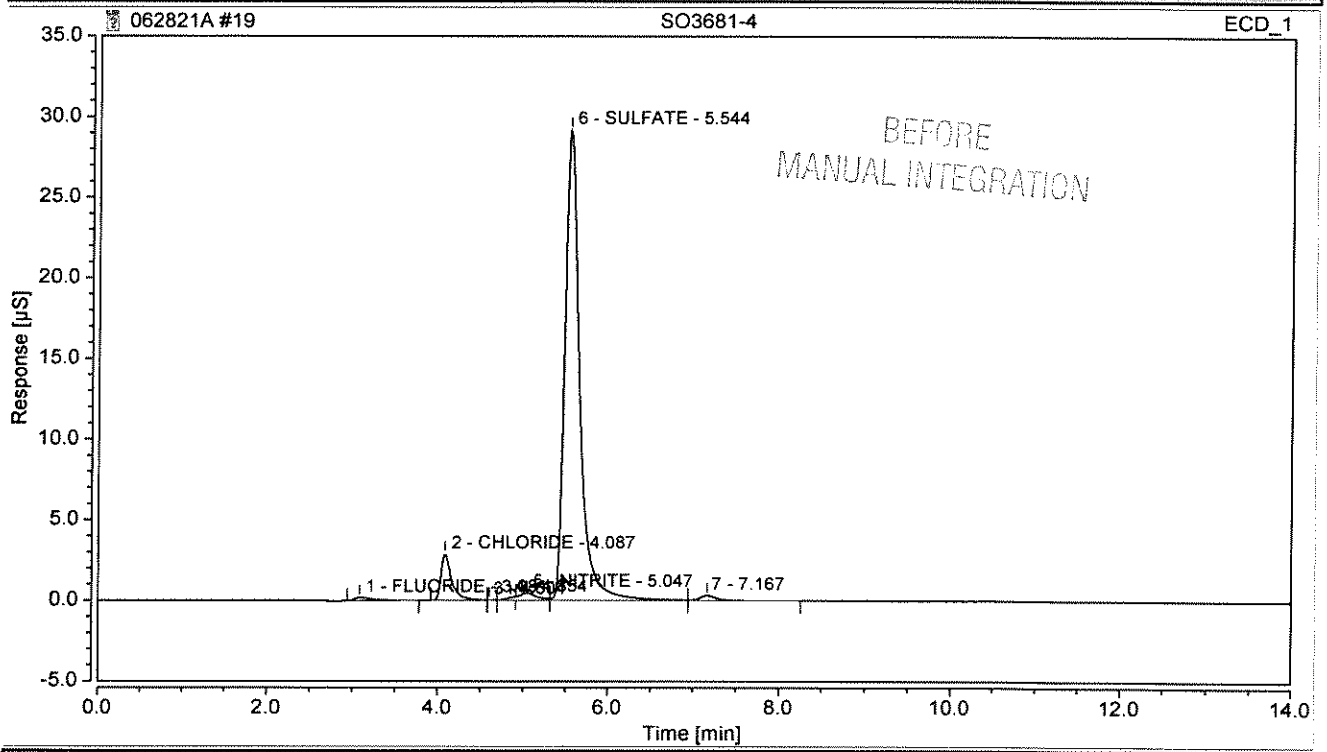
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.144	0.037	0.125	2.86	1.72	0.0699	n.a.
2	CHLORIDE	4.087	0.496	3.358	38.62	46.20	1.5509	n.a.
3	NITRITE	4.871	0.024	0.146	1.83	2.01	0.0339	n.a.
5	SULFATE	5.564	0.636	3.283	49.53	45.18	2.6340	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
6	NITRATE	7.171	0.022	0.079	1.70	1.09	0.0409	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**1.215**	**6.991**	**94.54**	**96.20**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3681-4**	*Run Time (min):*	**13.99**
Vial Number:	**19**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 19:49**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

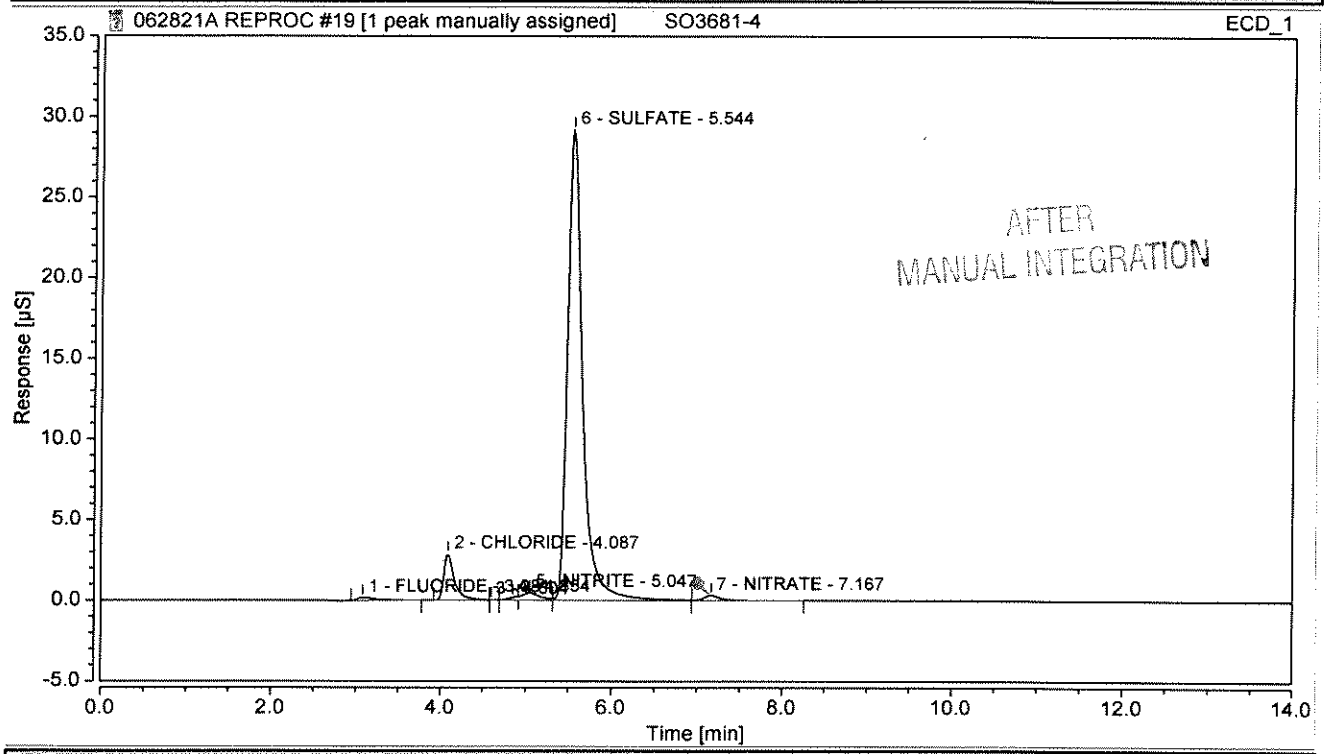
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.081	0.049	0.184	0.74	0.55	0.0929	n.a.
2	CHLORIDE	4.087	0.420	2.881	6.37	8.66	1.3161	n.a.
5	NITRITE	5.047	0.115	0.488	1.74	1.47	0.1651	n.a.
6	SULFATE	5.544	5.897	29.187	89.52	87.73	24.4088	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NITRATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**6.481**	**32.741**	**98.38**	**98.41**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3681-4**	*Run Time (min):*	**13.99**
Vial Number:	**19**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 19:49**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

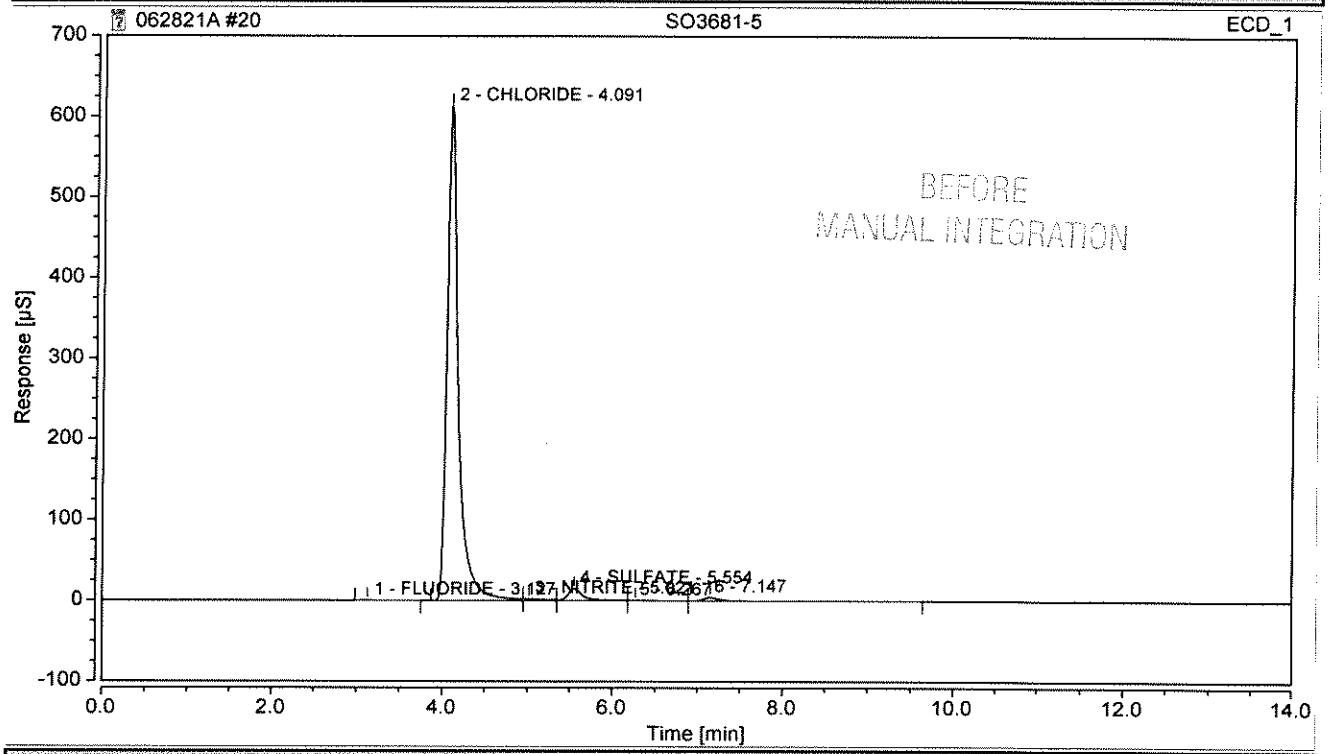
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.081	0.049	0.184	0.74	0.55	0.0929	n.a.
2	CHLORIDE	4.087	0.420	2.881	6.37	8.66	1.3161	n.a.
5	NITRITE	5.047	0.115	0.488	1.74	1.47	0.1651	n.a.
6	SULFATE	5.544	5.897	29.187	89.52	87.73	24.4088	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
7	NITRATE	7.167	0.079	0.320	1.20	0.96	0.1101	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**6.560**	**33.060**	**99.57**	**99.37**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3681-5**	*Run Time (min):*	**13.98**
Vial Number:	**20**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 20:04**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

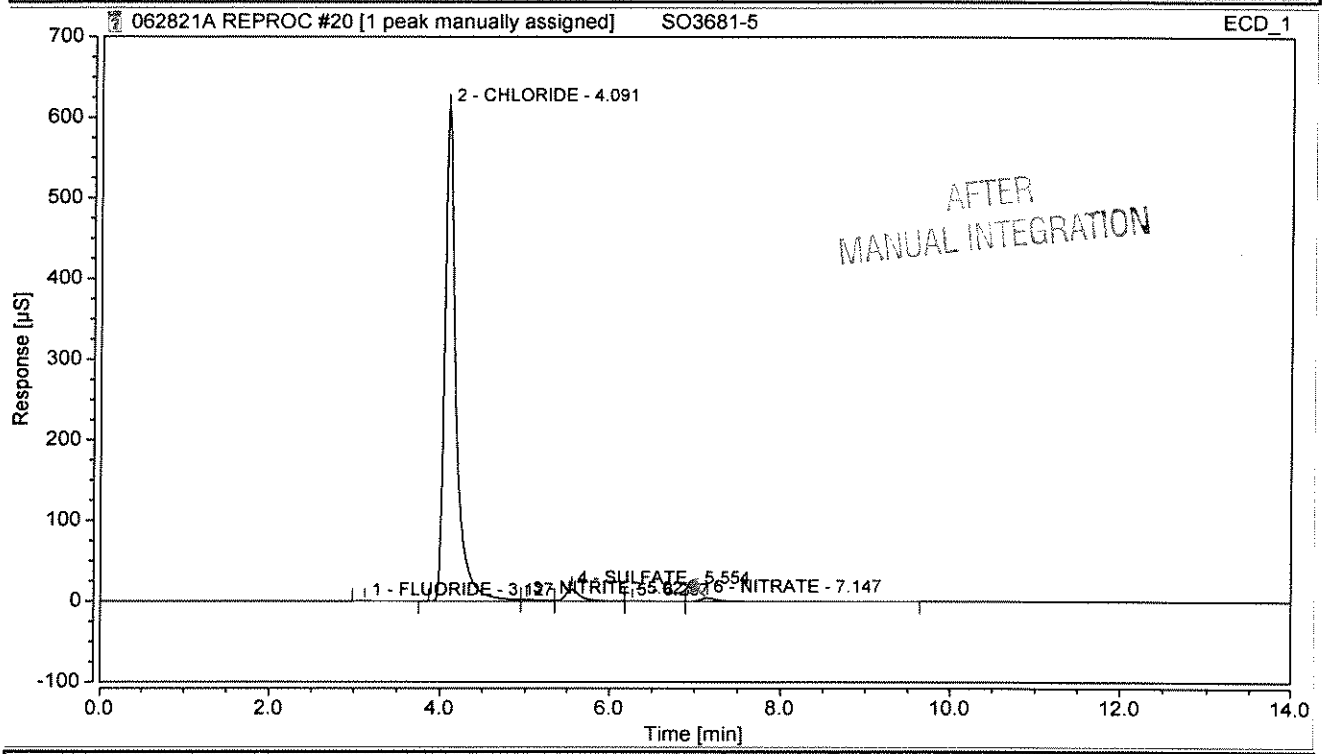
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.127	0.054	0.212	0.05	0.03	0.1034	n.a.
2	CHLORIDE	4.091	94.603	613.273	95.38	96.66	290.7907	n.a.
3	NITRITE	5.021	0.505	1.917	0.51	0.30	0.7272	n.a.
4	SULFATE	5.554	2.994	14.682	3.02	2.31	12.3919	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NITRATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**98.157**	**630.084**	**98.97**	**99.31**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3681-5**	*Run Time (min):*	**13.98**
Vial Number:	**20**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 20:04**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

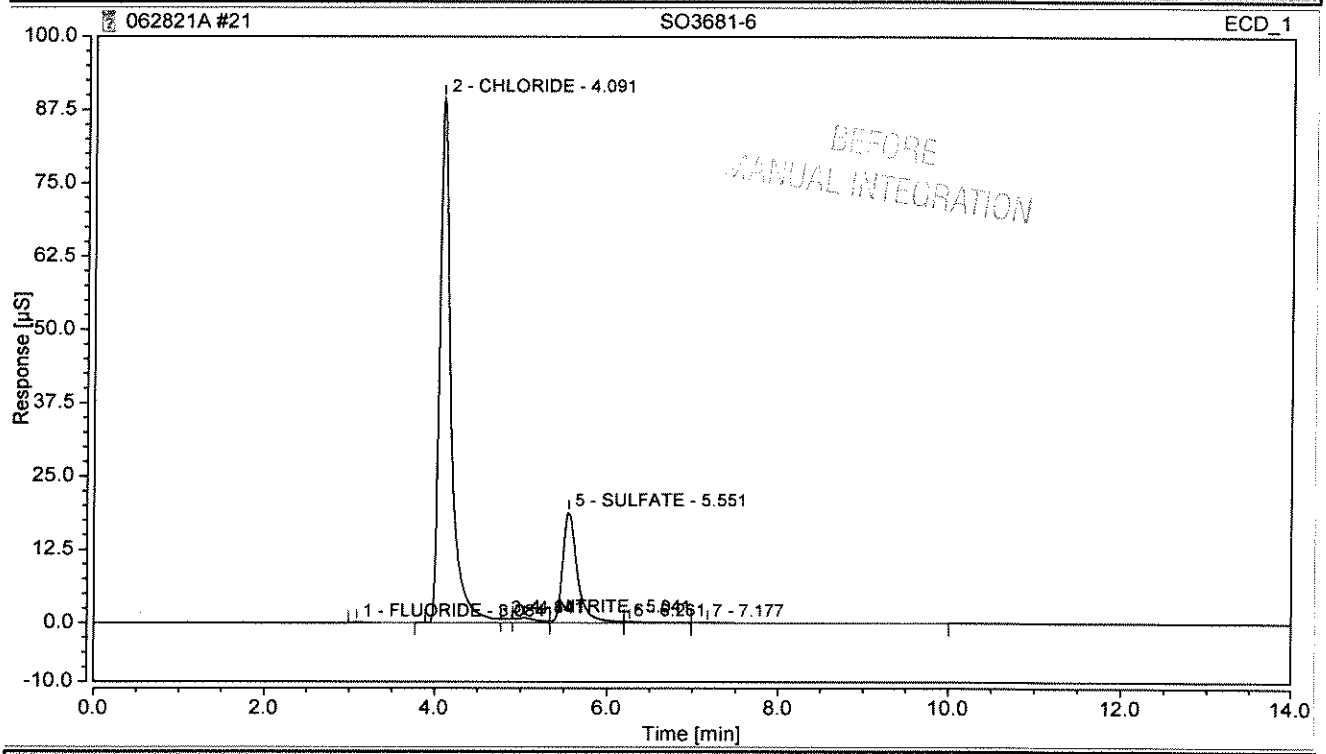
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.127	0.054	0.212	0.05	0.03	0.1034	n.a.
2	CHLORIDE	4.091	94.603	613.273	95.38	96.66	290.7907	n.a.
3	NITRITE	5.021	0.505	1.917	0.51	0.30	0.7272	n.a.
4	SULFATE	5.554	2.994	14.682	3.02	2.31	12.3919	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
6	NITRATE	7.147	0.929	4.120	0.94	0.65	1.1389	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**99.086**	**634.204**	**99.90**	**99.96**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3681-6**	*Run Time (min):*	**13.98**
Vial Number:	**21**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 20:19**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

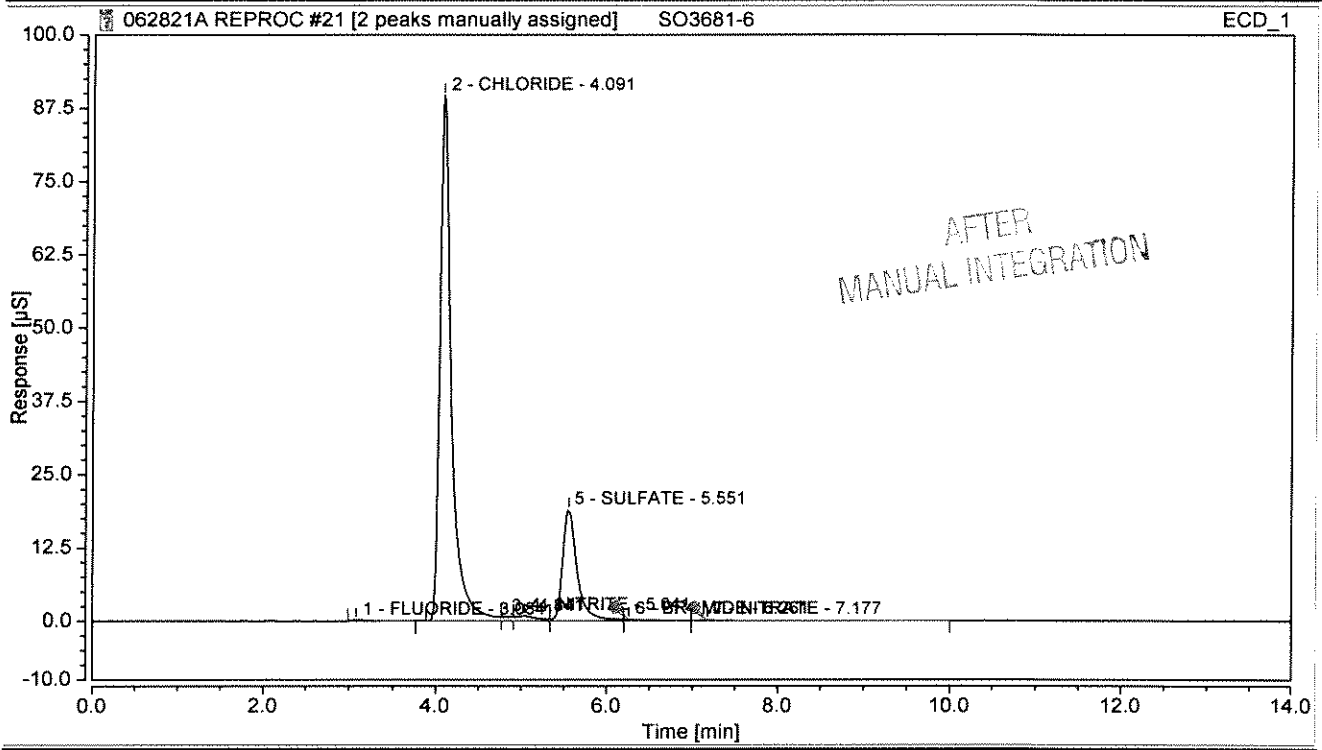
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.084	0.033	0.122	0.18	0.11	0.0631	n.a.
2	CHLORIDE	4.091	13.888	89.580	76.34	81.04	42.7106	n.a.
4	NITRITE	5.041	0.247	0.856	1.36	0.77	0.3555	n.a.
5	SULFATE	5.551	3.756	18.940	20.65	17.13	15.5469	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NITRATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**17.925**	**109.499**	**98.53**	**99.05**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3681-6**	*Run Time (min):*	**13.98**
Vial Number:	**21**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 20:19**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

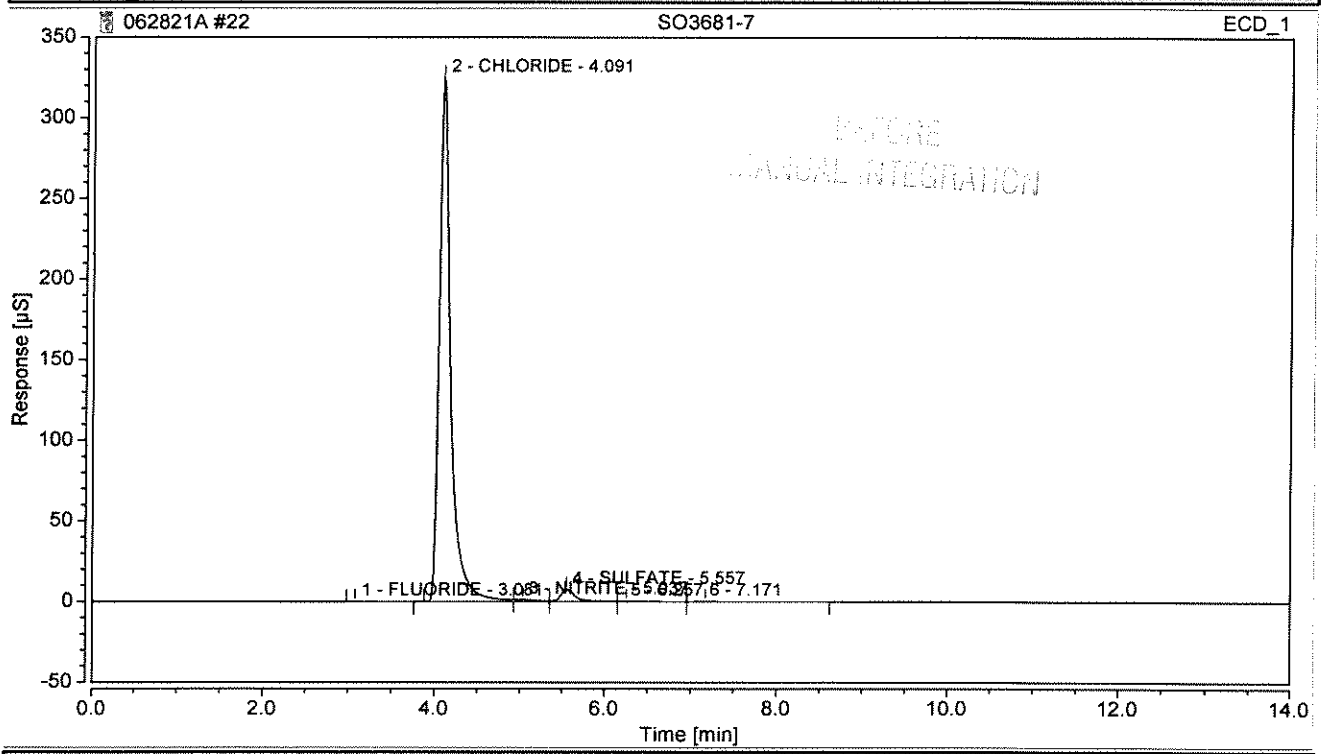
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.084	0.033	0.122	0.18	0.11	0.0631	n.a.
2	CHLORIDE	4.091	13.888	89.580	76.34	81.04	42.7106	n.a.
4	NITRITE	5.041	0.247	0.856	1.36	0.77	0.3555	n.a.
5	SULFATE	5.551	3.756	18.940	20.65	17.13	15.5469	n.a.
6	BROMIDE	6.261	0.098	0.227	0.54	0.21	0.3100	n.a.
7	NITRATE	7.177	0.076	0.123	0.42	0.11	0.1065	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**18.098**	**109.849**	**99.48**	**99.37**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3681-7**	*Run Time (min):*	**13.99**
Vial Number:	**22**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMltest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 20:34**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

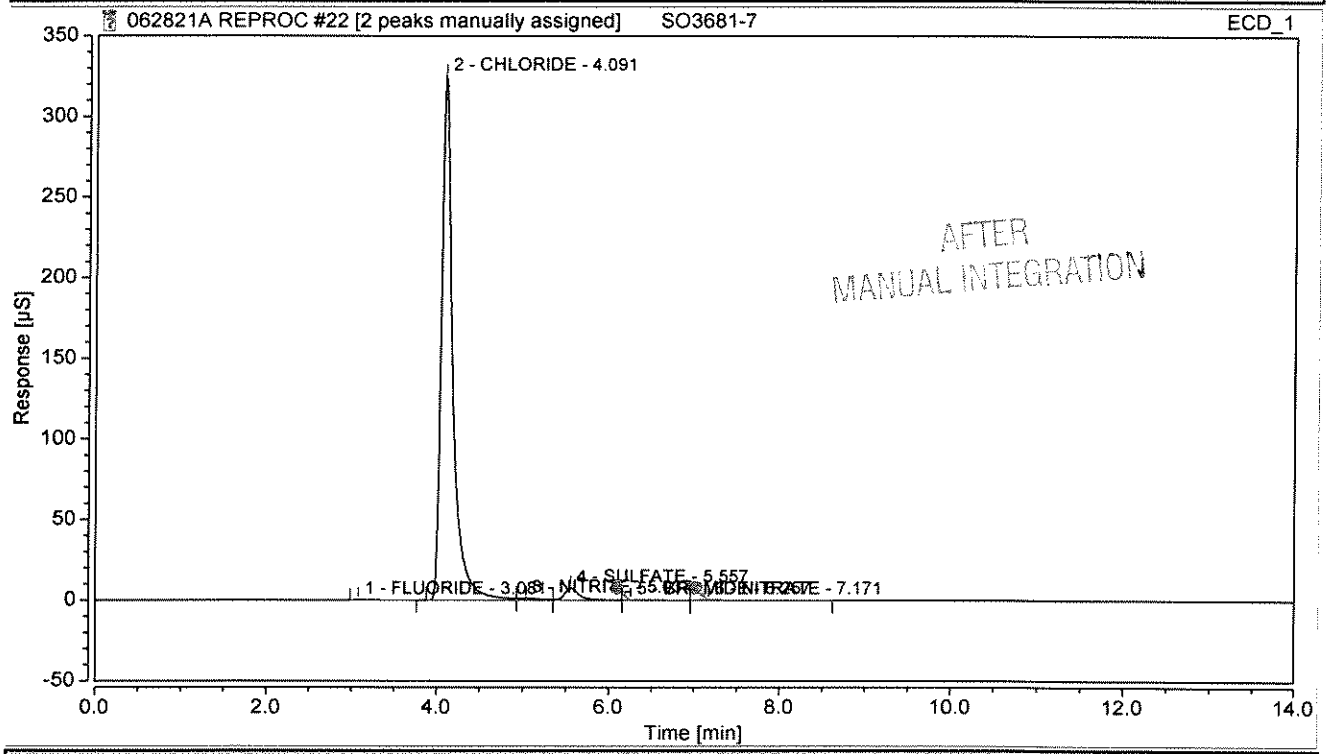
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.081	0.048	0.184	0.09	0.06	0.0919	n.a.
2	CHLORIDE	4.091	50.203	324.972	96.08	97.20	154.3251	n.a.
3	NITRITE	5.037	0.345	1.253	0.66	0.37	0.4971	n.a.
4	SULFATE	5.557	1.540	7.641	2.95	2.29	6.3728	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NITRATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**52.136**	**334.050**	**99.78**	**99.91**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3681-7**	*Run Time (min):*	**13.99**
Vial Number:	**22**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 20:34**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

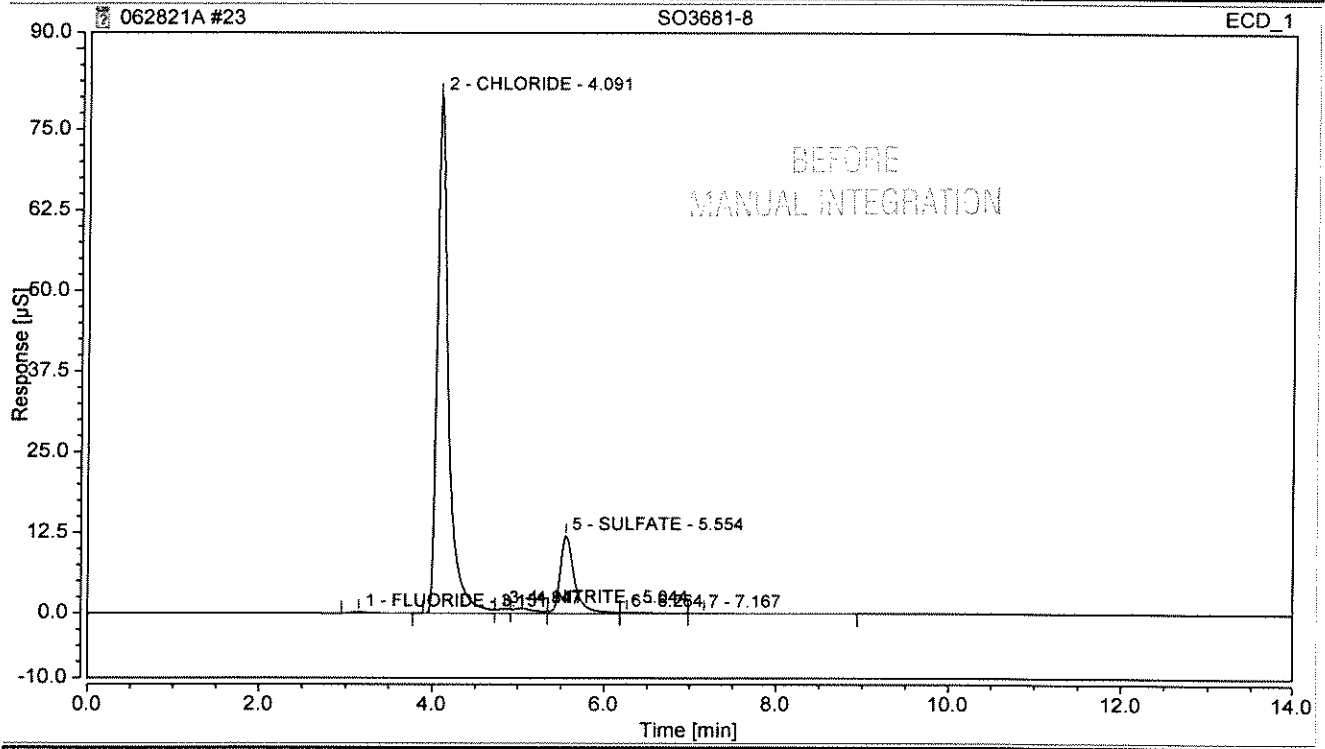
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.081	0.048	0.184	0.09	0.06	0.0919	n.a.
2	CHLORIDE	4.091	50.203	324.972	96.08	97.20	154.3251	n.a.
3	NITRITE	5.037	0.345	1.253	0.66	0.37	0.4971	n.a.
4	SULFATE	5.557	1.540	7.641	2.95	2.29	6.3728	n.a.
5	BROMIDE	6.257	0.067	0.140	0.13	0.04	0.1906	n.a.
6	NITRATE	7.171	0.051	0.152	0.10	0.05	0.0761	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**52.254**	**334.342**	**100.00**	**100.00**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3681-8**	*Run Time (min):*	**13.98**
Vial Number:	**23**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 20:49**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

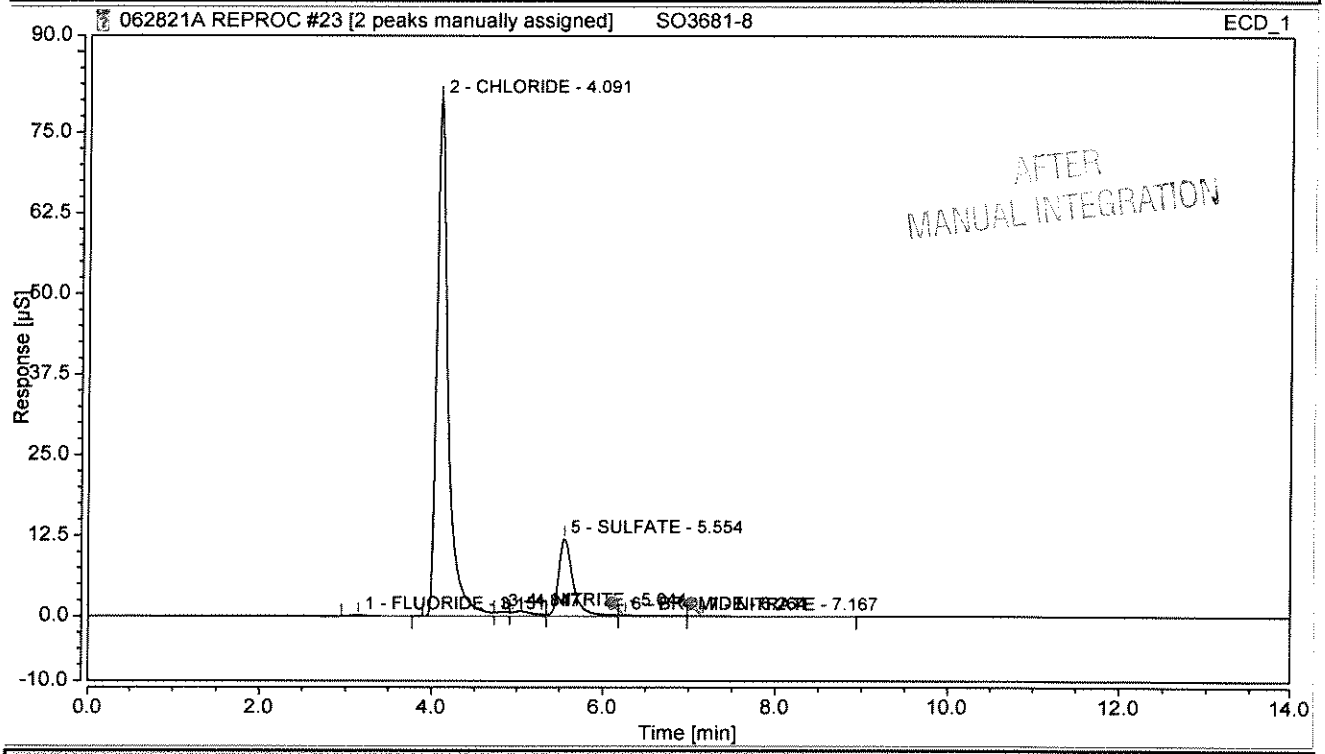
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.151	0.049	0.193	0.32	0.20	0.0936	n.a.
2	CHLORIDE	4.091	12.310	80.261	81.29	85.28	37.8613	n.a.
4	NITRITE	5.044	0.222	0.778	1.47	0.83	0.3201	n.a.
5	SULFATE	5.554	2.350	12.028	15.52	12.78	9.7271	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NITRATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**14.932**	**93.260**	**98.61**	**99.09**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3681-8**	*Run Time (min):*	**13.98**
Vial Number:	**23**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 20:49**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

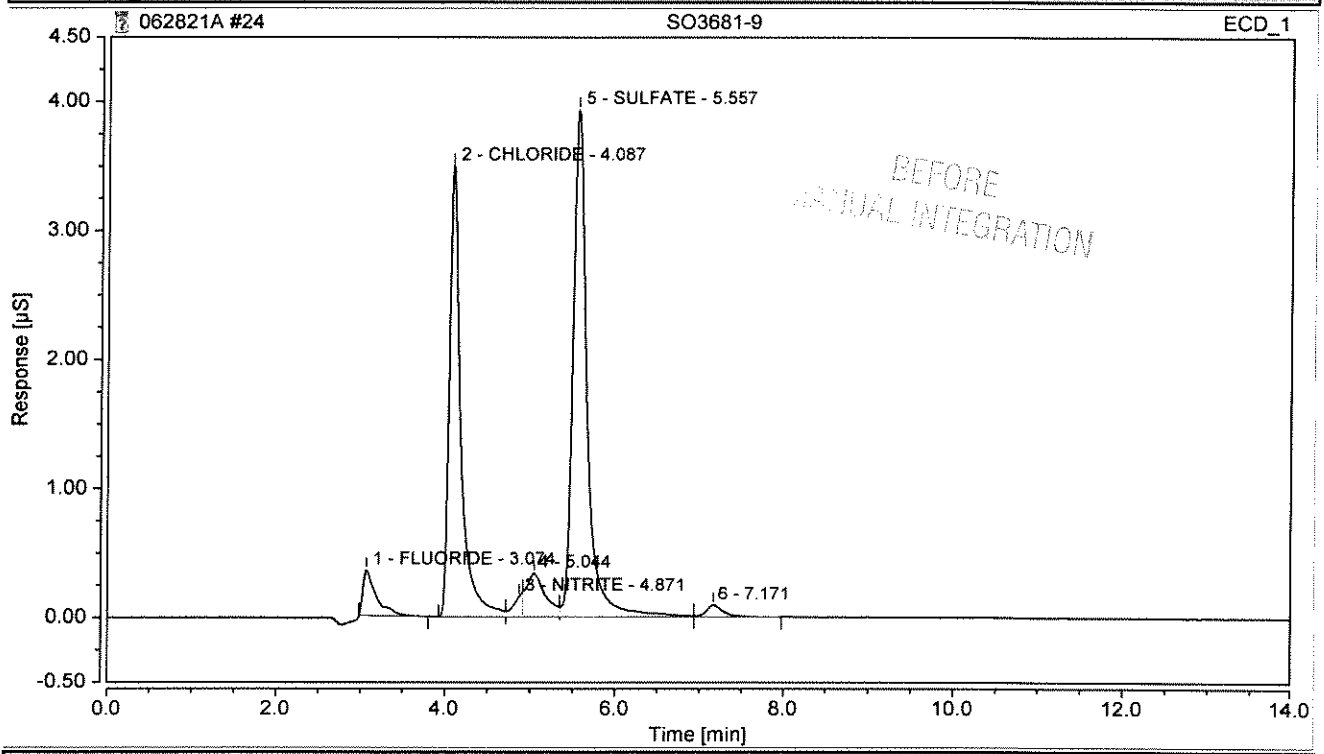
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.151	0.049	0.193	0.32	0.20	0.0936	n.a.
2	CHLORIDE	4.091	12.310	80.261	81.29	85.28	37.8613	n.a.
4	NITRITE	5.044	0.222	0.778	1.47	0.83	0.3201	n.a.
5	SULFATE	5.554	2.350	12.028	15.52	12.78	9.7271	n.a.
6	BROMIDE	6.264	0.066	0.156	0.44	0.17	0.2129	n.a.
7	NITRATE	7.167	0.031	0.056	0.20	0.06	0.0520	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**15.029**	**93.472**	**99.25**	**99.32**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3681-9**	*Run Time (min):*	**13.98**
Vial Number:	**24**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 21:04**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

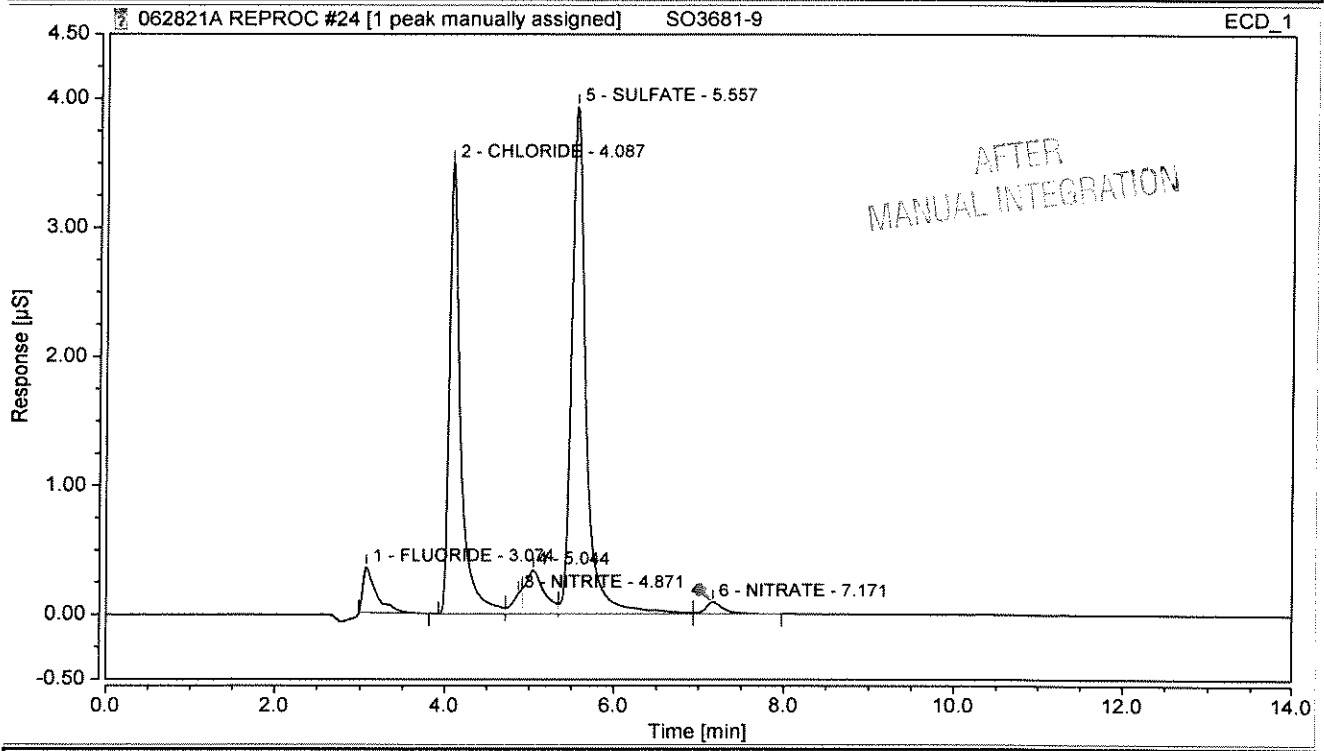
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.074	0.065	0.353	4.34	4.21	0.1245	n.a.
2	CHLORIDE	4.087	0.545	3.496	36.13	41.76	1.6999	n.a.
3	NITRITE	4.871	0.022	0.159	1.43	1.89	0.0311	n.a.
5	SULFATE	5.557	0.766	3.933	50.80	46.98	3.1700	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NITRATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**1.398**	**7.940**	**92.70**	**94.85**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3681-9**	*Run Time (min):*	**13.98**
Vial Number:	**24**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 21:04**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

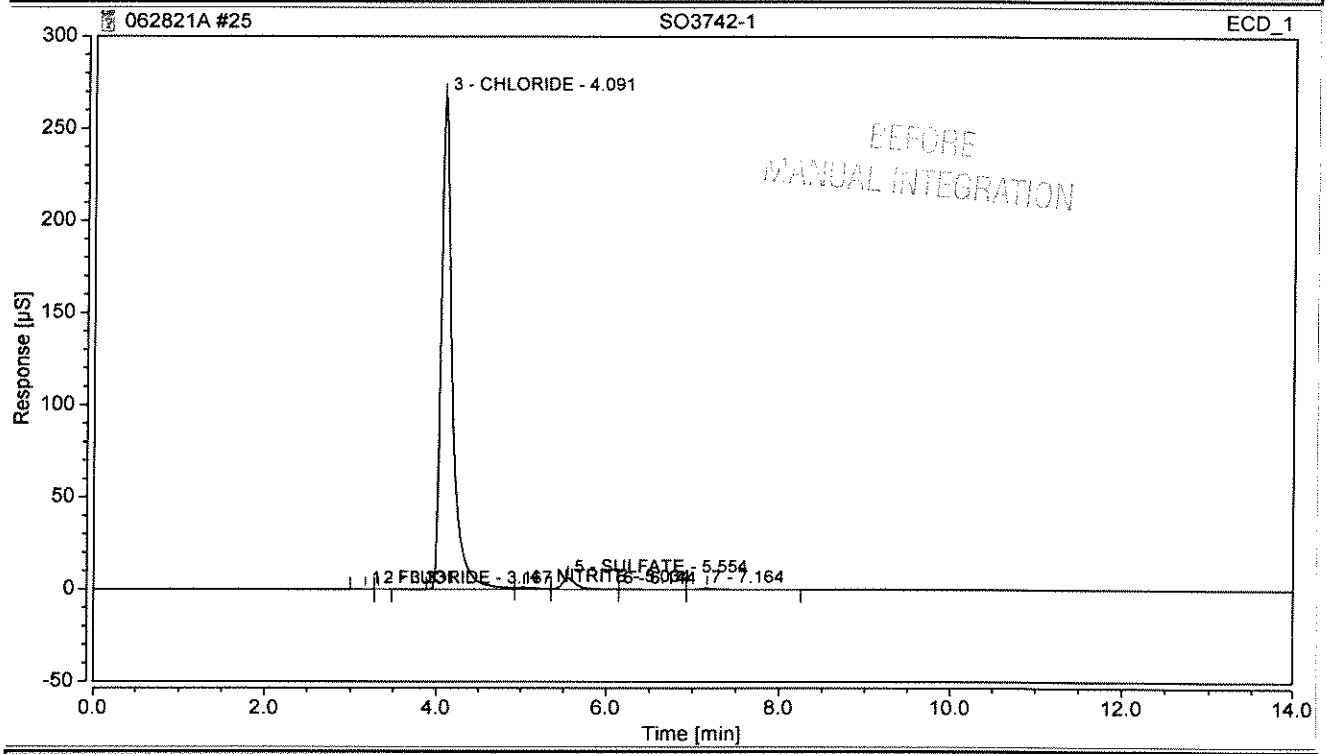
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.074	0.065	0.353	4.34	4.21	0.1245	n.a.
2	CHLORIDE	4.087	0.545	3.496	36.13	41.76	1.6999	n.a.
3	NITRITE	4.871	0.022	0.159	1.43	1.89	0.0311	n.a.
5	SULFATE	5.557	0.766	3.933	50.80	46.98	3.1700	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
6	NITRATE	7.171	0.023	0.092	1.50	1.10	0.0418	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**1.420**	**8.032**	**94.20**	**95.95**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3742-1**	*Run Time (min):*	**13.98**
Vial Number:	**25**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMltest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 21:19**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

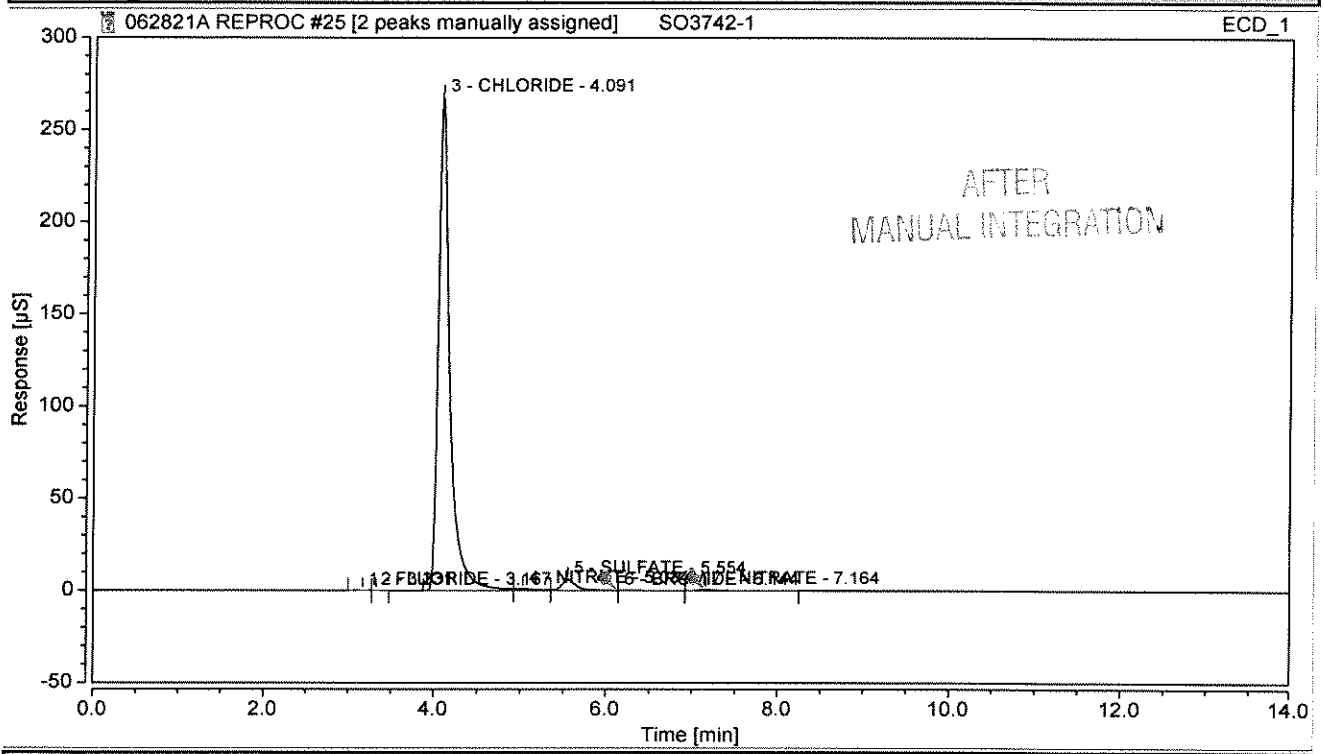
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.167	0.012	0.076	0.03	0.03	0.0225	n.a.
3	CHLORIDE	4.091	41.035	267.711	96.12	97.14	126.1490	n.a.
4	NITRITE	5.034	0.262	0.971	0.61	0.35	0.3766	n.a.
5	SULFATE	5.554	1.200	6.098	2.81	2.21	4.9669	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NITRATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**42.509**	**274.856**	**99.57**	**99.73**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3742-1**	*Run Time (min):*	**13.98**
Vial Number:	**25**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 21:19**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

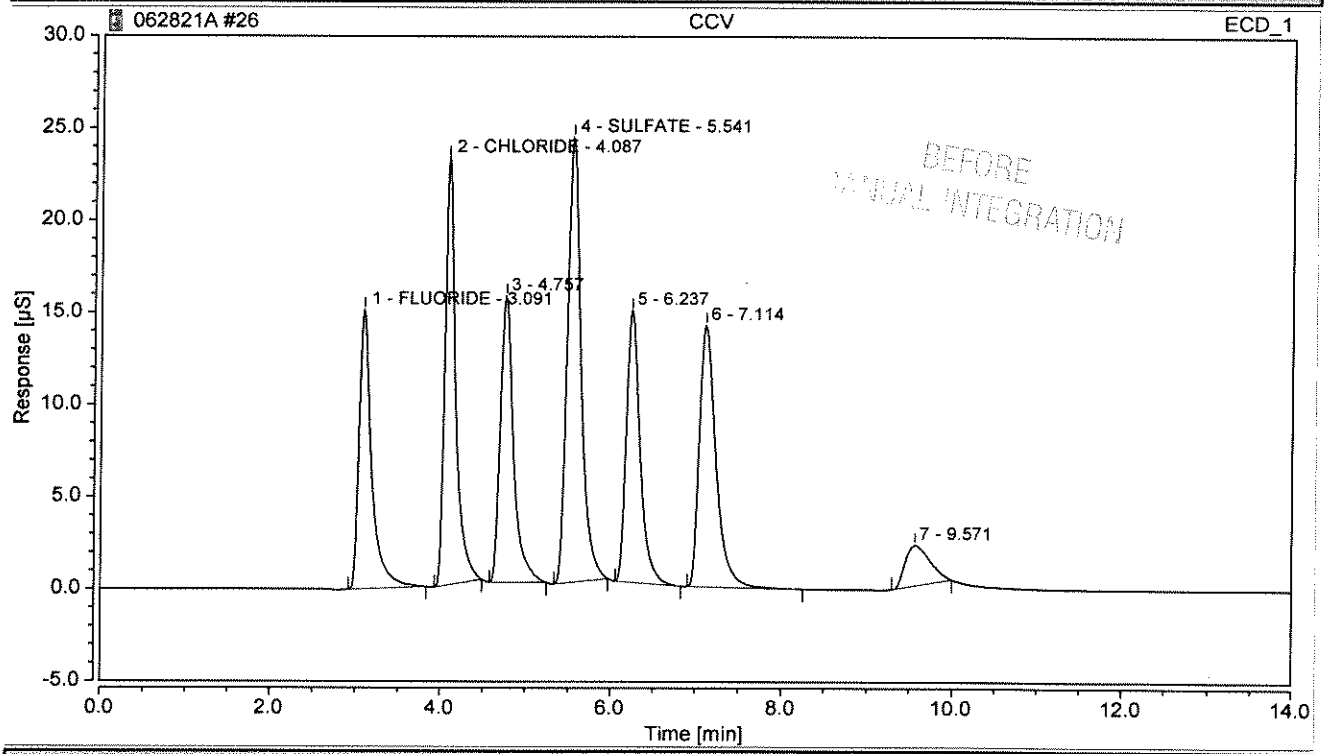
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.167	0.012	0.076	0.03	0.03	0.0225	n.a.
3	CHLORIDE	4.091	41.035	267.711	96.12	97.14	126.1490	n.a.
4	NITRITE	5.034	0.262	0.971	0.61	0.35	0.3766	n.a.
5	SULFATE	5.554	1.200	6.098	2.81	2.21	4.9669	n.a.
6	BROMIDE	6.144	0.042	0.105	0.10	0.04	0.1429	n.a.
7	NITRATE	7.164	0.138	0.621	0.32	0.23	0.1816	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**42.689**	**275.582**	**99.99**	**99.99**		

Chromatogram and Results

Injection Details

Injection Name:	**CCV**	*Run Time (min):*	**13.98**
Vial Number:	**26**	*Injection Volume:*	**200.00**
Injection Type:	**Check Standard**	*Channel:*	**ECD_1**
Calibration Level:	**06**	*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 21:34**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

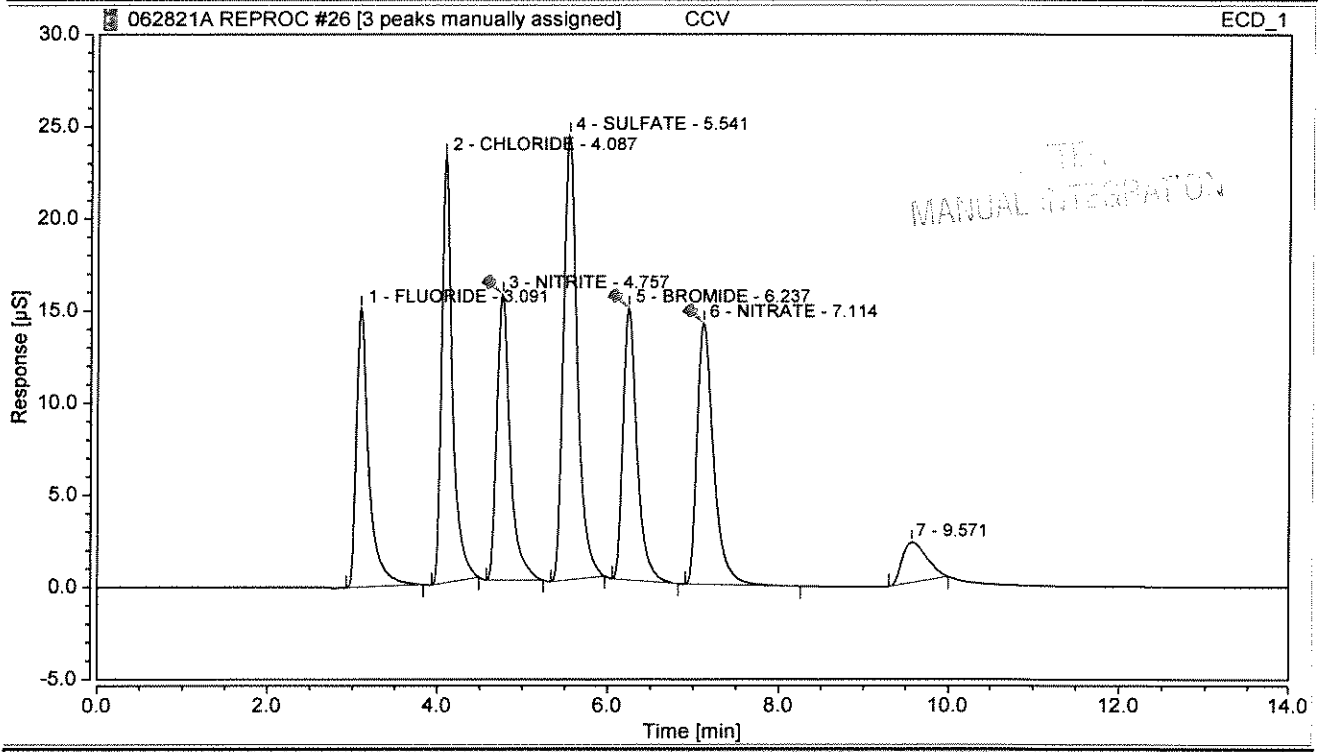
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.091	2.568	15.142	12.86	13.88	4.8836	-2.3283
2	CHLORIDE	4.087	3.383	23.169	16.94	21.23	10.4227	4.2270
n.a.	NITRITE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4	SULFATE	5.541	4.517	24.128	22.61	22.11	18.6933	-6.5333
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NITRATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**10.467**	**62.439**	**52.40**	**57.22**		

Chromatogram and Results

Injection Details

Injection Name:	**CCV**	*Run Time (min):*	**13.98**
Vial Number:	**26**	*Injection Volume:*	**200.00**
Injection Type:	**Check Standard**	*Channel:*	**ECD_1**
Calibration Level:	**06**	*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 21:34**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

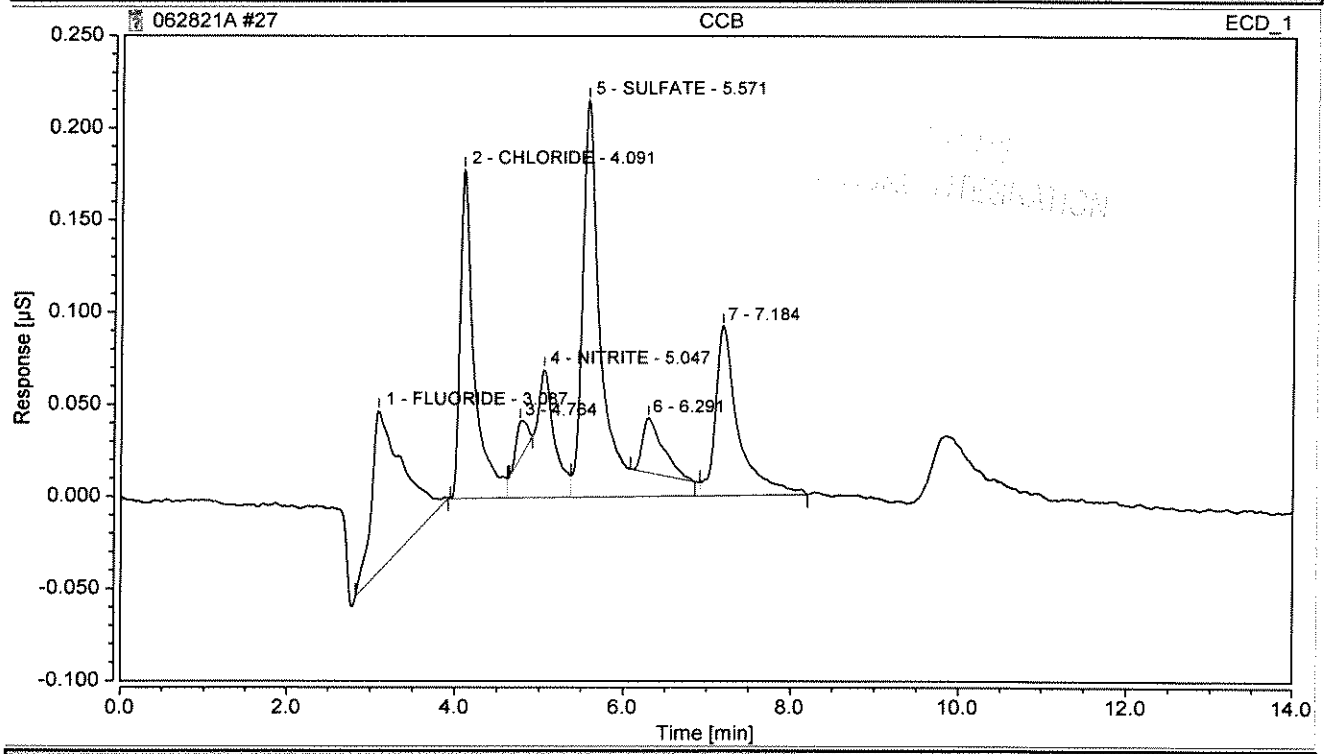
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.091	2.568	15.142	12.86	13.88	4.8836	-2.3283
2	CHLORIDE	4.087	3.383	23.169	16.94	21.23	10.4227	4.2270
3	NITRITE	4.757	2.789	15.522	13.96	14.23	4.0131	0.3269
4	SULFATE	5.541	4.517	24.128	22.61	22.11	18.6933	-6.5333
5	BROMIDE	6.237	2.791	14.764	13.97	13.53	20.1260	0.6298
6	NITRATE	7.114	3.189	14.184	15.97	13.00	3.8747	-3.1322
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**19.236**	**106.909**	**96.31**	**97.98**		

Chromatogram and Results

Injection Details

Injection Name:	**CCB**	*Run Time (min):*	**13.98**
Vial Number:	**27**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 21:49**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

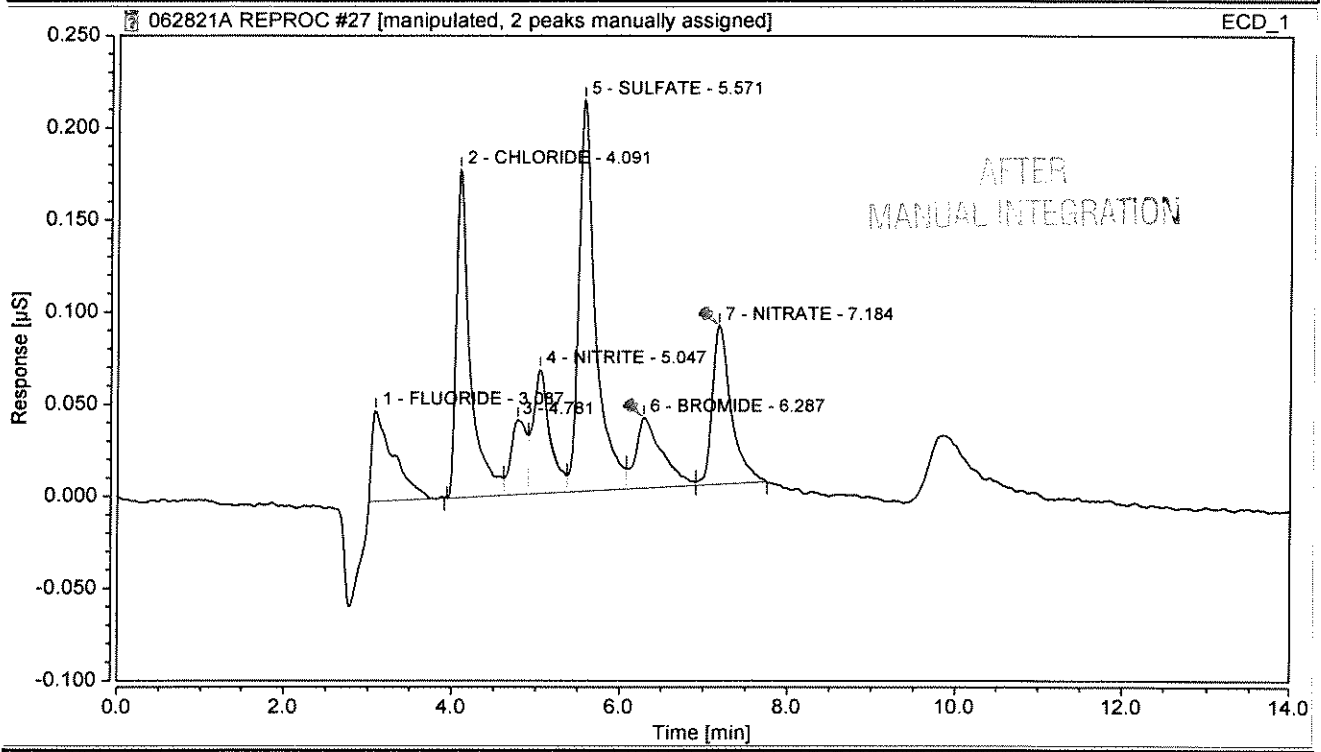
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.087	0.037	0.088	18.80	12.68	0.0700	n.a.
2	CHLORIDE	4.091	0.034	0.179	17.61	25.77	0.1315	n.a.
4	NITRITE	5.047	0.023	0.070	11.92	10.04	0.0336	n.a.
5	SULFATE	5.571	0.061	0.215	30.98	31.10	0.2509	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NITRATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.155**	**0.552**	**79.31**	**79.59**		

Chromatogram and Results

Injection Details

Injection Name:	**CCB**	*Run Time (min):*	**13.98**
Vial Number:	**27**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMltest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 21:49**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

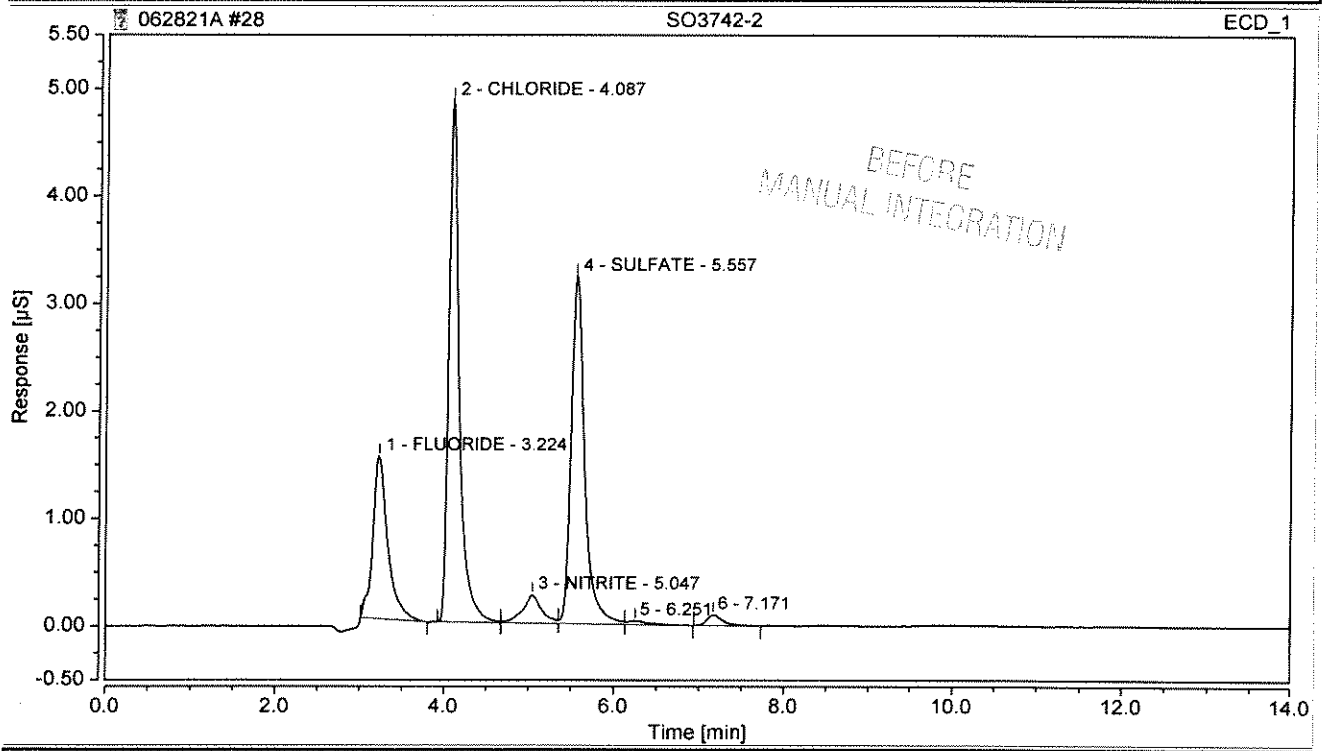
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.087	0.015	0.049	9.25	7.34	0.0279	n.a.
2	CHLORIDE	4.091	0.034	0.178	21.46	26.50	0.1303	n.a.
4	NITRITE	5.047	0.016	0.068	10.03	10.05	0.0229	n.a.
5	SULFATE	5.571	0.049	0.213	30.96	31.59	0.2033	n.a.
6	BROMIDE	6.287	0.014	0.038	8.82	5.69	0.0522	n.a.
7	NITRATE	7.184	0.022	0.086	13.97	12.79	0.0413	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.150**	**0.632**	**94.48**	**93.96**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3742-2**	*Run Time (min):*	**13.98**
Vial Number:	**28**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMltest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 22:04**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

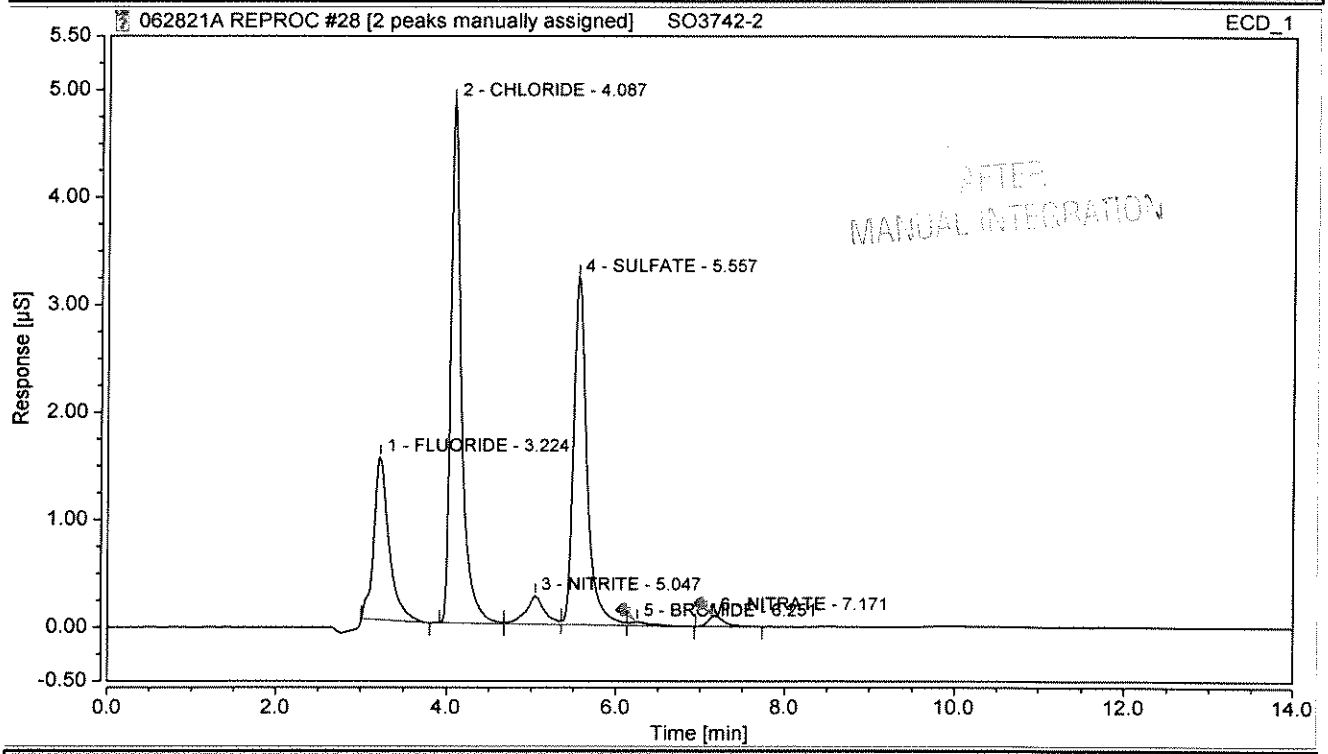
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.224	0.313	1.513	18.35	15.14	0.5950	n.a.
2	CHLORIDE	4.087	0.702	4.851	41.16	48.54	2.1824	n.a.
3	NITRITE	5.047	0.068	0.263	3.97	2.63	0.0975	n.a.
4	SULFATE	5.557	0.590	3.232	34.62	32.34	2.4427	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NITRATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**1.672**	**9.859**	**98.11**	**98.64**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3742-2**	*Run Time (min):*	**13.98**
Vial Number:	**28**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 22:04**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

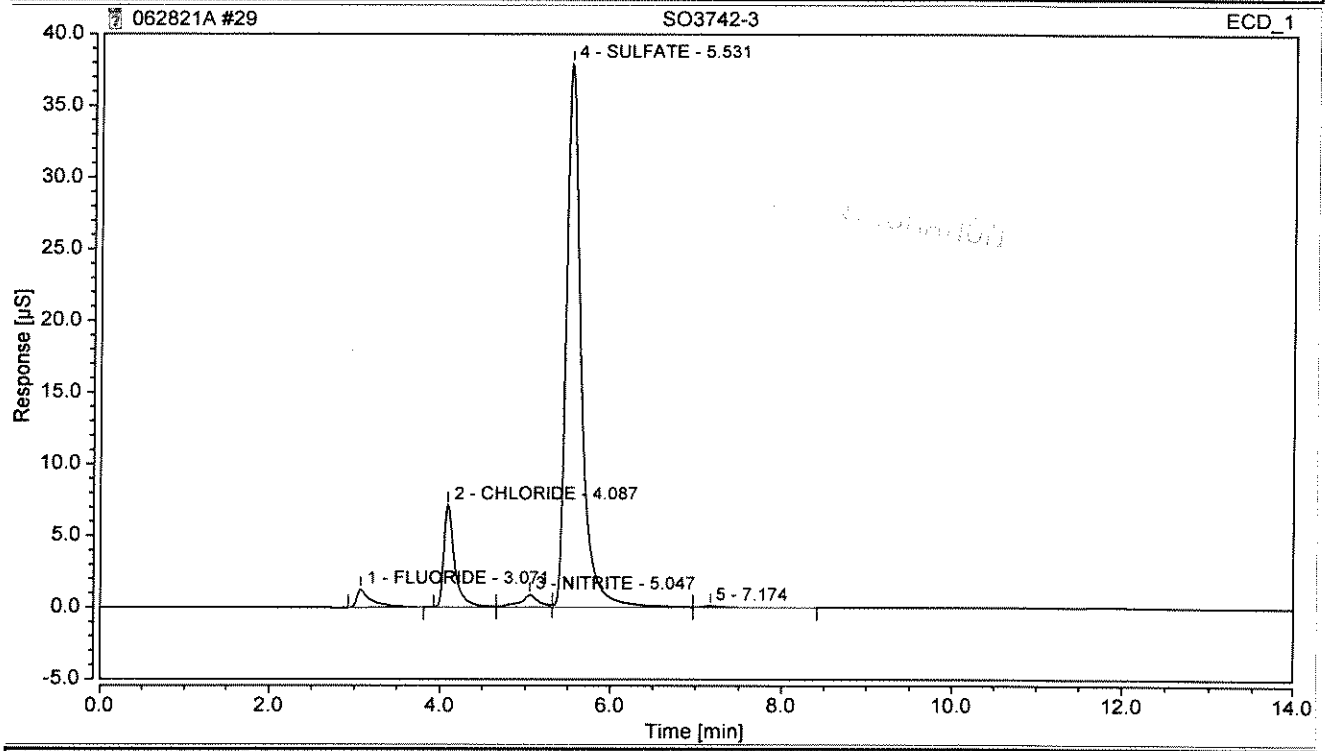
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.224	0.313	1.513	18.35	15.14	0.5950	n.a.
2	CHLORIDE	4.087	0.702	4.851	41.16	48.54	2.1824	n.a.
3	NITRITE	5.047	0.068	0.263	3.97	2.63	0.0975	n.a.
4	SULFATE	5.557	0.590	3.232	34.62	32.34	2.4427	n.a.
5	BROMIDE	6.251	0.010	0.035	0.60	0.35	0.0477	n.a.
6	NITRATE	7.171	0.022	0.101	1.29	1.01	0.0411	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**1.705**	**9.994**	**100.00**	**100.00**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3742-3**	*Run Time (min):*	**13.97**
Vial Number:	**29**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMltest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 22:19**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

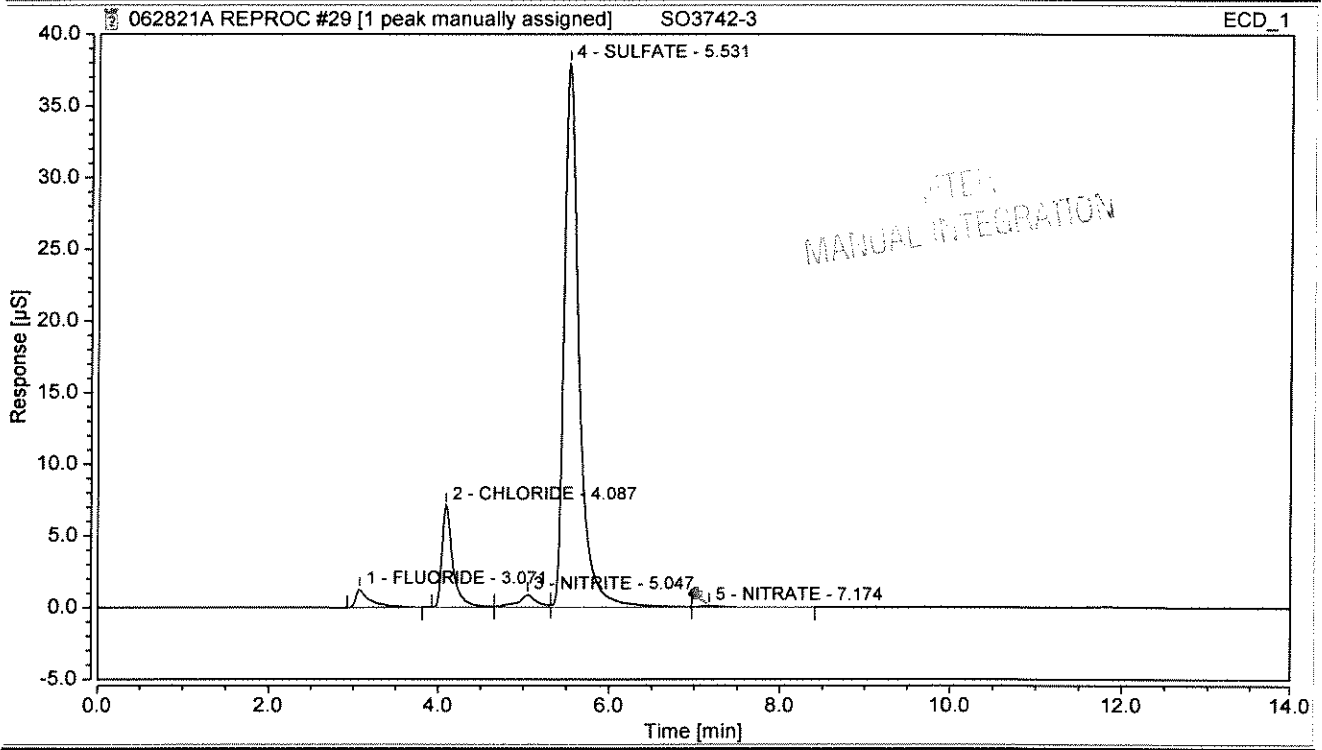
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.071	0.249	1.275	2.69	2.69	0.4730	n.a.
2	CHLORIDE	4.087	1.051	7.121	11.37	15.05	3.2556	n.a.
3	NITRITE	5.047	0.219	0.864	2.37	1.83	0.3156	n.a.
4	SULFATE	5.531	7.695	37.957	83.22	80.21	31.8471	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NITRATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**9.214**	**47.217**	**99.65**	**99.78**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3742-3**	*Run Time (min):*	**13.97**
Vial Number:	**29**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 22:19**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

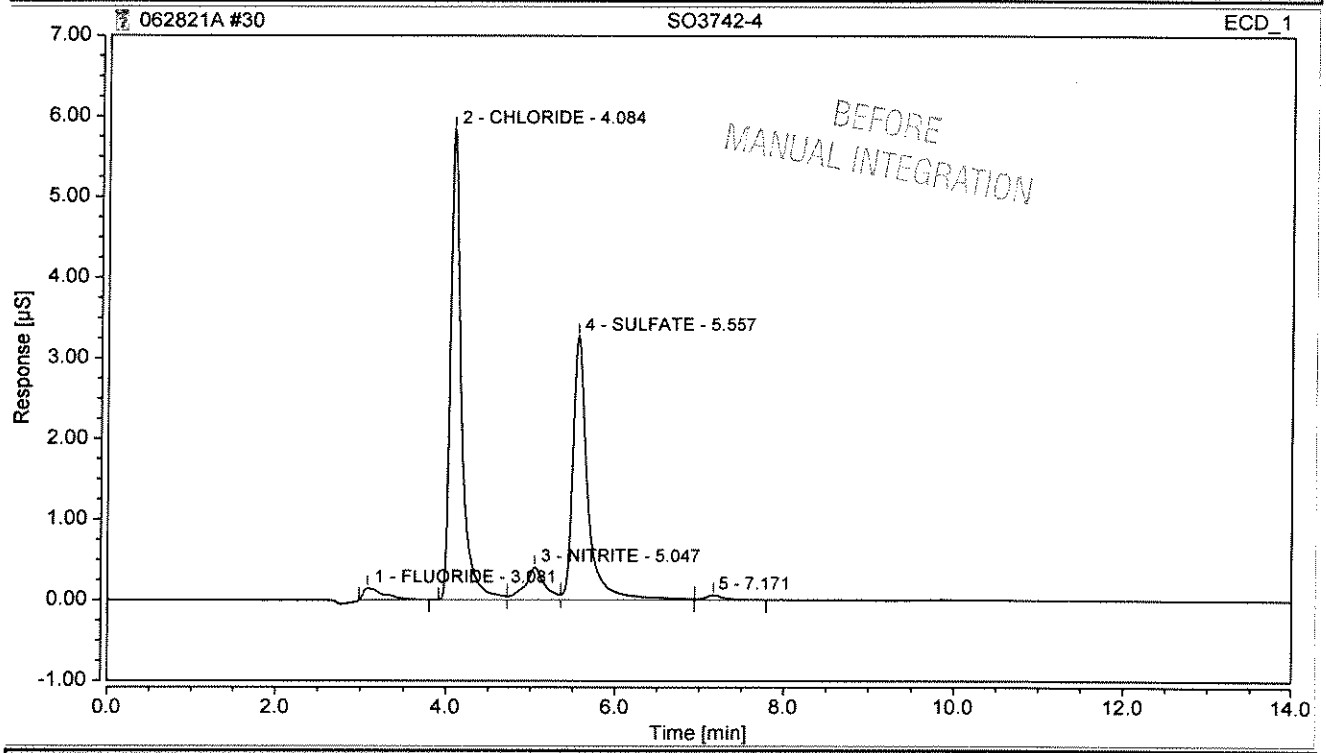
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.071	0.249	1.275	2.69	2.69	0.4730	n.a.
2	CHLORIDE	4.087	1.051	7.121	11.37	15.05	3.2556	n.a.
3	NITRITE	5.047	0.219	0.864	2.37	1.83	0.3156	n.a.
4	SULFATE	5.531	7.695	37.957	83.22	80.21	31.8471	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5	NITRATE	7.174	0.033	0.105	0.35	0.22	0.0540	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**9.246**	**47.322**	**100.00**	**100.00**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3742-4**	*Run Time (min):*	**13.98**
Vial Number:	**30**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 22:34**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

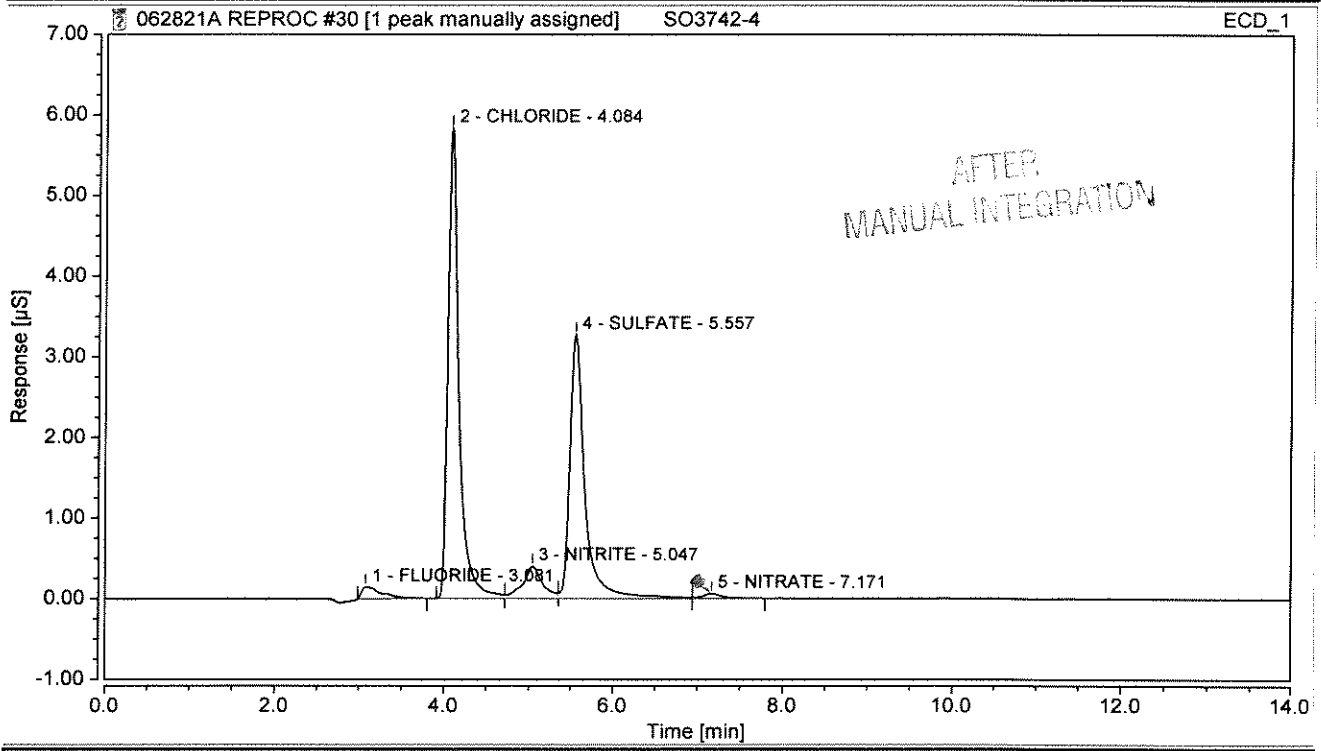
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.081	0.041	0.146	2.40	1.50	0.0779	n.a.
2	CHLORIDE	4.084	0.872	5.837	51.06	60.09	2.7042	n.a.
3	NITRITE	5.047	0.109	0.401	6.36	4.13	0.1563	n.a.
4	SULFATE	5.557	0.670	3.271	39.27	33.67	2.7746	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NITRATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**1.691**	**9.656**	**99.09**	**99.39**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3742-4**	*Run Time (min):*	**13.98**
Vial Number:	**30**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 22:34**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

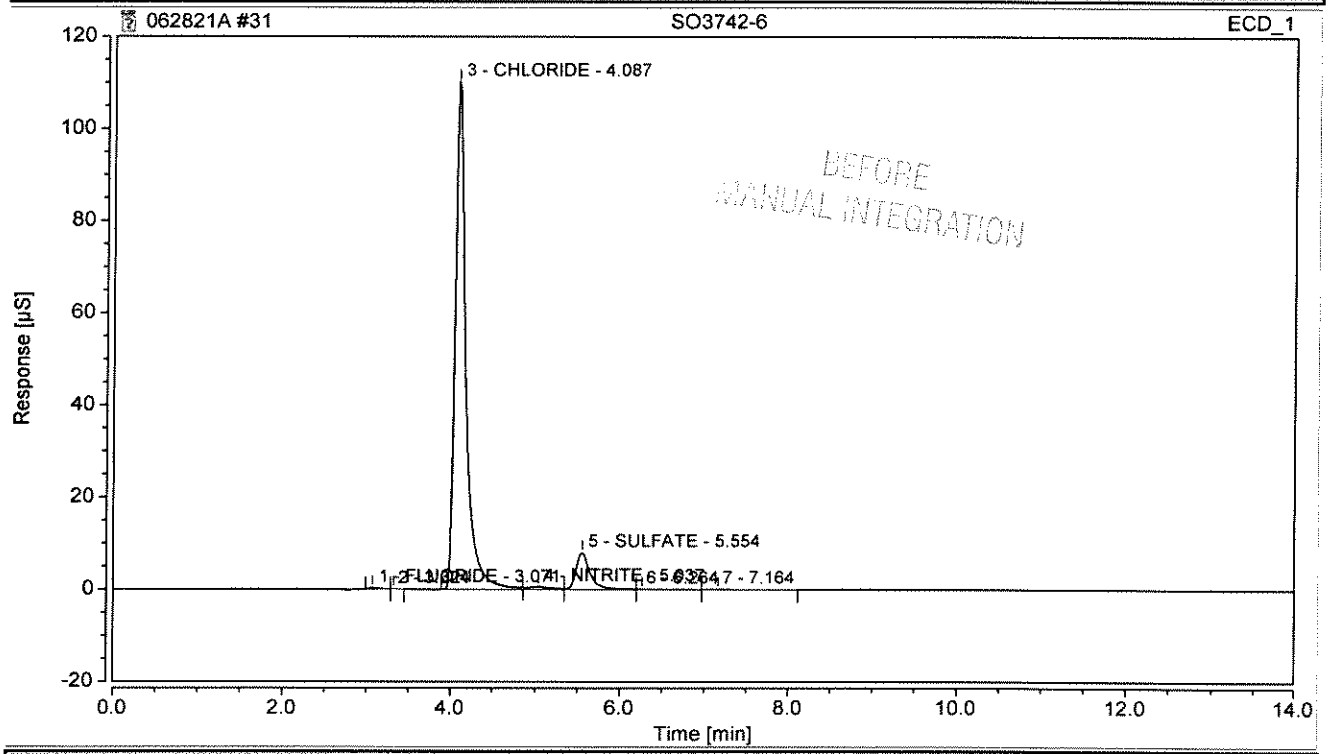
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.081	0.041	0.146	2.40	1.50	0.0779	n.a.
2	CHLORIDE	4.084	0.872	5.837	51.06	60.09	2.7042	n.a.
3	NITRITE	5.047	0.109	0.401	6.36	4.13	0.1563	n.a.
4	SULFATE	5.557	0.670	3.271	39.27	33.67	2.7746	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5	NITRATE	7.171	0.015	0.059	0.91	0.61	0.0332	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**1.707**	**9.715**	**100.00**	**100.00**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3742-6**	*Run Time (min):*	**13.99**
Vial Number:	**31**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 22:49**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

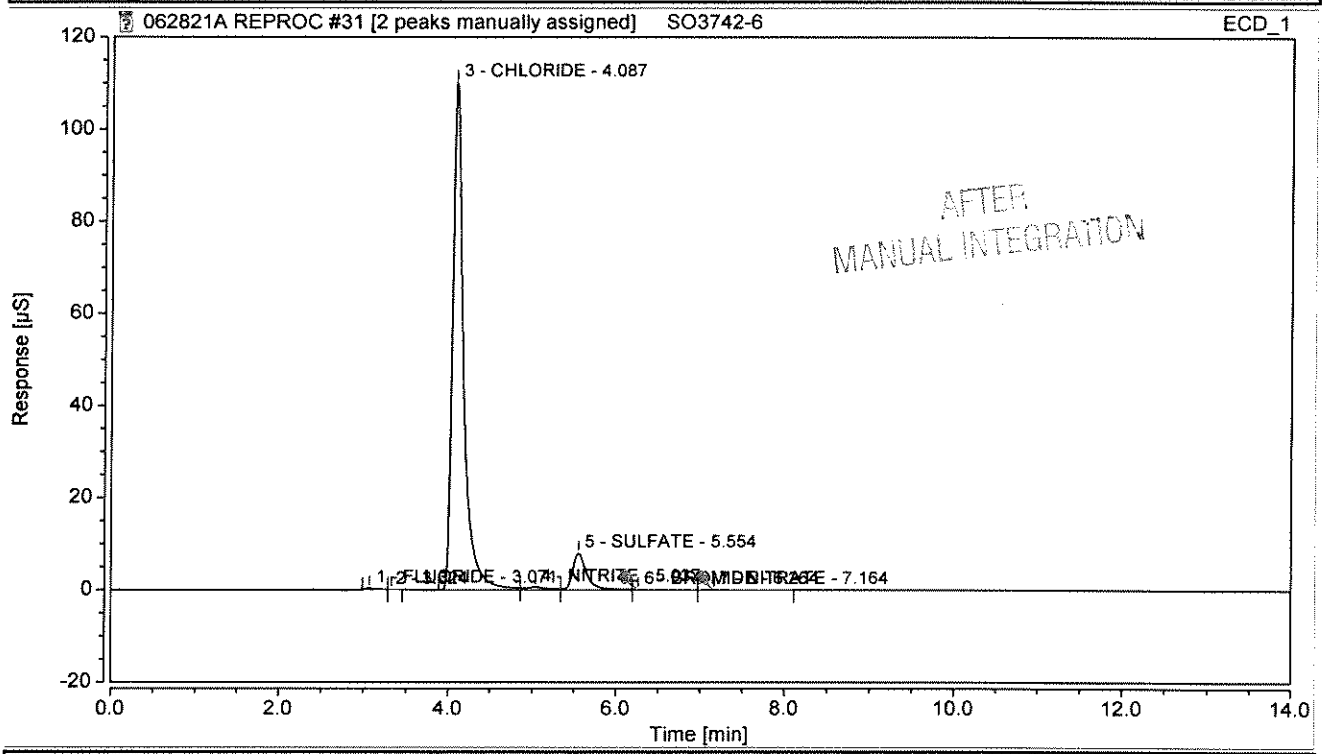
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.071	0.040	0.288	0.22	0.24	0.0763	n.a.
3	CHLORIDE	4.087	16.611	110.217	90.18	92.43	51.0810	n.a.
4	NITRITE	5.037	0.182	0.592	0.99	0.50	0.2623	n.a.
5	SULFATE	5.554	1.533	7.981	8.32	6.69	6.3462	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NITRATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**18.367**	**119.078**	**99.71**	**99.86**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3742-6**	*Run Time (min):*	**13.99**
Vial Number:	**31**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 22:49**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

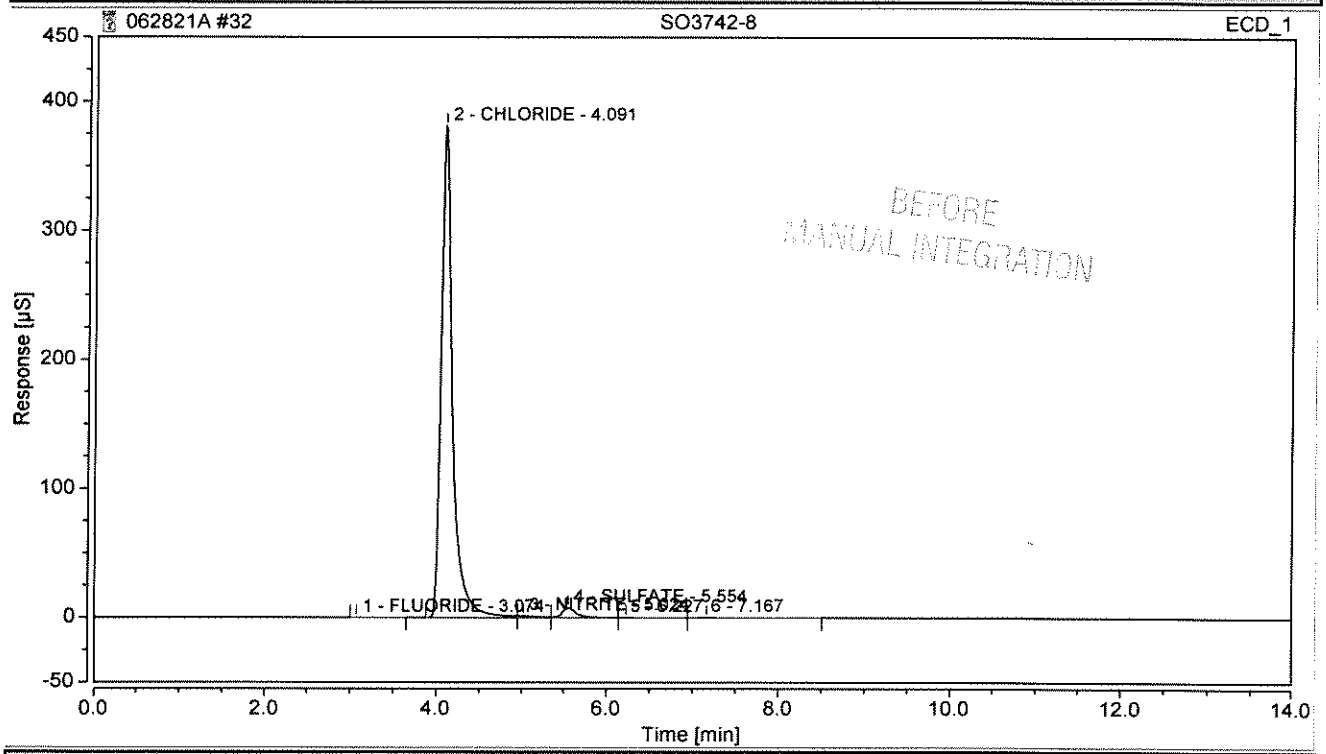
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.071	0.040	0.288	0.22	0.24	0.0763	n.a.
3	CHLORIDE	4.087	16.611	110.217	90.18	92.43	51.0810	n.a.
4	NITRITE	5.037	0.182	0.592	0.99	0.50	0.2623	n.a.
5	SULFATE	5.554	1.533	7.981	8.32	6.69	6.3462	n.a.
6	BROMIDE	6.264	0.034	0.085	0.18	0.07	0.1154	n.a.
7	NITRATE	7.164	0.018	0.060	0.10	0.05	0.0365	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**18.419**	**119.222**	**99.99**	**99.98**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3742-8**	*Run Time (min):*	**13.98**
Vial Number:	**32**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 23:04**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

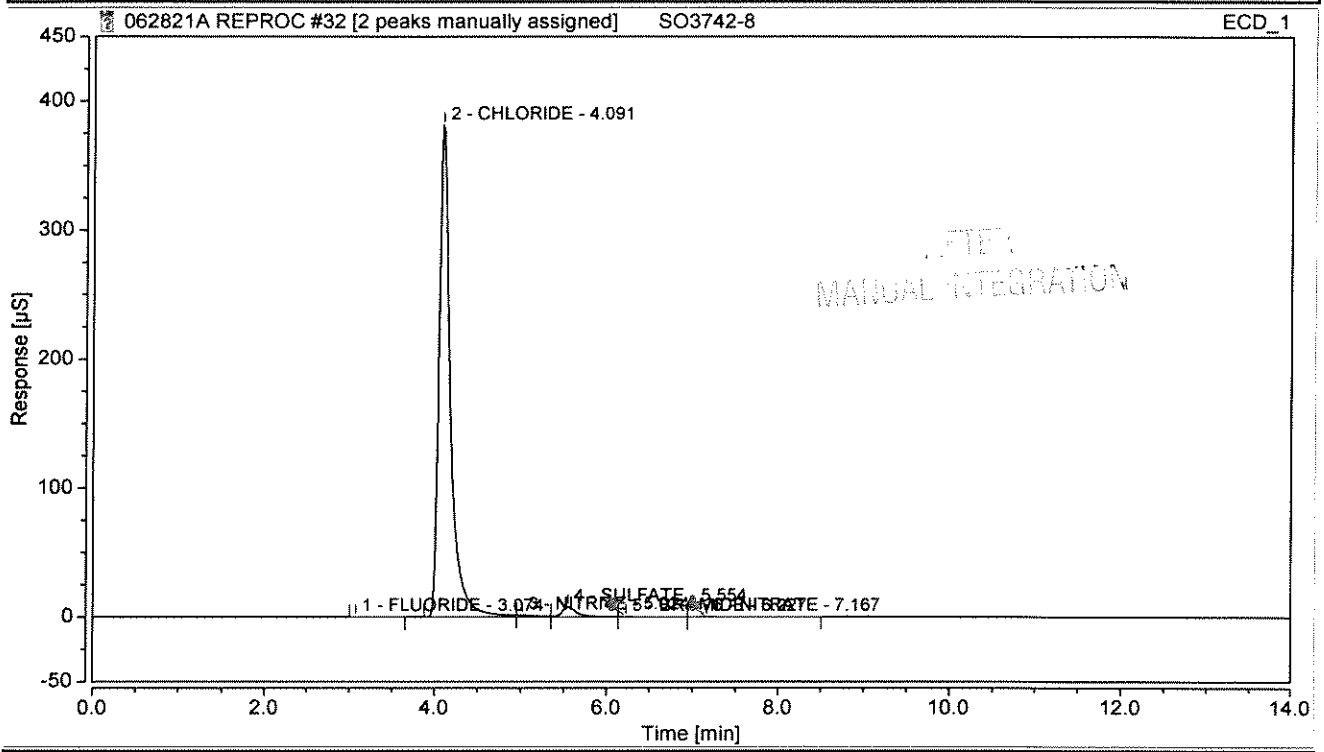
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.074	0.025	0.122	0.04	0.03	0.0469	n.a.
2	CHLORIDE	4.091	58.768	381.368	96.54	97.54	180.6489	n.a.
3	NITRITE	5.024	0.344	1.272	0.57	0.33	0.4955	n.a.
4	SULFATE	5.554	1.570	7.764	2.58	1.99	6.4978	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NITRATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**60.707**	**390.527**	**99.73**	**99.88**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3742-8**	*Run Time (min):*	**13.98**
Vial Number:	**32**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 23:04**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

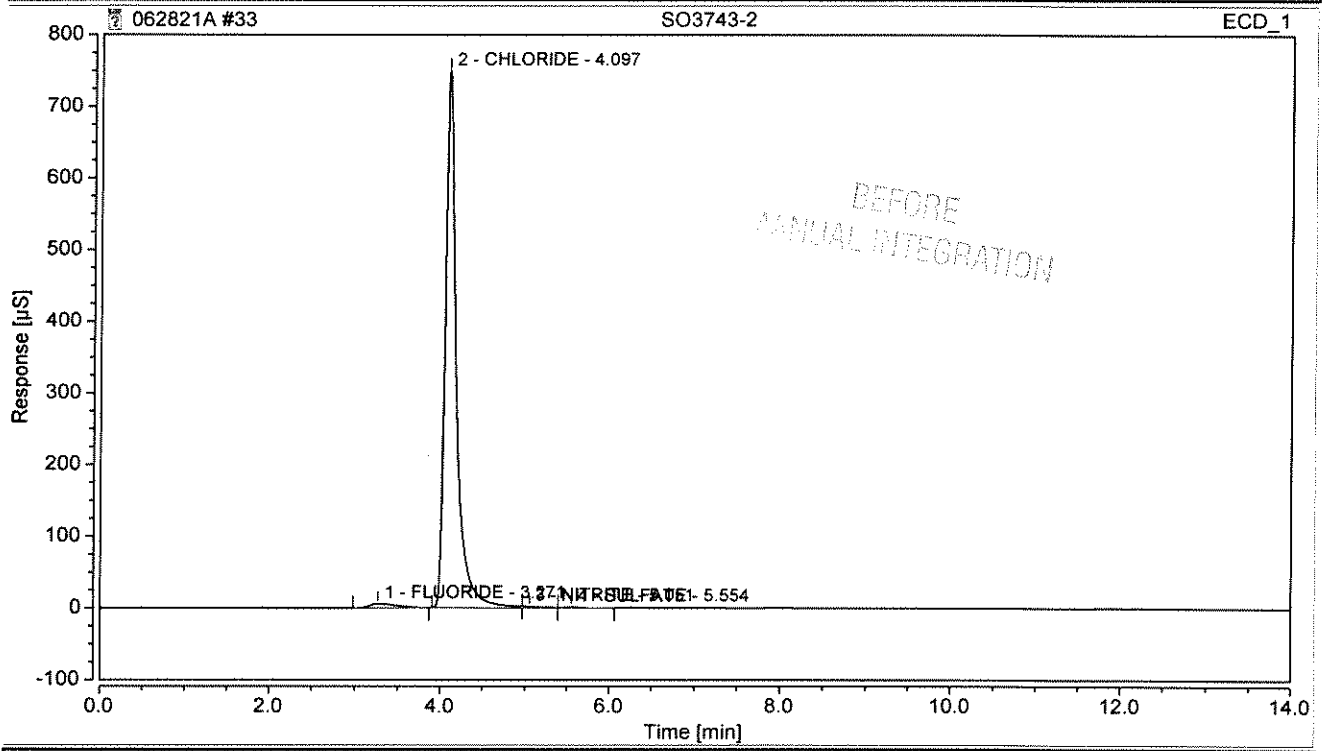
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.074	0.025	0.122	0.04	0.03	0.0469	n.a.
2	CHLORIDE	4.091	58.768	381.368	96.54	97.54	180.6489	n.a.
3	NITRITE	5.024	0.344	1.272	0.57	0.33	0.4955	n.a.
4	SULFATE	5.554	1.570	7.764	2.58	1.99	6.4978	n.a.
5	BROMIDE	6.227	0.083	0.179	0.14	0.05	0.2444	n.a.
6	NITRATE	7.167	0.083	0.287	0.14	0.07	0.1152	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**60.872**	**390.993**	**100.00**	**100.00**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3743-2**	*Run Time (min):*	**13.98**
Vial Number:	**33**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMltest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 23:19**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

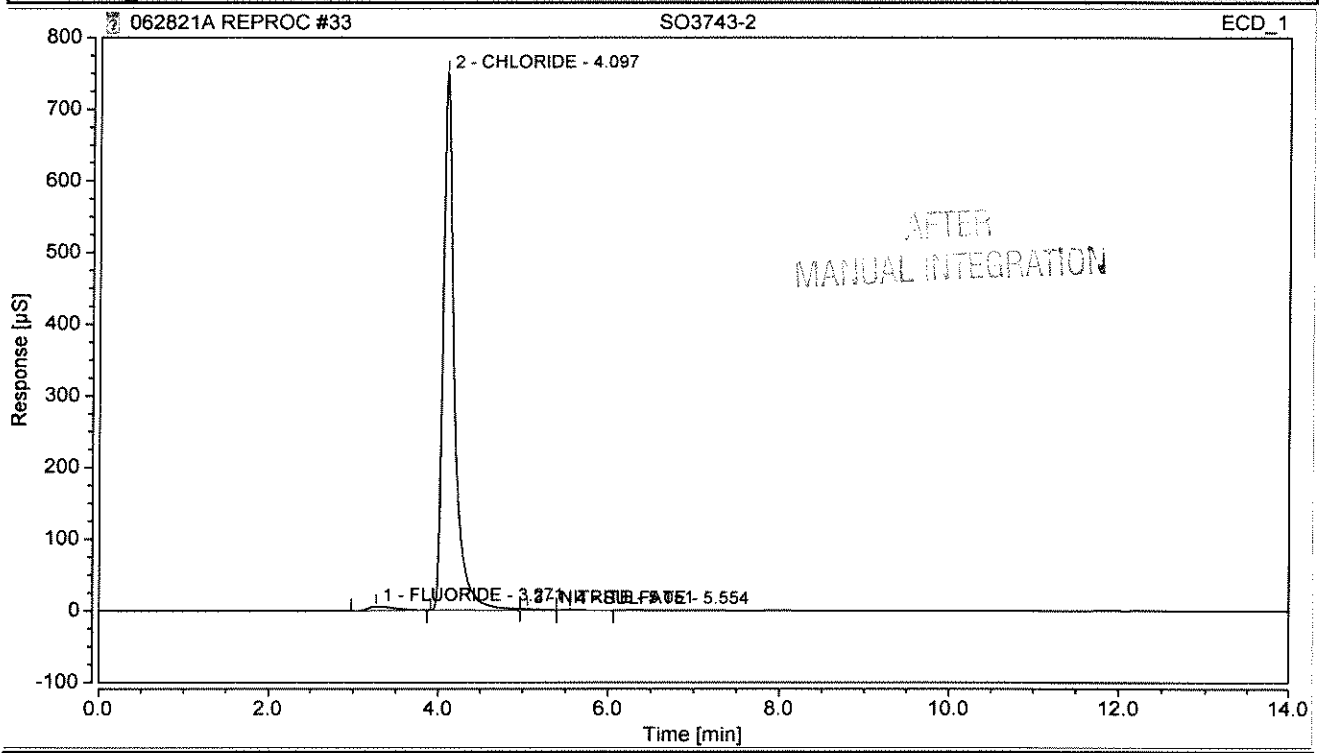
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.271	2.032	5.538	1.71	0.73	3.8647	n.a.
2	CHLORIDE	4.097	115.838	749.137	97.65	98.88	356.0569	n.a.
3	NITRITE	5.051	0.499	1.791	0.42	0.24	0.7186	n.a.
4	SULFATE	5.554	0.260	1.120	0.22	0.15	1.0743	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NITRATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**118.629**	**757.585**	**100.00**	**100.00**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3743-2**	*Run Time (min):*	**13.98**
Vial Number:	**33**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMltest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 23:19**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

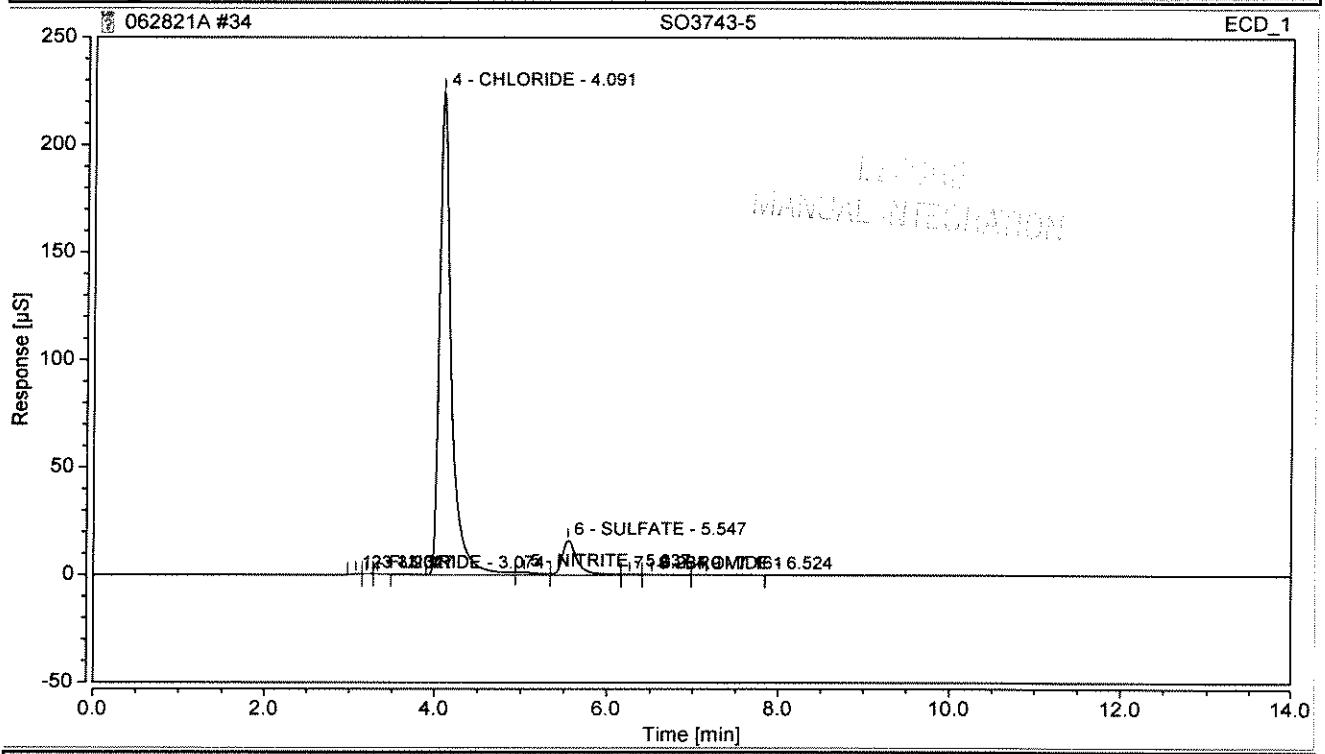
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.271	2.032	5.538	1.71	0.73	3.8647	n.a.
2	CHLORIDE	4.097	115.838	749.137	97.65	98.88	356.0569	n.a.
3	NITRITE	5.051	0.499	1.791	0.42	0.24	0.7186	n.a.
4	SULFATE	5.554	0.260	1.120	0.22	0.15	1.0743	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NITRATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**118.629**	**757.585**	**100.00**	**100.00**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3743-5**	*Run Time (min):*	**13.99**
Vial Number:	**34**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMltest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 23:34**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

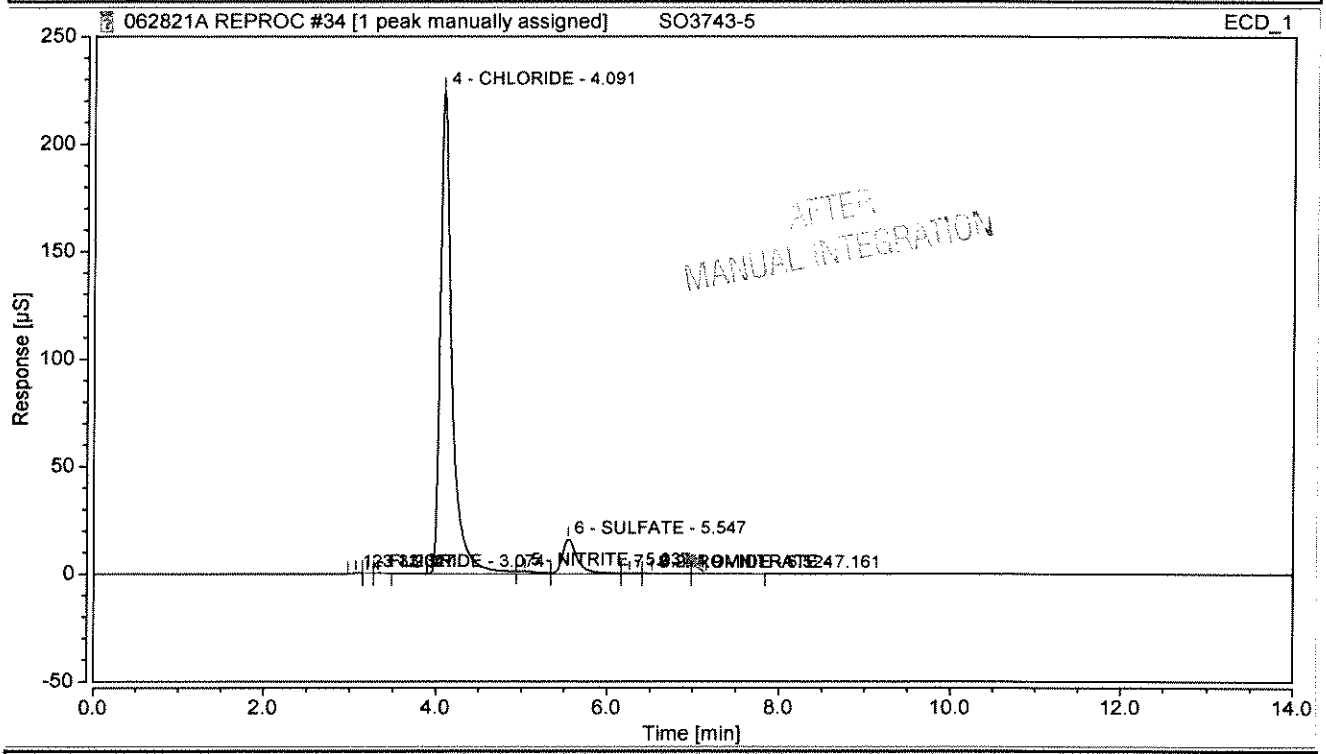
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.074	0.017	0.195	0.04	0.08	0.0318	n.a.
4	CHLORIDE	4.091	35.538	224.994	90.61	92.62	109.2511	n.a.
5	NITRITE	5.037	0.339	1.197	0.86	0.49	0.4878	n.a.
6	SULFATE	5.547	3.184	15.952	8.12	6.57	13.1793	n.a.
8	BROMIDE	6.524	0.056	0.144	0.14	0.06	0.1960	n.a.
n.a.	NITRATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**39.133**	**242.481**	**99.78**	**99.82**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3743-5**	*Run Time (min):*	**13.99**
Vial Number:	**34**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 23:34**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

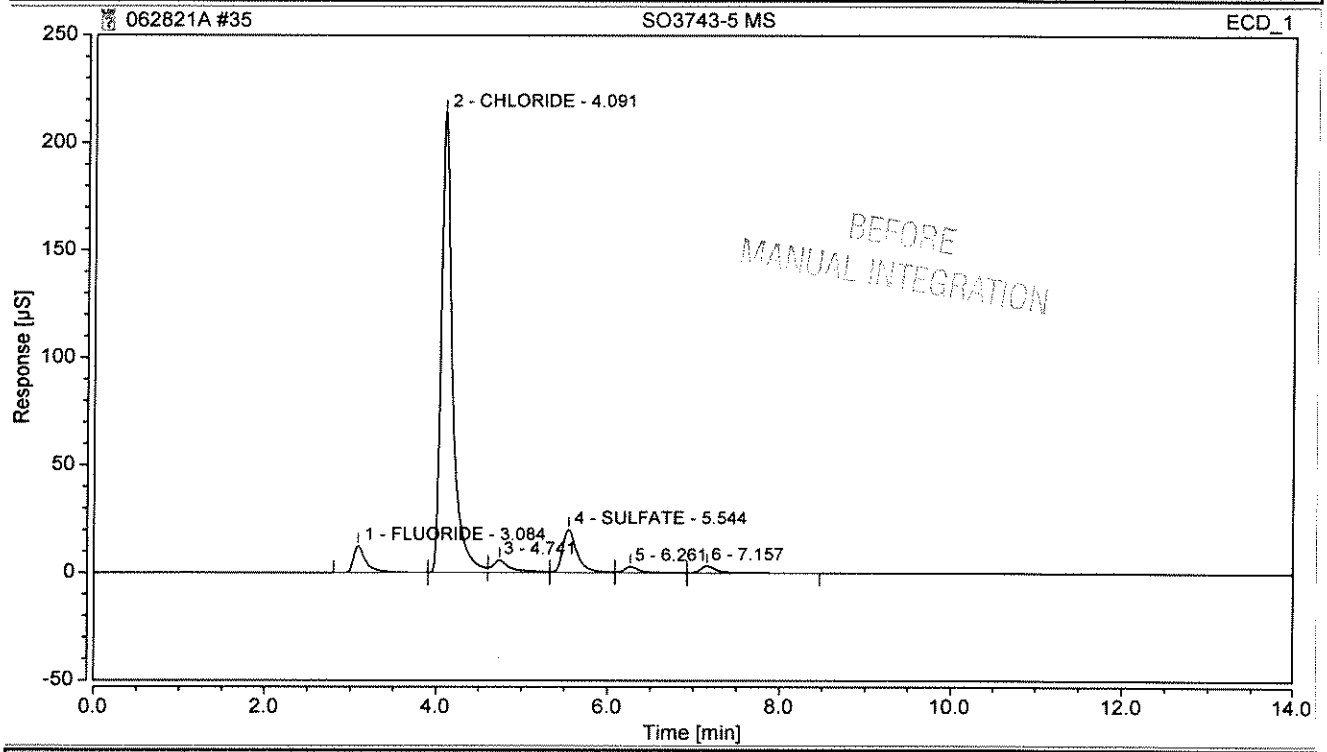
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.074	0.017	0.195	0.04	0.08	0.0318	n.a.
4	CHLORIDE	4.091	35.538	224.994	90.61	92.62	109.2511	n.a.
5	NITRITE	5.037	0.339	1.197	0.86	0.49	0.4878	n.a.
6	SULFATE	5.547	3.184	15.952	8.12	6.57	13.1793	n.a.
8	BROMIDE	6.524	0.056	0.144	0.14	0.06	0.1960	n.a.
9	NITRATE	7.161	0.025	0.079	0.06	0.03	0.0453	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**39.159**	**242.561**	**99.84**	**99.85**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3743-5 MS**	*Run Time (min):*	**13.98**
Vial Number:	**35**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 23:49**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

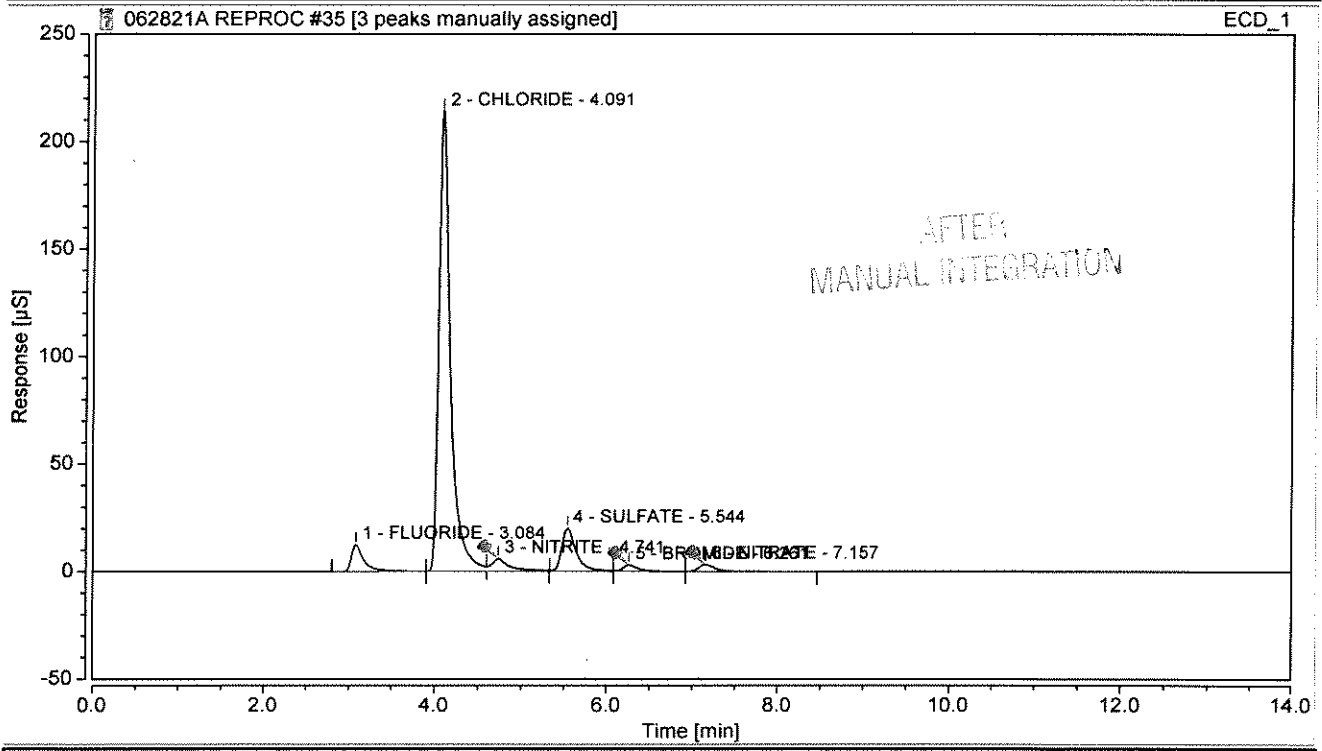
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.084	2.161	12.566	5.16	4.86	4.1098	n.a.
2	CHLORIDE	4.091	32.990	214.101	78.73	82.72	101.4216	n.a.
n.a.	NITRITE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4	SULFATE	5.544	3.952	20.037	9.43	7.74	16.3565	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NITRATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**39.103**	**246.704**	**93.31**	**95.32**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3743-5 MS**	*Run Time (min):*	**13.98**
Vial Number:	**35**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**28/Jun/21 23:49**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

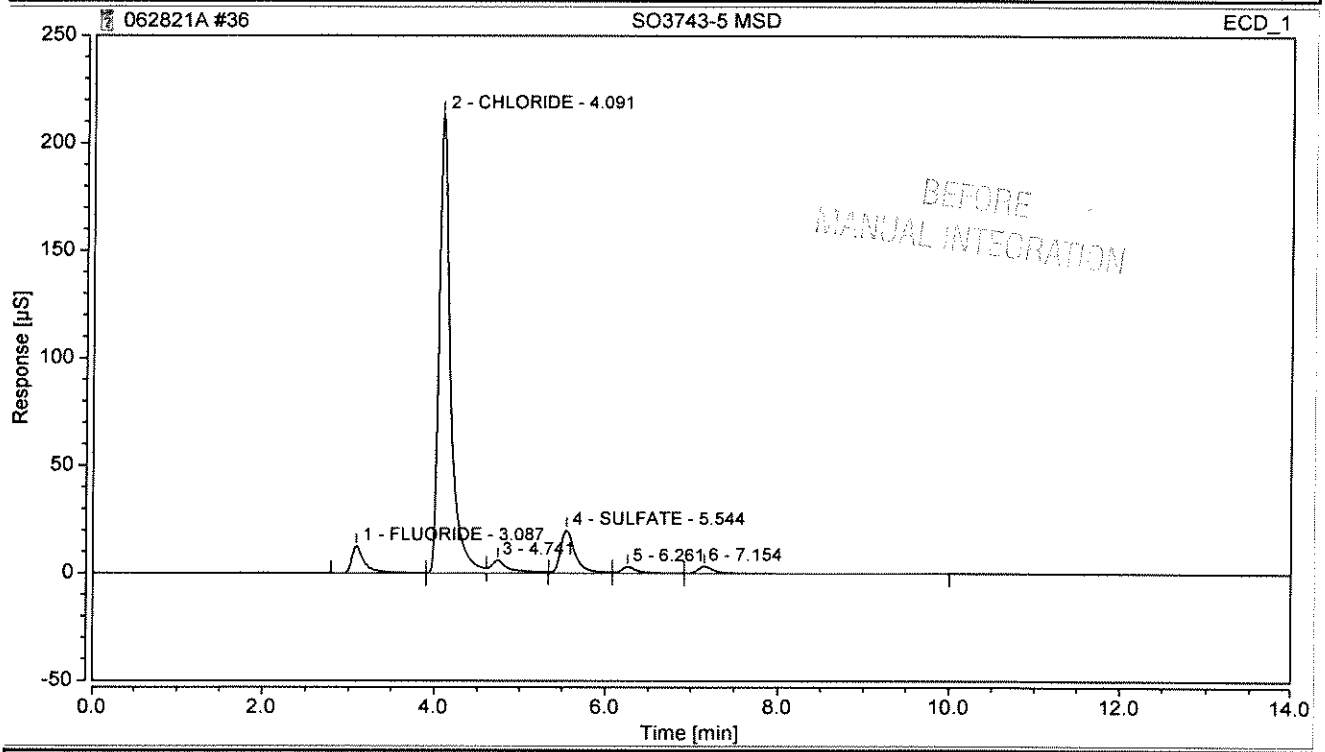
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.084	2.161	12.566	5.16	4.86	4.1098	n.a.
2	CHLORIDE	4.091	32.990	214.101	78.73	82.72	101.4216	n.a.
3	NITRITE	4.741	1.461	5.879	3.49	2.27	2.1031	n.a.
4	SULFATE	5.544	3.952	20.037	9.43	7.74	16.3565	n.a.
5	BROMIDE	6.261	0.630	2.979	1.50	1.15	4.0605	n.a.
6	NITRATE	7.157	0.710	3.255	1.70	1.26	0.8745	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**41.905**	**258.817**	**100.00**	**100.00**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3743-5 MSD**	*Run Time (min):*	**13.97**
Vial Number:	**36**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**29/Jun/21 00:04**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

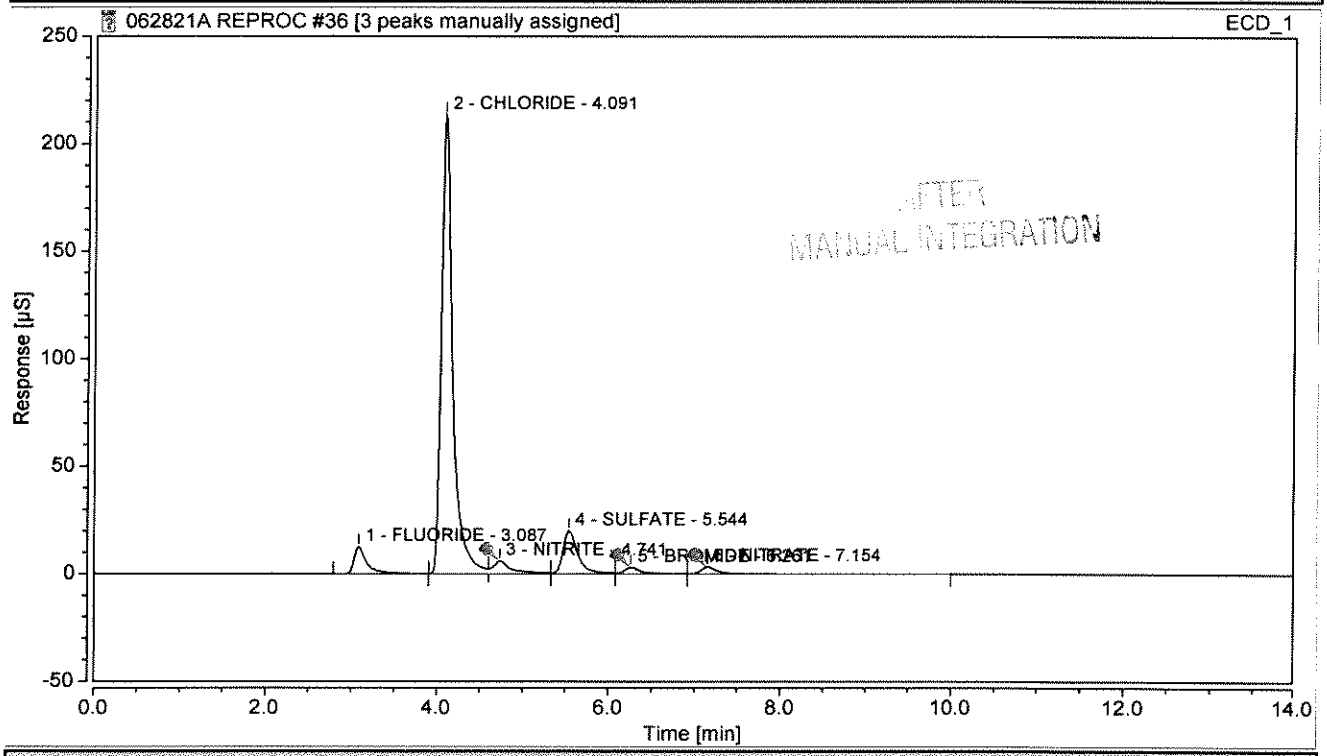
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.087	2.258	12.613	5.34	4.88	4.2941	n.a.
2	CHLORIDE	4.091	32.961	213.611	77.94	82.58	101.3324	n.a.
n.a.	NITRITE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4	SULFATE	5.544	4.012	20.075	9.49	7.76	16.6049	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NITRATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**39.231**	**246.299**	**92.76**	**95.22**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3743-5 MSD**	*Run Time (min):*	**13.97**
Vial Number:	**36**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**29/Jun/21 00:04**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

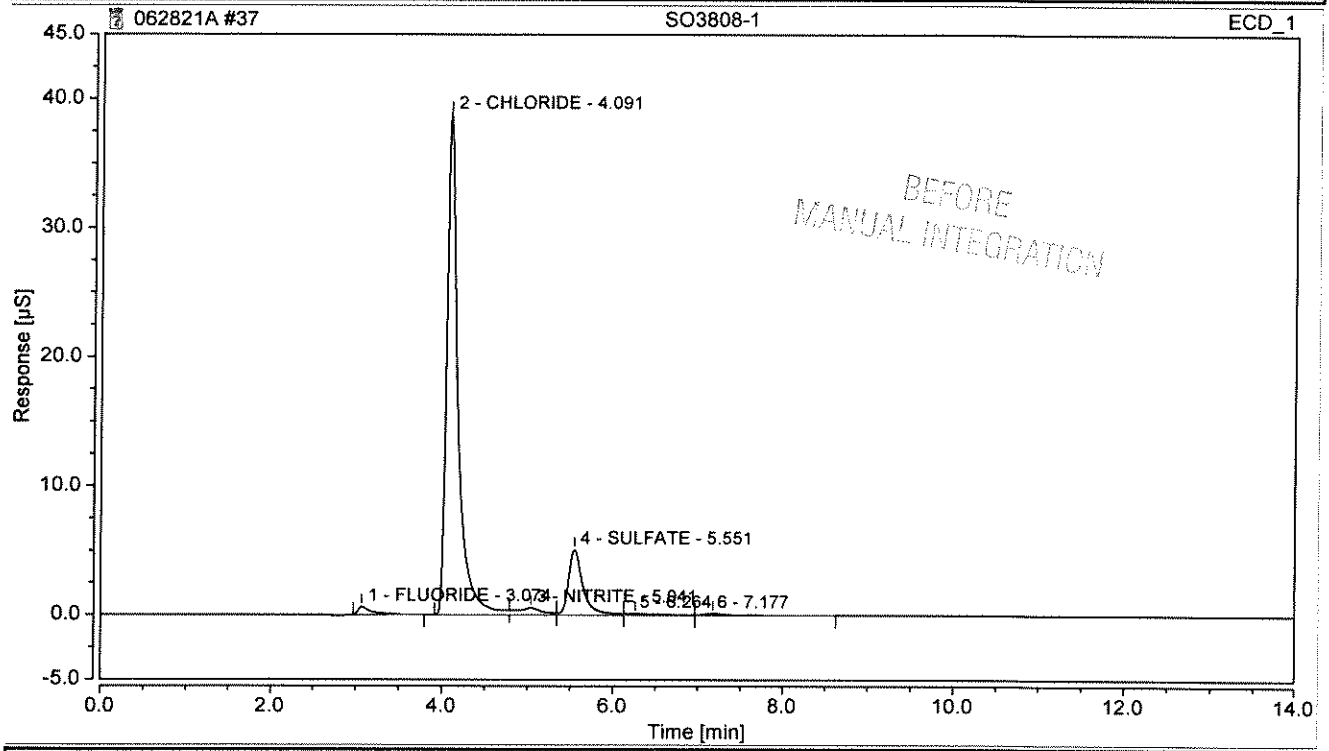
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.087	2.258	12.613	5.34	4.88	4.2941	n.a.
2	CHLORIDE	4.091	32.961	213.611	77.94	82.58	101.3324	n.a.
3	NITRITE	4.741	1.550	6.000	3.67	2.32	2.2306	n.a.
4	SULFATE	5.544	4.012	20.075	9.49	7.76	16.6049	n.a.
5	BROMIDE	6.261	0.700	3.062	1.66	1.18	4.1737	n.a.
6	NITRATE	7.154	0.812	3.307	1.92	1.28	0.9970	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**42.293**	**258.668**	**100.00**	**100.00**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3808-1**	*Run Time (min):*	**13.98**
Vial Number:	**37**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**29/Jun/21 00:19**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

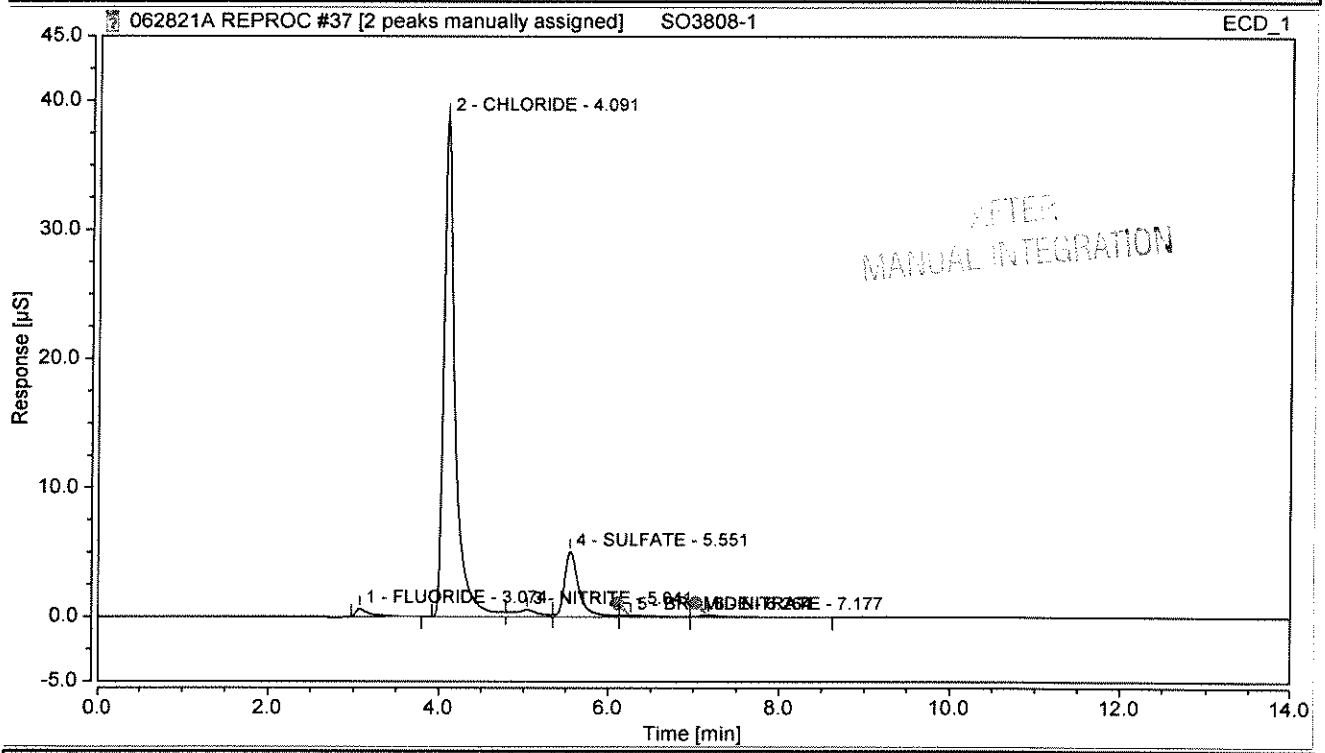
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.074	0.118	0.620	1.59	1.37	0.2253	n.a.
2	CHLORIDE	4.091	6.066	38.776	81.32	85.64	18.6707	n.a.
3	NITRITE	5.041	0.190	0.540	2.54	1.19	0.2731	n.a.
4	SULFATE	5.551	0.991	5.081	13.28	11.22	4.1009	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NITRATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**7.365**	**45.017**	**98.73**	**99.42**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3808-1**	*Run Time (min):*	**13.98**
Vial Number:	**37**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMitest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**29/Jun/21 00:19**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

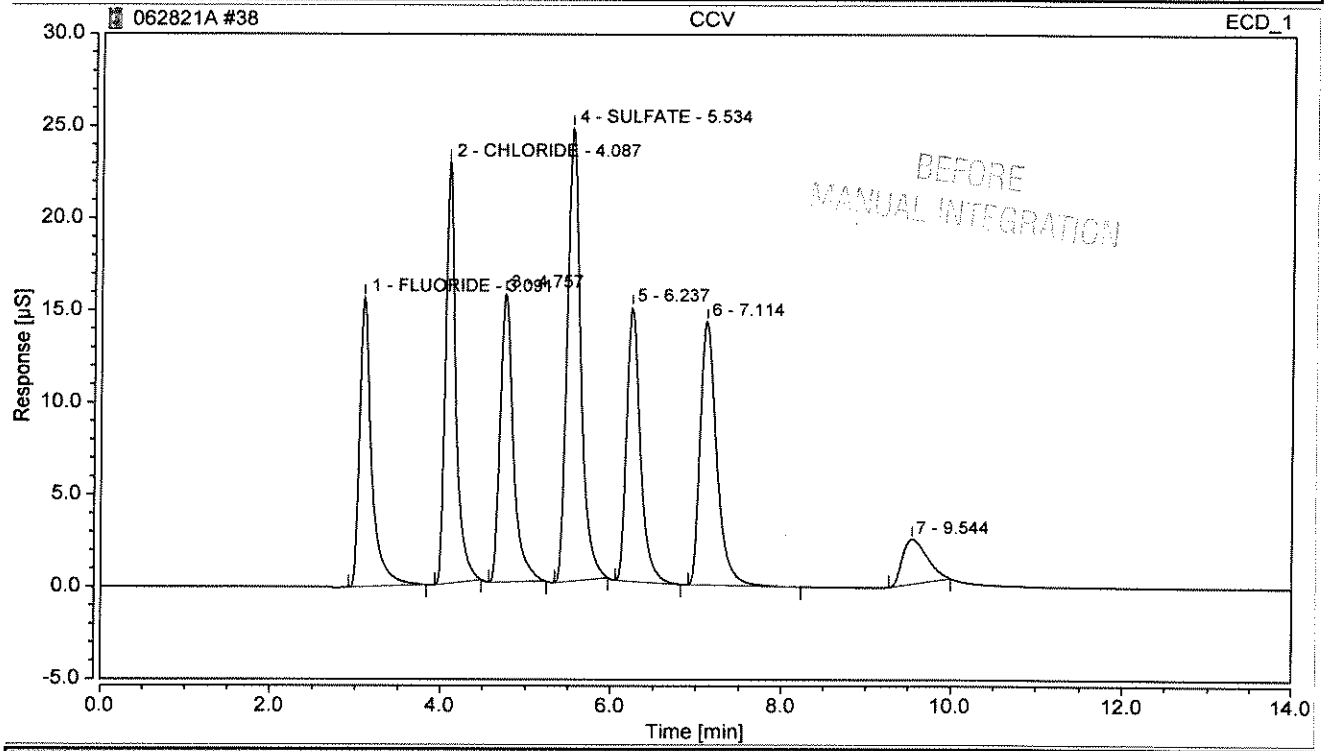
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.074	0.118	0.620	1.59	1.37	0.2253	n.a.
2	CHLORIDE	4.091	6.066	38.776	81.32	85.64	18.6707	n.a.
3	NITRITE	5.041	0.190	0.540	2.54	1.19	0.2731	n.a.
4	SULFATE	5.551	0.991	5.081	13.28	11.22	4.1009	n.a.
5	BROMIDE	6.264	0.051	0.120	0.69	0.27	0.1638	n.a.
6	NITRATE	7.177	0.043	0.141	0.58	0.31	0.0668	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**7.460**	**45.278**	**100.00**	**100.00**		

Chromatogram and Results

Injection Details

Injection Name:	**CCV**	*Run Time (min):*	**13.99**
Vial Number:	**38**	*Injection Volume:*	**200.00**
Injection Type:	**Check Standard**	*Channel:*	**ECD_1**
Calibration Level:	**06**	*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMitest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**29/Jun/21 00:34**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

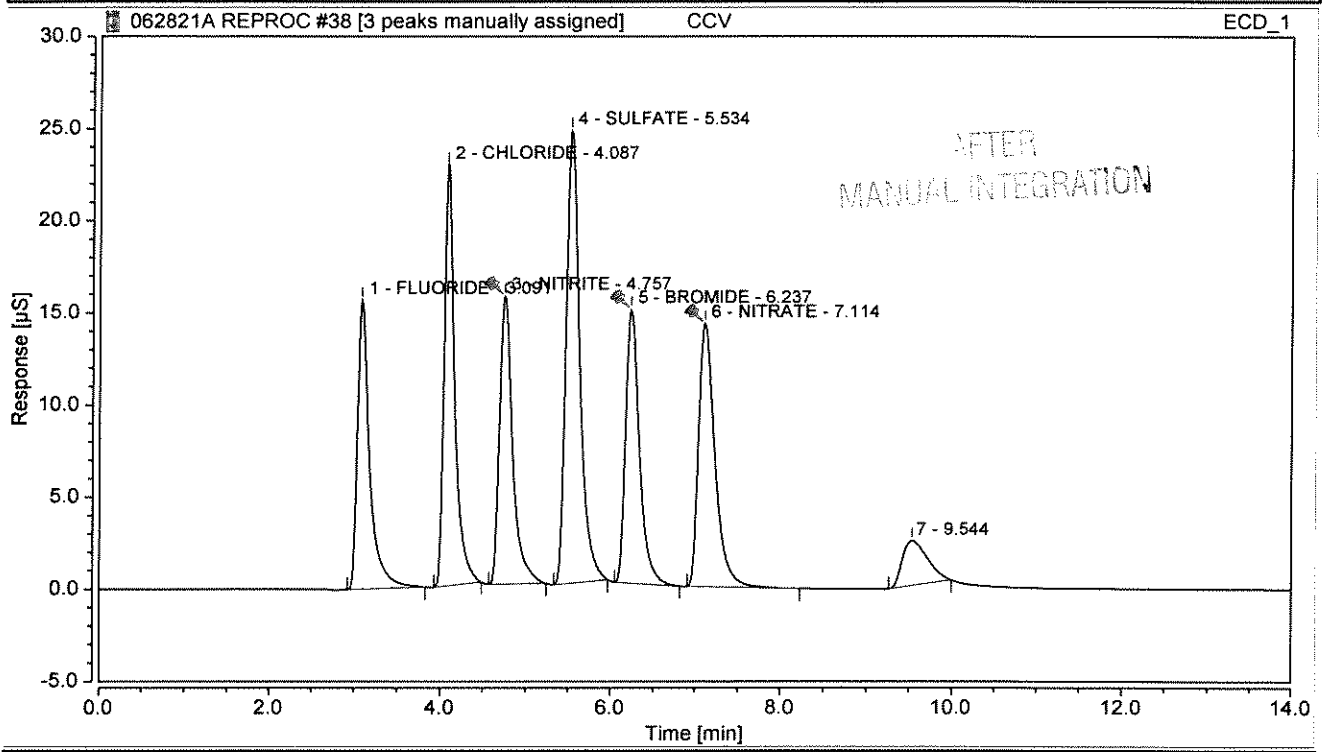
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.091	2.583	15.716	12.91	14.23	4.9122	-1.7565
2	CHLORIDE	4.087	3.260	22.871	16.30	20.71	10.0451	0.4509
n.a.	NITRITE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4	SULFATE	5.534	4.562	24.578	22.81	22.25	18.8807	-5.5966
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NITRATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**10.404**	**63.165**	**52.02**	**57.19**		

Chromatogram and Results

Injection Details

Injection Name:	**CCV**	*Run Time (min):*	**13.99**
Vial Number:	**38**	*Injection Volume:*	**200.00**
Injection Type:	**Check Standard**	*Channel:*	**ECD_1**
Calibration Level:	**06**	*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**29/Jun/21 00:34**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

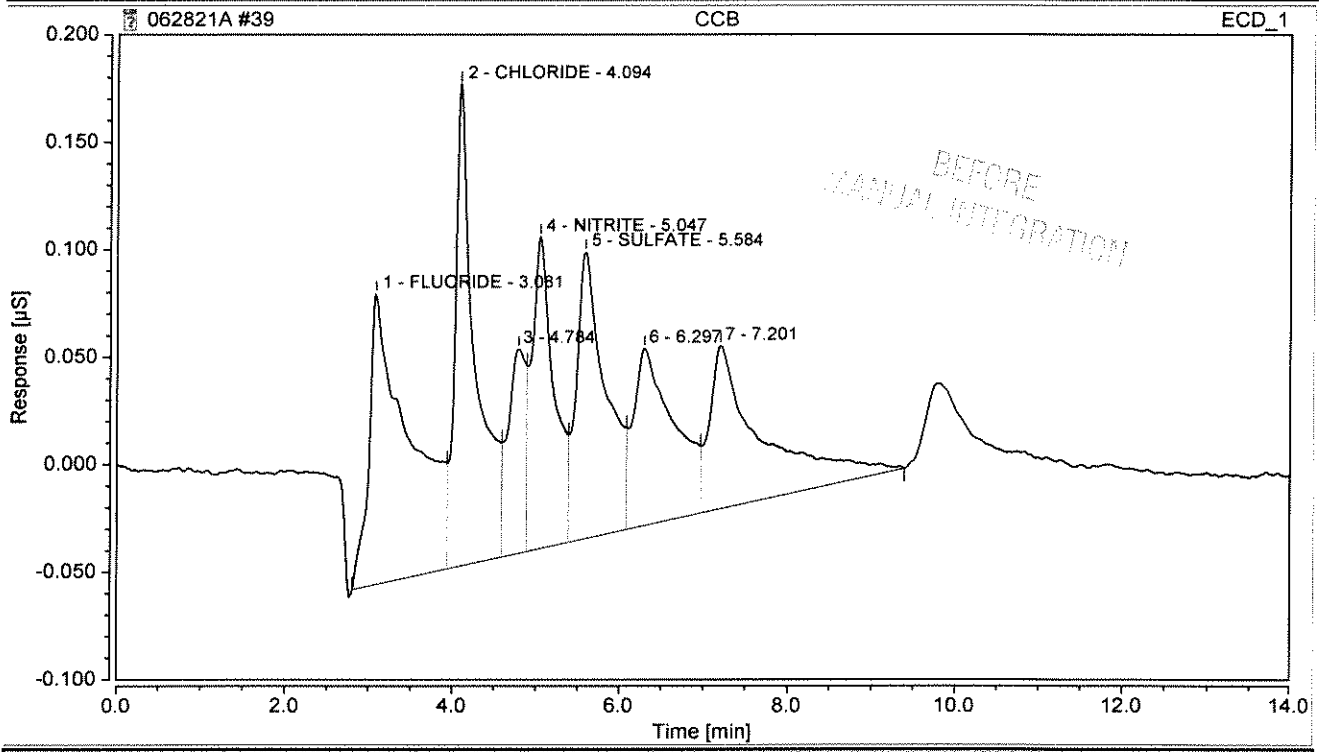
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.091	2.583	15.716	12.91	14.23	4.9122	-1.7565
2	CHLORIDE	4.087	3.260	22.871	16.30	20.71	10.0451	0.4509
3	NITRITE	4.757	2.788	15.667	13.94	14.18	4.0117	0.2914
4	SULFATE	5.534	4.562	24.578	22.81	22.25	18.8807	-5.5966
5	BROMIDE	6.237	2.793	14.882	13.96	13.47	20.2870	1.4348
6	NITRATE	7.114	3.187	14.298	15.93	12.95	3.8719	-3.2027
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**19.171**	**108.013**	**95.85**	**97.79**		

Chromatogram and Results

Injection Details

Injection Name:	**CCB**	*Run Time (min):*	**13.98**
Vial Number:	**39**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMltest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**29/Jun/21 00:49**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

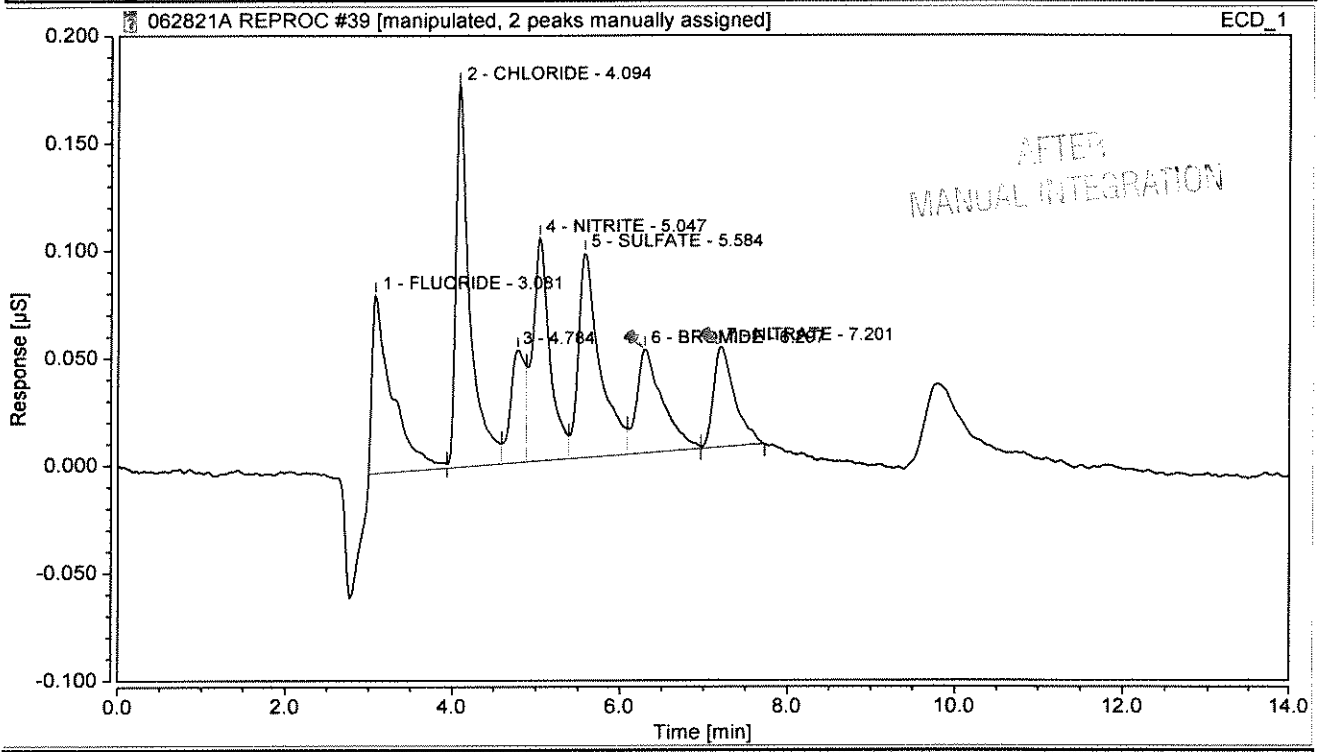
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.081	0.075	0.135	20.55	15.19	0.1419	n.a.
2	CHLORIDE	4.094	0.064	0.224	17.72	25.14	0.2233	n.a.
4	NITRITE	5.047	0.045	0.145	12.53	16.26	0.0654	n.a.
5	SULFATE	5.584	0.054	0.133	15.00	14.97	0.2253	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NITRATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.239**	**0.638**	**65.80**	**71.57**		

Chromatogram and Results

Injection Details

Injection Name:	**CCB**	*Run Time (min):*	**13.98**
Vial Number:	**39**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**29/Jun/21 00:49**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

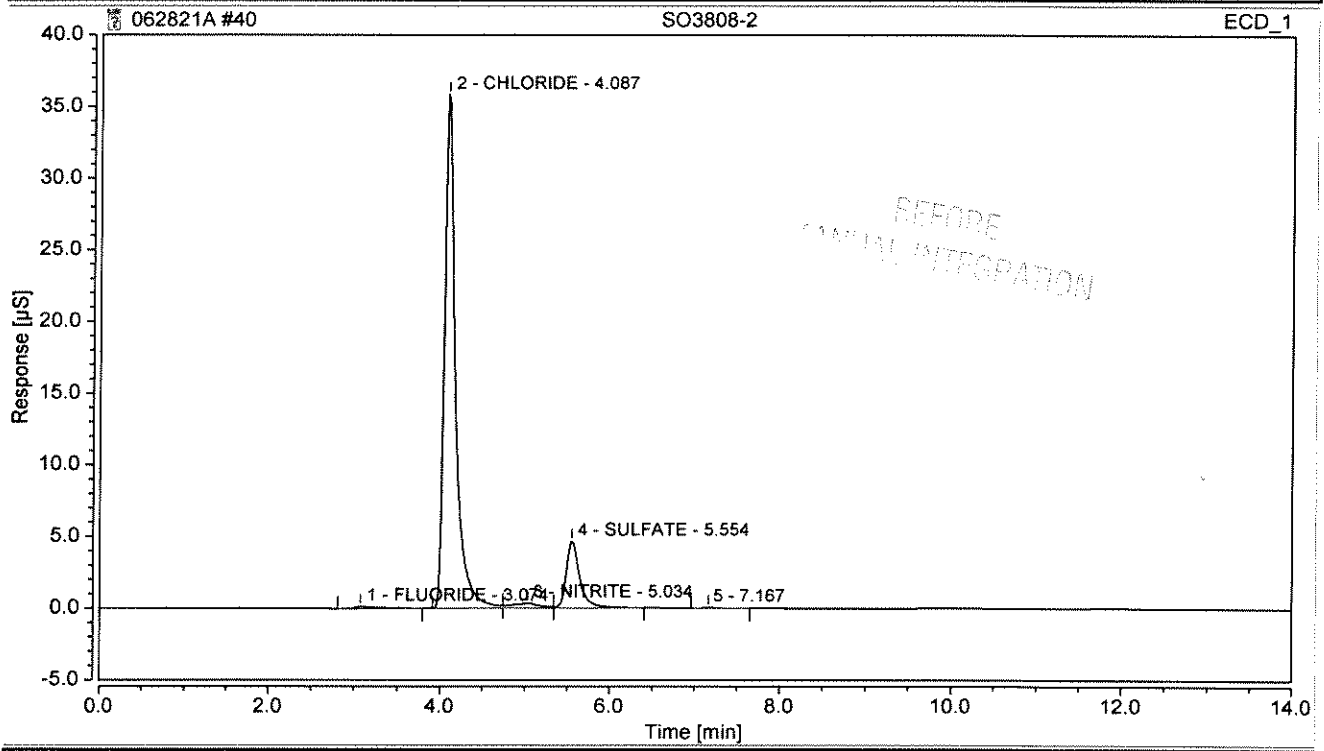
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.081	0.023	0.083	15.12	13.69	0.0438	n.a.
2	CHLORIDE	4.094	0.035	0.178	22.64	29.24	0.1317	n.a.
4	NITRITE	5.047	0.025	0.104	16.39	17.09	0.0360	n.a.
5	SULFATE	5.584	0.028	0.095	18.66	15.68	0.1177	n.a.
6	BROMIDE	6.297	0.017	0.048	11.45	7.95	0.0658	n.a.
7	NITRATE	7.201	0.014	0.047	9.00	7.71	0.0311	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.142**	**0.555**	**93.25**	**91.36**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3808-2**	*Run Time (min):*	**13.99**
Vial Number:	**40**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**29/Jun/21 01:04**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

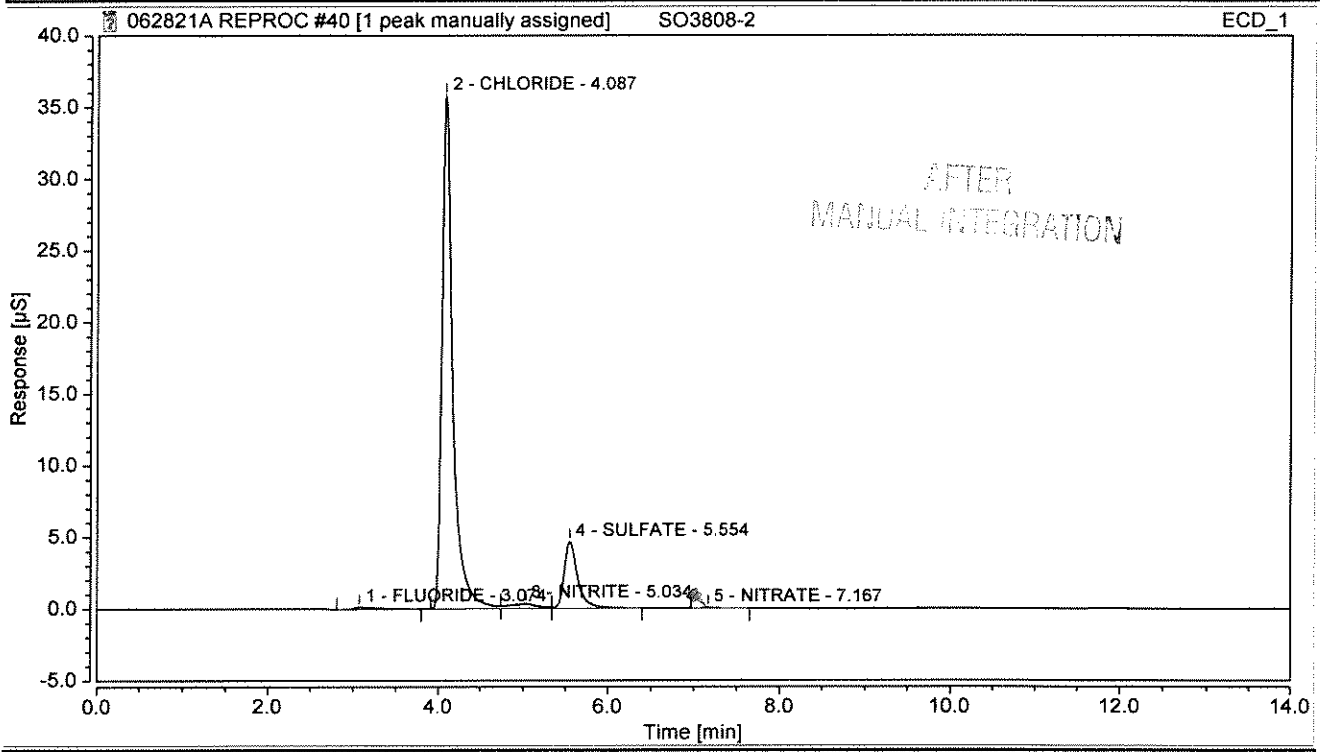
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.074	0.045	0.145	0.69	0.35	0.0848	n.a.
2	CHLORIDE	4.087	5.378	35.828	83.75	87.34	16.5551	n.a.
3	NITRITE	5.034	0.122	0.334	1.91	0.81	0.1763	n.a.
4	SULFATE	5.554	0.866	4.662	13.49	11.37	3.5844	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NITRATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**6.411**	**40.969**	**99.83**	**99.88**		

Chromatogram and Results

Injection Details

Injection Name:	**SO3808-2**	*Run Time (min):*	**13.99**
Vial Number:	**40**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMltest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**29/Jun/21 01:04**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

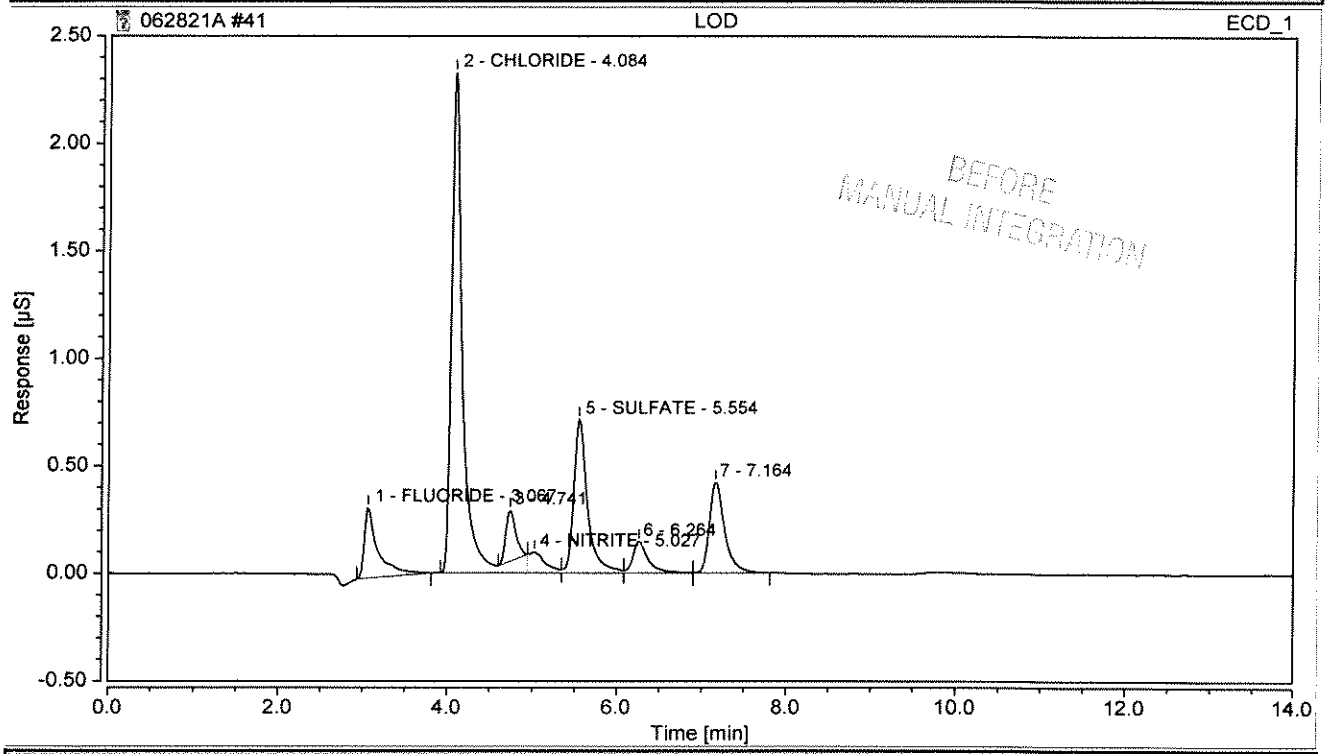
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.074	0.045	0.145	0.69	0.35	0.0848	n.a.
2	CHLORIDE	4.087	5.378	35.828	83.75	87.34	16.5551	n.a.
3	NITRITE	5.034	0.122	0.334	1.91	0.81	0.1763	n.a.
4	SULFATE	5.554	0.866	4.662	13.49	11.37	3.5844	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5	NITRATE	7.167	0.011	0.050	0.17	0.12	0.0274	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**6.422**	**41.019**	**100.00**	**100.00**		

Chromatogram and Results

Injection Details

Injection Name:	**LOD**	*Run Time (min):*	**13.99**
Vial Number:	**41**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMitest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**29/Jun/21 01:19**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

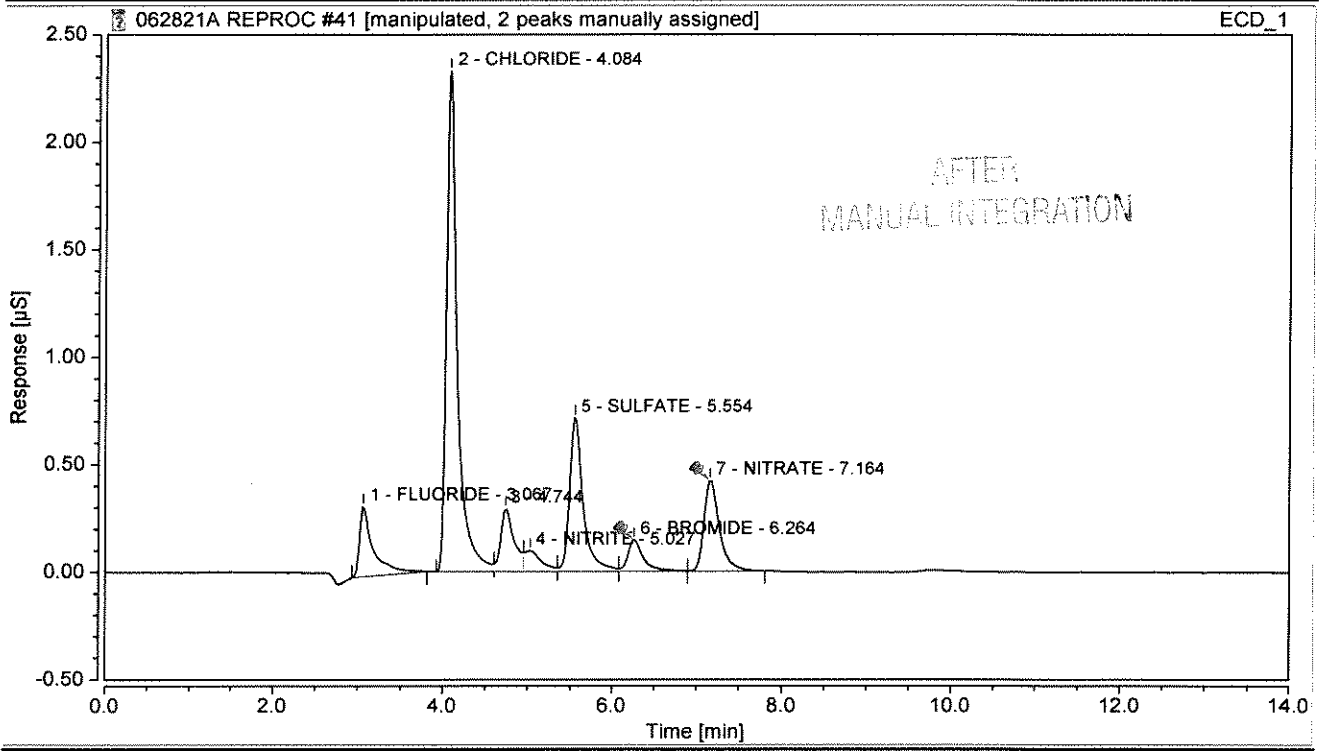
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.067	0.062	0.328	8.37	7.67	0.1180	n.a.
2	CHLORIDE	4.084	0.369	2.329	49.81	54.47	1.1608	n.a.
4	NITRITE	5.027	0.022	0.097	3.00	2.26	0.0320	n.a.
5	SULFATE	5.554	0.136	0.715	18.33	16.71	0.5625	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NITRATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.590**	**3.468**	**79.50**	**81.11**		

Chromatogram and Results

Injection Details

Injection Name:	**LOD**	*Run Time (min):*	**13.99**
Vial Number:	**41**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**29/Jun/21 01:19**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

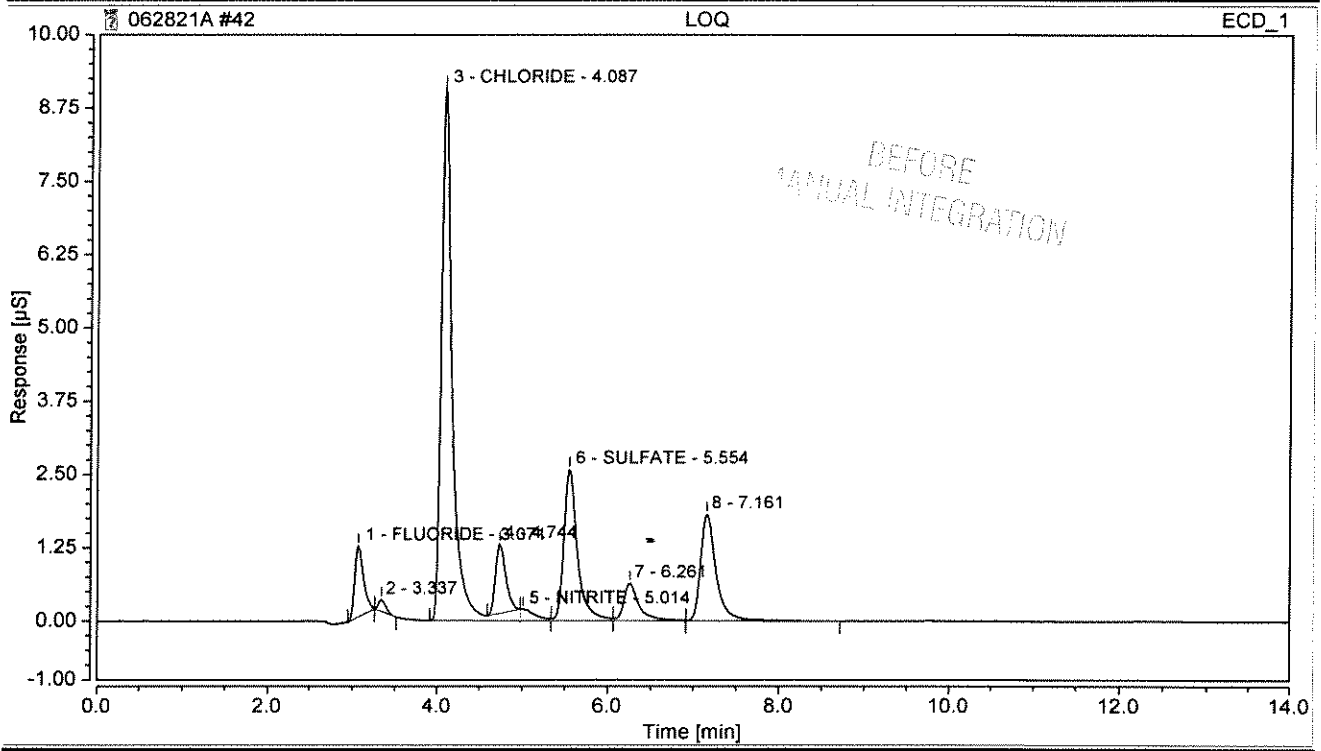
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.067	0.062	0.328	8.37	7.58	0.1180	n.a.
2	CHLORIDE	4.084	0.349	2.329	47.02	53.79	1.0973	n.a.
4	NITRITE	5.027	0.022	0.097	3.00	2.23	0.0320	n.a.
5	SULFATE	5.554	0.136	0.715	18.33	16.50	0.5625	n.a.
6	BROMIDE	6.264	0.031	0.146	4.18	3.38	0.1995	n.a.
7	NITRATE	7.164	0.089	0.423	11.95	9.77	0.1218	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.689**	**4.038**	**92.85**	**93.25**		

Chromatogram and Results

Injection Details

Injection Name:	**LOQ**	*Run Time (min):*	**13.98**
Vial Number:	**42**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**29/Jun/21 01:34**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

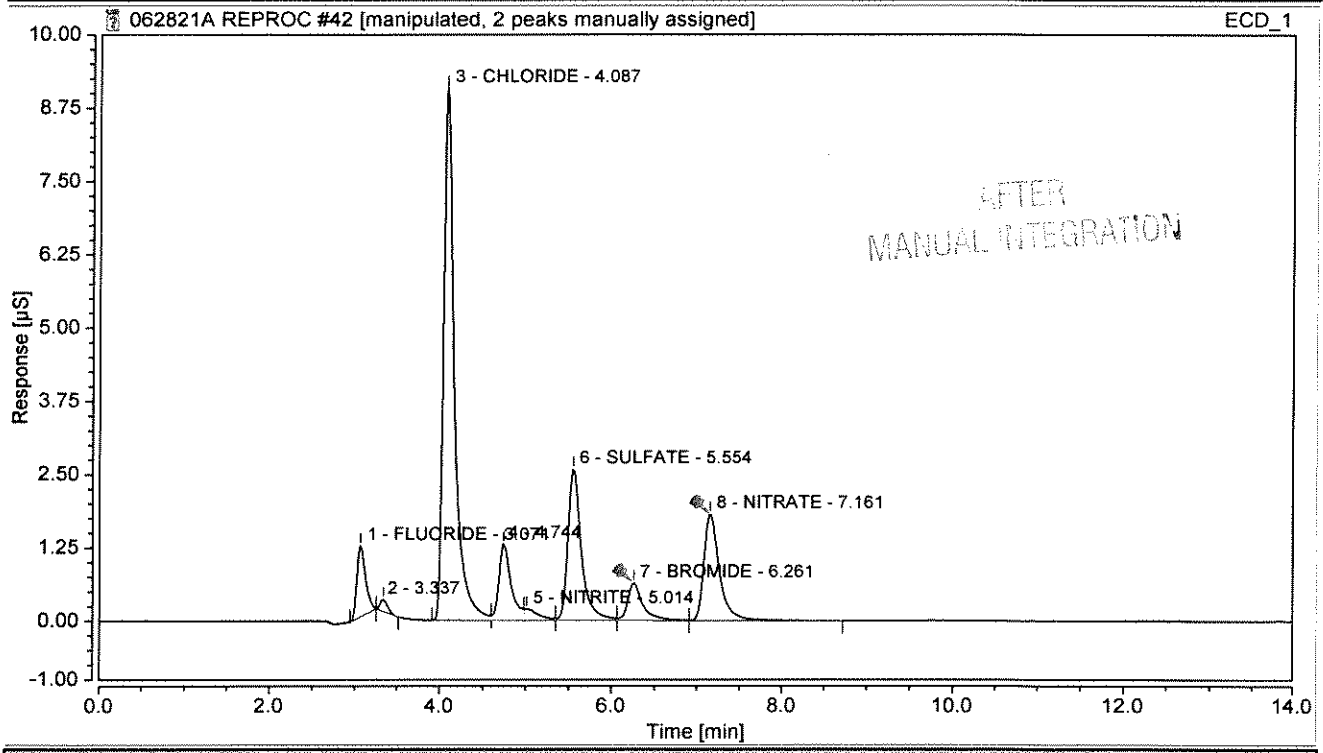
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.071	0.143	1.208	5.20	7.15	0.2727	n.a.
3	CHLORIDE	4.087	1.395	9.076	50.57	53.71	4.3134	n.a.
5	NITRITE	5.014	0.038	0.193	1.36	1.14	0.0542	n.a.
6	SULFATE	5.554	0.477	2.579	17.30	15.26	1.9753	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NITRATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**2.053**	**13.057**	**74.43**	**77.27**		

Chromatogram and Results

Injection Details

Injection Name:	**LOQ**	*Run Time (min):*	**13.98**
Vial Number:	**42**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMltest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**29/Jun/21 01:34**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

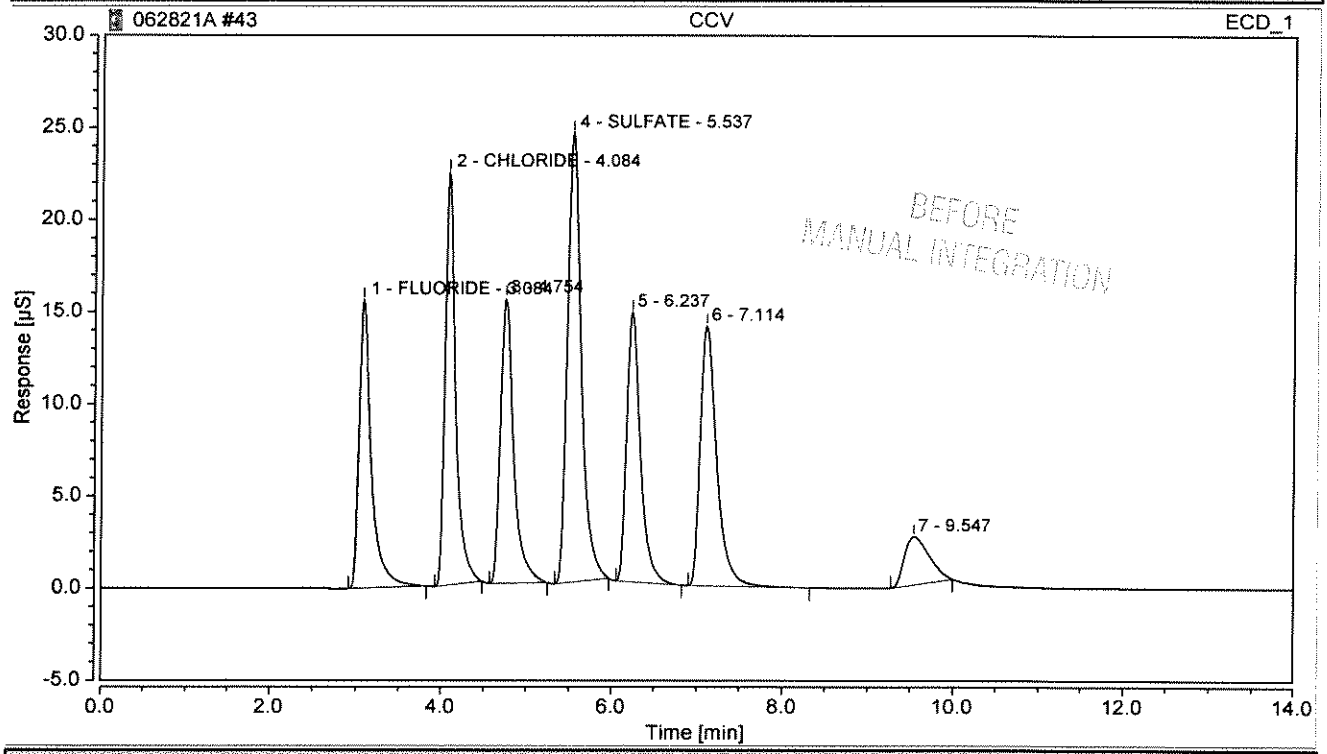
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.071	0.143	1.208	5.20	7.10	0.2727	n.a.
3	CHLORIDE	4.087	1.343	9.076	48.68	53.32	4.1529	n.a.
5	NITRITE	5.014	0.038	0.193	1.36	1.13	0.0542	n.a.
6	SULFATE	5.554	0.477	2.579	17.30	15.15	1.9753	n.a.
7	BROMIDE	6.261	0.132	0.641	4.77	3.76	0.8733	n.a.
8	NITRATE	7.161	0.389	1.819	14.10	10.69	0.4852	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**2.522**	**15.517**	**91.41**	**91.16**		

Chromatogram and Results

Injection Details

Injection Name:	**CCV**	*Run Time (min):*	**13.98**
Vial Number:	**43**	*Injection Volume:*	**200.00**
Injection Type:	**Check Standard**	*Channel:*	**ECD_1**
Calibration Level:	**06**	*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**29/Jun/21 01:49**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

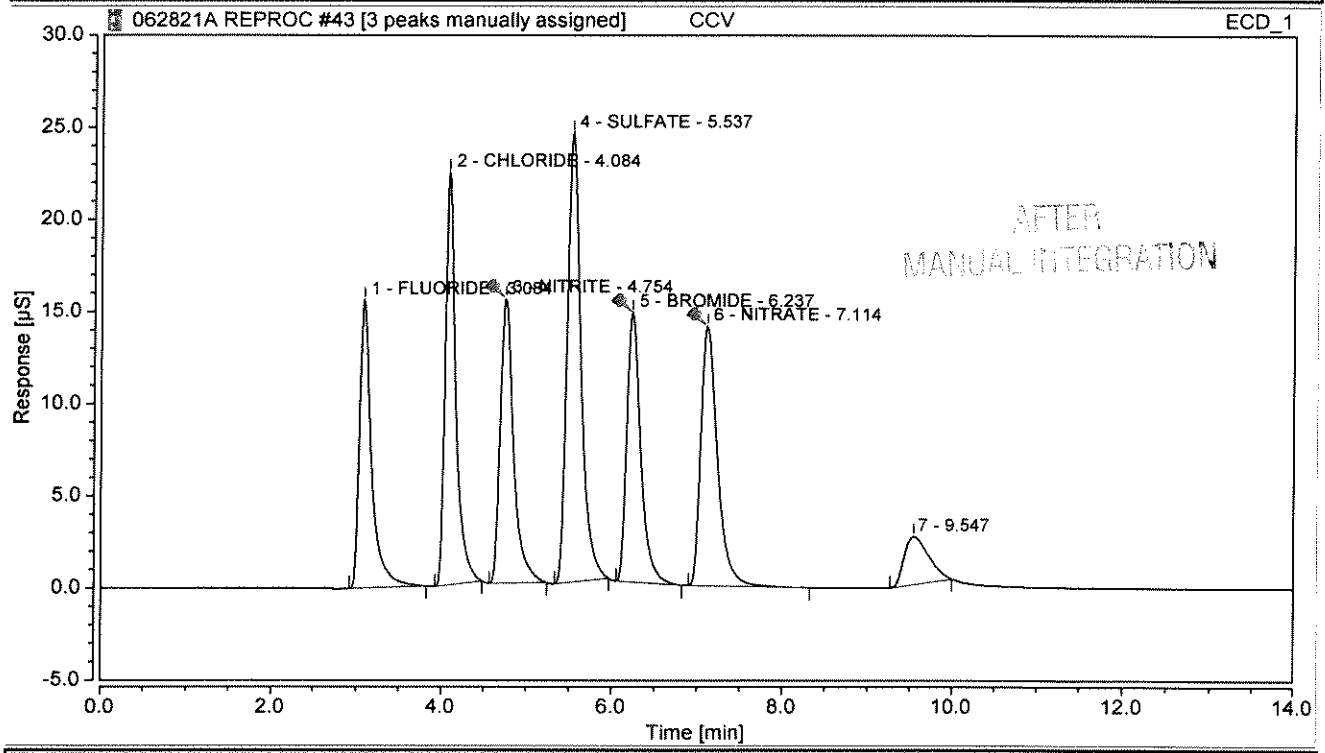
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.084	2.582	15.630	12.91	14.32	4.9101	-1.7973
2	CHLORIDE	4.084	3.234	22.398	16.17	20.52	9.9655	-0.3447
n.a.	NITRITE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4	SULFATE	5.537	4.556	24.362	22.78	22.32	18.8555	-5.7226
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NITRATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**10.371**	**62.390**	**51.85**	**57.15**		

Chromatogram and Results

Injection Details

Injection Name:	**CCV**	*Run Time (min):*	**13.98**
Vial Number:	**43**	*Injection Volume:*	**200.00**
Injection Type:	**Check Standard**	*Channel:*	**ECD_1**
Calibration Level:	**06**	*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMitest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**29/Jun/21 01:49**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

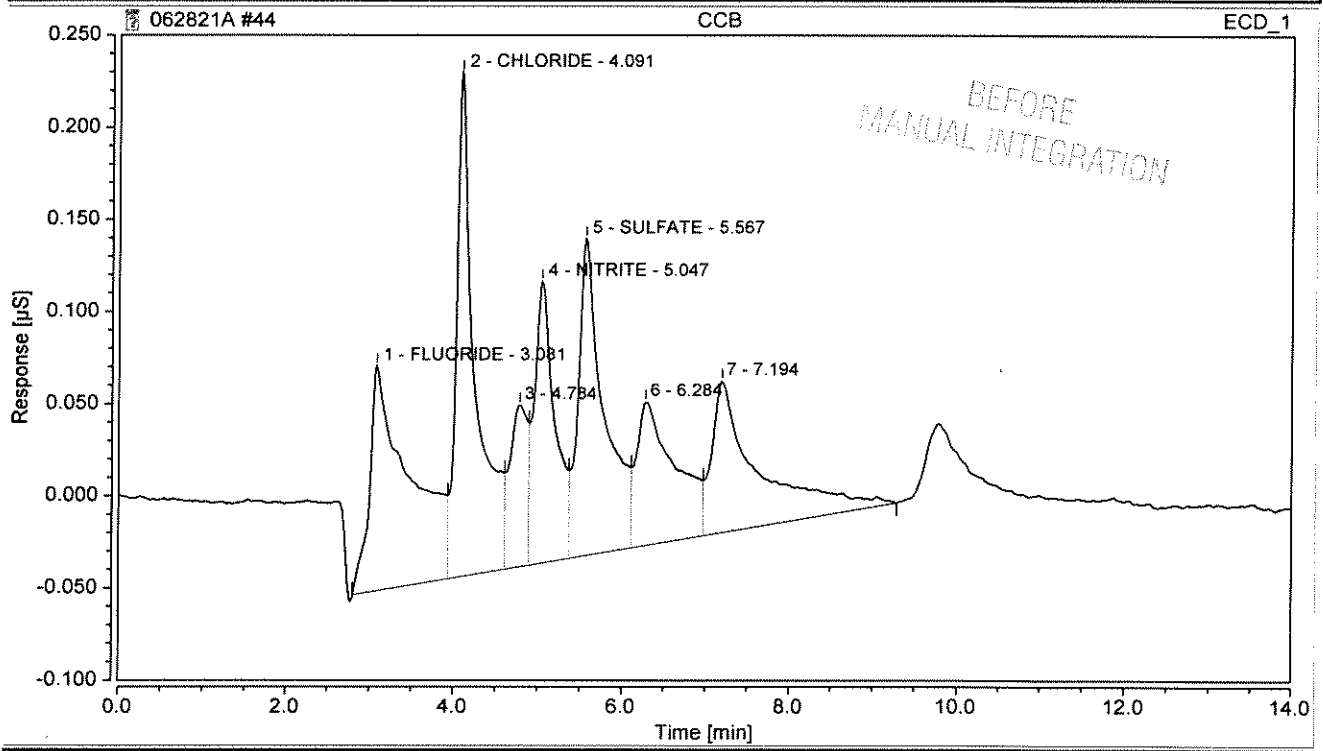
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.084	2.582	15.630	12.91	14.32	4.9101	-1.7973
2	CHLORIDE	4.084	3.234	22.398	16.17	20.52	9.9655	-0.3447
3	NITRITE	4.754	2.784	15.460	13.92	14.16	4.0063	0.1564
4	SULFATE	5.537	4.556	24.362	22.78	22.32	18.8555	-5.7226
5	BROMIDE	6.237	2.781	14.628	13.90	13.40	19.9407	-0.2963
6	NITRATE	7.114	3.184	14.080	15.92	12.90	3.8684	-3.2910
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**19.120**	**106.559**	**95.59**	**97.62**		

Chromatogram and Results

Injection Details

Injection Name:	**CCB**	*Run Time (min):*	**13.98**
Vial Number:	**44**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**29/Jun/21 02:04**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

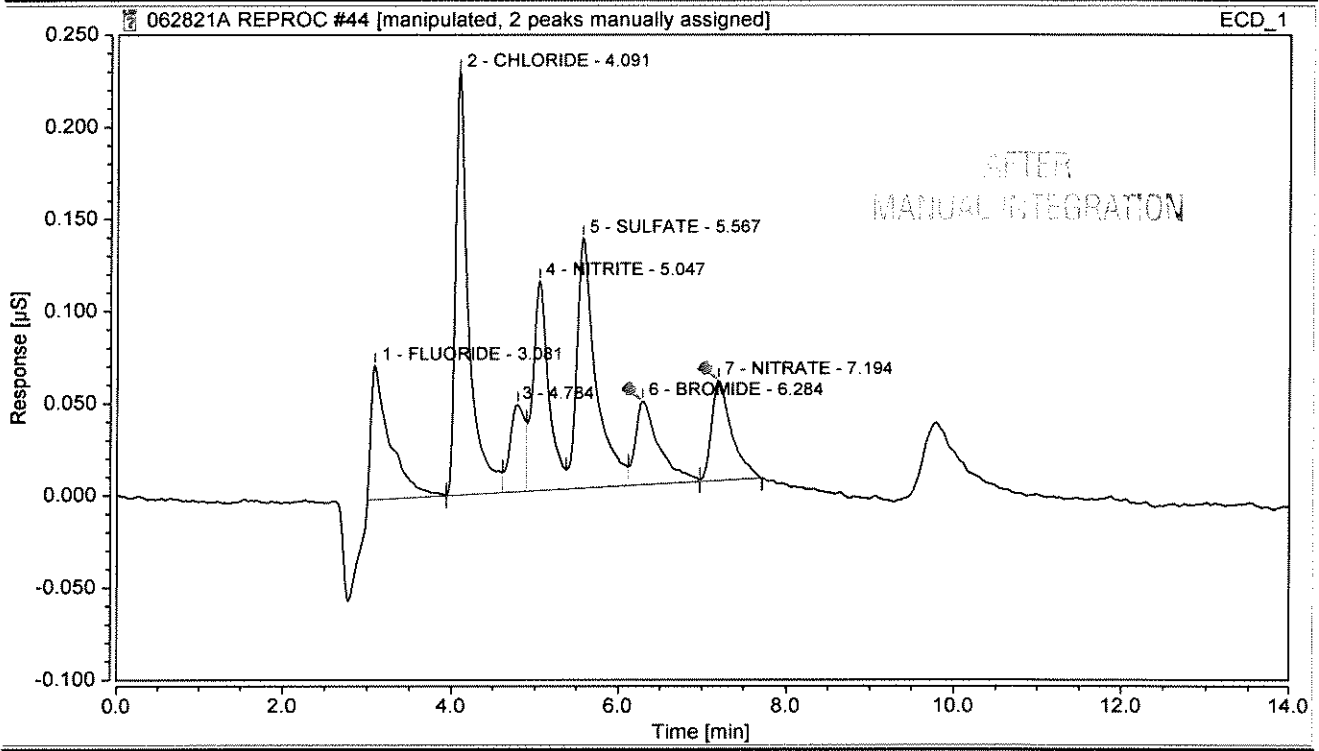
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.081	0.068	0.122	18.70	12.61	0.1284	n.a.
2	CHLORIDE	4.091	0.071	0.273	19.61	28.24	0.2432	n.a.
4	NITRITE	5.047	0.044	0.153	12.13	15.78	0.0630	n.a.
5	SULFATE	5.567	0.063	0.172	17.32	17.76	0.2588	n.a.
n.a.	BROMIDE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	NITRATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.245**	**0.720**	**67.76**	**74.38**		

Chromatogram and Results

Injection Details

Injection Name:	**CCB**	*Run Time (min):*	**13.98**
Vial Number:	**44**	*Injection Volume:*	**200.00**
Injection Type:	**Unknown**	*Channel:*	**ECD_1**
Calibration Level:		*Wavelength:*	**n.a.**
Instrument Method:	**ASDV30mMItest**	*Bandwidth:*	**n.a.**
Processing Method:	**KAT01 2100**	*Dilution Factor:*	**1.0**
Injection Date/Time:	**29/Jun/21 02:04**	*Sample Weight:*	**1.0**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount mg/L	Amnt.Dev. %
1	FLUORIDE	3.081	0.019	0.073	11.64	10.41	0.0358	n.a.
2	CHLORIDE	4.091	0.042	0.229	25.90	32.83	0.1544	n.a.
4	NITRITE	5.047	0.025	0.114	15.69	16.28	0.0365	n.a.
5	SULFATE	5.567	0.036	0.136	22.29	19.41	0.1493	n.a.
6	BROMIDE	6.284	0.015	0.045	9.24	6.50	0.0619	n.a.
7	NITRATE	7.194	0.015	0.054	9.39	7.79	0.0329	n.a.
n.a.	PHOSPHATE	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.152**	**0.651**	**94.15**	**93.22**		

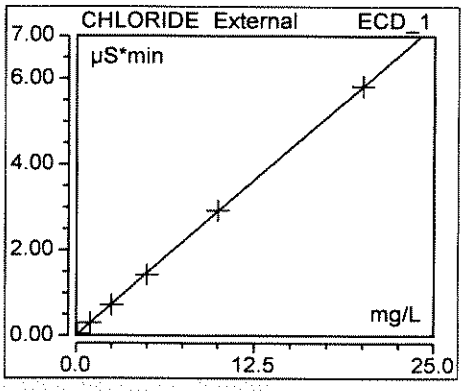
Calibration Batch Report

Sequence:	**042621A CAL**	*Injection Volume:*	**200.00**
Instrument Method:	**ASDV30mMItest**	*Operator:*	**Katahdin Analytical**
Inj. Date / Time:	**26-Apr-2021 / 14:52**	*Run Time:*	**13.977167**

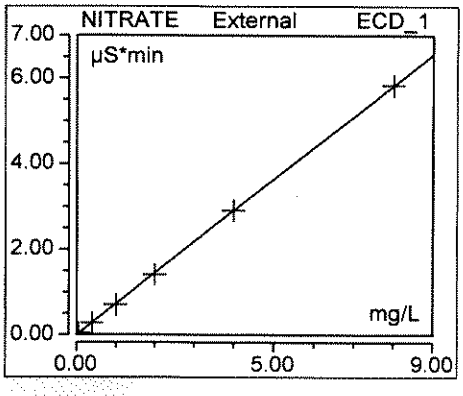
Calibration Summary

Peak Name	Eval.Type	Cal.Type	Points	Offset (C0)	Slope (C1)	Curve (C2)	Coeff.Det. %
FLUORIDE	Area	Lin	6.000	0.000	0.481	0.000	99.9708
CHLORIDE	Area	in, WithOffse	7.000	0.005	0.291	0.000	99.9931
NITRITE	Area	Lin	6.000	0.000	0.603	0.000	99.8840
SULFATE	Area	Lin	7.000	0.000	0.214	0.000	99.9900
NITRATE	Area	in, WithOffse	7.000	-0.014	0.730	0.000	99.9908
		AVERAGE:		-0.0017	0.4638	0.0000	99.9657

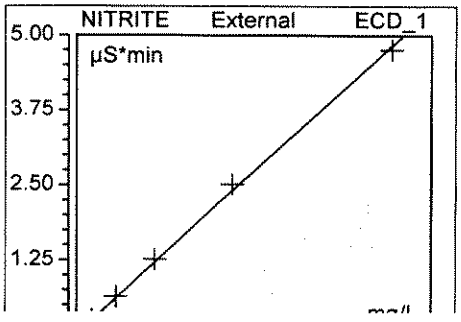
Injection Name **CHLORIDE**	Ret.Time min CHLORIDE	Area µS*min CHLORIDE	Height µS CHLORIDE	Amount mg/L CHLORIDE
	ECD_1	ECD_1	ECD_1	ECD_1
CAL 1	4.151	0.0119	0.082	0.024
CAL 2	4.144	0.0740	0.361	0.237
CAL 3	4.144	0.5015	2.640	1.707
CAL 4	4.144	0.8034	5.559	2.745
CAL 5	4.144	1.5571	11.044	5.337
CAL 6	4.144	3.2005	22.632	10.987
CAL 7	4.144	6.5352	45.233	22.452
Average	4.145			
Rel. Std. Dev.	0.061 %			



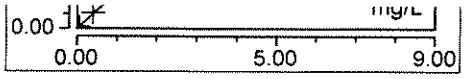
Injection Name **NITRATE**	Ret.Time min NITRATE	Area µS*min NITRATE	Height µS NITRATE	Amount mg/L NITRATE
	ECD_1	ECD_1	ECD_1	ECD_1
CAL 1	7.414	0.0047	0.020	0.025
CAL 2	7.394	0.0479	0.201	0.084
CAL 3	7.391	0.4973	1.621	0.700
CAL 4	7.381	0.8070	3.647	1.124
CAL 5	7.364	1.5990	7.188	2.210
CAL 6	7.341	3.2851	14.221	4.520
CAL 7	7.297	6.6118	26.521	9.078
Average	7.369			
Rel. Std. Dev.	0.532 %			



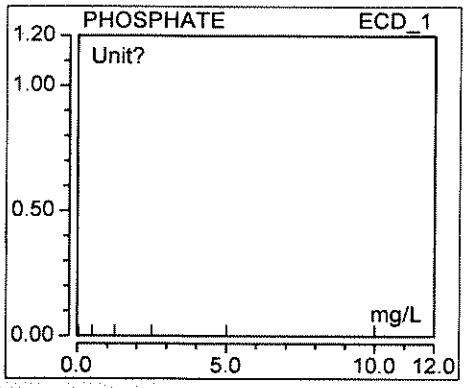
Injection Name **NITRITE**	Ret.Time min NITRITE	Area µS*min NITRITE	Height µS NITRITE	Amount mg/L NITRITE
	ECD_1	ECD_1	ECD_1	ECD_1
CAL 1	n.a.	n.a.	n.a.	n.a.
CAL 2	4.834	0.0382	0.205	0.063
CAL 3	4.837	0.4975	2.000	0.825
CAL 4	4.841	0.7690	4.315	1.275
CAL 5	4.844	1.4556	8.292	2.412



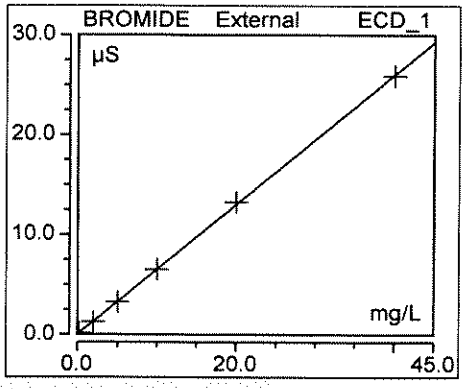
CAL 6	4.847	2.8694	15.740	4.756	
CAL 7	4.854	5.4861	27.945	9.092	
Average	4.843				
Rel. Std. Dev.	0.148 %				



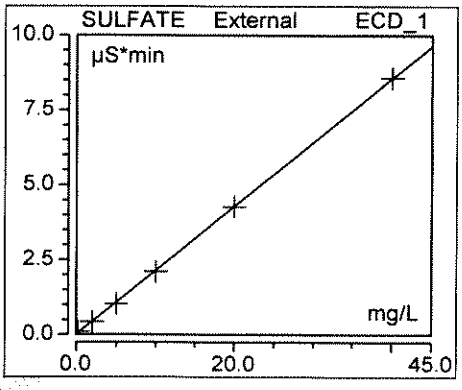
Injection Name	Ret.Time min	Area µS*min	Height µS	Amount mg/L
PHOSPHATE	PHOSPHATE	PHOSPHATE	PHOSPHATE	PHOSPHATE
	ECD_1	ECD_1	ECD_1	ECD_1
CAL 1	n.a.	n.a.	n.a.	n.a.
CAL 2	n.a.	n.a.	n.a.	n.a.
CAL 3	n.a.	n.a.	n.a.	n.a.
CAL 4	n.a.	n.a.	n.a.	n.a.
CAL 5	n.a.	n.a.	n.a.	n.a.
CAL 6	n.a.	n.a.	n.a.	n.a.
CAL 7	n.a.	n.a.	n.a.	n.a.
Average	#DIV/0!			
Rel. Std. Dev.	#DIV/0!			



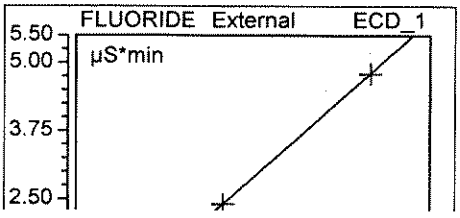
Injection Name	Ret.Time min	Area µS*min	Height µS	Amount mg/L
BROMIDE	BROMIDE	BROMIDE	BROMIDE	BROMIDE
	ECD_1	ECD_1	ECD_1	ECD_1
CAL 1	n.a.	n.a.	n.a.	n.a.
CAL 2	6.434	0.0424	0.166	0.255
CAL 3	6.431	0.4124	1.656	2.546
CAL 4	6.427	0.7239	3.726	5.729
CAL 5	6.421	1.4317	7.431	11.427
CAL 6	6.407	2.9418	15.040	23.126
CAL 7	n.a.	n.a.	n.a.	n.a.
Average	6.424			
Rel. Std. Dev.	0.165 %			



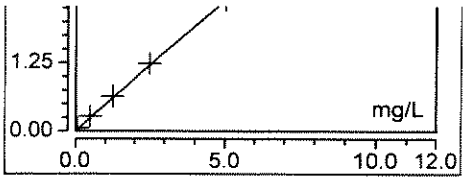
Injection Name	Ret.Time min	Area µS*min	Height µS	Amount mg/L
SULFATE	SULFATE	SULFATE	SULFATE	SULFATE
	ECD_1	ECD_1	ECD_1	ECD_1
CAL 1	5.731	0.0144	0.061	0.067
CAL 2	5.727	0.0761	0.344	0.356
CAL 3	5.727	0.6583	3.048	3.076
CAL 4	5.721	1.1947	6.325	5.581
CAL 5	5.717	2.3588	12.497	11.020
CAL 6	5.704	4.8235	25.119	22.534
CAL 7	5.681	9.6821	48.099	45.231
Average	5.715			
Rel. Std. Dev.	0.311 %			



Injection Name	Ret.Time min	Area µS*min	Height µS	Amount mg/L
FLUORIDE	FLUORIDE	FLUORIDE	FLUORIDE	FLUORIDE
	ECD_1	ECD_1	ECD_1	ECD_1
CAL 1	n.a.	n.a.	n.a.	n.a.
CAL 2	3.084	0.0704	0.223	0.146



CAL 3	3.087	0.5721	2.124	1.189
CAL 4	3.091	0.6987	4.536	1.453
CAL 5	3.094	1.3447	8.793	2.796
CAL 6	3.101	2.8235	17.226	5.870
CAL 7	3.111	5.1467	31.023	10.700



Average	3.094
Rel. Std. Dev.	0.314 %

Anion Summary Report

No. CHLORIDE	Name CHLORIDE	Time min CHLORIDE ECD_1	Area µS*min CHLORIDE ECD_1	Rel.Area % CHLORIDE ECD_1	Height µS CHLORIDE ECD_1	Rel.Height % CHLORIDE ECD_1	Amount mg/L CHLORIDE ECD_1
1	CAL 1	4.151	0.0119	22.62	0.08	31.38	0.0237
2	CAL 2	4.144	0.0740	18.97	0.36	21.75	0.2373
3	CAL 3	4.144	0.5015	15.98	2.64	20.17	1.7070
4	CAL 4	4.144	0.8034	16.08	5.56	19.78	2.7451
5	CAL 5	4.144	1.5571	15.98	11.04	19.99	5.3366
6	CAL 6	4.144	3.2005	16.05	22.63	20.58	10.9868
7	CAL 7	4.144	6.5352	16.58	45.23	21.75	22.4525
	Sum:	29.014	12.684	122.248	87.551	155.408	43.489
	Average:	4.145	1.812	17.464	12.507	22.201	6.213
	Rel.Std.Dev:	0.061 %	130.011 %	14.415 %	131.505 %	18.587 %	130.372 %

No. NITRATE	Name NITRATE	Time min NITRATE ECD_1	Area µS*min NITRATE ECD_1	Rel.Area % NITRATE ECD_1	Height µS NITRATE ECD_1	Rel.Height % NITRATE ECD_1	Amount mg/L NITRATE ECD_1
1	CAL 1	7.414	0.0047	8.85	0.02	7.85	0.0249
2	CAL 2	7.394	0.0479	12.28	0.20	12.10	0.0842
3	CAL 3	7.391	0.4973	15.84	1.62	12.38	0.7000
4	CAL 4	7.381	0.8070	16.15	3.65	12.97	1.1244
5	CAL 5	7.364	1.5990	16.41	7.19	13.01	2.2096
6	CAL 6	7.341	3.2851	16.47	14.22	12.93	4.5199
7	CAL 7	7.297	6.6118	16.77	26.52	12.75	9.0782
	Sum:	51.580	12.853	102.773	53.419	84.003	17.741
	Average:	7.369	1.836	14.682	7.631	12.000	2.534
	Rel.Std.Dev:	0.532 %	130.343 %	20.403 %	127.225 %	15.503 %	129.389 %

No. NITRITE	Name NITRITE	Time min NITRITE ECD_1	Area µS*min NITRITE ECD_1	Rel.Area % NITRITE ECD_1	Height µS NITRITE ECD_1	Rel.Height % NITRITE ECD_1	Amount mg/L NITRITE ECD_1
1	CAL 1	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2	CAL 2	4.834	0.0382	9.79	0.20	12.32	0.0634
3	CAL 3	4.837	0.4975	15.85	2.00	15.28	0.8245
4	CAL 4	4.841	0.7690	15.39	4.31	15.35	1.2745
5	CAL 5	4.844	1.4556	14.93	8.29	15.01	2.4124
6	CAL 6	4.847	2.8694	14.39	15.74	14.31	4.7555
7	CAL 7	4.854	5.4861	13.92	27.95	13.44	9.0921
	Sum:	29.057	11.116	84.273	58.497	85.714	18.422
	Average:	4.843	1.853	14.045	9.750	14.286	3.070
	Rel.Std.Dev:	0.148 %	109.816 %	15.617 %	107.555 %	8.419 %	109.816 %

No. PHOSPHATE	Name PHOSPHATE	Time min PHOSPHATE ECD_1	Area µS*min PHOSPHATE ECD_1	Rel.Area % PHOSPHATE ECD_1	Height µS PHOSPHATE ECD_1	Rel.Height % PHOSPHATE ECD_1	Amount mg/L PHOSPHATE ECD_1
1	CAL 1	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2	CAL 2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
3	CAL 3	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4	CAL 4	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5	CAL 5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

6	CAL 6	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
7	CAL 7	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
	Sum:	0.000	0.000	0.000	0.000	0.000	0.000
	Average:	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
	Rel.Std.Dev:	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

No. **BROMIDE**	**Name** **BROMIDE**	**Time min BROMIDE ECD_1**	**Area µS*min BROMIDE ECD_1**	**Rel.Area % BROMIDE ECD_1**	**Height µS BROMIDE ECD_1**	**Rel.Height % BROMIDE ECD_1**	**Amount mg/L BROMIDE ECD_1**
1	CAL 1	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2	CAL 2	6.434	0.0424	10.86	0.17	9.96	0.2546
3	CAL 3	6.431	0.4124	13.14	1.66	12.65	2.5456
4	CAL 4	6.427	0.7239	14.49	3.73	13.26	5.7285
5	CAL 5	6.421	1.4317	14.69	7.43	13.45	11.4265
6	CAL 6	6.407	2.9418	14.75	15.04	13.68	23.1261
7	CAL 7	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
	Sum:	32.119	5.552	67.922	28.018	62.995	43.081
	Average:	6.424	1.110	13.584	5.604	12.599	8.616
	Rel.Std.Dev:	0.165 %	103.017 %	12.224 %	105.981 %	12.078 %	105.981 %

No. **SULFATE**	**Name** **SULFATE**	**Time min SULFATE ECD_1**	**Area µS*min SULFATE ECD_1**	**Rel.Area % SULFATE ECD_1**	**Height µS SULFATE ECD_1**	**Rel.Height % SULFATE ECD_1**	**Amount mg/L SULFATE ECD_1**
1	CAL 1	5.731	0.0144	27.27	0.06	23.44	0.0671
2	CAL 2	5.727	0.0761	19.50	0.34	20.71	0.3557
3	CAL 3	5.727	0.6583	20.97	3.05	23.29	3.0755
4	CAL 4	5.721	1.1947	23.91	6.32	22.50	5.5810
5	CAL 5	5.717	2.3588	24.20	12.50	22.62	11.0195
6	CAL 6	5.704	4.8235	24.19	25.12	22.84	22.5339
7	CAL 7	5.681	9.6821	24.56	48.10	23.13	45.2314
	Sum:	40.007	18.808	164.603	95.492	158.531	87.864
	Average:	5.715	2.687	23.515	13.642	22.647	12.552
	Rel.Std.Dev:	0.311 %	130.624 %	10.821 %	128.625 %	4.056 %	130.624 %

No. **FLUORIDE**	**Name** **FLUORIDE**	**Time min FLUORIDE ECD_1**	**Area µS*min FLUORIDE ECD_1**	**Rel.Area % FLUORIDE ECD_1**	**Height µS FLUORIDE ECD_1**	**Rel.Height % FLUORIDE ECD_1**	**Amount mg/L FLUORIDE ECD_1**
1	CAL 1	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2	CAL 2	3.084	0.0704	18.03	0.22	13.42	0.1464
3	CAL 3	3.087	0.5721	18.23	2.12	16.23	1.1895
4	CAL 4	3.091	0.6987	13.98	4.54	16.14	1.4526
5	CAL 5	3.094	1.3447	13.80	8.79	15.92	2.7958
6	CAL 6	3.101	2.8235	14.16	17.23	15.66	5.8704
7	CAL 7	3.111	5.1467	13.06	31.02	14.92	10.7003
	Sum:	18.567	10.656	91.253	63.924	92.277	22.155
	Average:	3.094	1.776	15.209	10.654	15.380	3.692
	Rel.Std.Dev:	0.314 %	107.317 %	15.083 %	109.505 %	6.958 %	107.317 %

WET CHEMISTRY BATCH REPORT
Jun 23 2021, 02:20 pm
Batch: WG301289 Run ID 1: R570420 Run ID 2: NONE

Parameter: Sulfide-Iodometric

Prep Date: ~~23-JUN-21~~ N/A

Date Analyzed: 23-JUN-21

Prep Method: N/A

Analyst Initials:

Prep Chemist: N/A

Sample	Samp Type	Method	Initial Amt.	Final Amt.	Rpt. DF	Result	Rpt Result	TS(%)	PQL	MDL	Adj PQL	RPD	%Rec
SO3743-2	SAMP	SW846 9034 M	200.00mL	200.00mL	1	.89	U1.0 mg/L	NA	1	0.69	1.0		
SO3743-5	SAMP	SW846 9034 M	200.00mL	200.00mL	1	-.34	U1.0 mg/L	NA	1	0.69	1.0		
WG301289-1	MBLANK	SW846 9034 M	200.00mL	200.00mL	1	.89	J0.89 mg/L	NA	1	0.69	1.0		
WG301289-2	LCS	SW846 9034 M	200.00mL	200.00mL	1	10.58	10. mg/L	NA	1	0.69	1.0		108
WG301289-3	LCSD	SW846 9034 M	200.00mL	200.00mL	1	10.46	10. mg/L	NA	1	0.69	1.0	1	107
WG301289-4	MS	SW846 9034 M	200.00mL	200.00mL	1	8.54	8.5 mg/L	NA	1	0.69	1.0		87
WG301289-5	MSD	SW846 9034 M	200.00mL	200.00mL	1	10.13	10. mg/L	NA	1	0.69	1.0	17	104

Comments:

SO3743-2	Anions = SO4, client cancelled TOC on 06/22/2021.
SO3743-5	MS/MSD Anions = SO4
WG301289-1	SO3743-5
WG301289-2	SO3743-5
WG301289-3	SO3743-5
WG301289-4	SO3743-5
WG301289-5	SO3743-5

Entered by: JJ / ZF Date: 6/23/21 Accepted by: Date: 06/23/21

Katahdin Analytical Services 5000131

SULFIDE-TITRIMETRIC (EPA METHOD 376.1 / SW846 9030 / SM4500S2- E / SM4500S2- F [21ST EDITION])

Normality of $Na_2S_2O_3$ =	0.0375

Analysis Date:	6/23/2021
Analyst:	JJ/ZF
PQL, mg/L:	1.0
Matrix:	Aqueous

Standardization of I_2

Vol I_2 (mL)	Vol $Na_2S_2O_3$ (mL)
10.0	7.150
10.0	7.140
10.0	7.000
Mean =	7.096666667
Calc I_2 N =	0.0266

Standardization of Na_2S (CCV)

Vol I_2 (mL)	Vol $Na_2S_2O_3$ (mL)	Vol Na_2S (mL)
10.0	3.80	2.00
10.0	3.76	2.00
10.0	3.95	2.00
Means =	3.84	2.00
Calc Na_2S (mg/mL) =		0.978

Standardization of Na_2S (LCS/MS)

Vol I_2 (mL)	Vol $Na_2S_2O_3$ (mL)	Vol Na_2S (mL)
10.0	3.800	2.00
10.0	3.760	2.00
10.0	3.950	2.00
Means =	3.84	2.00
Calc Na_2S (mg/mL) =		0.978

Sample ID	QC Type	Initial Vol. (mL)	Volume I_2 (mL)	Volume $Na_2S_2O_3$ (mL)	Calculated S_2 (mg)	Calculated S_2 (mg/L)	Dil. Fctr.	Reported S_2 Concentration (mg/L)	Spike Added (mg/L)	CCV/LCS Rcvy. (%)	MS Rcvy. (%)	DUP RPD (%)
BLANK	BLANK	200	10.0	6.800	0.178	0.890	1.00	< 1.00				
LCS	LCS	200	10.0	3.570	2.116	10.580	1.00	10.58	9.78	108.18%		
LCSD	LCS	200	10.0	3.610	2.092	10.460	1.00	10.46	9.78	106.95%		
SO3743-2		200	10.0	6.800	0.178	0.890	1.00	< 1.00				
SO3743-5		200	10.0	7.210	-0.068	-0.340	1.00	< 1.00				
SO3743-5 MS	MS	200	10.0	4.250	1.708	8.540	1.00	8.54	2.00		427.00%	
SO3743-2 MS DUP	MS	200	10.0	3.720	2.026	10.130	1.00	10.13	2.00		79.50%	
		200	10.0				1.00					
		200	10.0				1.00					
		200	10.0				1.00					
		200	10.0				1.00					
		200	10.0				1.00					
		200	10.0				1.00					
		200	10.0				1.00					
		200	10.0				1.00					
		200	10.0				1.00					
		200	10.0				1.00					
		200	10.0				1.00					
		200	10.0				1.00					
		200	10.0				1.00					
		200	10.0				1.00					
		200	10.0				1.00					
		200	10.0				1.00					
		200	10.0				1.00					
		200	10.0				1.00					
		200	10.0				1.00					
		200	10.0				1.00					
		200	10.0				1.00					
		200	10.0				1.00					
		200	10.0				1.00					
		200	10.0				1.00					
		200	10.0				1.00					
		200	10.0				1.00					
		200	10.0				1.00					
		200	10.0				1.00					
		200	10.0				1.00					

WG301289
R570420

KATAHDIN ANALYTICAL SERVICES
SULFIDE

Methods (check one)		PQL: 1.0 mg/L
EPA 376.1	SW846 9034 ✓	Pipette IDs: W11, W4
SM4500S^{2-} F (21st ED)	SM4500S^{2-} E	

REAGENTS

Iodine Standard: W20008	HCL-6N: W18806
Na2S Solution: ~~SWL 9631~~ W20064 JS 6/23	Na2S2O3 Titrant-0.0375N: SWL 9631
Starch End Indicator: W19277	Filter Paper Lot #: SWL 4753

STANDARDIZATION OF I2 and Na2S

Vol. (ml) I2	Vol. (ml) Na2S2O3	CALC OF I2N	Vol. (ml) I2	Vol. (ml) Na2S2O3	Vol. (ml) Na2S	CALC Na2S mg/mL
10	7.15		10	3.80	2	
↓	7.14		↓	3.76	↓	
↓	7.00		↓	3.95	↓	
↓	X:		↓	X:	↓	

I2 meq Consumed = [(N I2 * Vol I2) - (N Na2S2O3 * Vol Na2S2O3)] * 16

S2- mg/L = I2 meq * 16 mg S2/meq * 1000 ml/L/Sample Volume (ml)

Time of Analysis	Sample ID	Sample Vol. (ml)	Na2S2O3 Vol. (ml)	I2 Vol. (ml)	S2 Vol. (ml)	S mg/L	Comments
13:40	blank	200	6.80	10	—		
↓	LCS	↓	3.57	↓	2		
↓	LCSD	↓	3.61	↓	2		
↓	S03743-2	↓	6.80	↓	—		
↓	S03743-5	↓	7.21	↓	—		
↓	S03743-5 MS	↓	4.25	↓	2		
14:02	-5 MSD	200	3.72	10	2		

JJ 6/23

NOTES:

ANALYST: ZF / JJ	DATE: 6/23/21
CHECKED BY:	DATE: 06/23/21

WET CHEMISTRY BATCH REPORT
Jun 29 2021, 09:14 am
Batch: WG301548 Run ID 1: R570904 Run ID 2: R570908

Parameter: Dissolved Organic Carbon (1)

Prep Date: N/A

Date Analyzed: 28-JUN-21

Prep Method: N/A

Analyst Initials: KD

Prep Chemist: N/A

Sample	Samp Type	Method	Initial Amt.	Final Amt.	Rpt. DF	Result	Rpt Result	TS(%)	PQL	MDL	Adj PQL	RPD	%Rec
SO3742-1	SAMP	SW846 9060A	20.000mL	20.000mL	1	1.255	1.2 mg/L	NA	1	0.32	1.0		
SO3742-2	SAMP	SW846 9060A	20.000mL	20.000mL	1	3.225	3.2 mg/L	NA	1	0.32	1.0		
SO3742-3	SAMP	SW846 9060A	20.000mL	20.000mL	1	3.501	3.5 mg/L	NA	1	0.32	1.0		
SO3742-4	SAMP	SW846 9060A	20.000mL	20.000mL	1	1.37	1.4 mg/L	NA	1	0.32	1.0		
SO3742-6	SAMP	SW846 9060A	20.000mL	20.000mL	1	3.934	3.9 mg/L	NA	1	0.32	1.0		
SO3742-8	SAMP	SW846 9060A	20.000mL	20.000mL	1	3.255	3.2 mg/L	NA	1	0.32	1.0		
SO3808-1	SAMP	SW846 9060A	20.000mL	20.000mL	1	6.901	6.9 mg/L	NA	1	0.32	1.0		
SO3808-2	SAMP	SW846 9060A	20.000mL	20.000mL	1	6.776	6.8 mg/L	NA	1	0.32	1.0		
WG301548-1	MBLANK	SW846 9060A	20.000mL	20.000mL	1	.5576	J0.56 mg/L	NA	1	0.32	1.0		
WG301548-2	LCS	SW846 9060A	20.000mL	20.000mL	1	50.8	51. mg/L	NA	1	0.32	1.0		102
WG301548-3	LCSD	SW846 9060A	20.000mL	20.000mL	1	51.17	51. mg/L	NA	1	0.32	1.0	1	102
WG301548-4	MS	SW846 9060A	20.000mL	20.000mL	1	106.1	110 mg/L	NA	1	0.32	1.0		102
WG301548-5	DUP	SW846 9060A	20.000mL	20.000mL	1	3.134	3.1 mg/L	NA	1	0.32	1.0	4	

Comments:

SO3742-1	Anions please report Cl & SO4
SO3742-2	Anions please report Cl & SO4
SO3742-3	Anions please report Cl & SO4
SO3742-4	Anions please report Cl & SO4
SO3742-6	Anions please report Cl & SO4
SO3742-8	Anions please report Cl & SO4
SO3808-1	Anions = Cl & SO4
SO3808-2	Anions = Cl & SO4
WG301548-1	SO3742-3
WG301548-2	SO3742-3
WG301548-3	SO3742-3
WG301548-4	SO3742-3
WG301548-5	SO3742-8

Entered by: KD/JL Date: 6/29/21 Accepted by: Date: 06/29/21

WET CHEMISTRY BATCH REPORT
Jun 29 2021, 08:50 am
Batch: WG301549 Run ID 1: R570901 Run ID 2: R570902

Parameter: Total Organic Carbon

Date Analyzed: 28-JUN-21

Analyst Initials: KD

Prep Date: N/A

Prep Method: N/A

Prep Chemist: N/A

Sample	Samp Type	Method	Initial Amt.	Final Amt.	Rpt. DF	Result	Rpt Result	TS(%)	PQL	MDL	Adj PQL	RPD	%Rec
SO3896-1	SAMP	SM5310B	20.000mL	20.000mL	1	.6881	U1.0 mg/L	NA	1	.1023	1.0		
SO3896-2	SAMP	SM5310B	20.000mL	20.000mL	1	3.982	4.0 mg/L	NA	1	.1023	1.0		
WG301549-1	MBLANK	SM5310B	20.000mL	20.000mL	1	.5576	J0.56 mg/L	NA	1	0.10	1.0		
WG301549-2	LCS	SM5310B	20.000mL	20.000mL	1	50.8	51. mg/L	NA	1	0.10	1.0		102
WG301549-3	LCSD	SM5310B	20.000mL	20.000mL	1	51.17	51. mg/L	NA	1	0.10	1.0	1	102

Comments:

WG301549-1	SO3896-1
WG301549-2	SO3896-1
WG301549-3	SO3896-1

Entered by: KD/JL Date: 6/29/21 Accepted by: [signature] Date: 06/29/21

WET CHEMISTRY BATCH REPORT
Jun 29 2021, 09:00 am
Batch: WG301562 Run ID 1: R570905 Run ID 2: R570906

Parameter: Total Organic Carbon (1)

Prep Date: N/A

Date Analyzed: 28-JUN-21

Prep Method: N/A

Analyst Initials: KD

Prep Chemist: N/A

Sample	Samp Type	Method	Initial Amt.	Final Amt.	Rpt. DF	Result	Rpt Result	TS(%)	PQL	MDL	Adj PQL	RPD	%Rec
SO3743-5	SAMP	SW846 9060A	20.000mL	20.000mL	1	16.93	17. mg/L	NA	1	0.10	1.0		
WG301562-1	MBLANK	SW846 9060A	20.000mL	20.000mL	1	.5576	J0.56 mg/L	NA	1	0.10	1.0		
WG301562-2	LCS	SW846 9060A	20.000mL	20.000mL	1	50.8	51. mg/L	NA	1	0.10	1.0		102
WG301562-3	LCSD	SW846 9060A	20.000mL	20.000mL	1	51.17	51. mg/L	NA	1	0.10	1.0	1	102
WG301562-4	MS	SW846 9060A	20.000mL	20.000mL	1	122.1	120 mg/L	NA	1	.1023	1.0		105
WG301562-5	MSD	SW846 9060A	20.000mL	20.000mL	1	119.2	120 mg/L	NA	1	.1023	1.0	2	102

Comments:

SO3743-5	MS/MSD Anions = SO4
WG301562-1	SO3743-5
WG301562-2	SO3743-5
WG301562-3	SO3743-5
WG301562-4	SO3743-5
WG301562-5	SO3743-5

Entered by: KD/JL Date: 6/29/21 Accepted by: [signature] Date: 06/29/21

KATAHDIN ANALYTICAL SERVICES, LLC
CARBON ANALYSIS RUN INFORMATION SHEET

INSTR. ID: WC2 (Shimadzu TOC-V_{CPH}) **ANALYST:** KD **DATE:** 6/29/21

FILE NAME: SMTOC 062821
DOC1062821
TOC1062821

METHOD(S):

TOC	DOC	TIC
• EPA 415.1	• EPA 415.1	• EPA 415.1
• SM5310B	• SM5310B	• SM5310B
• _____	• _____	• _____

CALIBRATION DATE: 05-25-21 **CALIBRATION ANALYST:** KD

Calibration standards were prepared by performing dilutions of the following standard on the day of calibration:

Calibration Source Standard ID	Prep Date	Expiration Date	Standard Conc. (mg/L)
W20025	05/25/21	08/25/21	2000

Note: Calibration must be performed quarterly or whenever a change in analysis conditions warrant. A copy of the associated calibration data is attached to this run.

STANDARDS USED:

Standard Name	Standard ID	Prep Date	Expiration Date	Standard Conc.
CCV	W20027	05/25/21	08/25/21	100 mg C/L
LCS	W20026	05/25/21	08/25/21	50 mg C/L
MS Stock Std. *	W20025	05/25/21	08/25/21	2000 mg C/L
Alkalinity Check	W20028	05/25/21	08/25/21	15 mg/L (Inorg. C)

* Matrix spikes are prepared by adding 2.0 mL of MS Stock Std. to 38 mL of sample.

Additional Comments and Notes:

Client cancelled S03742-5 and -7.

	Sample Name	Dilution	Result	Comment	Date / Time	Vial
1	ALK CHECK	1.000	NPOC:0.4043 mg/L		6/28/2021 12:06:10 PM	1
2	CCV	1.000	NPOC:91.96 mg/L	92.0%	6/28/2021 12:21:52 PM	2
3	BLANK	1.000	NPOC:0.5576 mg/L		6/28/2021 12:38:47 PM	6
4	LCS	1.000	NPOC:50.80 mg/L		6/28/2021 12:55:12 PM	10
5	LCS	1.000	NPOC:51.17 mg/L		6/28/2021 1:09:20 PM	10
6	SO3896-1	1.000	NPOC:0.6881 mg/L		6/28/2021 1:23:19 PM	11
7	SO3896-2	1.000	NPOC:3.982 mg/L		6/28/2021 1:39:15 PM	12
8	SO3742-1	1.000	NPOC:1.255 mg/L		6/28/2021 1:55:32 PM	13
9	SO3742-2	1.000	NPOC:3.225 mg/L		6/28/2021 2:12:05 PM	14
10	SO3742-3	1.000	NPOC:3.501 mg/L		6/28/2021 2:27:49 PM	15
11	SO3742-3MS	1.000	NPOC:106.1 mg/L		6/28/2021 2:42:51 PM	16
12	SO3742-4	1.000	NPOC:1.370 mg/L		6/28/2021 2:57:51 PM	17
13	SO3742-5	1.000	NPOC:2.366 mg/L		6/28/2021 3:13:05 PM	18
14	CCV	1.000	NPOC:92.93 mg/L	92.5%	6/28/2021 3:28:38 PM	2
15	BLANK	1.000	NPOC:0.8044 mg/L		6/28/2021 3:45:32 PM	6
16	SO3742-6	1.000	NPOC:3.934 mg/L		6/28/2021 4:01:07 PM	19
17	SO3742-7	1.000	NPOC:2.310 mg/L		6/28/2021 4:16:17 PM	20
18	SO3742-8	1.000	NPOC:3.255 mg/L		6/28/2021 4:31:35 PM	21
19	SO3742-8 DUP	1.000	NPOC:3.134 mg/L		6/28/2021 4:44:19 PM	21
20	SO3743-5	1.000	NPOC:16.93 mg/L		6/28/2021 4:58:59 PM	22
21	SO3743-5 MS	1.000	NPOC:122.1 mg/L		6/28/2021 5:13:50 PM	23
22	SO3743-5 MSD	1.000	NPOC:119.2 mg/L		6/28/2021 5:28:33 PM	24
23	SO3808-1	1.000	NPOC:6.901 mg/L		6/28/2021 5:51:49 PM	25
24	SO3808-2	1.000	NPOC:6.776 mg/L		6/28/2021 6:05:26 PM	26
25	CCV	1.000	NPOC:96.98 mg/L	97.0%	6/28/2021 6:34:30 PM	3
26	BLANK	1.000	NPOC:0.7170 mg/L		6/29/2021 7:02:34 AM	7

Instr.Information

System	TOC-Vcph / ASI-V
Detector	Combustion
Catalyst	Regular Sensitivity
Cell Length	long

Control Sample

Sample Name:	ALK CHECK
Sample ID:	<Untitled>
Method:	ALK CHECK DOUBLE INJECTION.tpl
Chk. Result	Control value: 0.4043 / Control within range!

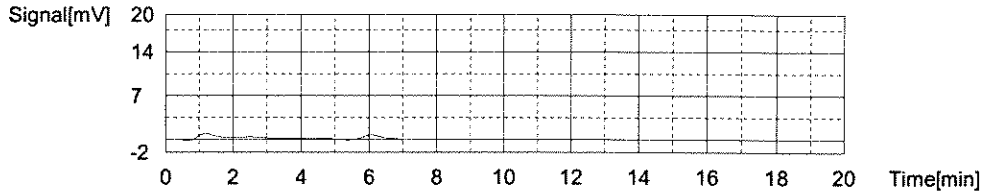
Type	Anal.	Dil.	Result
Control	NPOC	1.000	NPOC:0.4043 mg/L

1. Det.

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.633	0.6197mg/L	150uL	1		toc aq 052521 cal.2021_05_25_09_13_23.cal	6/28/2021 12:03:34 PM
2	2.021	0.1888mg/L	150uL	1		toc aq 052521 cal.2021_05_25_09_13_23.cal	6/28/2021 12:06:10 PM

Mean Area 4.327
Mean Conc. 0.4043mg/L



Control Sample

Sample Name:	CCV
Sample ID:	<Untitled>
Method:	CCV DOUBLE INJECTION.tpl
Chk. Result	Control value: 91.96 / Control within range!

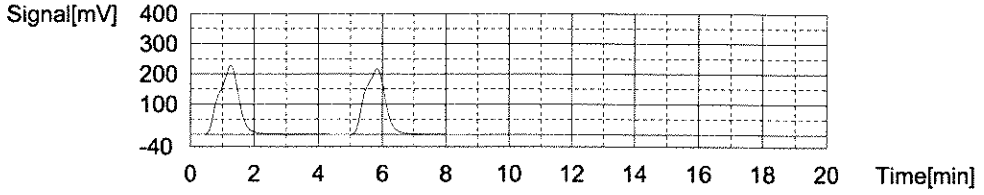
Type	Anal.	Dil.	Result
Control	NPOC	1.000	NPOC:91.96 mg/L

1. Det.

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	991.5	92.64mg/L	150uL	1		toc aq 052521 cal.2021_05_25_09_13_23.cal	6/28/2021 12:17:37 PM
2	977.1	91.29mg/L	150uL	1		toc aq 052521 cal.2021_05_25_09_13_23.cal	6/28/2021 12:21:52 PM

Mean Area 984.3
Mean Conc. 91.96mg/L



Control Sample

Sample Name: BLANK
Sample ID: <Untitled>
Method: BLANK DOUBLE INJECTION.tpl
Chk. Result Control value: 0.5576 / Control within range!

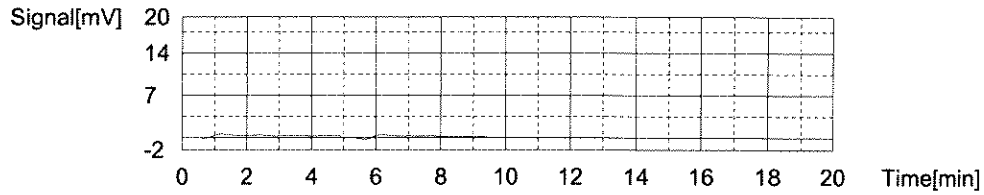
Type	Anal.	Dil.	Result
Control	NPOC	1.000	NPOC:0.5576 mg/L

1. Det.

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	4.708	0.4399mg/L	150uL	1		toc aq 052521 cal.2021_05_25_09_13_23.cal	6/28/2021 12:33:41 PM
2	7.229	0.6754mg/L	150uL	1		toc aq 052521 cal.2021_05_25_09_13_23.cal	6/28/2021 12:38:47 PM

Mean Area 5.969
Mean Conc. 0.5576mg/L



Control Sample

Sample Name: LCS
Sample ID: <Untitled>
Method: LCS DOUBLE INJECTION.tpl
Chk. Result Control value: 50.80 / Control within range!

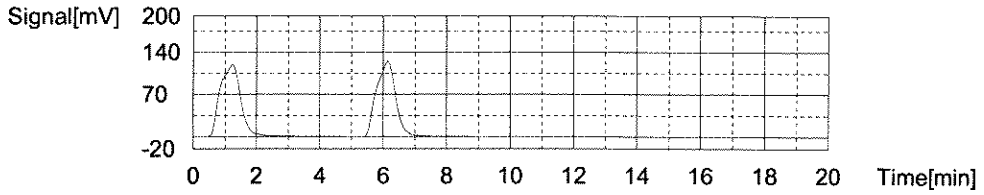
Type	Anal.	Dil.	Result
Control	NPOC	1.000	NPOC:50.80 mg/L

1. Det.

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	551.0	51.48mg/L	150uL	1		toc aq 052521 cal.2021_05_25_09_13_23.cal	6/28/2021 12:50:35 PM
2	536.5	50.13mg/L	150uL	1		toc aq 052521 cal.2021_05_25_09_13_23.cal	6/28/2021 12:55:12 PM

Mean Area 543.8
Mean Conc. 50.80mg/L



Control Sample

Sample Name: LCS
Sample ID: <Untitled>
Method: LCS DOUBLE INJECTION.tpl
Chk. Result Control value: 51.17 / Control within range!

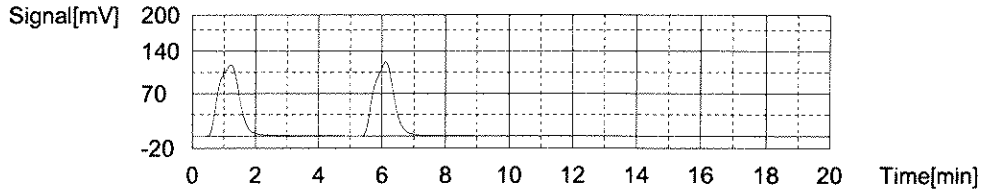
Type	Anal.	Dil.	Result
Control	NPOC	1.000	NPOC:51.17 mg/L

1. Det.

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	550.6	51.44mg/L	150uL	1		toc aq 052521 cal.2021_05_25_09_13_23.cal	6/28/2021 1:04:58 PM
2	544.7	50.89mg/L	150uL	1		toc aq 052521 cal.2021_05_25_09_13_23.cal	6/28/2021 1:09:20 PM

Mean Area 547.7
Mean Conc. 51.17mg/L



Sample

Sample Name: SO3896-1
Sample ID: <Untitled>
Origin: DOUBLE INJECTION B.met
Chk. Result

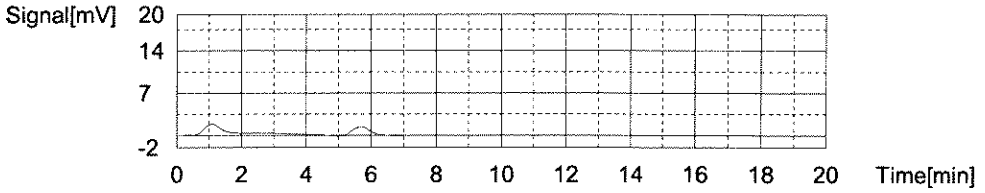
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:0.6881 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.437	0.8817mg/L	150uL	1		toc aq 052521 cal.2021_05_25_09_13_23.cal	6/28/2021 1:20:46 PM
2	5.292	0.4944mg/L	150uL	1		toc aq 052521 cal.2021_05_25_09_13_23.cal	6/28/2021 1:23:19 PM

Mean Area 7.365
Mean Conc. 0.6881mg/L



Sample

Sample Name: SO3896-2
Sample ID: <Untitled>
Origin: DOUBLE INJECTION B.met
Chk. Result

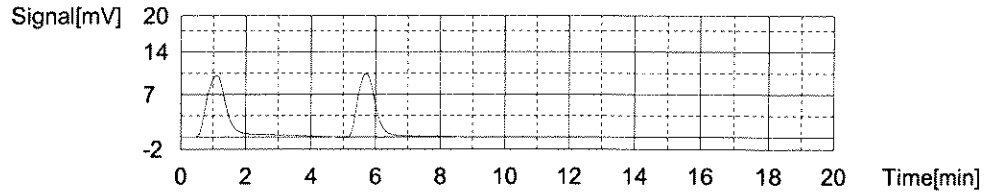
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:3.982 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	44.18	4.128mg/L	150uL	1		toc aq 052521 cal.2021_05_25_09_13_23.cal	6/28/2021 1:34:53 PM
2	41.06	3.836mg/L	150uL	1		toc aq 052521 cal.2021_05_25_09_13_23.cal	6/28/2021 1:39:15 PM

Mean Area 42.62
Mean Conc. 3.982mg/L



Sample

Sample Name: SO3742-1
Sample ID: <Untitled>
Origin: DOUBLE INJECTION B.met
Chk. Result

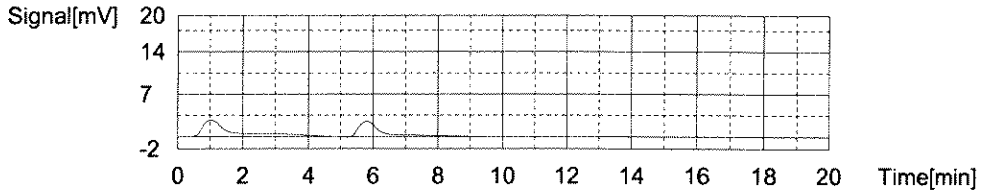
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:1.255 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	14.58	1.362mg/L	150uL	1		toc aq 052521 cal.2021_05_25_09_13_23.cal	6/28/2021 1:50:53 PM
2	12.29	1.148mg/L	150uL	1		toc aq 052521 cal.2021_05_25_09_13_23.cal	6/28/2021 1:55:32 PM

Mean Area 13.44
Mean Conc. 1.255mg/L



Sample

Sample Name: SO3742-2
Sample ID: <Untitled>
Origin: DOUBLE INJECTION B.met
Chk. Result

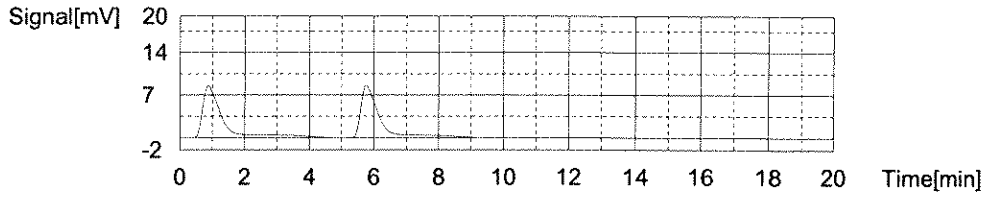
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:3.225 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	34.75	3.247mg/L	150uL	1		toc aq 052521 cal.2021_05_25_09_13_23.cal	6/28/2021 2:07:17 PM
2	34.28	3.203mg/L	150uL	1		toc aq 052521 cal.2021_05_25_09_13_23.cal	6/28/2021 2:12:05 PM

Mean Area 34.52
Mean Conc. 3.225mg/L



Sample

Sample Name: SO3742-3
Sample ID: <Untitled>
Origin: DOUBLE INJECTION B.met
Chk. Result

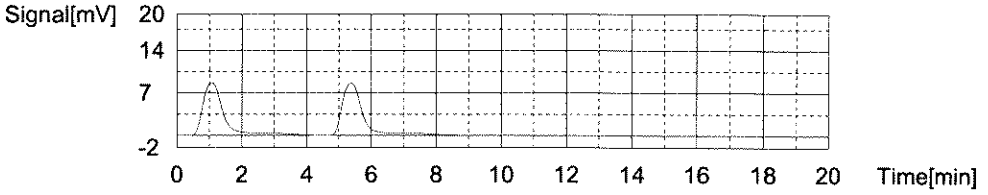
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:3.501 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	37.35	3.490mg/L	150uL	1		toc aq 052521 cal.2021_05_25_09_13_23.cal	6/28/2021 2:23:15 PM
2	37.60	3.513mg/L	150uL	1		toc aq 052521 cal.2021_05_25_09_13_23.cal	6/28/2021 2:27:49 PM

Mean Area 37.48
Mean Conc. 3.501mg/L



Sample

Sample Name: SO3742-3MS
Sample ID: <Untitled>
Origin: DOUBLE INJECTION B.met
Chk. Result

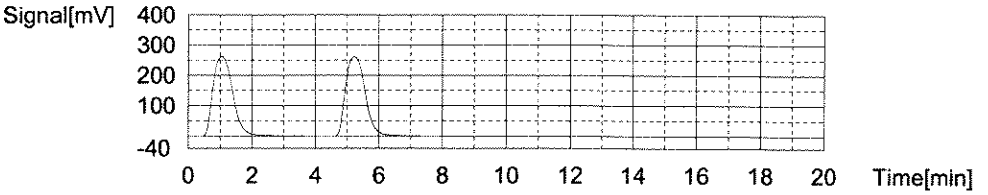
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:106.1 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1138	106.3mg/L	150uL	1		toc aq 052521 cal.2021_05_25_09_13_23.cal	6/28/2021 2:38:51 PM
2	1134	105.9mg/L	150uL	1		toc aq 052521 cal.2021_05_25_09_13_23.cal	6/28/2021 2:42:51 PM

Mean Area 1136
Mean Conc. 106.1mg/L



Sample

Sample Name: SO3742-4
Sample ID: <Untitled>
Origin: DOUBLE INJECTION B.met
Chk. Result

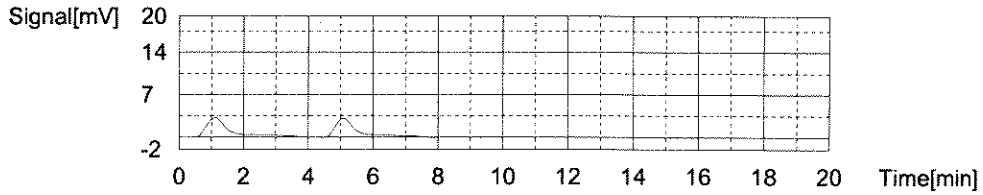
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:1.370 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	15.07	1.408mg/L	150uL	1		toc aq 052521 cal.2021_05_25_09_13_23.cal	6/28/2021 2:53:42 PM
2	14.26	1.332mg/L	150uL	1		toc aq 052521 cal.2021_05_25_09_13_23.cal	6/28/2021 2:57:51 PM

Mean Area 14.67
Mean Conc. 1.370mg/L



Sample

Sample Name: SO3742-5
Sample ID: <Untitled>
Origin: DOUBLE INJECTION B.met
Chk. Result

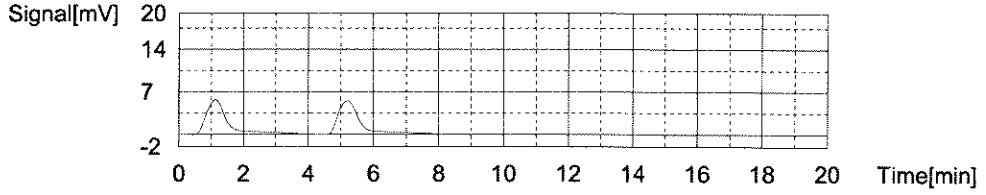
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:2.366 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	25.50	2.382mg/L	150uL	1		toc aq 052521 cal.2021_05_25_09_13_23.cal	6/28/2021 3:08:51 PM
2	25.15	2.350mg/L	150uL	1		toc aq 052521 cal.2021_05_25_09_13_23.cal	6/28/2021 3:13:05 PM

Mean Area 25.33
Mean Conc. 2.366mg/L



Control Sample

Sample Name: CCV
Sample ID: <Untitled>
Method: CCV DOUBLE INJECTION.tpl
Chk. Result Control value: 92.93 / Control within range!

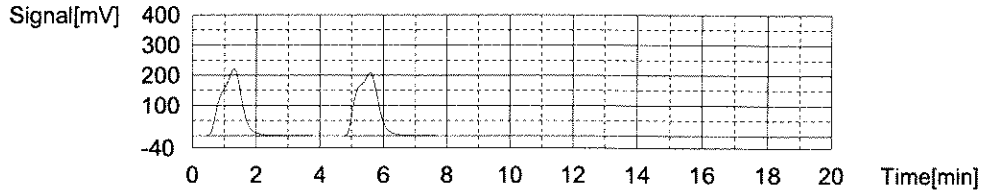
Type	Anal.	Dil.	Result
Control	NPOC	1.000	NPOC:92.93 mg/L

1. Det.

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	998.1	93.25mg/L	150uL	1		toc aq 052521 cal.2021_05_25_09_13_23.cal	6/28/2021 3:24:23 PM
2	991.1	92.60mg/L	150uL	1		toc aq 052521 cal.2021_05_25_09_13_23.cal	6/28/2021 3:28:38 PM

Mean Area 994.6
Mean Conc. 92.93mg/L



Control Sample

Sample Name: BLANK
Sample ID: <Untitled>
Method: BLANK DOUBLE INJECTION.tpl
Chk. Result Control value: 0.8044 / Control within range!

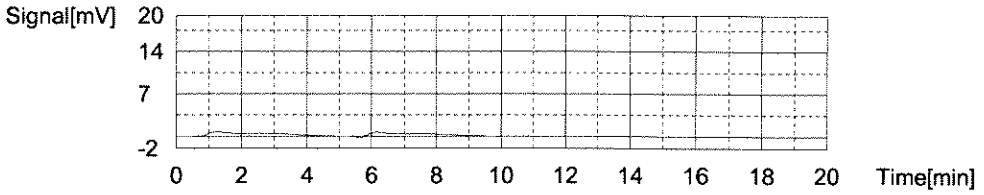
Type	Anal.	Dil.	Result
Control	NPOC	1.000	NPOC:0.8044 mg/L

1. Det.

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.491	0.7933mg/L	150uL	1		toc aq 052521 cal.2021_05_25_09_13_23.cal	6/28/2021 3:40:26 PM
2	8.729	0.8156mg/L	150uL	1		toc aq 052521 cal.2021_05_25_09_13_23.cal	6/28/2021 3:45:32 PM

Mean Area 8.610
Mean Conc. 0.8044mg/L



Sample

Sample Name: SO3742-6
Sample ID: <Untitled>
Origin: DOUBLE INJECTION B.met
Chk. Result

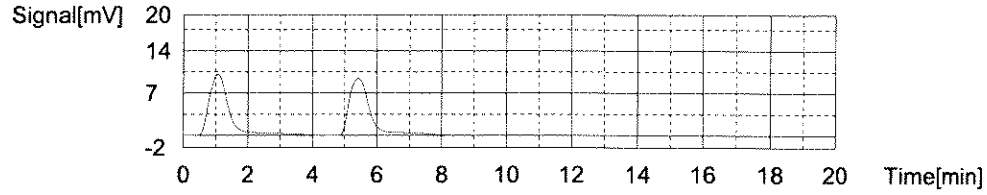
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:3.934 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	42.45	3.966mg/L	150uL	1		toc aq 052521 cal.2021_05_25_09_13_23.cal	6/28/2021 3:56:54 PM
2	41.77	3.903mg/L	150uL	1		toc aq 052521 cal.2021_05_25_09_13_23.cal	6/28/2021 4:01:07 PM

Mean Area 42.11
Mean Conc. 3.934mg/L



Sample

Sample Name: SO3742-7
Sample ID: <Untitled>
Origin: DOUBLE INJECTION B.met
Chk. Result

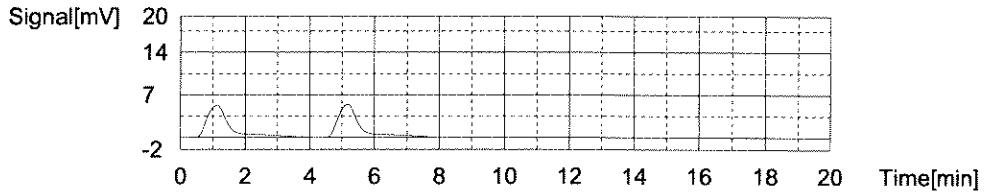
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:2.310 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	24.75	2.312mg/L	150uL	1		toc aq 052521 cal.2021_05_25_09_13_23.cal	6/28/2021 4:12:01 PM
2	24.70	2.308mg/L	150uL	1		toc aq 052521 cal.2021_05_25_09_13_23.cal	6/28/2021 4:16:17 PM

Mean Area 24.73
Mean Conc. 2.310mg/L



Sample

Sample Name: SO3742-8
Sample ID: <Untitled>
Origin: DOUBLE INJECTION B.met
Chk. Result

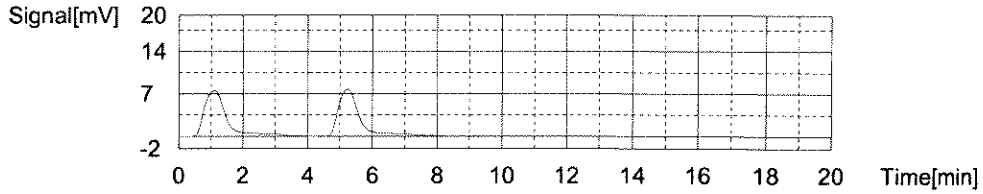
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:3.255 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	35.34	3.302mg/L	150uL	1		toc aq 052521 cal.2021_05_25_09_13_23.cal	6/28/2021 4:27:18 PM
2	34.33	3.207mg/L	150uL	1		toc aq 052521 cal.2021_05_25_09_13_23.cal	6/28/2021 4:31:35 PM

Mean Area 34.84
Mean Conc. 3.255mg/L



Sample

Sample Name: SO3742-8 DUP
Sample ID: <Untitled>
Origin: DOUBLE INJECTION B.met
Chk. Result

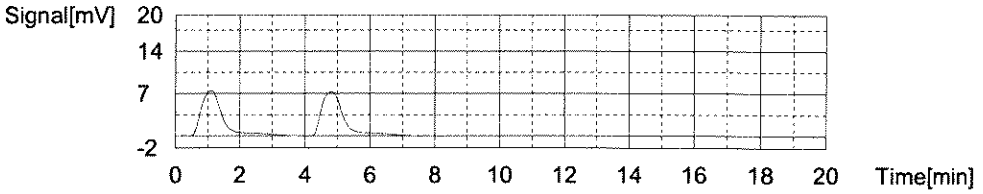
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:3.134 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	32.84	3.068mg/L	150uL	1		toc aq 052521 cal.2021_05_25_09_13_23.cal	6/28/2021 4:40:14 PM
2	34.25	3.200mg/L	150uL	1		toc aq 052521 cal.2021_05_25_09_13_23.cal	6/28/2021 4:44:19 PM

Mean Area 33.55
Mean Conc. 3.134mg/L



Sample

Sample Name: SO3743-5
Sample ID: <Untitled>
Origin: DOUBLE INJECTION B.met
Chk. Result

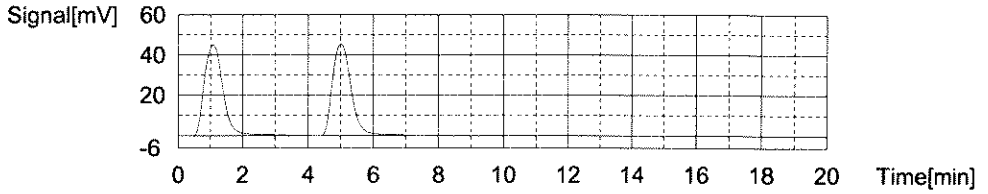
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:16.93 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	181.1	16.92mg/L	150uL	1		toc aq 052521 cal.2021_05_25_09_13_23.cal	6/28/2021 4:55:08 PM
2	181.3	16.94mg/L	150uL	1		toc aq 052521 cal.2021_05_25_09_13_23.cal	6/28/2021 4:58:59 PM

Mean Area 181.2
Mean Conc. 16.93mg/L



Sample

Sample Name: SO3743-5 MS
Sample ID: <Untitled>
Origin: DOUBLE INJECTION B.met
Chk. Result

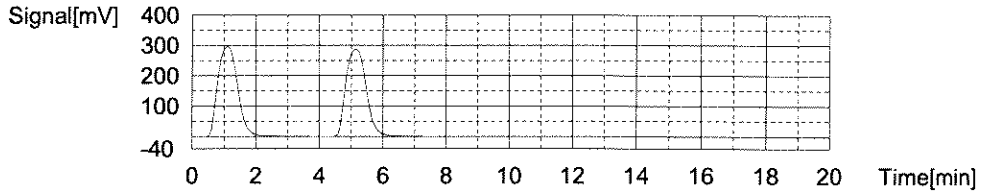
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:122.1 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1312	122.6mg/L	150uL	1		toc aq 052521 cal.2021_05_25_09_13_23.cal	6/28/2021 5:09:53 PM
2	1302	121.6mg/L	150uL	1		toc aq 052521 cal.2021_05_25_09_13_23.cal	6/28/2021 5:13:50 PM

Mean Area 1307
Mean Conc. 122.1mg/L



Sample

Sample Name: SO3743-5 MSD
Sample ID: <Untitled>
Origin: DOUBLE INJECTION B.met
Chk. Result

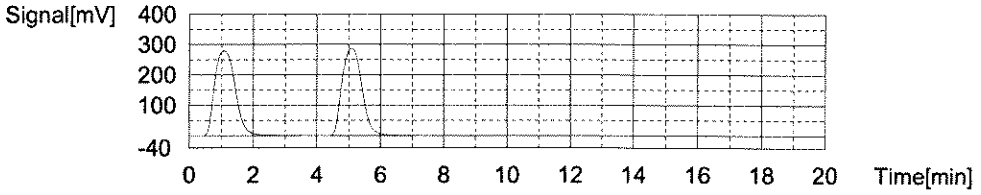
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:119.2 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1282	119.8mg/L	150uL	1		toc aq 052521 cal.2021_05_25_09_13_23.cal	6/28/2021 5:24:41 PM
2	1269	118.6mg/L	150uL	1		toc aq 052521 cal.2021_05_25_09_13_23.cal	6/28/2021 5:28:33 PM

Mean Area 1276
Mean Conc. 119.2mg/L



Sample

Sample Name: SO3808-1
Sample ID: <Untitled>
Origin: DOUBLE INJECTION B.met
Chk. Result

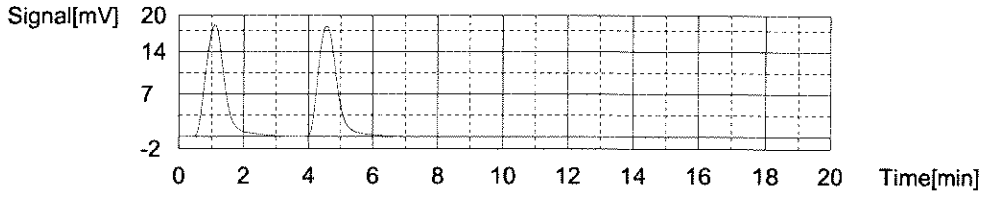
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:6.901 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	74.30	6.942mg/L	150uL	1		toc aq 052521 cal.2021_05_25_09_13_23.cal	6/28/2021 5:48:13 PM
2	73.43	6.861mg/L	150uL	1		toc aq 052521 cal.2021_05_25_09_13_23.cal	6/28/2021 5:51:49 PM

Mean Area 73.87
Mean Conc. 6.901mg/L



Sample

Sample Name: SO3808-2
Sample ID: <Untitled>
Origin: DOUBLE INJECTION B.met
Chk. Result

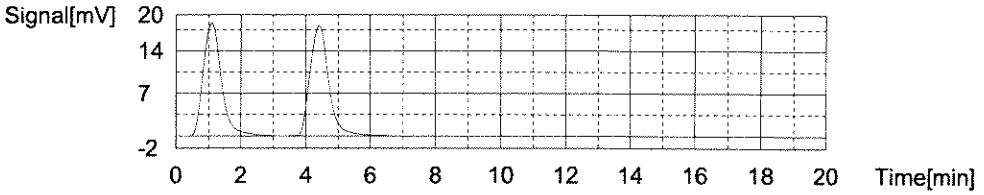
Type	Anal.	Dil.	Result
Unknown	NPOC	1.000	NPOC:6.776 mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	72.69	6.791mg/L	150uL	1		toc aq 052521 cal.2021_05_25_09_13_23.cal	6/28/2021 6:01:59 PM
2	72.35	6.760mg/L	150uL	1		toc aq 052521 cal.2021_05_25_09_13_23.cal	6/28/2021 6:05:26 PM

Mean Area 72.52
Mean Conc. 6.776mg/L



Control Sample

Sample Name: CCV
Sample ID: <Untitled>
Method: CCV DOUBLE INJECTION.tpl
Chk. Result Control value: 96.98 / Control within range!

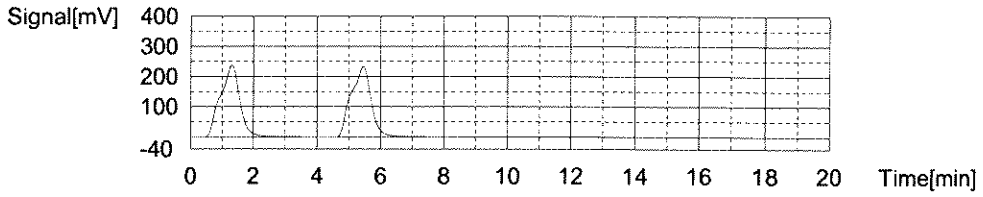
Type	Anal.	Dil.	Result
Control	NPOC	1.000	NPOC:96.98 mg/L

1. Det.

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1041	97.26mg/L	150uL	1		toc aq 052521 cal.2021_05_25_09_13_23.cal	6/28/2021 6:30:18 PM
2	1035	96.70mg/L	150uL	1		toc aq 052521 cal.2021_05_25_09_13_23.cal	6/28/2021 6:34:30 PM

Mean Area 1038
Mean Conc. 96.98mg/L



Control Sample

Sample Name: BLANK
Sample ID: <Untitled>
Method: BLANK DOUBLE INJECTION.tpl
Chk. Result Control value: 0.7170 / Control within range!

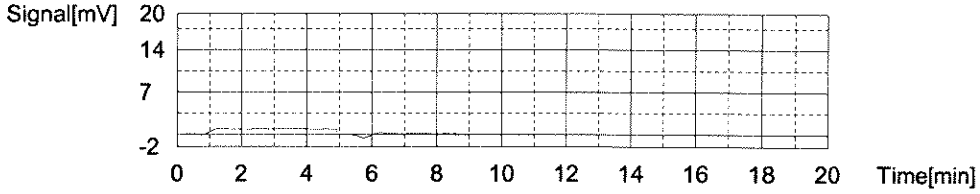
Type	Anal.	Dil.	Result
Control	NPOC	1.000	NPOC:0.7170 mg/L

1. Det.

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.29	0.9614mg/L	150uL	1		toc aq 052521 cal.2021_05_25_09_13_23.cal	6/29/2021 6:58:08 AM
2	5.059	0.4727mg/L	150uL	1		toc aq 052521 cal.2021_05_25_09_13_23.cal	6/29/2021 7:02:34 AM

Mean Area 7.675
Mean Conc. 0.7170mg/L



Instr.Information

System	TOC-Vcph / ASI-V
Detector	Combustion
Catalyst	Regular Sensitivity
Cell Length	long

Cal. Curve

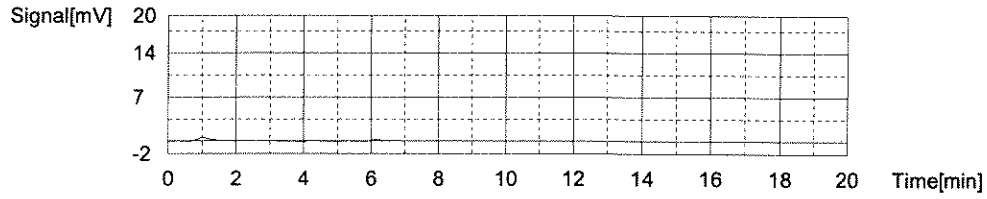
Sample Name:	Untitled
Sample ID:	Untitled
Cal. Curve:	toc aq 052521 cal.2021_05_25_09_13_23.cal

Type	Anal.
Standard	NPOC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1.789	50uL	1	*******	E	5/25/2021 9:23:09 AM
2	0.000	50uL	1	*******		5/25/2021 9:27:40 AM
3	0.4518	50uL	1	*******		5/25/2021 9:31:39 AM

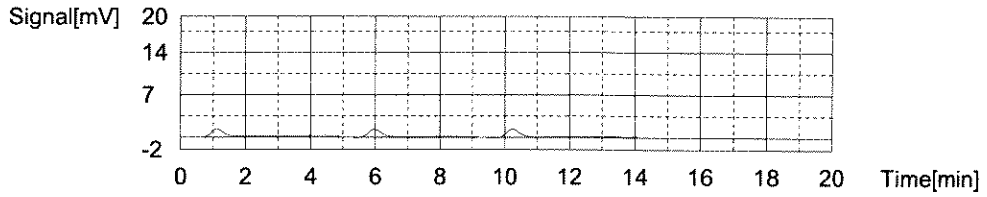
Acid Add. 1.500%
Sp. Time 90.00sec
Mean Area 0.2259



Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	4.616	50uL	1	T*******		5/25/2021 9:43:23 AM
2	4.385	50uL	1	*******	E	5/25/2021 9:50:16 AM
3	4.619	50uL	1	T*******		5/25/2021 9:57:47 AM

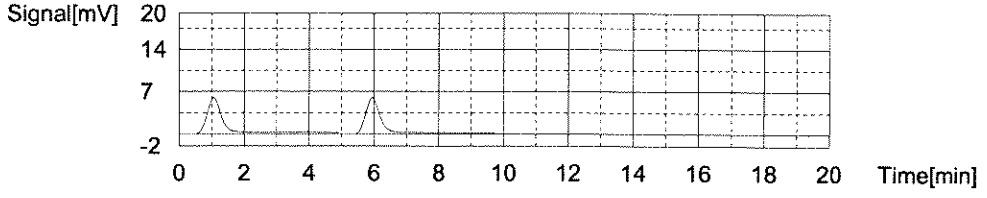
Acid Add. 1.500%
Sp. Time 90.00sec
Mean Area 4.618



Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	20.33	50uL	1	T*******		5/25/2021 10:09:31 AM
2	20.61	50uL	1	*******		5/25/2021 10:16:56 AM

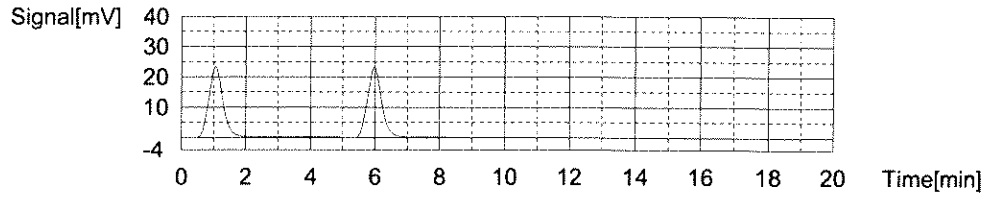
Acid Add. 1.500%
Sp. Time 90.00sec
Mean Area 20.47



Conc: 20.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	74.72	50uL	1	T******		5/25/2021 10:28:40 AM
2	73.32	50uL	1	*******		5/25/2021 10:34:55 AM

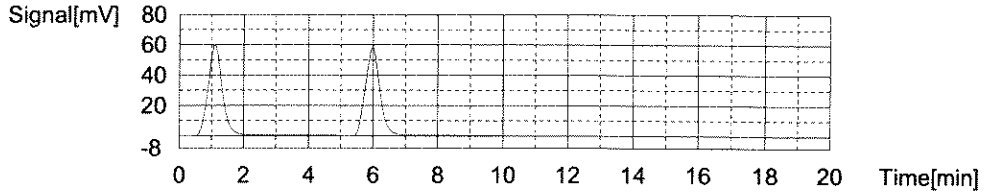
Acid Add. 1.500%
Sp. Time 90.00sec
Mean Area 74.02



Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	187.8	50uL	1	T******		5/25/2021 10:46:39 AM
2	186.8	50uL	1	T******		5/25/2021 10:54:10 AM

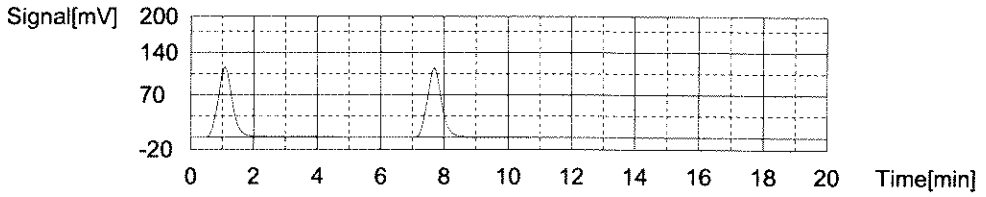
Acid Add. 1.500%
Sp. Time 90.00sec
Mean Area 187.3



Conc: 100.0mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	368.1	50uL	1	*******		5/25/2021 11:05:42 AM
2	0.000	50uL	1	*******	E	5/25/2021 11:10:12 AM
3	363.7	50uL	1	*******		5/25/2021 11:16:58 AM

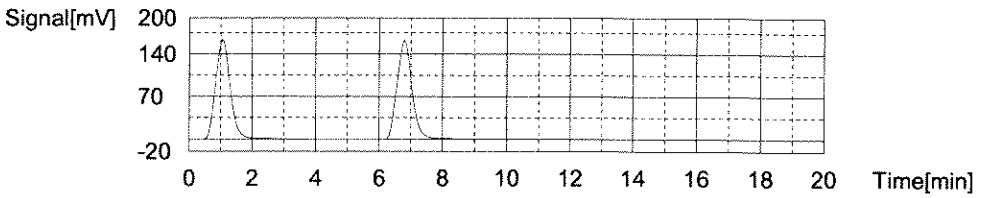
Acid Add. 1.500%
Sp. Time 90.00sec
Mean Area 365.9



Conc: 150.0mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	533.8	50uL	1	*******		5/25/2021 11:27:37 AM
2	0.000	50uL	1	*******	E	5/25/2021 11:32:07 AM
3	537.4	50uL	1	*******		5/25/2021 11:39:03 AM

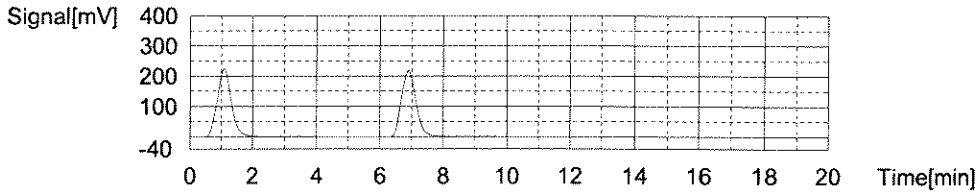
Acid Add. 1.500%
Sp. Time 90.00sec
Mean Area 535.6



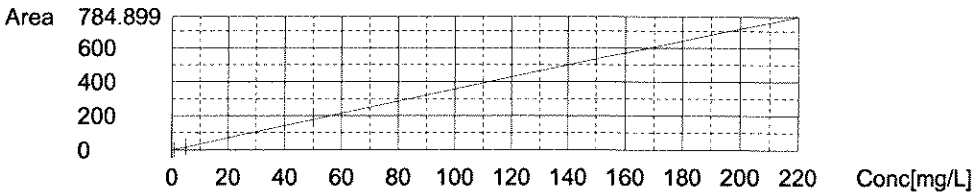
Conc: 200.0mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	716.1	50uL	1	*******		5/25/2021 11:49:51 AM
2	0.000	50uL	1	*******	E	5/25/2021 11:54:21 AM
3	713.3	50uL	1	*******		5/25/2021 12:00:55 PM

Acid Add.	1.500%
Sp. Time	90.00sec
Mean Area	714.7



Slope:	3.568
Intercept	0.000
r^2	0.999820



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ANALYTICAL REPORT

Eurofins Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

Laboratory Job ID: 680-206061-1
Client Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021
Revision: 1

For:
Seres Engineering & Services LLC
669 Marina Drive
Suite B7
Charleston, South Carolina 29492

Attn: Heather Levesque

Jerry Lanier

Authorized for release by:
3/9/2022 9:19:00 AM

Jerry Lanier, Project Manager I
(912)250-0281
Jerry.Lanier@Eurofinset.com

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
J	Estimated: The analyte was positively identified; the quantitation is an estimation
J1	Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
M	Manual integrated compound.
Q	One or more quality control criteria failed.
U	Undetected at the Limit of Detection.

GC VOA

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Undetected at the Limit of Detection.

HPLC/IC

Qualifier	Qualifier Description
M	Manual integrated compound.
U	Undetected at the Limit of Detection.

Metals

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Undetected at the Limit of Detection.

General Chemistry

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Undetected at the Limit of Detection.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Sample Summary

Client: Seres Engineering & Services LLC
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-206061-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-206061-1	G6M-02-06X-FAL21	Water	10/14/21 11:45	10/16/21 10:00
680-206061-2	G6M-02-07X-FAL21	Water	10/14/21 12:15	10/16/21 10:00
680-206061-3	G6M-02-08X-FAL21	Water	10/14/21 13:25	10/16/21 10:00
680-206061-4	G6M-04-06X-FAL21	Water	10/14/21 13:50	10/16/21 10:00
680-206061-5	G6M-04-07X-FAL21	Water	10/14/21 14:45	10/16/21 10:00
680-206061-6	G6M-13-05X-FAL21	Water	10/14/21 15:05	10/16/21 10:00
680-206061-7	G6M-95-19X-FAL21	Water	10/14/21 11:25	10/16/21 10:00
680-206061-8	G6M-95-20X-FAL21	Water	10/14/21 10:10	10/16/21 10:00
680-206061-9	AOC50-DUP01-FAL21	Water	10/14/21 10:10	10/16/21 10:00
680-206061-10	XSA-12-97X-FAL21	Water	10/14/21 15:10	10/16/21 10:00
680-206061-11	XSA-12-98X-FAL21	Water	10/14/21 13:40	10/16/21 10:00
680-206061-12	AOC50-TB02-FAL21	Water	10/14/21 00:00	10/16/21 10:00

Job ID: 680-206061-1

Laboratory: Eurofins Savannah

Narrative

Job Narrative
680-206061-1

Comments
No additional comments.

Receipt
The samples were received on 10/16/2021 10:00 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 0.4º C and 2.6º C.

Receipt Exceptions

Method 8260B: The following sample was listed on the Chain of Custody (COC); however, no sample was received to the volatiles department : AOC50-DUP01-FAL21 (680-206061-9).

REVISION
The final report was revised to report data to the lab LOD.

GC/MS VOA
Method 8260B: The continuing calibration verification (CCV) associated with batch 680-691543 recovered above the upper control limit for 3-Chloro-1-propene, Chloroethane, Acrolein, Vinyl Acetate. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: (CCVC 680-691543/33) and (CCVIS 680-691543/3).

Methods 8260B, 8260C DOD: The continuing calibration verification (CCV) associated with batch 680-691607 recovered above the upper control limit for Chloroethane, Vinyl Acetate. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCVIS 680-691607/3).

Methods 8260B, 8260C DOD: The continuing calibration verification (CCV) associated with batch 680-691607 recovered above the upper control limit for Chloroethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCVC 680-691607/34).

Method 8260B: The continuing calibration verification (CCV) associated with batch 680-691825 recovered above the upper control limit for Vinyl Acetate. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCVIS 680-691825/2).

Method 8260B: The CCV associated with batch 691825 fails 1% low for Dichlorodilfluoromethane, This analyte has been identified as a poor performer. The LCS/LCSD met acceptance criteria.

(CCVIS 680-691825/2)

Method 8260B: Reanalysis of the following samples were performed outside of the analytical holding time due to carry over: G6M-95-20X-FAL21 (680-206061-8), and XSA-12-98X-FAL21 (680-206061-11)..

Method 8260B: The following sample was analyzed outside of analytical holding time due to analyst error.: AOC50-DUP01-FAL21 (680-206061-9).

Method 8260B: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for analytical batch 680-691543 recovered outside control limits for the following analytes: Chloroethane. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Methods 8260B, 8260C DOD: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for analytical batch 680-691607 recovered outside control limits for the following analytes: Chloroethane. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Job ID: 680-206061-1 (Continued)

Laboratory: Eurofins Savannah (Continued)

Methods 8260B, 8260C DOD: The gas intermediate reagent expired at midnight and the samples injected after midnight. The QC was prepped prior to expiration per requirements and recoveries were acceptable.

(CCVC 680-691607/34)

Methods 8260B, 8260C DOD: The MS/MSD and CCVC ran outside of the tune window, recoveries are acceptable and all data has been reported.

(CCVC 680-691607/34), (CCVC 680-691607/35), (680-206157-F-12 MS) and (680-206157-D-12 MSD)

Method 8260B: The following sample is reported without a capping CCV due to the auto-sampler stopping. There is insufficient volume to rerun the sample.

G6M-95-20X-FAL21 (680-206061-8)

Method 8260B: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 680-691431.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

HPLC/IC
Method 9056A: The following sample was diluted due to color and appearance: G6M-02-08X-FAL21 (680-206061-3). Elevated reporting limits (RL) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
Method RSK-175: Due to the high concentration of Methane, the matrix spike / matrix spike duplicate (MS/MSD) for analytical batches 680-689915, and 680-690170 could not be evaluated for accuracy and precision. The associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) met acceptance criteria.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
Method 353.2: The matrix spike duplicate (MSD) recovery for method 353.2_Pres analytical batch 280-555228 was outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Client: Seres Engineering & Services LLC
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-206061-1

Client Sample ID: G6M-02-06X-FAL21
Date Collected: 10/14/21 11:45
Date Received: 10/16/21 10:00

Lab Sample ID: 680-206061-1
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 16:11	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 16:11	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/27/21 16:11	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/27/21 16:11	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/27/21 16:11	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/27/21 16:11	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/27/21 16:11	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 16:11	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/27/21 16:11	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 16:11	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/27/21 16:11	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/27/21 16:11	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 16:11	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/27/21 16:11	1
1,2-Dichloroethene, Total	2.0	U	2.0	2.0	0.74	ug/L		10/27/21 16:11	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/27/21 16:11	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		10/27/21 16:11	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/27/21 16:11	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/27/21 16:11	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/27/21 16:11	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 16:11	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		10/27/21 16:11	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/27/21 16:11	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/27/21 16:11	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/27/21 16:11	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/27/21 16:11	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/27/21 16:11	1
Acetone	25	U	25	25	7.0	ug/L		10/27/21 16:11	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/27/21 16:11	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/27/21 16:11	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/27/21 16:11	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 16:11	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/27/21 16:11	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/27/21 16:11	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/27/21 16:11	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/27/21 16:11	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/27/21 16:11	1
Chloroethane	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 16:11	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/27/21 16:11	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		10/27/21 16:11	1
cis-1,2-Dichloroethene	1.0	U	1.0	1.0	0.41	ug/L		10/27/21 16:11	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/27/21 16:11	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/27/21 16:11	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/27/21 16:11	1
Dichlorodifluoromethane	2.0	U M	2.0	2.0	0.60	ug/L		10/27/21 16:11	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/27/21 16:11	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/27/21 16:11	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 16:11	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/27/21 16:11	1

Client Sample ID: G6M-02-06X-FAL21
Lab Sample ID: 680-206061-1

Date Collected: 10/14/21 11:45
Matrix: Water
Date Received: 10/16/21 10:00

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/27/21 16:11	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 16:11	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		10/27/21 16:11	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 16:11	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/27/21 16:11	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/27/21 16:11	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/27/21 16:11	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/27/21 16:11	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/27/21 16:11	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/27/21 16:11	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		10/27/21 16:11	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/27/21 16:11	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 16:11	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/27/21 16:11	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		10/27/21 16:11	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/27/21 16:11	1
Vinyl acetate	2.0	U Q	2.0	2.0	0.81	ug/L		10/27/21 16:11	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		10/27/21 16:11	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		10/27/21 16:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*85 - 114*		*10/27/21 16:11*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 119*		*10/27/21 16:11*	*1*
Toluene-d8 (Surr)	*104*		*89 - 112*		*10/27/21 16:11*	*1*
1,2-Dichloroethane-d4 (Surr)	*98*		*81 - 118*		*10/27/21 16:11*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	50	U	50	50	17	ug/L		10/20/21 17:16	1
Manganese	3.0	U	10	3.0	1.0	ug/L		10/20/21 17:16	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**1.5**	**J**	3.0	3.0	1.5	ug/L		10/20/21 16:45	1

Client: Seres Engineering & Services LLC
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-206061-1

Client Sample ID: G6M-02-07X-FAL21
Date Collected: 10/14/21 12:15
Date Received: 10/16/21 10:00

Lab Sample ID: 680-206061-2
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 16:53	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 16:53	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/27/21 16:53	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/27/21 16:53	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/27/21 16:53	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/27/21 16:53	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/27/21 16:53	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 16:53	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/27/21 16:53	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 16:53	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/27/21 16:53	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/27/21 16:53	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 16:53	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/27/21 16:53	1
1,2-Dichloroethene, Total	2.0	U	2.0	2.0	0.74	ug/L		10/27/21 16:53	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/27/21 16:53	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		10/27/21 16:53	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/27/21 16:53	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/27/21 16:53	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/27/21 16:53	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 16:53	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		10/27/21 16:53	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/27/21 16:53	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/27/21 16:53	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/27/21 16:53	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/27/21 16:53	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/27/21 16:53	1
Acetone	25	U	25	25	7.0	ug/L		10/27/21 16:53	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/27/21 16:53	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/27/21 16:53	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/27/21 16:53	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 16:53	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/27/21 16:53	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/27/21 16:53	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/27/21 16:53	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/27/21 16:53	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/27/21 16:53	1
Chloroethane	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 16:53	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/27/21 16:53	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		10/27/21 16:53	1
cis-1,2-Dichloroethene	1.0	U	1.0	1.0	0.41	ug/L		10/27/21 16:53	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/27/21 16:53	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/27/21 16:53	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/27/21 16:53	1
Dichlorodifluoromethane	2.0	U M	2.0	2.0	0.60	ug/L		10/27/21 16:53	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/27/21 16:53	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/27/21 16:53	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 16:53	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/27/21 16:53	1

Client: Seres Engineering & Services LLC
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-206061-1

Client Sample ID: G6M-02-07X-FAL21
Date Collected: 10/14/21 12:15
Date Received: 10/16/21 10:00

Lab Sample ID: 680-206061-2
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/27/21 16:53	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 16:53	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		10/27/21 16:53	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 16:53	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/27/21 16:53	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/27/21 16:53	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/27/21 16:53	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/27/21 16:53	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/27/21 16:53	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/27/21 16:53	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		10/27/21 16:53	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/27/21 16:53	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 16:53	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/27/21 16:53	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		10/27/21 16:53	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/27/21 16:53	1
Vinyl acetate	2.0	U Q	2.0	2.0	0.81	ug/L		10/27/21 16:53	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		10/27/21 16:53	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		10/27/21 16:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*85 - 114*		*10/27/21 16:53*	*1*
Dibromofluoromethane (Surr)	*104*		*80 - 119*		*10/27/21 16:53*	*1*
Toluene-d8 (Surr)	*103*		*89 - 112*		*10/27/21 16:53*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*81 - 118*		*10/27/21 16:53*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	**42**	**J**	50	50	17	ug/L		10/20/21 17:39	1
Manganese	**13**		10	3.0	1.0	ug/L		10/20/21 17:39	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	3.0	U	3.0	3.0	1.5	ug/L		10/20/21 16:58	1

Client: Seres Engineering & Services LLC
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-206061-1

Client Sample ID: G6M-02-08X-FAL21
Date Collected: 10/14/21 13:25
Date Received: 10/16/21 10:00

Lab Sample ID: 680-206061-3
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 14:46	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 14:46	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/27/21 14:46	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/27/21 14:46	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/27/21 14:46	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/27/21 14:46	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/27/21 14:46	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 14:46	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/27/21 14:46	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 14:46	1
1,2,4-Trimethylbenzene	**2.1**		1.0	1.0	0.47	ug/L		10/27/21 14:46	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/27/21 14:46	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 14:46	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/27/21 14:46	1
1,2-Dichloroethene, Total	**3.3**		2.0	2.0	0.74	ug/L		10/27/21 14:46	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/27/21 14:46	1
1,3,5-Trimethylbenzene	**0.73**	**J**	1.0	1.0	0.31	ug/L		10/27/21 14:46	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/27/21 14:46	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/27/21 14:46	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/27/21 14:46	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 14:46	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		10/27/21 14:46	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/27/21 14:46	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/27/21 14:46	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/27/21 14:46	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/27/21 14:46	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/27/21 14:46	1
Acetone	25	U	25	25	7.0	ug/L		10/27/21 14:46	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/27/21 14:46	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/27/21 14:46	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/27/21 14:46	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 14:46	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/27/21 14:46	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/27/21 14:46	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/27/21 14:46	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/27/21 14:46	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/27/21 14:46	1
Chloroethane	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 14:46	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/27/21 14:46	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		10/27/21 14:46	1
cis-1,2-Dichloroethene	**3.3**		1.0	1.0	0.41	ug/L		10/27/21 14:46	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/27/21 14:46	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/27/21 14:46	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/27/21 14:46	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		10/27/21 14:46	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/27/21 14:46	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/27/21 14:46	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 14:46	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/27/21 14:46	1

Client Sample ID: G6M-02-08X-FAL21
Lab Sample ID: 680-206061-3

Date Collected: 10/14/21 13:25
Matrix: Water
Date Received: 10/16/21 10:00

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/27/21 14:46	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 14:46	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		10/27/21 14:46	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 14:46	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/27/21 14:46	1
N-Propylbenzene	**0.47**	**J**	1.0	1.0	0.38	ug/L		10/27/21 14:46	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/27/21 14:46	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/27/21 14:46	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/27/21 14:46	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/27/21 14:46	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		10/27/21 14:46	1
Toluene	**6.4**		1.0	1.0	0.48	ug/L		10/27/21 14:46	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 14:46	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/27/21 14:46	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		10/27/21 14:46	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/27/21 14:46	1
Vinyl acetate	2.0	U Q	2.0	2.0	0.81	ug/L		10/27/21 14:46	1
Vinyl chloride	**1.6**		1.0	1.0	0.50	ug/L		10/27/21 14:46	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		10/27/21 14:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*85 - 114*		*10/27/21 14:46*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 119*		*10/27/21 14:46*	*1*
Toluene-d8 (Surr)	*101*		*89 - 112*		*10/27/21 14:46*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*81 - 118*		*10/27/21 14:46*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Ethane	**2.5**		1.1	0.76	0.30	ug/L		10/19/21 21:13	1
Ethylene	**6.7**		1.0	0.71	0.31	ug/L		10/19/21 21:13	1
Methane (TCD)	**25000**		390	77	39	ug/L		10/19/21 21:13	1

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Sulfate	2.0	U M	2.0	2.0	0.80	mg/L		10/25/21 16:00	2

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	**22000**		50	50	17	ug/L		10/20/21 17:52	1
Manganese	**110**		10	3.0	1.0	ug/L		10/20/21 17:52	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**260**		3.0	3.0	1.5	ug/L		10/20/21 17:00	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate/Nitrite-N	**0.047**	**J**	0.10	0.050	0.019	mg/L		10/27/21 21:24	1
Sulfide	0.81	U	0.81	0.81	0.81	mg/L		10/19/21 11:08	1
Total Organic Carbon - Duplicates	**25**		1.0	0.80	0.35	mg/L		10/22/21 04:23	1
Alkalinity	**87**		10	6.4	3.1	mg/L		10/23/21 08:45	1

Client: Seres Engineering & Services LLC
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-206061-1

Client Sample ID: G6M-04-06X-FAL21
Date Collected: 10/14/21 13:50
Date Received: 10/16/21 10:00

Lab Sample ID: 680-206061-4
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 15:07	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 15:07	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/27/21 15:07	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/27/21 15:07	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/27/21 15:07	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/27/21 15:07	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/27/21 15:07	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 15:07	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/27/21 15:07	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 15:07	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/27/21 15:07	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/27/21 15:07	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 15:07	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/27/21 15:07	1
1,2-Dichloroethene, Total	**0.82**	**J**	2.0	2.0	0.74	ug/L		10/27/21 15:07	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/27/21 15:07	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		10/27/21 15:07	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/27/21 15:07	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/27/21 15:07	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/27/21 15:07	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 15:07	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		10/27/21 15:07	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/27/21 15:07	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/27/21 15:07	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/27/21 15:07	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/27/21 15:07	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/27/21 15:07	1
Acetone	25	U	25	25	7.0	ug/L		10/27/21 15:07	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/27/21 15:07	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/27/21 15:07	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/27/21 15:07	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 15:07	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/27/21 15:07	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/27/21 15:07	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/27/21 15:07	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/27/21 15:07	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/27/21 15:07	1
Chloroethane	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 15:07	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/27/21 15:07	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		10/27/21 15:07	1
cis-1,2-Dichloroethene	**0.82**	**J**	1.0	1.0	0.41	ug/L		10/27/21 15:07	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/27/21 15:07	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/27/21 15:07	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/27/21 15:07	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		10/27/21 15:07	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/27/21 15:07	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/27/21 15:07	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 15:07	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/27/21 15:07	1

Client: Seres Engineering & Services LLC
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-206061-1

Client Sample ID: G6M-04-06X-FAL21

Date Collected: 10/14/21 13:50
Date Received: 10/16/21 10:00

Lab Sample ID: 680-206061-4

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/27/21 15:07	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 15:07	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		10/27/21 15:07	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 15:07	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/27/21 15:07	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/27/21 15:07	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/27/21 15:07	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/27/21 15:07	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/27/21 15:07	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/27/21 15:07	1
Tetrachloroethene	**1.5**	**J**	2.0	2.0	0.74	ug/L		10/27/21 15:07	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/27/21 15:07	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 15:07	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/27/21 15:07	1
Trichloroethene	**1.1**		1.0	1.0	0.48	ug/L		10/27/21 15:07	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/27/21 15:07	1
Vinyl acetate	2.0	U Q	2.0	2.0	0.81	ug/L		10/27/21 15:07	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		10/27/21 15:07	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		10/27/21 15:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*85 - 114*		*10/27/21 15:07*	*1*
Dibromofluoromethane (Surr)	*100*		*80 - 119*		*10/27/21 15:07*	*1*
Toluene-d8 (Surr)	*103*		*89 - 112*		*10/27/21 15:07*	*1*
1,2-Dichloroethane-d4 (Surr)	*96*		*81 - 118*		*10/27/21 15:07*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	**26**	**J**	50	50	17	ug/L		10/20/21 17:57	1
Manganese	**100**		10	3.0	1.0	ug/L		10/20/21 17:57	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	3.0	U	3.0	3.0	1.5	ug/L		10/20/21 17:03	1

Client: Seres Engineering & Services LLC
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-206061-1

Client Sample ID: G6M-04-07X-FAL21
Date Collected: 10/14/21 14:45
Date Received: 10/16/21 10:00

Lab Sample ID: 680-206061-5
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 22:53	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 22:53	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/27/21 22:53	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/27/21 22:53	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/27/21 22:53	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/27/21 22:53	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/27/21 22:53	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 22:53	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/27/21 22:53	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 22:53	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/27/21 22:53	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/27/21 22:53	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 22:53	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/27/21 22:53	1
1,2-Dichloroethene, Total	**120**		2.0	2.0	0.74	ug/L		10/27/21 22:53	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/27/21 22:53	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		10/27/21 22:53	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/27/21 22:53	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/27/21 22:53	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/27/21 22:53	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 22:53	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		10/27/21 22:53	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/27/21 22:53	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/27/21 22:53	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/27/21 22:53	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/27/21 22:53	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/27/21 22:53	1
Acetone	25	U	25	25	7.0	ug/L		10/27/21 22:53	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/27/21 22:53	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/27/21 22:53	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/27/21 22:53	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 22:53	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/27/21 22:53	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/27/21 22:53	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/27/21 22:53	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/27/21 22:53	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/27/21 22:53	1
Chloroethane	5.0	U Q	5.0	5.0	2.5	ug/L		10/27/21 22:53	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/27/21 22:53	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		10/27/21 22:53	1
cis-1,2-Dichloroethene	**120**		1.0	1.0	0.41	ug/L		10/27/21 22:53	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/27/21 22:53	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/27/21 22:53	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/27/21 22:53	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		10/27/21 22:53	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/27/21 22:53	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/27/21 22:53	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 22:53	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/27/21 22:53	1

Client Sample ID: G6M-04-07X-FAL21
Lab Sample ID: 680-206061-5

Date Collected: 10/14/21 14:45
Matrix: Water
Date Received: 10/16/21 10:00

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/27/21 22:53	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 22:53	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		10/27/21 22:53	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 22:53	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/27/21 22:53	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/27/21 22:53	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/27/21 22:53	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/27/21 22:53	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/27/21 22:53	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/27/21 22:53	1
Tetrachloroethene	**4.8**		2.0	2.0	0.74	ug/L		10/27/21 22:53	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/27/21 22:53	1
trans-1,2-Dichloroethene	**0.66**	**J**	1.0	1.0	0.37	ug/L		10/27/21 22:53	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/27/21 22:53	1
Trichloroethene	**38**		1.0	1.0	0.48	ug/L		10/27/21 22:53	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/27/21 22:53	1
Vinyl acetate	2.0	U Q	2.0	2.0	0.81	ug/L		10/27/21 22:53	1
Vinyl chloride	**14**		1.0	1.0	0.50	ug/L		10/27/21 22:53	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		10/27/21 22:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*85 - 114*		*10/27/21 22:53*	*1*
Dibromofluoromethane (Surr)	*110*		*80 - 119*		*10/27/21 22:53*	*1*
Toluene-d8 (Surr)	*104*		*89 - 112*		*10/27/21 22:53*	*1*
1,2-Dichloroethane-d4 (Surr)	*103*		*81 - 118*		*10/27/21 22:53*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Ethane	**0.34**	**J**	1.1	0.76	0.30	ug/L		10/20/21 20:39	1
Ethylene	**0.64**	**J**	1.0	0.71	0.31	ug/L		10/20/21 20:39	1
Methane (TCD)	**520**		390	77	39	ug/L		10/20/21 20:39	1

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Sulfate	**7.5**		1.0	1.0	0.40	mg/L		10/25/21 16:13	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	**1200**		50	50	17	ug/L		10/20/21 18:01	1
Manganese	**4200**		10	3.0	1.0	ug/L		10/20/21 18:01	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**8.0**		3.0	3.0	1.5	ug/L		10/20/21 17:11	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate/Nitrite-N	0.050	U	0.10	0.050	0.019	mg/L		10/27/21 21:26	1
Sulfide	0.81	U	0.81	0.81	0.81	mg/L		10/19/21 11:08	1
Total Organic Carbon - Duplicates	**1.4**		1.0	0.80	0.35	mg/L		10/22/21 05:08	1
Alkalinity	**260**		10	6.4	3.1	mg/L		10/23/21 08:52	1

Client: Seres Engineering & Services LLC
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-206061-1

Client Sample ID: G6M-13-05X-FAL21
Date Collected: 10/14/21 15:05
Date Received: 10/16/21 10:00

Lab Sample ID: 680-206061-6
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 23:18	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 23:18	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/27/21 23:18	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/27/21 23:18	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/27/21 23:18	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/27/21 23:18	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/27/21 23:18	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 23:18	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/27/21 23:18	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 23:18	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/27/21 23:18	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/27/21 23:18	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 23:18	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/27/21 23:18	1
1,2-Dichloroethene, Total	**23**		2.0	2.0	0.74	ug/L		10/27/21 23:18	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/27/21 23:18	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		10/27/21 23:18	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/27/21 23:18	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/27/21 23:18	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/27/21 23:18	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 23:18	1
2-Butanone (MEK)	**11**		10	10	3.4	ug/L		10/27/21 23:18	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/27/21 23:18	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/27/21 23:18	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/27/21 23:18	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/27/21 23:18	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/27/21 23:18	1
Acetone	25	U	25	25	7.0	ug/L		10/27/21 23:18	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/27/21 23:18	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/27/21 23:18	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/27/21 23:18	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 23:18	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/27/21 23:18	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/27/21 23:18	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/27/21 23:18	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/27/21 23:18	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/27/21 23:18	1
Chloroethane	5.0	U Q	5.0	5.0	2.5	ug/L		10/27/21 23:18	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/27/21 23:18	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		10/27/21 23:18	1
cis-1,2-Dichloroethene	**23**		1.0	1.0	0.41	ug/L		10/27/21 23:18	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/27/21 23:18	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/27/21 23:18	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/27/21 23:18	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		10/27/21 23:18	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/27/21 23:18	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/27/21 23:18	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 23:18	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/27/21 23:18	1

Client Sample ID: G6M-13-05X-FAL21

Date Collected: 10/14/21 15:05
Date Received: 10/16/21 10:00

Lab Sample ID: 680-206061-6

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/27/21 23:18	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 23:18	1
m-Xylene & p-Xylene	**0.36**	**J**	1.0	1.0	0.35	ug/L		10/27/21 23:18	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 23:18	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/27/21 23:18	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/27/21 23:18	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/27/21 23:18	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/27/21 23:18	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/27/21 23:18	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/27/21 23:18	1
Tetrachloroethene	**9.2**		2.0	2.0	0.74	ug/L		10/27/21 23:18	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/27/21 23:18	1
trans-1,2-Dichloroethene	**0.64**	**J**	1.0	1.0	0.37	ug/L		10/27/21 23:18	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/27/21 23:18	1
Trichloroethene	**2.8**		1.0	1.0	0.48	ug/L		10/27/21 23:18	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/27/21 23:18	1
Vinyl acetate	2.0	U Q	2.0	2.0	0.81	ug/L		10/27/21 23:18	1
Vinyl chloride	**13**		1.0	1.0	0.50	ug/L		10/27/21 23:18	1
Xylenes, Total	**0.36**	**J**	2.0	2.0	0.23	ug/L		10/27/21 23:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*85 - 114*		*10/27/21 23:18*	*1*
Dibromofluoromethane (Surr)	*110*		*80 - 119*		*10/27/21 23:18*	*1*
Toluene-d8 (Surr)	*106*		*89 - 112*		*10/27/21 23:18*	*1*
1,2-Dichloroethane-d4 (Surr)	*103*		*81 - 118*		*10/27/21 23:18*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Ethane	**30**		1.1	0.76	0.30	ug/L		10/20/21 20:52	1
Ethylene	**35**		1.0	0.71	0.31	ug/L		10/20/21 20:52	1
Methane (TCD)	**17000**		390	77	39	ug/L		10/20/21 20:52	1

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Sulfate	1.0	U	1.0	1.0	0.40	mg/L		10/25/21 17:29	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	**92000**		50	50	17	ug/L		10/20/21 18:06	1
Manganese	**10000**		10	3.0	1.0	ug/L		10/20/21 18:06	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**130**		3.0	3.0	1.5	ug/L		10/20/21 17:13	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate/Nitrite-N	**0.043**	**J**	0.10	0.050	0.019	mg/L		10/27/21 21:28	1
Sulfide	0.81	U	0.81	0.81	0.81	mg/L		10/19/21 11:08	1
Total Organic Carbon - Duplicates	**11**		1.0	0.80	0.35	mg/L		10/22/21 05:22	1
Alkalinity	**91**		10	6.4	3.1	mg/L		10/23/21 08:58	1

Client: Seres Engineering & Services LLC
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-206061-1

Client Sample ID: G6M-95-19X-FAL21
Date Collected: 10/14/21 11:25
Date Received: 10/16/21 10:00

Lab Sample ID: 680-206061-7
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/28/21 00:07	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/28/21 00:07	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/28/21 00:07	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/28/21 00:07	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/28/21 00:07	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/28/21 00:07	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/28/21 00:07	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/28/21 00:07	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/28/21 00:07	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/28/21 00:07	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/28/21 00:07	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/28/21 00:07	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/28/21 00:07	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/28/21 00:07	1
1,2-Dichloroethene, Total	2.0	U	2.0	2.0	0.74	ug/L		10/28/21 00:07	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/28/21 00:07	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		10/28/21 00:07	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/28/21 00:07	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/28/21 00:07	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/28/21 00:07	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		10/28/21 00:07	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		10/28/21 00:07	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/28/21 00:07	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/28/21 00:07	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/28/21 00:07	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/28/21 00:07	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/28/21 00:07	1
Acetone	25	U	25	25	7.0	ug/L		10/28/21 00:07	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/28/21 00:07	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/28/21 00:07	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/28/21 00:07	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		10/28/21 00:07	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/28/21 00:07	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/28/21 00:07	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/28/21 00:07	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/28/21 00:07	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/28/21 00:07	1
Chloroethane	5.0	U Q	5.0	5.0	2.5	ug/L		10/28/21 00:07	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/28/21 00:07	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		10/28/21 00:07	1
cis-1,2-Dichloroethene	1.0	U	1.0	1.0	0.41	ug/L		10/28/21 00:07	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/28/21 00:07	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/28/21 00:07	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/28/21 00:07	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		10/28/21 00:07	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/28/21 00:07	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/28/21 00:07	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/28/21 00:07	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/28/21 00:07	1

Client: Seres Engineering & Services LLC
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-206061-1

Client Sample ID: G6M-95-19X-FAL21
Date Collected: 10/14/21 11:25
Date Received: 10/16/21 10:00

Lab Sample ID: 680-206061-7
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/28/21 00:07	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/28/21 00:07	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		10/28/21 00:07	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/28/21 00:07	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/28/21 00:07	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/28/21 00:07	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/28/21 00:07	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/28/21 00:07	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/28/21 00:07	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/28/21 00:07	1
Tetrachloroethene	**0.92**	**J**	2.0	2.0	0.74	ug/L		10/28/21 00:07	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/28/21 00:07	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		10/28/21 00:07	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/28/21 00:07	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		10/28/21 00:07	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/28/21 00:07	1
Vinyl acetate	2.0	U Q	2.0	2.0	0.81	ug/L		10/28/21 00:07	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		10/28/21 00:07	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		10/28/21 00:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*85 - 114*		*10/28/21 00:07*	*1*
Dibromofluoromethane (Surr)	*109*		*80 - 119*		*10/28/21 00:07*	*1*
Toluene-d8 (Surr)	*105*		*89 - 112*		*10/28/21 00:07*	*1*
1,2-Dichloroethane-d4 (Surr)	*102*		*81 - 118*		*10/28/21 00:07*	*1*

Client: Seres Engineering & Services LLC
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-206061-1

Client Sample ID: G6M-95-20X-FAL21
Date Collected: 10/14/21 10:10
Date Received: 10/16/21 10:00

Lab Sample ID: 680-206061-8
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/28/21 17:09	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/28/21 17:09	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/28/21 17:09	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/28/21 17:09	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/28/21 17:09	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/28/21 17:09	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/28/21 17:09	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/28/21 17:09	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/28/21 17:09	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/28/21 17:09	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/28/21 17:09	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/28/21 17:09	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/28/21 17:09	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/28/21 17:09	1
1,2-Dichloroethene, Total	**0.77**	**J**	2.0	2.0	0.74	ug/L		10/28/21 17:09	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/28/21 17:09	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		10/28/21 17:09	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/28/21 17:09	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/28/21 17:09	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/28/21 17:09	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		10/28/21 17:09	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		10/28/21 17:09	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/28/21 17:09	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/28/21 17:09	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/28/21 17:09	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/28/21 17:09	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/28/21 17:09	1
Acetone	25	U	25	25	7.0	ug/L		10/28/21 17:09	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/28/21 17:09	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/28/21 17:09	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/28/21 17:09	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		10/28/21 17:09	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/28/21 17:09	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/28/21 17:09	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/28/21 17:09	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/28/21 17:09	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/28/21 17:09	1
Chloroethane	5.0	U Q	5.0	5.0	2.5	ug/L		10/28/21 17:09	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/28/21 17:09	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		10/28/21 17:09	1
cis-1,2-Dichloroethene	**0.77**	**J**	1.0	1.0	0.41	ug/L		10/28/21 17:09	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/28/21 17:09	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/28/21 17:09	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/28/21 17:09	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		10/28/21 17:09	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/28/21 17:09	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/28/21 17:09	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/28/21 17:09	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/28/21 17:09	1

Client Sample ID: G6M-95-20X-FAL21
Lab Sample ID: 680-206061-8

Date Collected: 10/14/21 10:10
Matrix: Water
Date Received: 10/16/21 10:00

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/28/21 17:09	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/28/21 17:09	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		10/28/21 17:09	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/28/21 17:09	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/28/21 17:09	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/28/21 17:09	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/28/21 17:09	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/28/21 17:09	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/28/21 17:09	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/28/21 17:09	1
Tetrachloroethene	**2.8**		2.0	2.0	0.74	ug/L		10/28/21 17:09	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/28/21 17:09	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		10/28/21 17:09	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/28/21 17:09	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		10/28/21 17:09	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/28/21 17:09	1
Vinyl acetate	2.0	U	2.0	2.0	0.81	ug/L		10/28/21 17:09	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		10/28/21 17:09	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		10/28/21 17:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*85 - 114*		*10/28/21 17:09*	*1*
Dibromofluoromethane (Surr)	*110*		*80 - 119*		*10/28/21 17:09*	*1*
Toluene-d8 (Surr)	*106*		*89 - 112*		*10/28/21 17:09*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*81 - 118*		*10/28/21 17:09*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - RA

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,2-Dichloroethene, Total	2.0	U H	2.0	2.0	0.74	ug/L		10/29/21 15:04	1
cis-1,2-Dichloroethene	1.0	U H	1.0	1.0	0.41	ug/L		10/29/21 15:04	1
Tetrachloroethene	2.0	U H M	2.0	2.0	0.74	ug/L		10/29/21 15:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*85 - 114*		*10/29/21 15:04*	*1*
Dibromofluoromethane (Surr)	*108*		*80 - 119*		*10/29/21 15:04*	*1*
Toluene-d8 (Surr)	*112*		*89 - 112*		*10/29/21 15:04*	*1*
1,2-Dichloroethane-d4 (Surr)	*105*		*81 - 118*		*10/29/21 15:04*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	**6500**		50	50	17	ug/L		10/20/21 18:10	1
Manganese	**440**		10	3.0	1.0	ug/L		10/20/21 18:10	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**37**		3.0	3.0	1.5	ug/L		10/20/21 17:16	1

Client: Seres Engineering & Services LLC
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-206061-1

Client Sample ID: AOC50-DUP01-FAL21
Date Collected: 10/14/21 10:10
Date Received: 10/16/21 10:00

Lab Sample ID: 680-206061-9
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U H	1.0	1.0	0.37	ug/L		10/29/21 13:31	1
1,1,1-Trichloroethane	1.0	U H	1.0	1.0	0.37	ug/L		10/29/21 13:31	1
1,1,2,2-Tetrachloroethane	2.0	U H	2.0	2.0	0.62	ug/L		10/29/21 13:31	1
1,1,2-Trichloroethane	1.0	U H	1.0	1.0	0.33	ug/L		10/29/21 13:31	1
1,1-Dichloroethane	1.0	U H	1.0	1.0	0.38	ug/L		10/29/21 13:31	1
1,1-Dichloroethene	1.0	U H	1.0	1.0	0.36	ug/L		10/29/21 13:31	1
1,1-Dichloropropene	1.0	U H	1.0	1.0	0.34	ug/L		10/29/21 13:31	1
1,2,3-Trichlorobenzene	5.0	U H	5.0	5.0	2.5	ug/L		10/29/21 13:31	1
1,2,3-Trichloropropane	1.0	U H	1.0	1.0	0.39	ug/L		10/29/21 13:31	1
1,2,4-Trichlorobenzene	5.0	U H	5.0	5.0	2.5	ug/L		10/29/21 13:31	1
1,2,4-Trimethylbenzene	1.0	U H	1.0	1.0	0.47	ug/L		10/29/21 13:31	1
1,2-Dibromo-3-Chloropropane	4.0	U H	5.0	4.0	1.1	ug/L		10/29/21 13:31	1
1,2-Dichlorobenzene	1.0	U H	1.0	1.0	0.37	ug/L		10/29/21 13:31	1
1,2-Dichloroethane	1.0	U H M	1.0	1.0	0.50	ug/L		10/29/21 13:31	1
1,2-Dichloroethene, Total	2.0	U H	2.0	2.0	0.74	ug/L		10/29/21 13:31	1
1,2-Dichloropropane	2.0	U H	2.0	2.0	0.67	ug/L		10/29/21 13:31	1
1,3,5-Trimethylbenzene	1.0	U H	1.0	1.0	0.31	ug/L		10/29/21 13:31	1
1,3-Dichlorobenzene	1.0	U H	1.0	1.0	0.43	ug/L		10/29/21 13:31	1
1,3-Dichloropropane	1.0	U H	1.0	1.0	0.34	ug/L		10/29/21 13:31	1
1,4-Dichlorobenzene	1.0	U H	1.0	1.0	0.46	ug/L		10/29/21 13:31	1
2,2-Dichloropropane	1.0	U H	1.0	1.0	0.37	ug/L		10/29/21 13:31	1
2-Butanone (MEK)	10	U H	10	10	3.4	ug/L		10/29/21 13:31	1
2-Chlorotoluene	1.0	U H	1.0	1.0	0.27	ug/L		10/29/21 13:31	1
2-Hexanone	5.0	U H	10	5.0	2.0	ug/L		10/29/21 13:31	1
4-Chlorotoluene	1.0	U H	1.0	1.0	0.45	ug/L		10/29/21 13:31	1
4-Isopropyltoluene	1.0	U H	1.0	1.0	0.48	ug/L		10/29/21 13:31	1
4-Methyl-2-pentanone (MIBK)	5.0	U H	10	5.0	2.1	ug/L		10/29/21 13:31	1
Acetone	25	U H	25	25	7.0	ug/L		10/29/21 13:31	1
Benzene	1.0	U H	1.0	1.0	0.43	ug/L		10/29/21 13:31	1
Bromobenzene	1.0	U H	1.0	1.0	0.50	ug/L		10/29/21 13:31	1
Bromoform	1.0	U H	1.0	1.0	0.43	ug/L		10/29/21 13:31	1
Bromomethane	5.0	U H	5.0	5.0	2.5	ug/L		10/29/21 13:31	1
Carbon disulfide	1.0	U H	2.0	1.0	0.43	ug/L		10/29/21 13:31	1
Carbon tetrachloride	1.0	U H	1.0	1.0	0.33	ug/L		10/29/21 13:31	1
Chlorobenzene	1.0	U H	1.0	1.0	0.26	ug/L		10/29/21 13:31	1
Chlorobromomethane	1.0	U H	1.0	1.0	0.45	ug/L		10/29/21 13:31	1
Chlorodibromomethane	1.0	U H	1.0	1.0	0.32	ug/L		10/29/21 13:31	1
Chloroethane	5.0	U H	5.0	5.0	2.5	ug/L		10/29/21 13:31	1
Chloroform	1.0	U H	1.0	1.0	0.50	ug/L		10/29/21 13:31	1
Chloromethane	1.0	U H	1.0	1.0	0.40	ug/L		10/29/21 13:31	1
cis-1,2-Dichloroethene	1.0	U H	1.0	1.0	0.41	ug/L		10/29/21 13:31	1
cis-1,3-Dichloropropene	1.0	U H	1.0	1.0	0.40	ug/L		10/29/21 13:31	1
Dibromomethane	1.0	U H	1.0	1.0	0.35	ug/L		10/29/21 13:31	1
Dichlorobromomethane	1.0	U H	1.0	1.0	0.44	ug/L		10/29/21 13:31	1
Dichlorodifluoromethane	2.0	U H Q	2.0	2.0	0.60	ug/L		10/29/21 13:31	1
Ethylbenzene	1.0	U H	1.0	1.0	0.33	ug/L		10/29/21 13:31	1
Ethylene Dibromide	1.0	U H	1.0	1.0	0.44	ug/L		10/29/21 13:31	1
Hexachlorobutadiene	5.0	U H	5.0	5.0	2.5	ug/L		10/29/21 13:31	1
Isopropylbenzene	1.0	U H	1.0	1.0	0.35	ug/L		10/29/21 13:31	1

Client: Seres Engineering & Services LLC
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-206061-1

Client Sample ID: AOC50-DUP01-FAL21

Date Collected: 10/14/21 10:10
Date Received: 10/16/21 10:00

Lab Sample ID: 680-206061-9

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U H	10	1.0	0.30	ug/L		10/29/21 13:31	1
Methylene Chloride	5.0	U H	5.0	5.0	2.5	ug/L		10/29/21 13:31	1
m-Xylene & p-Xylene	1.0	U H	1.0	1.0	0.35	ug/L		10/29/21 13:31	1
Naphthalene	5.0	U H	5.0	5.0	2.5	ug/L		10/29/21 13:31	1
n-Butylbenzene	1.0	U H	1.0	1.0	0.47	ug/L		10/29/21 13:31	1
N-Propylbenzene	1.0	U H	1.0	1.0	0.38	ug/L		10/29/21 13:31	1
o-Xylene	0.50	U H	1.0	0.50	0.23	ug/L		10/29/21 13:31	1
sec-Butylbenzene	1.0	U H	1.0	1.0	0.42	ug/L		10/29/21 13:31	1
Styrene	1.0	U H	1.0	1.0	0.27	ug/L		10/29/21 13:31	1
tert-Butylbenzene	1.0	U H	1.0	1.0	0.45	ug/L		10/29/21 13:31	1
Tetrachloroethene	2.0	U H	2.0	2.0	0.74	ug/L		10/29/21 13:31	1
Toluene	1.0	U H	1.0	1.0	0.48	ug/L		10/29/21 13:31	1
trans-1,2-Dichloroethene	1.0	U H	1.0	1.0	0.37	ug/L		10/29/21 13:31	1
trans-1,3-Dichloropropene	1.0	U H	1.0	1.0	0.42	ug/L		10/29/21 13:31	1
Trichloroethene	1.0	U H	1.0	1.0	0.48	ug/L		10/29/21 13:31	1
Trichlorofluoromethane	1.0	U H	1.0	1.0	0.42	ug/L		10/29/21 13:31	1
Vinyl acetate	2.0	U H Q	2.0	2.0	0.81	ug/L		10/29/21 13:31	1
Vinyl chloride	1.0	U H	1.0	1.0	0.50	ug/L		10/29/21 13:31	1
Xylenes, Total	2.0	U H	2.0	2.0	0.23	ug/L		10/29/21 13:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*85 - 114*		*10/29/21 13:31*	*1*
Dibromofluoromethane (Surr)	*98*		*80 - 119*		*10/29/21 13:31*	*1*
Toluene-d8 (Surr)	*109*		*89 - 112*		*10/29/21 13:31*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*81 - 118*		*10/29/21 13:31*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	**6400**		50	50	17	ug/L		10/20/21 18:15	1
Manganese	**430**		10	3.0	1.0	ug/L		10/20/21 18:15	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**36**		3.0	3.0	1.5	ug/L		10/20/21 17:18	1

Client Sample ID: XSA-12-97X-FAL21
Lab Sample ID: 680-206061-10

Date Collected: 10/14/21 15:10
Matrix: Water
Date Received: 10/16/21 10:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/28/21 17:33	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/28/21 17:33	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/28/21 17:33	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/28/21 17:33	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/28/21 17:33	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/28/21 17:33	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/28/21 17:33	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/28/21 17:33	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/28/21 17:33	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/28/21 17:33	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/28/21 17:33	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/28/21 17:33	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/28/21 17:33	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/28/21 17:33	1
1,2-Dichloroethene, Total	**11**		2.0	2.0	0.74	ug/L		10/28/21 17:33	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/28/21 17:33	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		10/28/21 17:33	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/28/21 17:33	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/28/21 17:33	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/28/21 17:33	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		10/28/21 17:33	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		10/28/21 17:33	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/28/21 17:33	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/28/21 17:33	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/28/21 17:33	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/28/21 17:33	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/28/21 17:33	1
Acetone	25	U	25	25	7.0	ug/L		10/28/21 17:33	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/28/21 17:33	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/28/21 17:33	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/28/21 17:33	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		10/28/21 17:33	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/28/21 17:33	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/28/21 17:33	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/28/21 17:33	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/28/21 17:33	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/28/21 17:33	1
Chloroethane	5.0	U Q	5.0	5.0	2.5	ug/L		10/28/21 17:33	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/28/21 17:33	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		10/28/21 17:33	1
cis-1,2-Dichloroethene	**11**		1.0	1.0	0.41	ug/L		10/28/21 17:33	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/28/21 17:33	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/28/21 17:33	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/28/21 17:33	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		10/28/21 17:33	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/28/21 17:33	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/28/21 17:33	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/28/21 17:33	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/28/21 17:33	1

Client: Seres Engineering & Services LLC
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-206061-1

Client Sample ID: XSA-12-97X-FAL21

Date Collected: 10/14/21 15:10
Date Received: 10/16/21 10:00

Lab Sample ID: 680-206061-10

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/28/21 17:33	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/28/21 17:33	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		10/28/21 17:33	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/28/21 17:33	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/28/21 17:33	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/28/21 17:33	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/28/21 17:33	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/28/21 17:33	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/28/21 17:33	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/28/21 17:33	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		10/28/21 17:33	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/28/21 17:33	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		10/28/21 17:33	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/28/21 17:33	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		10/28/21 17:33	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/28/21 17:33	1
Vinyl acetate	2.0	U	2.0	2.0	0.81	ug/L		10/28/21 17:33	1
Vinyl chloride	**3.3**		1.0	1.0	0.50	ug/L		10/28/21 17:33	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		10/28/21 17:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*85 - 114*		*10/28/21 17:33*	*1*
Dibromofluoromethane (Surr)	*110*		*80 - 119*		*10/28/21 17:33*	*1*
Toluene-d8 (Surr)	*107*		*89 - 112*		*10/28/21 17:33*	*1*
1,2-Dichloroethane-d4 (Surr)	*103*		*81 - 118*		*10/28/21 17:33*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	**4800**		50	50	17	ug/L		10/20/21 18:19	1
Manganese	**7400**		10	3.0	1.0	ug/L		10/20/21 18:19	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**21**		3.0	3.0	1.5	ug/L		10/20/21 17:21	1

Client: Seres Engineering & Services LLC
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-206061-1

Client Sample ID: XSA-12-98X-FAL21
Date Collected: 10/14/21 13:40
Date Received: 10/16/21 10:00

Lab Sample ID: 680-206061-11
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/28/21 19:12	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/28/21 19:12	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/28/21 19:12	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/28/21 19:12	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/28/21 19:12	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/28/21 19:12	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/28/21 19:12	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/28/21 19:12	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/28/21 19:12	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/28/21 19:12	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/28/21 19:12	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/28/21 19:12	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/28/21 19:12	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/28/21 19:12	1
1,2-Dichloroethene, Total	2.0	U	2.0	2.0	0.74	ug/L		10/28/21 19:12	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/28/21 19:12	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		10/28/21 19:12	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/28/21 19:12	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/28/21 19:12	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/28/21 19:12	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		10/28/21 19:12	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		10/28/21 19:12	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/28/21 19:12	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/28/21 19:12	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/28/21 19:12	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/28/21 19:12	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/28/21 19:12	1
Acetone	25	U	25	25	7.0	ug/L		10/28/21 19:12	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/28/21 19:12	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/28/21 19:12	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/28/21 19:12	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		10/28/21 19:12	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/28/21 19:12	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/28/21 19:12	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/28/21 19:12	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/28/21 19:12	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/28/21 19:12	1
Chloroethane	5.0	U Q	5.0	5.0	2.5	ug/L		10/28/21 19:12	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/28/21 19:12	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		10/28/21 19:12	1
cis-1,2-Dichloroethene	1.0	U	1.0	1.0	0.41	ug/L		10/28/21 19:12	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/28/21 19:12	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/28/21 19:12	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/28/21 19:12	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		10/28/21 19:12	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/28/21 19:12	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/28/21 19:12	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/28/21 19:12	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/28/21 19:12	1

Client Sample ID: XSA-12-98X-FAL21

Date Collected: 10/14/21 13:40
Date Received: 10/16/21 10:00

Lab Sample ID: 680-206061-11

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/28/21 19:12	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/28/21 19:12	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		10/28/21 19:12	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/28/21 19:12	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/28/21 19:12	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/28/21 19:12	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/28/21 19:12	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/28/21 19:12	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/28/21 19:12	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/28/21 19:12	1
Tetrachloroethene	**1.6**	**J**	2.0	2.0	0.74	ug/L		10/28/21 19:12	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/28/21 19:12	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		10/28/21 19:12	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/28/21 19:12	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		10/28/21 19:12	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/28/21 19:12	1
Vinyl acetate	2.0	U	2.0	2.0	0.81	ug/L		10/28/21 19:12	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		10/28/21 19:12	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		10/28/21 19:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*85 - 114*		*10/28/21 19:12*	*1*
Dibromofluoromethane (Surr)	*109*		*80 - 119*		*10/28/21 19:12*	*1*
Toluene-d8 (Surr)	*103*		*89 - 112*		*10/28/21 19:12*	*1*
1,2-Dichloroethane-d4 (Surr)	*102*		*81 - 118*		*10/28/21 19:12*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - RA

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Tetrachloroethene	**0.83**	**J H**	2.0	2.0	0.74	ug/L		10/29/21 13:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*85 - 114*		*10/29/21 13:52*	*1*
Dibromofluoromethane (Surr)	*100*		*80 - 119*		*10/29/21 13:52*	*1*
Toluene-d8 (Surr)	*106*		*89 - 112*		*10/29/21 13:52*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*81 - 118*		*10/29/21 13:52*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	**410**		50	50	17	ug/L		10/20/21 18:23	1
Manganese	**30**		10	3.0	1.0	ug/L		10/20/21 18:23	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	3.0	U	3.0	3.0	1.5	ug/L		10/20/21 17:23	1

Client: Seres Engineering & Services LLC
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-206061-1

Client Sample ID: AOC50-TB02-FAL21
Date Collected: 10/14/21 00:00
Date Received: 10/16/21 10:00

Lab Sample ID: 680-206061-12
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/28/21 18:23	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/28/21 18:23	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/28/21 18:23	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/28/21 18:23	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/28/21 18:23	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/28/21 18:23	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/28/21 18:23	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/28/21 18:23	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/28/21 18:23	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/28/21 18:23	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/28/21 18:23	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/28/21 18:23	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/28/21 18:23	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/28/21 18:23	1
1,2-Dichloroethene, Total	2.0	U	2.0	2.0	0.74	ug/L		10/28/21 18:23	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/28/21 18:23	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		10/28/21 18:23	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/28/21 18:23	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/28/21 18:23	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/28/21 18:23	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		10/28/21 18:23	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		10/28/21 18:23	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/28/21 18:23	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/28/21 18:23	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/28/21 18:23	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/28/21 18:23	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/28/21 18:23	1
Acetone	25	U	25	25	7.0	ug/L		10/28/21 18:23	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/28/21 18:23	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/28/21 18:23	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/28/21 18:23	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		10/28/21 18:23	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/28/21 18:23	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/28/21 18:23	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/28/21 18:23	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/28/21 18:23	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/28/21 18:23	1
Chloroethane	5.0	U Q	5.0	5.0	2.5	ug/L		10/28/21 18:23	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/28/21 18:23	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		10/28/21 18:23	1
cis-1,2-Dichloroethene	1.0	U	1.0	1.0	0.41	ug/L		10/28/21 18:23	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/28/21 18:23	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/28/21 18:23	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/28/21 18:23	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		10/28/21 18:23	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/28/21 18:23	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/28/21 18:23	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/28/21 18:23	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/28/21 18:23	1

Client: Seres Engineering & Services LLC
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-206061-1

Client Sample ID: AOC50-TB02-FAL21
Date Collected: 10/14/21 00:00
Date Received: 10/16/21 10:00

Lab Sample ID: 680-206061-12
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/28/21 18:23	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/28/21 18:23	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		10/28/21 18:23	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/28/21 18:23	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/28/21 18:23	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/28/21 18:23	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/28/21 18:23	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/28/21 18:23	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/28/21 18:23	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/28/21 18:23	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		10/28/21 18:23	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/28/21 18:23	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		10/28/21 18:23	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/28/21 18:23	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		10/28/21 18:23	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/28/21 18:23	1
Vinyl acetate	2.0	U	2.0	2.0	0.81	ug/L		10/28/21 18:23	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		10/28/21 18:23	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		10/28/21 18:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*85 - 114*		*10/28/21 18:23*	*1*
Dibromofluoromethane (Surr)	*110*		*80 - 119*		*10/28/21 18:23*	*1*
Toluene-d8 (Surr)	*106*		*89 - 112*		*10/28/21 18:23*	*1*
1,2-Dichloroethane-d4 (Surr)	*105*		*81 - 118*		*10/28/21 18:23*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-691431/8
Matrix: Water
Analysis Batch: 691431

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 13:03	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 13:03	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/27/21 13:03	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/27/21 13:03	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/27/21 13:03	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/27/21 13:03	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/27/21 13:03	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 13:03	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/27/21 13:03	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 13:03	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/27/21 13:03	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/27/21 13:03	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 13:03	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/27/21 13:03	1
1,2-Dichloroethene, Total	2.0	U	2.0	2.0	0.74	ug/L		10/27/21 13:03	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/27/21 13:03	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		10/27/21 13:03	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/27/21 13:03	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/27/21 13:03	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/27/21 13:03	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 13:03	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		10/27/21 13:03	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/27/21 13:03	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/27/21 13:03	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/27/21 13:03	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/27/21 13:03	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/27/21 13:03	1
Acetone	25	U	25	25	7.0	ug/L		10/27/21 13:03	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/27/21 13:03	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/27/21 13:03	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/27/21 13:03	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 13:03	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/27/21 13:03	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/27/21 13:03	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/27/21 13:03	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/27/21 13:03	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/27/21 13:03	1
Chloroethane	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 13:03	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/27/21 13:03	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		10/27/21 13:03	1
cis-1,2-Dichloroethene	1.0	U	1.0	1.0	0.41	ug/L		10/27/21 13:03	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/27/21 13:03	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/27/21 13:03	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/27/21 13:03	1
Dichlorodifluoromethane	2.0	U M	2.0	2.0	0.60	ug/L		10/27/21 13:03	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/27/21 13:03	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/27/21 13:03	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 13:03	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-691431/8
Matrix: Water
Analysis Batch: 691431

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/27/21 13:03	1
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/27/21 13:03	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 13:03	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		10/27/21 13:03	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 13:03	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/27/21 13:03	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/27/21 13:03	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/27/21 13:03	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/27/21 13:03	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/27/21 13:03	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/27/21 13:03	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		10/27/21 13:03	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/27/21 13:03	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 13:03	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/27/21 13:03	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		10/27/21 13:03	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/27/21 13:03	1
Vinyl acetate	2.0	U	2.0	2.0	0.81	ug/L		10/27/21 13:03	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		10/27/21 13:03	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		10/27/21 13:03	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*85 - 114*		*10/27/21 13:03*	*1*
Dibromofluoromethane (Surr)	*100*		*80 - 119*		*10/27/21 13:03*	*1*
Toluene-d8 (Surr)	*99*		*89 - 112*		*10/27/21 13:03*	*1*
1,2-Dichloroethane-d4 (Surr)	*97*		*81 - 118*		*10/27/21 13:03*	*1*

Lab Sample ID: LCS 680-691431/3
Matrix: Water
Analysis Batch: 691431

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	50.0	49.9		ug/L		100	78 - 124
1,1,1-Trichloroethane	50.0	47.9		ug/L		96	74 - 131
1,1,2,2-Tetrachloroethane	50.0	45.2		ug/L		90	71 - 121
1,1,2-Trichloroethane	50.0	53.4		ug/L		107	80 - 119
1,1-Dichloroethane	50.0	51.5		ug/L		103	77 - 125
1,1-Dichloroethene	50.0	50.7		ug/L		101	71 - 131
1,1-Dichloropropene	50.0	51.3		ug/L		103	79 - 125
1,2,3-Trichlorobenzene	50.0	48.4		ug/L		97	69 - 129
1,2,3-Trichloropropane	50.0	49.5		ug/L		99	73 - 122
1,2,4-Trichlorobenzene	50.0	48.4		ug/L		97	69 - 130
1,2,4-Trimethylbenzene	50.0	49.2		ug/L		98	76 - 124
1,2-Dibromo-3-Chloropropane	50.0	46.0		ug/L		92	62 - 128
1,2-Dichlorobenzene	50.0	47.6		ug/L		95	80 - 119
1,2-Dichloroethane	50.0	52.3		ug/L		105	73 - 128
1,2-Dichloroethene, Total	100	102		ug/L		102	79 - 121
1,2-Dichloropropane	50.0	52.7		ug/L		105	78 - 122

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-691431/3
Matrix: Water
Analysis Batch: 691431

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3,5-Trimethylbenzene	50.0	48.7		ug/L		97	75 - 124
1,3-Dichlorobenzene	50.0	48.5		ug/L		97	80 - 119
1,3-Dichloropropane	50.0	51.6		ug/L		103	80 - 119
1,4-Dichlorobenzene	50.0	47.4		ug/L		95	79 - 118
2,2-Dichloropropane	50.0	48.5		ug/L		97	60 - 139
2-Butanone (MEK)	250	256		ug/L		102	56 - 143
2-Chlorotoluene	50.0	48.3		ug/L		97	79 - 122
2-Hexanone	250	262		ug/L		105	57 - 139
4-Chlorotoluene	50.0	48.9		ug/L		98	78 - 122
4-Isopropyltoluene	50.0	45.9		ug/L		92	77 - 127
4-Methyl-2-pentanone (MIBK)	250	269		ug/L		108	67 - 130
Acetone	250	260		ug/L		104	39 - 160
Benzene	50.0	50.9		ug/L		102	79 - 120
Bromobenzene	50.0	50.4		ug/L		101	80 - 120
Bromoform	50.0	50.5		ug/L		101	66 - 130
Bromomethane	50.0	54.4		ug/L		109	53 - 141
Carbon disulfide	50.0	50.3		ug/L		101	64 - 133
Carbon tetrachloride	50.0	49.0		ug/L		98	72 - 136
Chlorobenzene	50.0	47.9		ug/L		96	82 - 118
Chlorobromomethane	50.0	51.8		ug/L		104	78 - 123
Chlorodibromomethane	50.0	53.8		ug/L		108	74 - 126
Chloroethane	50.0	56.6		ug/L		113	60 - 138
Chloroform	50.0	50.8		ug/L		102	79 - 124
Chloromethane	50.0	49.8		ug/L		100	50 - 139
cis-1,2-Dichloroethene	50.0	50.1		ug/L		100	78 - 123
cis-1,3-Dichloropropene	50.0	54.8		ug/L		110	75 - 124
Dibromomethane	50.0	54.0		ug/L		108	79 - 123
Dichlorobromomethane	50.0	51.9		ug/L		104	79 - 125
Dichlorodifluoromethane	50.0	40.8		ug/L		82	32 - 152
Ethylbenzene	50.0	48.1		ug/L		96	79 - 121
Ethylene Dibromide	50.0	52.6		ug/L		105	75 - 127
Hexachlorobutadiene	50.0	45.8		ug/L		92	66 - 134
Isopropylbenzene	50.0	47.5		ug/L		95	72 - 131
Methyl tert-butyl ether	50.0	54.7		ug/L		109	71 - 124
Methylene Chloride	50.0	51.7		ug/L		103	74 - 124
m-Xylene & p-Xylene	50.0	48.6		ug/L		97	80 - 121
Naphthalene	50.0	47.1		ug/L		94	61 - 128
n-Butylbenzene	50.0	46.8		ug/L		94	75 - 128
N-Propylbenzene	50.0	48.2		ug/L		96	76 - 126
o-Xylene	50.0	48.4		ug/L		97	78 - 122
sec-Butylbenzene	50.0	47.9		ug/L		96	77 - 126
Styrene	50.0	49.8		ug/L		100	78 - 123
tert-Butylbenzene	50.0	48.0		ug/L		96	78 - 124
Tetrachloroethene	50.0	51.2		ug/L		102	74 - 129
Toluene	50.0	52.1		ug/L		104	80 - 121
trans-1,2-Dichloroethene	50.0	52.1		ug/L		104	75 - 124
trans-1,3-Dichloropropene	50.0	53.6		ug/L		107	73 - 127
Trichloroethene	50.0	52.5		ug/L		105	79 - 123
Trichlorofluoromethane	50.0	43.6		ug/L		87	65 - 141

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-691431/3
Matrix: Water
Analysis Batch: 691431

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Vinyl acetate			100	112	J1	ug/L		112	54 - 146		
Vinyl chloride			50.0	54.9		ug/L		110	58 - 137		
Xylenes, Total			100	97.0		ug/L		97	79 - 121		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*91*		*85 - 114*
Dibromofluoromethane (Surr)	*104*		*80 - 119*
Toluene-d8 (Surr)	*94*		*89 - 112*
1,2-Dichloroethane-d4 (Surr)	*111*		*81 - 118*

Lab Sample ID: LCSD 680-691431/4
Matrix: Water
Analysis Batch: 691431

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane			50.0	51.2		ug/L		102	78 - 124	3	20
1,1,1-Trichloroethane			50.0	48.7		ug/L		97	74 - 131	2	20
1,1,2,2-Tetrachloroethane			50.0	47.0		ug/L		94	71 - 121	4	20
1,1,2-Trichloroethane			50.0	54.8		ug/L		110	80 - 119	2	20
1,1-Dichloroethane			50.0	52.5		ug/L		105	77 - 125	2	20
1,1-Dichloroethene			50.0	50.7		ug/L		101	71 - 131	0	20
1,1-Dichloropropene			50.0	47.8		ug/L		96	79 - 125	7	20
1,2,3-Trichlorobenzene			50.0	49.4		ug/L		99	69 - 129	2	20
1,2,3-Trichloropropane			50.0	51.0		ug/L		102	73 - 122	3	20
1,2,4-Trichlorobenzene			50.0	48.6		ug/L		97	69 - 130	0	20
1,2,4-Trimethylbenzene			50.0	50.5		ug/L		101	76 - 124	3	20
1,2-Dibromo-3-Chloropropane			50.0	48.6		ug/L		97	62 - 128	6	20
1,2-Dichlorobenzene			50.0	48.3		ug/L		97	80 - 119	1	20
1,2-Dichloroethane			50.0	53.3		ug/L		107	73 - 128	2	20
1,2-Dichloroethene, Total			100	102		ug/L		102	79 - 121	0	20
1,2-Dichloropropane			50.0	53.6		ug/L		107	78 - 122	2	20
1,3,5-Trimethylbenzene			50.0	49.7		ug/L		99	75 - 124	2	20
1,3-Dichlorobenzene			50.0	49.0		ug/L		98	80 - 119	1	20
1,3-Dichloropropane			50.0	52.6		ug/L		105	80 - 119	2	20
1,4-Dichlorobenzene			50.0	47.6		ug/L		95	79 - 118	1	20
2,2-Dichloropropane			50.0	49.0		ug/L		98	60 - 139	1	20
2-Butanone (MEK)			250	270		ug/L		108	56 - 143	6	20
2-Chlorotoluene			50.0	49.3		ug/L		99	79 - 122	2	20
2-Hexanone			250	271		ug/L		108	57 - 139	3	20
4-Chlorotoluene			50.0	50.8		ug/L		102	78 - 122	4	20
4-Isopropyltoluene			50.0	46.8		ug/L		94	77 - 127	2	20
4-Methyl-2-pentanone (MIBK)			250	276		ug/L		111	67 - 130	3	20
Acetone			250	269		ug/L		108	39 - 160	3	20
Benzene			50.0	51.1		ug/L		102	79 - 120	0	20
Bromobenzene			50.0	51.5		ug/L		103	80 - 120	2	20
Bromoform			50.0	52.4		ug/L		105	66 - 130	4	20
Bromomethane			50.0	54.3		ug/L		109	53 - 141	0	20
Carbon disulfide			50.0	50.0		ug/L		100	64 - 133	1	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 680-691431/4
Matrix: Water
Analysis Batch: 691431

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Carbon tetrachloride	50.0	47.8		ug/L		96	72 - 136	2	20
Chlorobenzene	50.0	48.8		ug/L		98	82 - 118	2	20
Chlorobromomethane	50.0	53.0		ug/L		106	78 - 123	2	20
Chlorodibromomethane	50.0	54.5		ug/L		109	74 - 126	1	20
Chloroethane	50.0	57.8		ug/L		116	60 - 138	2	20
Chloroform	50.0	51.5		ug/L		103	79 - 124	1	20
Chloromethane	50.0	61.1		ug/L		122	50 - 139	20	20
cis-1,2-Dichloroethene	50.0	50.0		ug/L		100	78 - 123	0	20
cis-1,3-Dichloropropene	50.0	55.0		ug/L		110	75 - 124	0	20
Dibromomethane	50.0	53.6		ug/L		107	79 - 123	1	20
Dichlorobromomethane	50.0	52.5		ug/L		105	79 - 125	1	20
Dichlorodifluoromethane	50.0	42.8		ug/L		86	32 - 152	5	20
Ethylbenzene	50.0	48.6		ug/L		97	79 - 121	1	20
Ethylene Dibromide	50.0	54.1		ug/L		108	75 - 127	3	20
Hexachlorobutadiene	50.0	45.6		ug/L		91	66 - 134	0	20
Isopropylbenzene	50.0	48.8		ug/L		98	72 - 131	3	20
Methyl tert-butyl ether	50.0	56.1		ug/L		112	71 - 124	3	20
Methylene Chloride	50.0	51.9		ug/L		104	74 - 124	0	20
m-Xylene & p-Xylene	50.0	49.7		ug/L		99	80 - 121	2	20
Naphthalene	50.0	48.1		ug/L		96	61 - 128	2	20
n-Butylbenzene	50.0	46.7		ug/L		93	75 - 128	0	20
N-Propylbenzene	50.0	49.3		ug/L		99	76 - 126	2	20
o-Xylene	50.0	49.5		ug/L		99	78 - 122	2	20
sec-Butylbenzene	50.0	48.9		ug/L		98	77 - 126	2	20
Styrene	50.0	50.2		ug/L		100	78 - 123	1	20
tert-Butylbenzene	50.0	48.3		ug/L		97	78 - 124	1	20
Tetrachloroethene	50.0	50.7		ug/L		101	74 - 129	1	20
Toluene	50.0	52.1		ug/L		104	80 - 121	0	20
trans-1,2-Dichloroethene	50.0	52.3		ug/L		105	75 - 124	0	20
trans-1,3-Dichloropropene	50.0	54.8		ug/L		110	73 - 127	2	20
Trichloroethene	50.0	52.4		ug/L		105	79 - 123	0	20
Trichlorofluoromethane	50.0	45.8		ug/L		92	65 - 141	5	20
Vinyl acetate	100	118	J1	ug/L		118	54 - 146	5	20
Vinyl chloride	50.0	52.2		ug/L		104	58 - 137	5	20
Xylenes, Total	100	99.2		ug/L		99	79 - 121	2	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*93*		*85 - 114*
Dibromofluoromethane (Surr)	*105*		*80 - 119*
Toluene-d8 (Surr)	*95*		*89 - 112*
1,2-Dichloroethane-d4 (Surr)	*110*		*81 - 118*

Lab Sample ID: MB 680-691543/10
Matrix: Water
Analysis Batch: 691543

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 17:34	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-691543/10
Matrix: Water
Analysis Batch: 691543

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 17:34	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/27/21 17:34	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/27/21 17:34	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/27/21 17:34	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/27/21 17:34	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/27/21 17:34	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 17:34	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/27/21 17:34	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 17:34	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/27/21 17:34	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/27/21 17:34	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 17:34	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/27/21 17:34	1
1,2-Dichloroethene, Total	2.0	U	2.0	2.0	0.74	ug/L		10/27/21 17:34	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/27/21 17:34	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		10/27/21 17:34	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/27/21 17:34	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/27/21 17:34	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/27/21 17:34	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 17:34	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		10/27/21 17:34	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/27/21 17:34	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/27/21 17:34	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/27/21 17:34	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/27/21 17:34	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/27/21 17:34	1
Acetone	25	U	25	25	7.0	ug/L		10/27/21 17:34	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/27/21 17:34	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/27/21 17:34	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/27/21 17:34	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 17:34	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/27/21 17:34	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/27/21 17:34	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/27/21 17:34	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/27/21 17:34	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/27/21 17:34	1
Chloroethane	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 17:34	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/27/21 17:34	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		10/27/21 17:34	1
cis-1,2-Dichloroethene	1.0	U	1.0	1.0	0.41	ug/L		10/27/21 17:34	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/27/21 17:34	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/27/21 17:34	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/27/21 17:34	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		10/27/21 17:34	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/27/21 17:34	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/27/21 17:34	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 17:34	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/27/21 17:34	1
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/27/21 17:34	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-691543/10
Matrix: Water
Analysis Batch: 691543

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 17:34	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		10/27/21 17:34	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 17:34	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/27/21 17:34	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/27/21 17:34	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/27/21 17:34	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/27/21 17:34	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/27/21 17:34	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/27/21 17:34	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		10/27/21 17:34	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/27/21 17:34	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 17:34	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/27/21 17:34	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		10/27/21 17:34	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/27/21 17:34	1
Vinyl acetate	2.0	U	2.0	2.0	0.81	ug/L		10/27/21 17:34	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		10/27/21 17:34	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		10/27/21 17:34	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*106*		*85 - 114*		*10/27/21 17:34*	*1*
Dibromofluoromethane (Surr)	*106*		*80 - 119*		*10/27/21 17:34*	*1*
Toluene-d8 (Surr)	*101*		*89 - 112*		*10/27/21 17:34*	*1*
1,2-Dichloroethane-d4 (Surr)	*110*		*81 - 118*		*10/27/21 17:34*	*1*

Lab Sample ID: LCS 680-691543/4
Matrix: Water
Analysis Batch: 691543

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	50.0	50.2		ug/L		100	78 - 124
1,1,1-Trichloroethane	50.0	51.6		ug/L		103	74 - 131
1,1,2,2-Tetrachloroethane	50.0	48.1		ug/L		96	71 - 121
1,1,2-Trichloroethane	50.0	52.6		ug/L		105	80 - 119
1,1-Dichloroethane	50.0	55.5		ug/L		111	77 - 125
1,1-Dichloroethene	50.0	52.3		ug/L		105	71 - 131
1,1-Dichloropropene	50.0	53.0		ug/L		106	79 - 125
1,2,3-Trichlorobenzene	50.0	46.0		ug/L		92	69 - 129
1,2,3-Trichloropropane	50.0	50.1		ug/L		100	73 - 122
1,2,4-Trichlorobenzene	50.0	45.9		ug/L		92	69 - 130
1,2,4-Trimethylbenzene	50.0	44.0		ug/L		88	76 - 124
1,2-Dibromo-3-Chloropropane	50.0	46.2		ug/L		92	62 - 128
1,2-Dichlorobenzene	50.0	48.4		ug/L		97	80 - 119
1,2-Dichloroethane	50.0	54.3		ug/L		109	73 - 128
1,2-Dichloroethene, Total	100	105		ug/L		105	79 - 121
1,2-Dichloropropane	50.0	54.8		ug/L		110	78 - 122
1,3,5-Trimethylbenzene	50.0	45.3		ug/L		91	75 - 124
1,3-Dichlorobenzene	50.0	48.4		ug/L		97	80 - 119

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-691543/4
Matrix: Water
Analysis Batch: 691543

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3-Dichloropropane	50.0	53.5		ug/L		107	80 - 119
1,4-Dichlorobenzene	50.0	47.9		ug/L		96	79 - 118
2,2-Dichloropropane	50.0	54.1		ug/L		108	60 - 139
2-Butanone (MEK)	250	255		ug/L		102	56 - 143
2-Chlorotoluene	50.0	47.4		ug/L		95	79 - 122
2-Hexanone	250	273		ug/L		109	57 - 139
4-Chlorotoluene	50.0	47.1		ug/L		94	78 - 122
4-Isopropyltoluene	50.0	47.2		ug/L		94	77 - 127
4-Methyl-2-pentanone (MIBK)	250	281		ug/L		112	67 - 130
Acetone	250	273		ug/L		109	39 - 160
Benzene	50.0	52.5		ug/L		105	79 - 120
Bromobenzene	50.0	46.7		ug/L		93	80 - 120
Bromoform	50.0	49.5		ug/L		99	66 - 130
Bromomethane	50.0	46.6		ug/L		93	53 - 141
Carbon disulfide	50.0	52.3		ug/L		105	64 - 133
Carbon tetrachloride	50.0	51.0		ug/L		102	72 - 136
Chlorobenzene	50.0	47.3		ug/L		95	82 - 118
Chlorobromomethane	50.0	51.4		ug/L		103	78 - 123
Chlorodibromomethane	50.0	53.5		ug/L		107	74 - 126
Chloroethane	50.0	88.3	Q	ug/L		177	60 - 138
Chloroform	50.0	53.2		ug/L		106	79 - 124
Chloromethane	50.0	54.5		ug/L		109	50 - 139
cis-1,2-Dichloroethene	50.0	52.4		ug/L		105	78 - 123
cis-1,3-Dichloropropene	50.0	56.6		ug/L		113	75 - 124
Dibromomethane	50.0	53.3		ug/L		107	79 - 123
Dichlorobromomethane	50.0	53.5		ug/L		107	79 - 125
Dichlorodifluoromethane	50.0	51.7		ug/L		103	32 - 152
Ethylbenzene	50.0	48.4		ug/L		97	79 - 121
Ethylene Dibromide	50.0	53.3		ug/L		107	75 - 127
Hexachlorobutadiene	50.0	42.1		ug/L		84	66 - 134
Isopropylbenzene	50.0	47.0		ug/L		94	72 - 131
Methyl tert-butyl ether	50.0	53.6		ug/L		107	71 - 124
Methylene Chloride	50.0	53.0		ug/L		106	74 - 124
m-Xylene & p-Xylene	50.0	47.7		ug/L		95	80 - 121
Naphthalene	50.0	46.5		ug/L		93	61 - 128
n-Butylbenzene	50.0	48.6		ug/L		97	75 - 128
N-Propylbenzene	50.0	47.3		ug/L		95	76 - 126
o-Xylene	50.0	47.0		ug/L		94	78 - 122
sec-Butylbenzene	50.0	45.4		ug/L		91	77 - 126
Styrene	50.0	49.1		ug/L		98	78 - 123
tert-Butylbenzene	50.0	45.1		ug/L		90	78 - 124
Tetrachloroethene	50.0	50.8		ug/L		102	74 - 129
Toluene	50.0	52.8		ug/L		106	80 - 121
trans-1,2-Dichloroethene	50.0	53.0		ug/L		106	75 - 124
trans-1,3-Dichloropropene	50.0	54.7		ug/L		109	73 - 127
Trichloroethene	50.0	50.9		ug/L		102	79 - 123
Trichlorofluoromethane	50.0	53.2		ug/L		106	65 - 141
Vinyl acetate	100	145		ug/L		145	54 - 146
Vinyl chloride	50.0	50.0		ug/L		100	58 - 137

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-691543/4
Matrix: Water
Analysis Batch: 691543

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Xylenes, Total			100	94.7		ug/L		95	79 - 121		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*99*		*85 - 114*
Dibromofluoromethane (Surr)	*109*		*80 - 119*
Toluene-d8 (Surr)	*108*		*89 - 112*
1,2-Dichloroethane-d4 (Surr)	*109*		*81 - 118*

Lab Sample ID: LCSD 680-691543/5
Matrix: Water
Analysis Batch: 691543

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane			50.0	52.8		ug/L		106	78 - 124	5	20
1,1,1-Trichloroethane			50.0	52.0		ug/L		104	74 - 131	1	20
1,1,2,2-Tetrachloroethane			50.0	49.8		ug/L		100	71 - 121	3	20
1,1,2-Trichloroethane			50.0	53.5		ug/L		107	80 - 119	2	20
1,1-Dichloroethane			50.0	55.7		ug/L		111	77 - 125	0	20
1,1-Dichloroethene			50.0	52.4		ug/L		105	71 - 131	0	20
1,1-Dichloropropene			50.0	53.4		ug/L		107	79 - 125	1	20
1,2,3-Trichlorobenzene			50.0	46.9		ug/L		94	69 - 129	2	20
1,2,3-Trichloropropane			50.0	51.9		ug/L		104	73 - 122	3	20
1,2,4-Trichlorobenzene			50.0	46.6		ug/L		93	69 - 130	1	20
1,2,4-Trimethylbenzene			50.0	46.0		ug/L		92	76 - 124	4	20
1,2-Dibromo-3-Chloropropane			50.0	47.9		ug/L		96	62 - 128	4	20
1,2-Dichlorobenzene			50.0	49.3		ug/L		99	80 - 119	2	20
1,2-Dichloroethane			50.0	54.4		ug/L		109	73 - 128	0	20
1,2-Dichloroethene, Total			100	105		ug/L		105	79 - 121	0	20
1,2-Dichloropropane			50.0	54.5		ug/L		109	78 - 122	1	20
1,3,5-Trimethylbenzene			50.0	47.9		ug/L		96	75 - 124	6	20
1,3-Dichlorobenzene			50.0	49.0		ug/L		98	80 - 119	1	20
1,3-Dichloropropane			50.0	53.5		ug/L		107	80 - 119	0	20
1,4-Dichlorobenzene			50.0	48.0		ug/L		96	79 - 118	0	20
2,2-Dichloropropane			50.0	50.8		ug/L		102	60 - 139	6	20
2-Butanone (MEK)			250	259		ug/L		104	56 - 143	2	20
2-Chlorotoluene			50.0	48.9		ug/L		98	79 - 122	3	20
2-Hexanone			250	278		ug/L		111	57 - 139	2	20
4-Chlorotoluene			50.0	49.8		ug/L		100	78 - 122	6	20
4-Isopropyltoluene			50.0	48.4		ug/L		97	77 - 127	3	20
4-Methyl-2-pentanone (MIBK)			250	288		ug/L		115	67 - 130	2	20
Acetone			250	279		ug/L		112	39 - 160	2	20
Benzene			50.0	51.7		ug/L		103	79 - 120	1	20
Bromobenzene			50.0	48.4		ug/L		97	80 - 120	4	20
Bromoform			50.0	53.9		ug/L		108	66 - 130	8	20
Bromomethane			50.0	45.4		ug/L		91	53 - 141	3	20
Carbon disulfide			50.0	52.4		ug/L		105	64 - 133	0	20
Carbon tetrachloride			50.0	52.1		ug/L		104	72 - 136	2	20
Chlorobenzene			50.0	49.4		ug/L		99	82 - 118	4	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 680-691543/5
Matrix: Water
Analysis Batch: 691543

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chlorobromomethane			50.0	51.3		ug/L		103	78 - 123	0	20
Chlorodibromomethane			50.0	53.8		ug/L		108	74 - 126	1	20
Chloroethane			50.0	85.7	Q	ug/L		171	60 - 138	3	20
Chloroform			50.0	52.9		ug/L		106	79 - 124	0	20
Chloromethane			50.0	53.3		ug/L		107	50 - 139	2	20
cis-1,2-Dichloroethene			50.0	52.3		ug/L		105	78 - 123	0	20
cis-1,3-Dichloropropene			50.0	55.9		ug/L		112	75 - 124	1	20
Dibromomethane			50.0	53.2		ug/L		106	79 - 123	0	20
Dichlorobromomethane			50.0	54.3		ug/L		109	79 - 125	2	20
Dichlorodifluoromethane			50.0	55.4		ug/L		111	32 - 152	7	20
Ethylbenzene			50.0	50.2		ug/L		100	79 - 121	4	20
Ethylene Dibromide			50.0	53.2		ug/L		106	75 - 127	0	20
Hexachlorobutadiene			50.0	42.1		ug/L		84	66 - 134	0	20
Isopropylbenzene			50.0	49.4		ug/L		99	72 - 131	5	20
Methyl tert-butyl ether			50.0	54.2		ug/L		108	71 - 124	1	20
Methylene Chloride			50.0	52.4		ug/L		105	74 - 124	1	20
m-Xylene & p-Xylene			50.0	49.9		ug/L		100	80 - 121	5	20
Naphthalene			50.0	48.3		ug/L		97	61 - 128	4	20
n-Butylbenzene			50.0	49.4		ug/L		99	75 - 128	2	20
N-Propylbenzene			50.0	49.9		ug/L		100	76 - 126	5	20
o-Xylene			50.0	49.7		ug/L		99	78 - 122	6	20
sec-Butylbenzene			50.0	48.8		ug/L		98	77 - 126	7	20
Styrene			50.0	51.3		ug/L		103	78 - 123	4	20
tert-Butylbenzene			50.0	48.3		ug/L		97	78 - 124	7	20
Tetrachloroethene			50.0	49.9		ug/L		100	74 - 129	2	20
Toluene			50.0	51.9		ug/L		104	80 - 121	2	20
trans-1,2-Dichloroethene			50.0	52.6		ug/L		105	75 - 124	1	20
trans-1,3-Dichloropropene			50.0	54.4		ug/L		109	73 - 127	1	20
Trichloroethene			50.0	51.8		ug/L		104	79 - 123	2	20
Trichlorofluoromethane			50.0	53.6		ug/L		107	65 - 141	1	20
Vinyl acetate			100	116	Q	ug/L		116	54 - 146	23	20
Vinyl chloride			50.0	49.8		ug/L		100	58 - 137	1	20
Xylenes, Total			100	99.6		ug/L		100	79 - 121	5	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*99*		*85 - 114*
Dibromofluoromethane (Surr)	*107*		*80 - 119*
Toluene-d8 (Surr)	*106*		*89 - 112*
1,2-Dichloroethane-d4 (Surr)	*112*		*81 - 118*

Lab Sample ID: MB 680-691607/9
Matrix: Water
Analysis Batch: 691607

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/28/21 13:24	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/28/21 13:24	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/28/21 13:24	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-691607/9
Matrix: Water
Analysis Batch: 691607

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/28/21 13:24	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/28/21 13:24	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/28/21 13:24	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/28/21 13:24	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/28/21 13:24	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/28/21 13:24	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/28/21 13:24	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/28/21 13:24	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/28/21 13:24	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/28/21 13:24	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/28/21 13:24	1
1,2-Dichloroethene, Total	2.0	U	2.0	2.0	0.74	ug/L		10/28/21 13:24	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/28/21 13:24	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		10/28/21 13:24	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/28/21 13:24	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/28/21 13:24	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/28/21 13:24	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		10/28/21 13:24	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		10/28/21 13:24	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/28/21 13:24	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/28/21 13:24	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/28/21 13:24	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/28/21 13:24	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/28/21 13:24	1
Acetone	25	U	25	25	7.0	ug/L		10/28/21 13:24	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/28/21 13:24	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/28/21 13:24	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/28/21 13:24	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		10/28/21 13:24	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/28/21 13:24	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/28/21 13:24	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/28/21 13:24	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/28/21 13:24	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/28/21 13:24	1
Chloroethane	5.0	U	5.0	5.0	2.5	ug/L		10/28/21 13:24	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/28/21 13:24	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		10/28/21 13:24	1
cis-1,2-Dichloroethene	1.0	U	1.0	1.0	0.41	ug/L		10/28/21 13:24	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/28/21 13:24	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/28/21 13:24	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/28/21 13:24	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		10/28/21 13:24	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/28/21 13:24	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/28/21 13:24	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/28/21 13:24	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/28/21 13:24	1
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/28/21 13:24	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/28/21 13:24	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		10/28/21 13:24	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-691607/9
Matrix: Water
Analysis Batch: 691607

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/28/21 13:24	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/28/21 13:24	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/28/21 13:24	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/28/21 13:24	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/28/21 13:24	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/28/21 13:24	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/28/21 13:24	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		10/28/21 13:24	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/28/21 13:24	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		10/28/21 13:24	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/28/21 13:24	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		10/28/21 13:24	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/28/21 13:24	1
Vinyl acetate	2.0	U	2.0	2.0	0.81	ug/L		10/28/21 13:24	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		10/28/21 13:24	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		10/28/21 13:24	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*85 - 114*		*10/28/21 13:24*	*1*
Dibromofluoromethane (Surr)	*105*		*80 - 119*		*10/28/21 13:24*	*1*
Toluene-d8 (Surr)	*99*		*89 - 112*		*10/28/21 13:24*	*1*
1,2-Dichloroethane-d4 (Surr)	*104*		*81 - 118*		*10/28/21 13:24*	*1*

Lab Sample ID: LCS 680-691607/4
Matrix: Water
Analysis Batch: 691607

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	50.0	52.4		ug/L		105	78 - 124
1,1,1-Trichloroethane	50.0	49.7		ug/L		99	74 - 131
1,1,2,2-Tetrachloroethane	50.0	50.5		ug/L		101	71 - 121
1,1,2-Trichloroethane	50.0	53.6		ug/L		107	80 - 119
1,1-Dichloroethane	50.0	54.9		ug/L		110	77 - 125
1,1-Dichloroethene	50.0	48.9		ug/L		98	71 - 131
1,1-Dichloropropene	50.0	50.8		ug/L		102	79 - 125
1,2,3-Trichlorobenzene	50.0	46.9		ug/L		94	69 - 129
1,2,3-Trichloropropane	50.0	50.0		ug/L		100	73 - 122
1,2,4-Trichlorobenzene	50.0	46.9		ug/L		94	69 - 130
1,2,4-Trimethylbenzene	50.0	45.6		ug/L		91	76 - 124
1,2-Dibromo-3-Chloropropane	50.0	50.2		ug/L		100	62 - 128
1,2-Dichlorobenzene	50.0	50.4		ug/L		101	80 - 119
1,2-Dichloroethane	50.0	54.1		ug/L		108	73 - 128
1,2-Dichloroethene, Total	100	103		ug/L		103	79 - 121
1,2-Dichloropropane	50.0	54.5		ug/L		109	78 - 122
1,3,5-Trimethylbenzene	50.0	46.8		ug/L		94	75 - 124
1,3-Dichlorobenzene	50.0	50.5		ug/L		101	80 - 119
1,3-Dichloropropane	50.0	53.9		ug/L		108	80 - 119
1,4-Dichlorobenzene	50.0	49.9		ug/L		100	79 - 118

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-691607/4
Matrix: Water
Analysis Batch: 691607

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,2-Dichloropropane	50.0	51.2		ug/L		102	60 - 139
2-Butanone (MEK)	250	255		ug/L		102	56 - 143
2-Chlorotoluene	50.0	48.2		ug/L		96	79 - 122
2-Hexanone	250	271		ug/L		108	57 - 139
4-Chlorotoluene	50.0	49.6		ug/L		99	78 - 122
4-Isopropyltoluene	50.0	48.4		ug/L		97	77 - 127
4-Methyl-2-pentanone (MIBK)	250	278		ug/L		111	67 - 130
Acetone	250	269		ug/L		108	39 - 160
Benzene	50.0	51.6		ug/L		103	79 - 120
Bromobenzene	50.0	47.8		ug/L		96	80 - 120
Bromoform	50.0	54.9		ug/L		110	66 - 130
Bromomethane	50.0	45.5		ug/L		91	53 - 141
Carbon disulfide	50.0	50.6		ug/L		101	64 - 133
Carbon tetrachloride	50.0	49.7		ug/L		99	72 - 136
Chlorobenzene	50.0	48.9		ug/L		98	82 - 118
Chlorobromomethane	50.0	52.0		ug/L		104	78 - 123
Chlorodibromomethane	50.0	55.5		ug/L		111	74 - 126
Chloroethane	50.0	88.6	Q	ug/L		177	60 - 138
Chloroform	50.0	53.0		ug/L		106	79 - 124
Chloromethane	50.0	57.2		ug/L		114	50 - 139
cis-1,2-Dichloroethene	50.0	51.6		ug/L		103	78 - 123
cis-1,3-Dichloropropene	50.0	57.1		ug/L		114	75 - 124
Dibromomethane	50.0	53.2		ug/L		106	79 - 123
Dichlorobromomethane	50.0	55.4		ug/L		111	79 - 125
Dichlorodifluoromethane	50.0	55.1		ug/L		110	32 - 152
Ethylbenzene	50.0	48.9		ug/L		98	79 - 121
Ethylene Dibromide	50.0	53.2		ug/L		106	75 - 127
Hexachlorobutadiene	50.0	41.7		ug/L		83	66 - 134
Isopropylbenzene	50.0	48.2		ug/L		96	72 - 131
Methyl tert-butyl ether	50.0	52.7		ug/L		105	71 - 124
Methylene Chloride	50.0	52.4		ug/L		105	74 - 124
m-Xylene & p-Xylene	50.0	49.0		ug/L		98	80 - 121
Naphthalene	50.0	47.9		ug/L		96	61 - 128
n-Butylbenzene	50.0	49.5		ug/L		99	75 - 128
N-Propylbenzene	50.0	48.3		ug/L		97	76 - 126
o-Xylene	50.0	48.4		ug/L		97	78 - 122
sec-Butylbenzene	50.0	46.8		ug/L		94	77 - 126
Styrene	50.0	51.2		ug/L		102	78 - 123
tert-Butylbenzene	50.0	47.0		ug/L		94	78 - 124
Tetrachloroethene	50.0	47.5		ug/L		95	74 - 129
Toluene	50.0	51.5		ug/L		103	80 - 121
trans-1,2-Dichloroethene	50.0	51.6		ug/L		103	75 - 124
trans-1,3-Dichloropropene	50.0	55.4		ug/L		111	73 - 127
Trichloroethene	50.0	49.2		ug/L		98	79 - 123
Trichlorofluoromethane	50.0	52.6		ug/L		105	65 - 141
Vinyl acetate	100	137		ug/L		137	54 - 146
Vinyl chloride	50.0	51.3		ug/L		103	58 - 137
Xylenes, Total	100	97.4		ug/L		97	79 - 121

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-691607/4
Matrix: Water
Analysis Batch: 691607

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*85 - 114*
Dibromofluoromethane (Surr)	*107*		*80 - 119*
Toluene-d8 (Surr)	*105*		*89 - 112*
1,2-Dichloroethane-d4 (Surr)	*110*		*81 - 118*

Lab Sample ID: MB 680-691817/9
Matrix: Water
Analysis Batch: 691817

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/29/21 13:10	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/29/21 13:10	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/29/21 13:10	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/29/21 13:10	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/29/21 13:10	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/29/21 13:10	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/29/21 13:10	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/29/21 13:10	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/29/21 13:10	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/29/21 13:10	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/29/21 13:10	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/29/21 13:10	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/29/21 13:10	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/29/21 13:10	1
1,2-Dichloroethene, Total	2.0	U	2.0	2.0	0.74	ug/L		10/29/21 13:10	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/29/21 13:10	1
1,3,5-Trimethylbenzene	1.0	U M	1.0	1.0	0.31	ug/L		10/29/21 13:10	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/29/21 13:10	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/29/21 13:10	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/29/21 13:10	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		10/29/21 13:10	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		10/29/21 13:10	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/29/21 13:10	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/29/21 13:10	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/29/21 13:10	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/29/21 13:10	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/29/21 13:10	1
Acetone	25	U	25	25	7.0	ug/L		10/29/21 13:10	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/29/21 13:10	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/29/21 13:10	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/29/21 13:10	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		10/29/21 13:10	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/29/21 13:10	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/29/21 13:10	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/29/21 13:10	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/29/21 13:10	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/29/21 13:10	1
Chloroethane	5.0	U	5.0	5.0	2.5	ug/L		10/29/21 13:10	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-691817/9
Matrix: Water
Analysis Batch: 691817

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/29/21 13:10	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		10/29/21 13:10	1
cis-1,2-Dichloroethene	1.0	U	1.0	1.0	0.41	ug/L		10/29/21 13:10	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/29/21 13:10	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/29/21 13:10	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/29/21 13:10	1
Dichlorodifluoromethane	2.0	U M	2.0	2.0	0.60	ug/L		10/29/21 13:10	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/29/21 13:10	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/29/21 13:10	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/29/21 13:10	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/29/21 13:10	1
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/29/21 13:10	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/29/21 13:10	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		10/29/21 13:10	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/29/21 13:10	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/29/21 13:10	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/29/21 13:10	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/29/21 13:10	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/29/21 13:10	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/29/21 13:10	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/29/21 13:10	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		10/29/21 13:10	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/29/21 13:10	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		10/29/21 13:10	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/29/21 13:10	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		10/29/21 13:10	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/29/21 13:10	1
Vinyl acetate	2.0	U	2.0	2.0	0.81	ug/L		10/29/21 13:10	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		10/29/21 13:10	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		10/29/21 13:10	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*85 - 114*		*10/29/21 13:10*	*1*
Dibromofluoromethane (Surr)	*107*		*80 - 119*		*10/29/21 13:10*	*1*
Toluene-d8 (Surr)	*110*		*89 - 112*		*10/29/21 13:10*	*1*
1,2-Dichloroethane-d4 (Surr)	*105*		*81 - 118*		*10/29/21 13:10*	*1*

Lab Sample ID: LCS 680-691817/4
Matrix: Water
Analysis Batch: 691817

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	50.0	51.2		ug/L		102	78 - 124
1,1,1-Trichloroethane	50.0	50.4		ug/L		101	74 - 131
1,1,2,2-Tetrachloroethane	50.0	45.9		ug/L		92	71 - 121
1,1,2-Trichloroethane	50.0	51.8		ug/L		104	80 - 119
1,1-Dichloroethane	50.0	50.3		ug/L		101	77 - 125
1,1-Dichloroethene	50.0	46.8		ug/L		94	71 - 131

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-691817/4
Matrix: Water
Analysis Batch: 691817

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloropropene	50.0	51.1		ug/L		102	79 - 125
1,2,3-Trichlorobenzene	50.0	51.6		ug/L		103	69 - 129
1,2,3-Trichloropropane	50.0	51.9		ug/L		104	73 - 122
1,2,4-Trichlorobenzene	50.0	53.4		ug/L		107	69 - 130
1,2,4-Trimethylbenzene	50.0	49.2		ug/L		98	76 - 124
1,2-Dibromo-3-Chloropropane	50.0	49.1		ug/L		98	62 - 128
1,2-Dichlorobenzene	50.0	52.3		ug/L		105	80 - 119
1,2-Dichloroethane	50.0	54.5		ug/L		109	73 - 128
1,2-Dichloroethene, Total	100	94.7		ug/L		95	79 - 121
1,2-Dichloropropane	50.0	48.0		ug/L		96	78 - 122
1,3,5-Trimethylbenzene	50.0	49.3		ug/L		99	75 - 124
1,3-Dichlorobenzene	50.0	49.9		ug/L		100	80 - 119
1,3-Dichloropropane	50.0	51.9		ug/L		104	80 - 119
1,4-Dichlorobenzene	50.0	48.4		ug/L		97	79 - 118
2,2-Dichloropropane	50.0	58.8		ug/L		118	60 - 139
2-Butanone (MEK)	250	244		ug/L		98	56 - 143
2-Chlorotoluene	50.0	56.0		ug/L		112	79 - 122
2-Hexanone	250	220		ug/L		88	57 - 139
4-Chlorotoluene	50.0	54.8		ug/L		110	78 - 122
4-Isopropyltoluene	50.0	48.7		ug/L		97	77 - 127
4-Methyl-2-pentanone (MIBK)	250	256		ug/L		103	67 - 130
Acetone	250	244		ug/L		97	39 - 160
Benzene	50.0	48.8		ug/L		98	79 - 120
Bromobenzene	50.0	54.3		ug/L		109	80 - 120
Bromoform	50.0	51.8		ug/L		104	66 - 130
Bromomethane	50.0	52.6		ug/L		105	53 - 141
Carbon disulfide	50.0	50.7	M	ug/L		101	64 - 133
Carbon tetrachloride	50.0	48.5		ug/L		97	72 - 136
Chlorobenzene	50.0	47.9		ug/L		96	82 - 118
Chlorobromomethane	50.0	55.2		ug/L		110	78 - 123
Chlorodibromomethane	50.0	54.1		ug/L		108	74 - 126
Chloroethane	50.0	47.7		ug/L		95	60 - 138
Chloroform	50.0	47.9		ug/L		96	79 - 124
Chloromethane	50.0	43.0		ug/L		86	50 - 139
cis-1,2-Dichloroethene	50.0	47.4		ug/L		95	78 - 123
cis-1,3-Dichloropropene	50.0	54.1		ug/L		108	75 - 124
Dibromomethane	50.0	52.7		ug/L		105	79 - 123
Dichlorobromomethane	50.0	52.0		ug/L		104	79 - 125
Dichlorodifluoromethane	50.0	37.8		ug/L		76	32 - 152
Ethylbenzene	50.0	51.6		ug/L		103	79 - 121
Ethylene Dibromide	50.0	52.2		ug/L		104	75 - 127
Hexachlorobutadiene	50.0	51.4		ug/L		103	66 - 134
Isopropylbenzene	50.0	55.2		ug/L		110	72 - 131
Methyl tert-butyl ether	50.0	51.3		ug/L		103	71 - 124
Methylene Chloride	50.0	47.6		ug/L		95	74 - 124
m-Xylene & p-Xylene	50.0	53.7		ug/L		107	80 - 121
Naphthalene	50.0	46.8		ug/L		94	61 - 128
n-Butylbenzene	50.0	45.8		ug/L		92	75 - 128
N-Propylbenzene	50.0	47.7		ug/L		95	76 - 126

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-691817/4
Matrix: Water
Analysis Batch: 691817

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
o-Xylene			50.0	49.2		ug/L		98	78 - 122		
sec-Butylbenzene			50.0	47.2		ug/L		94	77 - 126		
Styrene			50.0	47.5		ug/L		95	78 - 123		
tert-Butylbenzene			50.0	47.5		ug/L		95	78 - 124		
Tetrachloroethene			50.0	51.7		ug/L		103	74 - 129		
Toluene			50.0	53.2		ug/L		106	80 - 121		
trans-1,2-Dichloroethene			50.0	47.3		ug/L		95	75 - 124		
trans-1,3-Dichloropropene			50.0	53.9		ug/L		108	73 - 127		
Trichloroethene			50.0	51.1		ug/L		102	79 - 123		
Trichlorofluoromethane			50.0	40.4		ug/L		81	65 - 141		
Vinyl acetate			100	118		ug/L		118	54 - 146		
Vinyl chloride			50.0	50.1	M	ug/L		100	58 - 137		
Xylenes, Total			100	103		ug/L		103	79 - 121		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*104*		*85 - 114*
Dibromofluoromethane (Surr)	*106*		*80 - 119*
Toluene-d8 (Surr)	*99*		*89 - 112*
1,2-Dichloroethane-d4 (Surr)	*101*		*81 - 118*

Lab Sample ID: LCSD 680-691817/5
Matrix: Water
Analysis Batch: 691817

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane			50.0	52.6		ug/L		105	78 - 124	3	20
1,1,1-Trichloroethane			50.0	50.8		ug/L		102	74 - 131	1	20
1,1,2,2-Tetrachloroethane			50.0	47.1		ug/L		94	71 - 121	3	20
1,1,2-Trichloroethane			50.0	51.9		ug/L		104	80 - 119	0	20
1,1-Dichloroethane			50.0	48.1		ug/L		96	77 - 125	4	20
1,1-Dichloroethene			50.0	44.5		ug/L		89	71 - 131	5	20
1,1-Dichloropropene			50.0	49.0		ug/L		98	79 - 125	4	20
1,2,3-Trichlorobenzene			50.0	53.0		ug/L		106	69 - 129	3	20
1,2,3-Trichloropropane			50.0	51.8		ug/L		104	73 - 122	0	20
1,2,4-Trichlorobenzene			50.0	53.9		ug/L		108	69 - 130	1	20
1,2,4-Trimethylbenzene			50.0	49.2		ug/L		98	76 - 124	0	20
1,2-Dibromo-3-Chloropropane			50.0	50.2		ug/L		100	62 - 128	2	20
1,2-Dichlorobenzene			50.0	52.6		ug/L		105	80 - 119	1	20
1,2-Dichloroethane			50.0	54.2		ug/L		108	73 - 128	1	20
1,2-Dichloroethene, Total			100	97.6		ug/L		98	79 - 121	3	20
1,2-Dichloropropane			50.0	48.1		ug/L		96	78 - 122	0	20
1,3,5-Trimethylbenzene			50.0	49.4		ug/L		99	75 - 124	0	20
1,3-Dichlorobenzene			50.0	51.1		ug/L		102	80 - 119	2	20
1,3-Dichloropropane			50.0	52.9		ug/L		106	80 - 119	2	20
1,4-Dichlorobenzene			50.0	49.4		ug/L		99	79 - 118	2	20
2,2-Dichloropropane			50.0	54.6		ug/L		109	60 - 139	7	20
2-Butanone (MEK)			250	268		ug/L		107	56 - 143	10	20
2-Chlorotoluene			50.0	56.4		ug/L		113	79 - 122	1	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 680-691817/5
Matrix: Water
Analysis Batch: 691817

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2-Hexanone			250	225		ug/L		90	57 - 139	2	20
4-Chlorotoluene			50.0	55.3		ug/L		111	78 - 122	1	20
4-Isopropyltoluene			50.0	49.0		ug/L		98	77 - 127	1	20
4-Methyl-2-pentanone (MIBK)			250	266		ug/L		106	67 - 130	3	20
Acetone			250	263		ug/L		105	39 - 160	8	20
Benzene			50.0	49.0		ug/L		98	79 - 120	0	20
Bromobenzene			50.0	54.1		ug/L		108	80 - 120	0	20
Bromoform			50.0	51.6		ug/L		103	66 - 130	0	20
Bromomethane			50.0	49.6		ug/L		99	53 - 141	6	20
Carbon disulfide			50.0	48.0	M	ug/L		96	64 - 133	5	20
Carbon tetrachloride			50.0	49.2		ug/L		98	72 - 136	1	20
Chlorobenzene			50.0	49.0		ug/L		98	82 - 118	2	20
Chlorobromomethane			50.0	50.9		ug/L		102	78 - 123	8	20
Chlorodibromomethane			50.0	54.9		ug/L		110	74 - 126	1	20
Chloroethane			50.0	46.1		ug/L		92	60 - 138	3	20
Chloroform			50.0	53.1		ug/L		106	79 - 124	10	20
Chloromethane			50.0	43.1		ug/L		86	50 - 139	0	20
cis-1,2-Dichloroethene			50.0	49.7		ug/L		99	78 - 123	5	20
cis-1,3-Dichloropropene			50.0	53.7		ug/L		107	75 - 124	1	20
Dibromomethane			50.0	53.4		ug/L		107	79 - 123	1	20
Dichlorobromomethane			50.0	51.4		ug/L		103	79 - 125	1	20
Dichlorodifluoromethane			50.0	35.2		ug/L		70	32 - 152	7	20
Ethylbenzene			50.0	52.1		ug/L		104	79 - 121	1	20
Ethylene Dibromide			50.0	52.6		ug/L		105	75 - 127	1	20
Hexachlorobutadiene			50.0	50.8		ug/L		102	66 - 134	1	20
Isopropylbenzene			50.0	55.2		ug/L		110	72 - 131	0	20
Methyl tert-butyl ether			50.0	51.1		ug/L		102	71 - 124	0	20
Methylene Chloride			50.0	46.2		ug/L		92	74 - 124	3	20
m-Xylene & p-Xylene			50.0	53.5		ug/L		107	80 - 121	0	20
Naphthalene			50.0	48.7		ug/L		97	61 - 128	4	20
n-Butylbenzene			50.0	46.4		ug/L		93	75 - 128	1	20
N-Propylbenzene			50.0	47.6		ug/L		95	76 - 126	0	20
o-Xylene			50.0	49.7		ug/L		99	78 - 122	1	20
sec-Butylbenzene			50.0	46.4		ug/L		93	77 - 126	2	20
Styrene			50.0	48.4		ug/L		97	78 - 123	2	20
tert-Butylbenzene			50.0	47.6		ug/L		95	78 - 124	0	20
Tetrachloroethene			50.0	51.0		ug/L		102	74 - 129	1	20
Toluene			50.0	53.3		ug/L		107	80 - 121	0	20
trans-1,2-Dichloroethene			50.0	47.9		ug/L		96	75 - 124	1	20
trans-1,3-Dichloropropene			50.0	54.4		ug/L		109	73 - 127	1	20
Trichloroethene			50.0	51.1		ug/L		102	79 - 123	0	20
Trichlorofluoromethane			50.0	46.5	M	ug/L		93	65 - 141	14	20
Vinyl acetate			100	102		ug/L		102	54 - 146	15	20
Vinyl chloride			50.0	46.4		ug/L		93	58 - 137	8	20
Xylenes, Total			100	103		ug/L		103	79 - 121	0	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*107*		*85 - 114*

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 680-691817/5
Matrix: Water
Analysis Batch: 691817

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Dibromofluoromethane (Surr)	*107*		*80 - 119*
Toluene-d8 (Surr)	*100*		*89 - 112*
1,2-Dichloroethane-d4 (Surr)	*101*		*81 - 118*

Lab Sample ID: MB 680-691825/8
Matrix: Water
Analysis Batch: 691825

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/29/21 12:34	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/29/21 12:34	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/29/21 12:34	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/29/21 12:34	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/29/21 12:34	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/29/21 12:34	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/29/21 12:34	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/29/21 12:34	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/29/21 12:34	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/29/21 12:34	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/29/21 12:34	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/29/21 12:34	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/29/21 12:34	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/29/21 12:34	1
1,2-Dichloroethene, Total	2.0	U	2.0	2.0	0.74	ug/L		10/29/21 12:34	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/29/21 12:34	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		10/29/21 12:34	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/29/21 12:34	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/29/21 12:34	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/29/21 12:34	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		10/29/21 12:34	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		10/29/21 12:34	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/29/21 12:34	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/29/21 12:34	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/29/21 12:34	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/29/21 12:34	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/29/21 12:34	1
Acetone	25	U	25	25	7.0	ug/L		10/29/21 12:34	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/29/21 12:34	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/29/21 12:34	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/29/21 12:34	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		10/29/21 12:34	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/29/21 12:34	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/29/21 12:34	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/29/21 12:34	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/29/21 12:34	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/29/21 12:34	1
Chloroethane	5.0	U	5.0	5.0	2.5	ug/L		10/29/21 12:34	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/29/21 12:34	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-691825/8
Matrix: Water
Analysis Batch: 691825

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		10/29/21 12:34	1
cis-1,2-Dichloroethene	1.0	U	1.0	1.0	0.41	ug/L		10/29/21 12:34	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/29/21 12:34	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/29/21 12:34	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/29/21 12:34	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		10/29/21 12:34	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/29/21 12:34	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/29/21 12:34	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/29/21 12:34	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/29/21 12:34	1
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/29/21 12:34	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/29/21 12:34	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		10/29/21 12:34	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/29/21 12:34	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/29/21 12:34	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/29/21 12:34	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/29/21 12:34	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/29/21 12:34	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/29/21 12:34	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/29/21 12:34	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		10/29/21 12:34	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/29/21 12:34	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		10/29/21 12:34	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/29/21 12:34	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		10/29/21 12:34	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/29/21 12:34	1
Vinyl acetate	2.0	U	2.0	2.0	0.81	ug/L		10/29/21 12:34	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		10/29/21 12:34	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		10/29/21 12:34	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*85 - 114*		*10/29/21 12:34*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 119*		*10/29/21 12:34*	*1*
Toluene-d8 (Surr)	*105*		*89 - 112*		*10/29/21 12:34*	*1*
1,2-Dichloroethane-d4 (Surr)	*102*		*81 - 118*		*10/29/21 12:34*	*1*

Lab Sample ID: LCS 680-691825/3
Matrix: Water
Analysis Batch: 691825

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	50.0	53.0		ug/L		106	78 - 124
1,1,1-Trichloroethane	50.0	44.8		ug/L		90	74 - 131
1,1,2,2-Tetrachloroethane	50.0	49.9		ug/L		100	71 - 121
1,1,2-Trichloroethane	50.0	55.9		ug/L		112	80 - 119
1,1-Dichloroethane	50.0	46.8		ug/L		94	77 - 125
1,1-Dichloroethene	50.0	42.2		ug/L		84	71 - 131
1,1-Dichloropropene	50.0	47.0		ug/L		94	79 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-691825/3
Matrix: Water
Analysis Batch: 691825

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,3-Trichlorobenzene	50.0	51.0		ug/L		102	69 - 129
1,2,3-Trichloropropane	50.0	51.9		ug/L		104	73 - 122
1,2,4-Trichlorobenzene	50.0	51.3		ug/L		103	69 - 130
1,2,4-Trimethylbenzene	50.0	52.7		ug/L		105	76 - 124
1,2-Dibromo-3-Chloropropane	50.0	47.9		ug/L		96	62 - 128
1,2-Dichlorobenzene	50.0	50.4		ug/L		101	80 - 119
1,2-Dichloroethane	50.0	54.3		ug/L		109	73 - 128
1,2-Dichloroethene, Total	100	89.2		ug/L		89	79 - 121
1,2-Dichloropropane	50.0	56.9		ug/L		114	78 - 122
1,3,5-Trimethylbenzene	50.0	51.4		ug/L		103	75 - 124
1,3-Dichlorobenzene	50.0	50.0		ug/L		100	80 - 119
1,3-Dichloropropane	50.0	54.8		ug/L		110	80 - 119
1,4-Dichlorobenzene	50.0	49.8		ug/L		100	79 - 118
2,2-Dichloropropane	50.0	45.9		ug/L		92	60 - 139
2-Butanone (MEK)	250	236		ug/L		94	56 - 143
2-Chlorotoluene	50.0	51.3		ug/L		103	79 - 122
2-Hexanone	250	295		ug/L		118	57 - 139
4-Chlorotoluene	50.0	52.9		ug/L		106	78 - 122
4-Isopropyltoluene	50.0	48.9		ug/L		98	77 - 127
4-Methyl-2-pentanone (MIBK)	250	302		ug/L		121	67 - 130
Acetone	250	232		ug/L		93	39 - 160
Benzene	50.0	52.1		ug/L		104	79 - 120
Bromobenzene	50.0	52.4		ug/L		105	80 - 120
Bromoform	50.0	53.8		ug/L		108	66 - 130
Bromomethane	50.0	43.3		ug/L		87	53 - 141
Carbon disulfide	50.0	41.9		ug/L		84	64 - 133
Carbon tetrachloride	50.0	45.5		ug/L		91	72 - 136
Chlorobenzene	50.0	50.2		ug/L		100	82 - 118
Chlorobromomethane	50.0	46.6		ug/L		93	78 - 123
Chlorodibromomethane	50.0	56.4		ug/L		113	74 - 126
Chloroethane	50.0	49.9		ug/L		100	60 - 138
Chloroform	50.0	46.3		ug/L		93	79 - 124
Chloromethane	50.0	61.6		ug/L		123	50 - 139
cis-1,2-Dichloroethene	50.0	46.5		ug/L		93	78 - 123
cis-1,3-Dichloropropene	50.0	56.0		ug/L		112	75 - 124
Dibromomethane	50.0	53.8		ug/L		108	79 - 123
Dichlorobromomethane	50.0	53.4		ug/L		107	79 - 125
Dichlorodifluoromethane	50.0	36.6		ug/L		73	32 - 152
Ethylbenzene	50.0	50.2		ug/L		100	79 - 121
Ethylene Dibromide	50.0	55.1		ug/L		110	75 - 127
Hexachlorobutadiene	50.0	49.6		ug/L		99	66 - 134
Isopropylbenzene	50.0	49.9		ug/L		100	72 - 131
Methyl tert-butyl ether	50.0	47.9		ug/L		96	71 - 124
Methylene Chloride	50.0	42.7		ug/L		85	74 - 124
m-Xylene & p-Xylene	50.0	50.8		ug/L		102	80 - 121
Naphthalene	50.0	49.2		ug/L		98	61 - 128
n-Butylbenzene	50.0	49.5		ug/L		99	75 - 128
N-Propylbenzene	50.0	51.5		ug/L		103	76 - 126
o-Xylene	50.0	50.8		ug/L		102	78 - 122

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-691825/3
Matrix: Water
Analysis Batch: 691825

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
sec-Butylbenzene			50.0	51.1		ug/L		102	77 - 126		
Styrene			50.0	52.6		ug/L		105	78 - 123		
tert-Butylbenzene			50.0	50.2		ug/L		100	78 - 124		
Tetrachloroethene			50.0	52.6		ug/L		105	74 - 129		
Toluene			50.0	52.5		ug/L		105	80 - 121		
trans-1,2-Dichloroethene			50.0	42.8		ug/L		86	75 - 124		
trans-1,3-Dichloropropene			50.0	56.6		ug/L		113	73 - 127		
Trichloroethene			50.0	51.7		ug/L		103	79 - 123		
Trichlorofluoromethane			50.0	38.7		ug/L		77	65 - 141		
Vinyl acetate			100	118	J1	ug/L		118	54 - 146		
Vinyl chloride			50.0	49.4		ug/L		99	58 - 137		
Xylenes, Total			100	102		ug/L		102	79 - 121		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*95*		*85 - 114*
Dibromofluoromethane (Surr)	*95*		*80 - 119*
Toluene-d8 (Surr)	*97*		*89 - 112*
1,2-Dichloroethane-d4 (Surr)	*104*		*81 - 118*

Lab Sample ID: LCSD 680-691825/4
Matrix: Water
Analysis Batch: 691825

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane			50.0	52.2		ug/L		104	78 - 124	2	20
1,1,1-Trichloroethane			50.0	43.9		ug/L		88	74 - 131	2	20
1,1,2,2-Tetrachloroethane			50.0	50.6		ug/L		101	71 - 121	2	20
1,1,2-Trichloroethane			50.0	55.5		ug/L		111	80 - 119	1	20
1,1-Dichloroethane			50.0	46.4		ug/L		93	77 - 125	1	20
1,1-Dichloroethene			50.0	42.6		ug/L		85	71 - 131	1	20
1,1-Dichloropropene			50.0	47.1		ug/L		94	79 - 125	0	20
1,2,3-Trichlorobenzene			50.0	51.4		ug/L		103	69 - 129	1	20
1,2,3-Trichloropropane			50.0	53.9		ug/L		108	73 - 122	4	20
1,2,4-Trichlorobenzene			50.0	49.9		ug/L		100	69 - 130	3	20
1,2,4-Trimethylbenzene			50.0	51.0		ug/L		102	76 - 124	3	20
1,2-Dibromo-3-Chloropropane			50.0	50.2		ug/L		100	62 - 128	5	20
1,2-Dichlorobenzene			50.0	49.8		ug/L		100	80 - 119	1	20
1,2-Dichloroethane			50.0	53.7		ug/L		107	73 - 128	1	20
1,2-Dichloroethene, Total			100	89.9		ug/L		90	79 - 121	1	20
1,2-Dichloropropane			50.0	55.3		ug/L		111	78 - 122	3	20
1,3,5-Trimethylbenzene			50.0	50.2		ug/L		100	75 - 124	2	20
1,3-Dichlorobenzene			50.0	49.9		ug/L		100	80 - 119	0	20
1,3-Dichloropropane			50.0	54.9		ug/L		110	80 - 119	0	20
1,4-Dichlorobenzene			50.0	49.0		ug/L		98	79 - 118	2	20
2,2-Dichloropropane			50.0	45.1		ug/L		90	60 - 139	2	20
2-Butanone (MEK)			250	250		ug/L		100	56 - 143	6	20
2-Chlorotoluene			50.0	50.0		ug/L		100	79 - 122	2	20
2-Hexanone			250	300		ug/L		120	57 - 139	2	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 680-691825/4
Matrix: Water
Analysis Batch: 691825

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
4-Chlorotoluene			50.0	51.2		ug/L		102	78 - 122	3	20
4-Isopropyltoluene			50.0	46.8		ug/L		94	77 - 127	4	20
4-Methyl-2-pentanone (MIBK)			250	306		ug/L		123	67 - 130	1	20
Acetone			250	238		ug/L		95	39 - 160	3	20
Benzene			50.0	50.7		ug/L		101	79 - 120	3	20
Bromobenzene			50.0	51.9		ug/L		104	80 - 120	1	20
Bromoform			50.0	54.5		ug/L		109	66 - 130	1	20
Bromomethane			50.0	44.1		ug/L		88	53 - 141	2	20
Carbon disulfide			50.0	41.5		ug/L		83	64 - 133	1	20
Carbon tetrachloride			50.0	45.8		ug/L		92	72 - 136	1	20
Chlorobenzene			50.0	48.9		ug/L		98	82 - 118	3	20
Chlorobromomethane			50.0	47.6		ug/L		95	78 - 123	2	20
Chlorodibromomethane			50.0	55.9		ug/L		112	74 - 126	1	20
Chloroethane			50.0	48.5		ug/L		97	60 - 138	3	20
Chloroform			50.0	47.3		ug/L		95	79 - 124	2	20
Chloromethane			50.0	64.7		ug/L		129	50 - 139	5	20
cis-1,2-Dichloroethene			50.0	46.4		ug/L		93	78 - 123	0	20
cis-1,3-Dichloropropene			50.0	55.7		ug/L		111	75 - 124	1	20
Dibromomethane			50.0	53.1		ug/L		106	79 - 123	1	20
Dichlorobromomethane			50.0	52.8		ug/L		106	79 - 125	1	20
Dichlorodifluoromethane			50.0	40.9		ug/L		82	32 - 152	11	20
Ethylbenzene			50.0	48.8		ug/L		98	79 - 121	3	20
Ethylene Dibromide			50.0	54.2		ug/L		108	75 - 127	2	20
Hexachlorobutadiene			50.0	47.6		ug/L		95	66 - 134	4	20
Isopropylbenzene			50.0	49.0		ug/L		98	72 - 131	2	20
Methyl tert-butyl ether			50.0	50.0		ug/L		100	71 - 124	4	20
Methylene Chloride			50.0	43.4		ug/L		87	74 - 124	2	20
m-Xylene & p-Xylene			50.0	50.3		ug/L		101	80 - 121	1	20
Naphthalene			50.0	50.3		ug/L		101	61 - 128	2	20
n-Butylbenzene			50.0	47.7		ug/L		95	75 - 128	4	20
N-Propylbenzene			50.0	50.7		ug/L		101	76 - 126	2	20
o-Xylene			50.0	50.0		ug/L		100	78 - 122	2	20
sec-Butylbenzene			50.0	49.4		ug/L		99	77 - 126	3	20
Styrene			50.0	52.2		ug/L		104	78 - 123	1	20
tert-Butylbenzene			50.0	48.9		ug/L		98	78 - 124	3	20
Tetrachloroethene			50.0	50.3		ug/L		101	74 - 129	5	20
Toluene			50.0	52.2		ug/L		104	80 - 121	1	20
trans-1,2-Dichloroethene			50.0	43.5		ug/L		87	75 - 124	2	20
trans-1,3-Dichloropropene			50.0	56.7		ug/L		113	73 - 127	0	20
Trichloroethene			50.0	50.6		ug/L		101	79 - 123	2	20
Trichlorofluoromethane			50.0	41.2		ug/L		82	65 - 141	6	20
Vinyl acetate			100	125	J1	ug/L		125	54 - 146	6	20
Vinyl chloride			50.0	52.2		ug/L		104	58 - 137	6	20
Xylenes, Total			100	100		ug/L		100	79 - 121	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*94*		*85 - 114*
Dibromofluoromethane (Surr)	*96*		*80 - 119*

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 680-691825/4
Matrix: Water
Analysis Batch: 691825

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*95*		*89 - 112*
1,2-Dichloroethane-d4 (Surr)	*100*		*81 - 118*

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 680-689915/66
Matrix: Water
Analysis Batch: 689915

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Ethane	0.76	U	1.1	0.76	0.30	ug/L		10/19/21 19:06	1
Ethylene	0.71	U	1.0	0.71	0.31	ug/L		10/19/21 19:06	1
Methane	1.2	U	1.2	1.2	0.57	ug/L		10/19/21 19:06	1

Lab Sample ID: LCS 680-689915/33
Matrix: Water
Analysis Batch: 689915

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methane (TCD)	1920	1780		ug/L		93	73 - 125

Lab Sample ID: LCS 680-689915/35
Matrix: Water
Analysis Batch: 689915

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane	288	306		ug/L		106	74 - 131
Ethylene	269	280		ug/L		104	72 - 133
Methane	154	161		ug/L		105	73 - 125

Lab Sample ID: LCSD 680-689915/34
Matrix: Water
Analysis Batch: 689915

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methane (TCD)	1920	1760		ug/L		92	73 - 125	1	30

Lab Sample ID: LCSD 680-689915/36
Matrix: Water
Analysis Batch: 689915

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane	288	276		ug/L		96	74 - 131	10	30
Ethylene	269	250		ug/L		93	72 - 133	11	30
Methane	154	144		ug/L		94	73 - 125	11	30

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: MB 680-690170/37
Matrix: Water
Analysis Batch: 690170

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Ethane	0.76	U	1.1	0.76	0.30	ug/L		10/20/21 18:46	1
Ethylene	0.71	U	1.0	0.71	0.31	ug/L		10/20/21 18:46	1
Methane	1.2	U	1.2	1.2	0.57	ug/L		10/20/21 18:46	1

Lab Sample ID: LCS 680-690170/33
Matrix: Water
Analysis Batch: 690170

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methane (TCD)	1920	1760		ug/L		91	73 - 125

Lab Sample ID: LCS 680-690170/35
Matrix: Water
Analysis Batch: 690170

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane	288	328		ug/L		114	74 - 131
Ethylene	269	300		ug/L		112	72 - 133
Methane	154	173		ug/L		112	73 - 125

Lab Sample ID: LCSD 680-690170/34
Matrix: Water
Analysis Batch: 690170

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methane (TCD)	1920	1740		ug/L		91	73 - 125	1	30

Lab Sample ID: LCSD 680-690170/36
Matrix: Water
Analysis Batch: 690170

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane	288	283		ug/L		98	74 - 131	15	30
Ethylene	269	256		ug/L		95	72 - 133	16	30
Methane	154	147		ug/L		96	73 - 125	16	30

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 680-691039/2
Matrix: Water
Analysis Batch: 691039

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Sulfate	1.0	U	1.0	1.0	0.40	mg/L		10/25/21 10:11	1

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 680-691039/3
Matrix: Water
Analysis Batch: 691039

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	10.0	10.9		mg/L		109	87 - 112

Lab Sample ID: LCSD 680-691039/4
Matrix: Water
Analysis Batch: 691039

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	10.0	11.0		mg/L		110	87 - 112	1	15

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-689968/1-A
Matrix: Water
Analysis Batch: 690327

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 689968

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	50	U	50	50	17	ug/L		10/20/21 17:07	1
Manganese	3.0	U	10	3.0	1.0	ug/L		10/20/21 17:07	1

Lab Sample ID: LCS 680-689968/2-A
Matrix: Water
Analysis Batch: 690327

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 689968

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	5000	4810		ug/L		96	87 - 115
Manganese	400	395		ug/L		99	90 - 114

Lab Sample ID: 680-206061-1 MS
Matrix: Water
Analysis Batch: 690327

Client Sample ID: G6M-02-06X-FAL21
Prep Type: Dissolved
Prep Batch: 689968

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	50	U	5000	4590		ug/L		92	87 - 115
Manganese	3.0	U	400	377		ug/L		94	90 - 114

Lab Sample ID: 680-206061-1 MSD
Matrix: Water
Analysis Batch: 690327

Client Sample ID: G6M-02-06X-FAL21
Prep Type: Dissolved
Prep Batch: 689968

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	50	U	5000	4710		ug/L		94	87 - 115	3	20
Manganese	3.0	U	400	386		ug/L		96	90 - 114	2	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 680-689971/1-A
Matrix: Water
Analysis Batch: 690272

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 689971

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	3.0	U	3.0	3.0	1.5	ug/L		10/20/21 16:40	1

Lab Sample ID: LCS 680-689971/2-A
Matrix: Water
Analysis Batch: 690272

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 689971

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	100	101		ug/L		101	84 - 116

Lab Sample ID: 680-206061-1 MS
Matrix: Water
Analysis Batch: 690272

Client Sample ID: G6M-02-06X-FAL21
Prep Type: Dissolved
Prep Batch: 689971

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	1.5	J	100	103		ug/L		103	84 - 116

Lab Sample ID: 680-206061-1 MSD
Matrix: Water
Analysis Batch: 690272

Client Sample ID: G6M-02-06X-FAL21
Prep Type: Dissolved
Prep Batch: 689971

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	1.5	J	100	104		ug/L		104	84 - 116	1	20

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 280-555228/104
Matrix: Water
Analysis Batch: 555228

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate/Nitrite-N	0.050	U	0.10	0.050	0.019	mg/L		10/27/21 20:16	1

Lab Sample ID: LCS 280-555228/103
Matrix: Water
Analysis Batch: 555228

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate/Nitrite-N	5.00	4.83		mg/L		97	90 - 110

Method: 9034 - Sulfide, Acid Soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 680-689931/1
Matrix: Water
Analysis Batch: 689931

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Sulfide	1.0	U	1.0	1.0	1.0	mg/L		10/19/21 11:08	1

Method: 9034 - Sulfide, Acid Soluble and Insoluble (Titrimetric) (Continued)

Lab Sample ID: LCS 680-689931/2
Matrix: Water
Analysis Batch: 689931

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfide			10.0	10.7		mg/L		107	75 - 125		

Lab Sample ID: LCSD 680-689931/3
Matrix: Water
Analysis Batch: 689931

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfide			10.0	10.5		mg/L		105	75 - 125	1	30

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 280-554589/36
Matrix: Water
Analysis Batch: 554589

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	0.80	U	1.0	0.80	0.35	mg/L		10/21/21 21:57	1

Lab Sample ID: MB 280-554589/4
Matrix: Water
Analysis Batch: 554589

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	0.80	U	1.0	0.80	0.35	mg/L		10/21/21 13:09	1

Lab Sample ID: LCS 280-554589/34
Matrix: Water
Analysis Batch: 554589

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon - Duplicates			25.0	25.1		mg/L		100	88 - 112		

Lab Sample ID: LCSD 280-554589/35
Matrix: Water
Analysis Batch: 554589

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Duplicates			25.0	25.2		mg/L		101	88 - 112	0	15

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 280-554753/141
Matrix: Water
Analysis Batch: 554753

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	4.88	J	10	6.4	3.1	mg/L		10/23/21 07:46	1

Client: Seres Engineering & Services LLC
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-206061-1

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: LCS 280-554753/139
Matrix: Water
Analysis Batch: 554753

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	200	214		mg/L		107	89 - 109

Lab Sample ID: LCSD 280-554753/140
Matrix: Water
Analysis Batch: 554753

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity	200	216		mg/L		108	89 - 109	1	10

GC/MS VOA

Analysis Batch: 691431

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-206061-1	G6M-02-06X-FAL21	Total/NA	Water	8260B	
680-206061-2	G6M-02-07X-FAL21	Total/NA	Water	8260B	
680-206061-3	G6M-02-08X-FAL21	Total/NA	Water	8260B	
680-206061-4	G6M-04-06X-FAL21	Total/NA	Water	8260B	
MB 680-691431/8	Method Blank	Total/NA	Water	8260B	
LCS 680-691431/3	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-691431/4	Lab Control Sample Dup	Total/NA	Water	8260B	

Analysis Batch: 691543

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-206061-5	G6M-04-07X-FAL21	Total/NA	Water	8260B	
680-206061-6	G6M-13-05X-FAL21	Total/NA	Water	8260B	
680-206061-7	G6M-95-19X-FAL21	Total/NA	Water	8260B	
MB 680-691543/10	Method Blank	Total/NA	Water	8260B	
LCS 680-691543/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-691543/5	Lab Control Sample Dup	Total/NA	Water	8260B	

Analysis Batch: 691607

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-206061-8	G6M-95-20X-FAL21	Total/NA	Water	8260B	
680-206061-10	XSA-12-97X-FAL21	Total/NA	Water	8260B	
680-206061-11	XSA-12-98X-FAL21	Total/NA	Water	8260B	
680-206061-12	AOC50-TB02-FAL21	Total/NA	Water	8260B	
MB 680-691607/9	Method Blank	Total/NA	Water	8260B	
LCS 680-691607/4	Lab Control Sample	Total/NA	Water	8260B	

Analysis Batch: 691817

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-206061-8 - RA	G6M-95-20X-FAL21	Total/NA	Water	8260B	
MB 680-691817/9	Method Blank	Total/NA	Water	8260B	
LCS 680-691817/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-691817/5	Lab Control Sample Dup	Total/NA	Water	8260B	

Analysis Batch: 691825

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-206061-9	AOC50-DUP01-FAL21	Total/NA	Water	8260B	
680-206061-11 - RA	XSA-12-98X-FAL21	Total/NA	Water	8260B	
MB 680-691825/8	Method Blank	Total/NA	Water	8260B	
LCS 680-691825/3	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-691825/4	Lab Control Sample Dup	Total/NA	Water	8260B	

GC VOA

Analysis Batch: 689915

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-206061-3	G6M-02-08X-FAL21	Total/NA	Water	RSK-175	
MB 680-689915/66	Method Blank	Total/NA	Water	RSK-175	
LCS 680-689915/33	Lab Control Sample	Total/NA	Water	RSK-175	
LCS 680-689915/35	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 680-689915/34	Lab Control Sample Dup	Total/NA	Water	RSK-175	
LCSD 680-689915/36	Lab Control Sample Dup	Total/NA	Water	RSK-175	

GC VOA

Analysis Batch: 690170

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-206061-5	G6M-04-07X-FAL21	Total/NA	Water	RSK-175	
680-206061-6	G6M-13-05X-FAL21	Total/NA	Water	RSK-175	
MB 680-690170/37	Method Blank	Total/NA	Water	RSK-175	
LCS 680-690170/33	Lab Control Sample	Total/NA	Water	RSK-175	
LCS 680-690170/35	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 680-690170/34	Lab Control Sample Dup	Total/NA	Water	RSK-175	
LCSD 680-690170/36	Lab Control Sample Dup	Total/NA	Water	RSK-175	

HPLC/IC

Analysis Batch: 691039

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-206061-3	G6M-02-08X-FAL21	Total/NA	Water	9056A	
680-206061-5	G6M-04-07X-FAL21	Total/NA	Water	9056A	
680-206061-6	G6M-13-05X-FAL21	Total/NA	Water	9056A	
MB 680-691039/2	Method Blank	Total/NA	Water	9056A	
LCS 680-691039/3	Lab Control Sample	Total/NA	Water	9056A	
LCSD 680-691039/4	Lab Control Sample Dup	Total/NA	Water	9056A	

Metals

Prep Batch: 689968

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-206061-1	G6M-02-06X-FAL21	Dissolved	Water	3005A	
680-206061-2	G6M-02-07X-FAL21	Dissolved	Water	3005A	
680-206061-3	G6M-02-08X-FAL21	Dissolved	Water	3005A	
680-206061-4	G6M-04-06X-FAL21	Dissolved	Water	3005A	
680-206061-5	G6M-04-07X-FAL21	Dissolved	Water	3005A	
680-206061-6	G6M-13-05X-FAL21	Dissolved	Water	3005A	
680-206061-8	G6M-95-20X-FAL21	Dissolved	Water	3005A	
680-206061-9	AOC50-DUP01-FAL21	Dissolved	Water	3005A	
680-206061-10	XSA-12-97X-FAL21	Dissolved	Water	3005A	
680-206061-11	XSA-12-98X-FAL21	Dissolved	Water	3005A	
MB 680-689968/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 680-689968/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
680-206061-1 MS	G6M-02-06X-FAL21	Dissolved	Water	3005A	
680-206061-1 MSD	G6M-02-06X-FAL21	Dissolved	Water	3005A	

Prep Batch: 689971

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-206061-1	G6M-02-06X-FAL21	Dissolved	Water	3005A	
680-206061-2	G6M-02-07X-FAL21	Dissolved	Water	3005A	
680-206061-3	G6M-02-08X-FAL21	Dissolved	Water	3005A	
680-206061-4	G6M-04-06X-FAL21	Dissolved	Water	3005A	
680-206061-5	G6M-04-07X-FAL21	Dissolved	Water	3005A	
680-206061-6	G6M-13-05X-FAL21	Dissolved	Water	3005A	
680-206061-8	G6M-95-20X-FAL21	Dissolved	Water	3005A	
680-206061-9	AOC50-DUP01-FAL21	Dissolved	Water	3005A	
680-206061-10	XSA-12-97X-FAL21	Dissolved	Water	3005A	
680-206061-11	XSA-12-98X-FAL21	Dissolved	Water	3005A	
MB 680-689971/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 680-689971/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Metals (Continued)

Prep Batch: 689971 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-206061-1 MS	G6M-02-06X-FAL21	Dissolved	Water	3005A	
680-206061-1 MSD	G6M-02-06X-FAL21	Dissolved	Water	3005A	

Analysis Batch: 690272

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-206061-1	G6M-02-06X-FAL21	Dissolved	Water	6020A	689971
680-206061-2	G6M-02-07X-FAL21	Dissolved	Water	6020A	689971
680-206061-3	G6M-02-08X-FAL21	Dissolved	Water	6020A	689971
680-206061-4	G6M-04-06X-FAL21	Dissolved	Water	6020A	689971
680-206061-5	G6M-04-07X-FAL21	Dissolved	Water	6020A	689971
680-206061-6	G6M-13-05X-FAL21	Dissolved	Water	6020A	689971
680-206061-8	G6M-95-20X-FAL21	Dissolved	Water	6020A	689971
680-206061-9	AOC50-DUP01-FAL21	Dissolved	Water	6020A	689971
680-206061-10	XSA-12-97X-FAL21	Dissolved	Water	6020A	689971
680-206061-11	XSA-12-98X-FAL21	Dissolved	Water	6020A	689971
MB 680-689971/1-A	Method Blank	Total Recoverable	Water	6020A	689971
LCS 680-689971/2-A	Lab Control Sample	Total Recoverable	Water	6020A	689971
680-206061-1 MS	G6M-02-06X-FAL21	Dissolved	Water	6020A	689971
680-206061-1 MSD	G6M-02-06X-FAL21	Dissolved	Water	6020A	689971

Analysis Batch: 690327

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-206061-1	G6M-02-06X-FAL21	Dissolved	Water	6010C	689968
680-206061-2	G6M-02-07X-FAL21	Dissolved	Water	6010C	689968
680-206061-3	G6M-02-08X-FAL21	Dissolved	Water	6010C	689968
680-206061-4	G6M-04-06X-FAL21	Dissolved	Water	6010C	689968
680-206061-5	G6M-04-07X-FAL21	Dissolved	Water	6010C	689968
680-206061-6	G6M-13-05X-FAL21	Dissolved	Water	6010C	689968
680-206061-8	G6M-95-20X-FAL21	Dissolved	Water	6010C	689968
680-206061-9	AOC50-DUP01-FAL21	Dissolved	Water	6010C	689968
680-206061-10	XSA-12-97X-FAL21	Dissolved	Water	6010C	689968
680-206061-11	XSA-12-98X-FAL21	Dissolved	Water	6010C	689968
MB 680-689968/1-A	Method Blank	Total Recoverable	Water	6010C	689968
LCS 680-689968/2-A	Lab Control Sample	Total Recoverable	Water	6010C	689968
680-206061-1 MS	G6M-02-06X-FAL21	Dissolved	Water	6010C	689968
680-206061-1 MSD	G6M-02-06X-FAL21	Dissolved	Water	6010C	689968

General Chemistry

Analysis Batch: 554589

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-206061-3	G6M-02-08X-FAL21	Total/NA	Water	9060A	
680-206061-5	G6M-04-07X-FAL21	Total/NA	Water	9060A	
680-206061-6	G6M-13-05X-FAL21	Total/NA	Water	9060A	
MB 280-554589/36	Method Blank	Total/NA	Water	9060A	
MB 280-554589/4	Method Blank	Total/NA	Water	9060A	
LCS 280-554589/34	Lab Control Sample	Total/NA	Water	9060A	
LCSD 280-554589/35	Lab Control Sample Dup	Total/NA	Water	9060A	

General Chemistry

Analysis Batch: 554753

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-206061-3	G6M-02-08X-FAL21	Total/NA	Water	SM 2320B	
680-206061-5	G6M-04-07X-FAL21	Total/NA	Water	SM 2320B	
680-206061-6	G6M-13-05X-FAL21	Total/NA	Water	SM 2320B	
MB 280-554753/141	Method Blank	Total/NA	Water	SM 2320B	
LCS 280-554753/139	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 280-554753/140	Lab Control Sample Dup	Total/NA	Water	SM 2320B	

Analysis Batch: 555228

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-206061-3	G6M-02-08X-FAL21	Total/NA	Water	353.2	
680-206061-5	G6M-04-07X-FAL21	Total/NA	Water	353.2	
680-206061-6	G6M-13-05X-FAL21	Total/NA	Water	353.2	
MB 280-555228/104	Method Blank	Total/NA	Water	353.2	
LCS 280-555228/103	Lab Control Sample	Total/NA	Water	353.2	

Analysis Batch: 689931

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-206061-3	G6M-02-08X-FAL21	Total/NA	Water	9034	
680-206061-5	G6M-04-07X-FAL21	Total/NA	Water	9034	
680-206061-6	G6M-13-05X-FAL21	Total/NA	Water	9034	
MB 680-689931/1	Method Blank	Total/NA	Water	9034	
LCS 680-689931/2	Lab Control Sample	Total/NA	Water	9034	
LCSD 680-689931/3	Lab Control Sample Dup	Total/NA	Water	9034	

Lab Chronicle

Client: Seres Engineering & Services LLC
Job ID: 680-206061-1
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Client Sample ID: G6M-02-06X-FAL21
Lab Sample ID: 680-206061-1
Date Collected: 10/14/21 11:45
Matrix: Water
Date Received: 10/16/21 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	691431	10/27/21 16:11	UI	TAL SAV
	Instrument ID: CMSB									
Dissolved	Prep	3005A			50 mL	50 mL	689968	10/19/21 13:39	JE	TAL SAV
Dissolved	Analysis	6010C		1			690327	10/20/21 17:16	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	689971	10/19/21 13:39	JE	TAL SAV
Dissolved	Analysis	6020A		1			690272	10/20/21 16:45	BWR	TAL SAV
	Instrument ID: ICPMSD									

Client Sample ID: G6M-02-07X-FAL21
Lab Sample ID: 680-206061-2
Date Collected: 10/14/21 12:15
Matrix: Water
Date Received: 10/16/21 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	691431	10/27/21 16:53	UI	TAL SAV
	Instrument ID: CMSB									
Dissolved	Prep	3005A			50 mL	50 mL	689968	10/19/21 13:39	JE	TAL SAV
Dissolved	Analysis	6010C		1			690327	10/20/21 17:39	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	689971	10/19/21 13:39	JE	TAL SAV
Dissolved	Analysis	6020A		1			690272	10/20/21 16:58	BWR	TAL SAV
	Instrument ID: ICPMSD									

Client Sample ID: G6M-02-08X-FAL21
Lab Sample ID: 680-206061-3
Date Collected: 10/14/21 13:25
Matrix: Water
Date Received: 10/16/21 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	691431	10/27/21 14:46	UI	TAL SAV
	Instrument ID: CMSB									
Total/NA	Analysis	RSK-175		1	17 mL	17 mL	689915	10/19/21 21:13	JCK	TAL SAV
	Instrument ID: CVGU									
Total/NA	Analysis	9056A		2	5 mL	5 mL	691039	10/25/21 16:00	OK	TAL SAV
	Instrument ID: CICK									
Dissolved	Prep	3005A			50 mL	50 mL	689968	10/19/21 13:39	JE	TAL SAV
Dissolved	Analysis	6010C		1			690327	10/20/21 17:52	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	689971	10/19/21 13:39	JE	TAL SAV
Dissolved	Analysis	6020A		1			690272	10/20/21 17:00	BWR	TAL SAV
	Instrument ID: ICPMSD									
Total/NA	Analysis	353.2		1	100 mL	100 mL	555228	10/27/21 21:24	SVC	TAL DEN
	Instrument ID: WC_Alp 2									
Total/NA	Analysis	9034		1	310 mL	310 mL	689931	10/19/21 11:08	AE	TAL SAV
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Seres Engineering & Services LLC
Job ID: 680-206061-1
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Client Sample ID: G6M-02-08X-FAL21
Lab Sample ID: 680-206061-3
Date Collected: 10/14/21 13:25
Matrix: Water
Date Received: 10/16/21 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060A		1	20 mL	20 mL	554589	10/22/21 04:23	RAF	TAL DEN
Total/NA	Analysis	SM 2320B		1			554753	10/23/21 08:45	ECC	TAL DEN
	Instrument ID: WC_AT4									

Client Sample ID: G6M-04-06X-FAL21
Lab Sample ID: 680-206061-4
Date Collected: 10/14/21 13:50
Matrix: Water
Date Received: 10/16/21 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	691431	10/27/21 15:07	UI	TAL SAV
	Instrument ID: CMSB									
Dissolved	Prep	3005A			50 mL	50 mL	689968	10/19/21 13:39	JE	TAL SAV
Dissolved	Analysis	6010C		1			690327	10/20/21 17:57	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	689971	10/19/21 13:39	JE	TAL SAV
Dissolved	Analysis	6020A		1			690272	10/20/21 17:03	BWR	TAL SAV
	Instrument ID: ICPMSD									

Client Sample ID: G6M-04-07X-FAL21
Lab Sample ID: 680-206061-5
Date Collected: 10/14/21 14:45
Matrix: Water
Date Received: 10/16/21 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	691543	10/27/21 22:53	P1C	TAL SAV
	Instrument ID: CMSAA									
Total/NA	Analysis	RSK-175		1	17 mL	17 mL	690170	10/20/21 20:39	JCK	TAL SAV
	Instrument ID: CVGU									
Total/NA	Analysis	9056A		1	5 mL	5 mL	691039	10/25/21 16:13	OK	TAL SAV
	Instrument ID: CICK									
Dissolved	Prep	3005A			50 mL	50 mL	689968	10/19/21 13:39	JE	TAL SAV
Dissolved	Analysis	6010C		1			690327	10/20/21 18:01	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	689971	10/19/21 13:39	JE	TAL SAV
Dissolved	Analysis	6020A		1			690272	10/20/21 17:11	BWR	TAL SAV
	Instrument ID: ICPMSD									
Total/NA	Analysis	353.2		1	100 mL	100 mL	555228	10/27/21 21:26	SVC	TAL DEN
	Instrument ID: WC_Alp 2									
Total/NA	Analysis	9034		1	310 mL	310 mL	689931	10/19/21 11:08	AE	TAL SAV
	Instrument ID: NOEQUIP									
Total/NA	Analysis	9060A		1	20 mL	20 mL	554589	10/22/21 05:08	RAF	TAL DEN
	Instrument ID: WC_SHI3									
Total/NA	Analysis	SM 2320B		1			554753	10/23/21 08:52	ECC	TAL DEN
	Instrument ID: WC_AT4									

Client Sample ID: G6M-13-05X-FAL21
Lab Sample ID: 680-206061-6

Date Collected: 10/14/21 15:05
Matrix: Water
Date Received: 10/16/21 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	691543	10/27/21 23:18	P1C	TAL SAV
	Instrument ID: CMSAA									
Total/NA	Analysis	RSK-175		1	17 mL	17 mL	690170	10/20/21 20:52	JCK	TAL SAV
	Instrument ID: CVGU									
Total/NA	Analysis	9056A		1	5 mL	5 mL	691039	10/25/21 17:29	OK	TAL SAV
	Instrument ID: CICK									
Dissolved	Prep	3005A			50 mL	50 mL	689968	10/19/21 13:39	JE	TAL SAV
Dissolved	Analysis	6010C		1			690327	10/20/21 18:06	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	689971	10/19/21 13:39	JE	TAL SAV
Dissolved	Analysis	6020A		1			690272	10/20/21 17:13	BWR	TAL SAV
	Instrument ID: ICPMSD									
Total/NA	Analysis	353.2		1	100 mL	100 mL	555228	10/27/21 21:28	SVC	TAL DEN
	Instrument ID: WC_Alp 2									
Total/NA	Analysis	9034		1	310 mL	310 mL	689931	10/19/21 11:08	AE	TAL SAV
	Instrument ID: NOEQUIP									
Total/NA	Analysis	9060A		1	20 mL	20 mL	554589	10/22/21 05:22	RAF	TAL DEN
	Instrument ID: WC_SHI3									
Total/NA	Analysis	SM 2320B		1			554753	10/23/21 08:58	ECC	TAL DEN
	Instrument ID: WC_AT4									

Client Sample ID: G6M-95-19X-FAL21
Lab Sample ID: 680-206061-7

Date Collected: 10/14/21 11:25
Matrix: Water
Date Received: 10/16/21 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	691543	10/28/21 00:07	P1C	TAL SAV
	Instrument ID: CMSAA									

Client Sample ID: G6M-95-20X-FAL21
Lab Sample ID: 680-206061-8

Date Collected: 10/14/21 10:10
Matrix: Water
Date Received: 10/16/21 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	691607	10/28/21 17:09	P1C	TAL SAV
	Instrument ID: CMSAA									
Total/NA	Analysis	8260B	RA	1	5 mL	5 mL	691817	10/29/21 15:04	SMP	TAL SAV
	Instrument ID: CMSAB									
Dissolved	Prep	3005A			50 mL	50 mL	689968	10/19/21 13:39	JE	TAL SAV
Dissolved	Analysis	6010C		1			690327	10/20/21 18:10	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	689971	10/19/21 13:39	JE	TAL SAV
Dissolved	Analysis	6020A		1			690272	10/20/21 17:16	BWR	TAL SAV
	Instrument ID: ICPMSD									

Lab Chronicle

Client: Seres Engineering & Services LLC
Job ID: 680-206061-1
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Client Sample ID: AOC50-DUP01-FAL21
Lab Sample ID: 680-206061-9
Date Collected: 10/14/21 10:10
Matrix: Water
Date Received: 10/16/21 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	691825	10/29/21 13:31	SMP	TAL SAV
	Instrument ID: CMSB									
Dissolved	Prep	3005A			50 mL	50 mL	689968	10/19/21 13:39	JE	TAL SAV
Dissolved	Analysis	6010C		1			690327	10/20/21 18:15	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	689971	10/19/21 13:39	JE	TAL SAV
Dissolved	Analysis	6020A		1			690272	10/20/21 17:18	BWR	TAL SAV
	Instrument ID: ICPMSD									

Client Sample ID: XSA-12-97X-FAL21
Lab Sample ID: 680-206061-10
Date Collected: 10/14/21 15:10
Matrix: Water
Date Received: 10/16/21 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	691607	10/28/21 17:33	P1C	TAL SAV
	Instrument ID: CMSAA									
Dissolved	Prep	3005A			50 mL	50 mL	689968	10/19/21 13:39	JE	TAL SAV
Dissolved	Analysis	6010C		1			690327	10/20/21 18:19	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	689971	10/19/21 13:39	JE	TAL SAV
Dissolved	Analysis	6020A		1			690272	10/20/21 17:21	BWR	TAL SAV
	Instrument ID: ICPMSD									

Client Sample ID: XSA-12-98X-FAL21
Lab Sample ID: 680-206061-11
Date Collected: 10/14/21 13:40
Matrix: Water
Date Received: 10/16/21 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	691607	10/28/21 19:12	P1C	TAL SAV
	Instrument ID: CMSAA									
Total/NA	Analysis	8260B	RA	1	5 mL	5 mL	691825	10/29/21 13:52	SMP	TAL SAV
	Instrument ID: CMSB									
Dissolved	Prep	3005A			50 mL	50 mL	689968	10/19/21 13:39	JE	TAL SAV
Dissolved	Analysis	6010C		1			690327	10/20/21 18:23	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	689971	10/19/21 13:39	JE	TAL SAV
Dissolved	Analysis	6020A		1			690272	10/20/21 17:23	BWR	TAL SAV
	Instrument ID: ICPMSD									

Client Sample ID: AOC50-TB02-FAL21
Lab Sample ID: 680-206061-12
Date Collected: 10/14/21 00:00
Matrix: Water
Date Received: 10/16/21 10:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	691607	10/28/21 18:23	P1C	TAL SAV
	Instrument ID: CMSAA									

Lab Chronicle

Client: Seres Engineering & Services LLC
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-206061-1

Laboratory References:

TAL DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SAV = Eurofins Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Accreditation/Certification Summary

Client: Seres Engineering & Services LLC
Job ID: 680-206061-1
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Laboratory: Eurofins Savannah

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
ANAB	Dept. of Defense ELAP	L2463	09-18-22

Laboratory: Eurofins Denver

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	11-02-21

Method Summary

Client: Seres Engineering & Services LLC
Job ID: 680-206061-1
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
RSK-175	Dissolved Gases (GC)	RSK	TAL SAV
9056A	Anions, Ion Chromatography	SW846	TAL SAV
6010C	Metals (ICP)	SW846	TAL SAV
6020A	Metals (ICP/MS)	SW846	TAL SAV
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL DEN
9034	Sulfide, Acid Soluble and Insoluble (Titrimetric)	SW846	TAL SAV
9060A	Organic Carbon, Total (TOC)	SW846	TAL DEN
SM 2320B	Alkalinity	SM	TAL DEN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL SAV
5030B	Purge and Trap	SW846	TAL SAV

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SAV = Eurofins Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

CHAIN-OF-CUSTODY RECORD

Seres-Arcadis JV
Nathan Mullens
669 Marina Drive, Suite B7, Charleston, SC 29492
(843) 478.0336, jennifer.singer@arcadis.com

COC # AOC50

Boston #215

Project Name: Former Fort Devens, Long Term Monitoring	Laboratory: Eurofins Environment Testing TestAmerica, Savannah, GA	Event: Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021
Project Number: DEVNS-LTM	POC: Jerry Lanier, jerry.lanier@eurofinset.com, 912-250-0281	
WBS Code:	Ship to:	

Comments:
A2320B (A) = Alkalinity
E353.2 (A) = Nitrite Nitrate as N
RSK175 (A) = Dissolved Gases
SW6010C/FLDFLT (B) = Fe Mn
SW6020A/FLDFLT (B) = As
SW9034 (A) = Sulfide

Equipment:

Code	Matrix
WG	Ground Water

Code	Container/Preservative
5	1x 125mL plastic, Cool < 6degC
7	2x 250mL plastic, ZnAc/NaOH Cool < 6degC
8	3x 40mL glass VOA Vials, HCl, pH < 2, Cool < 6degC
9	1x 250mL, plastic, HNO3, pH < 2, Cool < 6degC
10	1x 250mL, plastic, HNO3, pH < 2, Cool < 6degC
29	3x 40mL glass VOA Vials, HCl, pH < 2, Cool < 6degC
46	1x 250mL, plastic, Cool < 6degC
47	1x 500mL, amber glass, H2SO4, Cool < 6degC

						Analytical Test Method	A2320B (A)	E353.2 (A)	RSK175 (A)	SW6010C/FLDFLT (B)	SW6020A/FLDFLT (B)	SW8260B - VOCs	SW9034 (A)	SW9056A - SO4	SW9060A - TOC					
Event: Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021							46	47	8	9	9	29	7	5	10					
	Sample ID	Matrix	Date	Time	Samp Init.											Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom	Cooler
1	G6M-02-01X-FAL21	WG								X	X	X				G6M-02-01X	N1	80.00	95.00	
2	G6M-02-04X-FAL21	WG								X	X	X				G6M-02-04X	N1	90.00	105.00	
3	G6M-02-06X-FAL21	WG	10.14.21	1145	MS/BK					X	X	X				G6M-02-06X	N1	55.00	65.00	
4	G6M-02-07X-FAL21	WG	10.14.21	1215	BK					X	X	X				G6M-02-07X	N1	30.00	40.00	
5	G6M-02-08X-FAL21	WG	10.14.21	1325	DC	X	X	X	X	X	X	X	X	X		G6M-02-08X	N1	60.00	70.00	
6	G6M-02-11X-FAL21	WG							X	X	X					G6M-02-11X	N1	125.00	135.00	
7	G6M-02-13X-FAL21	WG							X	X	X					G6M-02-13X	N1	110.00	120.00	
8	G6M-03-07X-FAL21	WG				X	X	X	X	X	X	X	X	X		G6M-03-07X	N1	80.00	90.00	
9	G6M-03-10X-FAL21	WG							X	X	X					G6M-03-10X	N1	120.00	135.00	
10	G6M-04-01X-FAL21	WG							X	X	X					G6M-04-01X	N1	82.00	92.00	
11	G6M-04-02X-FAL21	WG				X	X	X	X	X	X	X	X	X		G6M-04-02X	N1	80.00	90.00	
12	G6M-04-03X-FAL21	WG				X	X	X	X	X	X	X	X	X		G6M-04-03X	N1	85.00	95.00	
13	G6M-04-04X-FAL21	WG							X	X	X					G6M-04-04X	N1	94.00	104.00	
14	AOC50-DUP03-FAL21	WG							X	X	X					G6M-04-04X	FD1	94.00	104.00	
15	G6M-04-06X-FAL21	WG	10.14.21	1350	MS/BK				X	X	X					G6M-04-06X	N1	95.00	136.00	
16	G6M-04-07X-FAL21	WG	10.14.21	1445	MS	X	X	X	X	X	X	X	X	X		G6M-04-07X	N1	120.00	130.00	
17	G6M-04-09X-FAL21	WG							X	X	X					G6M-04-09X	N1	55.00	65.00	

680-206061 Chain of Custody

Relinquished by: *(Signature)*
Date 10/14/21
Time 1710
Received by: *(Signature)*
Devens eCOCs_Fall 2021

Date 10/15/21
Time 1705
Shipping Date:
Received by Laboratory *(Signature, Date, Time)* & conditio 10-16-21/1000 2.5/2.6, 0.3/0.4

3/9/2022 (Rev. 1)

CHAIN-OF-CUSTODY RECORD

Seres-Arcadis JV
Nathan Mullens
669 Marina Drive, Suite B7, Charleston, SC 29492
(843) 478.0336, jennifer.singer@arcadis.com

COC # AOC50

Boston #215

Project Name: Former Fort Devens, Long Term Monitoring	Laboratory: Eurofins Environment Testing TestAmerica, Savannah, GA	Event: Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021
Project Number: DEVNS-LTM	POC: Jerry Lanier, jerry.lanier@eurofinset.com, 912-250-0281	
WBS Code:	Ship to:	

Comments:
A2320B (A) = Alkalinity
E353.2 (A) = Nitrite Nitrate as N
RSK175 (A) = Dissolved Gases
SW6010C/FLDFLT (B) = Fe Mn
SW6020A/FLDFLT (B) = As
SW9034 (A) = Sulfide

Equipment:

Code	Matrix
WG	Ground Water

Code	Container/Preservative
5	1x 125mL plastic, Cool < 6degC
7	2x 250mL plastic, ZnAc/NaOH Cool < 6degC
8	3x 40mL glass VOA Vials, HCl, pH < 2; Cool < 6degC
9	1x 250mL, plastic, HNO3, pH < 2, Cool < 6degC
10	1x 250mL, plastic, HNO3, pH < 2, Cool < 6degC
29	3x 40mL glass VOA Vials, HCl, pH < 2; Cool < 6degC
46	1x 250mL, plastic, Cool < 6degC
47	1x 500mL, amber glass, H2SO4; Cool < 6degC

Event: Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021

						Analytical Test Method	A2320B (A)	E353.2 (A)	RSK175 (A)	SW6010C/FLDFLT (B)	SW6020A/FLDFLT (B)	SW8260B - VOCs	SW9034 (A)	SW9056A - SO4	SW9060A - TOC			Sample	Depth (ft bgs)			
							46	47	8	9	9	29	7	5	10							
	Sample ID	Matrix	Date	Time	Samp Init												Location ID	Type	Top	Bottom	Cooler	Comments
18	G6M-04-10A-FAL21	WG					X	X	X	X	X	X	X	X	X		G6M-04-10A	N1	30.00	40.00		
19	G6M-04-10A-FAL21	WG					X	X	X	X	X	X	X	X	X		G6M-04-10A	MS1	30.00	40.00		
20	G6M-04-10A-FAL21	WG					X	X	X	X	X	X	X	X	X		G6M-04-10A	SD1	30.00	40.00		
21	G6M-04-10X-FAL21	WG										X					G6M-04-10X	N1	52.00	62.00		
22	G6M-04-13X-FAL21	WG										X					G6M-04-13X	N1	30.00	40.00		
23	G6M-04-14X-FAL21	WG								X	X	X					G6M-04-14X	N1	80.00	90.00		
24	G6M-04-15X-FAL21	WG								X	X	X					G6M-04-15X	N1	70.00	80.00		
25	G6M-07-02X-FAL21	WG					X	X	X	X	X	X	X	X	X		G6M-07-02X	N1	22.50	27.50		
26	AOC50-DUP02-FAL21	WG					X	X	X	X	X	X	X	X	X		G6M-07-02X	FD1	22.50	27.50		
27	G6M-13-01X-FAL21	WG					X	X	X	X	X	X	X	X	X		G6M-13-01X	N1	125.00	135.00		
28	G6M-13-02X-FAL21	WG					X	X	X	X	X	X	X	X	X		G6M-13-02X	N1	115.00	125.00		
29	AOC50-DUP04-FAL21	WG					X	X	X	X	X	X	X	X	X		G6M-13-02X	FD1	115.00	125.00		
30	G6M-13-04X-FAL21	WG								X	X	X					G6M-13-04X	N1	125.00	135.00		
31	G6M-13-05X-FAL21	WG	10.14.21	1505	DC		X	X	X	X	X	X	X	X	X		G6M-13-05X	N1	45.00	55.00		
32	G6M-13-06X-FAL21	WG					X	X	X	X	X	X	X	X	X		G6M-13-06X	N1	50.00	60.00		
33	G6M-95-19X-FAL21	WG	10.14.21	1125	DC							X					G6M-95-19X	N1	48.00	58.00		
34	G6M-95-20X-FAL21	WG	10.14.21	1010	DC					X	X	X					G6M-95-20X	N1	18.00	23.00		

Relinquished by: *(Signature)* WWW
Date 10/14/21
Time 1710
Received by: *(Signature)*
Devens eCOCs_Fall 2021

Date 10/15/21, 1720
Time
Shipping Date:
Received by Laboratory: *(Signature, Date, Time)* & conditio 10-16-21/1000

3/9/2022 (Rev. 1)

CHAIN-OF-CUSTODY RECORD

Seres-Arcadis JV
Nathan Mullens
669 Marina Drive, Suite B7, Charleston, SC 29492
(843) 478.0336, jennifer.singer@arcadis.com

COC # AOC50

Boston
#215

Project Name: Former Fort Devens, Long Term Monitoring	Laboratory: Eurofins Environment Testing TestAmerica, Savannah, GA
Project Number: DEVNS-LTM	POC: Jerry Lanier, jerry.lanier@eurofinset.com, 912-250-0281
WBS Code:	Ship to:

Event: Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021

Comments:
A2320B (A) = Alkalinity
E353.2 (A) = Nitrite Nitrate as N
RSK175 (A) = Dissolved Gases
SW6010C/FLDFLT (B) = Fe Mn
SW6020A/FLDFLT (B) = As
SW9034 (A) = Sulfide

Equipment:

Code	Matrix
WG	Ground Water

Code	Container/Preservative
5	1x 125mL plastic, Cool < 6degC
7	2x 250mL plastic, ZnAc/NaOH Cool < 6degC
8	3x 40mL glass VOA Vials, HCl, pH < 2; Cool < 6degC
9	1x 250mL, plastic, HNO3, pH < 2; Cool < 6degC
10	1x 250mL, plastic, HNO3, pH < 2; Cool < 6degC
29	3x 40mL glass VOA Vials, HCl, pH < 2; Cool < 6degC
46	1x 250mL, plastic, Cool < 6degC
47	1x 500mL, amber glass, H2SO4; Cool < 6degC

Event: Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021

	Sample ID	Matrix	Date	Time	Samp Init.	A2320B (A)	E353.2 (A)	RSK175 (A)	SW6010C/FLDFLT (B)	SW6020A/FLDFLT (B)	SW8260B - VOCs	SW9034 (A)	SW9056A - SO4	SW9060A - TOC	Location ID	Sample Type	Depth (ft bgs) Top	Bottom	Cooler	Comments
						46	47	8	9	9	29	7	5	10						
35	AOC50-DUP01-FAL21	WG	10.14.21	1010	DC				X	X	X				G6M-95-20X	FD1	18.00	23.00		
36	G6M-97-05B-FAL21	WG				X	X	X	X	X	X	X	X	X	G6M-97-05B	N1	130.00	135.00		
37	G6M-97-28X-FAL21	WG							X	X					G6M-97-28X	N1	100.00	105.00		
38	MW-3-FAL21	WG							X	X	X				MW-3	N1	126.00	137.00		
39	MW-3-FAL21	WG							X	X	X				MW-3	MS1	126.00	137.00		
40	MW-3-FAL21	WG							X	X	X				MW-3	SD1	126.00	137.00		
41	MW-7-FAL21	WG							X	X	X				MW-7	N1	6.58	135.00		
42	XSA-12-95X-FAL21	WG							X	X	X				XSA-12-95X	N1	120.00	130.00		
43	XSA-12-96X-FAL21	WG				X	X	X	X	X	X	X	X	X	XSA-12-96X	N1	120.00	130.00		
44	XSA-12-97X-FAL21	WG	10.14.21	1510	BK				X	X	X				XSA-12-97X	N1	120.00	130.00		
45	XSA-12-98X-FAL21	WG	10.14.21	1340	BK				X	X	X				XSA-12-98X	N1	60.00	70.00		
46	AOC50-TB-101421-FAL21		—	—	LAB						X					Trip Blank				
47																				
48																				
49																				
50																				
51																				
52																				

Relinquished by: ***(Signature)***
Date 10/14/21
Time 1710
Received by: *(Signature)*
Devens eCOCs_Fall 2021

Date 10/15/21 1700
Time
Shipping Date:
Received by Laboratory: ***(Signature, Date, Time)*** & conditio 10-16-21/1000

CHAIN-OF-CUSTODY RECORD

Seres-Arcadis JV
Nathan Mullens
669 Marina Drive, Suite B7, Charleston, SC 29492
(843) 478 0336, jennifer.singer@arcadis.com

COC # AOC50

Boston
#215

Project Name: Former Fort Devens, Long Term Monitoring	Laboratory: Eurofins Environment Testing TestAmerica, Savannah, GA	Event: Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021
Project Number: DEVNS-LTM	POC: Jerry Lanier, jerry.lanier@eurofinset.com, 912-250-0281	
WBS Code:	Ship to:	

Comments:
A2320B (A) = Alkalinity
E353.2 (A) = Nitrite Nitrate as N
RSK175 (A) = Dissolved Gases
SW6010C/FLDFLT (B) = Fe Mn
SW6020A/FLDFLT (B) = As
SW9034 (A) = Sulfide

Equipment:

Code	Matrix
WG	Ground Water

Code	Container/Preservative
5	1x 125mL plastic, Cool < 6degC
7	2x 250mL plastic, ZnAc/NaOH Cool < 6degC
8	3x 40mL glass VOA Vials, HCl, pH < 2, Cool < 6degC
9	1x 250mL, plastic, HNO3, pH < 2, Cool < 6degC
10	1x 250mL, plastic, HNO3, pH < 2, Cool < 6degC
29	3x 40mL glass VOA Vials, HCl, pH < 2, Cool < 6degC
46	1x 250mL, plastic, Cool < 6degC
47	1x 500mL, amber glass, H2SO4, Cool < 6degC

	Analytical Test Method	A2320B (A)	E353.2 (A)	RSK175 (A)	SW6010C/FLDFLT (B)	SW6020A/FLDFLT (B)	SW8260B - VOCs	SW9034 (A)	SW9056A - SO4	SW9060A - TOC					
Event: Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021		46	47	8	9	9	29	7	5	10					
Sample ID	Matrix	Date	Time	Samp Init.								Location ID	Sample Type	Depth (ft bgs) Top - Bottom	Cooler	Comments
Turnaround Time: Standard																

Relinquished by: *(Signature)*
Date 10/19/21
Time 1710
Received by: *(Signature)*

Devens eCOCs_Fall 2021

Date 10/15/21 1755
Time
Shipping Date:
Received by Laboratory *(Signature, Date, Time)* & conditio 10-1621/1000.

3/9/2022 (Rev. 1)

Eurofins TestAmerica, Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Phone: 912-354-7858 Fax: 912-352-0165

Chain of Custody Record

eurofins Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Lanier, Jerry A	Carrier Tracking No(s):	COC No: 680-671098.1
Client Contact: Shipping/Receiving	Phone	E-Mail: Jerry.Lanier@Eurofinset.com	State of Origin: Massachusetts	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): Dept. of Defense ELAP - A2LA; DoD - ANAB		Job #: 680-206061-1
Address: 4955 Yarrow Street,	Due Date Requested: 10/31/2021			
City: Arvada	TAT Requested (days):			
State, Zip: CO, 80002				
Phone: 303-736-0100(Tel) 303-431-7171(Fax)	PO #:			
Email:	WO #:			
Project Name: Seres-Arcadis JV, LTM, AOC 50, Fall 2021	Project #: 68023801			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2320B/ Alkalinity	353.2_Pres/ Nitrogen, Nitrate-Nitrite	9060A/ (MOD) Waters - TOC Duplicates	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
G6M-02-08X-FAL21 (680-206061-3)	10/14/21	13:25 Eastern		Water			X	X	X	3	
G6M-04-07X-FAL21 (680-206061-5)	10/14/21	14:45 Eastern		Water			X	X	X	3	
G6M-13-05X-FAL21 (680-206061-6)	10/14/21	15:05 Eastern		Water			X	X	X	3	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
	10/14 1530			10/19/21 1020	EA/DEN
Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Relinquished by	Date/Time	Company	Received by	Date/Time	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.: 1758450 1758444	Cooler Temperature(s) °C and Other Remarks: 0.4, 0.4 IR11 CF +1.0

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Seres Engineering & Services LLC

Job Number: 680-206061-1

Login Number: 206061
List Number: 1
Creator: Mooken, Darmal

List Source: Eurofins Savannah

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Seres Engineering & Services LLC

Job Number: 680-206061-1

Login Number: 206061
List Number: 2
Creator: Lee, Jerry

List Source: Eurofins Denver
List Creation: 10/19/21 05:06 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

Laboratory Job ID: 680-206221-1
Client Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021
Revision: 2

For:
Seres Engineering & Services LLC
669 Marina Drive
Suite B7
Charleston, South Carolina 29492

Attn: Heather Levesque

Authorized for release by:
3/9/2022 5:40:51 PM

Jerry Lanier, Project Manager I
(912)250-0281
Jerry.Lanier@Eurofinset.com

Definitions/Glossary

Client: Seres Engineering & Services LLC
Job ID: 680-206221-1
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
J1	Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
M	Manual integrated compound.
Q	One or more quality control criteria failed.
U	Undetected at the Limit of Detection.

GC VOA

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Undetected at the Limit of Detection.

HPLC/IC

Qualifier	Qualifier Description
M	Manual integrated compound.
U	Undetected at the Limit of Detection.

Metals

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Undetected at the Limit of Detection.

General Chemistry

Qualifier	Qualifier Description
B	Blank contamination: The analyte was detected above one-half the reporting limit in an associated blank.
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Undetected at the Limit of Detection.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Sample Summary

Client: Seres Engineering & Services LLC
Job ID: 680-206221-1
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-206221-1	G6M-02-13X-FAL21	Water	10/15/21 14:45	10/20/21 10:30
680-206221-2	G6M-04-14X-FAL21	Water	10/15/21 15:20	10/20/21 10:30
680-206221-3	G6M-03-07X-FAL21	Water	10/18/21 14:15	10/20/21 10:30
680-206221-4	G6M-04-02X-FAL21	Water	10/18/21 13:40	10/20/21 10:30
680-206221-5	G6M-04-04X-FAL21	Water	10/18/21 12:35	10/20/21 10:30
680-206221-6	AOC50-DUP03-FAL21	Water	10/18/21 13:00	10/20/21 10:30
680-206221-7	G6M-04-09X-FAL21	Water	10/18/21 09:55	10/20/21 10:30
680-206221-8	G6M-04-15X-FAL21	Water	10/18/21 11:52	10/20/21 10:30
680-206221-9	G6M-13-02X-FAL21	Water	10/18/21 10:45	10/20/21 10:30
680-206221-10	AOC50-DUP04-FAL21	Water	10/18/21 10:45	10/20/21 10:30
680-206221-11	AOC50-TB03-FAL21	Water	10/18/21 00:00	10/20/21 10:30
680-206221-12	AOC50-RB03-FAL21	Water	10/18/21 15:00	10/20/21 10:30

Job ID: 680-206221-1

Laboratory: Eurofins Savannah

Narrative

Job Narrative
680-206221-1

Comments
No additional comments.

Receipt
The samples were received on 10/20/2021 10:30 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.1º C and 3.3º C.

Revision
The final report was revised to correct the DUP 03 sample ID which was incorrect. The data was also set to the lab LOD.

GC/MS VOA
Method 8260B: The continuing calibration verification (CCV) associated with batch 680-691666 recovered above the upper control limit for Acetone, Chloroethane, and Bromomethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method 8260B: The continuing calibration verification (CCV) associated with batch 680-691666 recovered outside acceptance criteria, low biased, for Dichlorodifluoromethane. A reporting limit (RL) standard was analyzed, and the target analyte was detected. This analyte is also considered to be a poor performing analyte when using this method. Since the associated samples were non-detect for this analyte, the data have been reported.

Method 8260B: The closing continuing calibration verification (CCVC) associated with batch 680-691666 recovered above the upper control limit for Chloroethane and Bromomethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method 8260B: The continuing calibration verification (CCV) analyzed in batch 680-692128 was outside the method criteria for the following analyte(s): 2-Butanone. 2-Butanone has been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction/re-analysis was not performed. These results have been reported and qualified.

Method 8260B: The continuing calibration verification (CCV) associated with batch 680-692021 recovered above the upper control limit for Chloroethane and Vinyl acetate. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method 8260B: The closing continuing calibration verification (CCVC) associated with batch 680-692021 recovered above the upper control limit for Chloroethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method 8260B: The closing continuing calibration verification (CCVC) analyzed in batch 692021 was outside the method criteria for the 12 hour window. The data integrity was not impacted and the data has been reported and addressed. All other QC criteria have been met.

Method 8260B: The closing continuing calibration verification (CCVC) analyzed in batch 692128 was outside the method criteria for the 12 hour window by 1 minutes. The data integrity was not impacted and the data has been reported and addressed. All other QC criteria have been met.

Method 8260B: The reporting limit (RL) provided for the following samples falls below the laboratory's verified standard quantitation limit for 1,3,5-Trimethylbenzene: G6M-03-07X-FAL21 (680-206221-3), G6M-04-02X-FAL21 (680-206221-4), G6M-04-04X-FAL21 (680-206221-5) and AOC50-DUP03-FAL21 (680-206221-6). Results reported below the verified standard quantitation limit have less certainty (i.e., are estimated) and must be used at the client's discretion. The continuing calibration blanks and method blanks may not support the lower RL.

Method 8260B: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for analytical batch 680-691666 recovered outside control limits for the following analytes: Chloroethane and Bromomethane. These analytes were biased high in the

Job ID: 680-206221-1 (Continued)

Laboratory: Eurofins Savannah (Continued)

LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 8260B: Mega Mix was double spiked in the LCS/LCSD, corrections were made to reflect. Recoveries are acceptable and data has been reported.

(LCS 680-691666/3) and (LCSD 680-691666/4)

Method 8260B: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 680-692021.

Method 8260B: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for analytical batch 680-692021 recovered outside control limits for the following analytes: Chloroethane and Vinyl acetate. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 8260B: Vinyl acetate is reported with an E flag in the batch QC because the top two points were dropped from the ICAL. The sample associated with the QC was non detect for Vinyl acetate. The data has been qualified and reported.

Method 8260B: The initial calibration verification (ICV) result for batch 680-690817 was above the upper control limit. Sample results were non-detects, and have been reported as qualified data.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

HPLC/IC
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC Semi VOA
Method RSK-175: Due to the high concentration of Methane, the matrix spike / matrix spike duplicate (MS/MSD) for analytical batch 680-691497 could not be evaluated for accuracy and precision. The associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) met acceptance criteria.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
Method SM 2320B: The method blank for analytical batch 280-555457 contained total alkalinity above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Client: Seres Engineering & Services LLC
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-206221-1

Client Sample ID: G6M-02-13X-FAL21
Date Collected: 10/15/21 14:45
Date Received: 10/20/21 10:30

Lab Sample ID: 680-206221-1
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/28/21 16:12	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/28/21 16:12	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/28/21 16:12	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/28/21 16:12	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/28/21 16:12	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/28/21 16:12	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/28/21 16:12	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/28/21 16:12	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/28/21 16:12	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/28/21 16:12	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/28/21 16:12	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/28/21 16:12	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/28/21 16:12	1
1,2-Dichloroethane	1.0	U	1.0	1.0	0.50	ug/L		10/28/21 16:12	1
1,2-Dichloroethene, Total	2.0	U	2.0	2.0	0.74	ug/L		10/28/21 16:12	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/28/21 16:12	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		10/28/21 16:12	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/28/21 16:12	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/28/21 16:12	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/28/21 16:12	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		10/28/21 16:12	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		10/28/21 16:12	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/28/21 16:12	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/28/21 16:12	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/28/21 16:12	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/28/21 16:12	1
4-Methyl-2-pentanone (MIBK)	5.0	U M	10	5.0	2.1	ug/L		10/28/21 16:12	1
Acetone	25	U Q	25	25	7.0	ug/L		10/28/21 16:12	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/28/21 16:12	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/28/21 16:12	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/28/21 16:12	1
Bromomethane	5.0	U Q	5.0	5.0	2.5	ug/L		10/28/21 16:12	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/28/21 16:12	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/28/21 16:12	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/28/21 16:12	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/28/21 16:12	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/28/21 16:12	1
Chloroethane	5.0	U Q	5.0	5.0	2.5	ug/L		10/28/21 16:12	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/28/21 16:12	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		10/28/21 16:12	1
cis-1,2-Dichloroethene	1.0	U	1.0	1.0	0.41	ug/L		10/28/21 16:12	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/28/21 16:12	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/28/21 16:12	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/28/21 16:12	1
Dichlorodifluoromethane	2.0	U Q	2.0	2.0	0.60	ug/L		10/28/21 16:12	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/28/21 16:12	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/28/21 16:12	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/28/21 16:12	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/28/21 16:12	1

Client Sample ID: G6M-02-13X-FAL21
Lab Sample ID: 680-206221-1

Date Collected: 10/15/21 14:45
Matrix: Water
Date Received: 10/20/21 10:30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/28/21 16:12	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/28/21 16:12	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		10/28/21 16:12	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/28/21 16:12	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/28/21 16:12	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/28/21 16:12	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/28/21 16:12	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/28/21 16:12	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/28/21 16:12	1
tert-Butylbenzene	1.0	U M	1.0	1.0	0.45	ug/L		10/28/21 16:12	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		10/28/21 16:12	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/28/21 16:12	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		10/28/21 16:12	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/28/21 16:12	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		10/28/21 16:12	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/28/21 16:12	1
Vinyl acetate	2.0	U M	2.0	2.0	0.81	ug/L		10/28/21 16:12	1
Vinyl chloride	1.0	U M	1.0	1.0	0.50	ug/L		10/28/21 16:12	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		10/28/21 16:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*85 - 114*		*10/28/21 16:12*	*1*
Dibromofluoromethane (Surr)	*94*		*80 - 119*		*10/28/21 16:12*	*1*
Toluene-d8 (Surr)	*98*		*89 - 112*		*10/28/21 16:12*	*1*
1,2-Dichloroethane-d4 (Surr)	*83*		*81 - 118*		*10/28/21 16:12*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	**14000**		50	50	17	ug/L		10/26/21 11:58	1
Manganese	**22000**		10	3.0	1.0	ug/L		10/26/21 11:58	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**250**		3.0	3.0	1.5	ug/L		10/22/21 19:11	1

Client: Seres Engineering & Services LLC
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-206221-1

Client Sample ID: G6M-04-14X-FAL21
Date Collected: 10/15/21 15:20
Date Received: 10/20/21 10:30

Lab Sample ID: 680-206221-2
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/28/21 16:32	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/28/21 16:32	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/28/21 16:32	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/28/21 16:32	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/28/21 16:32	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/28/21 16:32	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/28/21 16:32	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/28/21 16:32	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/28/21 16:32	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/28/21 16:32	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/28/21 16:32	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/28/21 16:32	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/28/21 16:32	1
1,2-Dichloroethane	1.0	U	1.0	1.0	0.50	ug/L		10/28/21 16:32	1
1,2-Dichloroethene, Total	2.0	U	2.0	2.0	0.74	ug/L		10/28/21 16:32	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/28/21 16:32	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		10/28/21 16:32	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/28/21 16:32	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/28/21 16:32	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/28/21 16:32	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		10/28/21 16:32	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		10/28/21 16:32	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/28/21 16:32	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/28/21 16:32	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/28/21 16:32	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/28/21 16:32	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/28/21 16:32	1
Acetone	25	U Q	25	25	7.0	ug/L		10/28/21 16:32	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/28/21 16:32	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/28/21 16:32	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/28/21 16:32	1
Bromomethane	5.0	U M Q	5.0	5.0	2.5	ug/L		10/28/21 16:32	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/28/21 16:32	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/28/21 16:32	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/28/21 16:32	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/28/21 16:32	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/28/21 16:32	1
Chloroethane	5.0	U Q	5.0	5.0	2.5	ug/L		10/28/21 16:32	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/28/21 16:32	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		10/28/21 16:32	1
cis-1,2-Dichloroethene	1.0	U	1.0	1.0	0.41	ug/L		10/28/21 16:32	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/28/21 16:32	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/28/21 16:32	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/28/21 16:32	1
Dichlorodifluoromethane	2.0	U Q	2.0	2.0	0.60	ug/L		10/28/21 16:32	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/28/21 16:32	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/28/21 16:32	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/28/21 16:32	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/28/21 16:32	1

Client Sample ID: G6M-04-14X-FAL21
Lab Sample ID: 680-206221-2

Date Collected: 10/15/21 15:20
Matrix: Water
Date Received: 10/20/21 10:30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/28/21 16:32	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/28/21 16:32	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		10/28/21 16:32	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/28/21 16:32	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/28/21 16:32	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/28/21 16:32	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/28/21 16:32	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/28/21 16:32	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/28/21 16:32	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/28/21 16:32	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		10/28/21 16:32	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/28/21 16:32	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		10/28/21 16:32	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/28/21 16:32	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		10/28/21 16:32	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/28/21 16:32	1
Vinyl acetate	2.0	U	2.0	2.0	0.81	ug/L		10/28/21 16:32	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		10/28/21 16:32	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		10/28/21 16:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*85 - 114*		*10/28/21 16:32*	*1*
Dibromofluoromethane (Surr)	*91*		*80 - 119*		*10/28/21 16:32*	*1*
Toluene-d8 (Surr)	*99*		*89 - 112*		*10/28/21 16:32*	*1*
1,2-Dichloroethane-d4 (Surr)	*81*		*81 - 118*		*10/28/21 16:32*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	**54**		50	50	17	ug/L		10/26/21 11:21	1
Manganese	**6.4**	**J**	10	3.0	1.0	ug/L		10/26/21 11:21	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**6.3**		3.0	3.0	1.5	ug/L		10/22/21 18:54	1

Client: Seres Engineering & Services LLC
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-206221-1

Client Sample ID: G6M-03-07X-FAL21
Date Collected: 10/18/21 14:15
Date Received: 10/20/21 10:30

Lab Sample ID: 680-206221-3
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/30/21 22:35	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/30/21 22:35	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/30/21 22:35	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/30/21 22:35	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/30/21 22:35	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/30/21 22:35	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/30/21 22:35	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/30/21 22:35	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/30/21 22:35	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/30/21 22:35	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/30/21 22:35	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/30/21 22:35	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/30/21 22:35	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/30/21 22:35	1
1,2-Dichloroethene, Total	**0.76**	**J**	2.0	2.0	0.74	ug/L		10/30/21 22:35	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/30/21 22:35	1
1,3,5-Trimethylbenzene	1.0	U M	1.0	1.0	0.31	ug/L		10/30/21 22:35	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/30/21 22:35	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/30/21 22:35	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/30/21 22:35	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		10/30/21 22:35	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		10/30/21 22:35	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/30/21 22:35	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/30/21 22:35	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/30/21 22:35	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/30/21 22:35	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/30/21 22:35	1
Acetone	25	U	25	25	7.0	ug/L		10/30/21 22:35	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/30/21 22:35	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/30/21 22:35	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/30/21 22:35	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		10/30/21 22:35	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/30/21 22:35	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/30/21 22:35	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/30/21 22:35	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/30/21 22:35	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/30/21 22:35	1
Chloroethane	5.0	U Q	5.0	5.0	2.5	ug/L		10/30/21 22:35	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/30/21 22:35	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		10/30/21 22:35	1
cis-1,2-Dichloroethene	**0.50**	**J**	1.0	1.0	0.41	ug/L		10/30/21 22:35	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/30/21 22:35	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/30/21 22:35	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/30/21 22:35	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		10/30/21 22:35	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/30/21 22:35	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/30/21 22:35	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/30/21 22:35	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/30/21 22:35	1

Client Sample ID: G6M-03-07X-FAL21
Lab Sample ID: 680-206221-3
Date Collected: 10/18/21 14:15
Matrix: Water
Date Received: 10/20/21 10:30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/30/21 22:35	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/30/21 22:35	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		10/30/21 22:35	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/30/21 22:35	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/30/21 22:35	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/30/21 22:35	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/30/21 22:35	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/30/21 22:35	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/30/21 22:35	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/30/21 22:35	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		10/30/21 22:35	1
Toluene	**1.1**		1.0	1.0	0.48	ug/L		10/30/21 22:35	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		10/30/21 22:35	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/30/21 22:35	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		10/30/21 22:35	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/30/21 22:35	1
Vinyl acetate	2.0	U Q	2.0	2.0	0.81	ug/L		10/30/21 22:35	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		10/30/21 22:35	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		10/30/21 22:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*85 - 114*		*10/30/21 22:35*	*1*
Dibromofluoromethane (Surr)	*108*		*80 - 119*		*10/30/21 22:35*	*1*
Toluene-d8 (Surr)	*102*		*89 - 112*		*10/30/21 22:35*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*81 - 118*		*10/30/21 22:35*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Ethane	**9.4**		1.1	0.76	0.30	ug/L		10/27/21 00:28	1
Ethylene	0.71	U	1.0	0.71	0.31	ug/L		10/27/21 00:28	1
Methane (TCD)	**37000**		390	77	39	ug/L		10/27/21 00:28	1

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Sulfate	1.0	U	1.0	1.0	0.40	mg/L		10/28/21 22:30	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	**98000**		50	50	17	ug/L		10/23/21 09:49	1
Manganese	**2400**		10	3.0	1.0	ug/L		10/23/21 09:49	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**580**		3.0	3.0	1.5	ug/L		10/22/21 02:55	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate/Nitrite-N	**0.026**	**J**	0.10	0.050	0.019	mg/L		10/28/21 18:37	1
Sulfide	0.81	U	0.81	0.81	0.81	mg/L		10/21/21 16:44	1
Total Organic Carbon - Duplicates	**19**		1.0	0.80	0.35	mg/L		10/26/21 22:53	1
Alkalinity	**190**	**B**	10	6.4	3.1	mg/L		10/28/21 22:23	1

Client: Seres Engineering & Services LLC
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-206221-1

Client Sample ID: G6M-04-02X-FAL21
Date Collected: 10/18/21 13:40
Date Received: 10/20/21 10:30

Lab Sample ID: 680-206221-4
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/30/21 22:59	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/30/21 22:59	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/30/21 22:59	1
1,1,2-Trichloroethane	1.0	U M	1.0	1.0	0.33	ug/L		10/30/21 22:59	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/30/21 22:59	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/30/21 22:59	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/30/21 22:59	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/30/21 22:59	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/30/21 22:59	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/30/21 22:59	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/30/21 22:59	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/30/21 22:59	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/30/21 22:59	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/30/21 22:59	1
1,2-Dichloroethene, Total	**130**		2.0	2.0	0.74	ug/L		10/30/21 22:59	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/30/21 22:59	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		10/30/21 22:59	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/30/21 22:59	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/30/21 22:59	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/30/21 22:59	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		10/30/21 22:59	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		10/30/21 22:59	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/30/21 22:59	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/30/21 22:59	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/30/21 22:59	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/30/21 22:59	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/30/21 22:59	1
Acetone	**15**	**J**	25	25	7.0	ug/L		10/30/21 22:59	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/30/21 22:59	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/30/21 22:59	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/30/21 22:59	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		10/30/21 22:59	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/30/21 22:59	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/30/21 22:59	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/30/21 22:59	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/30/21 22:59	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/30/21 22:59	1
Chloroethane	5.0	U Q	5.0	5.0	2.5	ug/L		10/30/21 22:59	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/30/21 22:59	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		10/30/21 22:59	1
cis-1,2-Dichloroethene	**130**		1.0	1.0	0.41	ug/L		10/30/21 22:59	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/30/21 22:59	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/30/21 22:59	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/30/21 22:59	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		10/30/21 22:59	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/30/21 22:59	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/30/21 22:59	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/30/21 22:59	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/30/21 22:59	1

Client Sample ID: G6M-04-02X-FAL21
Lab Sample ID: 680-206221-4

Date Collected: 10/18/21 13:40
Matrix: Water
Date Received: 10/20/21 10:30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/30/21 22:59	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/30/21 22:59	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		10/30/21 22:59	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/30/21 22:59	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/30/21 22:59	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/30/21 22:59	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/30/21 22:59	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/30/21 22:59	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/30/21 22:59	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/30/21 22:59	1
Tetrachloroethene	**21**		2.0	2.0	0.74	ug/L		10/30/21 22:59	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/30/21 22:59	1
trans-1,2-Dichloroethene	**0.84**	**J**	1.0	1.0	0.37	ug/L		10/30/21 22:59	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/30/21 22:59	1
Trichloroethene	**13**		1.0	1.0	0.48	ug/L		10/30/21 22:59	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/30/21 22:59	1
Vinyl acetate	2.0	U Q	2.0	2.0	0.81	ug/L		10/30/21 22:59	1
Vinyl chloride	**18**		1.0	1.0	0.50	ug/L		10/30/21 22:59	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		10/30/21 22:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*106*		*85 - 114*		*10/30/21 22:59*	*1*
Dibromofluoromethane (Surr)	*106*		*80 - 119*		*10/30/21 22:59*	*1*
Toluene-d8 (Surr)	*103*		*89 - 112*		*10/30/21 22:59*	*1*
1,2-Dichloroethane-d4 (Surr)	*97*		*81 - 118*		*10/30/21 22:59*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Ethane	**0.56**	**J**	1.1	0.76	0.30	ug/L		10/27/21 00:41	1
Ethylene	**37**		1.0	0.71	0.31	ug/L		10/27/21 00:41	1
Methane (TCD)	**19000**		390	77	39	ug/L		10/27/21 00:41	1

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Sulfate	**3.4**		1.0	1.0	0.40	mg/L		10/28/21 22:43	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	**22000**		50	50	17	ug/L		10/23/21 09:53	1
Manganese	**6500**		10	3.0	1.0	ug/L		10/23/21 09:53	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**61**		3.0	3.0	1.5	ug/L		10/22/21 02:58	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate/Nitrite-N	0.050	U	0.10	0.050	0.019	mg/L		10/28/21 18:39	1
Sulfide	0.81	U	0.81	0.81	0.81	mg/L		10/21/21 16:44	1
Total Organic Carbon - Duplicates	**17**		1.0	0.80	0.35	mg/L		10/26/21 23:08	1
Alkalinity	**120**	**B**	10	6.4	3.1	mg/L		10/28/21 22:29	1

Client: Seres Engineering & Services LLC
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-206221-1

Client Sample ID: G6M-04-04X-FAL21
Date Collected: 10/18/21 12:35
Date Received: 10/20/21 10:30

Lab Sample ID: 680-206221-5
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/30/21 23:24	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/30/21 23:24	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/30/21 23:24	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/30/21 23:24	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/30/21 23:24	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/30/21 23:24	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/30/21 23:24	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/30/21 23:24	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/30/21 23:24	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/30/21 23:24	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/30/21 23:24	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/30/21 23:24	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/30/21 23:24	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/30/21 23:24	1
1,2-Dichloroethene, Total	2.0	U	2.0	2.0	0.74	ug/L		10/30/21 23:24	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/30/21 23:24	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		10/30/21 23:24	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/30/21 23:24	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/30/21 23:24	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/30/21 23:24	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		10/30/21 23:24	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		10/30/21 23:24	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/30/21 23:24	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/30/21 23:24	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/30/21 23:24	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/30/21 23:24	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/30/21 23:24	1
Acetone	25	U	25	25	7.0	ug/L		10/30/21 23:24	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/30/21 23:24	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/30/21 23:24	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/30/21 23:24	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		10/30/21 23:24	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/30/21 23:24	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/30/21 23:24	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/30/21 23:24	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/30/21 23:24	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/30/21 23:24	1
Chloroethane	5.0	U Q	5.0	5.0	2.5	ug/L		10/30/21 23:24	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/30/21 23:24	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		10/30/21 23:24	1
cis-1,2-Dichloroethene	**0.68**	**J**	1.0	1.0	0.41	ug/L		10/30/21 23:24	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/30/21 23:24	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/30/21 23:24	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/30/21 23:24	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		10/30/21 23:24	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/30/21 23:24	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/30/21 23:24	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/30/21 23:24	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/30/21 23:24	1

Client Sample ID: G6M-04-04X-FAL21
Lab Sample ID: 680-206221-5

Date Collected: 10/18/21 12:35
Matrix: Water
Date Received: 10/20/21 10:30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/30/21 23:24	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/30/21 23:24	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		10/30/21 23:24	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/30/21 23:24	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/30/21 23:24	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/30/21 23:24	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/30/21 23:24	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/30/21 23:24	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/30/21 23:24	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/30/21 23:24	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		10/30/21 23:24	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/30/21 23:24	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		10/30/21 23:24	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/30/21 23:24	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		10/30/21 23:24	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/30/21 23:24	1
Vinyl acetate	2.0	U Q	2.0	2.0	0.81	ug/L		10/30/21 23:24	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		10/30/21 23:24	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		10/30/21 23:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*106*		*85 - 114*		*10/30/21 23:24*	*1*
Dibromofluoromethane (Surr)	*107*		*80 - 119*		*10/30/21 23:24*	*1*
Toluene-d8 (Surr)	*101*		*89 - 112*		*10/30/21 23:24*	*1*
1,2-Dichloroethane-d4 (Surr)	*99*		*81 - 118*		*10/30/21 23:24*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	**88000**		50	50	17	ug/L		10/26/21 12:02	1
Manganese	**19000**		10	3.0	1.0	ug/L		10/26/21 12:02	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**470**		3.0	3.0	1.5	ug/L		10/22/21 19:15	1

Client: Seres Engineering & Services LLC
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-206221-1

Client Sample ID: AOC50-DUP03-FAL21
Date Collected: 10/18/21 13:00
Date Received: 10/20/21 10:30

Lab Sample ID: 680-206221-6
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/30/21 23:48	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/30/21 23:48	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/30/21 23:48	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/30/21 23:48	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/30/21 23:48	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/30/21 23:48	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/30/21 23:48	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/30/21 23:48	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/30/21 23:48	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/30/21 23:48	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/30/21 23:48	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/30/21 23:48	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/30/21 23:48	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/30/21 23:48	1
1,2-Dichloroethene, Total	2.0	U	2.0	2.0	0.74	ug/L		10/30/21 23:48	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/30/21 23:48	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		10/30/21 23:48	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/30/21 23:48	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/30/21 23:48	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/30/21 23:48	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		10/30/21 23:48	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		10/30/21 23:48	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/30/21 23:48	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/30/21 23:48	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/30/21 23:48	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/30/21 23:48	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/30/21 23:48	1
Acetone	25	U	25	25	7.0	ug/L		10/30/21 23:48	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/30/21 23:48	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/30/21 23:48	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/30/21 23:48	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		10/30/21 23:48	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/30/21 23:48	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/30/21 23:48	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/30/21 23:48	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/30/21 23:48	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/30/21 23:48	1
Chloroethane	5.0	U Q	5.0	5.0	2.5	ug/L		10/30/21 23:48	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/30/21 23:48	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		10/30/21 23:48	1
cis-1,2-Dichloroethene	**0.55**	**J**	1.0	1.0	0.41	ug/L		10/30/21 23:48	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/30/21 23:48	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/30/21 23:48	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/30/21 23:48	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		10/30/21 23:48	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/30/21 23:48	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/30/21 23:48	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/30/21 23:48	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/30/21 23:48	1

Client Sample ID: AOC50-DUP03-FAL21
Lab Sample ID: 680-206221-6

Date Collected: 10/18/21 13:00
Matrix: Water
Date Received: 10/20/21 10:30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/30/21 23:48	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/30/21 23:48	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		10/30/21 23:48	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/30/21 23:48	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/30/21 23:48	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/30/21 23:48	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/30/21 23:48	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/30/21 23:48	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/30/21 23:48	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/30/21 23:48	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		10/30/21 23:48	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/30/21 23:48	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		10/30/21 23:48	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/30/21 23:48	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		10/30/21 23:48	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/30/21 23:48	1
Vinyl acetate	2.0	U Q	2.0	2.0	0.81	ug/L		10/30/21 23:48	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		10/30/21 23:48	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		10/30/21 23:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*106*		*85 - 114*		*10/30/21 23:48*	*1*
Dibromofluoromethane (Surr)	*108*		*80 - 119*		*10/30/21 23:48*	*1*
Toluene-d8 (Surr)	*101*		*89 - 112*		*10/30/21 23:48*	*1*
1,2-Dichloroethane-d4 (Surr)	*99*		*81 - 118*		*10/30/21 23:48*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	**85000**		50	50	17	ug/L		10/26/21 12:06	1
Manganese	**18000**		10	3.0	1.0	ug/L		10/26/21 12:06	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**480**		3.0	3.0	1.5	ug/L		10/22/21 19:18	1

Client: Seres Engineering & Services LLC
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-206221-1

Client Sample ID: G6M-04-09X-FAL21
Date Collected: 10/18/21 09:55
Date Received: 10/20/21 10:30

Lab Sample ID: 680-206221-7
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/31/21 17:25	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/31/21 17:25	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/31/21 17:25	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/31/21 17:25	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/31/21 17:25	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/31/21 17:25	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/31/21 17:25	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/31/21 17:25	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/31/21 17:25	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/31/21 17:25	1
1,2,4-Trimethylbenzene	**1.2**		1.0	1.0	0.47	ug/L		10/31/21 17:25	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/31/21 17:25	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/31/21 17:25	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/31/21 17:25	1
1,2-Dichloroethene, Total	**13**		2.0	2.0	0.74	ug/L		10/31/21 17:25	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/31/21 17:25	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		10/31/21 17:25	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/31/21 17:25	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/31/21 17:25	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/31/21 17:25	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		10/31/21 17:25	1
2-Butanone (MEK)	10	U Q	10	10	3.4	ug/L		10/31/21 17:25	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/31/21 17:25	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/31/21 17:25	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/31/21 17:25	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/31/21 17:25	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/31/21 17:25	1
Acetone	25	U	25	25	7.0	ug/L		10/31/21 17:25	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/31/21 17:25	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/31/21 17:25	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/31/21 17:25	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		10/31/21 17:25	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/31/21 17:25	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/31/21 17:25	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/31/21 17:25	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/31/21 17:25	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/31/21 17:25	1
Chloroethane	5.0	U	5.0	5.0	2.5	ug/L		10/31/21 17:25	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/31/21 17:25	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		10/31/21 17:25	1
cis-1,2-Dichloroethene	**12**		1.0	1.0	0.41	ug/L		10/31/21 17:25	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/31/21 17:25	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/31/21 17:25	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/31/21 17:25	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		10/31/21 17:25	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/31/21 17:25	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/31/21 17:25	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/31/21 17:25	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/31/21 17:25	1

Client Sample ID: G6M-04-09X-FAL21
Lab Sample ID: 680-206221-7

Date Collected: 10/18/21 09:55
Matrix: Water
Date Received: 10/20/21 10:30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/31/21 17:25	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/31/21 17:25	1
m-Xylene & p-Xylene	**0.42**	**J**	1.0	1.0	0.35	ug/L		10/31/21 17:25	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/31/21 17:25	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/31/21 17:25	1
N-Propylbenzene	1.0	U M	1.0	1.0	0.38	ug/L		10/31/21 17:25	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/31/21 17:25	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/31/21 17:25	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/31/21 17:25	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/31/21 17:25	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		10/31/21 17:25	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/31/21 17:25	1
trans-1,2-Dichloroethene	**1.1**		1.0	1.0	0.37	ug/L		10/31/21 17:25	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/31/21 17:25	1
Trichloroethene	**3.2**		1.0	1.0	0.48	ug/L		10/31/21 17:25	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/31/21 17:25	1
Vinyl acetate	2.0	U Q	2.0	2.0	0.81	ug/L		10/31/21 17:25	1
Vinyl chloride	**1.7**		1.0	1.0	0.50	ug/L		10/31/21 17:25	1
Xylenes, Total	**0.42**	**J**	2.0	2.0	0.23	ug/L		10/31/21 17:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*85 - 114*		*10/31/21 17:25*	*1*
Dibromofluoromethane (Surr)	*105*		*80 - 119*		*10/31/21 17:25*	*1*
Toluene-d8 (Surr)	*102*		*89 - 112*		*10/31/21 17:25*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*81 - 118*		*10/31/21 17:25*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	**94000**		50	50	17	ug/L		10/26/21 12:10	1
Manganese	**3100**		10	3.0	1.0	ug/L		10/26/21 12:10	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**460**		3.0	3.0	1.5	ug/L		10/22/21 19:29	1

Client: Seres Engineering & Services LLC
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-206221-1

Client Sample ID: G6M-04-15X-FAL21
Date Collected: 10/18/21 11:52
Date Received: 10/20/21 10:30

Lab Sample ID: 680-206221-8
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/31/21 17:46	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/31/21 17:46	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/31/21 17:46	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/31/21 17:46	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/31/21 17:46	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/31/21 17:46	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/31/21 17:46	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/31/21 17:46	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/31/21 17:46	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/31/21 17:46	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/31/21 17:46	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/31/21 17:46	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/31/21 17:46	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/31/21 17:46	1
1,2-Dichloroethene, Total	**1.6**	**J**	2.0	2.0	0.74	ug/L		10/31/21 17:46	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/31/21 17:46	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		10/31/21 17:46	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/31/21 17:46	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/31/21 17:46	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/31/21 17:46	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		10/31/21 17:46	1
2-Butanone (MEK)	10	U Q	10	10	3.4	ug/L		10/31/21 17:46	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/31/21 17:46	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/31/21 17:46	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/31/21 17:46	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/31/21 17:46	1
4-Methyl-2-pentanone (MIBK)	5.0	U M	10	5.0	2.1	ug/L		10/31/21 17:46	1
Acetone	25	U	25	25	7.0	ug/L		10/31/21 17:46	1
Benzene	1.0	U M	1.0	1.0	0.43	ug/L		10/31/21 17:46	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/31/21 17:46	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/31/21 17:46	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		10/31/21 17:46	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/31/21 17:46	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/31/21 17:46	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/31/21 17:46	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/31/21 17:46	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/31/21 17:46	1
Chloroethane	5.0	U	5.0	5.0	2.5	ug/L		10/31/21 17:46	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/31/21 17:46	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		10/31/21 17:46	1
cis-1,2-Dichloroethene	**1.6**		1.0	1.0	0.41	ug/L		10/31/21 17:46	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/31/21 17:46	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/31/21 17:46	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/31/21 17:46	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		10/31/21 17:46	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/31/21 17:46	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/31/21 17:46	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/31/21 17:46	1
Isopropylbenzene	**0.79**	**J**	1.0	1.0	0.35	ug/L		10/31/21 17:46	1

Client Sample ID: G6M-04-15X-FAL21
Lab Sample ID: 680-206221-8

Date Collected: 10/18/21 11:52
Matrix: Water
Date Received: 10/20/21 10:30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/31/21 17:46	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/31/21 17:46	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		10/31/21 17:46	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/31/21 17:46	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/31/21 17:46	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/31/21 17:46	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/31/21 17:46	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/31/21 17:46	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/31/21 17:46	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/31/21 17:46	1
Tetrachloroethene	**0.87**	**J**	2.0	2.0	0.74	ug/L		10/31/21 17:46	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/31/21 17:46	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		10/31/21 17:46	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/31/21 17:46	1
Trichloroethene	**0.88**	**J**	1.0	1.0	0.48	ug/L		10/31/21 17:46	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/31/21 17:46	1
Vinyl acetate	2.0	U M Q	2.0	2.0	0.81	ug/L		10/31/21 17:46	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		10/31/21 17:46	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		10/31/21 17:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*106*		*85 - 114*		*10/31/21 17:46*	*1*
Dibromofluoromethane (Surr)	*98*		*80 - 119*		*10/31/21 17:46*	*1*
Toluene-d8 (Surr)	*106*		*89 - 112*		*10/31/21 17:46*	*1*
1,2-Dichloroethane-d4 (Surr)	*98*		*81 - 118*		*10/31/21 17:46*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	**4300**		50	50	17	ug/L		10/26/21 12:14	1
Manganese	**670**		10	3.0	1.0	ug/L		10/26/21 12:14	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**94**		3.0	3.0	1.5	ug/L		10/22/21 19:33	1

Client: Seres Engineering & Services LLC
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-206221-1

Client Sample ID: G6M-13-02X-FAL21
Date Collected: 10/18/21 10:45
Date Received: 10/20/21 10:30

Lab Sample ID: 680-206221-9
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/31/21 18:07	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/31/21 18:07	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/31/21 18:07	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/31/21 18:07	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/31/21 18:07	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/31/21 18:07	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/31/21 18:07	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/31/21 18:07	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/31/21 18:07	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/31/21 18:07	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/31/21 18:07	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/31/21 18:07	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/31/21 18:07	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/31/21 18:07	1
1,2-Dichloroethene, Total	**13**		2.0	2.0	0.74	ug/L		10/31/21 18:07	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/31/21 18:07	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		10/31/21 18:07	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/31/21 18:07	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/31/21 18:07	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/31/21 18:07	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		10/31/21 18:07	1
2-Butanone (MEK)	10	U Q	10	10	3.4	ug/L		10/31/21 18:07	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/31/21 18:07	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/31/21 18:07	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/31/21 18:07	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/31/21 18:07	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/31/21 18:07	1
Acetone	25	U	25	25	7.0	ug/L		10/31/21 18:07	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/31/21 18:07	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/31/21 18:07	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/31/21 18:07	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		10/31/21 18:07	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/31/21 18:07	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/31/21 18:07	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/31/21 18:07	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/31/21 18:07	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/31/21 18:07	1
Chloroethane	5.0	U	5.0	5.0	2.5	ug/L		10/31/21 18:07	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/31/21 18:07	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		10/31/21 18:07	1
cis-1,2-Dichloroethene	**13**		1.0	1.0	0.41	ug/L		10/31/21 18:07	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/31/21 18:07	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/31/21 18:07	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/31/21 18:07	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		10/31/21 18:07	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/31/21 18:07	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/31/21 18:07	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/31/21 18:07	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/31/21 18:07	1

Client Sample ID: G6M-13-02X-FAL21
Lab Sample ID: 680-206221-9

Date Collected: 10/18/21 10:45
Matrix: Water
Date Received: 10/20/21 10:30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/31/21 18:07	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/31/21 18:07	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		10/31/21 18:07	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/31/21 18:07	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/31/21 18:07	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/31/21 18:07	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/31/21 18:07	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/31/21 18:07	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/31/21 18:07	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/31/21 18:07	1
Tetrachloroethene	**11**		2.0	2.0	0.74	ug/L		10/31/21 18:07	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/31/21 18:07	1
trans-1,2-Dichloroethene	**0.68**	**J**	1.0	1.0	0.37	ug/L		10/31/21 18:07	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/31/21 18:07	1
Trichloroethene	**12**		1.0	1.0	0.48	ug/L		10/31/21 18:07	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/31/21 18:07	1
Vinyl acetate	2.0	U Q	2.0	2.0	0.81	ug/L		10/31/21 18:07	1
Vinyl chloride	**2.3**		1.0	1.0	0.50	ug/L		10/31/21 18:07	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		10/31/21 18:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*85 - 114*		*10/31/21 18:07*	*1*
Dibromofluoromethane (Surr)	*103*		*80 - 119*		*10/31/21 18:07*	*1*
Toluene-d8 (Surr)	*103*		*89 - 112*		*10/31/21 18:07*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*81 - 118*		*10/31/21 18:07*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Ethane	**0.69**	**J**	1.1	0.76	0.30	ug/L		10/27/21 13:57	1
Ethylene	**0.84**	**J**	1.0	0.71	0.31	ug/L		10/27/21 13:57	1
Methane (TCD)	**6500**		390	77	39	ug/L		10/27/21 13:57	1

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Sulfate	**8.0**		1.0	1.0	0.40	mg/L		10/28/21 22:56	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	**1700**		50	50	17	ug/L		10/23/21 09:58	1
Manganese	**2700**		10	3.0	1.0	ug/L		10/23/21 09:58	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**14**		3.0	3.0	1.5	ug/L		10/22/21 03:02	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate/Nitrite-N	0.050	U	0.10	0.050	0.019	mg/L		10/28/21 18:41	1
Sulfide	0.81	U	0.81	0.81	0.81	mg/L		10/21/21 16:44	1
Total Organic Carbon - Duplicates	**7.0**		1.0	0.80	0.35	mg/L		10/25/21 23:47	1
Alkalinity	**100**	**B**	10	6.4	3.1	mg/L		10/28/21 21:57	1

Client: Seres Engineering & Services LLC
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-206221-1

Client Sample ID: AOC50-DUP04-FAL21
Date Collected: 10/18/21 10:45
Date Received: 10/20/21 10:30

Lab Sample ID: 680-206221-10
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/31/21 18:28	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/31/21 18:28	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/31/21 18:28	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/31/21 18:28	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/31/21 18:28	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/31/21 18:28	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/31/21 18:28	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/31/21 18:28	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/31/21 18:28	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/31/21 18:28	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/31/21 18:28	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/31/21 18:28	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/31/21 18:28	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/31/21 18:28	1
1,2-Dichloroethene, Total	**14**		2.0	2.0	0.74	ug/L		10/31/21 18:28	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/31/21 18:28	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		10/31/21 18:28	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/31/21 18:28	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/31/21 18:28	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/31/21 18:28	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		10/31/21 18:28	1
2-Butanone (MEK)	10	U Q	10	10	3.4	ug/L		10/31/21 18:28	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/31/21 18:28	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/31/21 18:28	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/31/21 18:28	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/31/21 18:28	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/31/21 18:28	1
Acetone	25	U	25	25	7.0	ug/L		10/31/21 18:28	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/31/21 18:28	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/31/21 18:28	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/31/21 18:28	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		10/31/21 18:28	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/31/21 18:28	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/31/21 18:28	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/31/21 18:28	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/31/21 18:28	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/31/21 18:28	1
Chloroethane	5.0	U	5.0	5.0	2.5	ug/L		10/31/21 18:28	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/31/21 18:28	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		10/31/21 18:28	1
cis-1,2-Dichloroethene	**13**		1.0	1.0	0.41	ug/L		10/31/21 18:28	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/31/21 18:28	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/31/21 18:28	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/31/21 18:28	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		10/31/21 18:28	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/31/21 18:28	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/31/21 18:28	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/31/21 18:28	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/31/21 18:28	1

Client Sample ID: AOC50-DUP04-FAL21
Lab Sample ID: 680-206221-10

Date Collected: 10/18/21 10:45
Matrix: Water
Date Received: 10/20/21 10:30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/31/21 18:28	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/31/21 18:28	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		10/31/21 18:28	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/31/21 18:28	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/31/21 18:28	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/31/21 18:28	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/31/21 18:28	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/31/21 18:28	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/31/21 18:28	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/31/21 18:28	1
Tetrachloroethene	**10**		2.0	2.0	0.74	ug/L		10/31/21 18:28	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/31/21 18:28	1
trans-1,2-Dichloroethene	**1.0**		1.0	1.0	0.37	ug/L		10/31/21 18:28	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/31/21 18:28	1
Trichloroethene	**11**		1.0	1.0	0.48	ug/L		10/31/21 18:28	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/31/21 18:28	1
Vinyl acetate	2.0	U Q	2.0	2.0	0.81	ug/L		10/31/21 18:28	1
Vinyl chloride	**2.2**		1.0	1.0	0.50	ug/L		10/31/21 18:28	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		10/31/21 18:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*85 - 114*		*10/31/21 18:28*	*1*
Dibromofluoromethane (Surr)	*103*		*80 - 119*		*10/31/21 18:28*	*1*
Toluene-d8 (Surr)	*104*		*89 - 112*		*10/31/21 18:28*	*1*
1,2-Dichloroethane-d4 (Surr)	*98*		*81 - 118*		*10/31/21 18:28*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Ethane	**0.71**	**J**	1.1	0.76	0.30	ug/L		10/27/21 14:10	1
Ethylene	**0.99**	**J**	1.0	0.71	0.31	ug/L		10/27/21 14:10	1
Methane (TCD)	**6100**		390	77	39	ug/L		10/27/21 14:10	1

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Sulfate	**8.1**		1.0	1.0	0.40	mg/L		10/28/21 23:08	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	**1600**		50	50	17	ug/L		10/23/21 10:02	1
Manganese	**2600**		10	3.0	1.0	ug/L		10/23/21 10:02	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**14**		3.0	3.0	1.5	ug/L		10/22/21 03:06	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate/Nitrite-N	0.050	U	0.10	0.050	0.019	mg/L		10/28/21 18:43	1
Sulfide	0.81	U	0.81	0.81	0.81	mg/L		10/21/21 16:44	1
Total Organic Carbon - Duplicates	**6.6**		1.0	0.80	0.35	mg/L		10/26/21 00:02	1
Alkalinity	**100**	**B**	10	6.4	3.1	mg/L		10/28/21 22:03	1

Client: Seres Engineering & Services LLC
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-206221-1

Client Sample ID: AOC50-TB03-FAL21
Date Collected: 10/18/21 00:00
Date Received: 10/20/21 10:30

Lab Sample ID: 680-206221-11
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/31/21 18:49	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/31/21 18:49	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/31/21 18:49	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/31/21 18:49	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/31/21 18:49	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/31/21 18:49	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/31/21 18:49	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/31/21 18:49	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/31/21 18:49	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/31/21 18:49	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/31/21 18:49	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/31/21 18:49	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/31/21 18:49	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/31/21 18:49	1
1,2-Dichloroethene, Total	2.0	U	2.0	2.0	0.74	ug/L		10/31/21 18:49	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/31/21 18:49	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		10/31/21 18:49	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/31/21 18:49	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/31/21 18:49	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/31/21 18:49	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		10/31/21 18:49	1
2-Butanone (MEK)	10	U Q	10	10	3.4	ug/L		10/31/21 18:49	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/31/21 18:49	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/31/21 18:49	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/31/21 18:49	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/31/21 18:49	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/31/21 18:49	1
Acetone	25	U	25	25	7.0	ug/L		10/31/21 18:49	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/31/21 18:49	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/31/21 18:49	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/31/21 18:49	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		10/31/21 18:49	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/31/21 18:49	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/31/21 18:49	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/31/21 18:49	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/31/21 18:49	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/31/21 18:49	1
Chloroethane	5.0	U	5.0	5.0	2.5	ug/L		10/31/21 18:49	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/31/21 18:49	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		10/31/21 18:49	1
cis-1,2-Dichloroethene	1.0	U	1.0	1.0	0.41	ug/L		10/31/21 18:49	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/31/21 18:49	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/31/21 18:49	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/31/21 18:49	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		10/31/21 18:49	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/31/21 18:49	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/31/21 18:49	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/31/21 18:49	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/31/21 18:49	1

Client: Seres Engineering & Services LLC
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-206221-1

Client Sample ID: AOC50-TB03-FAL21
Date Collected: 10/18/21 00:00
Date Received: 10/20/21 10:30

Lab Sample ID: 680-206221-11
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/31/21 18:49	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/31/21 18:49	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		10/31/21 18:49	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/31/21 18:49	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/31/21 18:49	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/31/21 18:49	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/31/21 18:49	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/31/21 18:49	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/31/21 18:49	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/31/21 18:49	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		10/31/21 18:49	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/31/21 18:49	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		10/31/21 18:49	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/31/21 18:49	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		10/31/21 18:49	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/31/21 18:49	1
Vinyl acetate	2.0	U Q	2.0	2.0	0.81	ug/L		10/31/21 18:49	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		10/31/21 18:49	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		10/31/21 18:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*85 - 114*		*10/31/21 18:49*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 119*		*10/31/21 18:49*	*1*
Toluene-d8 (Surr)	*106*		*89 - 112*		*10/31/21 18:49*	*1*
1,2-Dichloroethane-d4 (Surr)	*103*		*81 - 118*		*10/31/21 18:49*	*1*

Client: Seres Engineering & Services LLC
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-206221-1

Client Sample ID: AOC50-RB03-FAL21
Date Collected: 10/18/21 15:00
Date Received: 10/20/21 10:30

Lab Sample ID: 680-206221-12
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/31/21 19:11	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/31/21 19:11	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/31/21 19:11	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/31/21 19:11	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/31/21 19:11	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/31/21 19:11	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/31/21 19:11	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/31/21 19:11	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/31/21 19:11	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/31/21 19:11	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/31/21 19:11	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/31/21 19:11	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/31/21 19:11	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/31/21 19:11	1
1,2-Dichloroethene, Total	2.0	U	2.0	2.0	0.74	ug/L		10/31/21 19:11	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/31/21 19:11	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		10/31/21 19:11	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/31/21 19:11	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/31/21 19:11	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/31/21 19:11	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		10/31/21 19:11	1
2-Butanone (MEK)	10	U Q	10	10	3.4	ug/L		10/31/21 19:11	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/31/21 19:11	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/31/21 19:11	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/31/21 19:11	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/31/21 19:11	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/31/21 19:11	1
Acetone	25	U	25	25	7.0	ug/L		10/31/21 19:11	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/31/21 19:11	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/31/21 19:11	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/31/21 19:11	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		10/31/21 19:11	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/31/21 19:11	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/31/21 19:11	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/31/21 19:11	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/31/21 19:11	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/31/21 19:11	1
Chloroethane	5.0	U	5.0	5.0	2.5	ug/L		10/31/21 19:11	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/31/21 19:11	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		10/31/21 19:11	1
cis-1,2-Dichloroethene	1.0	U	1.0	1.0	0.41	ug/L		10/31/21 19:11	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/31/21 19:11	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/31/21 19:11	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/31/21 19:11	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		10/31/21 19:11	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/31/21 19:11	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/31/21 19:11	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/31/21 19:11	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/31/21 19:11	1

Client Sample ID: AOC50-RB03-FAL21
Lab Sample ID: 680-206221-12

Date Collected: 10/18/21 15:00
Matrix: Water
Date Received: 10/20/21 10:30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/31/21 19:11	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/31/21 19:11	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		10/31/21 19:11	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/31/21 19:11	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/31/21 19:11	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/31/21 19:11	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/31/21 19:11	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/31/21 19:11	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/31/21 19:11	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/31/21 19:11	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		10/31/21 19:11	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/31/21 19:11	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		10/31/21 19:11	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/31/21 19:11	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		10/31/21 19:11	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/31/21 19:11	1
Vinyl acetate	2.0	U Q	2.0	2.0	0.81	ug/L		10/31/21 19:11	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		10/31/21 19:11	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		10/31/21 19:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*85 - 114*		*10/31/21 19:11*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 119*		*10/31/21 19:11*	*1*
Toluene-d8 (Surr)	*103*		*89 - 112*		*10/31/21 19:11*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*81 - 118*		*10/31/21 19:11*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	**19**	**J**	50	50	17	ug/L		10/26/21 12:19	1
Manganese	3.0	U	10	3.0	1.0	ug/L		10/26/21 12:19	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	3.0	U	3.0	3.0	1.5	ug/L		10/22/21 19:36	1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-691666/8
Matrix: Water
Analysis Batch: 691666

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/28/21 13:21	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/28/21 13:21	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/28/21 13:21	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/28/21 13:21	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/28/21 13:21	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/28/21 13:21	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/28/21 13:21	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/28/21 13:21	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/28/21 13:21	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/28/21 13:21	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/28/21 13:21	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/28/21 13:21	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/28/21 13:21	1
1,2-Dichloroethane	1.0	U	1.0	1.0	0.50	ug/L		10/28/21 13:21	1
1,2-Dichloroethene, Total	2.0	U	2.0	2.0	0.74	ug/L		10/28/21 13:21	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/28/21 13:21	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		10/28/21 13:21	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/28/21 13:21	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/28/21 13:21	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/28/21 13:21	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		10/28/21 13:21	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		10/28/21 13:21	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/28/21 13:21	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/28/21 13:21	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/28/21 13:21	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/28/21 13:21	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/28/21 13:21	1
Acetone	25	U	25	25	7.0	ug/L		10/28/21 13:21	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/28/21 13:21	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/28/21 13:21	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/28/21 13:21	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		10/28/21 13:21	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/28/21 13:21	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/28/21 13:21	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/28/21 13:21	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/28/21 13:21	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/28/21 13:21	1
Chloroethane	5.0	U	5.0	5.0	2.5	ug/L		10/28/21 13:21	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/28/21 13:21	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		10/28/21 13:21	1
cis-1,2-Dichloroethene	1.0	U	1.0	1.0	0.41	ug/L		10/28/21 13:21	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/28/21 13:21	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/28/21 13:21	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/28/21 13:21	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		10/28/21 13:21	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/28/21 13:21	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/28/21 13:21	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/28/21 13:21	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-691666/8
Matrix: Water
Analysis Batch: 691666

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/28/21 13:21	1
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/28/21 13:21	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/28/21 13:21	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		10/28/21 13:21	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/28/21 13:21	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/28/21 13:21	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/28/21 13:21	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/28/21 13:21	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/28/21 13:21	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/28/21 13:21	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/28/21 13:21	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		10/28/21 13:21	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/28/21 13:21	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		10/28/21 13:21	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/28/21 13:21	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		10/28/21 13:21	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/28/21 13:21	1
Vinyl acetate	2.0	U	2.0	2.0	0.81	ug/L		10/28/21 13:21	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		10/28/21 13:21	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		10/28/21 13:21	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*85 - 114*		*10/28/21 13:21*	*1*
Dibromofluoromethane (Surr)	*92*		*80 - 119*		*10/28/21 13:21*	*1*
Toluene-d8 (Surr)	*100*		*89 - 112*		*10/28/21 13:21*	*1*
1,2-Dichloroethane-d4 (Surr)	*82*		*81 - 118*		*10/28/21 13:21*	*1*

Lab Sample ID: LCS 680-691666/3
Matrix: Water
Analysis Batch: 691666

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	100	106		ug/L		106	78 - 124
1,1,1-Trichloroethane	100	88.5		ug/L		89	74 - 131
1,1,2,2-Tetrachloroethane	100	101		ug/L		101	71 - 121
1,1,2-Trichloroethane	100	87.0		ug/L		87	80 - 119
1,1-Dichloroethane	100	103		ug/L		103	77 - 125
1,1-Dichloroethene	100	94.0		ug/L		94	71 - 131
1,1-Dichloropropene	100	90.2		ug/L		90	79 - 125
1,2,3-Trichlorobenzene	100	95.0		ug/L		95	69 - 129
1,2,3-Trichloropropane	100	98.9		ug/L		99	73 - 122
1,2,4-Trichlorobenzene	100	98.9		ug/L		99	69 - 130
1,2,4-Trimethylbenzene	100	95.2		ug/L		95	76 - 124
1,2-Dibromo-3-Chloropropane	100	87.9		ug/L		88	62 - 128
1,2-Dichlorobenzene	100	91.6		ug/L		92	80 - 119
1,2-Dichloroethane	100	84.2		ug/L		84	73 - 128
1,2-Dichloroethene, Total	200	194		ug/L		97	79 - 121
1,2-Dichloropropane	100	107		ug/L		107	78 - 122

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-691666/3
Matrix: Water
Analysis Batch: 691666

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3,5-Trimethylbenzene	100	94.3		ug/L		94	75 - 124
1,3-Dichlorobenzene	100	104		ug/L		104	80 - 119
1,3-Dichloropropane	100	88.9		ug/L		89	80 - 119
1,4-Dichlorobenzene	100	103		ug/L		103	79 - 118
2,2-Dichloropropane	100	81.3		ug/L		81	60 - 139
2-Butanone (MEK)	500	453		ug/L		91	56 - 143
2-Chlorotoluene	100	97.3		ug/L		97	79 - 122
2-Hexanone	500	462		ug/L		92	57 - 139
4-Chlorotoluene	100	95.8		ug/L		96	78 - 122
4-Isopropyltoluene	100	90.6		ug/L		91	77 - 127
4-Methyl-2-pentanone (MIBK)	500	466		ug/L		93	67 - 130
Acetone	500	566		ug/L		113	39 - 160
Benzene	100	93.4		ug/L		93	79 - 120
Bromobenzene	100	105		ug/L		105	80 - 120
Bromoform	100	105		ug/L		105	66 - 130
Bromomethane	50.0	80.0	Q	ug/L		160	53 - 141
Carbon disulfide	100	89.0	M	ug/L		89	64 - 133
Carbon tetrachloride	100	81.1		ug/L		81	72 - 136
Chlorobenzene	100	105		ug/L		105	82 - 118
Chlorobromomethane	100	98.6		ug/L		99	78 - 123
Chlorodibromomethane	100	97.5		ug/L		98	74 - 126
Chloroethane	50.0	93.5	Q	ug/L		187	60 - 138
Chloroform	100	86.3		ug/L		86	79 - 124
Chloromethane	50.0	57.2		ug/L		114	50 - 139
cis-1,2-Dichloroethene	100	97.1		ug/L		97	78 - 123
cis-1,3-Dichloropropene	100	92.4		ug/L		92	75 - 124
Dibromomethane	100	89.5		ug/L		89	79 - 123
Dichlorobromomethane	100	81.0		ug/L		81	79 - 125
Dichlorodifluoromethane	50.0	39.8		ug/L		80	32 - 152
Ethylbenzene	100	102		ug/L		102	79 - 121
Ethylene Dibromide	100	100		ug/L		100	75 - 127
Hexachlorobutadiene	100	88.3		ug/L		88	66 - 134
Isopropylbenzene	100	97.6		ug/L		98	72 - 131
Methyl tert-butyl ether	100	83.6		ug/L		84	71 - 124
Methylene Chloride	100	93.3		ug/L		93	74 - 124
m-Xylene & p-Xylene	100	100		ug/L		100	80 - 121
Naphthalene	100	92.9		ug/L		93	61 - 128
n-Butylbenzene	100	91.8		ug/L		92	75 - 128
N-Propylbenzene	100	100		ug/L		100	76 - 126
o-Xylene	100	99.6		ug/L		100	78 - 122
sec-Butylbenzene	100	95.0		ug/L		95	77 - 126
Styrene	100	110		ug/L		110	78 - 123
tert-Butylbenzene	100	99.8		ug/L		100	78 - 124
Tetrachloroethene	100	100		ug/L		100	74 - 129
Toluene	100	99.2		ug/L		99	80 - 121
trans-1,2-Dichloroethene	100	96.5		ug/L		96	75 - 124
trans-1,3-Dichloropropene	100	86.8		ug/L		87	73 - 127
Trichloroethene	100	102		ug/L		102	79 - 123
Trichlorofluoromethane	50.0	38.9		ug/L		78	65 - 141

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-691666/3
Matrix: Water
Analysis Batch: 691666

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Vinyl acetate			200	217		ug/L		109	54 - 146		
Vinyl chloride			50.0	48.6		ug/L		97	58 - 137		
Xylenes, Total			200	200		ug/L		100	79 - 121		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*91*		*85 - 114*
Dibromofluoromethane (Surr)	*97*		*80 - 119*
Toluene-d8 (Surr)	*102*		*89 - 112*
1,2-Dichloroethane-d4 (Surr)	*85*		*81 - 118*

Lab Sample ID: LCSD 680-691666/4
Matrix: Water
Analysis Batch: 691666

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane			100	107		ug/L		107	78 - 124	1	20
1,1,1-Trichloroethane			100	89.2		ug/L		89	74 - 131	1	20
1,1,2,2-Tetrachloroethane			100	101		ug/L		101	71 - 121	1	20
1,1,2-Trichloroethane			100	86.6		ug/L		87	80 - 119	0	20
1,1-Dichloroethane			100	104		ug/L		104	77 - 125	1	20
1,1-Dichloroethene			100	95.4		ug/L		95	71 - 131	1	20
1,1-Dichloropropene			100	91.5		ug/L		91	79 - 125	1	20
1,2,3-Trichlorobenzene			100	99.8		ug/L		100	69 - 129	5	20
1,2,3-Trichloropropane			100	98.7		ug/L		99	73 - 122	0	20
1,2,4-Trichlorobenzene			100	102		ug/L		102	69 - 130	3	20
1,2,4-Trimethylbenzene			100	95.1		ug/L		95	76 - 124	0	20
1,2-Dibromo-3-Chloropropane			100	95.1		ug/L		95	62 - 128	8	20
1,2-Dichlorobenzene			100	93.5		ug/L		93	80 - 119	2	20
1,2-Dichloroethane			100	83.3		ug/L		83	73 - 128	1	20
1,2-Dichloroethene, Total			200	197		ug/L		98	79 - 121	2	20
1,2-Dichloropropane			100	105		ug/L		105	78 - 122	1	20
1,3,5-Trimethylbenzene			100	94.8		ug/L		95	75 - 124	1	20
1,3-Dichlorobenzene			100	105		ug/L		105	80 - 119	1	20
1,3-Dichloropropane			100	89.3		ug/L		89	80 - 119	0	20
1,4-Dichlorobenzene			100	105		ug/L		105	79 - 118	2	20
2,2-Dichloropropane			100	82.2		ug/L		82	60 - 139	1	20
2-Butanone (MEK)			500	459		ug/L		92	56 - 143	1	20
2-Chlorotoluene			100	98.5		ug/L		99	79 - 122	1	20
2-Hexanone			500	468		ug/L		94	57 - 139	1	20
4-Chlorotoluene			100	96.6		ug/L		97	78 - 122	1	20
4-Isopropyltoluene			100	93.1		ug/L		93	77 - 127	3	20
4-Methyl-2-pentanone (MIBK)			500	470		ug/L		94	67 - 130	1	20
Acetone			500	588		ug/L		118	39 - 160	4	20
Benzene			100	93.7		ug/L		94	79 - 120	0	20
Bromobenzene			100	105		ug/L		105	80 - 120	0	20
Bromoform			100	106		ug/L		106	66 - 130	1	20
Bromomethane			50.0	88.8	Q	ug/L		178	53 - 141	11	20
Carbon disulfide			100	90.3	M	ug/L		90	64 - 133	1	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 680-691666/4
Matrix: Water
Analysis Batch: 691666

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Carbon tetrachloride			100	82.2		ug/L		82	72 - 136	1	20
Chlorobenzene			100	106		ug/L		106	82 - 118	1	20
Chlorobromomethane			100	97.3		ug/L		97	78 - 123	1	20
Chlorodibromomethane			100	97.0		ug/L		97	74 - 126	1	20
Chloroethane			50.0	90.5	Q	ug/L		181	60 - 138	3	20
Chloroform			100	86.3		ug/L		86	79 - 124	0	20
Chloromethane			50.0	57.7		ug/L		115	50 - 139	1	20
cis-1,2-Dichloroethene			100	98.9		ug/L		99	78 - 123	2	20
cis-1,3-Dichloropropene			100	92.3		ug/L		92	75 - 124	0	20
Dibromomethane			100	87.8		ug/L		88	79 - 123	2	20
Dichlorobromomethane			100	82.5		ug/L		83	79 - 125	2	20
Dichlorodifluoromethane			50.0	40.3		ug/L		81	32 - 152	1	20
Ethylbenzene			100	103		ug/L		103	79 - 121	1	20
Ethylene Dibromide			100	98.7		ug/L		99	75 - 127	2	20
Hexachlorobutadiene			100	90.6		ug/L		91	66 - 134	3	20
Isopropylbenzene			100	98.4		ug/L		98	72 - 131	1	20
Methyl tert-butyl ether			100	82.6		ug/L		83	71 - 124	1	20
Methylene Chloride			100	94.4		ug/L		94	74 - 124	1	20
m-Xylene & p-Xylene			100	101		ug/L		101	80 - 121	1	20
Naphthalene			100	101		ug/L		101	61 - 128	8	20
n-Butylbenzene			100	94.5		ug/L		94	75 - 128	3	20
N-Propylbenzene			100	102		ug/L		102	76 - 126	2	20
o-Xylene			100	101		ug/L		101	78 - 122	1	20
sec-Butylbenzene			100	95.3		ug/L		95	77 - 126	0	20
Styrene			100	112		ug/L		112	78 - 123	1	20
tert-Butylbenzene			100	100		ug/L		100	78 - 124	0	20
Tetrachloroethene			100	101		ug/L		101	74 - 129	1	20
Toluene			100	101		ug/L		101	80 - 121	1	20
trans-1,2-Dichloroethene			100	97.6		ug/L		98	75 - 124	1	20
trans-1,3-Dichloropropene			100	86.5		ug/L		86	73 - 127	0	20
Trichloroethene			100	103		ug/L		103	79 - 123	1	20
Trichlorofluoromethane			50.0	39.2		ug/L		78	65 - 141	1	20
Vinyl acetate			200	200		ug/L		100	54 - 146	8	20
Vinyl chloride			50.0	48.5		ug/L		97	58 - 137	0	20
Xylenes, Total			200	202		ug/L		101	79 - 121	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*94*		*85 - 114*
Dibromofluoromethane (Surr)	*96*		*80 - 119*
Toluene-d8 (Surr)	*102*		*89 - 112*
1,2-Dichloroethane-d4 (Surr)	*84*		*81 - 118*

Lab Sample ID: MB 680-692021/9
Matrix: Water
Analysis Batch: 692021

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/30/21 16:05	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-692021/9
Matrix: Water
Analysis Batch: 692021

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/30/21 16:05	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/30/21 16:05	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/30/21 16:05	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/30/21 16:05	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/30/21 16:05	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/30/21 16:05	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/30/21 16:05	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/30/21 16:05	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/30/21 16:05	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/30/21 16:05	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/30/21 16:05	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/30/21 16:05	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/30/21 16:05	1
1,2-Dichloroethene, Total	2.0	U	2.0	2.0	0.74	ug/L		10/30/21 16:05	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/30/21 16:05	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		10/30/21 16:05	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/30/21 16:05	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/30/21 16:05	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/30/21 16:05	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		10/30/21 16:05	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		10/30/21 16:05	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/30/21 16:05	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/30/21 16:05	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/30/21 16:05	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/30/21 16:05	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/30/21 16:05	1
Acetone	25	U	25	25	7.0	ug/L		10/30/21 16:05	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/30/21 16:05	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/30/21 16:05	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/30/21 16:05	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		10/30/21 16:05	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/30/21 16:05	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/30/21 16:05	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/30/21 16:05	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/30/21 16:05	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/30/21 16:05	1
Chloroethane	5.0	U	5.0	5.0	2.5	ug/L		10/30/21 16:05	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/30/21 16:05	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		10/30/21 16:05	1
cis-1,2-Dichloroethene	1.0	U	1.0	1.0	0.41	ug/L		10/30/21 16:05	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/30/21 16:05	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/30/21 16:05	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/30/21 16:05	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		10/30/21 16:05	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/30/21 16:05	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/30/21 16:05	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/30/21 16:05	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/30/21 16:05	1
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/30/21 16:05	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-692021/9
Matrix: Water
Analysis Batch: 692021

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/30/21 16:05	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		10/30/21 16:05	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/30/21 16:05	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/30/21 16:05	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/30/21 16:05	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/30/21 16:05	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/30/21 16:05	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/30/21 16:05	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/30/21 16:05	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		10/30/21 16:05	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/30/21 16:05	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		10/30/21 16:05	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/30/21 16:05	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		10/30/21 16:05	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/30/21 16:05	1
Vinyl acetate	2.0	U	2.0	2.0	0.81	ug/L		10/30/21 16:05	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		10/30/21 16:05	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		10/30/21 16:05	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*107*		*85 - 114*		*10/30/21 16:05*	*1*
Dibromofluoromethane (Surr)	*106*		*80 - 119*		*10/30/21 16:05*	*1*
Toluene-d8 (Surr)	*101*		*89 - 112*		*10/30/21 16:05*	*1*
1,2-Dichloroethane-d4 (Surr)	*105*		*81 - 118*		*10/30/21 16:05*	*1*

Lab Sample ID: LCS 680-692021/3
Matrix: Water
Analysis Batch: 692021

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	50.0	48.8		ug/L		98	78 - 124
1,1,1-Trichloroethane	50.0	54.5		ug/L		109	74 - 131
1,1,2,2-Tetrachloroethane	50.0	45.8		ug/L		92	71 - 121
1,1,2-Trichloroethane	50.0	54.1		ug/L		108	80 - 119
1,1-Dichloroethane	50.0	58.8		ug/L		118	77 - 125
1,1-Dichloroethene	50.0	56.9		ug/L		114	71 - 131
1,1-Dichloropropene	50.0	58.0		ug/L		116	79 - 125
1,2,3-Trichlorobenzene	50.0	42.9		ug/L		86	69 - 129
1,2,3-Trichloropropane	50.0	45.2		ug/L		90	73 - 122
1,2,4-Trichlorobenzene	50.0	42.9		ug/L		86	69 - 130
1,2,4-Trimethylbenzene	50.0	44.3		ug/L		89	76 - 124
1,2-Dibromo-3-Chloropropane	50.0	43.1		ug/L		86	62 - 128
1,2-Dichlorobenzene	50.0	46.3		ug/L		93	80 - 119
1,2-Dichloroethane	50.0	55.1		ug/L		110	73 - 128
1,2-Dichloroethene, Total	100	112		ug/L		112	79 - 121
1,2-Dichloropropane	50.0	57.5		ug/L		115	78 - 122
1,3,5-Trimethylbenzene	50.0	45.8		ug/L		92	75 - 124
1,3-Dichlorobenzene	50.0	46.9		ug/L		94	80 - 119

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-692021/3
Matrix: Water
Analysis Batch: 692021

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3-Dichloropropane	50.0	55.2		ug/L		110	80 - 119
1,4-Dichlorobenzene	50.0	46.1		ug/L		92	79 - 118
2,2-Dichloropropane	50.0	58.5		ug/L		117	60 - 139
2-Butanone (MEK)	250	250		ug/L		100	56 - 143
2-Chlorotoluene	50.0	48.0		ug/L		96	79 - 122
2-Hexanone	250	258		ug/L		103	57 - 139
4-Chlorotoluene	50.0	47.8		ug/L		96	78 - 122
4-Isopropyltoluene	50.0	47.0		ug/L		94	77 - 127
4-Methyl-2-pentanone (MIBK)	250	272		ug/L		109	67 - 130
Acetone	250	267		ug/L		107	39 - 160
Benzene	50.0	55.2		ug/L		110	79 - 120
Bromobenzene	50.0	45.7		ug/L		91	80 - 120
Bromoform	50.0	48.0		ug/L		96	66 - 130
Bromomethane	50.0	44.9		ug/L		90	53 - 141
Carbon disulfide	50.0	57.5		ug/L		115	64 - 133
Carbon tetrachloride	50.0	54.9		ug/L		110	72 - 136
Chlorobenzene	50.0	46.2		ug/L		92	82 - 118
Chlorobromomethane	50.0	54.9		ug/L		110	78 - 123
Chlorodibromomethane	50.0	55.0		ug/L		110	74 - 126
Chloroethane	50.0	93.3	Q	ug/L		187	60 - 138
Chloroform	50.0	54.8		ug/L		110	79 - 124
Chloromethane	50.0	59.5		ug/L		119	50 - 139
cis-1,2-Dichloroethene	50.0	55.6		ug/L		111	78 - 123
cis-1,3-Dichloropropene	50.0	59.0		ug/L		118	75 - 124
Dibromomethane	50.0	54.2		ug/L		108	79 - 123
Dichlorobromomethane	50.0	55.9		ug/L		112	79 - 125
Dichlorodifluoromethane	50.0	57.9		ug/L		116	32 - 152
Ethylbenzene	50.0	47.8		ug/L		96	79 - 121
Ethylene Dibromide	50.0	53.9		ug/L		108	75 - 127
Hexachlorobutadiene	50.0	40.6		ug/L		81	66 - 134
Isopropylbenzene	50.0	48.2		ug/L		96	72 - 131
Methyl tert-butyl ether	50.0	54.3		ug/L		109	71 - 124
Methylene Chloride	50.0	55.5		ug/L		111	74 - 124
m-Xylene & p-Xylene	50.0	48.2		ug/L		96	80 - 121
Naphthalene	50.0	42.8		ug/L		86	61 - 128
n-Butylbenzene	50.0	48.3		ug/L		97	75 - 128
N-Propylbenzene	50.0	48.8		ug/L		98	76 - 126
o-Xylene	50.0	47.9		ug/L		96	78 - 122
sec-Butylbenzene	50.0	47.9		ug/L		96	77 - 126
Styrene	50.0	50.0		ug/L		100	78 - 123
tert-Butylbenzene	50.0	47.3		ug/L		95	78 - 124
Tetrachloroethene	50.0	52.6		ug/L		105	74 - 129
Toluene	50.0	54.5		ug/L		109	80 - 121
trans-1,2-Dichloroethene	50.0	56.3		ug/L		113	75 - 124
trans-1,3-Dichloropropene	50.0	56.4		ug/L		113	73 - 127
Trichloroethene	50.0	52.7		ug/L		105	79 - 123
Trichlorofluoromethane	50.0	57.1		ug/L		114	65 - 141
Vinyl acetate	100	151	Q	ug/L		151	54 - 146
Vinyl chloride	50.0	54.7		ug/L		109	58 - 137

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-692021/3
Matrix: Water
Analysis Batch: 692021

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Xylenes, Total			100	96.1		ug/L		96	79 - 121		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*96*		*85 - 114*
Dibromofluoromethane (Surr)	*112*		*80 - 119*
Toluene-d8 (Surr)	*111*		*89 - 112*
1,2-Dichloroethane-d4 (Surr)	*112*		*81 - 118*

Lab Sample ID: LCSD 680-692021/4
Matrix: Water
Analysis Batch: 692021

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane			50.0	48.0		ug/L		96	78 - 124	2	20
1,1,1-Trichloroethane			50.0	53.5		ug/L		107	74 - 131	2	20
1,1,2,2-Tetrachloroethane			50.0	45.9		ug/L		92	71 - 121	0	20
1,1,2-Trichloroethane			50.0	54.9		ug/L		110	80 - 119	2	20
1,1-Dichloroethane			50.0	58.2		ug/L		116	77 - 125	1	20
1,1-Dichloroethene			50.0	55.1		ug/L		110	71 - 131	3	20
1,1-Dichloropropene			50.0	56.8		ug/L		114	79 - 125	2	20
1,2,3-Trichlorobenzene			50.0	42.5		ug/L		85	69 - 129	1	20
1,2,3-Trichloropropane			50.0	45.4		ug/L		91	73 - 122	1	20
1,2,4-Trichlorobenzene			50.0	42.7		ug/L		85	69 - 130	1	20
1,2,4-Trimethylbenzene			50.0	42.5		ug/L		85	76 - 124	4	20
1,2-Dibromo-3-Chloropropane			50.0	42.7		ug/L		85	62 - 128	1	20
1,2-Dichlorobenzene			50.0	45.9		ug/L		92	80 - 119	1	20
1,2-Dichloroethane			50.0	54.6		ug/L		109	73 - 128	1	20
1,2-Dichloroethene, Total			100	110		ug/L		110	79 - 121	2	20
1,2-Dichloropropane			50.0	57.6		ug/L		115	78 - 122	0	20
1,3,5-Trimethylbenzene			50.0	43.7		ug/L		87	75 - 124	5	20
1,3-Dichlorobenzene			50.0	46.0		ug/L		92	80 - 119	2	20
1,3-Dichloropropane			50.0	55.2		ug/L		110	80 - 119	0	20
1,4-Dichlorobenzene			50.0	45.1		ug/L		90	79 - 118	2	20
2,2-Dichloropropane			50.0	56.7		ug/L		113	60 - 139	3	20
2-Butanone (MEK)			250	261		ug/L		104	56 - 143	4	20
2-Chlorotoluene			50.0	45.3		ug/L		91	79 - 122	6	20
2-Hexanone			250	271		ug/L		108	57 - 139	5	20
4-Chlorotoluene			50.0	46.1		ug/L		92	78 - 122	4	20
4-Isopropyltoluene			50.0	45.4		ug/L		91	77 - 127	3	20
4-Methyl-2-pentanone (MIBK)			250	282		ug/L		113	67 - 130	4	20
Acetone			250	271		ug/L		109	39 - 160	2	20
Benzene			50.0	54.8		ug/L		110	79 - 120	1	20
Bromobenzene			50.0	45.0		ug/L		90	80 - 120	2	20
Bromoform			50.0	48.1		ug/L		96	66 - 130	0	20
Bromomethane			50.0	46.5		ug/L		93	53 - 141	3	20
Carbon disulfide			50.0	55.8		ug/L		112	64 - 133	3	20
Carbon tetrachloride			50.0	53.9		ug/L		108	72 - 136	2	20
Chlorobenzene			50.0	45.3		ug/L		91	82 - 118	2	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 680-692021/4
Matrix: Water
Analysis Batch: 692021

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chlorobromomethane			50.0	54.5		ug/L		109	78 - 123	1	20
Chlorodibromomethane			50.0	55.9		ug/L		112	74 - 126	2	20
Chloroethane			50.0	93.3	Q	ug/L		187	60 - 138	0	20
Chloroform			50.0	54.7		ug/L		109	79 - 124	0	20
Chloromethane			50.0	58.3		ug/L		117	50 - 139	2	20
cis-1,2-Dichloroethene			50.0	54.6		ug/L		109	78 - 123	2	20
cis-1,3-Dichloropropene			50.0	59.1		ug/L		118	75 - 124	0	20
Dibromomethane			50.0	54.5		ug/L		109	79 - 123	0	20
Dichlorobromomethane			50.0	55.7		ug/L		111	79 - 125	0	20
Dichlorodifluoromethane			50.0	56.0		ug/L		112	32 - 152	3	20
Ethylbenzene			50.0	46.3		ug/L		93	79 - 121	3	20
Ethylene Dibromide			50.0	54.9		ug/L		110	75 - 127	2	20
Hexachlorobutadiene			50.0	39.6		ug/L		79	66 - 134	2	20
Isopropylbenzene			50.0	46.1		ug/L		92	72 - 131	4	20
Methyl tert-butyl ether			50.0	54.8		ug/L		110	71 - 124	1	20
Methylene Chloride			50.0	54.8		ug/L		110	74 - 124	1	20
m-Xylene & p-Xylene			50.0	46.4		ug/L		93	80 - 121	4	20
Naphthalene			50.0	43.4		ug/L		87	61 - 128	1	20
n-Butylbenzene			50.0	46.7		ug/L		93	75 - 128	3	20
N-Propylbenzene			50.0	46.5		ug/L		93	76 - 126	5	20
o-Xylene			50.0	45.7		ug/L		91	78 - 122	5	20
sec-Butylbenzene			50.0	45.2		ug/L		90	77 - 126	6	20
Styrene			50.0	47.3		ug/L		95	78 - 123	5	20
tert-Butylbenzene			50.0	44.9		ug/L		90	78 - 124	5	20
Tetrachloroethene			50.0	51.9		ug/L		104	74 - 129	1	20
Toluene			50.0	54.8		ug/L		110	80 - 121	1	20
trans-1,2-Dichloroethene			50.0	55.2		ug/L		110	75 - 124	2	20
trans-1,3-Dichloropropene			50.0	57.2		ug/L		114	73 - 127	1	20
Trichloroethene			50.0	52.3		ug/L		105	79 - 123	1	20
Trichlorofluoromethane			50.0	57.2		ug/L		114	65 - 141	0	20
Vinyl acetate			100	150	Q	ug/L		150	54 - 146	1	20
Vinyl chloride			50.0	54.3		ug/L		109	58 - 137	1	20
Xylenes, Total			100	92.1		ug/L		92	79 - 121	4	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*94*		*85 - 114*
Dibromofluoromethane (Surr)	*111*		*80 - 119*
Toluene-d8 (Surr)	*110*		*89 - 112*
1,2-Dichloroethane-d4 (Surr)	*111*		*81 - 118*

Lab Sample ID: MB 680-692128/8
Matrix: Water
Analysis Batch: 692128

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/31/21 15:28	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/31/21 15:28	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/31/21 15:28	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-692128/8
Matrix: Water
Analysis Batch: 692128

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/31/21 15:28	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/31/21 15:28	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/31/21 15:28	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/31/21 15:28	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/31/21 15:28	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/31/21 15:28	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/31/21 15:28	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/31/21 15:28	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/31/21 15:28	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/31/21 15:28	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/31/21 15:28	1
1,2-Dichloroethene, Total	2.0	U	2.0	2.0	0.74	ug/L		10/31/21 15:28	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/31/21 15:28	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		10/31/21 15:28	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/31/21 15:28	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/31/21 15:28	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/31/21 15:28	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		10/31/21 15:28	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		10/31/21 15:28	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/31/21 15:28	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/31/21 15:28	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/31/21 15:28	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/31/21 15:28	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/31/21 15:28	1
Acetone	25	U	25	25	7.0	ug/L		10/31/21 15:28	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/31/21 15:28	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/31/21 15:28	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/31/21 15:28	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		10/31/21 15:28	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/31/21 15:28	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/31/21 15:28	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/31/21 15:28	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/31/21 15:28	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/31/21 15:28	1
Chloroethane	5.0	U	5.0	5.0	2.5	ug/L		10/31/21 15:28	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/31/21 15:28	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		10/31/21 15:28	1
cis-1,2-Dichloroethene	1.0	U	1.0	1.0	0.41	ug/L		10/31/21 15:28	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/31/21 15:28	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/31/21 15:28	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/31/21 15:28	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		10/31/21 15:28	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/31/21 15:28	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/31/21 15:28	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/31/21 15:28	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/31/21 15:28	1
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/31/21 15:28	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/31/21 15:28	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		10/31/21 15:28	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-692128/8
Matrix: Water
Analysis Batch: 692128

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/31/21 15:28	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/31/21 15:28	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/31/21 15:28	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/31/21 15:28	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/31/21 15:28	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/31/21 15:28	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/31/21 15:28	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		10/31/21 15:28	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/31/21 15:28	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		10/31/21 15:28	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/31/21 15:28	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		10/31/21 15:28	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/31/21 15:28	1
Vinyl acetate	2.0	U	2.0	2.0	0.81	ug/L		10/31/21 15:28	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		10/31/21 15:28	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		10/31/21 15:28	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*85 - 114*		*10/31/21 15:28*	*1*
Dibromofluoromethane (Surr)	*104*		*80 - 119*		*10/31/21 15:28*	*1*
Toluene-d8 (Surr)	*104*		*89 - 112*		*10/31/21 15:28*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*81 - 118*		*10/31/21 15:28*	*1*

Lab Sample ID: LCS 680-692128/3
Matrix: Water
Analysis Batch: 692128

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	50.0	51.6		ug/L		103	78 - 124
1,1,1-Trichloroethane	50.0	49.0		ug/L		98	74 - 131
1,1,2,2-Tetrachloroethane	50.0	46.4		ug/L		93	71 - 121
1,1,2-Trichloroethane	50.0	50.6		ug/L		101	80 - 119
1,1-Dichloroethane	50.0	49.6		ug/L		99	77 - 125
1,1-Dichloroethene	50.0	49.7		ug/L		99	71 - 131
1,1-Dichloropropene	50.0	53.8		ug/L		108	79 - 125
1,2,3-Trichlorobenzene	50.0	46.1		ug/L		92	69 - 129
1,2,3-Trichloropropane	50.0	46.8		ug/L		94	73 - 122
1,2,4-Trichlorobenzene	50.0	48.9		ug/L		98	69 - 130
1,2,4-Trimethylbenzene	50.0	52.1		ug/L		104	76 - 124
1,2-Dibromo-3-Chloropropane	50.0	43.1		ug/L		86	62 - 128
1,2-Dichlorobenzene	50.0	49.6		ug/L		99	80 - 119
1,2-Dichloroethane	50.0	50.3		ug/L		101	73 - 128
1,2-Dichloroethene, Total	100	97.5		ug/L		98	79 - 121
1,2-Dichloropropane	50.0	51.4		ug/L		103	78 - 122
1,3,5-Trimethylbenzene	50.0	52.0		ug/L		104	75 - 124
1,3-Dichlorobenzene	50.0	51.0		ug/L		102	80 - 119
1,3-Dichloropropane	50.0	49.7		ug/L		99	80 - 119
1,4-Dichlorobenzene	50.0	49.8		ug/L		100	79 - 118

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-692128/3
Matrix: Water
Analysis Batch: 692128

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,2-Dichloropropane	50.0	51.0		ug/L		102	60 - 139
2-Butanone (MEK)	250	209		ug/L		84	56 - 143
2-Chlorotoluene	50.0	51.6		ug/L		103	79 - 122
2-Hexanone	250	226		ug/L		91	57 - 139
4-Chlorotoluene	50.0	52.2		ug/L		104	78 - 122
4-Isopropyltoluene	50.0	51.2		ug/L		102	77 - 127
4-Methyl-2-pentanone (MIBK)	250	229		ug/L		92	67 - 130
Acetone	250	211		ug/L		84	39 - 160
Benzene	50.0	51.2		ug/L		102	79 - 120
Bromobenzene	50.0	52.1		ug/L		104	80 - 120
Bromoform	50.0	51.0		ug/L		102	66 - 130
Bromomethane	50.0	42.7		ug/L		85	53 - 141
Carbon disulfide	50.0	49.0		ug/L		98	64 - 133
Carbon tetrachloride	50.0	50.6		ug/L		101	72 - 136
Chlorobenzene	50.0	49.6		ug/L		99	82 - 118
Chlorobromomethane	50.0	49.3		ug/L		99	78 - 123
Chlorodibromomethane	50.0	52.0		ug/L		104	74 - 126
Chloroethane	50.0	44.4		ug/L		89	60 - 138
Chloroform	50.0	48.8		ug/L		98	79 - 124
Chloromethane	50.0	49.6		ug/L		99	50 - 139
cis-1,2-Dichloroethene	50.0	49.0		ug/L		98	78 - 123
cis-1,3-Dichloropropene	50.0	52.9		ug/L		106	75 - 124
Dibromomethane	50.0	48.3		ug/L		97	79 - 123
Dichlorobromomethane	50.0	49.8		ug/L		100	79 - 125
Dichlorodifluoromethane	50.0	49.7		ug/L		99	32 - 152
Ethylbenzene	50.0	50.5		ug/L		101	79 - 121
Ethylene Dibromide	50.0	49.3		ug/L		99	75 - 127
Hexachlorobutadiene	50.0	54.2		ug/L		108	66 - 134
Isopropylbenzene	50.0	51.0		ug/L		102	72 - 131
Methyl tert-butyl ether	50.0	48.2		ug/L		96	71 - 124
Methylene Chloride	50.0	47.0		ug/L		94	74 - 124
m-Xylene & p-Xylene	50.0	51.5		ug/L		103	80 - 121
Naphthalene	50.0	43.2		ug/L		86	61 - 128
n-Butylbenzene	50.0	52.1		ug/L		104	75 - 128
N-Propylbenzene	50.0	52.7		ug/L		105	76 - 126
o-Xylene	50.0	50.6		ug/L		101	78 - 122
sec-Butylbenzene	50.0	52.8		ug/L		106	77 - 126
Styrene	50.0	51.7		ug/L		103	78 - 123
tert-Butylbenzene	50.0	51.8		ug/L		104	78 - 124
Tetrachloroethene	50.0	52.0		ug/L		104	74 - 129
Toluene	50.0	51.0		ug/L		102	80 - 121
trans-1,2-Dichloroethene	50.0	48.5		ug/L		97	75 - 124
trans-1,3-Dichloropropene	50.0	52.1		ug/L		104	73 - 127
Trichloroethene	50.0	52.8		ug/L		106	79 - 123
Trichlorofluoromethane	50.0	45.2		ug/L		90	65 - 141
Vinyl acetate	100	108	J1	ug/L		108	54 - 146
Vinyl chloride	50.0	53.5		ug/L		107	58 - 137
Xylenes, Total	100	102		ug/L		102	79 - 121

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-692128/3
Matrix: Water
Analysis Batch: 692128

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*98*		*85 - 114*
Dibromofluoromethane (Surr)	*100*		*80 - 119*
Toluene-d8 (Surr)	*97*		*89 - 112*
1,2-Dichloroethane-d4 (Surr)	*96*		*81 - 118*

Lab Sample ID: LCSD 680-692128/4
Matrix: Water
Analysis Batch: 692128

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane			50.0	51.7		ug/L		103	78 - 124	0	20
1,1,1-Trichloroethane			50.0	48.2		ug/L		96	74 - 131	2	20
1,1,2,2-Tetrachloroethane			50.0	46.4		ug/L		93	71 - 121	0	20
1,1,2-Trichloroethane			50.0	50.3		ug/L		101	80 - 119	1	20
1,1-Dichloroethane			50.0	48.2		ug/L		96	77 - 125	3	20
1,1-Dichloroethene			50.0	49.1		ug/L		98	71 - 131	1	20
1,1-Dichloropropene			50.0	52.8		ug/L		106	79 - 125	2	20
1,2,3-Trichlorobenzene			50.0	47.6		ug/L		95	69 - 129	3	20
1,2,3-Trichloropropane			50.0	46.7		ug/L		93	73 - 122	0	20
1,2,4-Trichlorobenzene			50.0	49.6		ug/L		99	69 - 130	1	20
1,2,4-Trimethylbenzene			50.0	51.3		ug/L		103	76 - 124	2	20
1,2-Dibromo-3-Chloropropane			50.0	44.6		ug/L		89	62 - 128	3	20
1,2-Dichlorobenzene			50.0	49.2		ug/L		98	80 - 119	1	20
1,2-Dichloroethane			50.0	49.9		ug/L		100	73 - 128	1	20
1,2-Dichloroethene, Total			100	95.4		ug/L		95	79 - 121	2	20
1,2-Dichloropropane			50.0	52.4		ug/L		105	78 - 122	2	20
1,3,5-Trimethylbenzene			50.0	50.9		ug/L		102	75 - 124	2	20
1,3-Dichlorobenzene			50.0	51.1		ug/L		102	80 - 119	0	20
1,3-Dichloropropane			50.0	49.6		ug/L		99	80 - 119	0	20
1,4-Dichlorobenzene			50.0	49.4		ug/L		99	79 - 118	1	20
2,2-Dichloropropane			50.0	49.2		ug/L		98	60 - 139	4	20
2-Butanone (MEK)			250	216		ug/L		86	56 - 143	3	20
2-Chlorotoluene			50.0	50.5		ug/L		101	79 - 122	2	20
2-Hexanone			250	234		ug/L		94	57 - 139	3	20
4-Chlorotoluene			50.0	51.6		ug/L		103	78 - 122	1	20
4-Isopropyltoluene			50.0	51.4		ug/L		103	77 - 127	0	20
4-Methyl-2-pentanone (MIBK)			250	237		ug/L		95	67 - 130	3	20
Acetone			250	214		ug/L		85	39 - 160	1	20
Benzene			50.0	50.3		ug/L		101	79 - 120	2	20
Bromobenzene			50.0	51.4		ug/L		103	80 - 120	1	20
Bromoform			50.0	49.8		ug/L		100	66 - 130	2	20
Bromomethane			50.0	40.4		ug/L		81	53 - 141	6	20
Carbon disulfide			50.0	47.8		ug/L		96	64 - 133	3	20
Carbon tetrachloride			50.0	50.5		ug/L		101	72 - 136	0	20
Chlorobenzene			50.0	49.3		ug/L		99	82 - 118	0	20
Chlorobromomethane			50.0	47.8		ug/L		96	78 - 123	3	20
Chlorodibromomethane			50.0	50.5		ug/L		101	74 - 126	3	20
Chloroethane			50.0	40.5		ug/L		81	60 - 138	9	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 680-692128/4
Matrix: Water
Analysis Batch: 692128

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloroform			50.0	46.8		ug/L		94	79 - 124	4	20
Chloromethane			50.0	47.9		ug/L		96	50 - 139	3	20
cis-1,2-Dichloroethene			50.0	47.8		ug/L		96	78 - 123	2	20
cis-1,3-Dichloropropene			50.0	53.1		ug/L		106	75 - 124	0	20
Dibromomethane			50.0	48.7		ug/L		97	79 - 123	1	20
Dichlorobromomethane			50.0	50.3		ug/L		101	79 - 125	1	20
Dichlorodifluoromethane			50.0	48.1		ug/L		96	32 - 152	3	20
Ethylbenzene			50.0	50.7		ug/L		101	79 - 121	0	20
Ethylene Dibromide			50.0	48.7		ug/L		97	75 - 127	1	20
Hexachlorobutadiene			50.0	53.5		ug/L		107	66 - 134	1	20
Isopropylbenzene			50.0	50.6		ug/L		101	72 - 131	1	20
Methyl tert-butyl ether			50.0	46.9		ug/L		94	71 - 124	3	20
Methylene Chloride			50.0	44.9		ug/L		90	74 - 124	5	20
m-Xylene & p-Xylene			50.0	50.9		ug/L		102	80 - 121	1	20
Naphthalene			50.0	44.1		ug/L		88	61 - 128	2	20
n-Butylbenzene			50.0	51.8		ug/L		104	75 - 128	1	20
N-Propylbenzene			50.0	52.0		ug/L		104	76 - 126	1	20
o-Xylene			50.0	49.9		ug/L		100	78 - 122	1	20
sec-Butylbenzene			50.0	51.9		ug/L		104	77 - 126	2	20
Styrene			50.0	51.3		ug/L		103	78 - 123	1	20
tert-Butylbenzene			50.0	51.4		ug/L		103	78 - 124	1	20
Tetrachloroethene			50.0	52.8		ug/L		106	74 - 129	2	20
Toluene			50.0	51.3		ug/L		103	80 - 121	1	20
trans-1,2-Dichloroethene			50.0	47.5		ug/L		95	75 - 124	2	20
trans-1,3-Dichloropropene			50.0	51.5		ug/L		103	73 - 127	1	20
Trichloroethene			50.0	53.3		ug/L		107	79 - 123	1	20
Trichlorofluoromethane			50.0	44.0		ug/L		88	65 - 141	3	20
Vinyl acetate			100	101	J1	ug/L		101	54 - 146	7	20
Vinyl chloride			50.0	52.0		ug/L		104	58 - 137	3	20
Xylenes, Total			100	101		ug/L		101	79 - 121	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*98*		*85 - 114*
Dibromofluoromethane (Surr)	*97*		*80 - 119*
Toluene-d8 (Surr)	*98*		*89 - 112*
1,2-Dichloroethane-d4 (Surr)	*93*		*81 - 118*

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 680-691316/39
Matrix: Water
Analysis Batch: 691316

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Ethane	0.76	U	1.1	0.76	0.30	ug/L		10/26/21 19:24	1
Ethylene	0.71	U	1.0	0.71	0.31	ug/L		10/26/21 19:24	1
Methane	1.2	U	1.2	1.2	0.57	ug/L		10/26/21 19:24	1

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: LCS 680-691316/35
Matrix: Water
Analysis Batch: 691316

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methane (TCD)	1920	1730		ug/L		90	73 - 125

Lab Sample ID: LCS 680-691316/37
Matrix: Water
Analysis Batch: 691316

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane	288	260		ug/L		90	74 - 131
Ethylene	269	237		ug/L		88	72 - 133
Methane	154	138		ug/L		90	73 - 125

Lab Sample ID: LCSD 680-691316/36
Matrix: Water
Analysis Batch: 691316

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methane (TCD)	1920	1760		ug/L		91	73 - 125	2	30

Lab Sample ID: LCSD 680-691316/38
Matrix: Water
Analysis Batch: 691316

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane	288	250		ug/L		87	74 - 131	4	30
Ethylene	269	230		ug/L		86	72 - 133	3	30
Methane	154	133		ug/L		87	73 - 125	3	30

Lab Sample ID: MB 680-691497/8
Matrix: Water
Analysis Batch: 691497

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Ethane	0.76	U	1.1	0.76	0.30	ug/L		10/27/21 12:44	1
Ethylene	0.71	U	1.0	0.71	0.31	ug/L		10/27/21 12:44	1
Methane	1.2	U	1.2	1.2	0.57	ug/L		10/27/21 12:44	1

Lab Sample ID: LCS 680-691497/3
Matrix: Water
Analysis Batch: 691497

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methane (TCD)	1920	1770		ug/L		92	73 - 125

Lab Sample ID: LCS 680-691497/6
Matrix: Water
Analysis Batch: 691497

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane	288	278		ug/L		96	74 - 131
Ethylene	269	253		ug/L		94	72 - 133

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: LCS 680-691497/6
Matrix: Water
Analysis Batch: 691497

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methane	154	150		ug/L		97	73 - 125

Lab Sample ID: LCSD 680-691497/4
Matrix: Water
Analysis Batch: 691497

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methane (TCD)	1920	1700		ug/L		88	73 - 125	4	30

Lab Sample ID: LCSD 680-691497/9
Matrix: Water
Analysis Batch: 691497

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane	288	279		ug/L		97	74 - 131	0	30
Ethylene	269	254		ug/L		94	72 - 133	1	30
Methane	154	149		ug/L		97	73 - 125	1	30

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 680-691639/33
Matrix: Water
Analysis Batch: 691639

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Sulfate	1.0	U M	1.0	1.0	0.40	mg/L		10/28/21 18:17	1

Lab Sample ID: LCS 680-691639/34
Matrix: Water
Analysis Batch: 691639

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	10.0	9.47		mg/L		95	87 - 112

Lab Sample ID: LCSD 680-691639/35
Matrix: Water
Analysis Batch: 691639

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	10.0	9.60		mg/L		96	87 - 112	1	15

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-690365/1-A
Matrix: Water
Analysis Batch: 690814

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 690365

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	50	U	50	50	17	ug/L		10/23/21 09:09	1
Manganese	3.0	U	10	3.0	1.0	ug/L		10/23/21 09:09	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 680-690365/2-A
Matrix: Water
Analysis Batch: 690814

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 690365

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	5000	4520		ug/L		90	87 - 115
Manganese	400	361		ug/L		90	90 - 114

Lab Sample ID: MB 680-690470/1-A
Matrix: Water
Analysis Batch: 691312

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 690470

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	50	U	50	50	17	ug/L		10/26/21 11:13	1
Manganese	3.0	U	10	3.0	1.0	ug/L		10/26/21 11:13	1

Lab Sample ID: LCS 680-690470/2-A
Matrix: Water
Analysis Batch: 691312

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 690470

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	5000	4660		ug/L		93	87 - 115
Manganese	400	373		ug/L		93	90 - 114

Lab Sample ID: 680-206221-2 MS
Matrix: Water
Analysis Batch: 691312

Client Sample ID: G6M-04-14X-FAL21
Prep Type: Dissolved
Prep Batch: 690470

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	54		5000	4910		ug/L		97	87 - 115
Manganese	6.4	J	400	395		ug/L		97	90 - 114

Lab Sample ID: 680-206221-2 MSD
Matrix: Water
Analysis Batch: 691312

Client Sample ID: G6M-04-14X-FAL21
Prep Type: Dissolved
Prep Batch: 690470

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	54		5000	4840		ug/L		96	87 - 115	1	20
Manganese	6.4	J	400	389		ug/L		96	90 - 114	2	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 680-690366/1-A
Matrix: Water
Analysis Batch: 690594

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 690366

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	3.0	U	3.0	3.0	1.5	ug/L		10/22/21 02:09	1

Lab Sample ID: LCS 680-690366/2-A
Matrix: Water
Analysis Batch: 690594

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 690366

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	100	112		ug/L		112	84 - 116

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 680-690471/1-A
Matrix: Water
Analysis Batch: 690834

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 690471

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	3.0	U	3.0	3.0	1.5	ug/L		10/22/21 18:47	1

Lab Sample ID: LCS 680-690471/2-A
Matrix: Water
Analysis Batch: 690834

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 690471

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	100	100		ug/L		100	84 - 116

Lab Sample ID: 680-206221-2 MS
Matrix: Water
Analysis Batch: 690834

Client Sample ID: G6M-04-14X-FAL21
Prep Type: Dissolved
Prep Batch: 690471

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	6.3		100	110		ug/L		103	84 - 116

Lab Sample ID: 680-206221-2 MSD
Matrix: Water
Analysis Batch: 690834

Client Sample ID: G6M-04-14X-FAL21
Prep Type: Dissolved
Prep Batch: 690471

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	6.3		100	107		ug/L		101	84 - 116	2	20

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 280-555388/61
Matrix: Water
Analysis Batch: 555388

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate/Nitrite-N	0.050	U	0.10	0.050	0.019	mg/L		10/28/21 18:09	1

Lab Sample ID: LCS 280-555388/60
Matrix: Water
Analysis Batch: 555388

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate/Nitrite-N	5.00	4.65		mg/L		93	90 - 110

Method: 9034 - Sulfide, Acid Soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 680-690475/1
Matrix: Water
Analysis Batch: 690475

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Sulfide	1.0	U	1.0	1.0	1.0	mg/L		10/21/21 16:44	1

Method: 9034 - Sulfide, Acid Soluble and Insoluble (Titrimetric) (Continued)

Lab Sample ID: LCS 680-690475/2
Matrix: Water
Analysis Batch: 690475

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	10.0	11.5		mg/L		115	75 - 125

Lab Sample ID: LCSD 680-690475/3
Matrix: Water
Analysis Batch: 690475

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfide	10.0	11.3		mg/L		113	75 - 125	1	30

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 280-554964/4
Matrix: Water
Analysis Batch: 554964

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	0.80	U	1.0	0.80	0.35	mg/L		10/25/21 16:45	1

Lab Sample ID: LCS 280-554964/3
Matrix: Water
Analysis Batch: 554964

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	25.0	25.1		mg/L		100	88 - 112

Lab Sample ID: MB 280-555123/4
Matrix: Water
Analysis Batch: 555123

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	0.80	U	1.0	0.80	0.35	mg/L		10/26/21 15:57	1

Lab Sample ID: LCS 280-555123/3
Matrix: Water
Analysis Batch: 555123

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	25.0	24.5		mg/L		98	88 - 112

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 280-555457/31
Matrix: Water
Analysis Batch: 555457

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	7.54	J	10	6.4	3.1	mg/L		10/28/21 20:45	1

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: MB 280-555457/5
Matrix: Water
Analysis Batch: 555457

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	6.50	J	10	6.4	3.1	mg/L		10/28/21 16:26	1

Lab Sample ID: LCS 280-555457/30
Matrix: Water
Analysis Batch: 555457

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Alkalinity			200	200		mg/L		100	89 - 109		

QC Association Summary

Client: Seres Engineering & Services LLC
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-206221-1

GC/MS VOA

Analysis Batch: 691666

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-206221-1	G6M-02-13X-FAL21	Total/NA	Water	8260B	
680-206221-2	G6M-04-14X-FAL21	Total/NA	Water	8260B	
MB 680-691666/8	Method Blank	Total/NA	Water	8260B	
LCS 680-691666/3	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-691666/4	Lab Control Sample Dup	Total/NA	Water	8260B	

Analysis Batch: 692021

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-206221-3	G6M-03-07X-FAL21	Total/NA	Water	8260B	
680-206221-4	G6M-04-02X-FAL21	Total/NA	Water	8260B	
680-206221-5	G6M-04-04X-FAL21	Total/NA	Water	8260B	
680-206221-6	AOC50-DUP03-FAL21	Total/NA	Water	8260B	
MB 680-692021/9	Method Blank	Total/NA	Water	8260B	
LCS 680-692021/3	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-692021/4	Lab Control Sample Dup	Total/NA	Water	8260B	

Analysis Batch: 692128

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-206221-7	G6M-04-09X-FAL21	Total/NA	Water	8260B	
680-206221-8	G6M-04-15X-FAL21	Total/NA	Water	8260B	
680-206221-9	G6M-13-02X-FAL21	Total/NA	Water	8260B	
680-206221-10	AOC50-DUP04-FAL21	Total/NA	Water	8260B	
680-206221-11	AOC50-TB03-FAL21	Total/NA	Water	8260B	
680-206221-12	AOC50-RB03-FAL21	Total/NA	Water	8260B	
MB 680-692128/8	Method Blank	Total/NA	Water	8260B	
LCS 680-692128/3	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-692128/4	Lab Control Sample Dup	Total/NA	Water	8260B	

GC VOA

Analysis Batch: 691316

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-206221-3	G6M-03-07X-FAL21	Total/NA	Water	RSK-175	
680-206221-4	G6M-04-02X-FAL21	Total/NA	Water	RSK-175	
MB 680-691316/39	Method Blank	Total/NA	Water	RSK-175	
LCS 680-691316/35	Lab Control Sample	Total/NA	Water	RSK-175	
LCS 680-691316/37	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 680-691316/36	Lab Control Sample Dup	Total/NA	Water	RSK-175	
LCSD 680-691316/38	Lab Control Sample Dup	Total/NA	Water	RSK-175	

Analysis Batch: 691497

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-206221-9	G6M-13-02X-FAL21	Total/NA	Water	RSK-175	
680-206221-10	AOC50-DUP04-FAL21	Total/NA	Water	RSK-175	
MB 680-691497/8	Method Blank	Total/NA	Water	RSK-175	
LCS 680-691497/3	Lab Control Sample	Total/NA	Water	RSK-175	
LCS 680-691497/6	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 680-691497/4	Lab Control Sample Dup	Total/NA	Water	RSK-175	
LCSD 680-691497/9	Lab Control Sample Dup	Total/NA	Water	RSK-175	

HPLC/IC

Analysis Batch: 691639

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-206221-3	G6M-03-07X-FAL21	Total/NA	Water	9056A	
680-206221-4	G6M-04-02X-FAL21	Total/NA	Water	9056A	
680-206221-9	G6M-13-02X-FAL21	Total/NA	Water	9056A	
680-206221-10	AOC50-DUP04-FAL21	Total/NA	Water	9056A	
MB 680-691639/33	Method Blank	Total/NA	Water	9056A	
LCS 680-691639/34	Lab Control Sample	Total/NA	Water	9056A	
LCSD 680-691639/35	Lab Control Sample Dup	Total/NA	Water	9056A	

Metals

Prep Batch: 690365

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-206221-3	G6M-03-07X-FAL21	Dissolved	Water	3005A	
680-206221-4	G6M-04-02X-FAL21	Dissolved	Water	3005A	
680-206221-9	G6M-13-02X-FAL21	Dissolved	Water	3005A	
680-206221-10	AOC50-DUP04-FAL21	Dissolved	Water	3005A	
MB 680-690365/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 680-690365/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 690366

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-206221-3	G6M-03-07X-FAL21	Dissolved	Water	3005A	
680-206221-4	G6M-04-02X-FAL21	Dissolved	Water	3005A	
680-206221-9	G6M-13-02X-FAL21	Dissolved	Water	3005A	
680-206221-10	AOC50-DUP04-FAL21	Dissolved	Water	3005A	
MB 680-690366/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 680-690366/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 690470

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-206221-1	G6M-02-13X-FAL21	Dissolved	Water	3005A	
680-206221-2	G6M-04-14X-FAL21	Dissolved	Water	3005A	
680-206221-5	G6M-04-04X-FAL21	Dissolved	Water	3005A	
680-206221-6	AOC50-DUP03-FAL21	Dissolved	Water	3005A	
680-206221-7	G6M-04-09X-FAL21	Dissolved	Water	3005A	
680-206221-8	G6M-04-15X-FAL21	Dissolved	Water	3005A	
680-206221-12	AOC50-RB03-FAL21	Dissolved	Water	3005A	
MB 680-690470/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 680-690470/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
680-206221-2 MS	G6M-04-14X-FAL21	Dissolved	Water	3005A	
680-206221-2 MSD	G6M-04-14X-FAL21	Dissolved	Water	3005A	

Prep Batch: 690471

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-206221-1	G6M-02-13X-FAL21	Dissolved	Water	3005A	
680-206221-2	G6M-04-14X-FAL21	Dissolved	Water	3005A	
680-206221-5	G6M-04-04X-FAL21	Dissolved	Water	3005A	
680-206221-6	AOC50-DUP03-FAL21	Dissolved	Water	3005A	
680-206221-7	G6M-04-09X-FAL21	Dissolved	Water	3005A	
680-206221-8	G6M-04-15X-FAL21	Dissolved	Water	3005A	
680-206221-12	AOC50-RB03-FAL21	Dissolved	Water	3005A	

Metals (Continued)

Prep Batch: 690471 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 680-690471/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 680-690471/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
680-206221-2 MS	G6M-04-14X-FAL21	Dissolved	Water	3005A	
680-206221-2 MSD	G6M-04-14X-FAL21	Dissolved	Water	3005A	

Analysis Batch: 690594

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-206221-3	G6M-03-07X-FAL21	Dissolved	Water	6020A	690366
680-206221-4	G6M-04-02X-FAL21	Dissolved	Water	6020A	690366
680-206221-9	G6M-13-02X-FAL21	Dissolved	Water	6020A	690366
680-206221-10	AOC50-DUP04-FAL21	Dissolved	Water	6020A	690366
MB 680-690366/1-A	Method Blank	Total Recoverable	Water	6020A	690366
LCS 680-690366/2-A	Lab Control Sample	Total Recoverable	Water	6020A	690366

Analysis Batch: 690814

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-206221-3	G6M-03-07X-FAL21	Dissolved	Water	6010C	690365
680-206221-4	G6M-04-02X-FAL21	Dissolved	Water	6010C	690365
680-206221-9	G6M-13-02X-FAL21	Dissolved	Water	6010C	690365
680-206221-10	AOC50-DUP04-FAL21	Dissolved	Water	6010C	690365
MB 680-690365/1-A	Method Blank	Total Recoverable	Water	6010C	690365
LCS 680-690365/2-A	Lab Control Sample	Total Recoverable	Water	6010C	690365

Analysis Batch: 690834

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-206221-1	G6M-02-13X-FAL21	Dissolved	Water	6020A	690471
680-206221-2	G6M-04-14X-FAL21	Dissolved	Water	6020A	690471
680-206221-5	G6M-04-04X-FAL21	Dissolved	Water	6020A	690471
680-206221-6	AOC50-DUP03-FAL21	Dissolved	Water	6020A	690471
680-206221-7	G6M-04-09X-FAL21	Dissolved	Water	6020A	690471
680-206221-8	G6M-04-15X-FAL21	Dissolved	Water	6020A	690471
680-206221-12	AOC50-RB03-FAL21	Dissolved	Water	6020A	690471
MB 680-690471/1-A	Method Blank	Total Recoverable	Water	6020A	690471
LCS 680-690471/2-A	Lab Control Sample	Total Recoverable	Water	6020A	690471
680-206221-2 MS	G6M-04-14X-FAL21	Dissolved	Water	6020A	690471
680-206221-2 MSD	G6M-04-14X-FAL21	Dissolved	Water	6020A	690471

Analysis Batch: 691312

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-206221-1	G6M-02-13X-FAL21	Dissolved	Water	6010C	690470
680-206221-2	G6M-04-14X-FAL21	Dissolved	Water	6010C	690470
680-206221-5	G6M-04-04X-FAL21	Dissolved	Water	6010C	690470
680-206221-6	AOC50-DUP03-FAL21	Dissolved	Water	6010C	690470
680-206221-7	G6M-04-09X-FAL21	Dissolved	Water	6010C	690470
680-206221-8	G6M-04-15X-FAL21	Dissolved	Water	6010C	690470
680-206221-12	AOC50-RB03-FAL21	Dissolved	Water	6010C	690470
MB 680-690470/1-A	Method Blank	Total Recoverable	Water	6010C	690470
LCS 680-690470/2-A	Lab Control Sample	Total Recoverable	Water	6010C	690470
680-206221-2 MS	G6M-04-14X-FAL21	Dissolved	Water	6010C	690470
680-206221-2 MSD	G6M-04-14X-FAL21	Dissolved	Water	6010C	690470

General Chemistry

Analysis Batch: 554964

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-206221-9	G6M-13-02X-FAL21	Total/NA	Water	9060A	
680-206221-10	AOC50-DUP04-FAL21	Total/NA	Water	9060A	
MB 280-554964/4	Method Blank	Total/NA	Water	9060A	
LCS 280-554964/3	Lab Control Sample	Total/NA	Water	9060A	

Analysis Batch: 555123

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-206221-3	G6M-03-07X-FAL21	Total/NA	Water	9060A	
680-206221-4	G6M-04-02X-FAL21	Total/NA	Water	9060A	
MB 280-555123/4	Method Blank	Total/NA	Water	9060A	
LCS 280-555123/3	Lab Control Sample	Total/NA	Water	9060A	

Analysis Batch: 555388

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-206221-3	G6M-03-07X-FAL21	Total/NA	Water	353.2	
680-206221-4	G6M-04-02X-FAL21	Total/NA	Water	353.2	
680-206221-9	G6M-13-02X-FAL21	Total/NA	Water	353.2	
680-206221-10	AOC50-DUP04-FAL21	Total/NA	Water	353.2	
MB 280-555388/61	Method Blank	Total/NA	Water	353.2	
LCS 280-555388/60	Lab Control Sample	Total/NA	Water	353.2	

Analysis Batch: 555457

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-206221-3	G6M-03-07X-FAL21	Total/NA	Water	SM 2320B	
680-206221-4	G6M-04-02X-FAL21	Total/NA	Water	SM 2320B	
680-206221-9	G6M-13-02X-FAL21	Total/NA	Water	SM 2320B	
680-206221-10	AOC50-DUP04-FAL21	Total/NA	Water	SM 2320B	
MB 280-555457/31	Method Blank	Total/NA	Water	SM 2320B	
MB 280-555457/5	Method Blank	Total/NA	Water	SM 2320B	
LCS 280-555457/30	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 690475

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-206221-3	G6M-03-07X-FAL21	Total/NA	Water	9034	
680-206221-4	G6M-04-02X-FAL21	Total/NA	Water	9034	
680-206221-9	G6M-13-02X-FAL21	Total/NA	Water	9034	
680-206221-10	AOC50-DUP04-FAL21	Total/NA	Water	9034	
MB 680-690475/1	Method Blank	Total/NA	Water	9034	
LCS 680-690475/2	Lab Control Sample	Total/NA	Water	9034	
LCSD 680-690475/3	Lab Control Sample Dup	Total/NA	Water	9034	

Lab Chronicle

Client: Seres Engineering & Services LLC
Job ID: 680-206221-1
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Client Sample ID: G6M-02-13X-FAL21
Lab Sample ID: 680-206221-1
Date Collected: 10/15/21 14:45
Matrix: Water
Date Received: 10/20/21 10:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	691666	10/28/21 16:12	EMA	TAL SAV
	Instrument ID: CMSU									
Dissolved	Prep	3005A			50 mL	50 mL	690470	10/21/21 16:21	JE	TAL SAV
Dissolved	Analysis	6010C		1			691312	10/26/21 11:58	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	690471	10/21/21 16:21	JE	TAL SAV
Dissolved	Analysis	6020A		1			690834	10/22/21 19:11	BWR	TAL SAV
	Instrument ID: ICPMSC									

Client Sample ID: G6M-04-14X-FAL21
Lab Sample ID: 680-206221-2
Date Collected: 10/15/21 15:20
Matrix: Water
Date Received: 10/20/21 10:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	691666	10/28/21 16:32	EMA	TAL SAV
	Instrument ID: CMSU									
Dissolved	Prep	3005A			50 mL	50 mL	690470	10/21/21 16:21	JE	TAL SAV
Dissolved	Analysis	6010C		1			691312	10/26/21 11:21	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	690471	10/21/21 16:21	JE	TAL SAV
Dissolved	Analysis	6020A		1			690834	10/22/21 18:54	BWR	TAL SAV
	Instrument ID: ICPMSC									

Client Sample ID: G6M-03-07X-FAL21
Lab Sample ID: 680-206221-3
Date Collected: 10/18/21 14:15
Matrix: Water
Date Received: 10/20/21 10:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	692021	10/30/21 22:35	P1C	TAL SAV
	Instrument ID: CMSAA									
Total/NA	Analysis	RSK-175		1	17 mL	17 mL	691316	10/27/21 00:28	JCK	TAL SAV
	Instrument ID: CVGU									
Total/NA	Analysis	9056A		1	5 mL	5 mL	691639	10/28/21 22:30	T1C	TAL SAV
	Instrument ID: CICK									
Dissolved	Prep	3005A			50 mL	50 mL	690365	10/21/21 11:42	JE	TAL SAV
Dissolved	Analysis	6010C		1			690814	10/23/21 09:49	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	690366	10/21/21 11:42	JE	TAL SAV
Dissolved	Analysis	6020A		1			690594	10/22/21 02:55	BWR	TAL SAV
	Instrument ID: ICPMSC									
Total/NA	Analysis	353.2		1	100 mL	100 mL	555388	10/28/21 18:37	SVC	TAL DEN
	Instrument ID: WC_Alp 2									
Total/NA	Analysis	9034		1	310 mL	310 mL	690475	10/21/21 16:44	AE	TAL SAV
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Seres Engineering & Services LLC
Job ID: 680-206221-1
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Client Sample ID: G6M-03-07X-FAL21
Lab Sample ID: 680-206221-3
Date Collected: 10/18/21 14:15
Matrix: Water
Date Received: 10/20/21 10:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060A		1	20 mL	20 mL	555123	10/26/21 22:53	RAF	TAL DEN
Total/NA	Analysis	SM 2320B		1			555457	10/28/21 22:23	ECC	TAL DEN
	Instrument ID: WC_AT4									

Client Sample ID: G6M-04-02X-FAL21
Lab Sample ID: 680-206221-4
Date Collected: 10/18/21 13:40
Matrix: Water
Date Received: 10/20/21 10:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	692021	10/30/21 22:59	P1C	TAL SAV
	Instrument ID: CMSAA									
Total/NA	Analysis	RSK-175		1	17 mL	17 mL	691316	10/27/21 00:41	JCK	TAL SAV
	Instrument ID: CVGU									
Total/NA	Analysis	9056A		1	5 mL	5 mL	691639	10/28/21 22:43	T1C	TAL SAV
	Instrument ID: CICK									
Dissolved	Prep	3005A			50 mL	50 mL	690365	10/21/21 11:42	JE	TAL SAV
Dissolved	Analysis	6010C		1			690814	10/23/21 09:53	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	690366	10/21/21 11:42	JE	TAL SAV
Dissolved	Analysis	6020A		1			690594	10/22/21 02:58	BWR	TAL SAV
	Instrument ID: ICPMSC									
Total/NA	Analysis	353.2		1	100 mL	100 mL	555388	10/28/21 18:39	SVC	TAL DEN
	Instrument ID: WC_Alp 2									
Total/NA	Analysis	9034		1	310 mL	310 mL	690475	10/21/21 16:44	AE	TAL SAV
	Instrument ID: NOEQUIP									
Total/NA	Analysis	9060A		1	20 mL	20 mL	555123	10/26/21 23:08	RAF	TAL DEN
	Instrument ID: WC_SHI3									
Total/NA	Analysis	SM 2320B		1			555457	10/28/21 22:29	ECC	TAL DEN
	Instrument ID: WC_AT4									

Client Sample ID: G6M-04-04X-FAL21
Lab Sample ID: 680-206221-5
Date Collected: 10/18/21 12:35
Matrix: Water
Date Received: 10/20/21 10:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	692021	10/30/21 23:24	P1C	TAL SAV
	Instrument ID: CMSAA									
Dissolved	Prep	3005A			50 mL	50 mL	690470	10/21/21 16:21	JE	TAL SAV
Dissolved	Analysis	6010C		1			691312	10/26/21 12:02	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	690471	10/21/21 16:21	JE	TAL SAV
Dissolved	Analysis	6020A		1			690834	10/22/21 19:15	BWR	TAL SAV
	Instrument ID: ICPMSC									

Lab Chronicle

Client: Seres Engineering & Services LLC
Job ID: 680-206221-1
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Client Sample ID: AOC50-DUP03-FAL21
Lab Sample ID: 680-206221-6
Date Collected: 10/18/21 13:00
Matrix: Water
Date Received: 10/20/21 10:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	692021	10/30/21 23:48	P1C	TAL SAV
	Instrument ID: CMSAA									
Dissolved	Prep	3005A			50 mL	50 mL	690470	10/21/21 16:21	JE	TAL SAV
Dissolved	Analysis	6010C		1			691312	10/26/21 12:06	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	690471	10/21/21 16:21	JE	TAL SAV
Dissolved	Analysis	6020A		1			690834	10/22/21 19:18	BWR	TAL SAV
	Instrument ID: ICPMSC									

Client Sample ID: G6M-04-09X-FAL21
Lab Sample ID: 680-206221-7
Date Collected: 10/18/21 09:55
Matrix: Water
Date Received: 10/20/21 10:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	692128	10/31/21 17:25	P1C	TAL SAV
	Instrument ID: CMSB									
Dissolved	Prep	3005A			50 mL	50 mL	690470	10/21/21 16:21	JE	TAL SAV
Dissolved	Analysis	6010C		1			691312	10/26/21 12:10	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	690471	10/21/21 16:21	JE	TAL SAV
Dissolved	Analysis	6020A		1			690834	10/22/21 19:29	BWR	TAL SAV
	Instrument ID: ICPMSC									

Client Sample ID: G6M-04-15X-FAL21
Lab Sample ID: 680-206221-8
Date Collected: 10/18/21 11:52
Matrix: Water
Date Received: 10/20/21 10:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	692128	10/31/21 17:46	P1C	TAL SAV
	Instrument ID: CMSB									
Dissolved	Prep	3005A			50 mL	50 mL	690470	10/21/21 16:21	JE	TAL SAV
Dissolved	Analysis	6010C		1			691312	10/26/21 12:14	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	690471	10/21/21 16:21	JE	TAL SAV
Dissolved	Analysis	6020A		1			690834	10/22/21 19:33	BWR	TAL SAV
	Instrument ID: ICPMSC									

Client Sample ID: G6M-13-02X-FAL21
Lab Sample ID: 680-206221-9
Date Collected: 10/18/21 10:45
Matrix: Water
Date Received: 10/20/21 10:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	692128	10/31/21 18:07	P1C	TAL SAV
	Instrument ID: CMSB									
Total/NA	Analysis	RSK-175		1	17 mL	17 mL	691497	10/27/21 13:57	JCK	TAL SAV
	Instrument ID: CVGU									

Client Sample ID: G6M-13-02X-FAL21
Lab Sample ID: 680-206221-9

Date Collected: 10/18/21 10:45
Matrix: Water
Date Received: 10/20/21 10:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	5 mL	5 mL	691639	10/28/21 22:56	T1C	TAL SAV
Dissolved	Prep	3005A			50 mL	50 mL	690365	10/21/21 11:42	JE	TAL SAV
Dissolved	Analysis	6010C		1			690814	10/23/21 09:58	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	690366	10/21/21 11:42	JE	TAL SAV
Dissolved	Analysis	6020A		1			690594	10/22/21 03:02	BWR	TAL SAV
	Instrument ID: ICPMSC									
Total/NA	Analysis	353.2		1	100 mL	100 mL	555388	10/28/21 18:41	SVC	TAL DEN
	Instrument ID: WC_Alp 2									
Total/NA	Analysis	9034		1	310 mL	310 mL	690475	10/21/21 16:44	AE	TAL SAV
	Instrument ID: NOEQUIP									
Total/NA	Analysis	9060A		1	20 mL	20 mL	554964	10/25/21 23:47	RAF	TAL DEN
	Instrument ID: WC_SHI4									
Total/NA	Analysis	SM 2320B		1			555457	10/28/21 21:57	ECC	TAL DEN
	Instrument ID: WC_AT4									

Client Sample ID: AOC50-DUP04-FAL21
Lab Sample ID: 680-206221-10

Date Collected: 10/18/21 10:45
Matrix: Water
Date Received: 10/20/21 10:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	692128	10/31/21 18:28	P1C	TAL SAV
	Instrument ID: CMSB									
Total/NA	Analysis	RSK-175		1	17 mL	17 mL	691497	10/27/21 14:10	JCK	TAL SAV
	Instrument ID: CVGU									
Total/NA	Analysis	9056A		1	5 mL	5 mL	691639	10/28/21 23:08	T1C	TAL SAV
	Instrument ID: CICK									
Dissolved	Prep	3005A			50 mL	50 mL	690365	10/21/21 11:42	JE	TAL SAV
Dissolved	Analysis	6010C		1			690814	10/23/21 10:02	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	690366	10/21/21 11:42	JE	TAL SAV
Dissolved	Analysis	6020A		1			690594	10/22/21 03:06	BWR	TAL SAV
	Instrument ID: ICPMSC									
Total/NA	Analysis	353.2		1	100 mL	100 mL	555388	10/28/21 18:43	SVC	TAL DEN
	Instrument ID: WC_Alp 2									
Total/NA	Analysis	9034		1	310 mL	310 mL	690475	10/21/21 16:44	AE	TAL SAV
	Instrument ID: NOEQUIP									
Total/NA	Analysis	9060A		1	20 mL	20 mL	554964	10/26/21 00:02	RAF	TAL DEN
	Instrument ID: WC_SHI4									
Total/NA	Analysis	SM 2320B		1			555457	10/28/21 22:03	ECC	TAL DEN
	Instrument ID: WC_AT4									

Lab Chronicle

Client: Seres Engineering & Services LLC
Job ID: 680-206221-1
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Client Sample ID: AOC50-TB03-FAL21
Lab Sample ID: 680-206221-11
Date Collected: 10/18/21 00:00
Matrix: Water
Date Received: 10/20/21 10:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	692128	10/31/21 18:49	P1C	TAL SAV
	Instrument ID: CMSB									

Client Sample ID: AOC50-RB03-FAL21
Lab Sample ID: 680-206221-12
Date Collected: 10/18/21 15:00
Matrix: Water
Date Received: 10/20/21 10:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	692128	10/31/21 19:11	P1C	TAL SAV
	Instrument ID: CMSB									
Dissolved	Prep	3005A			50 mL	50 mL	690470	10/21/21 16:21	JE	TAL SAV
Dissolved	Analysis	6010C		1			691312	10/26/21 12:19	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	690471	10/21/21 16:21	JE	TAL SAV
Dissolved	Analysis	6020A		1			690834	10/22/21 19:36	BWR	TAL SAV
	Instrument ID: ICPMSC									

Laboratory References:

TAL DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SAV = Eurofins Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Accreditation/Certification Summary

Client: Seres Engineering & Services LLC
Job ID: 680-206221-1
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Laboratory: Eurofins Savannah

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
ANAB	Dept. of Defense ELAP	L2463	09-18-22

Laboratory: Eurofins Denver

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	11-02-21

Method Summary

Client: Seres Engineering & Services LLC
Job ID: 680-206221-1
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
RSK-175	Dissolved Gases (GC)	RSK	TAL SAV
9056A	Anions, Ion Chromatography	SW846	TAL SAV
6010C	Metals (ICP)	SW846	TAL SAV
6020A	Metals (ICP/MS)	SW846	TAL SAV
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL DEN
9034	Sulfide, Acid Soluble and Insoluble (Titrimetric)	SW846	TAL SAV
9060A	Organic Carbon, Total (TOC)	SW846	TAL DEN
SM 2320B	Alkalinity	SM	TAL DEN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL SAV
5030B	Purge and Trap	SW846	TAL SAV

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SAV = Eurofins Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

CHAIN-OF-CUSTODY RECORD

Seres-Arcadis JV
Nathan Mullens
669 Marina Drive, Suite B7, Charleston, SC 29492
(843) 478.0336, jennifer.singer@arcadis.com

COC # AOC50

Boston #215

Project Name: Former Fort Devens, Long Term Monitoring	Laboratory: Eurofins Environment Testing TestAmerica, Savannah, GA	Event: Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021
Project Number: DEVNS-LTM	POC: Jerry Lanier, jerry.lanier@eurofinset.com, 912-250-0281	
WBS Code:	Ship to:	

Comments:
A2320B (A) = Alkalinity
E353.2 (A) = Nitrite Nitrate as N
RSK175 (A) = Dissolved Gases
SW6010C/FLDFLT (B) = Fe Mn
SW6020A/FLDFLT (B) = As
SW9034 (A) = Sulfide

Equipment:

Code	Matrix
WG	Ground Water

Code	Container/Preservative
5	1x 125mL plastic, Cool < 6degC
7	2x 250mL plastic, ZnAc/NaOH Cool < 6degC
8	3x 40mL glass VOA Vials, HCl, pH < 2; Cool < 6degC
9	1x 250mL, plastic, HNO3, pH < 2; Cool < 6degC
10	1x 250mL, plastic, HNO3, pH < 2; Cool < 6degC
29	3x 40mL glass VOA Vials, HCl, pH < 2; Cool < 6degC
46	1x 250mL, plastic, Cool < 6degC
47	1x 500mL, amber glass, H2SO4; Cool < 6degC

Event: Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021

	Sample ID	Matrix	Date	Time	Samp Init.	A2320B (A)	E353.2 (A)	RSK175 (A)	SW6010C/FLDFLT (B)	SW6020A/FLDFLT (B)	SW8260B - VOCs	SW9034 (A)	SW9056A - SO4	SW9060A - TOC	Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom	Cooler	Comments
	Analytical Test Method					46	47	8	9	9	29	7	5	10						
1	G6M-02-01X-FAL21	WG							X	X	X				G6M-02-01X	N1	80.00	95.00		
2	G6M-02-04X-FAL21	WG							X	X	X				G6M-02-04X	N1	90.00	105.00		
3	G6M-02-06X-FAL21	WG							X	X	X				G6M-02-06X	N1	55.00	65.00		
4	G6M-02-07X-FAL21	WG							X	X	X				G6M-02-07X	N1	30.00	40.00		
5	G6M-02-08X-FAL21	WG				X	X	X	X	X	X	X	X	X	G6M-02-08X	N1	60.00	70.00		
6	G6M-02-11X-FAL21	WG							X	X	X				G6M-02-11X	N1	125.00	135.00		
7	G6M-02-13X-FAL21	WG	10-15-21	1445	DC				X	X	X				G6M-02-13X	N1	110.00	120.00		
8	G6M-03-07X-FAL21	WG				X	X	X	X	X	X	X	X	X	G6M-03-07X	N1	80.00	90.00		
9	G6M-03-10X-FAL21	WG							X	X	X				G6M-03-10X	N1	120.00	135.00		
10	G6M-04-01X-FAL21	WG							X	X	X				G6M-04-01X	N1	82.00	92.00		
11	G6M-04-02X-FAL21	WG				X	X	X	X	X	X	X	X	X	G6M-04-02X	N1	80.00	90.00		
12	G6M-04-03X-FAL21	WG				X	X	X	X	X	X	X	X	X	G6M-04-03X	N1	85.00	95.00		
13	G6M-04-04X-FAL21	WG							X	X	X				G6M-04-04X	N1	94.00	104.00		
14	AOC50-DUP03-FAL21	WG							X	X	X				G6M-04-04X	FD1	94.00	104.00		
15	G6M-04-06X-FAL21	WG							X	X	X				G6M-04-06X	N1	95.00	136.00		
16	G6M-04-07X-FAL21	WG				X	X	X	X	X	X	X	X	X	G6M-04-07X	N1	120.00	130.00		
17	G6M-04-09X-FAL21	WG							X	X	X				G6M-04-09X	N1	55.00	65.00		

Relinquished by: *(Signature)*
Date 10/15/21
Time 1725
Received by: *(Signature)*
Devens eCOCs_Fall 2021

Date 10/18/21 1700
Time
Shipping Date:
Received by Laboratory *(Signature, Date, Time)* & conditio

10-20-21 1030

20/21 3.2/3.3

3/9/2022 (Rev. 2)

CHAIN-OF-CUSTODY RECORD

Seres-Arcadis JV
Nathan Mullens
669 Marina Drive, Suite B7, Charleston, SC 29492
(843) 478.0336, jennifer.singer@arcadis.com

COC # AOC50

Boston #215

Project Name: Former Fort Devens, Long Term Monitoring	Laboratory: Eurofins Environment Testing TestAmerica, Savannah, GA	Event: Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021
Project Number: DEVNS-LTM	POC: Jerry Lanier, jerry.lanier@eurofinset.com, 912-250-0281	
WBS Code:	Ship to:	

Comments:
A2320B (A) = Alkalinity
E353.2 (A) = Nitrite Nitrate as N
RSK175 (A) = Dissolved Gases
SW6010C/FLDFLT (B) = Fe Mn
SW6020A/FLDFLT (B) = As
SW9034 (A) = Sulfide

Equipment:

Code	Matrix
WG	Ground Water

Code	Container/Preservative
5	1x 125mL plastic, Cool < 6degC
7	2x 250mL plastic, ZnAc/NaOH Cool < 6degC
8	3x 40mL glass VOA Vials, HCl, pH < 2; Cool < 6degC
9	1x 250mL, plastic, HNO3, pH < 2; Cool < 6degC
10	1x 250mL, plastic, HNO3, pH < 2; Cool < 6degC
29	3x 40mL glass VOA Vials, HCl, pH < 2; Cool < 6degC
46	1x 250mL, plastic, Cool < 6degC
47	1x 500mL, amber glass, H2SO4, Cool < 6degC

						Analytical Test Method	A2320B (A)	E353.2 (A)	RSK175 (A)	SW6010C/FLDFLT (B)	SW6020A/FLDFLT (B)	SW8260B - VOCs	SW9034 (A)	SW9056A - SO4	SW9060A - TOC						
Event: Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021							46	47	8	9	9	29	7	5	10						
	Sample ID	Matrix	Date	Time	Samp Init.											Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom	Cooler	Comments
18	G6M-04-10A-FAL21	WG					X	X	X	X	X	X	X	X	X	G6M-04-10A	N1	30.00	40.00		
19	G6M-04-10A-FAL21	WG					X	X	X	X	X	X	X	X	X	G6M-04-10A	MS1	30.00	40.00		
20	G6M-04-10A-FAL21	WG					X	X	X	X	X	X	X	X	X	G6M-04-10A	SD1	30.00	40.00		
21	G6M-04-10X-FAL21	WG										X				G6M-04-10X	N1	52.00	62.00		
22	G6M-04-13X-FAL21	WG										X				G6M-04-13X	N1	30.00	40.00		
23	G6M-04-14X-FAL21	WG	10.15.21	1520	BK					X	X	X				G6M-04-14X	N1	80.00	90.00		
24	G6M-04-15X-FAL21	WG								X	X	X				G6M-04-15X	N1	70.00	80.00		
25	G6M-07-02X-FAL21	WG					X	X	X	X	X	X	X	X	X	G6M-07-02X	N1	22.50	27.50		
26	AOC50-DUP02-FAL21	WG					X	X	X	X	X	X	X	X	X	G6M-07-02X	FD1	22.50	27.50		
27	G6M-13-01X-FAL21	WG					X	X	X	X	X	X	X	X	X	G6M-13-01X	N1	125.00	135.00		
28	G6M-13-02X-FAL21	WG					X	X	X	X	X	X	X	X	X	G6M-13-02X	N1	115.00	125.00		
29	AOC50-DUP04-FAL21	WG					X	X	X	X	X	X	X	X	X	G6M-13-02X	FD1	115.00	125.00		
30	G6M-13-04X-FAL21	WG								X	X	X				G6M-13-04X	N1	125.00	135.00		
31	G6M-13-05X-FAL21	WG					X	X	X	X	X	X	X	X	X	G6M-13-05X	N1	45.00	55.00		
32	G6M-13-06X-FAL21	WG					X	X	X	X	X	X	X	X	X	G6M-13-06X	N1	50.00	60.00		
33	G6M-95-19X-FAL21	WG										X				G6M-95-19X	N1	48.00	58.00		
34	G6M-95-20X-FAL21	WG								X	X	X				G6M-95-20X	N1	18.00	23.00		

Relinquished by: *(Signature)*
Date 10/15/21
Time 1745
Received by: *(Signature)*
Devens eCOCs_Fall 2021

Date 10/18/21 1030
Time
Shipping Date:
Received by Laboratory: ***(Signature, Date, Time)*** & conditio 10.20.21 1030

3/9/2022 (Rev. 2)

CHAIN-OF-CUSTODY RECORD

Seres-Arcadis JV
Nathan Mullens
669 Marina Drive, Suite B7, Charleston, SC 29492
(843) 478.0336, jennifer.singer@arcadis.com

COC # AOC50

Boston #215

Project Name: Former Fort Devens, Long Term Monitoring	Laboratory: Eurofins Environment Testing TestAmerica, Savannah, GA	Event: Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021
Project Number: DEVNS-LTM	POC: Jerry Lanier, jerry.lanier@eurofinset.com, 912-250-0281	
WBS Code:	Ship to:	

Comments:
A2320B (A) = Alkalinity
E353.2 (A) = Nitrite Nitrate as N
RSK175 (A) = Dissolved Gases
SW6010C/FLDFLT (B) = Fe Mn
SW6020A/FLDFLT (B) = As
SW9034 (A) = Sulfide

Equipment:

Code	Matrix
WG	Ground Water

Code	Container/Preservative
5	1x 125mL plastic, Cool < 6degC
7	2x 250mL plastic, ZnAc/NaOH Cool < 6degC
8	3x 40mL glass VOA Vials, HCl, pH < 2, Cool < 6degC
9	1x 250mL plastic, HNO3, pH < 2, Cool < 6degC
10	1x 250mL, plastic, HNO3, pH < 2, Cool < 6degC
29	3x 40mL glass VOA Vials, HCl, pH < 2; Cool < 6degC
46	1x 250mL, plastic, Cool < 6degC
47	1x 500mL, amber glass, H2SO4, Cool < 6degC

						Analytical Test Method	A2320B (A)	E353.2 (A)	RSK175 (A)	SW6010C/FLDFLT (B)	SW6020A/FLDFLT (B)	SW8260B - VOCs	SW9034 (A)	SW9056A - SO4	SW9060A - TOC						
	Event: Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021						46	47	8	9	9	29	7	5	10						
	Sample ID	Matrix	Date	Time	Samp Init											Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom	Cooler	Comments
1	G6M-02-01X-FAL21	WG								X	X	X				G6M-02-01X	N1	80.00	95.00		
2	G6M-02-04X-FAL21	WG								X	X	X				G6M-02-04X	N1	90.00	105.00		
3	G6M-02-06X-FAL21	WG								X	X	X				G6M-02-06X	N1	55.00	65.00		
4	G6M-02-07X-FAL21	WG								X	X	X				G6M-02-07X	N1	30.00	40.00		
5	G6M-02-08X-FAL21	WG					X	X	X	X	X	X	X	X	X	G6M-02-08X	N1	60.00	70.00		
6	G6M-02-11X-FAL21	WG								X	X	X				G6M-02-11X	N1	125.00	135.00		
7	G6M-02-13X-FAL21	WG								X	X	X				G6M-02-13X	N1	110.00	120.00		
8	G6M-03-07X-FAL21	WG	10.18.21	1415	MS		X	X	X	X	X	X	X	X	X	G6M-03-07X	N1	80.00	90.00		
9	G6M-03-10X-FAL21	WG								X	X	X				G6M-03-10X	N1	120.00	135.00		
10	G6M-04-01X-FAL21	WG								X	X	X				G6M-04-01X	N1	82.00	92.00		
11	G6M-04-02X-FAL21	WG	10.18.21	1340	DC		X	X	X	X	X	X	X	X	X	G6M-04-02X	N1	80.00	90.00		
12	G6M-04-03X-FAL21	WG					X	X	X	X	X	X	X	X	X	G6M-04-03X	N1	85.00	95.00		
13	G6M-04-04X-FAL21	WG	10.18.21	1235	BK					X	X	X				G6M-04-04X	N1	94.00	104.00		
14	AOC50-DUP03-FAL21	WG	10.18.21	1300	BK					X	X	X				G6M-04-04X	FD1	94.00	104.00		
15	G6M-04-06X-FAL21	WG								X	X	X				G6M-04-06X	N1	95.00	136.00		
16	G6M-04-07X-FAL21	WG					X	X	X	X	X	X	X	X	X	G6M-04-07X	N1	120.00	130.00		
17	G6M-04-09X-FAL21	WG	10.18.21	0955	MS					X	X	X				G6M-04-09X	N1	55.00	65.00		

Relinquished by: *(Signature)*
Date 10/18/21
Time 1600
Received by: *(Signature)*
Devens eCOCs_Fall 2021

Date 10/18/21
Time 1700
Shipping Date:
Received by Laboratory: *(Signature, Date, Time)* & conditio TA 10.20.21 1030

3/9/2022 (Rev. 2)

CHAIN-OF-CUSTODY RECORD

Seres-Arcadis JV
Nathan Mullens
669 Marina Drive, Suite B7, Charleston, SC 29492
(843) 478.0336, jennifer.singer@arcadis.com

COC # AOC50

Boston
#215

Project Name: Former Fort Devens, Long Term Monitoring	Laboratory: Eurofins Environment Testing TestAmerica, Savannah, GA	Event: Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021
Project Number: DEVNS-LTM	POC: Jerry Lanier, jerry.lanier@eurofinset.com, 912-250-0281	
WBS Code:	Ship to:	

Comments:
A2320B (A) = Alkalinity
E353.2 (A) = Nitrite Nitrate as N
RSK175 (A) = Dissolved Gases
SW6010C/FLDFLT (B) = Fe Mn
SW6020A/FLDFLT (B) = As
SW9034 (A) = Sulfide

Equipment:

Code	Matrix
WG	Ground Water

Code	Container/Preservative
5	1x 125mL plastic, Cool < 6degC
7	2x 250mL plastic, ZnAc/NaOH Cool < 6degC
8	3x 40mL glass VOA Vials, HCl, pH < 2; Cool < 6degC
9	1x 250mL, plastic, HNO3, pH < 2; Cool < 6degC
10	1x 250mL, plastic, HNO3, pH < 2; Cool < 6degC
29	3x 40mL glass VOA Vials, HCl, pH < 2; Cool < 6degC
46	1x 250mL, plastic, Cool < 6degC
47	1x 500mL, amber glass, H2SO4; Cool < 6degC

Event: Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021

Analytical Test Method

#	Sample ID	Matrix	Date	Time	Samp Init.	A2320B (A) 46	E353.2 (A) 47	RSK175 (A) 8	SW6010C/FLDFLT (B) 9	SW6020A/FLDFLT (B) 9	SW8260B - VOCs 29	SW9034 (A) 7	SW9056A - SO4 5	SW9060A - TOC 10	Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom	Cooler	Comments
18	G6M-04-10A-FAL21	WG				X	X	X	X	X	X	X	X	X	G6M-04-10A	N1	30.00	40.00		
19	G6M-04-10A-FAL21	WG				X	X	X	X	X	X	X	X	X	G6M-04-10A	MS1	30.00	40.00		
20	G6M-04-10A-FAL21	WG				X	X	X	X	X	X	X	X	X	G6M-04-10A	SD1	30.00	40.00		
21	G6M-04-10X-FAL21	WG									X				G6M-04-10X	N1	52.00	62.00		
22	G6M-04-13X-FAL21	WG									X				G6M-04-13X	N1	30.00	40.00		
23	G6M-04-14X-FAL21	WG							X	X	X				G6M-04-14X	N1	80.00	90.00		
24	G6M-04-15X-FAL21	WG	10.18.21	1152	MS				X	X	X				G6M-04-15X	N1	70.00	80.00		
25	G6M-07-02X-FAL21	WG				X	X	X	X	X	X	X	X	X	G6M-07-02X	N1	22.50	27.50		
26	AOC50-DUP02-FAL21	WG				X	X	X	X	X	X	X	X	X	G6M-07-02X	FD1	22.50	27.50		
27	G6M-13-01X-FAL21	WG				X	X	X	X	X	X	X	X	X	G6M-13-01X	N1	125.00	135.00		
28	G6M-13-02X-FAL21	WG	10.18.21	1045	DC	X	X	X	X	X	X	X	X	X	G6M-13-02X	N1	115.00	125.00		
29	AOC50-DUP04-FAL21	WG	10.18.21	1045	DC	X	X	X	X	X	X	X	X	X	G6M-13-02X	FD1	115.00	125.00		
30	G6M-13-04X-FAL21	WG							X	X	X				G6M-13-04X	N1	125.00	135.00		
31	G6M-13-05X-FAL21	WG				X	X	X	X	X	X	X	X	X	G6M-13-05X	N1	45.00	55.00		
32	G6M-13-06X-FAL21	WG				X	X	X	X	X	X	X	X	X	G6M-13-06X	N1	50.00	60.00		
33	G6M-95-19X-FAL21	WG									X				G6M-95-19X	N1	48.00	58.00		
34	G6M-95-20X-FAL21	WG							X	X	X				G6M-95-20X	N1	18.00	23.00		

Relinquished by: (Signature) [signature]
Date 10/18/21
Time 1600
Received by: (Signature) [signature]
Devens eCOCs_Fall 2021

Date [signature] 10/18/21, 1700
Time
Shipping Date:
Received by Laboratory: ***(Signature, Date, Time)*** & conditio [signature] TA 10-20-21 1030

CHAIN-OF-CUSTODY RECORD

Seres-Arcadis JV
Nathan Mullens
669 Marina Drive, Suite B7, Charleston, SC 29492
(843) 478.0336, jennifer.singer@arcadis.com

COC # AOC50

Boston #215

Project Name: Former Fort Devens, Long Term Monitoring	Laboratory: Eurofins Environment Testing TestAmerica, Savannah, GA	Event: Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021
Project Number: DEVNS-LTM	POC: Jerry Lanier, jerry.lanier@eurofinset.com, 912-250-0281	
WBS Code:	Ship to:	

Comments:
A2320B (A) = Alkalinity
E353.2 (A) = Nitrite Nitrate as N
RSK175 (A) = Dissolved Gases
SW6010C/FLDFLT (B) = Fe Mn
SW6020A/FLDFLT (B) = As
SW9034 (A) = Sulfide

Equipment:

Code	Matrix
WG	Ground Water

Code	Container/Preservative
5	1x 125mL plastic, Cool < 6degC
7	2x 250mL plastic, ZnAc/NaOH Cool < 6degC
8	3x 40mL glass VOA Vials, HCl, pH < 2, Cool < 6degC
9	1x 250mL, plastic, HNO3, pH < 2, Cool < 6degC
10	1x 250mL, plastic, HNO3, pH < 2, Cool < 6degC
29	3x 40mL glass VOA Vials, HCl, pH < 2, Cool < 6degC
46	1x 250mL, plastic, Cool < 6degC
47	1x 500mL, amber glass, H2SO4, Cool < 6degC

Analytical Test Method

Event: Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021

	Sample ID	Matrix	Date	Time	Samp Init.	A2320B (A) 46	E353.2 (A) 47	RSK175 (A) 8	SW6010C/FLDFLT (B) 9	SW6020A/FLDFLT (B) 9	SW8260B - VOCs 29	SW9034 (A) 7	SW9056A - SO4 5	SW9060A - TOC 10	Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom	Cooler	Comments
35	AOC50-DUP01-FAL21	WG							X	X	X				G6M-95-20X	FD1	18.00	23.00		
36	G6M-97-05B-FAL21	WG				X	X	X	X	X	X	X	X	X	G6M-97-05B	N1	130.00	135.00		
37	G6M-97-28X-FAL21	WG							X	X					G6M-97-28X	N1	100.00	105.00		
38	MW-3-FAL21	WG							X	X	X				MW-3	N1	126.00	137.00		
39	MW-3-FAL21	WG							X	X	X				MW-3	MS1	126.00	137.00		
40	MW-3-FAL21	WG							X	X	X				MW-3	SD1	126.00	137.00		
41	MW-7-FAL21	WG							X	X	X				MW-7	N1	6.58	135.00		
42	XSA-12-95X-FAL21	WG							X	X	X				XSA-12-95X	N1	120.00	130.00		
43	XSA-12-96X-FAL21	WG				X	X	X	X	X	X	X	X	X	XSA-12-96X	N1	120.00	130.00		
44	XSA-12-97X-FAL21	WG							X	X	X				XSA-12-97X	N1	120.00	130.00		
45	XSA-12-98X-FAL21	WG							X	X	X				XSA-12-98X	N1	60.00	70.00		
46	~~AOC 50-TB 101821 FAL21~~										~~X~~					~~Trip Blank~~				
47	AOC50-TB01-FAL21	-	-								X					Trip Blank				
48	AOC50-RB01-FAL21		10.18.21	1500	MJ				X	X	X									
49																				
50																				
51																				
52																				

Relinquished by: *(Signature)* [signature]
Date 10/18/21
Time 1600
Received by: *(Signature)* [signature]

Date 10/18/21
Time 1700
Shipping Date:
Received by Laboratory: ***(Signature, Date, Time)*** & conditio [signature] TA 10-20-21 1030

Devens eCOCs_Fall 2021

3/9/2022 (Rev. 2)

CHAIN-OF-CUSTODY RECORD

Seres-Arcadis JV
Nathan Mullens
669 Marina Drive, Suite B7, Charleston, SC 29492
(843) 478 0336, jennifer.singer@arcadis.com

COC # AOC50

Boston #215

Project Name: Former Fort Devens, Long Term Monitoring	Laboratory: Eurofins Environment Testing TestAmerica, Savannah, GA	Event: Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021
Project Number: DEVNS-LTM	POC: Jerry Lanier, jerry.lanier@eurofinset.com, 912-250-0281	
WBS Code:	Ship to:	

Comments:
A2320B (A) = Alkalinity
E353.2 (A) = Nitrite Nitrate as N
RSK175 (A) = Dissolved Gases
SW6010C/FLDFLT (B) = Fe Mn
SW6020A/FLDFLT (B) = As
SW9034 (A) = Sulfide

Equipment:

Code	Matrix
WG	Ground Water

Code	Container/Preservative
5	1x 125mL plastic, Cool < 6degC
7	2x 250mL plastic, ZnAc/NaOH Cool < 6degC
8	3x 40mL glass VOA Vials, HCl, pH < 2, Cool < 6degC
9	1x 250mL, plastic, HNO3, pH < 2 Cool < 6degC
10	1x 250mL, plastic, HNO3, pH < 2 Cool < 6degC
29	3x 40mL glass VOA Vials, HCl, pH < 2, Cool < 6degC
46	1x 250mL, plastic, Cool < 6degC
47	1x 500mL, amber glass, H2SO4, Cool < 6degC

Event: Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021

	Sample ID	Matrix	Date	Time	Samp Init.	A2320B (A)	E353.2 (A)	RSK175 (A)	SW6010C/FLDFLT (B)	SW6020A/FLDFLT (B)	SW8260B - VOCs	SW9034 (A)	SW9056A - SO4	SW9060A - TOC	Location ID	Sample Type	Depth (ft bgs) Top	Bottom	Cooler	Comments
					Analytical Test Method	46	47	8	9	9	29	7	5	10						
35	AOC50-DUP01-FAL21	WG							X	X	X				G6M-95-20X	FD1	18.00	23.00		
36	G6M-97-05B-FAL21	WG				X	X	X	X	X	X	X	X	X	G6M-97-05B	N1	130.00	135.00		
37	G6M-97-28X-FAL21	WG							X	X					G6M-97-28X	N1	100.00	105.00		
38	MW-3-FAL21	WG							X	X	X				MW-3	N1	126.00	137.00		
39	MW-3-FAL21	WG							X	X	X				MW-3	MS1	126.00	137.00		
40	MW-3-FAL21	WG							X	X	X				MW-3	SD1	126.00	137.00		
41	MW-7-FAL21	WG							X	X	X				MW-7	N1	6.58	135.00		
42	XSA-12-95X-FAL21	WG							X	X	X				XSA-12-95X	N1	120.00	130.00		
43	XSA-12-96X-FAL21	WG				X	X	X	X	X	X	X	X	X	XSA-12-96X	N1	120.00	130.00		
44	XSA-12-97X-FAL21	WG							X	X	X				XSA-12-97X	N1	120.00	130.00		
45	XSA-12-98X-FAL21	WG							X	X	X				XSA-12-98X	N1	60.00	70.00		
46	AOC-50-TB-101521-FAL21	—	—	—							X					Trip Blank				
47																				
48																				
49																				
50																				
51																				
52																				

Relinquished by: *(Signature)* [signature]
Date 10/15/21
Time 1745
Received by: *(Signature)* [signature]
Devens eCOCs_Fall 2021

Date [signature] 10/18/21 1120
Time
Shipping Date:
Received by Laboratory *(Signature, Date, Time)* & conditio [signature] TA 10-20-21 1030

Eurofins TestAmerica, Savannah

5102 LaRoche Avenue
Savannah, GA 31404
Phone: 912-354-7858 Fax: 912-352-0165

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Lanier, Jerry A	Carrier Tracking No(s)	COC No: 680-671573.1
Client Contact: Shipping/Receiving	Phone	E-Mail: Jerry.Lanier@Eurofinset.com	State of Origin: Massachusetts	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): Dept of Defense ELAP - A2LA; DoD - ANAB		Job #: 680-206221-1
Address: 4955 Yarrow Street,	Due Date Requested: 11/2/2021			
City: Arvada	TAT Requested (days):			
State, Zip: CO, 80002				
Phone: 303-736-0100(Tel) 303-431-7171(Fax)	PO #			
Email	WO #			
Project Name: Seres-Arcadis JV, LTM, AOC 50, Fall 2021	Project #: 68023801			
Site:	SSOW#			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2320B/ Alkalinity	353.2_Pres/ Nitrogen, Nitrate-Nitrite	9060A/ (MOD) Waters - TOC Duplicates	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
G6M-03-07X-FAL21 (680-206221-3)	10/18/21	14:15 Eastern		Water			X	X	X	3	
G6M-04-02X-FAL21 (680-206221-4)	10/18/21	13:40 Eastern		Water			X	X	X	3	
G6M-13-02X-FAL21 (680-206221-9)	10/18/21	10:45 Eastern		Water			X	X	X	3	
AOC50-DUP04-FAL21 (680-206221-10)	10/18/21	10:45 Eastern		Water			X	X	X	3	

Note Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica

Possible Hazard Identification

Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ________ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: CP 10/21/21	Date/Time	Company	Received by: [illegible]	Date/Time: 10/22/2021 [illegible]	Company: [illegible]
Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: 2.3 IR [illegible]		

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Seres Engineering & Services LLC

Job Number: 680-206221-1

Login Number: 206221
List Number: 1
Creator: Sims, Robert D

List Source: Eurofins Savannah

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Seres Engineering & Services LLC

Job Number: 680-206221-1

Login Number: 206221
List Number: 2
Creator: O'Hara, Jake F

List Source: Eurofins Denver
List Creation: 10/22/21 07:43 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

Laboratory Job ID: 680-207006-2
Client Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021
Revision: 1

For:
Seres Engineering & Services LLC
669 Marina Drive
Suite B7
Charleston, South Carolina 29492

Attn: Heather Levesque

Jerry Lanier

Authorized for release by:
3/11/2022 3:54:57 PM

Jerry Lanier, Project Manager I
(912)250-0281
Jerry.Lanier@Eurofinset.com

Definitions/Glossary

Client: Seres Engineering & Services LLC
Job ID: 680-207006-2
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
M	Manual integrated compound.
Q	One or more quality control criteria failed.
U	Undetected at the Limit of Detection.

GC VOA

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.

HPLC/IC

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.

Metals

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Undetected at the Limit of Detection.

General Chemistry

Qualifier	Qualifier Description
B	Blank contamination: The analyte was detected above one-half the reporting limit in an associated blank.
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Undetected at the Limit of Detection.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Sample Summary

Client: Seres Engineering & Services LLC
Job ID: 680-207006-2
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-207006-18	G6M-07-01X-FAL21	Water	11/03/21 12:25	11/04/21 11:00
680-207006-19	AOC50-RB04-FAL21	Water	11/03/21 13:00	11/04/21 11:00
680-207006-20	AOC50-TB04-FAL21	Water	11/02/21 00:00	11/04/21 11:00

Job ID: 680-207006-2

Laboratory: Eurofins Savannah

Narrative

Job Narrative
680-207006-2

Comments
No additional comments.

Receipt
The samples were received on 11/4/2021 11:00 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 0.9º C, 1.3º C and 1.5º C.

REVISION
The final report was revised to report data to the lab LOD.

GC/MS VOA
Method 8260B: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 680-694163.

Method 8260B: The continuing calibration verification (CCV) associated with batch 680-694163 recovered above the upper control limit for Chloroethane and Bromomethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method 8260B: The continuing calibration verification (CCV) analyzed in batch 680-694163 was outside the method criteria for the following analyte(s): Dichlorodifluoromethane. Dichlorodifluoromethane has been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction/re-analysis was not performed. These results have been reported and qualified.

Method 8260B: The closing continuing calibration verification (CCVC) associated with batch 680-694163 recovered above the upper control limit for Chloroethane and Bromomethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method 8260B: The continuing calibration verification (CCV) analyzed in batch 680-694163 was outside the method criteria for the following analyte(s): Vinyl acetate. Vinyl acetate has been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction/re-analysis was not performed. These results have been reported and qualified.

Method 8260B: The continuing calibration verification (CCV) analyzed in batch 680-694453 was outside the method criteria for the following analyte(s): 2-Hexanone, Chloroethane and 2-Butanone. 2-Hexanone, Chloroethane and 2-Butanone has been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction/re-analysis was not performed. These results have been reported and qualified.

Method 8260B: The continuing calibration verification (CCVC) analyzed in batch 680-694453 was outside the method criteria for the following analyte(s): Chloroethane and Vinyl acetate. Chloroethane and Vinyl acetate has been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction/re-analysis was not performed. These results have been reported and qualified.

Method 8260B: The closing continuing calibration verification (CCVC) analyzed in batch 694453 was outside the method criteria for the 12 hour window. The data integrity was not impacted and the data has been reported and addressed. All other QC criteria have been met.

Method 8260B: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for analytical batch 680-694163 recovered outside control limits for the following analytes: Chloroethane and Bromomethane. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 8260B: The laboratory control sample and/or the laboratory control sample duplicate (LCS/LCSD) for analytical batch 680-694453 recovered outside control limits for the following analyte(s): Chloroethane. Chloroethane has been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction/re-analysis was not performed. These results have been reported and qualified.

Method 8260B: The reporting limit (RL) provided for the following samples falls below the laboratory's verified standard quantitation limit

Job ID: 680-207006-2 (Continued)

Laboratory: Eurofins Savannah (Continued)

for 1,3,5-Trimethylbenzene: G6M-07-01X-FAL21 (680-207006-18) and (680-206990-C-3). Results reported below the verified standard quantitation limit have less certainty (i.e., are estimated) and must be used at the client's discretion. The continuing calibration blanks and method blanks may not support the lower RL.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

HPLC/IC
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
Method SM 2320B: The continuing calibration blank (CCB) associated with the following sample contained Alkalinity greater than one-half the reporting limit (RL). The following sample could not be re-analyzed because the holding time has been exceeded. The sample results have been qualified and reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Client: Seres Engineering & Services LLC
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-207006-2

Client Sample ID: G6M-07-01X-FAL21
Date Collected: 11/03/21 12:25
Date Received: 11/04/21 11:00

Lab Sample ID: 680-207006-18
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		11/14/21 18:57	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		11/14/21 18:57	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		11/14/21 18:57	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		11/14/21 18:57	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		11/14/21 18:57	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		11/14/21 18:57	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		11/14/21 18:57	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		11/14/21 18:57	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		11/14/21 18:57	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		11/14/21 18:57	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		11/14/21 18:57	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		11/14/21 18:57	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		11/14/21 18:57	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		11/14/21 18:57	1
1,2-Dichloroethene, Total	2.0	U	2.0	2.0	0.74	ug/L		11/14/21 18:57	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		11/14/21 18:57	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		11/14/21 18:57	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		11/14/21 18:57	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		11/14/21 18:57	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		11/14/21 18:57	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		11/14/21 18:57	1
2-Butanone (MEK)	10	U Q	10	10	3.4	ug/L		11/14/21 18:57	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		11/14/21 18:57	1
2-Hexanone	5.0	U Q	10	5.0	2.0	ug/L		11/14/21 18:57	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		11/14/21 18:57	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		11/14/21 18:57	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		11/14/21 18:57	1
Acetone	25	U	25	25	7.0	ug/L		11/14/21 18:57	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		11/14/21 18:57	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		11/14/21 18:57	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		11/14/21 18:57	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		11/14/21 18:57	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		11/14/21 18:57	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		11/14/21 18:57	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		11/14/21 18:57	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		11/14/21 18:57	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		11/14/21 18:57	1
Chloroethane	5.0	U Q	5.0	5.0	2.5	ug/L		11/14/21 18:57	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		11/14/21 18:57	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		11/14/21 18:57	1
cis-1,2-Dichloroethene	**0.71**	**J**	1.0	1.0	0.41	ug/L		11/14/21 18:57	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		11/14/21 18:57	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		11/14/21 18:57	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		11/14/21 18:57	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		11/14/21 18:57	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		11/14/21 18:57	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		11/14/21 18:57	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		11/14/21 18:57	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		11/14/21 18:57	1

Client Sample ID: G6M-07-01X-FAL21
Lab Sample ID: 680-207006-18

Date Collected: 11/03/21 12:25
Matrix: Water
Date Received: 11/04/21 11:00

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		11/14/21 18:57	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		11/14/21 18:57	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		11/14/21 18:57	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		11/14/21 18:57	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		11/14/21 18:57	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		11/14/21 18:57	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		11/14/21 18:57	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		11/14/21 18:57	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		11/14/21 18:57	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		11/14/21 18:57	1
Tetrachloroethene	**13**		2.0	2.0	0.74	ug/L		11/14/21 18:57	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		11/14/21 18:57	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		11/14/21 18:57	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		11/14/21 18:57	1
Trichloroethene	**1.8**		1.0	1.0	0.48	ug/L		11/14/21 18:57	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		11/14/21 18:57	1
Vinyl acetate	2.0	U Q	2.0	2.0	0.81	ug/L		11/14/21 18:57	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		11/14/21 18:57	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		11/14/21 18:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*85 - 114*		*11/14/21 18:57*	*1*
Dibromofluoromethane (Surr)	*112*		*80 - 119*		*11/14/21 18:57*	*1*
Toluene-d8 (Surr)	*105*		*89 - 112*		*11/14/21 18:57*	*1*
1,2-Dichloroethane-d4 (Surr)	*103*		*81 - 118*		*11/14/21 18:57*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Ethane	0.76	U	1.1	0.76	0.30	ug/L		11/08/21 12:01	1
Ethylene	0.71	U	1.0	0.71	0.31	ug/L		11/08/21 12:01	1
Methane	**13**		1.2	1.2	0.57	ug/L		11/08/21 12:01	1

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Sulfate	**12**		1.0	1.0	0.40	mg/L		11/15/21 19:48	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	**170**		50	50	17	ug/L		11/09/21 02:27	1
Manganese	**42**		10	3.0	1.0	ug/L		11/09/21 02:27	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**1.6**	**J**	3.0	3.0	1.5	ug/L		11/08/21 16:51	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate/Nitrite-N	**1.0**		0.10	0.050	0.019	mg/L		11/11/21 21:08	1
Sulfide	0.81	U	0.81	0.81	0.81	mg/L		11/10/21 16:44	1
Total Organic Carbon - Duplicates	**5.3**		1.0	0.80	0.35	mg/L		11/13/21 02:16	1
Alkalinity	**45**	**B**	10	6.4	3.1	mg/L		11/12/21 02:07	1

Client: Seres Engineering & Services LLC
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-207006-2

Client Sample ID: AOC50-RB04-FAL21
Date Collected: 11/03/21 13:00
Date Received: 11/04/21 11:00

Lab Sample ID: 680-207006-19
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		11/14/21 19:22	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		11/14/21 19:22	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		11/14/21 19:22	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		11/14/21 19:22	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		11/14/21 19:22	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		11/14/21 19:22	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		11/14/21 19:22	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		11/14/21 19:22	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		11/14/21 19:22	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		11/14/21 19:22	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		11/14/21 19:22	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		11/14/21 19:22	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		11/14/21 19:22	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		11/14/21 19:22	1
1,2-Dichloroethene, Total	2.0	U	2.0	2.0	0.74	ug/L		11/14/21 19:22	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		11/14/21 19:22	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		11/14/21 19:22	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		11/14/21 19:22	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		11/14/21 19:22	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		11/14/21 19:22	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		11/14/21 19:22	1
2-Butanone (MEK)	10	U Q	10	10	3.4	ug/L		11/14/21 19:22	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		11/14/21 19:22	1
2-Hexanone	5.0	U Q	10	5.0	2.0	ug/L		11/14/21 19:22	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		11/14/21 19:22	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		11/14/21 19:22	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		11/14/21 19:22	1
Acetone	25	U	25	25	7.0	ug/L		11/14/21 19:22	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		11/14/21 19:22	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		11/14/21 19:22	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		11/14/21 19:22	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		11/14/21 19:22	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		11/14/21 19:22	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		11/14/21 19:22	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		11/14/21 19:22	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		11/14/21 19:22	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		11/14/21 19:22	1
Chloroethane	5.0	U Q	5.0	5.0	2.5	ug/L		11/14/21 19:22	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		11/14/21 19:22	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		11/14/21 19:22	1
cis-1,2-Dichloroethene	1.0	U	1.0	1.0	0.41	ug/L		11/14/21 19:22	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		11/14/21 19:22	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		11/14/21 19:22	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		11/14/21 19:22	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		11/14/21 19:22	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		11/14/21 19:22	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		11/14/21 19:22	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		11/14/21 19:22	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		11/14/21 19:22	1

Client: Seres Engineering & Services LLC
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-207006-2

Client Sample ID: AOC50-RB04-FAL21

Date Collected: 11/03/21 13:00
Date Received: 11/04/21 11:00

Lab Sample ID: 680-207006-19

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		11/14/21 19:22	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		11/14/21 19:22	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		11/14/21 19:22	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		11/14/21 19:22	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		11/14/21 19:22	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		11/14/21 19:22	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		11/14/21 19:22	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		11/14/21 19:22	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		11/14/21 19:22	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		11/14/21 19:22	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		11/14/21 19:22	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		11/14/21 19:22	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		11/14/21 19:22	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		11/14/21 19:22	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		11/14/21 19:22	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		11/14/21 19:22	1
Vinyl acetate	2.0	U Q	2.0	2.0	0.81	ug/L		11/14/21 19:22	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		11/14/21 19:22	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		11/14/21 19:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*85 - 114*		*11/14/21 19:22*	*1*
Dibromofluoromethane (Surr)	*111*		*80 - 119*		*11/14/21 19:22*	*1*
Toluene-d8 (Surr)	*107*		*89 - 112*		*11/14/21 19:22*	*1*
1,2-Dichloroethane-d4 (Surr)	*107*		*81 - 118*		*11/14/21 19:22*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	50	U	50	50	17	ug/L		11/09/21 02:31	1
Manganese	3.0	U	10	3.0	1.0	ug/L		11/09/21 02:31	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	3.0	U	3.0	3.0	1.5	ug/L		11/08/21 16:55	1

Client: Seres Engineering & Services LLC
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-207006-2

Client Sample ID: AOC50-TB04-FAL21
Date Collected: 11/02/21 00:00
Date Received: 11/04/21 11:00

Lab Sample ID: 680-207006-20
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		11/12/21 21:38	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		11/12/21 21:38	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		11/12/21 21:38	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		11/12/21 21:38	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		11/12/21 21:38	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		11/12/21 21:38	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		11/12/21 21:38	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		11/12/21 21:38	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		11/12/21 21:38	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		11/12/21 21:38	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		11/12/21 21:38	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		11/12/21 21:38	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		11/12/21 21:38	1
1,2-Dichloroethane	1.0	U	1.0	1.0	0.50	ug/L		11/12/21 21:38	1
1,2-Dichloroethene, Total	2.0	U	2.0	2.0	0.74	ug/L		11/12/21 21:38	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		11/12/21 21:38	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		11/12/21 21:38	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		11/12/21 21:38	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		11/12/21 21:38	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		11/12/21 21:38	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		11/12/21 21:38	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		11/12/21 21:38	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		11/12/21 21:38	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		11/12/21 21:38	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		11/12/21 21:38	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		11/12/21 21:38	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		11/12/21 21:38	1
Acetone	25	U	25	25	7.0	ug/L		11/12/21 21:38	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		11/12/21 21:38	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		11/12/21 21:38	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		11/12/21 21:38	1
Bromomethane	5.0	U Q	5.0	5.0	2.5	ug/L		11/12/21 21:38	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		11/12/21 21:38	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		11/12/21 21:38	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		11/12/21 21:38	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		11/12/21 21:38	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		11/12/21 21:38	1
Chloroethane	5.0	U Q	5.0	5.0	2.5	ug/L		11/12/21 21:38	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		11/12/21 21:38	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		11/12/21 21:38	1
cis-1,2-Dichloroethene	1.0	U	1.0	1.0	0.41	ug/L		11/12/21 21:38	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		11/12/21 21:38	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		11/12/21 21:38	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		11/12/21 21:38	1
Dichlorodifluoromethane	2.0	U Q	2.0	2.0	0.60	ug/L		11/12/21 21:38	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		11/12/21 21:38	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		11/12/21 21:38	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		11/12/21 21:38	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		11/12/21 21:38	1

Client: Seres Engineering & Services LLC
Job ID: 680-207006-2
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Client Sample ID: AOC50-TB04-FAL21
Lab Sample ID: 680-207006-20
Date Collected: 11/02/21 00:00
Matrix: Water
Date Received: 11/04/21 11:00

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		11/12/21 21:38	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		11/12/21 21:38	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		11/12/21 21:38	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		11/12/21 21:38	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		11/12/21 21:38	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		11/12/21 21:38	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		11/12/21 21:38	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		11/12/21 21:38	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		11/12/21 21:38	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		11/12/21 21:38	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		11/12/21 21:38	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		11/12/21 21:38	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		11/12/21 21:38	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		11/12/21 21:38	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		11/12/21 21:38	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		11/12/21 21:38	1
Vinyl acetate	2.0	U Q	2.0	2.0	0.81	ug/L		11/12/21 21:38	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		11/12/21 21:38	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		11/12/21 21:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*85 - 114*		*11/12/21 21:38*	*1*
Dibromofluoromethane (Surr)	*95*		*80 - 119*		*11/12/21 21:38*	*1*
Toluene-d8 (Surr)	*99*		*89 - 112*		*11/12/21 21:38*	*1*
1,2-Dichloroethane-d4 (Surr)	*82*		*81 - 118*		*11/12/21 21:38*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-694163/9
Matrix: Water
Analysis Batch: 694163

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		11/12/21 13:15	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		11/12/21 13:15	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		11/12/21 13:15	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		11/12/21 13:15	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		11/12/21 13:15	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		11/12/21 13:15	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		11/12/21 13:15	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		11/12/21 13:15	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		11/12/21 13:15	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		11/12/21 13:15	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		11/12/21 13:15	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		11/12/21 13:15	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		11/12/21 13:15	1
1,2-Dichloroethane	1.0	U	1.0	1.0	0.50	ug/L		11/12/21 13:15	1
1,2-Dichloroethene, Total	2.0	U	2.0	2.0	0.74	ug/L		11/12/21 13:15	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		11/12/21 13:15	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		11/12/21 13:15	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		11/12/21 13:15	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		11/12/21 13:15	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		11/12/21 13:15	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		11/12/21 13:15	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		11/12/21 13:15	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		11/12/21 13:15	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		11/12/21 13:15	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		11/12/21 13:15	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		11/12/21 13:15	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		11/12/21 13:15	1
Acetone	25	U	25	25	7.0	ug/L		11/12/21 13:15	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		11/12/21 13:15	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		11/12/21 13:15	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		11/12/21 13:15	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		11/12/21 13:15	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		11/12/21 13:15	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		11/12/21 13:15	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		11/12/21 13:15	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		11/12/21 13:15	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		11/12/21 13:15	1
Chloroethane	5.0	U	5.0	5.0	2.5	ug/L		11/12/21 13:15	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		11/12/21 13:15	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		11/12/21 13:15	1
cis-1,2-Dichloroethene	1.0	U	1.0	1.0	0.41	ug/L		11/12/21 13:15	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		11/12/21 13:15	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		11/12/21 13:15	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		11/12/21 13:15	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		11/12/21 13:15	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		11/12/21 13:15	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		11/12/21 13:15	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		11/12/21 13:15	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-694163/9
Matrix: Water
Analysis Batch: 694163

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		11/12/21 13:15	1
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		11/12/21 13:15	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		11/12/21 13:15	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		11/12/21 13:15	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		11/12/21 13:15	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		11/12/21 13:15	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		11/12/21 13:15	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		11/12/21 13:15	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		11/12/21 13:15	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		11/12/21 13:15	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		11/12/21 13:15	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		11/12/21 13:15	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		11/12/21 13:15	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		11/12/21 13:15	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		11/12/21 13:15	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		11/12/21 13:15	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		11/12/21 13:15	1
Vinyl acetate	2.0	U	2.0	2.0	0.81	ug/L		11/12/21 13:15	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		11/12/21 13:15	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		11/12/21 13:15	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*85 - 114*		*11/12/21 13:15*	*1*
Dibromofluoromethane (Surr)	*92*		*80 - 119*		*11/12/21 13:15*	*1*
Toluene-d8 (Surr)	*100*		*89 - 112*		*11/12/21 13:15*	*1*
1,2-Dichloroethane-d4 (Surr)	*82*		*81 - 118*		*11/12/21 13:15*	*1*

Lab Sample ID: LCS 680-694163/4
Matrix: Water
Analysis Batch: 694163

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	50.0	55.4		ug/L		111	78 - 124
1,1,1-Trichloroethane	50.0	46.2		ug/L		92	74 - 131
1,1,2,2-Tetrachloroethane	50.0	54.1		ug/L		108	71 - 121
1,1,2-Trichloroethane	50.0	45.6		ug/L		91	80 - 119
1,1-Dichloroethane	50.0	51.9		ug/L		104	77 - 125
1,1-Dichloroethene	50.0	47.9		ug/L		96	71 - 131
1,1-Dichloropropene	50.0	46.5		ug/L		93	79 - 125
1,2,3-Trichlorobenzene	50.0	50.9		ug/L		102	69 - 129
1,2,3-Trichloropropane	50.0	52.9		ug/L		106	73 - 122
1,2,4-Trichlorobenzene	50.0	51.4		ug/L		103	69 - 130
1,2,4-Trimethylbenzene	50.0	49.3		ug/L		99	76 - 124
1,2-Dibromo-3-Chloropropane	50.0	48.2		ug/L		96	62 - 128
1,2-Dichlorobenzene	50.0	47.6		ug/L		95	80 - 119
1,2-Dichloroethane	50.0	41.4		ug/L		83	73 - 128
1,2-Dichloroethene, Total	100	101		ug/L		101	79 - 121
1,2-Dichloropropane	50.0	53.0		ug/L		106	78 - 122

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-694163/4
Matrix: Water
Analysis Batch: 694163

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3,5-Trimethylbenzene	50.0	49.3		ug/L		99	75 - 124
1,3-Dichlorobenzene	50.0	52.2		ug/L		104	80 - 119
1,3-Dichloropropane	50.0	46.1		ug/L		92	80 - 119
1,4-Dichlorobenzene	50.0	52.1		ug/L		104	79 - 118
2,2-Dichloropropane	50.0	41.5		ug/L		83	60 - 139
2-Butanone (MEK)	250	238		ug/L		95	56 - 143
2-Chlorotoluene	50.0	50.1		ug/L		100	79 - 122
2-Hexanone	250	254		ug/L		102	57 - 139
4-Chlorotoluene	50.0	49.6		ug/L		99	78 - 122
4-Isopropyltoluene	50.0	45.0		ug/L		90	77 - 127
4-Methyl-2-pentanone (MIBK)	250	256		ug/L		102	67 - 130
Acetone	250	295		ug/L		118	39 - 160
Benzene	50.0	47.1		ug/L		94	79 - 120
Bromobenzene	50.0	55.2		ug/L		110	80 - 120
Bromoform	50.0	53.9		ug/L		108	66 - 130
Bromomethane	50.0	97.6	Q	ug/L		195	53 - 141
Carbon disulfide	50.0	45.1	M	ug/L		90	64 - 133
Carbon tetrachloride	50.0	41.4		ug/L		83	72 - 136
Chlorobenzene	50.0	54.0		ug/L		108	82 - 118
Chlorobromomethane	50.0	50.9		ug/L		102	78 - 123
Chlorodibromomethane	50.0	49.6		ug/L		99	74 - 126
Chloroethane	50.0	103	Q	ug/L		206	60 - 138
Chloroform	50.0	43.9		ug/L		88	79 - 124
Chloromethane	50.0	54.9		ug/L		110	50 - 139
cis-1,2-Dichloroethene	50.0	49.8		ug/L		100	78 - 123
cis-1,3-Dichloropropene	50.0	45.8		ug/L		92	75 - 124
Dibromomethane	50.0	45.3		ug/L		91	79 - 123
Dichlorobromomethane	50.0	41.2		ug/L		82	79 - 125
Dichlorodifluoromethane	50.0	38.2		ug/L		76	32 - 152
Ethylbenzene	50.0	51.6		ug/L		103	79 - 121
Ethylene Dibromide	50.0	51.8		ug/L		104	75 - 127
Hexachlorobutadiene	50.0	46.2		ug/L		92	66 - 134
Isopropylbenzene	50.0	50.4		ug/L		101	72 - 131
Methyl tert-butyl ether	50.0	44.2		ug/L		88	71 - 124
Methylene Chloride	50.0	47.6		ug/L		95	74 - 124
m-Xylene & p-Xylene	50.0	51.3		ug/L		103	80 - 121
Naphthalene	50.0	49.4		ug/L		99	61 - 128
n-Butylbenzene	50.0	44.9		ug/L		90	75 - 128
N-Propylbenzene	50.0	51.2		ug/L		102	76 - 126
o-Xylene	50.0	50.8		ug/L		102	78 - 122
sec-Butylbenzene	50.0	48.7		ug/L		97	77 - 126
Styrene	50.0	57.0		ug/L		114	78 - 123
tert-Butylbenzene	50.0	51.5		ug/L		103	78 - 124
Tetrachloroethene	50.0	52.6		ug/L		105	74 - 129
Toluene	50.0	51.1		ug/L		102	80 - 121
trans-1,2-Dichloroethene	50.0	51.2		ug/L		102	75 - 124
trans-1,3-Dichloropropene	50.0	43.9		ug/L		88	73 - 127
Trichloroethene	50.0	52.9		ug/L		106	79 - 123
Trichlorofluoromethane	50.0	46.3	M	ug/L		93	65 - 141

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-694163/4
Matrix: Water
Analysis Batch: 694163

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Vinyl acetate	100	108		ug/L		108	54 - 146
Vinyl chloride	50.0	48.2		ug/L		96	58 - 137
Xylenes, Total	100	102		ug/L		102	79 - 121

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*92*		*85 - 114*
Dibromofluoromethane (Surr)	*97*		*80 - 119*
Toluene-d8 (Surr)	*104*		*89 - 112*
1,2-Dichloroethane-d4 (Surr)	*85*		*81 - 118*

Lab Sample ID: LCSD 680-694163/5
Matrix: Water
Analysis Batch: 694163

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	50.0	55.2		ug/L		110	78 - 124	0	20
1,1,1-Trichloroethane	50.0	46.0		ug/L		92	74 - 131	0	20
1,1,2,2-Tetrachloroethane	50.0	51.9		ug/L		104	71 - 121	4	20
1,1,2-Trichloroethane	50.0	44.6		ug/L		89	80 - 119	2	20
1,1-Dichloroethane	50.0	52.5		ug/L		105	77 - 125	1	20
1,1-Dichloroethene	50.0	48.1		ug/L		96	71 - 131	0	20
1,1-Dichloropropene	50.0	46.4		ug/L		93	79 - 125	0	20
1,2,3-Trichlorobenzene	50.0	50.4		ug/L		101	69 - 129	1	20
1,2,3-Trichloropropane	50.0	53.0		ug/L		106	73 - 122	0	20
1,2,4-Trichlorobenzene	50.0	50.1		ug/L		100	69 - 130	3	20
1,2,4-Trimethylbenzene	50.0	49.7		ug/L		99	76 - 124	1	20
1,2-Dibromo-3-Chloropropane	50.0	47.2		ug/L		94	62 - 128	2	20
1,2-Dichlorobenzene	50.0	48.1		ug/L		96	80 - 119	1	20
1,2-Dichloroethane	50.0	42.2		ug/L		84	73 - 128	2	20
1,2-Dichloroethene, Total	100	102		ug/L		102	79 - 121	1	20
1,2-Dichloropropane	50.0	53.5		ug/L		107	78 - 122	1	20
1,3,5-Trimethylbenzene	50.0	49.5		ug/L		99	75 - 124	0	20
1,3-Dichlorobenzene	50.0	52.4		ug/L		105	80 - 119	0	20
1,3-Dichloropropane	50.0	45.2		ug/L		90	80 - 119	2	20
1,4-Dichlorobenzene	50.0	51.5		ug/L		103	79 - 118	1	20
2,2-Dichloropropane	50.0	41.5		ug/L		83	60 - 139	0	20
2-Butanone (MEK)	250	226		ug/L		90	56 - 143	5	20
2-Chlorotoluene	50.0	50.2		ug/L		100	79 - 122	0	20
2-Hexanone	250	256		ug/L		102	57 - 139	1	20
4-Chlorotoluene	50.0	49.8		ug/L		100	78 - 122	0	20
4-Isopropyltoluene	50.0	45.4		ug/L		91	77 - 127	1	20
4-Methyl-2-pentanone (MIBK)	250	253		ug/L		101	67 - 130	1	20
Acetone	250	300		ug/L		120	39 - 160	1	20
Benzene	50.0	47.6		ug/L		95	79 - 120	1	20
Bromobenzene	50.0	55.1		ug/L		110	80 - 120	0	20
Bromoform	50.0	53.8		ug/L		108	66 - 130	0	20
Bromomethane	50.0	101	Q	ug/L		203	53 - 141	4	20
Carbon disulfide	50.0	45.3	M	ug/L		91	64 - 133	0	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 680-694163/5
Matrix: Water
Analysis Batch: 694163

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Carbon tetrachloride			50.0	42.4		ug/L		85	72 - 136	2	20
Chlorobenzene			50.0	54.8		ug/L		110	82 - 118	1	20
Chlorobromomethane			50.0	50.2		ug/L		100	78 - 123	1	20
Chlorodibromomethane			50.0	48.2		ug/L		96	74 - 126	3	20
Chloroethane			50.0	103	Q	ug/L		206	60 - 138	0	20
Chloroform			50.0	44.4		ug/L		89	79 - 124	1	20
Chloromethane			50.0	54.5		ug/L		109	50 - 139	1	20
cis-1,2-Dichloroethene			50.0	50.0		ug/L		100	78 - 123	0	20
cis-1,3-Dichloropropene			50.0	45.5		ug/L		91	75 - 124	1	20
Dibromomethane			50.0	45.0		ug/L		90	79 - 123	1	20
Dichlorobromomethane			50.0	41.2		ug/L		82	79 - 125	0	20
Dichlorodifluoromethane			50.0	37.0		ug/L		74	32 - 152	3	20
Ethylbenzene			50.0	52.6		ug/L		105	79 - 121	2	20
Ethylene Dibromide			50.0	50.7		ug/L		101	75 - 127	2	20
Hexachlorobutadiene			50.0	45.5		ug/L		91	66 - 134	1	20
Isopropylbenzene			50.0	50.4		ug/L		101	72 - 131	0	20
Methyl tert-butyl ether			50.0	43.3		ug/L		87	71 - 124	2	20
Methylene Chloride			50.0	47.9		ug/L		96	74 - 124	1	20
m-Xylene & p-Xylene			50.0	51.5		ug/L		103	80 - 121	0	20
Naphthalene			50.0	48.3		ug/L		97	61 - 128	2	20
n-Butylbenzene			50.0	45.4		ug/L		91	75 - 128	1	20
N-Propylbenzene			50.0	51.7		ug/L		103	76 - 126	1	20
o-Xylene			50.0	51.0		ug/L		102	78 - 122	0	20
sec-Butylbenzene			50.0	48.7		ug/L		97	77 - 126	0	20
Styrene			50.0	57.1		ug/L		114	78 - 123	0	20
tert-Butylbenzene			50.0	51.8		ug/L		104	78 - 124	1	20
Tetrachloroethene			50.0	52.1		ug/L		104	74 - 129	1	20
Toluene			50.0	51.2		ug/L		102	80 - 121	0	20
trans-1,2-Dichloroethene			50.0	51.8		ug/L		104	75 - 124	1	20
trans-1,3-Dichloropropene			50.0	43.3		ug/L		87	73 - 127	2	20
Trichloroethene			50.0	53.5		ug/L		107	79 - 123	1	20
Trichlorofluoromethane			50.0	46.0	M	ug/L		92	65 - 141	1	20
Vinyl acetate			100	99.0		ug/L		99	54 - 146	9	20
Vinyl chloride			50.0	47.5		ug/L		95	58 - 137	1	20
Xylenes, Total			100	103		ug/L		103	79 - 121	0	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*92*		*85 - 114*
Dibromofluoromethane (Surr)	*101*		*80 - 119*
Toluene-d8 (Surr)	*106*		*89 - 112*
1,2-Dichloroethane-d4 (Surr)	*83*		*81 - 118*

Lab Sample ID: MB 680-694453/8
Matrix: Water
Analysis Batch: 694453

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		11/14/21 16:30	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-694453/8
Matrix: Water
Analysis Batch: 694453

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		11/14/21 16:30	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		11/14/21 16:30	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		11/14/21 16:30	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		11/14/21 16:30	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		11/14/21 16:30	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		11/14/21 16:30	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		11/14/21 16:30	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		11/14/21 16:30	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		11/14/21 16:30	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		11/14/21 16:30	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		11/14/21 16:30	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		11/14/21 16:30	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		11/14/21 16:30	1
1,2-Dichloroethene, Total	2.0	U	2.0	2.0	0.74	ug/L		11/14/21 16:30	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		11/14/21 16:30	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		11/14/21 16:30	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		11/14/21 16:30	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		11/14/21 16:30	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		11/14/21 16:30	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		11/14/21 16:30	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		11/14/21 16:30	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		11/14/21 16:30	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		11/14/21 16:30	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		11/14/21 16:30	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		11/14/21 16:30	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		11/14/21 16:30	1
Acetone	25	U	25	25	7.0	ug/L		11/14/21 16:30	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		11/14/21 16:30	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		11/14/21 16:30	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		11/14/21 16:30	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		11/14/21 16:30	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		11/14/21 16:30	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		11/14/21 16:30	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		11/14/21 16:30	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		11/14/21 16:30	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		11/14/21 16:30	1
Chloroethane	5.0	U	5.0	5.0	2.5	ug/L		11/14/21 16:30	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		11/14/21 16:30	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		11/14/21 16:30	1
cis-1,2-Dichloroethene	1.0	U	1.0	1.0	0.41	ug/L		11/14/21 16:30	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		11/14/21 16:30	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		11/14/21 16:30	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		11/14/21 16:30	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		11/14/21 16:30	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		11/14/21 16:30	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		11/14/21 16:30	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		11/14/21 16:30	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		11/14/21 16:30	1
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		11/14/21 16:30	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-694453/8
Matrix: Water
Analysis Batch: 694453

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		11/14/21 16:30	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		11/14/21 16:30	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		11/14/21 16:30	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		11/14/21 16:30	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		11/14/21 16:30	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		11/14/21 16:30	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		11/14/21 16:30	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		11/14/21 16:30	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		11/14/21 16:30	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		11/14/21 16:30	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		11/14/21 16:30	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		11/14/21 16:30	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		11/14/21 16:30	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		11/14/21 16:30	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		11/14/21 16:30	1
Vinyl acetate	2.0	U	2.0	2.0	0.81	ug/L		11/14/21 16:30	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		11/14/21 16:30	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		11/14/21 16:30	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*85 - 114*		*11/14/21 16:30*	*1*
Dibromofluoromethane (Surr)	*112*		*80 - 119*		*11/14/21 16:30*	*1*
Toluene-d8 (Surr)	*106*		*89 - 112*		*11/14/21 16:30*	*1*
1,2-Dichloroethane-d4 (Surr)	*102*		*81 - 118*		*11/14/21 16:30*	*1*

Lab Sample ID: LCS 680-694453/3
Matrix: Water
Analysis Batch: 694453

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	50.0	54.9		ug/L		110	78 - 124
1,1,1-Trichloroethane	50.0	51.1		ug/L		102	74 - 131
1,1,2,2-Tetrachloroethane	50.0	46.3		ug/L		93	71 - 121
1,1,2-Trichloroethane	50.0	47.9		ug/L		96	80 - 119
1,1-Dichloroethane	50.0	49.5		ug/L		99	77 - 125
1,1-Dichloroethene	50.0	51.6		ug/L		103	71 - 131
1,1-Dichloropropene	50.0	50.1		ug/L		100	79 - 125
1,2,3-Trichlorobenzene	50.0	47.5		ug/L		95	69 - 129
1,2,3-Trichloropropane	50.0	50.9		ug/L		102	73 - 122
1,2,4-Trichlorobenzene	50.0	47.3		ug/L		95	69 - 130
1,2,4-Trimethylbenzene	50.0	49.2		ug/L		98	76 - 124
1,2-Dibromo-3-Chloropropane	50.0	45.8		ug/L		92	62 - 128
1,2-Dichlorobenzene	50.0	50.5		ug/L		101	80 - 119
1,2-Dichloroethane	50.0	49.0		ug/L		98	73 - 128
1,2-Dichloroethene, Total	100	102		ug/L		102	79 - 121
1,2-Dichloropropane	50.0	48.4		ug/L		97	78 - 122
1,3,5-Trimethylbenzene	50.0	51.3		ug/L		103	75 - 124
1,3-Dichlorobenzene	50.0	50.7		ug/L		101	80 - 119

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-694453/3
Matrix: Water
Analysis Batch: 694453

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3-Dichloropropane	50.0	48.4		ug/L		97	80 - 119
1,4-Dichlorobenzene	50.0	50.4		ug/L		101	79 - 118
2,2-Dichloropropane	50.0	52.5		ug/L		105	60 - 139
2-Butanone (MEK)	250	192		ug/L		77	56 - 143
2-Chlorotoluene	50.0	52.7		ug/L		105	79 - 122
2-Hexanone	250	198		ug/L		79	57 - 139
4-Chlorotoluene	50.0	53.6		ug/L		107	78 - 122
4-Isopropyltoluene	50.0	49.3		ug/L		99	77 - 127
4-Methyl-2-pentanone (MIBK)	250	206		ug/L		82	67 - 130
Acetone	250	216		ug/L		86	39 - 160
Benzene	50.0	48.6		ug/L		97	79 - 120
Bromobenzene	50.0	53.2		ug/L		106	80 - 120
Bromoform	50.0	55.4		ug/L		111	66 - 130
Bromomethane	50.0	44.6		ug/L		89	53 - 141
Carbon disulfide	50.0	49.6		ug/L		99	64 - 133
Carbon tetrachloride	50.0	51.9		ug/L		104	72 - 136
Chlorobenzene	50.0	51.7		ug/L		103	82 - 118
Chlorobromomethane	50.0	43.0		ug/L		86	78 - 123
Chlorodibromomethane	50.0	53.7		ug/L		107	74 - 126
Chloroethane	50.0	81.1	Q	ug/L		162	60 - 138
Chloroform	50.0	50.7		ug/L		101	79 - 124
Chloromethane	50.0	47.4		ug/L		95	50 - 139
cis-1,2-Dichloroethene	50.0	50.4		ug/L		101	78 - 123
cis-1,3-Dichloropropene	50.0	53.3		ug/L		107	75 - 124
Dibromomethane	50.0	48.6		ug/L		97	79 - 123
Dichlorobromomethane	50.0	51.1		ug/L		102	79 - 125
Dichlorodifluoromethane	50.0	52.1		ug/L		104	32 - 152
Ethylbenzene	50.0	50.9		ug/L		102	79 - 121
Ethylene Dibromide	50.0	50.9		ug/L		102	75 - 127
Hexachlorobutadiene	50.0	48.9		ug/L		98	66 - 134
Isopropylbenzene	50.0	52.5		ug/L		105	72 - 131
Methyl tert-butyl ether	50.0	48.8		ug/L		98	71 - 124
Methylene Chloride	50.0	50.0		ug/L		100	74 - 124
m-Xylene & p-Xylene	50.0	53.6		ug/L		107	80 - 121
Naphthalene	50.0	45.5		ug/L		91	61 - 128
n-Butylbenzene	50.0	47.8		ug/L		96	75 - 128
N-Propylbenzene	50.0	53.3		ug/L		107	76 - 126
o-Xylene	50.0	52.7		ug/L		105	78 - 122
sec-Butylbenzene	50.0	51.4		ug/L		103	77 - 126
Styrene	50.0	54.8		ug/L		110	78 - 123
tert-Butylbenzene	50.0	52.6		ug/L		105	78 - 124
Tetrachloroethene	50.0	52.4		ug/L		105	74 - 129
Toluene	50.0	50.9		ug/L		102	80 - 121
trans-1,2-Dichloroethene	50.0	52.0		ug/L		104	75 - 124
trans-1,3-Dichloropropene	50.0	51.5		ug/L		103	73 - 127
Trichloroethene	50.0	51.5		ug/L		103	79 - 123
Trichlorofluoromethane	50.0	54.5		ug/L		109	65 - 141
Vinyl acetate	100	113		ug/L		113	54 - 146
Vinyl chloride	50.0	46.4		ug/L		93	58 - 137

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-694453/3
Matrix: Water
Analysis Batch: 694453

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Xylenes, Total			100	106		ug/L		106	79 - 121		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*85 - 114*
Dibromofluoromethane (Surr)	*105*		*80 - 119*
Toluene-d8 (Surr)	*107*		*89 - 112*
1,2-Dichloroethane-d4 (Surr)	*101*		*81 - 118*

Lab Sample ID: LCSD 680-694453/4
Matrix: Water
Analysis Batch: 694453

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane			50.0	54.8		ug/L		110	78 - 124	0	20
1,1,1-Trichloroethane			50.0	51.4		ug/L		103	74 - 131	1	20
1,1,2,2-Tetrachloroethane			50.0	46.4		ug/L		93	71 - 121	0	20
1,1,2-Trichloroethane			50.0	49.8		ug/L		100	80 - 119	4	20
1,1-Dichloroethane			50.0	50.4		ug/L		101	77 - 125	2	20
1,1-Dichloroethene			50.0	51.4		ug/L		103	71 - 131	0	20
1,1-Dichloropropene			50.0	51.4		ug/L		103	79 - 125	3	20
1,2,3-Trichlorobenzene			50.0	48.2		ug/L		96	69 - 129	2	20
1,2,3-Trichloropropane			50.0	50.5		ug/L		101	73 - 122	1	20
1,2,4-Trichlorobenzene			50.0	48.1		ug/L		96	69 - 130	2	20
1,2,4-Trimethylbenzene			50.0	48.8		ug/L		98	76 - 124	1	20
1,2-Dibromo-3-Chloropropane			50.0	46.7		ug/L		93	62 - 128	2	20
1,2-Dichlorobenzene			50.0	51.1		ug/L		102	80 - 119	1	20
1,2-Dichloroethane			50.0	49.4		ug/L		99	73 - 128	1	20
1,2-Dichloroethene, Total			100	104		ug/L		104	79 - 121	1	20
1,2-Dichloropropane			50.0	49.2		ug/L		98	78 - 122	2	20
1,3,5-Trimethylbenzene			50.0	50.7		ug/L		101	75 - 124	1	20
1,3-Dichlorobenzene			50.0	50.9		ug/L		102	80 - 119	0	20
1,3-Dichloropropane			50.0	49.7		ug/L		99	80 - 119	3	20
1,4-Dichlorobenzene			50.0	50.3		ug/L		101	79 - 118	0	20
2,2-Dichloropropane			50.0	53.4		ug/L		107	60 - 139	2	20
2-Butanone (MEK)			250	195		ug/L		78	56 - 143	2	20
2-Chlorotoluene			50.0	52.0		ug/L		104	79 - 122	1	20
2-Hexanone			250	201		ug/L		80	57 - 139	2	20
4-Chlorotoluene			50.0	53.1		ug/L		106	78 - 122	1	20
4-Isopropyltoluene			50.0	49.7		ug/L		99	77 - 127	1	20
4-Methyl-2-pentanone (MIBK)			250	212		ug/L		85	67 - 130	3	20
Acetone			250	226		ug/L		90	39 - 160	5	20
Benzene			50.0	49.7		ug/L		99	79 - 120	2	20
Bromobenzene			50.0	52.1		ug/L		104	80 - 120	2	20
Bromoform			50.0	54.4		ug/L		109	66 - 130	2	20
Bromomethane			50.0	47.5		ug/L		95	53 - 141	6	20
Carbon disulfide			50.0	50.5		ug/L		101	64 - 133	2	20
Carbon tetrachloride			50.0	52.6		ug/L		105	72 - 136	1	20
Chlorobenzene			50.0	50.9		ug/L		102	82 - 118	2	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 680-694453/4
Matrix: Water
Analysis Batch: 694453

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chlorobromomethane			50.0	43.7		ug/L		87	78 - 123	2	20
Chlorodibromomethane			50.0	55.0		ug/L		110	74 - 126	2	20
Chloroethane			50.0	82.4	Q	ug/L		165	60 - 138	2	20
Chloroform			50.0	51.8		ug/L		104	79 - 124	2	20
Chloromethane			50.0	47.8		ug/L		96	50 - 139	1	20
cis-1,2-Dichloroethene			50.0	51.7		ug/L		103	78 - 123	3	20
cis-1,3-Dichloropropene			50.0	54.0		ug/L		108	75 - 124	1	20
Dibromomethane			50.0	49.6		ug/L		99	79 - 123	2	20
Dichlorobromomethane			50.0	51.3		ug/L		103	79 - 125	0	20
Dichlorodifluoromethane			50.0	51.9		ug/L		104	32 - 152	1	20
Ethylbenzene			50.0	50.5		ug/L		101	79 - 121	1	20
Ethylene Dibromide			50.0	51.5		ug/L		103	75 - 127	1	20
Hexachlorobutadiene			50.0	49.2		ug/L		98	66 - 134	1	20
Isopropylbenzene			50.0	51.9		ug/L		104	72 - 131	1	20
Methyl tert-butyl ether			50.0	49.5		ug/L		99	71 - 124	1	20
Methylene Chloride			50.0	50.0		ug/L		100	74 - 124	0	20
m-Xylene & p-Xylene			50.0	52.5		ug/L		105	80 - 121	2	20
Naphthalene			50.0	46.7		ug/L		93	61 - 128	3	20
n-Butylbenzene			50.0	48.2		ug/L		96	75 - 128	1	20
N-Propylbenzene			50.0	53.0		ug/L		106	76 - 126	1	20
o-Xylene			50.0	52.1		ug/L		104	78 - 122	1	20
sec-Butylbenzene			50.0	51.2		ug/L		102	77 - 126	0	20
Styrene			50.0	54.3		ug/L		109	78 - 123	1	20
tert-Butylbenzene			50.0	52.2		ug/L		104	78 - 124	1	20
Tetrachloroethene			50.0	51.6		ug/L		103	74 - 129	1	20
Toluene			50.0	51.6		ug/L		103	80 - 121	1	20
trans-1,2-Dichloroethene			50.0	52.1		ug/L		104	75 - 124	0	20
trans-1,3-Dichloropropene			50.0	52.4		ug/L		105	73 - 127	2	20
Trichloroethene			50.0	52.3		ug/L		105	79 - 123	1	20
Trichlorofluoromethane			50.0	53.6		ug/L		107	65 - 141	2	20
Vinyl acetate			100	114		ug/L		114	54 - 146	1	20
Vinyl chloride			50.0	47.1		ug/L		94	58 - 137	2	20
Xylenes, Total			100	105		ug/L		105	79 - 121	2	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*85 - 114*
Dibromofluoromethane (Surr)	*109*		*80 - 119*
Toluene-d8 (Surr)	*108*		*89 - 112*
1,2-Dichloroethane-d4 (Surr)	*105*		*81 - 118*

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 680-693283/8
Matrix: Water
Analysis Batch: 693283

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Ethane	0.76	U	1.1	0.76	0.30	ug/L		11/08/21 10:22	1
Ethylene	0.71	U	1.0	0.71	0.31	ug/L		11/08/21 10:22	1

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: MB 680-693283/8
Matrix: Water
Analysis Batch: 693283

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methane	1.2	U	1.2	1.2	0.57	ug/L		11/08/21 10:22	1

Lab Sample ID: LCS 680-693283/3
Matrix: Water
Analysis Batch: 693283

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methane (TCD)	1920	1800		ug/L		94	73 - 125

Lab Sample ID: LCS 680-693283/6
Matrix: Water
Analysis Batch: 693283

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane	288	246		ug/L		85	74 - 131
Ethylene	269	222		ug/L		82	72 - 133
Methane	154	137		ug/L		89	73 - 125

Lab Sample ID: LCSD 680-693283/4
Matrix: Water
Analysis Batch: 693283

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methane (TCD)	1920	1750		ug/L		91	73 - 125	3	30

Lab Sample ID: LCSD 680-693283/7
Matrix: Water
Analysis Batch: 693283

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane	288	246		ug/L		85	74 - 131	0	30
Ethylene	269	223		ug/L		83	72 - 133	0	30
Methane	154	137		ug/L		89	73 - 125	0	30

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 680-694555/2
Matrix: Water
Analysis Batch: 694555

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Sulfate	1.0	U	1.0	1.0	0.40	mg/L		11/15/21 09:52	1

Lab Sample ID: LCS 680-694555/3
Matrix: Water
Analysis Batch: 694555

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	10.0	9.71		mg/L		97	87 - 112

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 680-694555/4
Matrix: Water
Analysis Batch: 694555

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate			10.0	9.87		mg/L		99	87 - 112	2	15

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-693140/1-A
Matrix: Water
Analysis Batch: 693551

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 693140

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	50	U	50	50	17	ug/L		11/09/21 01:12	1
Manganese	3.0	U	10	3.0	1.0	ug/L		11/09/21 01:12	1

Lab Sample ID: LCS 680-693140/2-A
Matrix: Water
Analysis Batch: 693551

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 693140

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Iron			5000	4850		ug/L		97	87 - 115		
Manganese			400	396		ug/L		99	90 - 114		

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 680-693141/1-A
Matrix: Water
Analysis Batch: 693531

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 693141

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	3.0	U	3.0	3.0	1.5	ug/L		11/08/21 15:39	1

Lab Sample ID: LCS 680-693141/2-A
Matrix: Water
Analysis Batch: 693531

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 693141

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Arsenic			100	109		ug/L		109	84 - 116		

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 280-557161/104
Matrix: Water
Analysis Batch: 557161

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate/Nitrite-N	0.0262	J	0.10	0.050	0.019	mg/L		11/11/21 19:56	1

Lab Sample ID: MB 280-557161/60
Matrix: Water
Analysis Batch: 557161

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate/Nitrite-N	0.0218	J	0.10	0.050	0.019	mg/L		11/11/21 18:28	1

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: LCS 280-557161/103
Matrix: Water
Analysis Batch: 557161

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrate/Nitrite-N			5.00	5.16		mg/L		103	90 - 110		

Method: 9034 - Sulfide, Acid Soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 680-693888/1
Matrix: Water
Analysis Batch: 693888

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Sulfide	1.0	U	1.0	1.0	1.0	mg/L		11/10/21 16:44	1

Lab Sample ID: LCS 680-693888/2
Matrix: Water
Analysis Batch: 693888

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfide			10.0	9.46		mg/L		95	75 - 125		

Lab Sample ID: LCSD 680-693888/3
Matrix: Water
Analysis Batch: 693888

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfide			10.0	9.08		mg/L		91	75 - 125	4	30

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 280-557475/4
Matrix: Water
Analysis Batch: 557475

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	0.80	U	1.0	0.80	0.35	mg/L		11/12/21 19:02	1

Lab Sample ID: LCS 280-557475/3
Matrix: Water
Analysis Batch: 557475

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon - Duplicates			25.0	25.0		mg/L		100	88 - 112		

Lab Sample ID: 680-207006-18 MS
Matrix: Water
Analysis Batch: 557475

Client Sample ID: G6M-07-01X-FAL21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon - Duplicates	5.3		25.0	30.1		mg/L		99	88 - 112		

Method: 9060A - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: 680-207006-18 MSD
Client Sample ID: G6M-07-01X-FAL21
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 557475

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Duplicates	5.3		25.0	30.4		mg/L		100	88 - 112	1	15

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 280-557229/31
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 557229

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	3.64	J	10	6.4	3.1	mg/L		11/11/21 20:31	1

Lab Sample ID: MB 280-557229/57
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 557229

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	6.4	U	10	6.4	3.1	mg/L		11/11/21 23:52	1

Lab Sample ID: LCS 280-557229/56
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 557229

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	200	196		mg/L		98	89 - 109

GC/MS VOA

Analysis Batch: 694163

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-207006-20	AOC50-TB04-FAL21	Total/NA	Water	8260B	
MB 680-694163/9	Method Blank	Total/NA	Water	8260B	
LCS 680-694163/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-694163/5	Lab Control Sample Dup	Total/NA	Water	8260B	

Analysis Batch: 694453

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-207006-18	G6M-07-01X-FAL21	Total/NA	Water	8260B	
680-207006-19	AOC50-RB04-FAL21	Total/NA	Water	8260B	
MB 680-694453/8	Method Blank	Total/NA	Water	8260B	
LCS 680-694453/3	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-694453/4	Lab Control Sample Dup	Total/NA	Water	8260B	

GC VOA

Analysis Batch: 693283

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-207006-18	G6M-07-01X-FAL21	Total/NA	Water	RSK-175	
MB 680-693283/8	Method Blank	Total/NA	Water	RSK-175	
LCS 680-693283/3	Lab Control Sample	Total/NA	Water	RSK-175	
LCS 680-693283/6	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 680-693283/4	Lab Control Sample Dup	Total/NA	Water	RSK-175	
LCSD 680-693283/7	Lab Control Sample Dup	Total/NA	Water	RSK-175	

HPLC/IC

Analysis Batch: 694555

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-207006-18	G6M-07-01X-FAL21	Total/NA	Water	9056A	
MB 680-694555/2	Method Blank	Total/NA	Water	9056A	
LCS 680-694555/3	Lab Control Sample	Total/NA	Water	9056A	
LCSD 680-694555/4	Lab Control Sample Dup	Total/NA	Water	9056A	

Metals

Prep Batch: 693140

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-207006-18	G6M-07-01X-FAL21	Dissolved	Water	3005A	
680-207006-19	AOC50-RB04-FAL21	Dissolved	Water	3005A	
MB 680-693140/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 680-693140/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 693141

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-207006-18	G6M-07-01X-FAL21	Dissolved	Water	3005A	
680-207006-19	AOC50-RB04-FAL21	Dissolved	Water	3005A	
MB 680-693141/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 680-693141/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 693531

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-207006-18	G6M-07-01X-FAL21	Dissolved	Water	6020A	693141

Metals (Continued)

Analysis Batch: 693531 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-207006-19	AOC50-RB04-FAL21	Dissolved	Water	6020A	693141
MB 680-693141/1-A	Method Blank	Total Recoverable	Water	6020A	693141
LCS 680-693141/2-A	Lab Control Sample	Total Recoverable	Water	6020A	693141

Analysis Batch: 693551

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-207006-18	G6M-07-01X-FAL21	Dissolved	Water	6010C	693140
680-207006-19	AOC50-RB04-FAL21	Dissolved	Water	6010C	693140
MB 680-693140/1-A	Method Blank	Total Recoverable	Water	6010C	693140
LCS 680-693140/2-A	Lab Control Sample	Total Recoverable	Water	6010C	693140

General Chemistry

Analysis Batch: 557161

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-207006-18	G6M-07-01X-FAL21	Total/NA	Water	353.2	
MB 280-557161/104	Method Blank	Total/NA	Water	353.2	
MB 280-557161/60	Method Blank	Total/NA	Water	353.2	
LCS 280-557161/103	Lab Control Sample	Total/NA	Water	353.2	

Analysis Batch: 557229

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-207006-18	G6M-07-01X-FAL21	Total/NA	Water	SM 2320B	
MB 280-557229/31	Method Blank	Total/NA	Water	SM 2320B	
MB 280-557229/57	Method Blank	Total/NA	Water	SM 2320B	
LCS 280-557229/56	Lab Control Sample	Total/NA	Water	SM 2320B	

Analysis Batch: 557475

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-207006-18	G6M-07-01X-FAL21	Total/NA	Water	9060A	
MB 280-557475/4	Method Blank	Total/NA	Water	9060A	
LCS 280-557475/3	Lab Control Sample	Total/NA	Water	9060A	
680-207006-18 MS	G6M-07-01X-FAL21	Total/NA	Water	9060A	
680-207006-18 MSD	G6M-07-01X-FAL21	Total/NA	Water	9060A	

Analysis Batch: 693888

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-207006-18	G6M-07-01X-FAL21	Total/NA	Water	9034	
MB 680-693888/1	Method Blank	Total/NA	Water	9034	
LCS 680-693888/2	Lab Control Sample	Total/NA	Water	9034	
LCSD 680-693888/3	Lab Control Sample Dup	Total/NA	Water	9034	

Lab Chronicle

Client: Seres Engineering & Services LLC
Job ID: 680-207006-2
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Client Sample ID: G6M-07-01X-FAL21
Lab Sample ID: 680-207006-18
Date Collected: 11/03/21 12:25
Matrix: Water
Date Received: 11/04/21 11:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	694453	11/14/21 18:57	P1C	TAL SAV
	Instrument ID: CMSAA									
Total/NA	Analysis	RSK-175		1	17 mL	17 mL	693283	11/08/21 12:01	JCK	TAL SAV
	Instrument ID: CVGU									
Total/NA	Analysis	9056A		1	5 mL	5 mL	694555	11/15/21 19:48	AF	TAL SAV
	Instrument ID: CICL									
Dissolved	Prep	3005A			50 mL	50 mL	693140	11/05/21 15:08	JE	TAL SAV
Dissolved	Analysis	6010C		1			693551	11/09/21 02:27	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	693141	11/05/21 15:08	JE	TAL SAV
Dissolved	Analysis	6020A		1			693531	11/08/21 16:51	BWR	TAL SAV
	Instrument ID: ICPMSD									
Total/NA	Analysis	353.2		1	100 mL	100 mL	557161	11/11/21 21:08	SVC	TAL DEN
	Instrument ID: WC_Alp 2									
Total/NA	Analysis	9034		1	310 mL	310 mL	693888	11/10/21 16:44	AE	TAL SAV
	Instrument ID: NOEQUIP									
Total/NA	Analysis	9060A		1	20 mL	20 mL	557475	11/13/21 02:16	RAF	TAL DEN
	Instrument ID: WC_SHI3									
Total/NA	Analysis	SM 2320B		1			557229	11/12/21 02:07	ECC	TAL DEN
	Instrument ID: WC-AT3									

Client Sample ID: AOC50-RB04-FAL21
Lab Sample ID: 680-207006-19
Date Collected: 11/03/21 13:00
Matrix: Water
Date Received: 11/04/21 11:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	694453	11/14/21 19:22	P1C	TAL SAV
	Instrument ID: CMSAA									
Dissolved	Prep	3005A			50 mL	50 mL	693140	11/05/21 15:08	JE	TAL SAV
Dissolved	Analysis	6010C		1			693551	11/09/21 02:31	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	693141	11/05/21 15:08	JE	TAL SAV
Dissolved	Analysis	6020A		1			693531	11/08/21 16:55	BWR	TAL SAV
	Instrument ID: ICPMSD									

Client Sample ID: AOC50-TB04-FAL21
Lab Sample ID: 680-207006-20
Date Collected: 11/02/21 00:00
Matrix: Water
Date Received: 11/04/21 11:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	694163	11/12/21 21:38	P1C	TAL SAV
	Instrument ID: CMSU									

Laboratory References:

TAL DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SAV = Eurofins Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Eurofins Savannah

Accreditation/Certification Summary

Client: Seres Engineering & Services LLC
Job ID: 680-207006-2
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Laboratory: Eurofins Savannah

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
ANAB	Dept. of Defense ELAP	L2463	09-18-22

Laboratory: Eurofins Denver

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	11-30-21

Method Summary

Client: Seres Engineering & Services LLC
Job ID: 680-207006-2
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
RSK-175	Dissolved Gases (GC)	RSK	TAL SAV
9056A	Anions, Ion Chromatography	SW846	TAL SAV
6010C	Metals (ICP)	SW846	TAL SAV
6020A	Metals (ICP/MS)	SW846	TAL SAV
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL DEN
9034	Sulfide, Acid Soluble and Insoluble (Titrimetric)	SW846	TAL SAV
9060A	Organic Carbon, Total (TOC)	SW846	TAL DEN
SM 2320B	Alkalinity	SM	TAL DEN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL SAV
5030B	Purge and Trap	SW846	TAL SAV

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SAV = Eurofins Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

CHAIN-OF-CUSTODY RECORD

Seres-Arcadis JV
Nathan Mullens
669 Marina Drive, Suite B7, Charleston, SC 29492
(843) 478 0336, jennifer.singer@arcadis.com

COC # AOC50

Boston #215

Project Name: Former Fort Devens, Long Term Monitoring	Laboratory: Eurofins Environment Testing TestAmerica, Savannah, GA	Event: Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021
Project Number: DEVNS-LTM	POC: Jerry Lanier, jerry.lanier@eurofinset com, 912-250-0281	
WBS Code:	Ship to:	

Comments:
A2320B (A) = Alkalinity
E353.2 (A) = Nitrite Nitrate as N
RSK175 (A) = Dissolved Gases
SW6010C/FLDFLT (B) = Fe Mn
SW6020A/FLDFLT (B) = As
SW9034 (A) = Sulfide

Equipment:

Code	Matrix
WG	Ground Water

Code	Container/Preservative
5	1x 125mL plastic, Cool < 6degC
7	2x 250mL plastic, ZnAc/NaOH Cool < 6degC
8	3x 40mL glass VOA Vials, HCl, pH < 2; Cool < 6degC
9	1x 250mL, plastic, HNO3, pH < 2, Cool < 6degC
10	1x 250mL, plastic, HNO3, pH < 2; Cool < 6degC
29	3x 40mL glass VOA Vials, HCl, pH < 2; Cool < 6degC
46	1x 250mL, plastic, Cool < 6degC
47	1x 500mL, amber glass, H2SO4, Cool < 6degC

Event: Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021

						Analytical Test Method	A2320B (A)	E353.2 (A)	RSK175 (A)	SW6010C/FLDFLT (B)	SW6020A/FLDFLT (B)	SW8260B - VOCs	SW9034 (A)	SW9056A - SO4	SW9060A - TOC					
							46	47	8	9	9	29	7	5	10			Depth (ft bgs)		
	Sample ID	Matrix	Date	Time	Samp Init.											Location ID	Sample Type	Top	Bottom	Cooler	Comments
35	AOC50-DUP01-FAL21	WG								X	X	X				G6M-95-20X	FD1	18.00	23.00		
36	G6M-97-05B-FAL21	WG					X	X	X	X	X	X	X	X	X	G6M-97-05B	N1	130.00	135.00		
37	G6M-97-28X-FAL21	WG								X	X					G6M-97-28X	N1	100.00	105.00		
38	MW-3-FAL21	WG								X	X	X				MW-3	N1	126.00	137.00		
39	MW-3-FAL21	WG								X	X	X				MW-3	MS1	126.00	137.00		
40	MW-3-FAL21	WG								X	X	X				MW-3	SD1	126.00	137.00		
41	MW-7-FAL21	WG								X	X	X				MW-7	N1	6.58	135.00		
42	XSA-12-95X-FAL21	WG								X	X	X				XSA-12-95X	N1	120.00	130.00		
43	XSA-12-96X-FAL21	WG					X	X	X	X	X	X	X	X	X	XSA-12-96X	N1	120.00	130.00		
44	XSA-12-97X-FAL21	WG								X	X	X				XSA-12-97X	N1	120.00	130.00		
45	XSA-12-98X-FAL21	WG								X	X	X				XSA-12-98X	N1	60.00	70.00		
46	G6M-07-01X FAL21	WG	11.3.21	1225	DC		X	X	X	X	X	X	X	X	X	G6M-07-01X	N1				
47	AOC-50-RB3-FAL21		11.3.21	1300	DC		X	X	X	X	X	X	X	X	X	Rinse blank					
48	AOC50-TBL FAL21		—	—	—							X				Trip Blank					
49																					
50																					
51																					
52																					

Relinquished by: *(Signature)*
Date 11/3/21
Time 1400
Received by: *(Signature)*
Devens eCOCs_Fall 2021

Date 11/3/21 1720
Time
Shipping Date:
Received by Laboratory: ***(Signature, Date, Time)*** & conditio

ap 11.04 15:05

Eurofins TestAmerica, Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Phone: 912-354-7858 Fax: 912-352-0165

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Lanier, Jerry A	Carrier Tracking No(s):	COC No: 680-673394.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Jerry.Lanier@Eurofinset.com	State of Origin: Massachusetts	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): Dept. of Defense ELAP - A2LA; DoD - ANAB		Job #: 680-207006-1
Address: 4955 Yarrow Street,	Due Date Requested: 11/17/2021			
City: Arvada	TAT Requested (days):			
State, Zip: CO, 80002				
Phone: 303-736-0100(Tel) 303-431-7171(Fax)	PO #:			
Email:	WO #:			
Project Name: Seres-Arcadis JV, LTM, SHL, Fall 2021	Project #: 68023801			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2320B/ Alkalinity	9060A_Diss/FIELD_FLTRD Organic Carbon, Dissolved (DOC)	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
SHP-2016-1A-FAL21 (680-207006-1)	11/2/21	11:55 Eastern		Water			X	X	2	
SHP-2016-1B-FAL21 (680-207006-2)	11/2/21	12:55 Eastern		Water			X	X	2	
SHP-99-29X-FAL21 (680-207006-3)	11/2/21	10:15 Eastern		Water			X	X	2	
SHL-99-RB01-FAL21 (680-207006-4)	11/2/21	12:35 Eastern		Water			X	X	2	
SHM-10-06-FAL21 (680-207006-5)	11/2/21	14:55 Eastern		Water			X	X	2	
SHM-10-14-FAL21 (680-207006-6)	11/2/21	08:50 Eastern		Water			X	X	2	
SHL-15-FAL21 (680-207006-7)	11/2/21	09:20 Eastern		Water			X	X	2	
SHL-5-FAL21 (680-207006-8)	11/2/21	12:25 Eastern		Water			X	X	2	
SHL-8D-FAL21 (680-207006-9)	11/2/21	11:00 Eastern		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For ________ Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:		Time:	Method of Shipment:	
Relinquished by: [signature]	Date/Time: 11/5/21 17:00	Company	Received by: [signature]	Date/Time: 11/08/2021 0945	Company: ETA1DSL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.5, 1.1 IR11+1.0

Ver: 06/08/2021

Eurofins TestAmerica, Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Phone: 912-354-7858 Fax: 912-352-0165

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Lanier, Jerry A	Carrier Tracking No(s):	COC No: 680-673394.2
Client Contact: Shipping/Receiving	Phone	E-Mail: Jerry.Lanier@Eurofinset.com	State of Origin: Massachusetts	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): Dept. of Defense ELAP - A2LA; DoD - ANAB		Job #: 680-207006-1
Address: 4955 Yarrow Street,	Due Date Requested: 11/17/2021			
City: Arvada	TAT Requested (days):			
State, Zip: CO, 80002				
Phone: 303-736-0100(Tel) 303-431-7171(Fax)	PO #:			
Email:	WO #:			
Project Name: Seres-Arcadis JV, LTM, SHL, Fall 2021	Project #: 68023801			
Site:	SSOW#:			

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2320B/ Alkalinity	9060A_Diss/FIELD_FLTRD Organic Carbon, Dissolved (DOC)	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
SHL-8S-FAL21 (680-207006-10)	11/2/21	09:05 Eastern		Water			X	X	2	
SHL-9-FAL21 (680-207006-11)	11/2/21	14:25 Eastern		Water			X	X	2	
SHL-10-FAL21 (680-207006-12)	11/2/21	12:05 Eastern		Water			X	X	2	
EPA-PZ-2012-2B-FAL21 (680-207006-13)	11/2/21	15:55 Eastern		Water			X	X	2	
EPA-PZ-2012-7A-FAL21 (680-207006-14)	11/2/21	14:50 Eastern		Water			X	X	2	
EPA-PZ-2012-7B-FAL21 (680-207006-15)	11/2/21	13:45 Eastern		Water			X	X	2	
SHM-10-06A-FAL21 (680-207006-16)	11/3/21	10:40 Eastern		Water			X	X	2	
SHL-3-FAL21 (680-207006-17)	11/3/21	12:15 Eastern		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time:	Company
1		11/5/21 17:00			11/08/2021 0945	EST/DSN
2	Relinquished by	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Eurofins TestAmerica, Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Phone: 912-354-7858 Fax: 912-352-0165

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Lanier, Jerry A	Carrier Tracking No(s):	COC No: 680-673394.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Jerry.Lanier@Eurofinset.com	State of Origin: Massachusetts	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): Dept. of Defense ELAP - A2LA; DoD - ANAB		Job #: 680-207006-2
Address: 4955 Yarrow Street, ,	Due Date Requested: 11/14/2021			
City: Arvada	TAT Requested (days):			
State, Zip: CO, 80002				
Phone: 303-736-0100(Tel) 303-431-7171(Fax)	PO #:			
Email:	WO #:			
Project Name: Seres-Arcadis JV, LTM, AOC 50, Fall 2021	Project #: 68023801			
Site:	SSOW#:			

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2320B/ Alkalinity	353.2_Pres/ Nitrogen, Nitrate-Nitrite	9060A/ (MOD) Waters - TOC Duplicates	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
G6M-07-01X-FAL21 (680-207006-18)	11/3/21	12:25 Eastern		Water			X	X	X	3	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1		11/5/21 1700			11/08/2021 0945	TAL KEN
2	Relinquished by	Date/Time.	Company	Received by	Date/Time:	Company
3	Relinquished by:	Date/Time.	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Seres Engineering & Services LLC

Job Number: 680-207006-2

Login Number: 207006
List Number: 1
Creator: Padayao, Abigail

List Source: Eurofins Savannah

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Seres Engineering & Services LLC

Job Number: 680-207006-2

Login Number: 207006
List Number: 2
Creator: O'Hara, Jake F

List Source: Eurofins Denver
List Creation: 11/08/21 03:10 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

Eurofins Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

Laboratory Job ID: 680-205985-1
Client Project/Site: Seres - Arcadis JV, LTM, AOC 50, Fall 2021
Revision: 1

For:
Seres Engineering & Services LLC
669 Marina Drive
Suite B7
Charleston, South Carolina 29492

Attn: Heather Levesque

Authorized for release by:
3/7/2022 5:43:50 PM

Jerry Lanier, Project Manager I
(912)250-0281
Jerry.Lanier@Eurofinset.com

Definitions/Glossary

Client: Seres Engineering & Services LLC
Job ID: 680-205985-1
Project/Site: Seres - Arcadis JV, LTM, AOC 50, Fall 2021

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
J1	Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
M	Manual integrated compound.
Q	One or more quality control criteria failed.
U	Undetected at the Limit of Detection.

GC VOA

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Undetected at the Limit of Detection.

HPLC/IC

Qualifier	Qualifier Description
M	Manual integrated compound.
U	Undetected at the Limit of Detection.

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
J	Estimated: The analyte was positively identified; the quantitation is an estimation
J1	Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
U	Undetected at the Limit of Detection.

General Chemistry

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Undetected at the Limit of Detection.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Sample Summary

Client: Seres Engineering & Services LLC
Job ID: 680-205985-1
Project/Site: Seres - Arcadis JV, LTM, AOC 50, Fall 2021

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-205985-1	G6M-02-04X-FAL21	Water	10/12/21 11:19	10/14/21 10:30
680-205985-2	G6M-02-11X-FAL21	Water	10/12/21 13:15	10/14/21 10:30
680-205985-3	G6M-03-10X-FAL21	Water	10/12/21 15:45	10/14/21 10:30
680-205985-4	G6M-07-02X-FAL21	Water	10/12/21 15:40	10/14/21 10:30
680-205985-5	AOC50-DUP02-FAL21	Water	10/12/21 15:40	10/14/21 10:30
680-205985-6	G6M-13-01X-FAL21	Water	10/12/21 13:30	10/14/21 10:30
680-205985-7	G6M-13-04X-FAL21	Water	10/12/21 13:33	10/14/21 10:30
680-205985-8	G6M-13-06X-FAL21	Water	10/12/21 15:45	10/14/21 10:30
680-205985-9	G6M-97-28X-FAL21	Water	10/12/21 10:45	10/14/21 10:30
680-205985-10	MW-3-FAL21	Water	10/12/21 12:05	10/14/21 10:30
680-205985-13	MW-7-FAL21	Water	10/12/21 10:30	10/14/21 10:30
680-205985-14	AOC50-RB01-FAL21	Water	10/12/21 11:15	10/14/21 10:30

Job ID: 680-205985-1

Laboratory: Eurofins Savannah

Narrative

Job Narrative
680-205985-1

Comments
No additional comments.

Receipt
The samples were received on 10/14/2021 10:30 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.1º C and 5.6º C.

REVISION
The final report was revised to report data to the lab LOD.

GC/MS VOA
Method 8260B: The reporting limit (RL) provided for the following samples falls below the laboratory's verified standard quantitation limit for 1,3,5-Trimethylbenzene: G6M-02-04X-FAL21 (680-205985-1), G6M-02-11X-FAL21 (680-205985-2) and MW-3-FAL21 (680-205985-10). Results reported below the verified standard quantitation limit have less certainty (i.e., are estimated) and must be used at the client's discretion. The continuing calibration blanks and method blanks may not support the lower RL.

Method 8260B: The continuing calibration verification (CCV) associated with batch 680-690986 recovered above the upper control limit for Chloroethane, 2,2-Dichloropropane, Trichlorofluoromethane and Vinyl acetate. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Methods 8260B, 8260C DOD: The closing continuing calibration verification (CCVC) analyzed in batch 690986 was outside the method criteria for the 12 hour window. The data integrity was not impacted and the data has been reported and addressed. All other QC criteria have been met.

Method 8260B: The continuing calibration verification (CCV/CCVC) analyzed in batch 680-690986 was outside the method criteria for the following analyte(s): Dichlorodifluoromethane. Dichlorodifluoromethane has been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction/re-analysis was not performed. These results have been reported and qualified.

Method 8260B: The closing CCV was outside the tune window by 95 minutes. Recoveries were acceptable and all data has been reported.

(CCVC 680-691048/36)

Method 8260B: The continuing calibration verification (CCV) associated with batch 680-691048 recovered above the upper control limit for Vinyl Acetate, Chloroethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCVIS 680-691048/5).

Method 8260B: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for analytical batch 680-690986 recovered outside control limits for the following analytes: Chloroethane. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 8260B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 680-690986 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Methods 8260B, 8260C DOD: The matrix spike and /or The matrix spike duplicate ran outside of the 12 hour tune window. The recoveries were acceptable. The data has been qualified and reported.

MW-3-FAL21 (680-205985-10[MS]) and MW-3-FAL21 (680-205985-10[MSD])

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Job ID: 680-205985-1 (Continued)

Laboratory: Eurofins Savannah (Continued)

HPLC/IC
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC Semi VOA
Method RSK-175: Due to the high concentration of Methane, the matrix spike / matrix spike duplicate (MS/MSD) for analytical batch 680-690170 could not be evaluated for accuracy and precision. The associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) met acceptance criteria.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
Methods 9034, SM 4500 S2 F: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 680-689829 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 353.2: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for method 353.2_Pres analytical batch 280-555077 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Client: Seres Engineering & Services LLC
Project/Site: Seres - Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-205985-1

Client Sample ID: G6M-02-04X-FAL21
Date Collected: 10/12/21 11:19
Date Received: 10/14/21 10:30

Lab Sample ID: 680-205985-1
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 18:54	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 18:54	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/25/21 18:54	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/25/21 18:54	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/25/21 18:54	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/25/21 18:54	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/25/21 18:54	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 18:54	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/25/21 18:54	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 18:54	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/25/21 18:54	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/25/21 18:54	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 18:54	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/25/21 18:54	1
1,2-Dichloroethene, Total	2.0	U	2.0	2.0	0.74	ug/L		10/25/21 18:54	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/25/21 18:54	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		10/25/21 18:54	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/25/21 18:54	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/25/21 18:54	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/25/21 18:54	1
2,2-Dichloropropane	1.0	U Q	1.0	1.0	0.37	ug/L		10/25/21 18:54	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		10/25/21 18:54	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/25/21 18:54	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/25/21 18:54	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/25/21 18:54	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/25/21 18:54	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/25/21 18:54	1
Acetone	25	U	25	25	7.0	ug/L		10/25/21 18:54	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/25/21 18:54	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/25/21 18:54	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/25/21 18:54	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 18:54	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/25/21 18:54	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/25/21 18:54	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/25/21 18:54	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/25/21 18:54	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/25/21 18:54	1
Chloroethane	5.0	U Q	5.0	5.0	2.5	ug/L		10/25/21 18:54	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/25/21 18:54	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		10/25/21 18:54	1
cis-1,2-Dichloroethene	1.0	U	1.0	1.0	0.41	ug/L		10/25/21 18:54	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/25/21 18:54	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/25/21 18:54	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/25/21 18:54	1
Dichlorodifluoromethane	2.0	U Q	2.0	2.0	0.60	ug/L		10/25/21 18:54	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/25/21 18:54	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/25/21 18:54	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 18:54	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/25/21 18:54	1

Client Sample ID: G6M-02-04X-FAL21
Lab Sample ID: 680-205985-1

Date Collected: 10/12/21 11:19
Matrix: Water
Date Received: 10/14/21 10:30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/25/21 18:54	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 18:54	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		10/25/21 18:54	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 18:54	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/25/21 18:54	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/25/21 18:54	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/25/21 18:54	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/25/21 18:54	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/25/21 18:54	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/25/21 18:54	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		10/25/21 18:54	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/25/21 18:54	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 18:54	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/25/21 18:54	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		10/25/21 18:54	1
Trichlorofluoromethane	1.0	U Q	1.0	1.0	0.42	ug/L		10/25/21 18:54	1
Vinyl acetate	2.0	U Q	2.0	2.0	0.81	ug/L		10/25/21 18:54	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		10/25/21 18:54	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		10/25/21 18:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*85 - 114*		*10/25/21 18:54*	*1*
Dibromofluoromethane (Surr)	*109*		*80 - 119*		*10/25/21 18:54*	*1*
Toluene-d8 (Surr)	*105*		*89 - 112*		*10/25/21 18:54*	*1*
1,2-Dichloroethane-d4 (Surr)	*105*		*81 - 118*		*10/25/21 18:54*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	**37000**		50	50	17	ug/L		10/20/21 14:56	1
Manganese	**2000**		10	3.0	1.0	ug/L		10/20/21 14:56	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**400**		3.0	3.0	1.5	ug/L		10/19/21 16:01	1

Client: Seres Engineering & Services LLC
Project/Site: Seres - Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-205985-1

Client Sample ID: G6M-02-11X-FAL21
Date Collected: 10/12/21 13:15
Date Received: 10/14/21 10:30

Lab Sample ID: 680-205985-2
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 19:19	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 19:19	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/25/21 19:19	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/25/21 19:19	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/25/21 19:19	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/25/21 19:19	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/25/21 19:19	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 19:19	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/25/21 19:19	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 19:19	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/25/21 19:19	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/25/21 19:19	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 19:19	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/25/21 19:19	1
1,2-Dichloroethene, Total	2.0	U	2.0	2.0	0.74	ug/L		10/25/21 19:19	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/25/21 19:19	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		10/25/21 19:19	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/25/21 19:19	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/25/21 19:19	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/25/21 19:19	1
2,2-Dichloropropane	1.0	U Q	1.0	1.0	0.37	ug/L		10/25/21 19:19	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		10/25/21 19:19	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/25/21 19:19	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/25/21 19:19	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/25/21 19:19	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/25/21 19:19	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/25/21 19:19	1
Acetone	25	U	25	25	7.0	ug/L		10/25/21 19:19	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/25/21 19:19	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/25/21 19:19	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/25/21 19:19	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 19:19	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/25/21 19:19	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/25/21 19:19	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/25/21 19:19	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/25/21 19:19	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/25/21 19:19	1
Chloroethane	5.0	U Q	5.0	5.0	2.5	ug/L		10/25/21 19:19	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/25/21 19:19	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		10/25/21 19:19	1
cis-1,2-Dichloroethene	1.0	U	1.0	1.0	0.41	ug/L		10/25/21 19:19	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/25/21 19:19	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/25/21 19:19	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/25/21 19:19	1
Dichlorodifluoromethane	2.0	U Q	2.0	2.0	0.60	ug/L		10/25/21 19:19	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/25/21 19:19	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/25/21 19:19	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 19:19	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/25/21 19:19	1

Client Sample ID: G6M-02-11X-FAL21
Lab Sample ID: 680-205985-2

Date Collected: 10/12/21 13:15
Matrix: Water
Date Received: 10/14/21 10:30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/25/21 19:19	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 19:19	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		10/25/21 19:19	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 19:19	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/25/21 19:19	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/25/21 19:19	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/25/21 19:19	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/25/21 19:19	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/25/21 19:19	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/25/21 19:19	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		10/25/21 19:19	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/25/21 19:19	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 19:19	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/25/21 19:19	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		10/25/21 19:19	1
Trichlorofluoromethane	1.0	U Q	1.0	1.0	0.42	ug/L		10/25/21 19:19	1
Vinyl acetate	2.0	U Q	2.0	2.0	0.81	ug/L		10/25/21 19:19	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		10/25/21 19:19	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		10/25/21 19:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*85 - 114*		*10/25/21 19:19*	*1*
Dibromofluoromethane (Surr)	*113*		*80 - 119*		*10/25/21 19:19*	*1*
Toluene-d8 (Surr)	*105*		*89 - 112*		*10/25/21 19:19*	*1*
1,2-Dichloroethane-d4 (Surr)	*110*		*81 - 118*		*10/25/21 19:19*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	**39000**		50	50	17	ug/L		10/20/21 15:10	1
Manganese	**8800**		10	3.0	1.0	ug/L		10/20/21 15:10	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**520**		3.0	3.0	1.5	ug/L		10/19/21 16:04	1

Client: Seres Engineering & Services LLC
Project/Site: Seres - Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-205985-1

Client Sample ID: G6M-03-10X-FAL21
Date Collected: 10/12/21 15:45
Date Received: 10/14/21 10:30

Lab Sample ID: 680-205985-3
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 17:52	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 17:52	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/25/21 17:52	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/25/21 17:52	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/25/21 17:52	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/25/21 17:52	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/25/21 17:52	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 17:52	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/25/21 17:52	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 17:52	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/25/21 17:52	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/25/21 17:52	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 17:52	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/25/21 17:52	1
1,2-Dichloroethene, Total	2.0	U	2.0	2.0	0.74	ug/L		10/25/21 17:52	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/25/21 17:52	1
1,3,5-Trimethylbenzene	1.0	U M	1.0	1.0	0.31	ug/L		10/25/21 17:52	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/25/21 17:52	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/25/21 17:52	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/25/21 17:52	1
2,2-Dichloropropane	1.0	U Q	1.0	1.0	0.37	ug/L		10/25/21 17:52	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		10/25/21 17:52	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/25/21 17:52	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/25/21 17:52	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/25/21 17:52	1
4-Isopropyltoluene	1.0	U M	1.0	1.0	0.48	ug/L		10/25/21 17:52	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/25/21 17:52	1
Acetone	25	U Q	25	25	7.0	ug/L		10/25/21 17:52	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/25/21 17:52	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/25/21 17:52	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/25/21 17:52	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 17:52	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/25/21 17:52	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/25/21 17:52	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/25/21 17:52	1
Chlorobromomethane	1.0	U Q	1.0	1.0	0.45	ug/L		10/25/21 17:52	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/25/21 17:52	1
Chloroethane	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 17:52	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/25/21 17:52	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		10/25/21 17:52	1
cis-1,2-Dichloroethene	1.0	U	1.0	1.0	0.41	ug/L		10/25/21 17:52	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/25/21 17:52	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/25/21 17:52	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/25/21 17:52	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		10/25/21 17:52	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/25/21 17:52	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/25/21 17:52	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 17:52	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/25/21 17:52	1

Client: Seres Engineering & Services LLC
Project/Site: Seres - Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-205985-1

Client Sample ID: G6M-03-10X-FAL21
Date Collected: 10/12/21 15:45
Date Received: 10/14/21 10:30

Lab Sample ID: 680-205985-3
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/25/21 17:52	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 17:52	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		10/25/21 17:52	1
Naphthalene	5.0	U M	5.0	5.0	2.5	ug/L		10/25/21 17:52	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/25/21 17:52	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/25/21 17:52	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/25/21 17:52	1
sec-Butylbenzene	**0.96**	**J**	1.0	1.0	0.42	ug/L		10/25/21 17:52	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/25/21 17:52	1
tert-Butylbenzene	**0.93**	**J**	1.0	1.0	0.45	ug/L		10/25/21 17:52	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		10/25/21 17:52	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/25/21 17:52	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 17:52	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/25/21 17:52	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		10/25/21 17:52	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/25/21 17:52	1
Vinyl acetate	2.0	U Q	2.0	2.0	0.81	ug/L		10/25/21 17:52	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		10/25/21 17:52	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		10/25/21 17:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*85 - 114*		*10/25/21 17:52*	*1*
Dibromofluoromethane (Surr)	*104*		*80 - 119*		*10/25/21 17:52*	*1*
Toluene-d8 (Surr)	*105*		*89 - 112*		*10/25/21 17:52*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*81 - 118*		*10/25/21 17:52*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	**44000**		50	50	17	ug/L		10/20/21 15:14	1
Manganese	**1900**		10	3.0	1.0	ug/L		10/20/21 15:14	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**290**		3.0	3.0	1.5	ug/L		10/19/21 16:06	1

Client: Seres Engineering & Services LLC
Project/Site: Seres - Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-205985-1

Client Sample ID: G6M-07-02X-FAL21
Date Collected: 10/12/21 15:40
Date Received: 10/14/21 10:30

Lab Sample ID: 680-205985-4
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 18:15	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 18:15	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/25/21 18:15	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/25/21 18:15	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/25/21 18:15	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/25/21 18:15	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/25/21 18:15	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 18:15	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/25/21 18:15	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 18:15	1
1,2,4-Trimethylbenzene	**1.4**		1.0	1.0	0.47	ug/L		10/25/21 18:15	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/25/21 18:15	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 18:15	1
1,2-Dichloroethane	1.0	U	1.0	1.0	0.50	ug/L		10/25/21 18:15	1
1,2-Dichloroethene, Total	**9.8**		2.0	2.0	0.74	ug/L		10/25/21 18:15	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/25/21 18:15	1
1,3,5-Trimethylbenzene	**0.80**	**J M**	1.0	1.0	0.31	ug/L		10/25/21 18:15	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/25/21 18:15	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/25/21 18:15	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/25/21 18:15	1
2,2-Dichloropropane	1.0	U Q	1.0	1.0	0.37	ug/L		10/25/21 18:15	1
2-Butanone (MEK)	10	U M	10	10	3.4	ug/L		10/25/21 18:15	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/25/21 18:15	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/25/21 18:15	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/25/21 18:15	1
4-Isopropyltoluene	**0.80**	**J**	1.0	1.0	0.48	ug/L		10/25/21 18:15	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/25/21 18:15	1
Acetone	**19**	**J Q**	25	25	7.0	ug/L		10/25/21 18:15	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/25/21 18:15	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/25/21 18:15	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/25/21 18:15	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 18:15	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/25/21 18:15	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/25/21 18:15	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/25/21 18:15	1
Chlorobromomethane	1.0	U Q	1.0	1.0	0.45	ug/L		10/25/21 18:15	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/25/21 18:15	1
Chloroethane	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 18:15	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/25/21 18:15	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		10/25/21 18:15	1
cis-1,2-Dichloroethene	**9.8**		1.0	1.0	0.41	ug/L		10/25/21 18:15	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/25/21 18:15	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/25/21 18:15	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/25/21 18:15	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		10/25/21 18:15	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/25/21 18:15	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/25/21 18:15	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 18:15	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/25/21 18:15	1

Client Sample ID: G6M-07-02X-FAL21
Lab Sample ID: 680-205985-4

Date Collected: 10/12/21 15:40
Matrix: Water
Date Received: 10/14/21 10:30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/25/21 18:15	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 18:15	1
m-Xylene & p-Xylene	**0.57**	**J**	1.0	1.0	0.35	ug/L		10/25/21 18:15	1
Naphthalene	**5.2**		5.0	5.0	2.5	ug/L		10/25/21 18:15	1
n-Butylbenzene	**0.80**	**J**	1.0	1.0	0.47	ug/L		10/25/21 18:15	1
N-Propylbenzene	**0.84**	**J**	1.0	1.0	0.38	ug/L		10/25/21 18:15	1
o-Xylene	**1.0**	**M**	1.0	0.50	0.23	ug/L		10/25/21 18:15	1
sec-Butylbenzene	**0.86**	**J**	1.0	1.0	0.42	ug/L		10/25/21 18:15	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/25/21 18:15	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/25/21 18:15	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		10/25/21 18:15	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/25/21 18:15	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 18:15	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/25/21 18:15	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		10/25/21 18:15	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/25/21 18:15	1
Vinyl acetate	2.0	U Q	2.0	2.0	0.81	ug/L		10/25/21 18:15	1
Vinyl chloride	**1.5**	**M**	1.0	1.0	0.50	ug/L		10/25/21 18:15	1
Xylenes, Total	**1.6**	**J**	2.0	2.0	0.23	ug/L		10/25/21 18:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*85 - 114*		*10/25/21 18:15*	*1*
Dibromofluoromethane (Surr)	*105*		*80 - 119*		*10/25/21 18:15*	*1*
Toluene-d8 (Surr)	*106*		*89 - 112*		*10/25/21 18:15*	*1*
1,2-Dichloroethane-d4 (Surr)	*99*		*81 - 118*		*10/25/21 18:15*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Ethane	**3.4**		1.1	0.76	0.30	ug/L		10/20/21 21:05	1
Ethylene	**3.2**		1.0	0.71	0.31	ug/L		10/20/21 21:05	1
Methane (TCD)	**15000**		390	77	39	ug/L		10/20/21 21:05	1

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Sulfate	1.0	U M	1.0	1.0	0.40	mg/L		10/23/21 22:55	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	**170000**		50	50	17	ug/L		10/20/21 15:19	1
Manganese	**4300**		10	3.0	1.0	ug/L		10/20/21 15:19	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**25**		3.0	3.0	1.5	ug/L		10/19/21 16:14	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate/Nitrite-N	**0.074**	**J**	0.10	0.050	0.019	mg/L		10/26/21 20:55	1
Sulfide	8.1	U	8.1	8.1	8.1	mg/L		10/18/21 17:00	10
Total Organic Carbon - Duplicates	**190**		10	8.0	3.5	mg/L		10/23/21 03:34	10
Alkalinity	**130**		10	6.4	3.1	mg/L		10/23/21 09:09	1

Client: Seres Engineering & Services LLC
Project/Site: Seres - Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-205985-1

Client Sample ID: AOC50-DUP02-FAL21
Date Collected: 10/12/21 15:40
Date Received: 10/14/21 10:30

Lab Sample ID: 680-205985-5
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 17:42	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 17:42	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/25/21 17:42	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/25/21 17:42	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/25/21 17:42	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/25/21 17:42	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/25/21 17:42	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 17:42	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/25/21 17:42	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 17:42	1
1,2,4-Trimethylbenzene	**0.97**	**J**	1.0	1.0	0.47	ug/L		10/25/21 17:42	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/25/21 17:42	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 17:42	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/25/21 17:42	1
1,2-Dichloroethene, Total	**12**		2.0	2.0	0.74	ug/L		10/25/21 17:42	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/25/21 17:42	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		10/25/21 17:42	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/25/21 17:42	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/25/21 17:42	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/25/21 17:42	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 17:42	1
2-Butanone (MEK)	**8.1**	**J**	10	10	3.4	ug/L		10/25/21 17:42	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/25/21 17:42	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/25/21 17:42	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/25/21 17:42	1
4-Isopropyltoluene	1.0	U M	1.0	1.0	0.48	ug/L		10/25/21 17:42	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/25/21 17:42	1
Acetone	**21**	**J**	25	25	7.0	ug/L		10/25/21 17:42	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/25/21 17:42	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/25/21 17:42	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/25/21 17:42	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 17:42	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/25/21 17:42	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/25/21 17:42	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/25/21 17:42	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/25/21 17:42	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/25/21 17:42	1
Chloroethane	5.0	U Q	5.0	5.0	2.5	ug/L		10/25/21 17:42	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/25/21 17:42	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		10/25/21 17:42	1
cis-1,2-Dichloroethene	**12**		1.0	1.0	0.41	ug/L		10/25/21 17:42	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/25/21 17:42	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/25/21 17:42	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/25/21 17:42	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		10/25/21 17:42	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/25/21 17:42	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/25/21 17:42	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 17:42	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/25/21 17:42	1

Client Sample ID: AOC50-DUP02-FAL21
Lab Sample ID: 680-205985-5

Date Collected: 10/12/21 15:40
Matrix: Water
Date Received: 10/14/21 10:30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/25/21 17:42	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 17:42	1
m-Xylene & p-Xylene	**0.76**	**J**	1.0	1.0	0.35	ug/L		10/25/21 17:42	1
Naphthalene	**4.2**	**J**	5.0	5.0	2.5	ug/L		10/25/21 17:42	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/25/21 17:42	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/25/21 17:42	1
o-Xylene	**0.49**	**J**	1.0	0.50	0.23	ug/L		10/25/21 17:42	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/25/21 17:42	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/25/21 17:42	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/25/21 17:42	1
Tetrachloroethene	**0.90**	**J**	2.0	2.0	0.74	ug/L		10/25/21 17:42	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/25/21 17:42	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 17:42	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/25/21 17:42	1
Trichloroethene	**2.3**		1.0	1.0	0.48	ug/L		10/25/21 17:42	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/25/21 17:42	1
Vinyl acetate	2.0	U Q	2.0	2.0	0.81	ug/L		10/25/21 17:42	1
Vinyl chloride	**2.3**		1.0	1.0	0.50	ug/L		10/25/21 17:42	1
Xylenes, Total	**1.3**	**J**	2.0	2.0	0.23	ug/L		10/25/21 17:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*85 - 114*		*10/25/21 17:42*	*1*
Dibromofluoromethane (Surr)	*100*		*80 - 119*		*10/25/21 17:42*	*1*
Toluene-d8 (Surr)	*105*		*89 - 112*		*10/25/21 17:42*	*1*
1,2-Dichloroethane-d4 (Surr)	*95*		*81 - 118*		*10/25/21 17:42*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Ethane	**3.9**		1.1	0.76	0.30	ug/L		10/20/21 21:44	1
Ethylene	**3.6**		1.0	0.71	0.31	ug/L		10/20/21 21:44	1
Methane (TCD)	**18000**		390	77	39	ug/L		10/20/21 21:44	1

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Sulfate	1.0	U M	1.0	1.0	0.40	mg/L		10/23/21 23:08	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	**180000**		50	50	17	ug/L		10/20/21 15:23	1
Manganese	**4400**		10	3.0	1.0	ug/L		10/20/21 15:23	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**27**		3.0	3.0	1.5	ug/L		10/19/21 16:17	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate/Nitrite-N	**0.067**	**J**	0.10	0.050	0.019	mg/L		10/26/21 20:57	1
Sulfide	8.1	U	8.1	8.1	8.1	mg/L		10/18/21 17:00	10
Total Organic Carbon - Duplicates	**190**		10	8.0	3.5	mg/L		10/23/21 03:49	10
Alkalinity	**150**		10	6.4	3.1	mg/L		10/23/21 09:03	1

Client: Seres Engineering & Services LLC
Project/Site: Seres - Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-205985-1

Client Sample ID: G6M-13-01X-FAL21
Date Collected: 10/12/21 13:30
Date Received: 10/14/21 10:30

Lab Sample ID: 680-205985-6
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 18:03	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 18:03	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/25/21 18:03	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/25/21 18:03	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/25/21 18:03	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/25/21 18:03	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/25/21 18:03	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 18:03	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/25/21 18:03	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 18:03	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/25/21 18:03	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/25/21 18:03	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 18:03	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/25/21 18:03	1
1,2-Dichloroethene, Total	**1.9**	**J**	2.0	2.0	0.74	ug/L		10/25/21 18:03	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/25/21 18:03	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		10/25/21 18:03	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/25/21 18:03	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/25/21 18:03	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/25/21 18:03	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 18:03	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		10/25/21 18:03	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/25/21 18:03	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/25/21 18:03	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/25/21 18:03	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/25/21 18:03	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/25/21 18:03	1
Acetone	25	U	25	25	7.0	ug/L		10/25/21 18:03	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/25/21 18:03	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/25/21 18:03	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/25/21 18:03	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 18:03	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/25/21 18:03	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/25/21 18:03	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/25/21 18:03	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/25/21 18:03	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/25/21 18:03	1
Chloroethane	5.0	U Q	5.0	5.0	2.5	ug/L		10/25/21 18:03	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/25/21 18:03	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		10/25/21 18:03	1
cis-1,2-Dichloroethene	**1.9**		1.0	1.0	0.41	ug/L		10/25/21 18:03	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/25/21 18:03	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/25/21 18:03	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/25/21 18:03	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		10/25/21 18:03	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/25/21 18:03	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/25/21 18:03	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 18:03	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/25/21 18:03	1

Client Sample ID: G6M-13-01X-FAL21
Lab Sample ID: 680-205985-6

Date Collected: 10/12/21 13:30
Matrix: Water
Date Received: 10/14/21 10:30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/25/21 18:03	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 18:03	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		10/25/21 18:03	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 18:03	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/25/21 18:03	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/25/21 18:03	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/25/21 18:03	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/25/21 18:03	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/25/21 18:03	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/25/21 18:03	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		10/25/21 18:03	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/25/21 18:03	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 18:03	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/25/21 18:03	1
Trichloroethene	**1.6**		1.0	1.0	0.48	ug/L		10/25/21 18:03	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/25/21 18:03	1
Vinyl acetate	2.0	U Q	2.0	2.0	0.81	ug/L		10/25/21 18:03	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		10/25/21 18:03	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		10/25/21 18:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*85 - 114*		*10/25/21 18:03*	*1*
Dibromofluoromethane (Surr)	*103*		*80 - 119*		*10/25/21 18:03*	*1*
Toluene-d8 (Surr)	*103*		*89 - 112*		*10/25/21 18:03*	*1*
1,2-Dichloroethane-d4 (Surr)	*95*		*81 - 118*		*10/25/21 18:03*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Ethane	0.76	U	1.1	0.76	0.30	ug/L		10/20/21 21:56	1
Ethylene	**0.60**	**J**	1.0	0.71	0.31	ug/L		10/20/21 21:56	1
Methane (TCD)	**2200**		390	77	39	ug/L		10/20/21 21:56	1

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Sulfate	**11**		1.0	1.0	0.40	mg/L		10/23/21 23:20	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	**1400**		50	50	17	ug/L		10/20/21 15:28	1
Manganese	**5800**		10	3.0	1.0	ug/L		10/20/21 15:28	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**160**		3.0	3.0	1.5	ug/L		10/19/21 16:19	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate/Nitrite-N	0.050	U	0.10	0.050	0.019	mg/L		10/26/21 20:59	1
Sulfide	0.81	U	0.81	0.81	0.81	mg/L		10/18/21 17:00	1
Total Organic Carbon - Duplicates	**1.3**		1.0	0.80	0.35	mg/L		10/21/21 15:43	1
Alkalinity	**98**		10	6.4	3.1	mg/L		10/23/21 09:36	1

Client: Seres Engineering & Services LLC
Project/Site: Seres - Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-205985-1

Client Sample ID: G6M-13-04X-FAL21
Date Collected: 10/12/21 13:33
Date Received: 10/14/21 10:30

Lab Sample ID: 680-205985-7
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 18:24	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 18:24	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/25/21 18:24	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/25/21 18:24	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/25/21 18:24	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/25/21 18:24	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/25/21 18:24	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 18:24	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/25/21 18:24	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 18:24	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/25/21 18:24	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/25/21 18:24	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 18:24	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/25/21 18:24	1
1,2-Dichloroethene, Total	**0.91**	**J**	2.0	2.0	0.74	ug/L		10/25/21 18:24	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/25/21 18:24	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		10/25/21 18:24	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/25/21 18:24	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/25/21 18:24	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/25/21 18:24	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 18:24	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		10/25/21 18:24	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/25/21 18:24	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/25/21 18:24	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/25/21 18:24	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/25/21 18:24	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/25/21 18:24	1
Acetone	25	U	25	25	7.0	ug/L		10/25/21 18:24	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/25/21 18:24	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/25/21 18:24	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/25/21 18:24	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 18:24	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/25/21 18:24	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/25/21 18:24	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/25/21 18:24	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/25/21 18:24	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/25/21 18:24	1
Chloroethane	5.0	U Q	5.0	5.0	2.5	ug/L		10/25/21 18:24	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/25/21 18:24	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		10/25/21 18:24	1
cis-1,2-Dichloroethene	**0.91**	**J**	1.0	1.0	0.41	ug/L		10/25/21 18:24	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/25/21 18:24	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/25/21 18:24	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/25/21 18:24	1
Dichlorodifluoromethane	2.0	U M	2.0	2.0	0.60	ug/L		10/25/21 18:24	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/25/21 18:24	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/25/21 18:24	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 18:24	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/25/21 18:24	1

Client Sample ID: G6M-13-04X-FAL21
Lab Sample ID: 680-205985-7

Date Collected: 10/12/21 13:33
Matrix: Water
Date Received: 10/14/21 10:30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/25/21 18:24	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 18:24	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		10/25/21 18:24	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 18:24	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/25/21 18:24	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/25/21 18:24	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/25/21 18:24	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/25/21 18:24	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/25/21 18:24	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/25/21 18:24	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		10/25/21 18:24	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/25/21 18:24	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 18:24	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/25/21 18:24	1
Trichloroethene	**0.88**	**J**	1.0	1.0	0.48	ug/L		10/25/21 18:24	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/25/21 18:24	1
Vinyl acetate	2.0	U Q	2.0	2.0	0.81	ug/L		10/25/21 18:24	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		10/25/21 18:24	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		10/25/21 18:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*85 - 114*		*10/25/21 18:24*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 119*		*10/25/21 18:24*	*1*
Toluene-d8 (Surr)	*102*		*89 - 112*		*10/25/21 18:24*	*1*
1,2-Dichloroethane-d4 (Surr)	*97*		*81 - 118*		*10/25/21 18:24*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	**41000**		50	50	17	ug/L		10/20/21 15:32	1
Manganese	**8300**		10	3.0	1.0	ug/L		10/20/21 15:32	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**450**		3.0	3.0	1.5	ug/L		10/19/21 16:22	1

Client: Seres Engineering & Services LLC
Project/Site: Seres - Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-205985-1

Client Sample ID: G6M-13-06X-FAL21
Date Collected: 10/12/21 15:45
Date Received: 10/14/21 10:30

Lab Sample ID: 680-205985-8
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 18:45	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 18:45	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/25/21 18:45	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/25/21 18:45	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/25/21 18:45	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/25/21 18:45	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/25/21 18:45	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 18:45	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/25/21 18:45	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 18:45	1
1,2,4-Trimethylbenzene	**1.9**		1.0	1.0	0.47	ug/L		10/25/21 18:45	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/25/21 18:45	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 18:45	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/25/21 18:45	1
1,2-Dichloroethene, Total	**1.5**	**J**	2.0	2.0	0.74	ug/L		10/25/21 18:45	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/25/21 18:45	1
1,3,5-Trimethylbenzene	**0.51**	**J**	1.0	1.0	0.31	ug/L		10/25/21 18:45	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/25/21 18:45	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/25/21 18:45	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/25/21 18:45	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 18:45	1
2-Butanone (MEK)	**640**		10	10	3.4	ug/L		10/25/21 18:45	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/25/21 18:45	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/25/21 18:45	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/25/21 18:45	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/25/21 18:45	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/25/21 18:45	1
Acetone	**110**		25	25	7.0	ug/L		10/25/21 18:45	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/25/21 18:45	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/25/21 18:45	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/25/21 18:45	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 18:45	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/25/21 18:45	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/25/21 18:45	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/25/21 18:45	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/25/21 18:45	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/25/21 18:45	1
Chloroethane	5.0	U Q	5.0	5.0	2.5	ug/L		10/25/21 18:45	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/25/21 18:45	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		10/25/21 18:45	1
cis-1,2-Dichloroethene	**1.5**	**M**	1.0	1.0	0.41	ug/L		10/25/21 18:45	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/25/21 18:45	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/25/21 18:45	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/25/21 18:45	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		10/25/21 18:45	1
Ethylbenzene	**2.0**		1.0	1.0	0.33	ug/L		10/25/21 18:45	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/25/21 18:45	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 18:45	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/25/21 18:45	1

Client Sample ID: G6M-13-06X-FAL21
Lab Sample ID: 680-205985-8

Date Collected: 10/12/21 15:45
Matrix: Water
Date Received: 10/14/21 10:30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	**0.40**	**J**	10	1.0	0.30	ug/L		10/25/21 18:45	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 18:45	1
m-Xylene & p-Xylene	**0.71**	**J**	1.0	1.0	0.35	ug/L		10/25/21 18:45	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 18:45	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/25/21 18:45	1
N-Propylbenzene	1.0	U M	1.0	1.0	0.38	ug/L		10/25/21 18:45	1
o-Xylene	**0.49**	**J**	1.0	0.50	0.23	ug/L		10/25/21 18:45	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/25/21 18:45	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/25/21 18:45	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/25/21 18:45	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		10/25/21 18:45	1
Toluene	**9.3**		1.0	1.0	0.48	ug/L		10/25/21 18:45	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 18:45	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/25/21 18:45	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		10/25/21 18:45	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/25/21 18:45	1
Vinyl acetate	2.0	U Q	2.0	2.0	0.81	ug/L		10/25/21 18:45	1
Vinyl chloride	**0.59**	**J**	1.0	1.0	0.50	ug/L		10/25/21 18:45	1
Xylenes, Total	**1.2**	**J**	2.0	2.0	0.23	ug/L		10/25/21 18:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*85 - 114*		*10/25/21 18:45*	*1*
Dibromofluoromethane (Surr)	*101*		*80 - 119*		*10/25/21 18:45*	*1*
Toluene-d8 (Surr)	*106*		*89 - 112*		*10/25/21 18:45*	*1*
1,2-Dichloroethane-d4 (Surr)	*96*		*81 - 118*		*10/25/21 18:45*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Ethane	**8.4**		1.1	0.76	0.30	ug/L		10/20/21 22:09	1
Ethylene	**4.7**		1.0	0.71	0.31	ug/L		10/20/21 22:09	1
Methane (TCD)	**12000**		390	77	39	ug/L		10/20/21 22:09	1

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Sulfate	1.0	U M	1.0	1.0	0.40	mg/L		10/23/21 23:33	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	**220000**		50	50	17	ug/L		10/20/21 15:37	1
Manganese	**2300**		10	3.0	1.0	ug/L		10/20/21 15:37	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**440**		3.0	3.0	1.5	ug/L		10/19/21 16:24	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate/Nitrite-N	**0.064**	**J**	0.10	0.050	0.019	mg/L		10/26/21 21:01	1
Sulfide	0.81	U	0.81	0.81	0.81	mg/L		10/18/21 17:00	1

Client: Seres Engineering & Services LLC
Job ID: 680-205985-1
Project/Site: Seres - Arcadis JV, LTM, AOC 50, Fall 2021

Client Sample ID: G6M-13-06X-FAL21
Lab Sample ID: 680-205985-8
Date Collected: 10/12/21 15:45
Matrix: Water
Date Received: 10/14/21 10:30

General Chemistry (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	150		4.2	3.3	1.4	mg/L		10/21/21 16:00	4.166666666667
Alkalinity	310		10	6.4	3.1	mg/L		10/23/21 09:30	1

Client Sample Results

Client: Seres Engineering & Services LLC
Job ID: 680-205985-1
Project/Site: Seres - Arcadis JV, LTM, AOC 50, Fall 2021

Client Sample ID: G6M-97-28X-FAL21
Lab Sample ID: 680-205985-9

Date Collected: 10/12/21 10:45
Matrix: Water
Date Received: 10/14/21 10:30

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	7700		50	50	17	ug/L		10/20/21 15:41	1
Manganese	6800		10	3.0	1.0	ug/L		10/20/21 15:41	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	120		3.0	3.0	1.5	ug/L		10/19/21 16:27	1

Client: Seres Engineering & Services LLC
Project/Site: Seres - Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-205985-1

Client Sample ID: MW-3-FAL21
Date Collected: 10/12/21 12:05
Date Received: 10/14/21 10:30

Lab Sample ID: 680-205985-10
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 20:08	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 20:08	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/25/21 20:08	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/25/21 20:08	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/25/21 20:08	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/25/21 20:08	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/25/21 20:08	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 20:08	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/25/21 20:08	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 20:08	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/25/21 20:08	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/25/21 20:08	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 20:08	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/25/21 20:08	1
1,2-Dichloroethene, Total	2.0	U	2.0	2.0	0.74	ug/L		10/25/21 20:08	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/25/21 20:08	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		10/25/21 20:08	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/25/21 20:08	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/25/21 20:08	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/25/21 20:08	1
2,2-Dichloropropane	1.0	U Q	1.0	1.0	0.37	ug/L		10/25/21 20:08	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		10/25/21 20:08	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/25/21 20:08	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/25/21 20:08	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/25/21 20:08	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/25/21 20:08	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/25/21 20:08	1
Acetone	25	U	25	25	7.0	ug/L		10/25/21 20:08	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/25/21 20:08	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/25/21 20:08	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/25/21 20:08	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 20:08	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/25/21 20:08	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/25/21 20:08	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/25/21 20:08	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/25/21 20:08	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/25/21 20:08	1
Chloroethane	5.0	U J1 Q	5.0	5.0	2.5	ug/L		10/25/21 20:08	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/25/21 20:08	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		10/25/21 20:08	1
cis-1,2-Dichloroethene	**0.51**	**J**	1.0	1.0	0.41	ug/L		10/25/21 20:08	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/25/21 20:08	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/25/21 20:08	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/25/21 20:08	1
Dichlorodifluoromethane	2.0	U Q	2.0	2.0	0.60	ug/L		10/25/21 20:08	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/25/21 20:08	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/25/21 20:08	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 20:08	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/25/21 20:08	1

Client Sample ID: MW-3-FAL21
Date Collected: 10/12/21 12:05
Date Received: 10/14/21 10:30

Lab Sample ID: 680-205985-10
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/25/21 20:08	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 20:08	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		10/25/21 20:08	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 20:08	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/25/21 20:08	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/25/21 20:08	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/25/21 20:08	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/25/21 20:08	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/25/21 20:08	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/25/21 20:08	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		10/25/21 20:08	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/25/21 20:08	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 20:08	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/25/21 20:08	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		10/25/21 20:08	1
Trichlorofluoromethane	1.0	U Q	1.0	1.0	0.42	ug/L		10/25/21 20:08	1
Vinyl acetate	2.0	U Q	2.0	2.0	0.81	ug/L		10/25/21 20:08	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		10/25/21 20:08	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		10/25/21 20:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*85 - 114*		*10/25/21 20:08*	*1*
Dibromofluoromethane (Surr)	*110*		*80 - 119*		*10/25/21 20:08*	*1*
Toluene-d8 (Surr)	*104*		*89 - 112*		*10/25/21 20:08*	*1*
1,2-Dichloroethane-d4 (Surr)	*109*		*81 - 118*		*10/25/21 20:08*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	**41000**	**J1**	50	50	17	ug/L		10/20/21 14:31	1
Manganese	**8900**	**J1**	10	3.0	1.0	ug/L		10/20/21 14:31	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**530**	**J1**	3.0	3.0	1.5	ug/L		10/19/21 15:49	1

Client: Seres Engineering & Services LLC
Project/Site: Seres - Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-205985-1

Client Sample ID: MW-7-FAL21
Date Collected: 10/12/21 10:30
Date Received: 10/14/21 10:30

Lab Sample ID: 680-205985-13
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 19:49	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 19:49	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/25/21 19:49	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/25/21 19:49	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/25/21 19:49	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/25/21 19:49	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/25/21 19:49	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 19:49	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/25/21 19:49	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 19:49	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/25/21 19:49	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/25/21 19:49	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 19:49	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/25/21 19:49	1
1,2-Dichloroethene, Total	**3.0**		2.0	2.0	0.74	ug/L		10/25/21 19:49	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/25/21 19:49	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		10/25/21 19:49	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/25/21 19:49	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/25/21 19:49	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/25/21 19:49	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 19:49	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		10/25/21 19:49	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/25/21 19:49	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/25/21 19:49	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/25/21 19:49	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/25/21 19:49	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/25/21 19:49	1
Acetone	25	U	25	25	7.0	ug/L		10/25/21 19:49	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/25/21 19:49	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/25/21 19:49	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/25/21 19:49	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 19:49	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/25/21 19:49	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/25/21 19:49	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/25/21 19:49	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/25/21 19:49	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/25/21 19:49	1
Chloroethane	5.0	U Q	5.0	5.0	2.5	ug/L		10/25/21 19:49	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/25/21 19:49	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		10/25/21 19:49	1
cis-1,2-Dichloroethene	**3.0**		1.0	1.0	0.41	ug/L		10/25/21 19:49	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/25/21 19:49	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/25/21 19:49	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/25/21 19:49	1
Dichlorodifluoromethane	2.0	U M	2.0	2.0	0.60	ug/L		10/25/21 19:49	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/25/21 19:49	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/25/21 19:49	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 19:49	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/25/21 19:49	1

Client Sample ID: MW-7-FAL21
Date Collected: 10/12/21 10:30
Date Received: 10/14/21 10:30

Lab Sample ID: 680-205985-13
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/25/21 19:49	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 19:49	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		10/25/21 19:49	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 19:49	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/25/21 19:49	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/25/21 19:49	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/25/21 19:49	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/25/21 19:49	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/25/21 19:49	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/25/21 19:49	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		10/25/21 19:49	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/25/21 19:49	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 19:49	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/25/21 19:49	1
Trichloroethene	**0.65**	**J**	1.0	1.0	0.48	ug/L		10/25/21 19:49	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/25/21 19:49	1
Vinyl acetate	2.0	U Q	2.0	2.0	0.81	ug/L		10/25/21 19:49	1
Vinyl chloride	**1.6**		1.0	1.0	0.50	ug/L		10/25/21 19:49	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		10/25/21 19:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*85 - 114*		*10/25/21 19:49*	*1*
Dibromofluoromethane (Surr)	*100*		*80 - 119*		*10/25/21 19:49*	*1*
Toluene-d8 (Surr)	*106*		*89 - 112*		*10/25/21 19:49*	*1*
1,2-Dichloroethane-d4 (Surr)	*95*		*81 - 118*		*10/25/21 19:49*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	**26000**		50	50	17	ug/L		10/20/21 15:46	1
Manganese	**11000**		10	3.0	1.0	ug/L		10/20/21 15:46	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**490**		3.0	3.0	1.5	ug/L		10/19/21 16:30	1

Client: Seres Engineering & Services LLC
Project/Site: Seres - Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-205985-1

Client Sample ID: AOC50-RB01-FAL21
Date Collected: 10/12/21 11:15
Date Received: 10/14/21 10:30

Lab Sample ID: 680-205985-14
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 20:10	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 20:10	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/25/21 20:10	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/25/21 20:10	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/25/21 20:10	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/25/21 20:10	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/25/21 20:10	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 20:10	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/25/21 20:10	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 20:10	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/25/21 20:10	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/25/21 20:10	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 20:10	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/25/21 20:10	1
1,2-Dichloroethene, Total	2.0	U	2.0	2.0	0.74	ug/L		10/25/21 20:10	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/25/21 20:10	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		10/25/21 20:10	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/25/21 20:10	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/25/21 20:10	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/25/21 20:10	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 20:10	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		10/25/21 20:10	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/25/21 20:10	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/25/21 20:10	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/25/21 20:10	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/25/21 20:10	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/25/21 20:10	1
Acetone	25	U	25	25	7.0	ug/L		10/25/21 20:10	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/25/21 20:10	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/25/21 20:10	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/25/21 20:10	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 20:10	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/25/21 20:10	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/25/21 20:10	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/25/21 20:10	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/25/21 20:10	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/25/21 20:10	1
Chloroethane	5.0	U Q	5.0	5.0	2.5	ug/L		10/25/21 20:10	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/25/21 20:10	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		10/25/21 20:10	1
cis-1,2-Dichloroethene	1.0	U	1.0	1.0	0.41	ug/L		10/25/21 20:10	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/25/21 20:10	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/25/21 20:10	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/25/21 20:10	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		10/25/21 20:10	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/25/21 20:10	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/25/21 20:10	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 20:10	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/25/21 20:10	1

Client Sample ID: AOC50-RB01-FAL21
Lab Sample ID: 680-205985-14

Date Collected: 10/12/21 11:15
Matrix: Water
Date Received: 10/14/21 10:30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/25/21 20:10	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 20:10	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		10/25/21 20:10	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 20:10	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/25/21 20:10	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/25/21 20:10	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/25/21 20:10	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/25/21 20:10	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/25/21 20:10	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/25/21 20:10	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		10/25/21 20:10	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/25/21 20:10	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 20:10	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/25/21 20:10	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		10/25/21 20:10	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/25/21 20:10	1
Vinyl acetate	2.0	U Q	2.0	2.0	0.81	ug/L		10/25/21 20:10	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		10/25/21 20:10	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		10/25/21 20:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*85 - 114*		*10/25/21 20:10*	*1*
Dibromofluoromethane (Surr)	*101*		*80 - 119*		*10/25/21 20:10*	*1*
Toluene-d8 (Surr)	*101*		*89 - 112*		*10/25/21 20:10*	*1*
1,2-Dichloroethane-d4 (Surr)	*96*		*81 - 118*		*10/25/21 20:10*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	50	U	50	50	17	ug/L		10/20/21 15:50	1
Manganese	**1.0**	**J**	10	3.0	1.0	ug/L		10/20/21 15:50	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	3.0	U	3.0	3.0	1.5	ug/L		10/19/21 16:32	1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-690986/11
Matrix: Water
Analysis Batch: 690986

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 14:30	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 14:30	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/25/21 14:30	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/25/21 14:30	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/25/21 14:30	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/25/21 14:30	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/25/21 14:30	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 14:30	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/25/21 14:30	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 14:30	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/25/21 14:30	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/25/21 14:30	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 14:30	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/25/21 14:30	1
1,2-Dichloroethene, Total	2.0	U	2.0	2.0	0.74	ug/L		10/25/21 14:30	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/25/21 14:30	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		10/25/21 14:30	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/25/21 14:30	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/25/21 14:30	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/25/21 14:30	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 14:30	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		10/25/21 14:30	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/25/21 14:30	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/25/21 14:30	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/25/21 14:30	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/25/21 14:30	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/25/21 14:30	1
Acetone	25	U	25	25	7.0	ug/L		10/25/21 14:30	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/25/21 14:30	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/25/21 14:30	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/25/21 14:30	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 14:30	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/25/21 14:30	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/25/21 14:30	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/25/21 14:30	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/25/21 14:30	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/25/21 14:30	1
Chloroethane	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 14:30	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/25/21 14:30	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		10/25/21 14:30	1
cis-1,2-Dichloroethene	1.0	U	1.0	1.0	0.41	ug/L		10/25/21 14:30	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/25/21 14:30	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/25/21 14:30	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/25/21 14:30	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		10/25/21 14:30	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/25/21 14:30	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/25/21 14:30	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 14:30	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-690986/11
Matrix: Water
Analysis Batch: 690986

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/25/21 14:30	1
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/25/21 14:30	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 14:30	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		10/25/21 14:30	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 14:30	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/25/21 14:30	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/25/21 14:30	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/25/21 14:30	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/25/21 14:30	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/25/21 14:30	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/25/21 14:30	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		10/25/21 14:30	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/25/21 14:30	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 14:30	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/25/21 14:30	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		10/25/21 14:30	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/25/21 14:30	1
Vinyl acetate	2.0	U	2.0	2.0	0.81	ug/L		10/25/21 14:30	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		10/25/21 14:30	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		10/25/21 14:30	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*85 - 114*		*10/25/21 14:30*	*1*
Dibromofluoromethane (Surr)	*110*		*80 - 119*		*10/25/21 14:30*	*1*
Toluene-d8 (Surr)	*104*		*89 - 112*		*10/25/21 14:30*	*1*
1,2-Dichloroethane-d4 (Surr)	*110*		*81 - 118*		*10/25/21 14:30*	*1*

Lab Sample ID: LCS 680-690986/5
Matrix: Water
Analysis Batch: 690986

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	50.0	52.8		ug/L		106	78 - 124
1,1,1-Trichloroethane	50.0	52.3		ug/L		105	74 - 131
1,1,2,2-Tetrachloroethane	50.0	49.5		ug/L		99	71 - 121
1,1,2-Trichloroethane	50.0	49.9		ug/L		100	80 - 119
1,1-Dichloroethane	50.0	53.2		ug/L		106	77 - 125
1,1-Dichloroethene	50.0	52.3		ug/L		105	71 - 131
1,1-Dichloropropene	50.0	52.7		ug/L		105	79 - 125
1,2,3-Trichlorobenzene	50.0	47.0		ug/L		94	69 - 129
1,2,3-Trichloropropane	50.0	51.8		ug/L		104	73 - 122
1,2,4-Trichlorobenzene	50.0	46.6		ug/L		93	69 - 130
1,2,4-Trimethylbenzene	50.0	46.4		ug/L		93	76 - 124
1,2-Dibromo-3-Chloropropane	50.0	49.3		ug/L		99	62 - 128
1,2-Dichlorobenzene	50.0	49.4		ug/L		99	80 - 119
1,2-Dichloroethane	50.0	53.9		ug/L		108	73 - 128
1,2-Dichloroethene, Total	100	102		ug/L		102	79 - 121
1,2-Dichloropropane	50.0	50.1		ug/L		100	78 - 122

Client: Seres Engineering & Services LLC
Project/Site: Seres - Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-205985-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-690986/5
Matrix: Water
Analysis Batch: 690986

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3,5-Trimethylbenzene	50.0	48.0		ug/L		96	75 - 124
1,3-Dichlorobenzene	50.0	49.4		ug/L		99	80 - 119
1,3-Dichloropropane	50.0	50.2		ug/L		100	80 - 119
1,4-Dichlorobenzene	50.0	49.1		ug/L		98	79 - 118
2,2-Dichloropropane	50.0	56.0		ug/L		112	60 - 139
2-Butanone (MEK)	250	246		ug/L		98	56 - 143
2-Chlorotoluene	50.0	48.6		ug/L		97	79 - 122
2-Hexanone	250	260		ug/L		104	57 - 139
4-Chlorotoluene	50.0	50.2		ug/L		100	78 - 122
4-Isopropyltoluene	50.0	49.7		ug/L		99	77 - 127
4-Methyl-2-pentanone (MIBK)	250	266		ug/L		106	67 - 130
Acetone	250	259		ug/L		103	39 - 160
Benzene	50.0	49.6		ug/L		99	79 - 120
Bromobenzene	50.0	47.8		ug/L		96	80 - 120
Bromoform	50.0	53.6		ug/L		107	66 - 130
Bromomethane	50.0	48.4		ug/L		97	53 - 141
Carbon disulfide	50.0	51.4		ug/L		103	64 - 133
Carbon tetrachloride	50.0	54.0		ug/L		108	72 - 136
Chlorobenzene	50.0	48.1		ug/L		96	82 - 118
Chlorobromomethane	50.0	48.0		ug/L		96	78 - 123
Chlorodibromomethane	50.0	53.1		ug/L		106	74 - 126
Chloroethane	50.0	86.1	Q	ug/L		172	60 - 138
Chloroform	50.0	52.0		ug/L		104	79 - 124
Chloromethane	50.0	53.0		ug/L		106	50 - 139
cis-1,2-Dichloroethene	50.0	50.6		ug/L		101	78 - 123
cis-1,3-Dichloropropene	50.0	54.1		ug/L		108	75 - 124
Dibromomethane	50.0	50.9		ug/L		102	79 - 123
Dichlorobromomethane	50.0	53.0		ug/L		106	79 - 125
Dichlorodifluoromethane	50.0	59.1		ug/L		118	32 - 152
Ethylbenzene	50.0	49.6		ug/L		99	79 - 121
Ethylene Dibromide	50.0	51.3		ug/L		103	75 - 127
Hexachlorobutadiene	50.0	45.0		ug/L		90	66 - 134
Isopropylbenzene	50.0	49.8		ug/L		100	72 - 131
Methyl tert-butyl ether	50.0	51.9		ug/L		104	71 - 124
Methylene Chloride	50.0	49.3		ug/L		99	74 - 124
m-Xylene & p-Xylene	50.0	49.4		ug/L		99	80 - 121
Naphthalene	50.0	47.3		ug/L		95	61 - 128
n-Butylbenzene	50.0	50.7		ug/L		101	75 - 128
N-Propylbenzene	50.0	50.8		ug/L		102	76 - 126
o-Xylene	50.0	49.1		ug/L		98	78 - 122
sec-Butylbenzene	50.0	48.9		ug/L		98	77 - 126
Styrene	50.0	50.9		ug/L		102	78 - 123
tert-Butylbenzene	50.0	48.8		ug/L		98	78 - 124
Tetrachloroethene	50.0	50.2		ug/L		100	74 - 129
Toluene	50.0	50.0		ug/L		100	80 - 121
trans-1,2-Dichloroethene	50.0	51.5		ug/L		103	75 - 124
trans-1,3-Dichloropropene	50.0	53.4		ug/L		107	73 - 127
Trichloroethene	50.0	49.0		ug/L		98	79 - 123
Trichlorofluoromethane	50.0	57.3		ug/L		115	65 - 141

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-690986/5
Matrix: Water
Analysis Batch: 690986

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Vinyl acetate	100	145		ug/L		145	54 - 146
Vinyl chloride	50.0	50.0		ug/L		100	58 - 137
Xylenes, Total	100	98.5		ug/L		99	79 - 121

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*100*		*85 - 114*
Dibromofluoromethane (Surr)	*106*		*80 - 119*
Toluene-d8 (Surr)	*103*		*89 - 112*
1,2-Dichloroethane-d4 (Surr)	*111*		*81 - 118*

Lab Sample ID: LCSD 680-690986/6
Matrix: Water
Analysis Batch: 690986

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	50.0	54.6		ug/L		109	78 - 124	3	20
1,1,1-Trichloroethane	50.0	54.0		ug/L		108	74 - 131	3	20
1,1,2,2-Tetrachloroethane	50.0	49.0		ug/L		98	71 - 121	1	20
1,1,2-Trichloroethane	50.0	49.5		ug/L		99	80 - 119	1	20
1,1-Dichloroethane	50.0	52.9		ug/L		106	77 - 125	1	20
1,1-Dichloroethene	50.0	52.8		ug/L		106	71 - 131	1	20
1,1-Dichloropropene	50.0	52.4		ug/L		105	79 - 125	1	20
1,2,3-Trichlorobenzene	50.0	47.0		ug/L		94	69 - 129	0	20
1,2,3-Trichloropropane	50.0	51.3		ug/L		103	73 - 122	1	20
1,2,4-Trichlorobenzene	50.0	46.4		ug/L		93	69 - 130	0	20
1,2,4-Trimethylbenzene	50.0	47.6		ug/L		95	76 - 124	2	20
1,2-Dibromo-3-Chloropropane	50.0	49.3		ug/L		99	62 - 128	0	20
1,2-Dichlorobenzene	50.0	49.3		ug/L		99	80 - 119	0	20
1,2-Dichloroethane	50.0	53.9		ug/L		108	73 - 128	0	20
1,2-Dichloroethene, Total	100	102		ug/L		102	79 - 121	0	20
1,2-Dichloropropane	50.0	50.0		ug/L		100	78 - 122	0	20
1,3,5-Trimethylbenzene	50.0	49.0		ug/L		98	75 - 124	2	20
1,3-Dichlorobenzene	50.0	49.4		ug/L		99	80 - 119	0	20
1,3-Dichloropropane	50.0	49.4		ug/L		99	80 - 119	2	20
1,4-Dichlorobenzene	50.0	48.7		ug/L		97	79 - 118	1	20
2,2-Dichloropropane	50.0	55.9		ug/L		112	60 - 139	0	20
2-Butanone (MEK)	250	242		ug/L		97	56 - 143	2	20
2-Chlorotoluene	50.0	50.3		ug/L		101	79 - 122	4	20
2-Hexanone	250	248		ug/L		99	57 - 139	5	20
4-Chlorotoluene	50.0	51.0		ug/L		102	78 - 122	2	20
4-Isopropyltoluene	50.0	49.3		ug/L		99	77 - 127	1	20
4-Methyl-2-pentanone (MIBK)	250	256		ug/L		102	67 - 130	4	20
Acetone	250	255		ug/L		102	39 - 160	1	20
Benzene	50.0	49.3		ug/L		99	79 - 120	1	20
Bromobenzene	50.0	49.4		ug/L		99	80 - 120	3	20
Bromoform	50.0	55.7		ug/L		111	66 - 130	4	20
Bromomethane	50.0	50.8		ug/L		102	53 - 141	5	20
Carbon disulfide	50.0	51.3		ug/L		103	64 - 133	0	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 680-690986/6
Matrix: Water
Analysis Batch: 690986

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Carbon tetrachloride	50.0	54.4		ug/L		109	72 - 136	1	20
Chlorobenzene	50.0	48.7		ug/L		97	82 - 118	1	20
Chlorobromomethane	50.0	47.3		ug/L		95	78 - 123	1	20
Chlorodibromomethane	50.0	53.0		ug/L		106	74 - 126	0	20
Chloroethane	50.0	84.6	Q	ug/L		169	60 - 138	2	20
Chloroform	50.0	51.9		ug/L		104	79 - 124	0	20
Chloromethane	50.0	52.4		ug/L		105	50 - 139	1	20
cis-1,2-Dichloroethene	50.0	50.4		ug/L		101	78 - 123	0	20
cis-1,3-Dichloropropene	50.0	53.7		ug/L		107	75 - 124	1	20
Dibromomethane	50.0	50.6		ug/L		101	79 - 123	1	20
Dichlorobromomethane	50.0	52.7		ug/L		105	79 - 125	0	20
Dichlorodifluoromethane	50.0	59.9		ug/L		120	32 - 152	1	20
Ethylbenzene	50.0	50.4		ug/L		101	79 - 121	2	20
Ethylene Dibromide	50.0	50.7		ug/L		101	75 - 127	1	20
Hexachlorobutadiene	50.0	44.6		ug/L		89	66 - 134	1	20
Isopropylbenzene	50.0	51.4		ug/L		103	72 - 131	3	20
Methyl tert-butyl ether	50.0	51.9		ug/L		104	71 - 124	0	20
Methylene Chloride	50.0	49.2		ug/L		98	74 - 124	0	20
m-Xylene & p-Xylene	50.0	51.6		ug/L		103	80 - 121	4	20
Naphthalene	50.0	47.1		ug/L		94	61 - 128	0	20
n-Butylbenzene	50.0	50.2		ug/L		100	75 - 128	1	20
N-Propylbenzene	50.0	51.7		ug/L		103	76 - 126	2	20
o-Xylene	50.0	50.6		ug/L		101	78 - 122	3	20
sec-Butylbenzene	50.0	50.2		ug/L		100	77 - 126	3	20
Styrene	50.0	52.2		ug/L		104	78 - 123	3	20
tert-Butylbenzene	50.0	50.6		ug/L		101	78 - 124	4	20
Tetrachloroethene	50.0	49.5		ug/L		99	74 - 129	1	20
Toluene	50.0	48.7		ug/L		97	80 - 121	3	20
trans-1,2-Dichloroethene	50.0	51.3		ug/L		103	75 - 124	0	20
trans-1,3-Dichloropropene	50.0	52.7		ug/L		105	73 - 127	1	20
Trichloroethene	50.0	50.0		ug/L		100	79 - 123	2	20
Trichlorofluoromethane	50.0	57.7		ug/L		115	65 - 141	1	20
Vinyl acetate	100	140		ug/L		140	54 - 146	4	20
Vinyl chloride	50.0	50.0		ug/L		100	58 - 137	0	20
Xylenes, Total	100	102		ug/L		102	79 - 121	4	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*100*		*85 - 114*
Dibromofluoromethane (Surr)	*105*		*80 - 119*
Toluene-d8 (Surr)	*101*		*89 - 112*
1,2-Dichloroethane-d4 (Surr)	*110*		*81 - 118*

Lab Sample ID: 680-205985-10 MS
Matrix: Water
Analysis Batch: 690986

Client Sample ID: MW-3-FAL21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	1.0	U	50.0	51.6		ug/L		103	78 - 124

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 680-205985-10 MS
Matrix: Water
Analysis Batch: 690986

Client Sample ID: MW-3-FAL21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	1.0	U	50.0	52.6		ug/L		105	74 - 131
1,1,2,2-Tetrachloroethane	2.0	U	50.0	47.9		ug/L		96	71 - 121
1,1,2-Trichloroethane	1.0	U	50.0	48.4		ug/L		97	80 - 119
1,1-Dichloroethane	1.0	U	50.0	53.9		ug/L		108	77 - 125
1,1-Dichloroethene	1.0	U	50.0	53.5		ug/L		107	71 - 131
1,1-Dichloropropene	1.0	U	50.0	53.5		ug/L		107	79 - 125
1,2,3-Trichlorobenzene	5.0	U	50.0	45.7		ug/L		91	69 - 129
1,2,3-Trichloropropane	1.0	U	50.0	48.5		ug/L		97	73 - 122
1,2,4-Trichlorobenzene	5.0	U	50.0	45.3		ug/L		91	69 - 130
1,2,4-Trimethylbenzene	1.0	U	50.0	44.8		ug/L		90	76 - 124
1,2-Dibromo-3-Chloropropane	4.0	U	50.0	47.4		ug/L		95	62 - 128
1,2-Dichlorobenzene	1.0	U	50.0	49.5		ug/L		99	80 - 119
1,2-Dichloroethane	1.0	U M	50.0	51.5		ug/L		103	73 - 128
1,2-Dichloroethene, Total	2.0	U	100	102		ug/L		102	79 - 121
1,2-Dichloropropane	2.0	U	50.0	50.5		ug/L		101	78 - 122
1,3,5-Trimethylbenzene	1.0	U	50.0	46.3		ug/L		93	75 - 124
1,3-Dichlorobenzene	1.0	U	50.0	49.9		ug/L		100	80 - 119
1,3-Dichloropropane	1.0	U	50.0	49.0		ug/L		98	80 - 119
1,4-Dichlorobenzene	1.0	U	50.0	48.8		ug/L		98	79 - 118
2,2-Dichloropropane	1.0	U Q	50.0	42.9		ug/L		86	60 - 139
2-Butanone (MEK)	10	U	250	226		ug/L		90	56 - 143
2-Chlorotoluene	1.0	U	50.0	47.3		ug/L		95	79 - 122
2-Hexanone	5.0	U	250	244		ug/L		98	57 - 139
4-Chlorotoluene	1.0	U	50.0	47.4		ug/L		95	78 - 122
4-Isopropyltoluene	1.0	U	50.0	50.0		ug/L		100	77 - 127
4-Methyl-2-pentanone (MIBK)	5.0	U	250	255		ug/L		102	67 - 130
Acetone	25	U	250	239		ug/L		96	39 - 160
Benzene	1.0	U	50.0	49.9		ug/L		100	79 - 120
Bromobenzene	1.0	U	50.0	47.2		ug/L		94	80 - 120
Bromoform	1.0	U	50.0	50.7		ug/L		101	66 - 130
Bromomethane	5.0	U	50.0	48.5		ug/L		97	53 - 141
Carbon disulfide	1.0	U	50.0	53.1		ug/L		106	64 - 133
Carbon tetrachloride	1.0	U	50.0	53.5		ug/L		107	72 - 136
Chlorobenzene	1.0	U	50.0	47.7		ug/L		95	82 - 118
Chlorobromomethane	1.0	U	50.0	47.5		ug/L		95	78 - 123
Chlorodibromomethane	1.0	U	50.0	50.8		ug/L		102	74 - 126
Chloroethane	5.0	U J1 Q	50.0	90.6	J1	ug/L		181	60 - 138
Chloroform	1.0	U	50.0	50.6		ug/L		101	79 - 124
Chloromethane	1.0	U	50.0	57.2		ug/L		114	50 - 139
cis-1,2-Dichloroethene	0.51	J	50.0	50.5		ug/L		100	78 - 123
cis-1,3-Dichloropropene	1.0	U	50.0	50.8		ug/L		102	75 - 124
Dibromomethane	1.0	U	50.0	48.6		ug/L		97	79 - 123
Dichlorobromomethane	1.0	U	50.0	51.5		ug/L		103	79 - 125
Dichlorodifluoromethane	2.0	U Q	50.0	60.8		ug/L		122	32 - 152
Ethylbenzene	1.0	U	50.0	50.0		ug/L		100	79 - 121
Ethylene Dibromide	1.0	U	50.0	48.6		ug/L		97	75 - 127
Hexachlorobutadiene	5.0	U	50.0	43.3		ug/L		87	66 - 134
Isopropylbenzene	1.0	U	50.0	49.1		ug/L		98	72 - 131
Methyl tert-butyl ether	1.0	U	50.0	49.2		ug/L		98	71 - 124

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 680-205985-10 MS
Matrix: Water
Analysis Batch: 690986

Client Sample ID: MW-3-FAL21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Methylene Chloride	5.0	U	50.0	48.8		ug/L		98	74 - 124
m-Xylene & p-Xylene	1.0	U	50.0	49.1		ug/L		98	80 - 121
Naphthalene	5.0	U	50.0	46.3		ug/L		93	61 - 128
n-Butylbenzene	1.0	U	50.0	50.4		ug/L		101	75 - 128
N-Propylbenzene	1.0	U	50.0	48.9		ug/L		98	76 - 126
o-Xylene	0.50	U	50.0	48.1		ug/L		96	78 - 122
sec-Butylbenzene	1.0	U	50.0	47.9		ug/L		96	77 - 126
Styrene	1.0	U	50.0	49.1		ug/L		98	78 - 123
tert-Butylbenzene	1.0	U	50.0	47.7		ug/L		95	78 - 124
Tetrachloroethene	2.0	U	50.0	48.7		ug/L		97	74 - 129
Toluene	1.0	U	50.0	49.9		ug/L		100	80 - 121
trans-1,2-Dichloroethene	1.0	U	50.0	51.9		ug/L		104	75 - 124
trans-1,3-Dichloropropene	1.0	U	50.0	49.1		ug/L		98	73 - 127
Trichloroethene	1.0	U	50.0	49.0		ug/L		98	79 - 123
Trichlorofluoromethane	1.0	U Q	50.0	59.8		ug/L		120	65 - 141
Vinyl acetate	2.0	U Q	100	125		ug/L		125	54 - 146
Vinyl chloride	1.0	U	50.0	54.0		ug/L		108	58 - 137
Xylenes, Total	2.0	U	100	97.2		ug/L		97	79 - 121

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*102*		*85 - 114*
Dibromofluoromethane (Surr)	*103*		*80 - 119*
Toluene-d8 (Surr)	*103*		*89 - 112*
1,2-Dichloroethane-d4 (Surr)	*104*		*81 - 118*

Lab Sample ID: 680-205985-10 MSD
Matrix: Water
Analysis Batch: 690986

Client Sample ID: MW-3-FAL21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	1.0	U	50.0	53.0		ug/L		106	78 - 124	3	20
1,1,1-Trichloroethane	1.0	U	50.0	52.5		ug/L		105	74 - 131	0	20
1,1,2,2-Tetrachloroethane	2.0	U	50.0	47.7		ug/L		95	71 - 121	0	20
1,1,2-Trichloroethane	1.0	U	50.0	48.5		ug/L		97	80 - 119	0	20
1,1-Dichloroethane	1.0	U	50.0	53.2		ug/L		106	77 - 125	1	20
1,1-Dichloroethene	1.0	U	50.0	52.7		ug/L		105	71 - 131	1	20
1,1-Dichloropropene	1.0	U	50.0	53.1		ug/L		106	79 - 125	1	20
1,2,3-Trichlorobenzene	5.0	U	50.0	45.3		ug/L		91	69 - 129	1	20
1,2,3-Trichloropropane	1.0	U	50.0	48.7		ug/L		97	73 - 122	0	20
1,2,4-Trichlorobenzene	5.0	U	50.0	44.9		ug/L		90	69 - 130	1	20
1,2,4-Trimethylbenzene	1.0	U	50.0	46.4		ug/L		93	76 - 124	4	20
1,2-Dibromo-3-Chloropropane	4.0	U	50.0	46.5		ug/L		93	62 - 128	2	20
1,2-Dichlorobenzene	1.0	U	50.0	48.9		ug/L		98	80 - 119	1	20
1,2-Dichloroethane	1.0	U M	50.0	50.8		ug/L		102	73 - 128	2	20
1,2-Dichloroethene, Total	2.0	U	100	103		ug/L		103	79 - 121	0	20
1,2-Dichloropropane	2.0	U	50.0	50.3		ug/L		101	78 - 122	0	20
1,3,5-Trimethylbenzene	1.0	U	50.0	48.2		ug/L		96	75 - 124	4	20
1,3-Dichlorobenzene	1.0	U	50.0	49.9		ug/L		100	80 - 119	0	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 680-205985-10 MSD
Matrix: Water
Analysis Batch: 690986

Client Sample ID: MW-3-FAL21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,3-Dichloropropane	1.0	U	50.0	48.0		ug/L		96	80 - 119	2	20
1,4-Dichlorobenzene	1.0	U	50.0	49.4		ug/L		99	79 - 118	1	20
2,2-Dichloropropane	1.0	U Q	50.0	42.6		ug/L		85	60 - 139	1	20
2-Butanone (MEK)	10	U	250	225		ug/L		90	56 - 143	1	20
2-Chlorotoluene	1.0	U	50.0	50.3		ug/L		101	79 - 122	6	20
2-Hexanone	5.0	U	250	229		ug/L		92	57 - 139	6	20
4-Chlorotoluene	1.0	U	50.0	50.3		ug/L		101	78 - 122	6	20
4-Isopropyltoluene	1.0	U	50.0	49.9		ug/L		100	77 - 127	0	20
4-Methyl-2-pentanone (MIBK)	5.0	U	250	244		ug/L		98	67 - 130	4	20
Acetone	25	U	250	235		ug/L		94	39 - 160	2	20
Benzene	1.0	U	50.0	49.4		ug/L		99	79 - 120	1	20
Bromobenzene	1.0	U	50.0	48.7		ug/L		97	80 - 120	3	20
Bromoform	1.0	U	50.0	53.2		ug/L		106	66 - 130	5	20
Bromomethane	5.0	U	50.0	51.6		ug/L		103	53 - 141	6	20
Carbon disulfide	1.0	U	50.0	53.2		ug/L		106	64 - 133	0	20
Carbon tetrachloride	1.0	U	50.0	53.5		ug/L		107	72 - 136	0	20
Chlorobenzene	1.0	U	50.0	48.3		ug/L		97	82 - 118	1	20
Chlorobromomethane	1.0	U	50.0	47.4		ug/L		95	78 - 123	0	20
Chlorodibromomethane	1.0	U	50.0	50.6		ug/L		101	74 - 126	0	20
Chloroethane	5.0	U J1 Q	50.0	89.2	J1	ug/L		178	60 - 138	2	20
Chloroform	1.0	U	50.0	50.9		ug/L		102	79 - 124	1	20
Chloromethane	1.0	U	50.0	55.7		ug/L		111	50 - 139	3	20
cis-1,2-Dichloroethene	0.51	J	50.0	50.6		ug/L		100	78 - 123	0	20
cis-1,3-Dichloropropene	1.0	U	50.0	50.2		ug/L		100	75 - 124	1	20
Dibromomethane	1.0	U	50.0	48.6		ug/L		97	79 - 123	0	20
Dichlorobromomethane	1.0	U	50.0	51.4		ug/L		103	79 - 125	0	20
Dichlorodifluoromethane	2.0	U Q	50.0	60.0		ug/L		120	32 - 152	1	20
Ethylbenzene	1.0	U	50.0	51.0		ug/L		102	79 - 121	2	20
Ethylene Dibromide	1.0	U	50.0	49.1		ug/L		98	75 - 127	1	20
Hexachlorobutadiene	5.0	U	50.0	42.9		ug/L		86	66 - 134	1	20
Isopropylbenzene	1.0	U	50.0	51.6		ug/L		103	72 - 131	5	20
Methyl tert-butyl ether	1.0	U	50.0	48.9		ug/L		98	71 - 124	1	20
Methylene Chloride	5.0	U	50.0	49.2		ug/L		98	74 - 124	1	20
m-Xylene & p-Xylene	1.0	U	50.0	51.7		ug/L		103	80 - 121	5	20
Naphthalene	5.0	U	50.0	45.8		ug/L		92	61 - 128	1	20
n-Butylbenzene	1.0	U	50.0	50.2		ug/L		100	75 - 128	0	20
N-Propylbenzene	1.0	U	50.0	51.5		ug/L		103	76 - 126	5	20
o-Xylene	0.50	U	50.0	50.2		ug/L		100	78 - 122	4	20
sec-Butylbenzene	1.0	U	50.0	50.3		ug/L		101	77 - 126	5	20
Styrene	1.0	U	50.0	51.8		ug/L		104	78 - 123	5	20
tert-Butylbenzene	1.0	U	50.0	50.5		ug/L		101	78 - 124	6	20
Tetrachloroethene	2.0	U	50.0	48.1		ug/L		96	74 - 129	1	20
Toluene	1.0	U	50.0	48.7		ug/L		97	80 - 121	2	20
trans-1,2-Dichloroethene	1.0	U	50.0	52.1		ug/L		104	75 - 124	0	20
trans-1,3-Dichloropropene	1.0	U	50.0	48.7		ug/L		97	73 - 127	1	20
Trichloroethene	1.0	U	50.0	49.2		ug/L		98	79 - 123	0	20
Trichlorofluoromethane	1.0	U Q	50.0	58.3		ug/L		117	65 - 141	3	20
Vinyl acetate	2.0	U Q	100	125		ug/L		125	54 - 146	0	20
Vinyl chloride	1.0	U	50.0	53.2		ug/L		106	58 - 137	1	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 680-205985-10 MSD
Matrix: Water
Analysis Batch: 690986

Client Sample ID: MW-3-FAL21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Xylenes, Total	2.0	U	100	102		ug/L		102	79 - 121	5	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*100*		*85 - 114*
Dibromofluoromethane (Surr)	*102*		*80 - 119*
Toluene-d8 (Surr)	*99*		*89 - 112*
1,2-Dichloroethane-d4 (Surr)	*104*		*81 - 118*

Lab Sample ID: MB 680-691040/9
Matrix: Water
Analysis Batch: 691040

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 13:57	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 13:57	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/25/21 13:57	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/25/21 13:57	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/25/21 13:57	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/25/21 13:57	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/25/21 13:57	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 13:57	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/25/21 13:57	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 13:57	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/25/21 13:57	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/25/21 13:57	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 13:57	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/25/21 13:57	1
1,2-Dichloroethene, Total	2.0	U	2.0	2.0	0.74	ug/L		10/25/21 13:57	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/25/21 13:57	1
1,3,5-Trimethylbenzene	1.0	U M	1.0	1.0	0.31	ug/L		10/25/21 13:57	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/25/21 13:57	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/25/21 13:57	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/25/21 13:57	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 13:57	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		10/25/21 13:57	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/25/21 13:57	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/25/21 13:57	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/25/21 13:57	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/25/21 13:57	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/25/21 13:57	1
Acetone	25	U	25	25	7.0	ug/L		10/25/21 13:57	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/25/21 13:57	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/25/21 13:57	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/25/21 13:57	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 13:57	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/25/21 13:57	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/25/21 13:57	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/25/21 13:57	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-691040/9
Matrix: Water
Analysis Batch: 691040

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/25/21 13:57	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/25/21 13:57	1
Chloroethane	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 13:57	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/25/21 13:57	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		10/25/21 13:57	1
cis-1,2-Dichloroethene	1.0	U	1.0	1.0	0.41	ug/L		10/25/21 13:57	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/25/21 13:57	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/25/21 13:57	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/25/21 13:57	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		10/25/21 13:57	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/25/21 13:57	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/25/21 13:57	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 13:57	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/25/21 13:57	1
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/25/21 13:57	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 13:57	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		10/25/21 13:57	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 13:57	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/25/21 13:57	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/25/21 13:57	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/25/21 13:57	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/25/21 13:57	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/25/21 13:57	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/25/21 13:57	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		10/25/21 13:57	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/25/21 13:57	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 13:57	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/25/21 13:57	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		10/25/21 13:57	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/25/21 13:57	1
Vinyl acetate	2.0	U	2.0	2.0	0.81	ug/L		10/25/21 13:57	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		10/25/21 13:57	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		10/25/21 13:57	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*107*		*85 - 114*		*10/25/21 13:57*	*1*
Dibromofluoromethane (Surr)	*107*		*80 - 119*		*10/25/21 13:57*	*1*
Toluene-d8 (Surr)	*103*		*89 - 112*		*10/25/21 13:57*	*1*
1,2-Dichloroethane-d4 (Surr)	*103*		*81 - 118*		*10/25/21 13:57*	*1*

Lab Sample ID: LCS 680-691040/4
Matrix: Water
Analysis Batch: 691040

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	50.0	50.8		ug/L		102	78 - 124
1,1,1-Trichloroethane	50.0	50.7		ug/L		101	74 - 131
1,1,2,2-Tetrachloroethane	50.0	49.0		ug/L		98	71 - 121

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-691040/4
Matrix: Water
Analysis Batch: 691040

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,2-Trichloroethane	50.0	49.4		ug/L		99	80 - 119
1,1-Dichloroethane	50.0	50.2		ug/L		100	77 - 125
1,1-Dichloroethene	50.0	50.1		ug/L		100	71 - 131
1,1-Dichloropropene	50.0	50.1		ug/L		100	79 - 125
1,2,3-Trichlorobenzene	50.0	55.7		ug/L		111	69 - 129
1,2,3-Trichloropropane	50.0	50.2		ug/L		100	73 - 122
1,2,4-Trichlorobenzene	50.0	56.0		ug/L		112	69 - 130
1,2,4-Trimethylbenzene	50.0	48.3		ug/L		97	76 - 124
1,2-Dibromo-3-Chloropropane	50.0	51.6		ug/L		103	62 - 128
1,2-Dichlorobenzene	50.0	52.7		ug/L		105	80 - 119
1,2-Dichloroethane	50.0	52.3		ug/L		105	73 - 128
1,2-Dichloroethene, Total	100	106		ug/L		106	79 - 121
1,2-Dichloropropane	50.0	48.3		ug/L		97	78 - 122
1,3,5-Trimethylbenzene	50.0	48.7		ug/L		97	75 - 124
1,3-Dichlorobenzene	50.0	50.6	M	ug/L		101	80 - 119
1,3-Dichloropropane	50.0	48.4		ug/L		97	80 - 119
1,4-Dichlorobenzene	50.0	47.7	M	ug/L		95	79 - 118
2,2-Dichloropropane	50.0	60.2		ug/L		120	60 - 139
2-Butanone (MEK)	250	238		ug/L		95	56 - 143
2-Chlorotoluene	50.0	55.9		ug/L		112	79 - 122
2-Hexanone	250	212		ug/L		85	57 - 139
4-Chlorotoluene	50.0	53.2		ug/L		106	78 - 122
4-Isopropyltoluene	50.0	51.2		ug/L		102	77 - 127
4-Methyl-2-pentanone (MIBK)	250	258		ug/L		103	67 - 130
Acetone	250	273		ug/L		109	39 - 160
Benzene	50.0	49.5		ug/L		99	79 - 120
Bromobenzene	50.0	51.3		ug/L		103	80 - 120
Bromoform	50.0	49.4		ug/L		99	66 - 130
Bromomethane	50.0	54.2		ug/L		108	53 - 141
Carbon disulfide	50.0	53.7		ug/L		107	64 - 133
Carbon tetrachloride	50.0	49.0		ug/L		98	72 - 136
Chlorobenzene	50.0	47.7		ug/L		95	82 - 118
Chlorobromomethane	50.0	50.0		ug/L		100	78 - 123
Chlorodibromomethane	50.0	50.4		ug/L		101	74 - 126
Chloroethane	50.0	50.9		ug/L		102	60 - 138
Chloroform	50.0	52.9		ug/L		106	79 - 124
Chloromethane	50.0	49.3		ug/L		99	50 - 139
cis-1,2-Dichloroethene	50.0	54.7		ug/L		109	78 - 123
cis-1,3-Dichloropropene	50.0	51.5		ug/L		103	75 - 124
Dibromomethane	50.0	51.8		ug/L		104	79 - 123
Dichlorobromomethane	50.0	48.7		ug/L		97	79 - 125
Dichlorodifluoromethane	50.0	46.8		ug/L		94	32 - 152
Ethylbenzene	50.0	52.0		ug/L		104	79 - 121
Ethylene Dibromide	50.0	48.5		ug/L		97	75 - 127
Hexachlorobutadiene	50.0	54.1		ug/L		108	66 - 134
Isopropylbenzene	50.0	56.9		ug/L		114	72 - 131
Methyl tert-butyl ether	50.0	52.8		ug/L		106	71 - 124
Methylene Chloride	50.0	49.1		ug/L		98	74 - 124
m-Xylene & p-Xylene	50.0	54.1		ug/L		108	80 - 121

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-691040/4
Matrix: Water
Analysis Batch: 691040

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Naphthalene	50.0	51.2		ug/L		102	61 - 128
n-Butylbenzene	50.0	49.3		ug/L		99	75 - 128
N-Propylbenzene	50.0	48.1		ug/L		96	76 - 126
o-Xylene	50.0	50.1		ug/L		100	78 - 122
sec-Butylbenzene	50.0	48.0		ug/L		96	77 - 126
Styrene	50.0	46.8		ug/L		94	78 - 123
tert-Butylbenzene	50.0	48.4		ug/L		97	78 - 124
Tetrachloroethene	50.0	49.1		ug/L		98	74 - 129
Toluene	50.0	51.5		ug/L		103	80 - 121
trans-1,2-Dichloroethene	50.0	51.1		ug/L		102	75 - 124
trans-1,3-Dichloropropene	50.0	49.5		ug/L		99	73 - 127
Trichloroethene	50.0	48.4		ug/L		97	79 - 123
Trichlorofluoromethane	50.0	41.6	M	ug/L		83	65 - 141
Vinyl acetate	100	117		ug/L		117	54 - 146
Vinyl chloride	50.0	50.9		ug/L		102	58 - 137
Xylenes, Total	100	104		ug/L		104	79 - 121

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*106*		*85 - 114*
Dibromofluoromethane (Surr)	*104*		*80 - 119*
Toluene-d8 (Surr)	*102*		*89 - 112*
1,2-Dichloroethane-d4 (Surr)	*97*		*81 - 118*

Lab Sample ID: LCSD 680-691040/5
Matrix: Water
Analysis Batch: 691040

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	50.0	50.5		ug/L		101	78 - 124	1	20
1,1,1-Trichloroethane	50.0	51.0		ug/L		102	74 - 131	0	20
1,1,2,2-Tetrachloroethane	50.0	49.6		ug/L		99	71 - 121	1	20
1,1,2-Trichloroethane	50.0	50.3		ug/L		101	80 - 119	2	20
1,1-Dichloroethane	50.0	51.4		ug/L		103	77 - 125	2	20
1,1-Dichloroethene	50.0	49.3		ug/L		99	71 - 131	2	20
1,1-Dichloropropene	50.0	52.2		ug/L		104	79 - 125	4	20
1,2,3-Trichlorobenzene	50.0	54.9		ug/L		110	69 - 129	1	20
1,2,3-Trichloropropane	50.0	50.0		ug/L		100	73 - 122	0	20
1,2,4-Trichlorobenzene	50.0	54.8		ug/L		110	69 - 130	2	20
1,2,4-Trimethylbenzene	50.0	49.1		ug/L		98	76 - 124	2	20
1,2-Dibromo-3-Chloropropane	50.0	50.9		ug/L		102	62 - 128	1	20
1,2-Dichlorobenzene	50.0	51.7		ug/L		103	80 - 119	2	20
1,2-Dichloroethane	50.0	52.7		ug/L		105	73 - 128	1	20
1,2-Dichloroethene, Total	100	105		ug/L		105	79 - 121	1	20
1,2-Dichloropropane	50.0	49.6		ug/L		99	78 - 122	3	20
1,3,5-Trimethylbenzene	50.0	49.4		ug/L		99	75 - 124	1	20
1,3-Dichlorobenzene	50.0	49.9		ug/L		100	80 - 119	1	20
1,3-Dichloropropane	50.0	50.9		ug/L		102	80 - 119	5	20
1,4-Dichlorobenzene	50.0	47.6		ug/L		95	79 - 118	0	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 680-691040/5
Matrix: Water
Analysis Batch: 691040

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2,2-Dichloropropane	50.0	59.8		ug/L		120	60 - 139	1	20
2-Butanone (MEK)	250	252		ug/L		101	56 - 143	6	20
2-Chlorotoluene	50.0	56.1		ug/L		112	79 - 122	0	20
2-Hexanone	250	227		ug/L		91	57 - 139	7	20
4-Chlorotoluene	50.0	52.6		ug/L		105	78 - 122	1	20
4-Isopropyltoluene	50.0	51.0		ug/L		102	77 - 127	0	20
4-Methyl-2-pentanone (MIBK)	250	270		ug/L		108	67 - 130	5	20
Acetone	250	276		ug/L		111	39 - 160	1	20
Benzene	50.0	50.5		ug/L		101	79 - 120	2	20
Bromobenzene	50.0	52.4		ug/L		105	80 - 120	2	20
Bromoform	50.0	48.7		ug/L		97	66 - 130	1	20
Bromomethane	50.0	53.3		ug/L		107	53 - 141	2	20
Carbon disulfide	50.0	54.2		ug/L		108	64 - 133	1	20
Carbon tetrachloride	50.0	48.8		ug/L		98	72 - 136	0	20
Chlorobenzene	50.0	48.8		ug/L		98	82 - 118	2	20
Chlorobromomethane	50.0	51.4		ug/L		103	78 - 123	3	20
Chlorodibromomethane	50.0	52.3		ug/L		105	74 - 126	4	20
Chloroethane	50.0	50.7		ug/L		101	60 - 138	0	20
Chloroform	50.0	49.4		ug/L		99	79 - 124	7	20
Chloromethane	50.0	50.1		ug/L		100	50 - 139	2	20
cis-1,2-Dichloroethene	50.0	54.1		ug/L		108	78 - 123	1	20
cis-1,3-Dichloropropene	50.0	54.1		ug/L		108	75 - 124	5	20
Dibromomethane	50.0	52.5		ug/L		105	79 - 123	1	20
Dichlorobromomethane	50.0	50.6		ug/L		101	79 - 125	4	20
Dichlorodifluoromethane	50.0	46.5		ug/L		93	32 - 152	1	20
Ethylbenzene	50.0	52.4		ug/L		105	79 - 121	1	20
Ethylene Dibromide	50.0	50.4		ug/L		101	75 - 127	4	20
Hexachlorobutadiene	50.0	52.2		ug/L		104	66 - 134	4	20
Isopropylbenzene	50.0	57.3		ug/L		115	72 - 131	1	20
Methyl tert-butyl ether	50.0	52.4		ug/L		105	71 - 124	1	20
Methylene Chloride	50.0	49.4		ug/L		99	74 - 124	1	20
m-Xylene & p-Xylene	50.0	54.3		ug/L		109	80 - 121	0	20
Naphthalene	50.0	50.7		ug/L		101	61 - 128	1	20
n-Butylbenzene	50.0	48.8		ug/L		98	75 - 128	1	20
N-Propylbenzene	50.0	48.2		ug/L		96	76 - 126	0	20
o-Xylene	50.0	49.9		ug/L		100	78 - 122	0	20
sec-Butylbenzene	50.0	48.2		ug/L		96	77 - 126	0	20
Styrene	50.0	47.1		ug/L		94	78 - 123	1	20
tert-Butylbenzene	50.0	49.5		ug/L		99	78 - 124	2	20
Tetrachloroethene	50.0	50.6		ug/L		101	74 - 129	3	20
Toluene	50.0	53.3		ug/L		107	80 - 121	3	20
trans-1,2-Dichloroethene	50.0	50.4		ug/L		101	75 - 124	1	20
trans-1,3-Dichloropropene	50.0	51.9		ug/L		104	73 - 127	5	20
Trichloroethene	50.0	48.6		ug/L		97	79 - 123	0	20
Trichlorofluoromethane	50.0	49.4	M	ug/L		99	65 - 141	17	20
Vinyl acetate	100	121		ug/L		121	54 - 146	4	20
Vinyl chloride	50.0	53.0		ug/L		106	58 - 137	4	20
Xylenes, Total	100	104		ug/L		104	79 - 121	0	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 680-691040/5
Matrix: Water
Analysis Batch: 691040

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	*107*		*85 - 114*
Dibromofluoromethane (Surr)	*100*		*80 - 119*
Toluene-d8 (Surr)	*102*		*89 - 112*
1,2-Dichloroethane-d4 (Surr)	*102*		*81 - 118*

Lab Sample ID: MB 680-691048/11
Matrix: Water
Analysis Batch: 691048

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 13:58	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 13:58	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/25/21 13:58	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/25/21 13:58	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/25/21 13:58	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/25/21 13:58	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/25/21 13:58	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 13:58	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/25/21 13:58	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 13:58	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/25/21 13:58	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/25/21 13:58	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 13:58	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/25/21 13:58	1
1,2-Dichloroethene, Total	2.0	U	2.0	2.0	0.74	ug/L		10/25/21 13:58	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/25/21 13:58	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		10/25/21 13:58	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/25/21 13:58	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/25/21 13:58	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/25/21 13:58	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 13:58	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		10/25/21 13:58	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/25/21 13:58	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/25/21 13:58	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/25/21 13:58	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/25/21 13:58	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/25/21 13:58	1
Acetone	25	U	25	25	7.0	ug/L		10/25/21 13:58	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/25/21 13:58	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/25/21 13:58	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/25/21 13:58	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 13:58	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/25/21 13:58	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/25/21 13:58	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/25/21 13:58	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/25/21 13:58	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/25/21 13:58	1
Chloroethane	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 13:58	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-691048/11
Matrix: Water
Analysis Batch: 691048

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/25/21 13:58	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		10/25/21 13:58	1
cis-1,2-Dichloroethene	1.0	U	1.0	1.0	0.41	ug/L		10/25/21 13:58	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/25/21 13:58	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/25/21 13:58	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/25/21 13:58	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		10/25/21 13:58	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/25/21 13:58	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/25/21 13:58	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 13:58	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/25/21 13:58	1
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/25/21 13:58	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 13:58	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		10/25/21 13:58	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/25/21 13:58	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/25/21 13:58	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/25/21 13:58	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/25/21 13:58	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/25/21 13:58	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/25/21 13:58	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/25/21 13:58	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		10/25/21 13:58	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/25/21 13:58	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		10/25/21 13:58	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/25/21 13:58	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		10/25/21 13:58	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/25/21 13:58	1
Vinyl acetate	2.0	U	2.0	2.0	0.81	ug/L		10/25/21 13:58	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		10/25/21 13:58	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		10/25/21 13:58	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*85 - 114*		*10/25/21 13:58*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 119*		*10/25/21 13:58*	*1*
Toluene-d8 (Surr)	*105*		*89 - 112*		*10/25/21 13:58*	*1*
1,2-Dichloroethane-d4 (Surr)	*95*		*81 - 118*		*10/25/21 13:58*	*1*

Lab Sample ID: LCS 680-691048/6
Matrix: Water
Analysis Batch: 691048

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	50.0	52.3		ug/L		105	78 - 124
1,1,1-Trichloroethane	50.0	49.6		ug/L		99	74 - 131
1,1,2,2-Tetrachloroethane	50.0	48.3		ug/L		97	71 - 121
1,1,2-Trichloroethane	50.0	50.2		ug/L		100	80 - 119
1,1-Dichloroethane	50.0	50.3		ug/L		101	77 - 125
1,1-Dichloroethene	50.0	51.5		ug/L		103	71 - 131

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-691048/6
Matrix: Water
Analysis Batch: 691048

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloropropene	50.0	50.8		ug/L		102	79 - 125
1,2,3-Trichlorobenzene	50.0	50.6		ug/L		101	69 - 129
1,2,3-Trichloropropane	50.0	51.4		ug/L		103	73 - 122
1,2,4-Trichlorobenzene	50.0	51.1		ug/L		102	69 - 130
1,2,4-Trimethylbenzene	50.0	51.0		ug/L		102	76 - 124
1,2-Dibromo-3-Chloropropane	50.0	50.4		ug/L		101	62 - 128
1,2-Dichlorobenzene	50.0	49.1		ug/L		98	80 - 119
1,2-Dichloroethane	50.0	49.0		ug/L		98	73 - 128
1,2-Dichloroethene, Total	100	99.9		ug/L		100	79 - 121
1,2-Dichloropropane	50.0	50.1		ug/L		100	78 - 122
1,3,5-Trimethylbenzene	50.0	50.8		ug/L		102	75 - 124
1,3-Dichlorobenzene	50.0	50.6		ug/L		101	80 - 119
1,3-Dichloropropane	50.0	48.9		ug/L		98	80 - 119
1,4-Dichlorobenzene	50.0	48.8		ug/L		98	79 - 118
2,2-Dichloropropane	50.0	51.7		ug/L		103	60 - 139
2-Butanone (MEK)	250	256		ug/L		102	56 - 143
2-Chlorotoluene	50.0	49.2		ug/L		98	79 - 122
2-Hexanone	250	245		ug/L		98	57 - 139
4-Chlorotoluene	50.0	51.2		ug/L		102	78 - 122
4-Isopropyltoluene	50.0	49.4		ug/L		99	77 - 127
4-Methyl-2-pentanone (MIBK)	250	250		ug/L		100	67 - 130
Acetone	250	238		ug/L		95	39 - 160
Benzene	50.0	49.2		ug/L		98	79 - 120
Bromobenzene	50.0	50.9		ug/L		102	80 - 120
Bromoform	50.0	54.3		ug/L		109	66 - 130
Bromomethane	50.0	54.1		ug/L		108	53 - 141
Carbon disulfide	50.0	50.6		ug/L		101	64 - 133
Carbon tetrachloride	50.0	51.0		ug/L		102	72 - 136
Chlorobenzene	50.0	48.6		ug/L		97	82 - 118
Chlorobromomethane	50.0	50.2		ug/L		100	78 - 123
Chlorodibromomethane	50.0	52.6		ug/L		105	74 - 126
Chloroethane	50.0	54.2		ug/L		108	60 - 138
Chloroform	50.0	49.8		ug/L		100	79 - 124
Chloromethane	50.0	44.5		ug/L		89	50 - 139
cis-1,2-Dichloroethene	50.0	49.0		ug/L		98	78 - 123
cis-1,3-Dichloropropene	50.0	52.3		ug/L		105	75 - 124
Dibromomethane	50.0	49.9		ug/L		100	79 - 123
Dichlorobromomethane	50.0	49.7		ug/L		99	79 - 125
Dichlorodifluoromethane	50.0	44.4		ug/L		89	32 - 152
Ethylbenzene	50.0	49.8		ug/L		100	79 - 121
Ethylene Dibromide	50.0	49.9		ug/L		100	75 - 127
Hexachlorobutadiene	50.0	51.4		ug/L		103	66 - 134
Isopropylbenzene	50.0	49.8		ug/L		100	72 - 131
Methyl tert-butyl ether	50.0	51.7		ug/L		103	71 - 124
Methylene Chloride	50.0	48.4		ug/L		97	74 - 124
m-Xylene & p-Xylene	50.0	50.8		ug/L		102	80 - 121
Naphthalene	50.0	50.4		ug/L		101	61 - 128
n-Butylbenzene	50.0	50.8		ug/L		102	75 - 128
N-Propylbenzene	50.0	51.0		ug/L		102	76 - 126

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-691048/6
Matrix: Water
Analysis Batch: 691048

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
o-Xylene			50.0	49.8		ug/L		100	78 - 122		
sec-Butylbenzene			50.0	51.2		ug/L		102	77 - 126		
Styrene			50.0	50.7		ug/L		101	78 - 123		
tert-Butylbenzene			50.0	50.7		ug/L		101	78 - 124		
Tetrachloroethene			50.0	51.1		ug/L		102	74 - 129		
Toluene			50.0	49.4		ug/L		99	80 - 121		
trans-1,2-Dichloroethene			50.0	50.9		ug/L		102	75 - 124		
trans-1,3-Dichloropropene			50.0	52.1		ug/L		104	73 - 127		
Trichloroethene			50.0	51.4		ug/L		103	79 - 123		
Trichlorofluoromethane			50.0	44.5		ug/L		89	65 - 141		
Vinyl acetate			100	116	J1	ug/L		116	54 - 146		
Vinyl chloride			50.0	50.7		ug/L		101	58 - 137		
Xylenes, Total			100	101		ug/L		101	79 - 121		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*96*		*85 - 114*
Dibromofluoromethane (Surr)	*102*		*80 - 119*
Toluene-d8 (Surr)	*97*		*89 - 112*
1,2-Dichloroethane-d4 (Surr)	*94*		*81 - 118*

Lab Sample ID: LCSD 680-691048/7
Matrix: Water
Analysis Batch: 691048

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane			50.0	53.1		ug/L		106	78 - 124	2	20
1,1,1-Trichloroethane			50.0	49.6		ug/L		99	74 - 131	0	20
1,1,2,2-Tetrachloroethane			50.0	48.2		ug/L		96	71 - 121	0	20
1,1,2-Trichloroethane			50.0	50.7		ug/L		101	80 - 119	1	20
1,1-Dichloroethane			50.0	49.5		ug/L		99	77 - 125	1	20
1,1-Dichloroethene			50.0	50.2		ug/L		100	71 - 131	2	20
1,1-Dichloropropene			50.0	52.2		ug/L		104	79 - 125	3	20
1,2,3-Trichlorobenzene			50.0	51.8		ug/L		104	69 - 129	2	20
1,2,3-Trichloropropane			50.0	51.6		ug/L		103	73 - 122	0	20
1,2,4-Trichlorobenzene			50.0	51.2		ug/L		102	69 - 130	0	20
1,2,4-Trimethylbenzene			50.0	51.4		ug/L		103	76 - 124	1	20
1,2-Dibromo-3-Chloropropane			50.0	52.5		ug/L		105	62 - 128	4	20
1,2-Dichlorobenzene			50.0	49.9		ug/L		100	80 - 119	2	20
1,2-Dichloroethane			50.0	49.5		ug/L		99	73 - 128	1	20
1,2-Dichloroethene, Total			100	98.6		ug/L		99	79 - 121	1	20
1,2-Dichloropropane			50.0	49.6		ug/L		99	78 - 122	1	20
1,3,5-Trimethylbenzene			50.0	51.0		ug/L		102	75 - 124	0	20
1,3-Dichlorobenzene			50.0	50.5		ug/L		101	80 - 119	0	20
1,3-Dichloropropane			50.0	49.1		ug/L		98	80 - 119	0	20
1,4-Dichlorobenzene			50.0	49.8		ug/L		100	79 - 118	2	20
2,2-Dichloropropane			50.0	50.9		ug/L		102	60 - 139	2	20
2-Butanone (MEK)			250	264		ug/L		106	56 - 143	3	20
2-Chlorotoluene			50.0	49.9		ug/L		100	79 - 122	1	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 680-691048/7
Matrix: Water
Analysis Batch: 691048

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2-Hexanone			250	251		ug/L		100	57 - 139	3	20
4-Chlorotoluene			50.0	51.2		ug/L		102	78 - 122	0	20
4-Isopropyltoluene			50.0	49.9		ug/L		100	77 - 127	1	20
4-Methyl-2-pentanone (MIBK)			250	255		ug/L		102	67 - 130	2	20
Acetone			250	250		ug/L		100	39 - 160	5	20
Benzene			50.0	48.8		ug/L		98	79 - 120	1	20
Bromobenzene			50.0	51.6		ug/L		103	80 - 120	1	20
Bromoform			50.0	54.3		ug/L		109	66 - 130	0	20
Bromomethane			50.0	55.9		ug/L		112	53 - 141	3	20
Carbon disulfide			50.0	49.7		ug/L		99	64 - 133	2	20
Carbon tetrachloride			50.0	51.3		ug/L		103	72 - 136	1	20
Chlorobenzene			50.0	49.5		ug/L		99	82 - 118	2	20
Chlorobromomethane			50.0	50.7		ug/L		101	78 - 123	1	20
Chlorodibromomethane			50.0	52.5		ug/L		105	74 - 126	0	20
Chloroethane			50.0	56.2		ug/L		112	60 - 138	4	20
Chloroform			50.0	49.5		ug/L		99	79 - 124	1	20
Chloromethane			50.0	43.8		ug/L		88	50 - 139	2	20
cis-1,2-Dichloroethene			50.0	47.9		ug/L		96	78 - 123	2	20
cis-1,3-Dichloropropene			50.0	51.1		ug/L		102	75 - 124	2	20
Dibromomethane			50.0	50.0		ug/L		100	79 - 123	0	20
Dichlorobromomethane			50.0	49.9		ug/L		100	79 - 125	0	20
Dichlorodifluoromethane			50.0	44.3		ug/L		89	32 - 152	0	20
Ethylbenzene			50.0	50.3		ug/L		101	79 - 121	1	20
Ethylene Dibromide			50.0	50.4		ug/L		101	75 - 127	1	20
Hexachlorobutadiene			50.0	49.6		ug/L		99	66 - 134	4	20
Isopropylbenzene			50.0	50.4		ug/L		101	72 - 131	1	20
Methyl tert-butyl ether			50.0	52.5		ug/L		105	71 - 124	2	20
Methylene Chloride			50.0	47.9		ug/L		96	74 - 124	1	20
m-Xylene & p-Xylene			50.0	51.1		ug/L		102	80 - 121	1	20
Naphthalene			50.0	50.8		ug/L		102	61 - 128	1	20
n-Butylbenzene			50.0	50.4		ug/L		101	75 - 128	1	20
N-Propylbenzene			50.0	50.9		ug/L		102	76 - 126	0	20
o-Xylene			50.0	49.9		ug/L		100	78 - 122	0	20
sec-Butylbenzene			50.0	51.6		ug/L		103	77 - 126	1	20
Styrene			50.0	51.1		ug/L		102	78 - 123	1	20
tert-Butylbenzene			50.0	50.2		ug/L		100	78 - 124	1	20
Tetrachloroethene			50.0	51.9		ug/L		104	74 - 129	2	20
Toluene			50.0	49.5		ug/L		99	80 - 121	0	20
trans-1,2-Dichloroethene			50.0	50.7		ug/L		101	75 - 124	0	20
trans-1,3-Dichloropropene			50.0	51.8		ug/L		104	73 - 127	0	20
Trichloroethene			50.0	51.9		ug/L		104	79 - 123	1	20
Trichlorofluoromethane			50.0	45.2		ug/L		90	65 - 141	2	20
Vinyl acetate			100	117	J1	ug/L		117	54 - 146	0	20
Vinyl chloride			50.0	50.8		ug/L		102	58 - 137	0	20
Xylenes, Total			100	101		ug/L		101	79 - 121	0	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*95*		*85 - 114*

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 680-691048/7
Matrix: Water
Analysis Batch: 691048

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*102*		*80 - 119*
Toluene-d8 (Surr)	*99*		*89 - 112*
1,2-Dichloroethane-d4 (Surr)	*97*		*81 - 118*

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 680-690170/37
Matrix: Water
Analysis Batch: 690170

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Ethane	0.76	U	1.1	0.76	0.30	ug/L		10/20/21 18:46	1
Ethylene	0.71	U	1.0	0.71	0.31	ug/L		10/20/21 18:46	1
Methane	1.2	U	1.2	1.2	0.57	ug/L		10/20/21 18:46	1

Lab Sample ID: LCS 680-690170/33
Matrix: Water
Analysis Batch: 690170

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methane (TCD)	1920	1760		ug/L		91	73 - 125

Lab Sample ID: LCS 680-690170/35
Matrix: Water
Analysis Batch: 690170

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane	288	328		ug/L		114	74 - 131
Ethylene	269	300		ug/L		112	72 - 133
Methane	154	173		ug/L		112	73 - 125

Lab Sample ID: LCSD 680-690170/34
Matrix: Water
Analysis Batch: 690170

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methane (TCD)	1920	1740		ug/L		91	73 - 125	1	30

Lab Sample ID: LCSD 680-690170/36
Matrix: Water
Analysis Batch: 690170

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane	288	283		ug/L		98	74 - 131	15	30
Ethylene	269	256		ug/L		95	72 - 133	16	30
Methane	154	147		ug/L		96	73 - 125	16	30

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 680-690810/33
Matrix: Water
Analysis Batch: 690810

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Sulfate	1.0	U	1.0	1.0	0.40	mg/L		10/23/21 21:01	1

Lab Sample ID: LCS 680-690810/34
Matrix: Water
Analysis Batch: 690810

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	10.0	10.4		mg/L		104	87 - 112

Lab Sample ID: LCSD 680-690810/35
Matrix: Water
Analysis Batch: 690810

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	10.0	10.4		mg/L		104	87 - 112	0	15

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-689796/1-A
Matrix: Water
Analysis Batch: 690327

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 689796

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	50	U	50	50	17	ug/L		10/20/21 14:22	1
Manganese	3.0	U	10	3.0	1.0	ug/L		10/20/21 14:22	1

Lab Sample ID: LCS 680-689796/2-A
Matrix: Water
Analysis Batch: 690327

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 689796

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	5000	4970		ug/L		99	87 - 115
Manganese	400	404		ug/L		101	90 - 114

Lab Sample ID: 680-205985-10 MS
Matrix: Water
Analysis Batch: 690327

Client Sample ID: MW-3-FAL21
Prep Type: Dissolved
Prep Batch: 689796

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	41000	J1	5000	44900	4	ug/L		78	87 - 115
Manganese	8900	J1	400	9050	4	ug/L		42	90 - 114

Lab Sample ID: 680-205985-10 MSD
Matrix: Water
Analysis Batch: 690327

Client Sample ID: MW-3-FAL21
Prep Type: Dissolved
Prep Batch: 689796

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	41000	J1	5000	44200	4	ug/L		66	87 - 115	1	20
Manganese	8900	J1	400	8910	4	ug/L		7	90 - 114	2	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 680-689798/1-A
Matrix: Water
Analysis Batch: 690084

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 689798

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	3.0	U	3.0	3.0	1.5	ug/L		10/19/21 15:43	1

Lab Sample ID: LCS 680-689798/2-A
Matrix: Water
Analysis Batch: 690084

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 689798

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	100	106		ug/L		106	84 - 116

Lab Sample ID: 680-205985-10 MS
Matrix: Water
Analysis Batch: 690084

Client Sample ID: MW-3-FAL21
Prep Type: Dissolved
Prep Batch: 689798

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	530	J1	100	654	4	ug/L		125	84 - 116

Lab Sample ID: 680-205985-10 MSD
Matrix: Water
Analysis Batch: 690084

Client Sample ID: MW-3-FAL21
Prep Type: Dissolved
Prep Batch: 689798

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	530	J1	100	614	4	ug/L		85	84 - 116	6	20

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 280-555077/104
Matrix: Water
Analysis Batch: 555077

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate/Nitrite-N	0.050	U	0.10	0.050	0.019	mg/L		10/26/21 19:49	1

Lab Sample ID: LCS 280-555077/103
Matrix: Water
Analysis Batch: 555077

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate/Nitrite-N	5.00	4.97		mg/L		99	90 - 110

Method: 9034 - Sulfide, Acid Soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 680-689829/1
Matrix: Water
Analysis Batch: 689829

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Sulfide	1.0	U	1.0	1.0	1.0	mg/L		10/18/21 17:00	1

Method: 9034 - Sulfide, Acid Soluble and Insoluble (Titrimetric) (Continued)

Lab Sample ID: LCS 680-689829/2
Matrix: Water
Analysis Batch: 689829

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	10.0	11.2		mg/L		112	75 - 125

Lab Sample ID: LCSD 680-689829/3
Matrix: Water
Analysis Batch: 689829

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfide	10.0	11.3		mg/L		113	75 - 125	1	30

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 280-554589/4
Matrix: Water
Analysis Batch: 554589

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	0.80	U	1.0	0.80	0.35	mg/L		10/21/21 13:09	1

Lab Sample ID: LCS 280-554589/3
Matrix: Water
Analysis Batch: 554589

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	25.0	24.8		mg/L		99	88 - 112

Lab Sample ID: LCSD 280-554589/35
Matrix: Water
Analysis Batch: 554589

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Duplicates	25.0	25.2		mg/L		101	88 - 112	0	15

Lab Sample ID: MB 280-554820/35
Matrix: Water
Analysis Batch: 554820

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	0.80	U	1.0	0.80	0.35	mg/L		10/23/21 00:53	1

Lab Sample ID: LCS 280-554820/34
Matrix: Water
Analysis Batch: 554820

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	25.0	24.8		mg/L		99	88 - 112

Client: Seres Engineering & Services LLC
Project/Site: Seres - Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-205985-1

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 280-554753/141
Matrix: Water
Analysis Batch: 554753

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	4.88	J	10	6.4	3.1	mg/L		10/23/21 07:46	1

Lab Sample ID: LCS 280-554753/139
Matrix: Water
Analysis Batch: 554753

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Alkalinity			200	214		mg/L		107	89 - 109		

Lab Sample ID: LCSD 280-554753/140
Matrix: Water
Analysis Batch: 554753

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity			200	216		mg/L		108	89 - 109	1	10

GC/MS VOA

Analysis Batch: 690986

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-205985-1	G6M-02-04X-FAL21	Total/NA	Water	8260B	
680-205985-2	G6M-02-11X-FAL21	Total/NA	Water	8260B	
680-205985-10	MW-3-FAL21	Total/NA	Water	8260B	
MB 680-690986/11	Method Blank	Total/NA	Water	8260B	
LCS 680-690986/5	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-690986/6	Lab Control Sample Dup	Total/NA	Water	8260B	
680-205985-10 MS	MW-3-FAL21	Total/NA	Water	8260B	
680-205985-10 MSD	MW-3-FAL21	Total/NA	Water	8260B	

Analysis Batch: 691040

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-205985-3	G6M-03-10X-FAL21	Total/NA	Water	8260B	
680-205985-4	G6M-07-02X-FAL21	Total/NA	Water	8260B	
MB 680-691040/9	Method Blank	Total/NA	Water	8260B	
LCS 680-691040/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-691040/5	Lab Control Sample Dup	Total/NA	Water	8260B	

Analysis Batch: 691048

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-205985-5	AOC50-DUP02-FAL21	Total/NA	Water	8260B	
680-205985-6	G6M-13-01X-FAL21	Total/NA	Water	8260B	
680-205985-7	G6M-13-04X-FAL21	Total/NA	Water	8260B	
680-205985-8	G6M-13-06X-FAL21	Total/NA	Water	8260B	
680-205985-13	MW-7-FAL21	Total/NA	Water	8260B	
680-205985-14	AOC50-RB01-FAL21	Total/NA	Water	8260B	
MB 680-691048/11	Method Blank	Total/NA	Water	8260B	
LCS 680-691048/6	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-691048/7	Lab Control Sample Dup	Total/NA	Water	8260B	

GC VOA

Analysis Batch: 690170

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-205985-4	G6M-07-02X-FAL21	Total/NA	Water	RSK-175	
680-205985-5	AOC50-DUP02-FAL21	Total/NA	Water	RSK-175	
680-205985-6	G6M-13-01X-FAL21	Total/NA	Water	RSK-175	
680-205985-8	G6M-13-06X-FAL21	Total/NA	Water	RSK-175	
MB 680-690170/37	Method Blank	Total/NA	Water	RSK-175	
LCS 680-690170/33	Lab Control Sample	Total/NA	Water	RSK-175	
LCS 680-690170/35	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 680-690170/34	Lab Control Sample Dup	Total/NA	Water	RSK-175	
LCSD 680-690170/36	Lab Control Sample Dup	Total/NA	Water	RSK-175	

HPLC/IC

Analysis Batch: 690810

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-205985-4	G6M-07-02X-FAL21	Total/NA	Water	9056A	
680-205985-5	AOC50-DUP02-FAL21	Total/NA	Water	9056A	
680-205985-6	G6M-13-01X-FAL21	Total/NA	Water	9056A	
680-205985-8	G6M-13-06X-FAL21	Total/NA	Water	9056A	
MB 680-690810/33	Method Blank	Total/NA	Water	9056A	

HPLC/IC (Continued)

Analysis Batch: 690810 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 680-690810/34	Lab Control Sample	Total/NA	Water	9056A	
LCSD 680-690810/35	Lab Control Sample Dup	Total/NA	Water	9056A	

Metals

Prep Batch: 689796

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-205985-1	G6M-02-04X-FAL21	Dissolved	Water	3005A	
680-205985-2	G6M-02-11X-FAL21	Dissolved	Water	3005A	
680-205985-3	G6M-03-10X-FAL21	Dissolved	Water	3005A	
680-205985-4	G6M-07-02X-FAL21	Dissolved	Water	3005A	
680-205985-5	AOC50-DUP02-FAL21	Dissolved	Water	3005A	
680-205985-6	G6M-13-01X-FAL21	Dissolved	Water	3005A	
680-205985-7	G6M-13-04X-FAL21	Dissolved	Water	3005A	
680-205985-8	G6M-13-06X-FAL21	Dissolved	Water	3005A	
680-205985-9	G6M-97-28X-FAL21	Dissolved	Water	3005A	
680-205985-10	MW-3-FAL21	Dissolved	Water	3005A	
680-205985-13	MW-7-FAL21	Dissolved	Water	3005A	
680-205985-14	AOC50-RB01-FAL21	Dissolved	Water	3005A	
MB 680-689796/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 680-689796/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
680-205985-10 MS	MW-3-FAL21	Dissolved	Water	3005A	
680-205985-10 MSD	MW-3-FAL21	Dissolved	Water	3005A	

Prep Batch: 689798

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-205985-1	G6M-02-04X-FAL21	Dissolved	Water	3005A	
680-205985-2	G6M-02-11X-FAL21	Dissolved	Water	3005A	
680-205985-3	G6M-03-10X-FAL21	Dissolved	Water	3005A	
680-205985-4	G6M-07-02X-FAL21	Dissolved	Water	3005A	
680-205985-5	AOC50-DUP02-FAL21	Dissolved	Water	3005A	
680-205985-6	G6M-13-01X-FAL21	Dissolved	Water	3005A	
680-205985-7	G6M-13-04X-FAL21	Dissolved	Water	3005A	
680-205985-8	G6M-13-06X-FAL21	Dissolved	Water	3005A	
680-205985-9	G6M-97-28X-FAL21	Dissolved	Water	3005A	
680-205985-10	MW-3-FAL21	Dissolved	Water	3005A	
680-205985-13	MW-7-FAL21	Dissolved	Water	3005A	
680-205985-14	AOC50-RB01-FAL21	Dissolved	Water	3005A	
MB 680-689798/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 680-689798/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
680-205985-10 MS	MW-3-FAL21	Dissolved	Water	3005A	
680-205985-10 MSD	MW-3-FAL21	Dissolved	Water	3005A	

Analysis Batch: 690084

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-205985-1	G6M-02-04X-FAL21	Dissolved	Water	6020A	689798
680-205985-2	G6M-02-11X-FAL21	Dissolved	Water	6020A	689798
680-205985-3	G6M-03-10X-FAL21	Dissolved	Water	6020A	689798
680-205985-4	G6M-07-02X-FAL21	Dissolved	Water	6020A	689798
680-205985-5	AOC50-DUP02-FAL21	Dissolved	Water	6020A	689798
680-205985-6	G6M-13-01X-FAL21	Dissolved	Water	6020A	689798

Metals (Continued)

Analysis Batch: 690084 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-205985-7	G6M-13-04X-FAL21	Dissolved	Water	6020A	689798
680-205985-8	G6M-13-06X-FAL21	Dissolved	Water	6020A	689798
680-205985-9	G6M-97-28X-FAL21	Dissolved	Water	6020A	689798
680-205985-10	MW-3-FAL21	Dissolved	Water	6020A	689798
680-205985-13	MW-7-FAL21	Dissolved	Water	6020A	689798
680-205985-14	AOC50-RB01-FAL21	Dissolved	Water	6020A	689798
MB 680-689798/1-A	Method Blank	Total Recoverable	Water	6020A	689798
LCS 680-689798/2-A	Lab Control Sample	Total Recoverable	Water	6020A	689798
680-205985-10 MS	MW-3-FAL21	Dissolved	Water	6020A	689798
680-205985-10 MSD	MW-3-FAL21	Dissolved	Water	6020A	689798

Analysis Batch: 690327

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-205985-1	G6M-02-04X-FAL21	Dissolved	Water	6010C	689796
680-205985-2	G6M-02-11X-FAL21	Dissolved	Water	6010C	689796
680-205985-3	G6M-03-10X-FAL21	Dissolved	Water	6010C	689796
680-205985-4	G6M-07-02X-FAL21	Dissolved	Water	6010C	689796
680-205985-5	AOC50-DUP02-FAL21	Dissolved	Water	6010C	689796
680-205985-6	G6M-13-01X-FAL21	Dissolved	Water	6010C	689796
680-205985-7	G6M-13-04X-FAL21	Dissolved	Water	6010C	689796
680-205985-8	G6M-13-06X-FAL21	Dissolved	Water	6010C	689796
680-205985-9	G6M-97-28X-FAL21	Dissolved	Water	6010C	689796
680-205985-10	MW-3-FAL21	Dissolved	Water	6010C	689796
680-205985-13	MW-7-FAL21	Dissolved	Water	6010C	689796
680-205985-14	AOC50-RB01-FAL21	Dissolved	Water	6010C	689796
MB 680-689796/1-A	Method Blank	Total Recoverable	Water	6010C	689796
LCS 680-689796/2-A	Lab Control Sample	Total Recoverable	Water	6010C	689796
680-205985-10 MS	MW-3-FAL21	Dissolved	Water	6010C	689796
680-205985-10 MSD	MW-3-FAL21	Dissolved	Water	6010C	689796

General Chemistry

Analysis Batch: 554589

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-205985-6	G6M-13-01X-FAL21	Total/NA	Water	9060A	
680-205985-8	G6M-13-06X-FAL21	Total/NA	Water	9060A	
MB 280-554589/4	Method Blank	Total/NA	Water	9060A	
LCS 280-554589/3	Lab Control Sample	Total/NA	Water	9060A	
LCSD 280-554589/35	Lab Control Sample Dup	Total/NA	Water	9060A	

Analysis Batch: 554753

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-205985-4	G6M-07-02X-FAL21	Total/NA	Water	SM 2320B	
680-205985-5	AOC50-DUP02-FAL21	Total/NA	Water	SM 2320B	
680-205985-6	G6M-13-01X-FAL21	Total/NA	Water	SM 2320B	
680-205985-8	G6M-13-06X-FAL21	Total/NA	Water	SM 2320B	
MB 280-554753/141	Method Blank	Total/NA	Water	SM 2320B	
LCS 280-554753/139	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 280-554753/140	Lab Control Sample Dup	Total/NA	Water	SM 2320B	

QC Association Summary

Client: Seres Engineering & Services LLC
Job ID: 680-205985-1
Project/Site: Seres - Arcadis JV, LTM, AOC 50, Fall 2021

General Chemistry

Analysis Batch: 554820

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-205985-4	G6M-07-02X-FAL21	Total/NA	Water	9060A	
680-205985-5	AOC50-DUP02-FAL21	Total/NA	Water	9060A	
MB 280-554820/35	Method Blank	Total/NA	Water	9060A	
LCS 280-554820/34	Lab Control Sample	Total/NA	Water	9060A	

Analysis Batch: 555077

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-205985-4	G6M-07-02X-FAL21	Total/NA	Water	353.2	
680-205985-5	AOC50-DUP02-FAL21	Total/NA	Water	353.2	
680-205985-6	G6M-13-01X-FAL21	Total/NA	Water	353.2	
680-205985-8	G6M-13-06X-FAL21	Total/NA	Water	353.2	
MB 280-555077/104	Method Blank	Total/NA	Water	353.2	
LCS 280-555077/103	Lab Control Sample	Total/NA	Water	353.2	

Analysis Batch: 689829

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-205985-4	G6M-07-02X-FAL21	Total/NA	Water	9034	
680-205985-5	AOC50-DUP02-FAL21	Total/NA	Water	9034	
680-205985-6	G6M-13-01X-FAL21	Total/NA	Water	9034	
680-205985-8	G6M-13-06X-FAL21	Total/NA	Water	9034	
MB 680-689829/1	Method Blank	Total/NA	Water	9034	
LCS 680-689829/2	Lab Control Sample	Total/NA	Water	9034	
LCSD 680-689829/3	Lab Control Sample Dup	Total/NA	Water	9034	

Lab Chronicle

Client: Seres Engineering & Services LLC
Job ID: 680-205985-1
Project/Site: Seres - Arcadis JV, LTM, AOC 50, Fall 2021

Client Sample ID: G6M-02-04X-FAL21
Lab Sample ID: 680-205985-1
Date Collected: 10/12/21 11:19
Matrix: Water
Date Received: 10/14/21 10:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	690986	10/25/21 18:54	P1C	TAL SAV
	Instrument ID: CMSAA									
Dissolved	Prep	3005A			50 mL	50 mL	689796	10/18/21 14:25	JE	TAL SAV
Dissolved	Analysis	6010C		1			690327	10/20/21 14:56	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	689798	10/18/21 14:25	JE	TAL SAV
Dissolved	Analysis	6020A		1			690084	10/19/21 16:01	BWR	TAL SAV
	Instrument ID: ICPMSD									

Client Sample ID: G6M-02-11X-FAL21
Lab Sample ID: 680-205985-2
Date Collected: 10/12/21 13:15
Matrix: Water
Date Received: 10/14/21 10:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	690986	10/25/21 19:19	P1C	TAL SAV
	Instrument ID: CMSAA									
Dissolved	Prep	3005A			50 mL	50 mL	689796	10/18/21 14:25	JE	TAL SAV
Dissolved	Analysis	6010C		1			690327	10/20/21 15:10	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	689798	10/18/21 14:25	JE	TAL SAV
Dissolved	Analysis	6020A		1			690084	10/19/21 16:04	BWR	TAL SAV
	Instrument ID: ICPMSD									

Client Sample ID: G6M-03-10X-FAL21
Lab Sample ID: 680-205985-3
Date Collected: 10/12/21 15:45
Matrix: Water
Date Received: 10/14/21 10:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	691040	10/25/21 17:52	P1C	TAL SAV
	Instrument ID: CMSAB									
Dissolved	Prep	3005A			50 mL	50 mL	689796	10/18/21 14:25	JE	TAL SAV
Dissolved	Analysis	6010C		1			690327	10/20/21 15:14	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	689798	10/18/21 14:25	JE	TAL SAV
Dissolved	Analysis	6020A		1			690084	10/19/21 16:06	BWR	TAL SAV
	Instrument ID: ICPMSD									

Client Sample ID: G6M-07-02X-FAL21
Lab Sample ID: 680-205985-4
Date Collected: 10/12/21 15:40
Matrix: Water
Date Received: 10/14/21 10:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	691040	10/25/21 18:15	P1C	TAL SAV
	Instrument ID: CMSAB									
Total/NA	Analysis	RSK-175		1	17 mL	17 mL	690170	10/20/21 21:05	JCK	TAL SAV
	Instrument ID: CVGU									

Lab Chronicle

Client: Seres Engineering & Services LLC
Job ID: 680-205985-1
Project/Site: Seres - Arcadis JV, LTM, AOC 50, Fall 2021

Client Sample ID: G6M-07-02X-FAL21
Lab Sample ID: 680-205985-4
Date Collected: 10/12/21 15:40
Matrix: Water
Date Received: 10/14/21 10:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	5 mL	5 mL	690810	10/23/21 22:55	OK	TAL SAV
Dissolved	Prep	3005A			50 mL	50 mL	689796	10/18/21 14:25	JE	TAL SAV
Dissolved	Analysis	6010C		1			690327	10/20/21 15:19	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	689798	10/18/21 14:25	JE	TAL SAV
Dissolved	Analysis	6020A		1			690084	10/19/21 16:14	BWR	TAL SAV
	Instrument ID: ICPMSD									
Total/NA	Analysis	353.2		1	100 mL	100 mL	555077	10/26/21 20:55	SVC	TAL DEN
	Instrument ID: WC_Alp 2									
Total/NA	Analysis	9034		10	310 mL	310 mL	689829	10/18/21 17:00	AE	TAL SAV
	Instrument ID: NOEQUIP									
Total/NA	Analysis	9060A		10	20 mL	20 mL	554820	10/23/21 03:34	RAF	TAL DEN
	Instrument ID: WC_SHI3									
Total/NA	Analysis	SM 2320B		1			554753	10/23/21 09:09	ECC	TAL DEN
	Instrument ID: WC_AT4									

Client Sample ID: AOC50-DUP02-FAL21
Lab Sample ID: 680-205985-5
Date Collected: 10/12/21 15:40
Matrix: Water
Date Received: 10/14/21 10:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	691048	10/25/21 17:42	UI	TAL SAV
	Instrument ID: CMSB									
Total/NA	Analysis	RSK-175		1	17 mL	17 mL	690170	10/20/21 21:44	JCK	TAL SAV
	Instrument ID: CVGU									
Total/NA	Analysis	9056A		1	5 mL	5 mL	690810	10/23/21 23:08	OK	TAL SAV
	Instrument ID: CICK									
Dissolved	Prep	3005A			50 mL	50 mL	689796	10/18/21 14:25	JE	TAL SAV
Dissolved	Analysis	6010C		1			690327	10/20/21 15:23	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	689798	10/18/21 14:25	JE	TAL SAV
Dissolved	Analysis	6020A		1			690084	10/19/21 16:17	BWR	TAL SAV
	Instrument ID: ICPMSD									
Total/NA	Analysis	353.2		1	100 mL	100 mL	555077	10/26/21 20:57	SVC	TAL DEN
	Instrument ID: WC_Alp 2									
Total/NA	Analysis	9034		10	310 mL	310 mL	689829	10/18/21 17:00	AE	TAL SAV
	Instrument ID: NOEQUIP									
Total/NA	Analysis	9060A		10	20 mL	20 mL	554820	10/23/21 03:49	RAF	TAL DEN
	Instrument ID: WC_SHI3									
Total/NA	Analysis	SM 2320B		1			554753	10/23/21 09:03	ECC	TAL DEN
	Instrument ID: WC_AT4									

Lab Chronicle

Client: Seres Engineering & Services LLC
Project/Site: Seres - Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-205985-1

Client Sample ID: G6M-13-01X-FAL21

Date Collected: 10/12/21 13:30
Date Received: 10/14/21 10:30

Lab Sample ID: 680-205985-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	691048	10/25/21 18:03	UI	TAL SAV
	Instrument ID: CMSB									
Total/NA	Analysis	RSK-175		1	17 mL	17 mL	690170	10/20/21 21:56	JCK	TAL SAV
	Instrument ID: CVGU									
Total/NA	Analysis	9056A		1	5 mL	5 mL	690810	10/23/21 23:20	OK	TAL SAV
	Instrument ID: CICK									
Dissolved	Prep	3005A			50 mL	50 mL	689796	10/18/21 14:25	JE	TAL SAV
Dissolved	Analysis	6010C		1			690327	10/20/21 15:28	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	689798	10/18/21 14:25	JE	TAL SAV
Dissolved	Analysis	6020A		1			690084	10/19/21 16:19	BWR	TAL SAV
	Instrument ID: ICPMSD									
Total/NA	Analysis	353.2		1	100 mL	100 mL	555077	10/26/21 20:59	SVC	TAL DEN
	Instrument ID: WC_Alp 2									
Total/NA	Analysis	9034		1	310 mL	310 mL	689829	10/18/21 17:00	AE	TAL SAV
	Instrument ID: NOEQUIP									
Total/NA	Analysis	9060A		1	20 mL	20 mL	554589	10/21/21 15:43	RAF	TAL DEN
	Instrument ID: WC_SHI3									
Total/NA	Analysis	SM 2320B		1			554753	10/23/21 09:36	ECC	TAL DEN
	Instrument ID: WC_AT4									

Client Sample ID: G6M-13-04X-FAL21

Date Collected: 10/12/21 13:33
Date Received: 10/14/21 10:30

Lab Sample ID: 680-205985-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	691048	10/25/21 18:24	UI	TAL SAV
	Instrument ID: CMSB									
Dissolved	Prep	3005A			50 mL	50 mL	689796	10/18/21 14:25	JE	TAL SAV
Dissolved	Analysis	6010C		1			690327	10/20/21 15:32	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	689798	10/18/21 14:25	JE	TAL SAV
Dissolved	Analysis	6020A		1			690084	10/19/21 16:22	BWR	TAL SAV
	Instrument ID: ICPMSD									

Client Sample ID: G6M-13-06X-FAL21

Date Collected: 10/12/21 15:45
Date Received: 10/14/21 10:30

Lab Sample ID: 680-205985-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	691048	10/25/21 18:45	UI	TAL SAV
	Instrument ID: CMSB									
Total/NA	Analysis	RSK-175		1	17 mL	17 mL	690170	10/20/21 22:09	JCK	TAL SAV
	Instrument ID: CVGU									

Lab Chronicle

Client: Seres Engineering & Services LLC
Job ID: 680-205985-1
Project/Site: Seres - Arcadis JV, LTM, AOC 50, Fall 2021

Client Sample ID: G6M-13-06X-FAL21
Lab Sample ID: 680-205985-8
Date Collected: 10/12/21 15:45
Matrix: Water
Date Received: 10/14/21 10:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	5 mL	5 mL	690810	10/23/21 23:33	OK	TAL SAV
Dissolved	Prep	3005A			50 mL	50 mL	689796	10/18/21 14:25	JE	TAL SAV
Dissolved	Analysis	6010C		1			690327	10/20/21 15:37	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	689798	10/18/21 14:25	JE	TAL SAV
Dissolved	Analysis	6020A		1			690084	10/19/21 16:24	BWR	TAL SAV
	Instrument ID: ICPMSD									
Total/NA	Analysis	353.2		1	100 mL	100 mL	555077	10/26/21 21:01	SVC	TAL DEN
	Instrument ID: WC_Alp 2									
Total/NA	Analysis	9034		1	310 mL	310 mL	689829	10/18/21 17:00	AE	TAL SAV
	Instrument ID: NOEQUIP									
Total/NA	Analysis	9060A		4.16666666666667	20 mL	20 mL	554589	10/21/21 16:00	RAF	TAL DEN
	Instrument ID: WC_SHI3									
Total/NA	Analysis	SM 2320B		1			554753	10/23/21 09:30	ECC	TAL DEN
	Instrument ID: WC_AT4									

Client Sample ID: G6M-97-28X-FAL21
Lab Sample ID: 680-205985-9
Date Collected: 10/12/21 10:45
Matrix: Water
Date Received: 10/14/21 10:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	50 mL	689796	10/18/21 14:25	JE	TAL SAV
Dissolved	Analysis	6010C		1			690327	10/20/21 15:41	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	689798	10/18/21 14:25	JE	TAL SAV
Dissolved	Analysis	6020A		1			690084	10/19/21 16:27	BWR	TAL SAV
	Instrument ID: ICPMSD									

Client Sample ID: MW-3-FAL21
Lab Sample ID: 680-205985-10
Date Collected: 10/12/21 12:05
Matrix: Water
Date Received: 10/14/21 10:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	690986	10/25/21 20:08	P1C	TAL SAV
	Instrument ID: CMSAA									
Dissolved	Prep	3005A			50 mL	50 mL	689796	10/18/21 14:25	JE	TAL SAV
Dissolved	Analysis	6010C		1			690327	10/20/21 14:31	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	689798	10/18/21 14:25	JE	TAL SAV
Dissolved	Analysis	6020A		1			690084	10/19/21 15:49	BWR	TAL SAV
	Instrument ID: ICPMSD									

Lab Chronicle

Client: Seres Engineering & Services LLC
Job ID: 680-205985-1
Project/Site: Seres - Arcadis JV, LTM, AOC 50, Fall 2021

Client Sample ID: MW-7-FAL21
Lab Sample ID: 680-205985-13
Date Collected: 10/12/21 10:30
Matrix: Water
Date Received: 10/14/21 10:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	691048	10/25/21 19:49	UI	TAL SAV
	Instrument ID: CMSB									
Dissolved	Prep	3005A			50 mL	50 mL	689796	10/18/21 14:25	JE	TAL SAV
Dissolved	Analysis	6010C		1			690327	10/20/21 15:46	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	689798	10/18/21 14:25	JE	TAL SAV
Dissolved	Analysis	6020A		1			690084	10/19/21 16:30	BWR	TAL SAV
	Instrument ID: ICPMSD									

Client Sample ID: AOC50-RB01-FAL21
Lab Sample ID: 680-205985-14
Date Collected: 10/12/21 11:15
Matrix: Water
Date Received: 10/14/21 10:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	691048	10/25/21 20:10	UI	TAL SAV
	Instrument ID: CMSB									
Dissolved	Prep	3005A			50 mL	50 mL	689796	10/18/21 14:25	JE	TAL SAV
Dissolved	Analysis	6010C		1			690327	10/20/21 15:50	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	689798	10/18/21 14:25	JE	TAL SAV
Dissolved	Analysis	6020A		1			690084	10/19/21 16:32	BWR	TAL SAV
	Instrument ID: ICPMSD									

Laboratory References:
TAL DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100
TAL SAV = Eurofins Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Accreditation/Certification Summary

Client: Seres Engineering & Services LLC
Job ID: 680-205985-1
Project/Site: Seres - Arcadis JV, LTM, AOC 50, Fall 2021

Laboratory: Eurofins Savannah

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
ANAB	Dept. of Defense ELAP	L2463	09-18-22

Laboratory: Eurofins Denver

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	11-02-21

Method Summary

Client: Seres Engineering & Services LLC
Job ID: 680-205985-1
Project/Site: Seres - Arcadis JV, LTM, AOC 50, Fall 2021

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
RSK-175	Dissolved Gases (GC)	RSK	TAL SAV
9056A	Anions, Ion Chromatography	SW846	TAL SAV
6010C	Metals (ICP)	SW846	TAL SAV
6020A	Metals (ICP/MS)	SW846	TAL SAV
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL DEN
9034	Sulfide, Acid Soluble and Insoluble (Titrimetric)	SW846	TAL SAV
9060A	Organic Carbon, Total (TOC)	SW846	TAL DEN
SM 2320B	Alkalinity	SM	TAL DEN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL SAV
5030B	Purge and Trap	SW846	TAL SAV

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SAV = Eurofins Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

CHAIN-OF-CUSTODY RECORD

Seres-Arcadis JV
Nathan Mullens
669 Marina Drive, Suite B7, Charleston, SC 29492
(843) 478.0336, jennifer.singer@arcadis.com

COC # AOC50

Project Name: Former Fort Devens, Long Term Monitoring	Laboratory: Eurofins Environment Testing TestAmerica, Savannah, GA	Event: Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021
Project Number: DEVNS-LTM	POC: Jerry Lanier, jerry.lanier@eurofinset.com, 912-250-0281	
WBS Code:	Ship to:	

Comments:
A2320B (A) = Alkalinity
E353.2 (A) = Nitrite Nitrate as N
RSK175 (A) = Dissolved Gases
SW6010C/FLDFLT (B) = Fe Mn
SW6020A/FLDFLT (B) = As
SW9034 (A) = Sulfide

Equipment:

Code	Matrix
WG	Ground Water

Code	Container/Preservative
5	1x 125mL plastic, Cool < 6degC
7	2x 250mL plastic, ZnAc/NaOH Cool < 6degC
8	3x 40mL glass VOA Vials, HCl, pH < 2, Cool < 6degC
9	1x 250mL, plastic, HNO3, pH < 2, Cool < 6degC
10	1x 250mL, plastic, HNO3, pH < 2, Cool < 6degC
29	3x 40mL glass VOA Vials, HCl, pH < 2, Cool < 6degC
46	1x 250mL, plastic, Cool < 6degC
47	1x 500mL, amber glass, H2SO4, Cool < 6degC

680-205985 Chain of Custody

Event: Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021

Analytical Test Method

	A2320B (A)	E353.2 (A)	RSK175 (A)	SW6010C/FLDFLT (B)	SW6020A/FLDFLT (B)	SW8260B - VOCs	SW9034 (A)	SW9056A - SO4	SW9060A - TOC
	46	47	8	9	9	29	7	5	10

	Sample ID	Matrix	Date	Time	Samp Init.	Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom	Cooler	Comments
1	G6M-02-01X-FAL21	WG				G6M-02-01X	N1	80.00	95.00		
2	G6M-02-04X-FAL21	WG	10-12-21	1119	MS	G6M-02-04X	N1	90.00	105.00		
3	G6M-02-06X-FAL21	WG				G6M-02-06X	N1	55.00	65.00		
4	G6M-02-07X-FAL21	WG				G6M-02-07X	N1	30.00	40.00		
5	G6M-02-08X-FAL21	WG				G6M-02-08X	N1	60.00	70.00		
6	G6M-02-11X-FAL21	WG	10.12.21	1315	BK	G6M-02-11X	N1	125.00	135.00		
7	G6M-02-13X-FAL21	WG				G6M-02-13X	N1	110.00	120.00		
8	G6M-03-07X-FAL21	WG				G6M-03-07X	N1	80.00	90.00		
9	G6M-03-10X-FAL21	WG	10-12-21	1545	BK	G6M-03-10X	N1	120.00	135.00		
10	G6M-04-01X-FAL21	WG				G6M-04-01X	N1	82.00	92.00		
11	G6M-04-02X-FAL21	WG				G6M-04-02X	N1	80.00	90.00		
12	G6M-04-03X-FAL21	WG				G6M-04-03X	N1	85.00	95.00		
13	G6M-04-04X-FAL21	WG				G6M-04-04X	N1	94.00	104.00		
14	AOC50-DUP03-FAL21	WG				G6M-04-04X	FD1	94.00	104.00		
15	G6M-04-06X-FAL21	WG				G6M-04-06X	N1	95.00	136.00		
16	G6M-04-07X-FAL21	WG				G6M-04-07X	N1	120.00	130.00		
17	G6M-04-09X-FAL21	WG				G6M-04-09X	N1	55.00	65.00		

Relinquished by: *(Signature)* WWL
Date 10/12/21
Time 1825
Received by: *(Signature)*
Devens eCOCs_Fall 2021

Date 10/12/21
Time 1825

10/13/21
1700

Shipping Date:
Received by Laboratory *(Signature, Date, Time)* & conditio

10/14 1030 5.5/5.6, 1.0/1.1

CHAIN-OF-CUSTODY RECORD

Seres-Arcadis JV
Nathan Mullens
669 Marina Drive, Suite B7, Charleston, SC 29492
(843) 478.0336, jennifer.singer@arcadis.com

COC # AOC50

Project Name: Former Fort Devens, Long Term Monitoring	Laboratory: Eurofins Environment Testing TestAmerica, Savannah, GA	Event: Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021
Project Number: DEVNS-LTM	POC: Jerry Lanier, jerry.lanier@eurofinset.com, 912-250-0281	
WBS Code:	Ship to:	

Comments:
A2320B (A) = Alkalinity
E353.2 (A) = Nitrite Nitrate as N
RSK175 (A) = Dissolved Gases
SW6010C/FLDFLT (B) = Fe Mn
SW6020A/FLDFLT (B) = As
SW9034 (A) = Sulfide

Equipment:

Code	Matrix
WG	Ground Water

Code	Container/Preservative
5	1x 125mL plastic, Cool < 6degC
7	2x 250mL plastic, ZnAc/NaOH Cool < 6degC
8	3x 40mL glass VOA Vials, HCl, pH < 2, Cool < 6degC
9	1x 250mL, plastic, HNO3, pH < 2, Cool < 6degC
10	1x 250mL, plastic, HNO3, pH < 2, Cool < 6degC
29	3x 40mL glass VOA Vials, HCl, pH < 2, Cool < 6degC
46	1x 250mL, plastic, Cool < 6degC
47	1x 500mL, amber glass, H2SO4, Cool < 6degC

Event: Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021

						Analytical Test Method	A2320B (A)	E353.2 (A)	RSK175 (A)	SW6010C/FLDFLT (B)	SW6020A/FLDFLT (B)	SW8260B - VOCs	SW9034 (A)	SW9056A - SO4	SW9060A - TOC			Sample	Depth (ft bgs)			
							46	47	8	9	9	29	7	5	10							
	Sample ID	Matrix	Date	Time	Samp Init.												Location ID	Type	Top	Bottom	Cooler	Comments
18	G6M-04-10A-FAL21	WG					X	X	X	X	X	X	X	X	X		G6M-04-10A	N1	30.00	40.00		
19	G6M-04-10A-FAL21	WG					X	X	X	X	X	X	X	X	X		G6M-04-10A	MS1	30.00	40.00		
20	G6M-04-10A-FAL21	WG					X	X	X	X	X	X	X	X	X		G6M-04-10A	SD1	30.00	40.00		
21	G6M-04-10X-FAL21	WG										X					G6M-04-10X	N1	52.00	62.00		
22	G6M-04-13X-FAL21	WG										X					G6M-04-13X	N1	30.00	40.00		
23	G6M-04-14X-FAL21	WG								X	X	X					G6M-04-14X	N1	80.00	90.00		
24	G6M-04-15X-FAL21	WG								X	X	X					G6M-04-15X	N1	70.00	80.00		
25	G6M-07-02X-FAL21	WG	10-12-21	1540	MS		X	X	X	X	X	X	X	X	X		G6M-07-02X	N1	22.50	27.50		
26	AOC50-DUP02-FAL21	WG	10-12-21	1540	MS		X	X	X	X	X	X	X	X	X		G6M-07-02X	FD1	22.50	27.50		
27	G6M-13-01X-FAL21	WG	10-12-21	1330	DC		X	X	X	X	X	X	X	X	X		G6M-13-01X	N1	125.00	135.00		
28	G6M-13-02X-FAL21	WG					X	X	X	X	X	X	X	X	X		G6M-13-02X	N1	115.00	125.00		
29	AOC50-DUP04-FAL21	WG					X	X	X	X	X	X	X	X	X		G6M-13-02X	FD1	115.00	125.00		
30	G6M-13-04X-FAL21	WG	10.12.21	1333	MS					X	X	X					G6M-13-04X	N1	125.00	135.00		
31	G6M-13-05X-FAL21	WG					X	X	X	X	X	X	X	X	X		G6M-13-05X	N1	45.00	55.00		
32	G6M-13-06X-FAL21	WG	10-12-21	1545	DC		X	X	X	X	X	X	X	X	X		G6M-13-06X	N1	50.00	60.00		
33	G6M-95-19X-FAL21	WG										X					G6M-95-19X	N1	48.00	58.00		
34	G6M-95-20X-FAL21	WG								X	X	X					G6M-95-20X	N1	18.00	23.00		

Relinquished by: *(Signature)* Walker
Date 10/12/21
Time 1845
Received by: *(Signature)*

Devens eCOCs_Fall 2021

Date 10/12/21
Time 1825
Shipping Date:
Received by Laboratory *(Signature, Date, Time)* & conditio

10/13/21 1700

10/14 1030

CHAIN-OF-CUSTODY RECORD

Seres-Arcadis JV
Nathan Mullens
669 Marina Drive, Suite B7, Charleston, SC 29492
(843) 478.0336, jennifer.singer@arcadis.com

COC # AOC50

Project Name: Former Fort Devens, Long Term Monitoring	Laboratory: Eurofins Environment Testing TestAmerica, Savannah, GA
Project Number: DEVNS-LTM	POC: Jerry Lanier, jerry.lanier@eurofinset.com, 912-250-0281
WBS Code:	Ship to:

Event: Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021

Comments:
A2320B (A) = Alkalinity
E353.2 (A) = Nitrite Nitrate as N
RSK175 (A) = Dissolved Gases
SW6010C/FLDFLT (B) = Fe Mn
SW6020A/FLDFLT (B) = As
SW9034 (A) = Sulfide

Equipment:

Code	Matrix
WG	Ground Water

Code	Container/Preservative
5	1x 125mL plastic, Cool < 6degC
7	2x 250mL plastic, ZnAc/NaOH Cool < 6degC
8	3x 40mL glass VOA Vials, HCl, pH < 2; Cool < 6degC
9	1x 250mL, plastic, HNO3, pH < 2; Cool < 6degC
10	1x 250mL, plastic, HNO3, pH < 2; Cool < 6degC
29	3x 40mL glass VOA Vials, HCl, pH < 2; Cool < 6degC
46	1x 250mL, plastic, Cool < 6degC
47	1x 500mL, amber glass, H2SO4, Cool < 6degC

Event: Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021

	Sample ID	Matrix	Date	Time	Samp Init.	A2320B (A) 46	E353.2 (A) 47	RSK175 (A) 8	SW6010C/FLDFLT (B) 9	SW6020A/FLDFLT (B) 9	SW8260B - VOCs 29	SW9034 (A) 7	SW9056A - SO4 5	SW9060A - TOC 10	Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom	Cooler	Comments
35	AOC50-DUP01-FAL21	WG							X	X	X				G6M-95-20X	FD1	18.00	23.00		
36	G6M-97-05B-FAL21	WG				X	X	X	X	X	X	X	X	X	G6M-97-05B	N1	130.00	135.00		
37	G6M-97-28X-FAL21	WG	10-12-21	1045	BK				X	X					G6M-97-28X	N1	100.00	105.00		
38	MW-3-FAL21	WG	10-12-21	1205	DC				X	X	X				MW-3	N1	126.00	137.00		
39	MW-3-FAL21	WG	10-12-21	1205	DC				X	X	X				MW-3	MS1	126.00	137.00		
40	MW-3-FAL21	WG	10-12-21	1205	DC				X	X	X				MW-3	SD1	126.00	137.00		
41	MW-7-FAL21	WG	10-12-21	1030	DC				X	X	X				MW-7	N1	6.58	135.00		
42	XSA-12-95X-FAL21	WG							X	X	X				XSA-12-95X	N1	120.00	130.00		
43	XSA-12-96X-FAL21	WG				X	X	X	X	X	X	X	X	X	XSA-12-96X	N1	120.00	130.00		
44	XSA-12-97X-FAL21	WG							X	X	X				XSA-12-97X	N1	120.00	130.00		
45	XSA-12-98X-FAL21	WG							X	X	X				XSA-12-98X	N1	60.00	70.00		
46	RB-01-101221-FAL21	Lab water	10-12-21	1115	DC				X	X	X				—	—	—	—		
47																				
48																				
49																				
50																				
51																				
52																				

Relinquished by: (Signature) [signature]
Date 10/12/21
Time 1825
Received by: (Signature)
Devens eCOCs_Fall 2021

Date 10/12/21 10/13/21
Time 1825 [signature] 1700 [signature]
Shipping Date:
Received by Laboratory: **(Signature, Date, Time)** & conditio [signature] 10/14 1030

CHAIN-OF-CUSTODY RECORD

Seres-Arcadis JV
Nathan Mullens
669 Marina Drive, Suite B7, Charleston, SC 29492
(843) 478 0336, jennifer.singer@arcadis.com

COC # AOC50

Project Name: Former Fort Devens, Long Term Monitoring	Laboratory: Eurofins Environment Testing TestAmerica, Savannah, GA	Event: Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021
Project Number: DEVNS-LTM	POC: Jerry Lanier, jerry.lanier@eurofinset.com, 912-250-0281	
WBS Code:	Ship to:	

Comments:
A2320B (A) = Alkalinity
E353.2 (A) = Nitrite Nitrate as N
RSK175 (A) = Dissolved Gases
SW6010C/FLDFLT (B) = Fe Mn
SW6020A/FLDFLT (B) = As
SW9034 (A) = Sulfide

Equipment:

Code	Matrix
WG	Ground Water

Code	Container/Preservative
5	1x 125mL plastic, Cool < 6degC
7	2x 250mL plastic, ZnAc/NaOH Cool < 6degC
8	3x 40mL glass VOA Vials, HCl, pH < 2, Cool < 6degC
9	1x 250mL, plastic, HNO3, pH < 2, Cool < 6degC
10	1x 250mL, plastic, HNO3, pH < 2, Cool < 6degC
29	3x 40mL glass VOA Vials, HCl, pH < 2, Cool < 6degC
46	1x 250mL, plastic, Cool < 6degC
47	1x 500mL, amber glass, H2SO4, Cool < 6degC

Analytical Test Method

Event: Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021					A2320B (A)	E353.2 (A)	RSK175 (A)	SW6010C/FLDFLT (B)	SW6020A/FLDFLT (B)	SW8260B - VOCs	SW9034 (A)	SW9056A - SO4	SW9060A - TOC		Location ID	Sample Type	Depth (ft bgs) Top - Bottom	Cooler	Comments
					46	47	8	9	9	29	7	5	10						
Sample ID	Matrix	Date	Time	Samp Init.															

Turnaround Time: Standard

Relinquished by: ***(Signature)*** [signature]
Date 10/12/21
Time 1825
Received by: *(Signature)*
Devens eCOCs_Fall 2021

Date 10/12/21 — 10/13/21
Time 1825 — 1700
Shipping Date:
Received by Laboratory: ***(Signature, Date, Time)*** & conditio

Eurofins TestAmerica, Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Phone: 912-354-7858 Fax: 912-352-0165

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Lanier, Jerry A	Carrier Tracking No(s)	COC No: 680-670885 1
Client Contact: Shipping/Receiving	Phone	E-Mail: Jerry Lanier@Eurofinset com	State of Origin: Massachusetts	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc		Accreditations Required (See note): Dept. of Defense ELAP - A2LA; DoD - ANAB		Job #: 680-205985-1
Address: 4955 Yarrow Street, ,	Due Date Requested: 10/27/2021			
City: Arvada	TAT Requested (days):			
State, Zip: CO, 80002				
Phone: 303-736-0100(Tel) 303-431-7171(Fax)	PO #			
Email	WO #			
Project Name: Seres - Arcadis JV, LTM, AOC 50, Fall 2021	Project #: 68023801			
Site	SSOW#			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2320B/ Alkalinity	353.2_Pres/ Nitrogen, Nitrate-Nitrite	9060A/ (MOD) Waters - TOC Duplicates	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
G6M-07-02X-FAL21 (680-205985-4)	10/12/21	15.40 Eastern		Water			X	X	X	3	
AOC50-DUP02-FAL21 (680-205985-5)	10/12/21	15:40 Eastern		Water			X	X	X	3	
G6M-13-01X-FAL21 (680-205985-6)	10/12/21	13:30 Eastern		Water			X	X	X	3	
G6M-13-06X-FAL21 (680-205985-8)	10/12/21	15:45 Eastern		Water			X	X	X	3	

Note Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method analyte & accreditation compliance upon out subcontract laboratories This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For ______ Months*

Deliverable Requested. I, II, III, IV, Other (specify) — Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by.	Date:	Time:	Method of Shipment

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
[signature]	10-13-21 / 1522		[signature]	10/14/2021 1000	ETA/DEW
Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Relinquished by	Date/Time	Company	Received by	Date/Time	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 0.0, 0.0, -0.3 FR11 +/-0

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Seres Engineering & Services LLC

Job Number: 680-205985-1

Login Number: 205985
List Number: 1
Creator: Hartley, Tyler

List Source: Eurofins Savannah

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Seres Engineering & Services LLC

Job Number: 680-205985-1

Login Number: 205985
List Number: 2
Creator: O'Hara, Jake F

List Source: Eurofins Denver
List Creation: 10/16/21 03:21 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

Eurofins Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

Laboratory Job ID: 680-206032-1
Client Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021
Revision: 1

For:
Seres Engineering & Services LLC
669 Marina Drive
Suite B7
Charleston, South Carolina 29492

Attn: Heather Levesque

Authorized for release by:
3/9/2022 9:12:31 AM

Jerry Lanier, Project Manager I
(912)250-0281
Jerry.Lanier@Eurofinset.com

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
J1	Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
M	Manual integrated compound.
Q	One or more quality control criteria failed.
U	Undetected at the Limit of Detection.

GC VOA

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
U	Undetected at the Limit of Detection.

HPLC/IC

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
M	Manual integrated compound.
U	Undetected at the Limit of Detection.

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
J	Estimated: The analyte was positively identified; the quantitation is an estimation
J1	Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
U	Undetected at the Limit of Detection.

General Chemistry

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
J1	Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
U	Undetected at the Limit of Detection.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Sample Summary

Client: Seres Engineering & Services LLC
Job ID: 680-206032-1
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-206032-1	G6M-02-01X-FAL21	Water	10/13/21 13:45	10/15/21 10:50
680-206032-2	G6M-04-01X-FAL21	Water	10/13/21 12:35	10/15/21 10:50
680-206032-3	G6M-04-03X-FAL21	Water	10/13/21 15:40	10/15/21 10:50
680-206032-4	G6M-04-10A-FAL21	Water	10/13/21 12:15	10/15/21 10:50
680-206032-5	G6M-04-10X-FAL21	Water	10/13/21 09:32	10/15/21 10:50
680-206032-6	G6M-04-13X-FAL21	Water	10/13/21 15:03	10/15/21 10:50
680-206032-7	G6M-97-05B-FAL21	Water	10/13/21 09:35	10/15/21 10:50
680-206032-8	XSA-12-95X-FAL21	Water	10/13/21 11:20	10/15/21 10:50
680-206032-9	XSA-12-96X-FAL21	Water	10/13/21 14:45	10/15/21 10:50
680-206032-10	AOC50-RB02-FAL21	Water	10/13/21 10:30	10/15/21 10:50
680-206032-11	AOC50-TB01-FAL21	Water	10/13/21 00:00	10/15/21 10:50

Job ID: 680-206032-1

Laboratory: Eurofins Savannah

Narrative

Job Narrative
680-206032-1

Comments
No additional comments.

Receipt
The samples were received on 10/15/2021 10:50 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 3.2º C and 3.3º C.

GC/MS VOA
Method 8260B: The continuing calibration verification (CCV) associated with batch 680-691213 recovered above the upper control limit for Chloroethane, Chloromethane, Vinyl acetate and Bromomethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method 8260B: The continuing calibration verification (CCV) associated with batch 680-691186 recovered above the upper control limit for Chloroethane and Vinyl acetate. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method 8260B: The closing continuing calibration verification (CCVC) associated with batch 680-691186 recovered above the upper control limit for Chloroethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method 8260B: The closing continuing calibration verification (CCVC) analyzed in batch 691186 was outside the method criteria for the 12 hour window. The data integrity was not impacted and the data has been reported and addressed. All other QC criteria have been met.

Method 8260B: The reporting limit (RL) provided for the following sample falls below the laboratory's verified standard quantitation limit for 1,3,5-Trimethylbenzene: G6M-04-10X-FAL21 (680-206032-5). Results reported below the verified standard quantitation limit have less certainty (i.e., are estimated) and must be used at the client's discretion. The continuing calibration blanks and method blanks may not support the lower RL.

Method 8260B: Vinyl acetate is reported with an E flag in the batch QC because the top two points were dropped from the ICAL. The sample associated with the QC was non detect for Vinyl acetate. The data has been qualified and reported.

Method 8260B: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for analytical batch 680-691186 recovered outside control limits for the following analytes: Chloroethane and Vinyl acetate. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 8260B: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 680-691431.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

HPLC/IC
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC Semi VOA
Method RSK-175: Due to the high concentration of Methane, the matrix spike / matrix spike duplicate (MS/MSD) for analytical batch 680-690170 could not be evaluated for accuracy and precision. The associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) met acceptance criteria.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Job ID: 680-206032-1 (Continued)

Laboratory: Eurofins Savannah (Continued)

General Chemistry
Method 353.2: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for method 353.2_Pres analytical batch 280-555077 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Client: Seres Engineering & Services LLC
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-206032-1

Client Sample ID: G6M-02-01X-FAL21
Date Collected: 10/13/21 13:45
Date Received: 10/15/21 10:50

Lab Sample ID: 680-206032-1
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/26/21 20:31	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/26/21 20:31	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/26/21 20:31	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/26/21 20:31	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/26/21 20:31	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/26/21 20:31	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/26/21 20:31	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/26/21 20:31	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/26/21 20:31	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/26/21 20:31	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/26/21 20:31	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/26/21 20:31	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/26/21 20:31	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/26/21 20:31	1
1,2-Dichloroethene, Total	**1.4**	**J**	2.0	2.0	0.74	ug/L		10/26/21 20:31	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/26/21 20:31	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		10/26/21 20:31	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/26/21 20:31	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/26/21 20:31	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/26/21 20:31	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		10/26/21 20:31	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		10/26/21 20:31	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/26/21 20:31	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/26/21 20:31	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/26/21 20:31	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/26/21 20:31	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/26/21 20:31	1
Acetone	25	U	25	25	7.0	ug/L		10/26/21 20:31	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/26/21 20:31	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/26/21 20:31	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/26/21 20:31	1
Bromomethane	5.0	U Q	5.0	5.0	2.5	ug/L		10/26/21 20:31	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/26/21 20:31	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/26/21 20:31	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/26/21 20:31	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/26/21 20:31	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/26/21 20:31	1
Chloroethane	5.0	U Q	5.0	5.0	2.5	ug/L		10/26/21 20:31	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/26/21 20:31	1
Chloromethane	1.0	U Q	1.0	1.0	0.40	ug/L		10/26/21 20:31	1
cis-1,2-Dichloroethene	**1.4**		1.0	1.0	0.41	ug/L		10/26/21 20:31	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/26/21 20:31	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/26/21 20:31	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/26/21 20:31	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		10/26/21 20:31	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/26/21 20:31	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/26/21 20:31	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/26/21 20:31	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/26/21 20:31	1

Client: Seres Engineering & Services LLC
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-206032-1

Client Sample ID: G6M-02-01X-FAL21
Date Collected: 10/13/21 13:45
Date Received: 10/15/21 10:50

Lab Sample ID: 680-206032-1
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/26/21 20:31	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/26/21 20:31	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		10/26/21 20:31	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/26/21 20:31	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/26/21 20:31	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/26/21 20:31	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/26/21 20:31	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/26/21 20:31	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/26/21 20:31	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/26/21 20:31	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		10/26/21 20:31	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/26/21 20:31	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		10/26/21 20:31	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/26/21 20:31	1
Trichloroethene	**2.4**		1.0	1.0	0.48	ug/L		10/26/21 20:31	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/26/21 20:31	1
Vinyl acetate	2.0	U Q	2.0	2.0	0.81	ug/L		10/26/21 20:31	1
Vinyl chloride	**0.72**	**J**	1.0	1.0	0.50	ug/L		10/26/21 20:31	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		10/26/21 20:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*85 - 114*		*10/26/21 20:31*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 119*		*10/26/21 20:31*	*1*
Toluene-d8 (Surr)	*103*		*89 - 112*		*10/26/21 20:31*	*1*
1,2-Dichloroethane-d4 (Surr)	*98*		*81 - 118*		*10/26/21 20:31*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	**22000**		50	50	17	ug/L		10/20/21 08:26	1
Manganese	**1900**		10	3.0	1.0	ug/L		10/20/21 08:26	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**310**		3.0	3.0	1.5	ug/L		10/19/21 17:05	1

Client: Seres Engineering & Services LLC
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-206032-1

Client Sample ID: G6M-04-01X-FAL21
Date Collected: 10/13/21 12:35
Date Received: 10/15/21 10:50

Lab Sample ID: 680-206032-2
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/26/21 19:28	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/26/21 19:28	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/26/21 19:28	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/26/21 19:28	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/26/21 19:28	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/26/21 19:28	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/26/21 19:28	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/26/21 19:28	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/26/21 19:28	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/26/21 19:28	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/26/21 19:28	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/26/21 19:28	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/26/21 19:28	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/26/21 19:28	1
1,2-Dichloroethene, Total	2.0	U	2.0	2.0	0.74	ug/L		10/26/21 19:28	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/26/21 19:28	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		10/26/21 19:28	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/26/21 19:28	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/26/21 19:28	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/26/21 19:28	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		10/26/21 19:28	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		10/26/21 19:28	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/26/21 19:28	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/26/21 19:28	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/26/21 19:28	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/26/21 19:28	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/26/21 19:28	1
Acetone	25	U	25	25	7.0	ug/L		10/26/21 19:28	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/26/21 19:28	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/26/21 19:28	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/26/21 19:28	1
Bromomethane	5.0	U Q	5.0	5.0	2.5	ug/L		10/26/21 19:28	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/26/21 19:28	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/26/21 19:28	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/26/21 19:28	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/26/21 19:28	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/26/21 19:28	1
Chloroethane	5.0	U Q	5.0	5.0	2.5	ug/L		10/26/21 19:28	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/26/21 19:28	1
Chloromethane	1.0	U Q	1.0	1.0	0.40	ug/L		10/26/21 19:28	1
cis-1,2-Dichloroethene	1.0	U	1.0	1.0	0.41	ug/L		10/26/21 19:28	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/26/21 19:28	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/26/21 19:28	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/26/21 19:28	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		10/26/21 19:28	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/26/21 19:28	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/26/21 19:28	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/26/21 19:28	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/26/21 19:28	1

Client Sample ID: G6M-04-01X-FAL21
Lab Sample ID: 680-206032-2

Date Collected: 10/13/21 12:35
Matrix: Water
Date Received: 10/15/21 10:50

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/26/21 19:28	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/26/21 19:28	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		10/26/21 19:28	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/26/21 19:28	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/26/21 19:28	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/26/21 19:28	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/26/21 19:28	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/26/21 19:28	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/26/21 19:28	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/26/21 19:28	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		10/26/21 19:28	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/26/21 19:28	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		10/26/21 19:28	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/26/21 19:28	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		10/26/21 19:28	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/26/21 19:28	1
Vinyl acetate	2.0	U Q	2.0	2.0	0.81	ug/L		10/26/21 19:28	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		10/26/21 19:28	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		10/26/21 19:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*85 - 114*		*10/26/21 19:28*	*1*
Dibromofluoromethane (Surr)	*101*		*80 - 119*		*10/26/21 19:28*	*1*
Toluene-d8 (Surr)	*103*		*89 - 112*		*10/26/21 19:28*	*1*
1,2-Dichloroethane-d4 (Surr)	*97*		*81 - 118*		*10/26/21 19:28*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	**42000**		50	50	17	ug/L		10/20/21 08:30	1
Manganese	**11000**		10	3.0	1.0	ug/L		10/20/21 08:30	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**680**		3.0	3.0	1.5	ug/L		10/19/21 17:13	1

Client: Seres Engineering & Services LLC
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-206032-1

Client Sample ID: G6M-04-03X-FAL21
Date Collected: 10/13/21 15:40
Date Received: 10/15/21 10:50

Lab Sample ID: 680-206032-3
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/26/21 19:49	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/26/21 19:49	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/26/21 19:49	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/26/21 19:49	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/26/21 19:49	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/26/21 19:49	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/26/21 19:49	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/26/21 19:49	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/26/21 19:49	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/26/21 19:49	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/26/21 19:49	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/26/21 19:49	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/26/21 19:49	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/26/21 19:49	1
1,2-Dichloroethene, Total	**1.3**	**J**	2.0	2.0	0.74	ug/L		10/26/21 19:49	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/26/21 19:49	1
1,3,5-Trimethylbenzene	1.0	U M	1.0	1.0	0.31	ug/L		10/26/21 19:49	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/26/21 19:49	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/26/21 19:49	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/26/21 19:49	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		10/26/21 19:49	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		10/26/21 19:49	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/26/21 19:49	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/26/21 19:49	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/26/21 19:49	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/26/21 19:49	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/26/21 19:49	1
Acetone	25	U	25	25	7.0	ug/L		10/26/21 19:49	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/26/21 19:49	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/26/21 19:49	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/26/21 19:49	1
Bromomethane	5.0	U Q	5.0	5.0	2.5	ug/L		10/26/21 19:49	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/26/21 19:49	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/26/21 19:49	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/26/21 19:49	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/26/21 19:49	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/26/21 19:49	1
Chloroethane	5.0	U Q	5.0	5.0	2.5	ug/L		10/26/21 19:49	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/26/21 19:49	1
Chloromethane	1.0	U Q	1.0	1.0	0.40	ug/L		10/26/21 19:49	1
cis-1,2-Dichloroethene	**0.58**	**J**	1.0	1.0	0.41	ug/L		10/26/21 19:49	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/26/21 19:49	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/26/21 19:49	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/26/21 19:49	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		10/26/21 19:49	1
Ethylbenzene	1.0	U M	1.0	1.0	0.33	ug/L		10/26/21 19:49	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/26/21 19:49	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/26/21 19:49	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/26/21 19:49	1

Client Sample ID: G6M-04-03X-FAL21
Lab Sample ID: 680-206032-3

Date Collected: 10/13/21 15:40
Matrix: Water
Date Received: 10/15/21 10:50

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/26/21 19:49	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/26/21 19:49	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		10/26/21 19:49	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/26/21 19:49	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/26/21 19:49	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/26/21 19:49	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/26/21 19:49	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/26/21 19:49	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/26/21 19:49	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/26/21 19:49	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		10/26/21 19:49	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/26/21 19:49	1
trans-1,2-Dichloroethene	**0.72**	**J**	1.0	1.0	0.37	ug/L		10/26/21 19:49	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/26/21 19:49	1
Trichloroethene	**0.60**	**J**	1.0	1.0	0.48	ug/L		10/26/21 19:49	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/26/21 19:49	1
Vinyl acetate	2.0	U Q	2.0	2.0	0.81	ug/L		10/26/21 19:49	1
Vinyl chloride	**0.71**	**J**	1.0	1.0	0.50	ug/L		10/26/21 19:49	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		10/26/21 19:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*85 - 114*		*10/26/21 19:49*	*1*
Dibromofluoromethane (Surr)	*101*		*80 - 119*		*10/26/21 19:49*	*1*
Toluene-d8 (Surr)	*102*		*89 - 112*		*10/26/21 19:49*	*1*
1,2-Dichloroethane-d4 (Surr)	*97*		*81 - 118*		*10/26/21 19:49*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Ethane	**1.9**		1.1	0.76	0.30	ug/L		10/20/21 22:22	1
Ethylene	**3.5**		1.0	0.71	0.31	ug/L		10/20/21 22:22	1
Methane (TCD)	**20000**		390	77	39	ug/L		10/20/21 22:22	1

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Sulfate	**2.3**	**M**	1.0	1.0	0.40	mg/L		10/23/21 23:58	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	**36000**		50	50	17	ug/L		10/20/21 07:36	1
Manganese	**3600**		10	3.0	1.0	ug/L		10/20/21 07:36	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**210**		3.0	3.0	1.5	ug/L		10/19/21 17:00	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate/Nitrite-N	0.050	U	0.10	0.050	0.019	mg/L		10/26/21 20:33	1
Sulfide	0.81	U	0.81	0.81	0.81	mg/L		10/19/21 11:08	1
Total Organic Carbon - Duplicates	**7.3**		1.0	0.80	0.35	mg/L		10/22/21 02:38	1
Alkalinity	**200**		10	6.4	3.1	mg/L		10/23/21 10:21	1

Client Sample ID: G6M-04-10A-FAL21
Lab Sample ID: 680-206032-4

Date Collected: 10/13/21 12:15
Matrix: Water
Date Received: 10/15/21 10:50

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/26/21 20:52	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/26/21 20:52	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/26/21 20:52	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/26/21 20:52	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/26/21 20:52	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/26/21 20:52	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/26/21 20:52	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/26/21 20:52	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/26/21 20:52	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/26/21 20:52	1
1,2,4-Trimethylbenzene	**0.97**	**J**	1.0	1.0	0.47	ug/L		10/26/21 20:52	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/26/21 20:52	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/26/21 20:52	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/26/21 20:52	1
1,2-Dichloroethene, Total	**4.0**		2.0	2.0	0.74	ug/L		10/26/21 20:52	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/26/21 20:52	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		10/26/21 20:52	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/26/21 20:52	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/26/21 20:52	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/26/21 20:52	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		10/26/21 20:52	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		10/26/21 20:52	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/26/21 20:52	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/26/21 20:52	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/26/21 20:52	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/26/21 20:52	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/26/21 20:52	1
Acetone	25	U	25	25	7.0	ug/L		10/26/21 20:52	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/26/21 20:52	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/26/21 20:52	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/26/21 20:52	1
Bromomethane	5.0	U Q	5.0	5.0	2.5	ug/L		10/26/21 20:52	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/26/21 20:52	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/26/21 20:52	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/26/21 20:52	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/26/21 20:52	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/26/21 20:52	1
Chloroethane	5.0	U Q	5.0	5.0	2.5	ug/L		10/26/21 20:52	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/26/21 20:52	1
Chloromethane	1.0	U Q	1.0	1.0	0.40	ug/L		10/26/21 20:52	1
cis-1,2-Dichloroethene	**3.6**		1.0	1.0	0.41	ug/L		10/26/21 20:52	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/26/21 20:52	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/26/21 20:52	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/26/21 20:52	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		10/26/21 20:52	1
Ethylbenzene	1.0	U M	1.0	1.0	0.33	ug/L		10/26/21 20:52	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/26/21 20:52	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/26/21 20:52	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/26/21 20:52	1

Client Sample ID: G6M-04-10A-FAL21
Lab Sample ID: 680-206032-4

Date Collected: 10/13/21 12:15
Matrix: Water
Date Received: 10/15/21 10:50

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/26/21 20:52	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/26/21 20:52	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		10/26/21 20:52	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/26/21 20:52	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/26/21 20:52	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/26/21 20:52	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/26/21 20:52	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/26/21 20:52	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/26/21 20:52	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/26/21 20:52	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		10/26/21 20:52	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/26/21 20:52	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		10/26/21 20:52	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/26/21 20:52	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		10/26/21 20:52	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/26/21 20:52	1
Vinyl acetate	2.0	U Q	2.0	2.0	0.81	ug/L		10/26/21 20:52	1
Vinyl chloride	**1.7**		1.0	1.0	0.50	ug/L		10/26/21 20:52	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		10/26/21 20:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*85 - 114*		*10/26/21 20:52*	*1*
Dibromofluoromethane (Surr)	*104*		*80 - 119*		*10/26/21 20:52*	*1*
Toluene-d8 (Surr)	*104*		*89 - 112*		*10/26/21 20:52*	*1*
1,2-Dichloroethane-d4 (Surr)	*97*		*81 - 118*		*10/26/21 20:52*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Ethane	**6.9**		1.1	0.76	0.30	ug/L		10/20/21 23:40	1
Ethylene	**9.3**		1.0	0.71	0.31	ug/L		10/20/21 23:40	1
Methane (TCD)	**27000**		390	77	39	ug/L		10/20/21 23:40	1

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Sulfate	**2.8**	**M**	1.0	1.0	0.40	mg/L		10/23/21 15:07	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	**85000**	**J1**	50	50	17	ug/L		10/20/21 07:04	1
Manganese	**1100**		10	3.0	1.0	ug/L		10/20/21 07:04	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**320**	**J1**	3.0	3.0	1.5	ug/L		10/19/21 16:48	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate/Nitrite-N	0.050	U J1	0.10	0.050	0.019	mg/L		10/26/21 20:27	1
Sulfide	0.81	U	0.81	0.81	0.81	mg/L		10/19/21 11:08	1
Total Organic Carbon - Duplicates	**22**		1.0	0.80	0.35	mg/L		10/22/21 02:53	1
Alkalinity	**140**		10	6.4	3.1	mg/L		10/23/21 10:15	1

Client: Seres Engineering & Services LLC
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-206032-1

Client Sample ID: G6M-04-10X-FAL21
Date Collected: 10/13/21 09:32
Date Received: 10/15/21 10:50

Lab Sample ID: 680-206032-5
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/26/21 18:16	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/26/21 18:16	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/26/21 18:16	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/26/21 18:16	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/26/21 18:16	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/26/21 18:16	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/26/21 18:16	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/26/21 18:16	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/26/21 18:16	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/26/21 18:16	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/26/21 18:16	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/26/21 18:16	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/26/21 18:16	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/26/21 18:16	1
1,2-Dichloroethene, Total	2.0	U	2.0	2.0	0.74	ug/L		10/26/21 18:16	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/26/21 18:16	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		10/26/21 18:16	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/26/21 18:16	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/26/21 18:16	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/26/21 18:16	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		10/26/21 18:16	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		10/26/21 18:16	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/26/21 18:16	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/26/21 18:16	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/26/21 18:16	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/26/21 18:16	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/26/21 18:16	1
Acetone	25	U	25	25	7.0	ug/L		10/26/21 18:16	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/26/21 18:16	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/26/21 18:16	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/26/21 18:16	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		10/26/21 18:16	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/26/21 18:16	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/26/21 18:16	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/26/21 18:16	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/26/21 18:16	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/26/21 18:16	1
Chloroethane	5.0	U Q	5.0	5.0	2.5	ug/L		10/26/21 18:16	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/26/21 18:16	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		10/26/21 18:16	1
cis-1,2-Dichloroethene	1.0	U	1.0	1.0	0.41	ug/L		10/26/21 18:16	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/26/21 18:16	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/26/21 18:16	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/26/21 18:16	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		10/26/21 18:16	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/26/21 18:16	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/26/21 18:16	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/26/21 18:16	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/26/21 18:16	1

Client: Seres Engineering & Services LLC
Job ID: 680-206032-1
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Client Sample ID: G6M-04-10X-FAL21
Lab Sample ID: 680-206032-5
Date Collected: 10/13/21 09:32
Matrix: Water
Date Received: 10/15/21 10:50

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/26/21 18:16	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/26/21 18:16	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		10/26/21 18:16	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/26/21 18:16	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/26/21 18:16	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/26/21 18:16	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/26/21 18:16	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/26/21 18:16	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/26/21 18:16	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/26/21 18:16	1
Tetrachloroethene	**1.7**	**J**	2.0	2.0	0.74	ug/L		10/26/21 18:16	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/26/21 18:16	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		10/26/21 18:16	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/26/21 18:16	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		10/26/21 18:16	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/26/21 18:16	1
Vinyl acetate	2.0	U Q	2.0	2.0	0.81	ug/L		10/26/21 18:16	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		10/26/21 18:16	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		10/26/21 18:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*85 - 114*		*10/26/21 18:16*	*1*
Dibromofluoromethane (Surr)	*108*		*80 - 119*		*10/26/21 18:16*	*1*
Toluene-d8 (Surr)	*103*		*89 - 112*		*10/26/21 18:16*	*1*
1,2-Dichloroethane-d4 (Surr)	*104*		*81 - 118*		*10/26/21 18:16*	*1*

Client: Seres Engineering & Services LLC
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-206032-1

Client Sample ID: G6M-04-13X-FAL21
Date Collected: 10/13/21 15:03
Date Received: 10/15/21 10:50

Lab Sample ID: 680-206032-6
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 14:04	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 14:04	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/27/21 14:04	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/27/21 14:04	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/27/21 14:04	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/27/21 14:04	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/27/21 14:04	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 14:04	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/27/21 14:04	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 14:04	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/27/21 14:04	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/27/21 14:04	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 14:04	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/27/21 14:04	1
1,2-Dichloroethene, Total	2.0	U	2.0	2.0	0.74	ug/L		10/27/21 14:04	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/27/21 14:04	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		10/27/21 14:04	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/27/21 14:04	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/27/21 14:04	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/27/21 14:04	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 14:04	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		10/27/21 14:04	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/27/21 14:04	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/27/21 14:04	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/27/21 14:04	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/27/21 14:04	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/27/21 14:04	1
Acetone	25	U	25	25	7.0	ug/L		10/27/21 14:04	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/27/21 14:04	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/27/21 14:04	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/27/21 14:04	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 14:04	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/27/21 14:04	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/27/21 14:04	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/27/21 14:04	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/27/21 14:04	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/27/21 14:04	1
Chloroethane	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 14:04	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/27/21 14:04	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		10/27/21 14:04	1
cis-1,2-Dichloroethene	1.0	U	1.0	1.0	0.41	ug/L		10/27/21 14:04	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/27/21 14:04	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/27/21 14:04	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/27/21 14:04	1
Dichlorodifluoromethane	2.0	U M	2.0	2.0	0.60	ug/L		10/27/21 14:04	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/27/21 14:04	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/27/21 14:04	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 14:04	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/27/21 14:04	1

Client: Seres Engineering & Services LLC
Job ID: 680-206032-1
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Client Sample ID: G6M-04-13X-FAL21
Lab Sample ID: 680-206032-6
Date Collected: 10/13/21 15:03
Matrix: Water
Date Received: 10/15/21 10:50

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/27/21 14:04	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 14:04	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		10/27/21 14:04	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 14:04	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/27/21 14:04	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/27/21 14:04	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/27/21 14:04	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/27/21 14:04	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/27/21 14:04	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/27/21 14:04	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		10/27/21 14:04	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/27/21 14:04	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 14:04	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/27/21 14:04	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		10/27/21 14:04	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/27/21 14:04	1
Vinyl acetate	2.0	U Q	2.0	2.0	0.81	ug/L		10/27/21 14:04	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		10/27/21 14:04	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		10/27/21 14:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*85 - 114*		*10/27/21 14:04*	*1*
Dibromofluoromethane (Surr)	*101*		*80 - 119*		*10/27/21 14:04*	*1*
Toluene-d8 (Surr)	*102*		*89 - 112*		*10/27/21 14:04*	*1*
1,2-Dichloroethane-d4 (Surr)	*98*		*81 - 118*		*10/27/21 14:04*	*1*

Client: Seres Engineering & Services LLC
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-206032-1

Client Sample ID: G6M-97-05B-FAL21
Date Collected: 10/13/21 09:35
Date Received: 10/15/21 10:50

Lab Sample ID: 680-206032-7
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 14:25	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 14:25	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/27/21 14:25	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/27/21 14:25	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/27/21 14:25	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/27/21 14:25	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/27/21 14:25	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 14:25	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/27/21 14:25	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 14:25	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/27/21 14:25	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/27/21 14:25	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 14:25	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/27/21 14:25	1
1,2-Dichloroethene, Total	**21**		2.0	2.0	0.74	ug/L		10/27/21 14:25	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/27/21 14:25	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		10/27/21 14:25	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/27/21 14:25	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/27/21 14:25	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/27/21 14:25	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 14:25	1
2-Butanone (MEK)	**31**		10	10	3.4	ug/L		10/27/21 14:25	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/27/21 14:25	1
2-Hexanone	**13**		10	5.0	2.0	ug/L		10/27/21 14:25	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/27/21 14:25	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/27/21 14:25	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/27/21 14:25	1
Acetone	**14**	**J**	25	25	7.0	ug/L		10/27/21 14:25	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/27/21 14:25	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/27/21 14:25	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/27/21 14:25	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 14:25	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/27/21 14:25	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/27/21 14:25	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/27/21 14:25	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/27/21 14:25	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/27/21 14:25	1
Chloroethane	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 14:25	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/27/21 14:25	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		10/27/21 14:25	1
cis-1,2-Dichloroethene	**21**		1.0	1.0	0.41	ug/L		10/27/21 14:25	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/27/21 14:25	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/27/21 14:25	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/27/21 14:25	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		10/27/21 14:25	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/27/21 14:25	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/27/21 14:25	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 14:25	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/27/21 14:25	1

Client Sample ID: G6M-97-05B-FAL21
Lab Sample ID: 680-206032-7

Date Collected: 10/13/21 09:35
Matrix: Water
Date Received: 10/15/21 10:50

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/27/21 14:25	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 14:25	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		10/27/21 14:25	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 14:25	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/27/21 14:25	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/27/21 14:25	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/27/21 14:25	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/27/21 14:25	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/27/21 14:25	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/27/21 14:25	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		10/27/21 14:25	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/27/21 14:25	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 14:25	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/27/21 14:25	1
Trichloroethene	**3.1**		1.0	1.0	0.48	ug/L		10/27/21 14:25	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/27/21 14:25	1
Vinyl acetate	2.0	U Q	2.0	2.0	0.81	ug/L		10/27/21 14:25	1
Vinyl chloride	**8.0**		1.0	1.0	0.50	ug/L		10/27/21 14:25	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		10/27/21 14:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*85 - 114*		*10/27/21 14:25*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 119*		*10/27/21 14:25*	*1*
Toluene-d8 (Surr)	*103*		*89 - 112*		*10/27/21 14:25*	*1*
1,2-Dichloroethane-d4 (Surr)	*97*		*81 - 118*		*10/27/21 14:25*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Ethane	**6.3**		1.1	0.76	0.30	ug/L		10/20/21 22:35	1
Ethylene	**23**		1.0	0.71	0.31	ug/L		10/20/21 22:35	1
Methane (TCD)	**28000**		390	77	39	ug/L		10/20/21 22:35	1

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Sulfate	**0.67**	**J**	1.0	1.0	0.40	mg/L		10/23/21 23:46	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	**52000**		50	50	17	ug/L		10/20/21 07:54	1
Manganese	**6600**		10	3.0	1.0	ug/L		10/20/21 07:54	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**170**		3.0	3.0	1.5	ug/L		10/19/21 17:03	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate/Nitrite-N	0.050	U	0.10	0.050	0.019	mg/L		10/26/21 20:35	1
Sulfide	0.81	U	0.81	0.81	0.81	mg/L		10/19/21 11:08	1
Total Organic Carbon - Duplicates	**34**		1.0	0.80	0.35	mg/L		10/22/21 03:39	1
Alkalinity	**110**		10	6.4	3.1	mg/L		10/23/21 10:09	1

Client: Seres Engineering & Services LLC
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-206032-1

Client Sample ID: XSA-12-95X-FAL21
Date Collected: 10/13/21 11:20
Date Received: 10/15/21 10:50

Lab Sample ID: 680-206032-8
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 15:28	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 15:28	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/27/21 15:28	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/27/21 15:28	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/27/21 15:28	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/27/21 15:28	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/27/21 15:28	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 15:28	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/27/21 15:28	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 15:28	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/27/21 15:28	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/27/21 15:28	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 15:28	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/27/21 15:28	1
1,2-Dichloroethene, Total	**6.0**		2.0	2.0	0.74	ug/L		10/27/21 15:28	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/27/21 15:28	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		10/27/21 15:28	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/27/21 15:28	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/27/21 15:28	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/27/21 15:28	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 15:28	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		10/27/21 15:28	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/27/21 15:28	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/27/21 15:28	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/27/21 15:28	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/27/21 15:28	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/27/21 15:28	1
Acetone	25	U	25	25	7.0	ug/L		10/27/21 15:28	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/27/21 15:28	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/27/21 15:28	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/27/21 15:28	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 15:28	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/27/21 15:28	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/27/21 15:28	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/27/21 15:28	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/27/21 15:28	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/27/21 15:28	1
Chloroethane	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 15:28	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/27/21 15:28	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		10/27/21 15:28	1
cis-1,2-Dichloroethene	**4.3**		1.0	1.0	0.41	ug/L		10/27/21 15:28	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/27/21 15:28	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/27/21 15:28	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/27/21 15:28	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		10/27/21 15:28	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/27/21 15:28	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/27/21 15:28	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 15:28	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/27/21 15:28	1

Client Sample ID: XSA-12-95X-FAL21
Lab Sample ID: 680-206032-8

Date Collected: 10/13/21 11:20
Matrix: Water
Date Received: 10/15/21 10:50

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/27/21 15:28	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 15:28	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		10/27/21 15:28	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 15:28	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/27/21 15:28	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/27/21 15:28	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/27/21 15:28	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/27/21 15:28	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/27/21 15:28	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/27/21 15:28	1
Tetrachloroethene	**2.8**		2.0	2.0	0.74	ug/L		10/27/21 15:28	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/27/21 15:28	1
trans-1,2-Dichloroethene	**1.7**		1.0	1.0	0.37	ug/L		10/27/21 15:28	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/27/21 15:28	1
Trichloroethene	**2.7**		1.0	1.0	0.48	ug/L		10/27/21 15:28	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/27/21 15:28	1
Vinyl acetate	2.0	U Q	2.0	2.0	0.81	ug/L		10/27/21 15:28	1
Vinyl chloride	**0.86**	**J**	1.0	1.0	0.50	ug/L		10/27/21 15:28	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		10/27/21 15:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*107*		*85 - 114*		*10/27/21 15:28*	*1*
Dibromofluoromethane (Surr)	*98*		*80 - 119*		*10/27/21 15:28*	*1*
Toluene-d8 (Surr)	*105*		*89 - 112*		*10/27/21 15:28*	*1*
1,2-Dichloroethane-d4 (Surr)	*96*		*81 - 118*		*10/27/21 15:28*	*1*

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	**3500**		50	50	17	ug/L		10/20/21 02:59	1
Manganese	**11000**		10	3.0	1.0	ug/L		10/20/21 02:59	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**2.2**	**J**	3.0	3.0	1.5	ug/L		10/19/21 17:41	1

Client: Seres Engineering & Services LLC
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-206032-1

Client Sample ID: XSA-12-96X-FAL21
Date Collected: 10/13/21 14:45
Date Received: 10/15/21 10:50

Lab Sample ID: 680-206032-9
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 15:50	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 15:50	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/27/21 15:50	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/27/21 15:50	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/27/21 15:50	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/27/21 15:50	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/27/21 15:50	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 15:50	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/27/21 15:50	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 15:50	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/27/21 15:50	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/27/21 15:50	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 15:50	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/27/21 15:50	1
1,2-Dichloroethene, Total	**12**		2.0	2.0	0.74	ug/L		10/27/21 15:50	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/27/21 15:50	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		10/27/21 15:50	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/27/21 15:50	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/27/21 15:50	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/27/21 15:50	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 15:50	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		10/27/21 15:50	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/27/21 15:50	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/27/21 15:50	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/27/21 15:50	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/27/21 15:50	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/27/21 15:50	1
Acetone	25	U	25	25	7.0	ug/L		10/27/21 15:50	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/27/21 15:50	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/27/21 15:50	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/27/21 15:50	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 15:50	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/27/21 15:50	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/27/21 15:50	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/27/21 15:50	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/27/21 15:50	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/27/21 15:50	1
Chloroethane	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 15:50	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/27/21 15:50	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		10/27/21 15:50	1
cis-1,2-Dichloroethene	**8.6**		1.0	1.0	0.41	ug/L		10/27/21 15:50	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/27/21 15:50	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/27/21 15:50	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/27/21 15:50	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		10/27/21 15:50	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/27/21 15:50	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/27/21 15:50	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 15:50	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/27/21 15:50	1

Client Sample ID: XSA-12-96X-FAL21
Lab Sample ID: 680-206032-9

Date Collected: 10/13/21 14:45
Matrix: Water
Date Received: 10/15/21 10:50

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/27/21 15:50	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 15:50	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		10/27/21 15:50	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 15:50	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/27/21 15:50	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/27/21 15:50	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/27/21 15:50	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/27/21 15:50	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/27/21 15:50	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/27/21 15:50	1
Tetrachloroethene	**2.1**		2.0	2.0	0.74	ug/L		10/27/21 15:50	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/27/21 15:50	1
trans-1,2-Dichloroethene	**3.1**		1.0	1.0	0.37	ug/L		10/27/21 15:50	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/27/21 15:50	1
Trichloroethene	**8.3**		1.0	1.0	0.48	ug/L		10/27/21 15:50	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/27/21 15:50	1
Vinyl acetate	2.0	U Q	2.0	2.0	0.81	ug/L		10/27/21 15:50	1
Vinyl chloride	**4.4**		1.0	1.0	0.50	ug/L		10/27/21 15:50	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		10/27/21 15:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*85 - 114*		*10/27/21 15:50*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 119*		*10/27/21 15:50*	*1*
Toluene-d8 (Surr)	*102*		*89 - 112*		*10/27/21 15:50*	*1*
1,2-Dichloroethane-d4 (Surr)	*98*		*81 - 118*		*10/27/21 15:50*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Ethane	**0.66**	**J**	1.1	0.76	0.30	ug/L		10/20/21 22:48	1
Ethylene	0.71	U	1.0	0.71	0.31	ug/L		10/20/21 22:48	1
Methane	**25**		1.2	1.2	0.57	ug/L		10/20/21 22:48	1

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Sulfate	**5.7**	**M**	1.0	1.0	0.40	mg/L		10/23/21 21:39	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	**2200**		50	50	17	ug/L		10/20/21 03:03	1
Manganese	**5600**		10	3.0	1.0	ug/L		10/20/21 03:03	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	**1.6**	**J**	3.0	3.0	1.5	ug/L		10/19/21 17:44	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate/Nitrite-N	0.050	U	0.10	0.050	0.019	mg/L		10/26/21 20:37	1
Sulfide	0.81	U	0.81	0.81	0.81	mg/L		10/19/21 11:08	1
Total Organic Carbon - Duplicates	**2.2**		1.0	0.80	0.35	mg/L		10/22/21 03:54	1
Alkalinity	**250**		10	6.4	3.1	mg/L		10/23/21 11:04	1

Client: Seres Engineering & Services LLC
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-206032-1

Client Sample ID: AOC50-RB02-FAL21
Date Collected: 10/13/21 10:30
Date Received: 10/15/21 10:50

Lab Sample ID: 680-206032-10
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/26/21 19:07	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/26/21 19:07	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/26/21 19:07	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/26/21 19:07	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/26/21 19:07	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/26/21 19:07	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/26/21 19:07	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/26/21 19:07	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/26/21 19:07	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/26/21 19:07	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/26/21 19:07	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/26/21 19:07	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/26/21 19:07	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/26/21 19:07	1
1,2-Dichloroethene, Total	2.0	U	2.0	2.0	0.74	ug/L		10/26/21 19:07	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/26/21 19:07	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		10/26/21 19:07	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/26/21 19:07	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/26/21 19:07	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/26/21 19:07	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		10/26/21 19:07	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		10/26/21 19:07	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/26/21 19:07	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/26/21 19:07	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/26/21 19:07	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/26/21 19:07	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/26/21 19:07	1
Acetone	25	U	25	25	7.0	ug/L		10/26/21 19:07	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/26/21 19:07	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/26/21 19:07	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/26/21 19:07	1
Bromomethane	5.0	U Q	5.0	5.0	2.5	ug/L		10/26/21 19:07	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/26/21 19:07	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/26/21 19:07	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/26/21 19:07	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/26/21 19:07	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/26/21 19:07	1
Chloroethane	5.0	U Q	5.0	5.0	2.5	ug/L		10/26/21 19:07	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/26/21 19:07	1
Chloromethane	1.0	U Q	1.0	1.0	0.40	ug/L		10/26/21 19:07	1
cis-1,2-Dichloroethene	1.0	U	1.0	1.0	0.41	ug/L		10/26/21 19:07	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/26/21 19:07	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/26/21 19:07	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/26/21 19:07	1
Dichlorodifluoromethane	2.0	U M	2.0	2.0	0.60	ug/L		10/26/21 19:07	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/26/21 19:07	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/26/21 19:07	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/26/21 19:07	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/26/21 19:07	1

Client Sample ID: AOC50-RB02-FAL21
Lab Sample ID: 680-206032-10

Date Collected: 10/13/21 10:30
Matrix: Water
Date Received: 10/15/21 10:50

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/26/21 19:07	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/26/21 19:07	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		10/26/21 19:07	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/26/21 19:07	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/26/21 19:07	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/26/21 19:07	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/26/21 19:07	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/26/21 19:07	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/26/21 19:07	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/26/21 19:07	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		10/26/21 19:07	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/26/21 19:07	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		10/26/21 19:07	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/26/21 19:07	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		10/26/21 19:07	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/26/21 19:07	1
Vinyl acetate	2.0	U Q	2.0	2.0	0.81	ug/L		10/26/21 19:07	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		10/26/21 19:07	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		10/26/21 19:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*85 - 114*		*10/26/21 19:07*	*1*
Dibromofluoromethane (Surr)	*101*		*80 - 119*		*10/26/21 19:07*	*1*
Toluene-d8 (Surr)	*103*		*89 - 112*		*10/26/21 19:07*	*1*
1,2-Dichloroethane-d4 (Surr)	*98*		*81 - 118*		*10/26/21 19:07*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Ethane	0.76	U	1.1	0.76	0.30	ug/L		10/20/21 23:01	1
Ethylene	0.71	U	1.0	0.71	0.31	ug/L		10/20/21 23:01	1
Methane	1.2	U	1.2	1.2	0.57	ug/L		10/20/21 23:01	1

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Sulfate	1.0	U	1.0	1.0	0.40	mg/L		10/24/21 01:14	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	50	U	50	50	17	ug/L		10/20/21 03:08	1
Manganese	3.0	U	10	3.0	1.0	ug/L		10/20/21 03:08	1

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	3.0	U	3.0	3.0	1.5	ug/L		10/19/21 17:47	1

General Chemistry

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate/Nitrite-N	0.050	U	0.10	0.050	0.019	mg/L		10/26/21 20:39	1
Sulfide	0.81	U	0.81	0.81	0.81	mg/L		10/19/21 11:08	1
Total Organic Carbon - Duplicates	**0.49**	**J**	1.0	0.80	0.35	mg/L		10/22/21 04:08	1
Alkalinity	**3.7**	**J**	10	6.4	3.1	mg/L		10/23/21 11:17	1

Client: Seres Engineering & Services LLC
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-206032-1

Client Sample ID: AOC50-TB01-FAL21
Date Collected: 10/13/21 00:00
Date Received: 10/15/21 10:50

Lab Sample ID: 680-206032-11
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/26/21 14:32	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/26/21 14:32	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/26/21 14:32	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/26/21 14:32	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/26/21 14:32	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/26/21 14:32	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/26/21 14:32	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/26/21 14:32	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/26/21 14:32	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/26/21 14:32	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/26/21 14:32	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/26/21 14:32	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/26/21 14:32	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/26/21 14:32	1
1,2-Dichloroethene, Total	2.0	U	2.0	2.0	0.74	ug/L		10/26/21 14:32	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/26/21 14:32	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		10/26/21 14:32	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/26/21 14:32	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/26/21 14:32	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/26/21 14:32	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		10/26/21 14:32	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		10/26/21 14:32	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/26/21 14:32	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/26/21 14:32	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/26/21 14:32	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/26/21 14:32	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/26/21 14:32	1
Acetone	25	U	25	25	7.0	ug/L		10/26/21 14:32	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/26/21 14:32	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/26/21 14:32	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/26/21 14:32	1
Bromomethane	5.0	U Q	5.0	5.0	2.5	ug/L		10/26/21 14:32	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/26/21 14:32	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/26/21 14:32	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/26/21 14:32	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/26/21 14:32	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/26/21 14:32	1
Chloroethane	5.0	U Q	5.0	5.0	2.5	ug/L		10/26/21 14:32	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/26/21 14:32	1
Chloromethane	1.0	U Q	1.0	1.0	0.40	ug/L		10/26/21 14:32	1
cis-1,2-Dichloroethene	1.0	U	1.0	1.0	0.41	ug/L		10/26/21 14:32	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/26/21 14:32	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/26/21 14:32	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/26/21 14:32	1
Dichlorodifluoromethane	2.0	U M	2.0	2.0	0.60	ug/L		10/26/21 14:32	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/26/21 14:32	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/26/21 14:32	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/26/21 14:32	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/26/21 14:32	1

Client: Seres Engineering & Services LLC
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-206032-1

Client Sample ID: AOC50-TB01-FAL21
Date Collected: 10/13/21 00:00
Date Received: 10/15/21 10:50

Lab Sample ID: 680-206032-11
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/26/21 14:32	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/26/21 14:32	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		10/26/21 14:32	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/26/21 14:32	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/26/21 14:32	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/26/21 14:32	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/26/21 14:32	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/26/21 14:32	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/26/21 14:32	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/26/21 14:32	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		10/26/21 14:32	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/26/21 14:32	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		10/26/21 14:32	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/26/21 14:32	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		10/26/21 14:32	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/26/21 14:32	1
Vinyl acetate	2.0	U Q	2.0	2.0	0.81	ug/L		10/26/21 14:32	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		10/26/21 14:32	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		10/26/21 14:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*109*		*85 - 114*		*10/26/21 14:32*	*1*
Dibromofluoromethane (Surr)	*101*		*80 - 119*		*10/26/21 14:32*	*1*
Toluene-d8 (Surr)	*102*		*89 - 112*		*10/26/21 14:32*	*1*
1,2-Dichloroethane-d4 (Surr)	*97*		*81 - 118*		*10/26/21 14:32*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-691186/9
Matrix: Water
Analysis Batch: 691186

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/26/21 13:24	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/26/21 13:24	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/26/21 13:24	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/26/21 13:24	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/26/21 13:24	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/26/21 13:24	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/26/21 13:24	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/26/21 13:24	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/26/21 13:24	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/26/21 13:24	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/26/21 13:24	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/26/21 13:24	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/26/21 13:24	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/26/21 13:24	1
1,2-Dichloroethene, Total	2.0	U	2.0	2.0	0.74	ug/L		10/26/21 13:24	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/26/21 13:24	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		10/26/21 13:24	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/26/21 13:24	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/26/21 13:24	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/26/21 13:24	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		10/26/21 13:24	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		10/26/21 13:24	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/26/21 13:24	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/26/21 13:24	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/26/21 13:24	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/26/21 13:24	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/26/21 13:24	1
Acetone	25	U	25	25	7.0	ug/L		10/26/21 13:24	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/26/21 13:24	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/26/21 13:24	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/26/21 13:24	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		10/26/21 13:24	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/26/21 13:24	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/26/21 13:24	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/26/21 13:24	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/26/21 13:24	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/26/21 13:24	1
Chloroethane	5.0	U	5.0	5.0	2.5	ug/L		10/26/21 13:24	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/26/21 13:24	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		10/26/21 13:24	1
cis-1,2-Dichloroethene	1.0	U	1.0	1.0	0.41	ug/L		10/26/21 13:24	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/26/21 13:24	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/26/21 13:24	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/26/21 13:24	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		10/26/21 13:24	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/26/21 13:24	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/26/21 13:24	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/26/21 13:24	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-691186/9
Matrix: Water
Analysis Batch: 691186

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/26/21 13:24	1
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/26/21 13:24	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/26/21 13:24	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		10/26/21 13:24	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/26/21 13:24	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/26/21 13:24	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/26/21 13:24	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/26/21 13:24	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/26/21 13:24	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/26/21 13:24	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/26/21 13:24	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		10/26/21 13:24	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/26/21 13:24	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		10/26/21 13:24	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/26/21 13:24	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		10/26/21 13:24	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/26/21 13:24	1
Vinyl acetate	2.0	U	2.0	2.0	0.81	ug/L		10/26/21 13:24	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		10/26/21 13:24	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		10/26/21 13:24	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*85 - 114*		*10/26/21 13:24*	*1*
Dibromofluoromethane (Surr)	*107*		*80 - 119*		*10/26/21 13:24*	*1*
Toluene-d8 (Surr)	*102*		*89 - 112*		*10/26/21 13:24*	*1*
1,2-Dichloroethane-d4 (Surr)	*112*		*81 - 118*		*10/26/21 13:24*	*1*

Lab Sample ID: LCSD 680-691186/4
Matrix: Water
Analysis Batch: 691186

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane			50.0	53.8		ug/L		108	78 - 124	0	20
1,1,1-Trichloroethane			50.0	51.9		ug/L		104	74 - 131	0	20
1,1,2,2-Tetrachloroethane			50.0	51.1		ug/L		102	71 - 121	2	20
1,1,2-Trichloroethane			50.0	53.1		ug/L		106	80 - 119	0	20
1,1-Dichloroethane			50.0	55.1		ug/L		110	77 - 125	1	20
1,1-Dichloroethene			50.0	51.9		ug/L		104	71 - 131	0	20
1,1-Dichloropropene			50.0	52.4		ug/L		105	79 - 125	1	20
1,2,3-Trichlorobenzene			50.0	47.2		ug/L		94	69 - 129	0	20
1,2,3-Trichloropropane			50.0	51.7		ug/L		103	73 - 122	3	20
1,2,4-Trichlorobenzene			50.0	46.7		ug/L		93	69 - 130	2	20
1,2,4-Trimethylbenzene			50.0	45.9		ug/L		92	76 - 124	0	20
1,2-Dibromo-3-Chloropropane			50.0	48.8		ug/L		98	62 - 128	2	20
1,2-Dichlorobenzene			50.0	50.4		ug/L		101	80 - 119	2	20
1,2-Dichloroethane			50.0	55.8		ug/L		112	73 - 128	1	20
1,2-Dichloroethene, Total			100	105		ug/L		105	79 - 121	0	20
1,2-Dichloropropane			50.0	53.8		ug/L		108	78 - 122	1	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 680-691186/4
Matrix: Water
Analysis Batch: 691186

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,3,5-Trimethylbenzene	50.0	47.6		ug/L		95	75 - 124	0	20
1,3-Dichlorobenzene	50.0	50.2		ug/L		100	80 - 119	1	20
1,3-Dichloropropane	50.0	53.2		ug/L		106	80 - 119	1	20
1,4-Dichlorobenzene	50.0	49.6		ug/L		99	79 - 118	1	20
2,2-Dichloropropane	50.0	53.8		ug/L		108	60 - 139	1	20
2-Butanone (MEK)	250	252		ug/L		101	56 - 143	3	20
2-Chlorotoluene	50.0	48.5		ug/L		97	79 - 122	2	20
2-Hexanone	250	266		ug/L		107	57 - 139	4	20
4-Chlorotoluene	50.0	49.1		ug/L		98	78 - 122	1	20
4-Isopropyltoluene	50.0	48.2		ug/L		96	77 - 127	1	20
4-Methyl-2-pentanone (MIBK)	250	278		ug/L		111	67 - 130	3	20
Acetone	250	266		ug/L		106	39 - 160	3	20
Benzene	50.0	51.4		ug/L		103	79 - 120	1	20
Bromobenzene	50.0	48.5		ug/L		97	80 - 120	2	20
Bromoform	50.0	53.3		ug/L		107	66 - 130	1	20
Bromomethane	50.0	55.3		ug/L		111	53 - 141	0	20
Carbon disulfide	50.0	51.2		ug/L		102	64 - 133	1	20
Carbon tetrachloride	50.0	52.4		ug/L		105	72 - 136	1	20
Chlorobenzene	50.0	48.6		ug/L		97	82 - 118	2	20
Chlorobromomethane	50.0	51.7		ug/L		103	78 - 123	1	20
Chlorodibromomethane	50.0	55.3		ug/L		111	74 - 126	0	20
Chloroethane	50.0	89.1	Q	ug/L		178	60 - 138	2	20
Chloroform	50.0	53.3		ug/L		107	79 - 124	1	20
Chloromethane	50.0	55.2		ug/L		110	50 - 139	1	20
cis-1,2-Dichloroethene	50.0	52.6		ug/L		105	78 - 123	0	20
cis-1,3-Dichloropropene	50.0	56.6		ug/L		113	75 - 124	1	20
Dibromomethane	50.0	53.6		ug/L		107	79 - 123	1	20
Dichlorobromomethane	50.0	54.8		ug/L		110	79 - 125	2	20
Dichlorodifluoromethane	50.0	59.8		ug/L		120	32 - 152	5	20
Ethylbenzene	50.0	49.4		ug/L		99	79 - 121	2	20
Ethylene Dibromide	50.0	53.8		ug/L		108	75 - 127	0	20
Hexachlorobutadiene	50.0	43.0		ug/L		86	66 - 134	0	20
Isopropylbenzene	50.0	48.9		ug/L		98	72 - 131	1	20
Methyl tert-butyl ether	50.0	54.3		ug/L		109	71 - 124	1	20
Methylene Chloride	50.0	51.9		ug/L		104	74 - 124	1	20
m-Xylene & p-Xylene	50.0	49.7		ug/L		99	80 - 121	0	20
Naphthalene	50.0	48.4		ug/L		97	61 - 128	2	20
n-Butylbenzene	50.0	49.5		ug/L		99	75 - 128	1	20
N-Propylbenzene	50.0	49.9		ug/L		100	76 - 126	2	20
o-Xylene	50.0	49.7		ug/L		99	78 - 122	1	20
sec-Butylbenzene	50.0	48.2		ug/L		96	77 - 126	2	20
Styrene	50.0	51.4		ug/L		103	78 - 123	0	20
tert-Butylbenzene	50.0	48.2		ug/L		96	78 - 124	2	20
Tetrachloroethene	50.0	48.9		ug/L		98	74 - 129	2	20
Toluene	50.0	51.8		ug/L		104	80 - 121	1	20
trans-1,2-Dichloroethene	50.0	52.4		ug/L		105	75 - 124	0	20
trans-1,3-Dichloropropene	50.0	55.8		ug/L		112	73 - 127	1	20
Trichloroethene	50.0	49.8		ug/L		100	79 - 123	1	20
Trichlorofluoromethane	50.0	55.4		ug/L		111	65 - 141	3	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 680-691186/4
Matrix: Water
Analysis Batch: 691186

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Vinyl acetate			100	154	Q	ug/L		154	54 - 146	4	20
Vinyl chloride			50.0	51.1		ug/L		102	58 - 137	1	20
Xylenes, Total			100	99.4		ug/L		99	79 - 121	0	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*85 - 114*
Dibromofluoromethane (Surr)	*107*		*80 - 119*
Toluene-d8 (Surr)	*105*		*89 - 112*
1,2-Dichloroethane-d4 (Surr)	*114*		*81 - 118*

Lab Sample ID: MB 680-691213/8
Matrix: Water
Analysis Batch: 691213

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/26/21 12:38	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/26/21 12:38	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/26/21 12:38	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/26/21 12:38	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/26/21 12:38	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/26/21 12:38	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/26/21 12:38	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/26/21 12:38	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/26/21 12:38	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/26/21 12:38	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/26/21 12:38	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/26/21 12:38	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/26/21 12:38	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/26/21 12:38	1
1,2-Dichloroethene, Total	2.0	U	2.0	2.0	0.74	ug/L		10/26/21 12:38	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/26/21 12:38	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		10/26/21 12:38	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/26/21 12:38	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/26/21 12:38	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/26/21 12:38	1
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		10/26/21 12:38	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		10/26/21 12:38	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/26/21 12:38	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/26/21 12:38	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/26/21 12:38	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/26/21 12:38	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/26/21 12:38	1
Acetone	25	U	25	25	7.0	ug/L		10/26/21 12:38	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/26/21 12:38	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/26/21 12:38	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/26/21 12:38	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		10/26/21 12:38	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/26/21 12:38	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-691213/8
Matrix: Water
Analysis Batch: 691213

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/26/21 12:38	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/26/21 12:38	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/26/21 12:38	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/26/21 12:38	1
Chloroethane	5.0	U	5.0	5.0	2.5	ug/L		10/26/21 12:38	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/26/21 12:38	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		10/26/21 12:38	1
cis-1,2-Dichloroethene	1.0	U	1.0	1.0	0.41	ug/L		10/26/21 12:38	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/26/21 12:38	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/26/21 12:38	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/26/21 12:38	1
Dichlorodifluoromethane	2.0	U	2.0	2.0	0.60	ug/L		10/26/21 12:38	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/26/21 12:38	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/26/21 12:38	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/26/21 12:38	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/26/21 12:38	1
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/26/21 12:38	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/26/21 12:38	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		10/26/21 12:38	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/26/21 12:38	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/26/21 12:38	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/26/21 12:38	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/26/21 12:38	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/26/21 12:38	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/26/21 12:38	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/26/21 12:38	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		10/26/21 12:38	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/26/21 12:38	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		10/26/21 12:38	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/26/21 12:38	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		10/26/21 12:38	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/26/21 12:38	1
Vinyl acetate	2.0	U	2.0	2.0	0.81	ug/L		10/26/21 12:38	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		10/26/21 12:38	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		10/26/21 12:38	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*110*		*85 - 114*		*10/26/21 12:38*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 119*		*10/26/21 12:38*	*1*
Toluene-d8 (Surr)	*101*		*89 - 112*		*10/26/21 12:38*	*1*
1,2-Dichloroethane-d4 (Surr)	*99*		*81 - 118*		*10/26/21 12:38*	*1*

Lab Sample ID: LCS 680-691213/3
Matrix: Water
Analysis Batch: 691213

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	50.0	53.3		ug/L		107	78 - 124

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-691213/3
Matrix: Water
Analysis Batch: 691213

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	50.0	48.5		ug/L		97	74 - 131
1,1,2,2-Tetrachloroethane	50.0	48.8		ug/L		98	71 - 121
1,1,2-Trichloroethane	50.0	53.3		ug/L		107	80 - 119
1,1-Dichloroethane	50.0	49.5		ug/L		99	77 - 125
1,1-Dichloroethene	50.0	47.4		ug/L		95	71 - 131
1,1-Dichloropropene	50.0	48.6		ug/L		97	79 - 125
1,2,3-Trichlorobenzene	50.0	51.0		ug/L		102	69 - 129
1,2,3-Trichloropropane	50.0	51.8		ug/L		104	73 - 122
1,2,4-Trichlorobenzene	50.0	51.0		ug/L		102	69 - 130
1,2,4-Trimethylbenzene	50.0	52.0		ug/L		104	76 - 124
1,2-Dibromo-3-Chloropropane	50.0	49.9		ug/L		100	62 - 128
1,2-Dichlorobenzene	50.0	51.2		ug/L		102	80 - 119
1,2-Dichloroethane	50.0	51.4		ug/L		103	73 - 128
1,2-Dichloroethene, Total	100	98.5		ug/L		99	79 - 121
1,2-Dichloropropane	50.0	51.8		ug/L		104	78 - 122
1,3,5-Trimethylbenzene	50.0	51.8		ug/L		104	75 - 124
1,3-Dichlorobenzene	50.0	51.5		ug/L		103	80 - 119
1,3-Dichloropropane	50.0	51.9		ug/L		104	80 - 119
1,4-Dichlorobenzene	50.0	50.7		ug/L		101	79 - 118
2,2-Dichloropropane	50.0	49.0		ug/L		98	60 - 139
2-Butanone (MEK)	250	257		ug/L		103	56 - 143
2-Chlorotoluene	50.0	51.3		ug/L		103	79 - 122
2-Hexanone	250	254		ug/L		101	57 - 139
4-Chlorotoluene	50.0	51.6		ug/L		103	78 - 122
4-Isopropyltoluene	50.0	49.2		ug/L		98	77 - 127
4-Methyl-2-pentanone (MIBK)	250	260		ug/L		104	67 - 130
Acetone	250	249		ug/L		99	39 - 160
Benzene	50.0	49.7		ug/L		99	79 - 120
Bromobenzene	50.0	53.4		ug/L		107	80 - 120
Bromoform	50.0	53.8		ug/L		108	66 - 130
Bromomethane	50.0	63.3		ug/L		127	53 - 141
Carbon disulfide	50.0	49.1		ug/L		98	64 - 133
Carbon tetrachloride	50.0	48.1		ug/L		96	72 - 136
Chlorobenzene	50.0	50.2		ug/L		100	82 - 118
Chlorobromomethane	50.0	52.3		ug/L		105	78 - 123
Chlorodibromomethane	50.0	55.4		ug/L		111	74 - 126
Chloroethane	50.0	62.7		ug/L		125	60 - 138
Chloroform	50.0	49.5		ug/L		99	79 - 124
Chloromethane	50.0	57.8	M	ug/L		116	50 - 139
cis-1,2-Dichloroethene	50.0	48.6		ug/L		97	78 - 123
cis-1,3-Dichloropropene	50.0	53.9		ug/L		108	75 - 124
Dibromomethane	50.0	53.0		ug/L		106	79 - 123
Dichlorobromomethane	50.0	52.2		ug/L		104	79 - 125
Dichlorodifluoromethane	50.0	46.3		ug/L		93	32 - 152
Ethylbenzene	50.0	50.3		ug/L		101	79 - 121
Ethylene Dibromide	50.0	53.6		ug/L		107	75 - 127
Hexachlorobutadiene	50.0	46.8		ug/L		94	66 - 134
Isopropylbenzene	50.0	50.5		ug/L		101	72 - 131
Methyl tert-butyl ether	50.0	53.4		ug/L		107	71 - 124

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-691213/3
Matrix: Water
Analysis Batch: 691213

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methylene Chloride	50.0	49.4		ug/L		99	74 - 124
m-Xylene & p-Xylene	50.0	51.5		ug/L		103	80 - 121
Naphthalene	50.0	50.9		ug/L		102	61 - 128
n-Butylbenzene	50.0	49.1		ug/L		98	75 - 128
N-Propylbenzene	50.0	51.1		ug/L		102	76 - 126
o-Xylene	50.0	51.0		ug/L		102	78 - 122
sec-Butylbenzene	50.0	50.3		ug/L		101	77 - 126
Styrene	50.0	52.0		ug/L		104	78 - 123
tert-Butylbenzene	50.0	49.9		ug/L		100	78 - 124
Tetrachloroethene	50.0	51.2		ug/L		102	74 - 129
Toluene	50.0	50.9		ug/L		102	80 - 121
trans-1,2-Dichloroethene	50.0	50.0		ug/L		100	75 - 124
trans-1,3-Dichloropropene	50.0	54.6		ug/L		109	73 - 127
Trichloroethene	50.0	52.0		ug/L		104	79 - 123
Trichlorofluoromethane	50.0	43.8		ug/L		88	65 - 141
Vinyl acetate	100	111	J1	ug/L		111	54 - 146
Vinyl chloride	50.0	49.9		ug/L		100	58 - 137
Xylenes, Total	100	103		ug/L		103	79 - 121

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*98*		*85 - 114*
Dibromofluoromethane (Surr)	*104*		*80 - 119*
Toluene-d8 (Surr)	*98*		*89 - 112*
1,2-Dichloroethane-d4 (Surr)	*100*		*81 - 118*

Lab Sample ID: LCSD 680-691213/4
Matrix: Water
Analysis Batch: 691213

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	50.0	52.4		ug/L		105	78 - 124	2	20
1,1,1-Trichloroethane	50.0	49.0		ug/L		98	74 - 131	1	20
1,1,2,2-Tetrachloroethane	50.0	50.5		ug/L		101	71 - 121	3	20
1,1,2-Trichloroethane	50.0	52.1		ug/L		104	80 - 119	2	20
1,1-Dichloroethane	50.0	50.2		ug/L		100	77 - 125	1	20
1,1-Dichloroethene	50.0	49.6		ug/L		99	71 - 131	4	20
1,1-Dichloropropene	50.0	47.5		ug/L		95	79 - 125	2	20
1,2,3-Trichlorobenzene	50.0	50.5		ug/L		101	69 - 129	1	20
1,2,3-Trichloropropane	50.0	51.3		ug/L		103	73 - 122	1	20
1,2,4-Trichlorobenzene	50.0	50.6		ug/L		101	69 - 130	1	20
1,2,4-Trimethylbenzene	50.0	51.4		ug/L		103	76 - 124	1	20
1,2-Dibromo-3-Chloropropane	50.0	50.4		ug/L		101	62 - 128	1	20
1,2-Dichlorobenzene	50.0	50.3		ug/L		101	80 - 119	2	20
1,2-Dichloroethane	50.0	51.1		ug/L		102	73 - 128	1	20
1,2-Dichloroethene, Total	100	99.4		ug/L		99	79 - 121	1	20
1,2-Dichloropropane	50.0	51.6		ug/L		103	78 - 122	0	20
1,3,5-Trimethylbenzene	50.0	50.8		ug/L		102	75 - 124	2	20
1,3-Dichlorobenzene	50.0	50.8		ug/L		102	80 - 119	1	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 680-691213/4
Matrix: Water
Analysis Batch: 691213

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,3-Dichloropropane	50.0	51.7		ug/L		103	80 - 119	0	20
1,4-Dichlorobenzene	50.0	49.7		ug/L		99	79 - 118	2	20
2,2-Dichloropropane	50.0	50.0		ug/L		100	60 - 139	2	20
2-Butanone (MEK)	250	258		ug/L		103	56 - 143	0	20
2-Chlorotoluene	50.0	49.3		ug/L		99	79 - 122	4	20
2-Hexanone	250	257		ug/L		103	57 - 139	1	20
4-Chlorotoluene	50.0	50.7		ug/L		101	78 - 122	2	20
4-Isopropyltoluene	50.0	50.1		ug/L		100	77 - 127	2	20
4-Methyl-2-pentanone (MIBK)	250	262		ug/L		105	67 - 130	1	20
Acetone	250	244		ug/L		97	39 - 160	2	20
Benzene	50.0	50.6		ug/L		101	79 - 120	2	20
Bromobenzene	50.0	52.0		ug/L		104	80 - 120	3	20
Bromoform	50.0	53.4		ug/L		107	66 - 130	1	20
Bromomethane	50.0	61.8		ug/L		124	53 - 141	2	20
Carbon disulfide	50.0	48.8		ug/L		98	64 - 133	1	20
Carbon tetrachloride	50.0	46.4		ug/L		93	72 - 136	3	20
Chlorobenzene	50.0	49.5		ug/L		99	82 - 118	2	20
Chlorobromomethane	50.0	51.7		ug/L		103	78 - 123	1	20
Chlorodibromomethane	50.0	54.4		ug/L		109	74 - 126	2	20
Chloroethane	50.0	55.8		ug/L		112	60 - 138	12	20
Chloroform	50.0	50.3		ug/L		101	79 - 124	2	20
Chloromethane	50.0	56.7	M	ug/L		113	50 - 139	2	20
cis-1,2-Dichloroethene	50.0	48.9		ug/L		98	78 - 123	1	20
cis-1,3-Dichloropropene	50.0	53.4		ug/L		107	75 - 124	1	20
Dibromomethane	50.0	53.0		ug/L		106	79 - 123	0	20
Dichlorobromomethane	50.0	51.5		ug/L		103	79 - 125	1	20
Dichlorodifluoromethane	50.0	47.0		ug/L		94	32 - 152	2	20
Ethylbenzene	50.0	49.5		ug/L		99	79 - 121	1	20
Ethylene Dibromide	50.0	53.5		ug/L		107	75 - 127	0	20
Hexachlorobutadiene	50.0	48.0		ug/L		96	66 - 134	2	20
Isopropylbenzene	50.0	49.1		ug/L		98	72 - 131	3	20
Methyl tert-butyl ether	50.0	53.6		ug/L		107	71 - 124	0	20
Methylene Chloride	50.0	49.0		ug/L		98	74 - 124	1	20
m-Xylene & p-Xylene	50.0	50.1		ug/L		100	80 - 121	3	20
Naphthalene	50.0	50.7		ug/L		101	61 - 128	0	20
n-Butylbenzene	50.0	49.8		ug/L		100	75 - 128	1	20
N-Propylbenzene	50.0	50.5		ug/L		101	76 - 126	1	20
o-Xylene	50.0	49.6		ug/L		99	78 - 122	3	20
sec-Butylbenzene	50.0	49.7		ug/L		99	77 - 126	1	20
Styrene	50.0	51.2		ug/L		102	78 - 123	2	20
tert-Butylbenzene	50.0	49.6		ug/L		99	78 - 124	0	20
Tetrachloroethene	50.0	50.9		ug/L		102	74 - 129	0	20
Toluene	50.0	50.2		ug/L		100	80 - 121	1	20
trans-1,2-Dichloroethene	50.0	50.5		ug/L		101	75 - 124	1	20
trans-1,3-Dichloropropene	50.0	52.8		ug/L		106	73 - 127	3	20
Trichloroethene	50.0	51.3		ug/L		103	79 - 123	1	20
Trichlorofluoromethane	50.0	37.3		ug/L		75	65 - 141	16	20
Vinyl acetate	100	118	J1	ug/L		118	54 - 146	6	20
Vinyl chloride	50.0	49.8		ug/L		100	58 - 137	0	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 680-691213/4
Matrix: Water
Analysis Batch: 691213

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Xylenes, Total			100	99.7		ug/L		100	79 - 121	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*98*		*85 - 114*
Dibromofluoromethane (Surr)	*102*		*80 - 119*
Toluene-d8 (Surr)	*98*		*89 - 112*
1,2-Dichloroethane-d4 (Surr)	*109*		*81 - 118*

Lab Sample ID: 680-206032-4 MS
Matrix: Water
Analysis Batch: 691213

Client Sample ID: G6M-04-10A-FAL21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	1.0	U	50.0	51.3		ug/L		103	78 - 124
1,1,1-Trichloroethane	1.0	U	50.0	49.3		ug/L		99	74 - 131
1,1,2,2-Tetrachloroethane	2.0	U	50.0	48.7		ug/L		97	71 - 121
1,1,2-Trichloroethane	1.0	U	50.0	49.0		ug/L		98	80 - 119
1,1-Dichloroethane	1.0	U	50.0	49.1		ug/L		98	77 - 125
1,1-Dichloroethene	1.0	U	50.0	50.6		ug/L		101	71 - 131
1,1-Dichloropropene	1.0	U	50.0	51.0		ug/L		102	79 - 125
1,2,3-Trichlorobenzene	5.0	U	50.0	47.0		ug/L		94	69 - 129
1,2,3-Trichloropropane	1.0	U	50.0	50.2		ug/L		100	73 - 122
1,2,4-Trichlorobenzene	5.0	U	50.0	47.6		ug/L		95	69 - 130
1,2,4-Trimethylbenzene	0.97	J	50.0	52.2		ug/L		102	76 - 124
1,2-Dibromo-3-Chloropropane	4.0	U	50.0	49.0		ug/L		98	62 - 128
1,2-Dichlorobenzene	1.0	U	50.0	47.5		ug/L		95	80 - 119
1,2-Dichloroethane	1.0	U M	50.0	48.3		ug/L		97	73 - 128
1,2-Dichloroethene, Total	4.0		100	99.5		ug/L		96	79 - 121
1,2-Dichloropropane	2.0	U	50.0	49.6		ug/L		99	78 - 122
1,3,5-Trimethylbenzene	1.0	U	50.0	51.0		ug/L		102	75 - 124
1,3-Dichlorobenzene	1.0	U	50.0	49.4		ug/L		99	80 - 119
1,3-Dichloropropane	1.0	U	50.0	47.3		ug/L		95	80 - 119
1,4-Dichlorobenzene	1.0	U	50.0	48.3		ug/L		97	79 - 118
2,2-Dichloropropane	1.0	U	50.0	42.6		ug/L		85	60 - 139
2-Butanone (MEK)	10	U	250	251		ug/L		100	56 - 143
2-Chlorotoluene	1.0	U	50.0	49.6		ug/L		99	79 - 122
2-Hexanone	5.0	U	250	251		ug/L		101	57 - 139
4-Chlorotoluene	1.0	U	50.0	50.8		ug/L		102	78 - 122
4-Isopropyltoluene	1.0	U	50.0	49.7		ug/L		99	77 - 127
4-Methyl-2-pentanone (MIBK)	5.0	U	250	257		ug/L		103	67 - 130
Acetone	25	U	250	235		ug/L		94	39 - 160
Benzene	1.0	U	50.0	50.1		ug/L		100	79 - 120
Bromobenzene	1.0	U	50.0	49.8		ug/L		100	80 - 120
Bromoform	1.0	U	50.0	50.3		ug/L		101	66 - 130
Bromomethane	5.0	U Q	50.0	54.9		ug/L		110	53 - 141
Carbon disulfide	1.0	U	50.0	49.5		ug/L		99	64 - 133
Carbon tetrachloride	1.0	U	50.0	50.9		ug/L		102	72 - 136
Chlorobenzene	1.0	U	50.0	49.4		ug/L		99	82 - 118

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 680-206032-4 MS
Matrix: Water
Analysis Batch: 691213

Client Sample ID: G6M-04-10A-FAL21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chlorobromomethane	1.0	U	50.0	47.6		ug/L		95	78 - 123
Chlorodibromomethane	1.0	U	50.0	50.6		ug/L		101	74 - 126
Chloroethane	5.0	U Q	50.0	61.5		ug/L		123	60 - 138
Chloroform	1.0	U	50.0	48.1		ug/L		96	79 - 124
Chloromethane	1.0	U Q	50.0	58.0	M	ug/L		116	50 - 139
cis-1,2-Dichloroethene	3.6		50.0	49.9		ug/L		93	78 - 123
cis-1,3-Dichloropropene	1.0	U	50.0	48.8		ug/L		98	75 - 124
Dibromomethane	1.0	U	50.0	48.8		ug/L		98	79 - 123
Dichlorobromomethane	1.0	U	50.0	48.8		ug/L		98	79 - 125
Dichlorodifluoromethane	2.0	U	50.0	45.9		ug/L		92	32 - 152
Ethylbenzene	1.0	U M	50.0	50.7		ug/L		101	79 - 121
Ethylene Dibromide	1.0	U	50.0	48.2		ug/L		96	75 - 127
Hexachlorobutadiene	5.0	U	50.0	45.6		ug/L		91	66 - 134
Isopropylbenzene	1.0	U	50.0	50.8		ug/L		102	72 - 131
Methyl tert-butyl ether	1.0	U	50.0	48.9		ug/L		98	71 - 124
Methylene Chloride	5.0	U	50.0	45.0		ug/L		90	74 - 124
m-Xylene & p-Xylene	1.0	U	50.0	51.8		ug/L		104	80 - 121
Naphthalene	5.0	U	50.0	47.9		ug/L		96	61 - 128
n-Butylbenzene	1.0	U	50.0	49.4		ug/L		99	75 - 128
N-Propylbenzene	1.0	U	50.0	52.1		ug/L		104	76 - 126
o-Xylene	0.50	U	50.0	49.9		ug/L		100	78 - 122
sec-Butylbenzene	1.0	U	50.0	51.8		ug/L		104	77 - 126
Styrene	1.0	U	50.0	51.1		ug/L		102	78 - 123
tert-Butylbenzene	1.0	U	50.0	50.4		ug/L		101	78 - 124
Tetrachloroethene	2.0	U	50.0	50.4		ug/L		101	74 - 129
Toluene	1.0	U	50.0	49.7		ug/L		99	80 - 121
trans-1,2-Dichloroethene	1.0	U	50.0	49.6		ug/L		99	75 - 124
trans-1,3-Dichloropropene	1.0	U	50.0	47.7		ug/L		95	73 - 127
Trichloroethene	1.0	U	50.0	51.6		ug/L		103	79 - 123
Trichlorofluoromethane	1.0	U	50.0	43.9		ug/L		88	65 - 141
Vinyl acetate	2.0	U Q	100	109	J1	ug/L		109	54 - 146
Vinyl chloride	1.7		50.0	51.7		ug/L		100	58 - 137
Xylenes, Total	2.0	U	100	102		ug/L		102	79 - 121

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*95*		*85 - 114*
Dibromofluoromethane (Surr)	*98*		*80 - 119*
Toluene-d8 (Surr)	*100*		*89 - 112*
1,2-Dichloroethane-d4 (Surr)	*94*		*81 - 118*

Lab Sample ID: 680-206032-4 MSD
Matrix: Water
Analysis Batch: 691213

Client Sample ID: G6M-04-10A-FAL21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	1.0	U	50.0	52.3		ug/L		105	78 - 124	2	20
1,1,1-Trichloroethane	1.0	U	50.0	49.9		ug/L		100	74 - 131	1	20
1,1,2,2-Tetrachloroethane	2.0	U	50.0	49.8		ug/L		100	71 - 121	2	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 680-206032-4 MSD
Matrix: Water
Analysis Batch: 691213

Client Sample ID: G6M-04-10A-FAL21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,2-Trichloroethane	1.0	U	50.0	50.5		ug/L		101	80 - 119	3	20
1,1-Dichloroethane	1.0	U	50.0	50.8		ug/L		102	77 - 125	3	20
1,1-Dichloroethene	1.0	U	50.0	52.3		ug/L		105	71 - 131	3	20
1,1-Dichloropropene	1.0	U	50.0	53.1		ug/L		106	79 - 125	4	20
1,2,3-Trichlorobenzene	5.0	U	50.0	48.5		ug/L		97	69 - 129	3	20
1,2,3-Trichloropropane	1.0	U	50.0	51.7		ug/L		103	73 - 122	3	20
1,2,4-Trichlorobenzene	5.0	U	50.0	48.1		ug/L		96	69 - 130	1	20
1,2,4-Trimethylbenzene	0.97	J	50.0	53.2		ug/L		104	76 - 124	2	20
1,2-Dibromo-3-Chloropropane	4.0	U	50.0	50.8		ug/L		102	62 - 128	4	20
1,2-Dichlorobenzene	1.0	U	50.0	49.4		ug/L		99	80 - 119	4	20
1,2-Dichloroethane	1.0	U M	50.0	49.6		ug/L		99	73 - 128	3	20
1,2-Dichloroethene, Total	4.0		100	100		ug/L		96	79 - 121	1	20
1,2-Dichloropropane	2.0	U	50.0	50.3		ug/L		101	78 - 122	1	20
1,3,5-Trimethylbenzene	1.0	U	50.0	52.0		ug/L		104	75 - 124	2	20
1,3-Dichlorobenzene	1.0	U	50.0	51.0		ug/L		102	80 - 119	3	20
1,3-Dichloropropane	1.0	U	50.0	48.0		ug/L		96	80 - 119	1	20
1,4-Dichlorobenzene	1.0	U	50.0	49.5		ug/L		99	79 - 118	2	20
2,2-Dichloropropane	1.0	U	50.0	43.8		ug/L		88	60 - 139	3	20
2-Butanone (MEK)	10	U	250	265		ug/L		106	56 - 143	5	20
2-Chlorotoluene	1.0	U	50.0	51.1		ug/L		102	79 - 122	3	20
2-Hexanone	5.0	U	250	260		ug/L		104	57 - 139	4	20
4-Chlorotoluene	1.0	U	50.0	51.0		ug/L		102	78 - 122	0	20
4-Isopropyltoluene	1.0	U	50.0	51.1		ug/L		102	77 - 127	3	20
4-Methyl-2-pentanone (MIBK)	5.0	U	250	261		ug/L		105	67 - 130	2	20
Acetone	25	U	250	245		ug/L		98	39 - 160	4	20
Benzene	1.0	U	50.0	51.1		ug/L		102	79 - 120	2	20
Bromobenzene	1.0	U	50.0	51.0		ug/L		102	80 - 120	2	20
Bromoform	1.0	U	50.0	51.8		ug/L		104	66 - 130	3	20
Bromomethane	5.0	U Q	50.0	55.8		ug/L		112	53 - 141	2	20
Carbon disulfide	1.0	U	50.0	51.4		ug/L		103	64 - 133	4	20
Carbon tetrachloride	1.0	U	50.0	52.2		ug/L		104	72 - 136	3	20
Chlorobenzene	1.0	U	50.0	49.5		ug/L		99	82 - 118	0	20
Chlorobromomethane	1.0	U	50.0	48.6		ug/L		97	78 - 123	2	20
Chlorodibromomethane	1.0	U	50.0	51.1		ug/L		102	74 - 126	1	20
Chloroethane	5.0	U Q	50.0	64.7		ug/L		129	60 - 138	5	20
Chloroform	1.0	U	50.0	49.5		ug/L		99	79 - 124	3	20
Chloromethane	1.0	U Q	50.0	65.3	M	ug/L		131	50 - 139	12	20
cis-1,2-Dichloroethene	3.6		50.0	50.2		ug/L		93	78 - 123	1	20
cis-1,3-Dichloropropene	1.0	U	50.0	49.4		ug/L		99	75 - 124	1	20
Dibromomethane	1.0	U	50.0	49.5		ug/L		99	79 - 123	1	20
Dichlorobromomethane	1.0	U	50.0	50.3		ug/L		101	79 - 125	3	20
Dichlorodifluoromethane	2.0	U	50.0	47.8		ug/L		96	32 - 152	4	20
Ethylbenzene	1.0	U M	50.0	51.1		ug/L		102	79 - 121	1	20
Ethylene Dibromide	1.0	U	50.0	49.1		ug/L		98	75 - 127	2	20
Hexachlorobutadiene	5.0	U	50.0	46.7		ug/L		93	66 - 134	3	20
Isopropylbenzene	1.0	U	50.0	51.4		ug/L		103	72 - 131	1	20
Methyl tert-butyl ether	1.0	U	50.0	49.8		ug/L		100	71 - 124	2	20
Methylene Chloride	5.0	U	50.0	47.4		ug/L		95	74 - 124	5	20
m-Xylene & p-Xylene	1.0	U	50.0	51.4		ug/L		103	80 - 121	1	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 680-206032-4 MSD
Matrix: Water
Analysis Batch: 691213

Client Sample ID: G6M-04-10A-FAL21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Naphthalene	5.0	U	50.0	49.8		ug/L		100	61 - 128	4	20
n-Butylbenzene	1.0	U	50.0	50.9		ug/L		102	75 - 128	3	20
N-Propylbenzene	1.0	U	50.0	52.4		ug/L		105	76 - 126	1	20
o-Xylene	0.50	U	50.0	50.4		ug/L		101	78 - 122	1	20
sec-Butylbenzene	1.0	U	50.0	52.5		ug/L		105	77 - 126	1	20
Styrene	1.0	U	50.0	51.1		ug/L		102	78 - 123	0	20
tert-Butylbenzene	1.0	U	50.0	51.5		ug/L		103	78 - 124	2	20
Tetrachloroethene	2.0	U	50.0	51.1		ug/L		102	74 - 129	1	20
Toluene	1.0	U	50.0	50.7		ug/L		101	80 - 121	2	20
trans-1,2-Dichloroethene	1.0	U	50.0	49.8		ug/L		100	75 - 124	0	20
trans-1,3-Dichloropropene	1.0	U	50.0	48.5		ug/L		97	73 - 127	2	20
Trichloroethene	1.0	U	50.0	52.2		ug/L		104	79 - 123	1	20
Trichlorofluoromethane	1.0	U	50.0	46.2		ug/L		92	65 - 141	5	20
Vinyl acetate	2.0	U Q	100	111	J1	ug/L		111	54 - 146	2	20
Vinyl chloride	1.7		50.0	56.7		ug/L		110	58 - 137	9	20
Xylenes, Total	2.0	U	100	102		ug/L		102	79 - 121	0	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*97*		*85 - 114*
Dibromofluoromethane (Surr)	*101*		*80 - 119*
Toluene-d8 (Surr)	*101*		*89 - 112*
1,2-Dichloroethane-d4 (Surr)	*103*		*81 - 118*

Lab Sample ID: MB 680-691431/8
Matrix: Water
Analysis Batch: 691431

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 13:03	1
1,1,1-Trichloroethane	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 13:03	1
1,1,2,2-Tetrachloroethane	2.0	U	2.0	2.0	0.62	ug/L		10/27/21 13:03	1
1,1,2-Trichloroethane	1.0	U	1.0	1.0	0.33	ug/L		10/27/21 13:03	1
1,1-Dichloroethane	1.0	U	1.0	1.0	0.38	ug/L		10/27/21 13:03	1
1,1-Dichloroethene	1.0	U	1.0	1.0	0.36	ug/L		10/27/21 13:03	1
1,1-Dichloropropene	1.0	U	1.0	1.0	0.34	ug/L		10/27/21 13:03	1
1,2,3-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 13:03	1
1,2,3-Trichloropropane	1.0	U	1.0	1.0	0.39	ug/L		10/27/21 13:03	1
1,2,4-Trichlorobenzene	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 13:03	1
1,2,4-Trimethylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/27/21 13:03	1
1,2-Dibromo-3-Chloropropane	4.0	U	5.0	4.0	1.1	ug/L		10/27/21 13:03	1
1,2-Dichlorobenzene	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 13:03	1
1,2-Dichloroethane	1.0	U M	1.0	1.0	0.50	ug/L		10/27/21 13:03	1
1,2-Dichloroethene, Total	2.0	U	2.0	2.0	0.74	ug/L		10/27/21 13:03	1
1,2-Dichloropropane	2.0	U	2.0	2.0	0.67	ug/L		10/27/21 13:03	1
1,3,5-Trimethylbenzene	1.0	U	1.0	1.0	0.31	ug/L		10/27/21 13:03	1
1,3-Dichlorobenzene	1.0	U	1.0	1.0	0.43	ug/L		10/27/21 13:03	1
1,3-Dichloropropane	1.0	U	1.0	1.0	0.34	ug/L		10/27/21 13:03	1
1,4-Dichlorobenzene	1.0	U	1.0	1.0	0.46	ug/L		10/27/21 13:03	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-691431/8
Matrix: Water
Analysis Batch: 691431

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
2,2-Dichloropropane	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 13:03	1
2-Butanone (MEK)	10	U	10	10	3.4	ug/L		10/27/21 13:03	1
2-Chlorotoluene	1.0	U	1.0	1.0	0.27	ug/L		10/27/21 13:03	1
2-Hexanone	5.0	U	10	5.0	2.0	ug/L		10/27/21 13:03	1
4-Chlorotoluene	1.0	U	1.0	1.0	0.45	ug/L		10/27/21 13:03	1
4-Isopropyltoluene	1.0	U	1.0	1.0	0.48	ug/L		10/27/21 13:03	1
4-Methyl-2-pentanone (MIBK)	5.0	U	10	5.0	2.1	ug/L		10/27/21 13:03	1
Acetone	25	U	25	25	7.0	ug/L		10/27/21 13:03	1
Benzene	1.0	U	1.0	1.0	0.43	ug/L		10/27/21 13:03	1
Bromobenzene	1.0	U	1.0	1.0	0.50	ug/L		10/27/21 13:03	1
Bromoform	1.0	U	1.0	1.0	0.43	ug/L		10/27/21 13:03	1
Bromomethane	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 13:03	1
Carbon disulfide	1.0	U	2.0	1.0	0.43	ug/L		10/27/21 13:03	1
Carbon tetrachloride	1.0	U	1.0	1.0	0.33	ug/L		10/27/21 13:03	1
Chlorobenzene	1.0	U	1.0	1.0	0.26	ug/L		10/27/21 13:03	1
Chlorobromomethane	1.0	U	1.0	1.0	0.45	ug/L		10/27/21 13:03	1
Chlorodibromomethane	1.0	U	1.0	1.0	0.32	ug/L		10/27/21 13:03	1
Chloroethane	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 13:03	1
Chloroform	1.0	U	1.0	1.0	0.50	ug/L		10/27/21 13:03	1
Chloromethane	1.0	U	1.0	1.0	0.40	ug/L		10/27/21 13:03	1
cis-1,2-Dichloroethene	1.0	U	1.0	1.0	0.41	ug/L		10/27/21 13:03	1
cis-1,3-Dichloropropene	1.0	U	1.0	1.0	0.40	ug/L		10/27/21 13:03	1
Dibromomethane	1.0	U	1.0	1.0	0.35	ug/L		10/27/21 13:03	1
Dichlorobromomethane	1.0	U	1.0	1.0	0.44	ug/L		10/27/21 13:03	1
Dichlorodifluoromethane	2.0	U M	2.0	2.0	0.60	ug/L		10/27/21 13:03	1
Ethylbenzene	1.0	U	1.0	1.0	0.33	ug/L		10/27/21 13:03	1
Ethylene Dibromide	1.0	U	1.0	1.0	0.44	ug/L		10/27/21 13:03	1
Hexachlorobutadiene	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 13:03	1
Isopropylbenzene	1.0	U	1.0	1.0	0.35	ug/L		10/27/21 13:03	1
Methyl tert-butyl ether	1.0	U	10	1.0	0.30	ug/L		10/27/21 13:03	1
Methylene Chloride	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 13:03	1
m-Xylene & p-Xylene	1.0	U	1.0	1.0	0.35	ug/L		10/27/21 13:03	1
Naphthalene	5.0	U	5.0	5.0	2.5	ug/L		10/27/21 13:03	1
n-Butylbenzene	1.0	U	1.0	1.0	0.47	ug/L		10/27/21 13:03	1
N-Propylbenzene	1.0	U	1.0	1.0	0.38	ug/L		10/27/21 13:03	1
o-Xylene	0.50	U	1.0	0.50	0.23	ug/L		10/27/21 13:03	1
sec-Butylbenzene	1.0	U	1.0	1.0	0.42	ug/L		10/27/21 13:03	1
Styrene	1.0	U	1.0	1.0	0.27	ug/L		10/27/21 13:03	1
tert-Butylbenzene	1.0	U	1.0	1.0	0.45	ug/L		10/27/21 13:03	1
Tetrachloroethene	2.0	U	2.0	2.0	0.74	ug/L		10/27/21 13:03	1
Toluene	1.0	U	1.0	1.0	0.48	ug/L		10/27/21 13:03	1
trans-1,2-Dichloroethene	1.0	U	1.0	1.0	0.37	ug/L		10/27/21 13:03	1
trans-1,3-Dichloropropene	1.0	U	1.0	1.0	0.42	ug/L		10/27/21 13:03	1
Trichloroethene	1.0	U	1.0	1.0	0.48	ug/L		10/27/21 13:03	1
Trichlorofluoromethane	1.0	U	1.0	1.0	0.42	ug/L		10/27/21 13:03	1
Vinyl acetate	2.0	U	2.0	2.0	0.81	ug/L		10/27/21 13:03	1
Vinyl chloride	1.0	U	1.0	1.0	0.50	ug/L		10/27/21 13:03	1
Xylenes, Total	2.0	U	2.0	2.0	0.23	ug/L		10/27/21 13:03	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-691431/8
Matrix: Water
Analysis Batch: 691431

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	*103*		*85 - 114*		*10/27/21 13:03*	*1*
Dibromofluoromethane (Surr)	*100*		*80 - 119*		*10/27/21 13:03*	*1*
Toluene-d8 (Surr)	*99*		*89 - 112*		*10/27/21 13:03*	*1*
1,2-Dichloroethane-d4 (Surr)	*97*		*81 - 118*		*10/27/21 13:03*	*1*

Lab Sample ID: LCS 680-691431/3
Matrix: Water
Analysis Batch: 691431

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	50.0	49.9		ug/L		100	78 - 124
1,1,1-Trichloroethane	50.0	47.9		ug/L		96	74 - 131
1,1,2,2-Tetrachloroethane	50.0	45.2		ug/L		90	71 - 121
1,1,2-Trichloroethane	50.0	53.4		ug/L		107	80 - 119
1,1-Dichloroethane	50.0	51.5		ug/L		103	77 - 125
1,1-Dichloroethene	50.0	50.7		ug/L		101	71 - 131
1,1-Dichloropropene	50.0	51.3		ug/L		103	79 - 125
1,2,3-Trichlorobenzene	50.0	48.4		ug/L		97	69 - 129
1,2,3-Trichloropropane	50.0	49.5		ug/L		99	73 - 122
1,2,4-Trichlorobenzene	50.0	48.4		ug/L		97	69 - 130
1,2,4-Trimethylbenzene	50.0	49.2		ug/L		98	76 - 124
1,2-Dibromo-3-Chloropropane	50.0	46.0		ug/L		92	62 - 128
1,2-Dichlorobenzene	50.0	47.6		ug/L		95	80 - 119
1,2-Dichloroethane	50.0	52.3		ug/L		105	73 - 128
1,2-Dichloroethene, Total	100	102		ug/L		102	79 - 121
1,2-Dichloropropane	50.0	52.7		ug/L		105	78 - 122
1,3,5-Trimethylbenzene	50.0	48.7		ug/L		97	75 - 124
1,3-Dichlorobenzene	50.0	48.5		ug/L		97	80 - 119
1,3-Dichloropropane	50.0	51.6		ug/L		103	80 - 119
1,4-Dichlorobenzene	50.0	47.4		ug/L		95	79 - 118
2,2-Dichloropropane	50.0	48.5		ug/L		97	60 - 139
2-Butanone (MEK)	250	256		ug/L		102	56 - 143
2-Chlorotoluene	50.0	48.3		ug/L		97	79 - 122
2-Hexanone	250	262		ug/L		105	57 - 139
4-Chlorotoluene	50.0	48.9		ug/L		98	78 - 122
4-Isopropyltoluene	50.0	45.9		ug/L		92	77 - 127
4-Methyl-2-pentanone (MIBK)	250	269		ug/L		108	67 - 130
Acetone	250	260		ug/L		104	39 - 160
Benzene	50.0	50.9		ug/L		102	79 - 120
Bromobenzene	50.0	50.4		ug/L		101	80 - 120
Bromoform	50.0	50.5		ug/L		101	66 - 130
Bromomethane	50.0	54.4		ug/L		109	53 - 141
Carbon disulfide	50.0	50.3		ug/L		101	64 - 133
Carbon tetrachloride	50.0	49.0		ug/L		98	72 - 136
Chlorobenzene	50.0	47.9		ug/L		96	82 - 118
Chlorobromomethane	50.0	51.8		ug/L		104	78 - 123
Chlorodibromomethane	50.0	53.8		ug/L		108	74 - 126
Chloroethane	50.0	56.6		ug/L		113	60 - 138

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-691431/3
Matrix: Water
Analysis Batch: 691431

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloroform	50.0	50.8		ug/L		102	79 - 124
Chloromethane	50.0	49.8		ug/L		100	50 - 139
cis-1,2-Dichloroethene	50.0	50.1		ug/L		100	78 - 123
cis-1,3-Dichloropropene	50.0	54.8		ug/L		110	75 - 124
Dibromomethane	50.0	54.0		ug/L		108	79 - 123
Dichlorobromomethane	50.0	51.9		ug/L		104	79 - 125
Dichlorodifluoromethane	50.0	40.8		ug/L		82	32 - 152
Ethylbenzene	50.0	48.1		ug/L		96	79 - 121
Ethylene Dibromide	50.0	52.6		ug/L		105	75 - 127
Hexachlorobutadiene	50.0	45.8		ug/L		92	66 - 134
Isopropylbenzene	50.0	47.5		ug/L		95	72 - 131
Methyl tert-butyl ether	50.0	54.7		ug/L		109	71 - 124
Methylene Chloride	50.0	51.7		ug/L		103	74 - 124
m-Xylene & p-Xylene	50.0	48.6		ug/L		97	80 - 121
Naphthalene	50.0	47.1		ug/L		94	61 - 128
n-Butylbenzene	50.0	46.8		ug/L		94	75 - 128
N-Propylbenzene	50.0	48.2		ug/L		96	76 - 126
o-Xylene	50.0	48.4		ug/L		97	78 - 122
sec-Butylbenzene	50.0	47.9		ug/L		96	77 - 126
Styrene	50.0	49.8		ug/L		100	78 - 123
tert-Butylbenzene	50.0	48.0		ug/L		96	78 - 124
Tetrachloroethene	50.0	51.2		ug/L		102	74 - 129
Toluene	50.0	52.1		ug/L		104	80 - 121
trans-1,2-Dichloroethene	50.0	52.1		ug/L		104	75 - 124
trans-1,3-Dichloropropene	50.0	53.6		ug/L		107	73 - 127
Trichloroethene	50.0	52.5		ug/L		105	79 - 123
Trichlorofluoromethane	50.0	43.6		ug/L		87	65 - 141
Vinyl acetate	100	112	J1	ug/L		112	54 - 146
Vinyl chloride	50.0	54.9		ug/L		110	58 - 137
Xylenes, Total	100	97.0		ug/L		97	79 - 121

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*91*		*85 - 114*
Dibromofluoromethane (Surr)	*104*		*80 - 119*
Toluene-d8 (Surr)	*94*		*89 - 112*
1,2-Dichloroethane-d4 (Surr)	*111*		*81 - 118*

Lab Sample ID: LCSD 680-691431/4
Matrix: Water
Analysis Batch: 691431

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	50.0	51.2		ug/L		102	78 - 124	3	20
1,1,1-Trichloroethane	50.0	48.7		ug/L		97	74 - 131	2	20
1,1,2,2-Tetrachloroethane	50.0	47.0		ug/L		94	71 - 121	4	20
1,1,2-Trichloroethane	50.0	54.8		ug/L		110	80 - 119	2	20
1,1-Dichloroethane	50.0	52.5		ug/L		105	77 - 125	2	20
1,1-Dichloroethene	50.0	50.7		ug/L		101	71 - 131	0	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 680-691431/4
Matrix: Water
Analysis Batch: 691431

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1-Dichloropropene	50.0	47.8		ug/L		96	79 - 125	7	20
1,2,3-Trichlorobenzene	50.0	49.4		ug/L		99	69 - 129	2	20
1,2,3-Trichloropropane	50.0	51.0		ug/L		102	73 - 122	3	20
1,2,4-Trichlorobenzene	50.0	48.6		ug/L		97	69 - 130	0	20
1,2,4-Trimethylbenzene	50.0	50.5		ug/L		101	76 - 124	3	20
1,2-Dibromo-3-Chloropropane	50.0	48.6		ug/L		97	62 - 128	6	20
1,2-Dichlorobenzene	50.0	48.3		ug/L		97	80 - 119	1	20
1,2-Dichloroethane	50.0	53.3		ug/L		107	73 - 128	2	20
1,2-Dichloroethene, Total	100	102		ug/L		102	79 - 121	0	20
1,2-Dichloropropane	50.0	53.6		ug/L		107	78 - 122	2	20
1,3,5-Trimethylbenzene	50.0	49.7		ug/L		99	75 - 124	2	20
1,3-Dichlorobenzene	50.0	49.0		ug/L		98	80 - 119	1	20
1,3-Dichloropropane	50.0	52.6		ug/L		105	80 - 119	2	20
1,4-Dichlorobenzene	50.0	47.6		ug/L		95	79 - 118	1	20
2,2-Dichloropropane	50.0	49.0		ug/L		98	60 - 139	1	20
2-Butanone (MEK)	250	270		ug/L		108	56 - 143	6	20
2-Chlorotoluene	50.0	49.3		ug/L		99	79 - 122	2	20
2-Hexanone	250	271		ug/L		108	57 - 139	3	20
4-Chlorotoluene	50.0	50.8		ug/L		102	78 - 122	4	20
4-Isopropyltoluene	50.0	46.8		ug/L		94	77 - 127	2	20
4-Methyl-2-pentanone (MIBK)	250	276		ug/L		111	67 - 130	3	20
Acetone	250	269		ug/L		108	39 - 160	3	20
Benzene	50.0	51.1		ug/L		102	79 - 120	0	20
Bromobenzene	50.0	51.5		ug/L		103	80 - 120	2	20
Bromoform	50.0	52.4		ug/L		105	66 - 130	4	20
Bromomethane	50.0	54.3		ug/L		109	53 - 141	0	20
Carbon disulfide	50.0	50.0		ug/L		100	64 - 133	1	20
Carbon tetrachloride	50.0	47.8		ug/L		96	72 - 136	2	20
Chlorobenzene	50.0	48.8		ug/L		98	82 - 118	2	20
Chlorobromomethane	50.0	53.0		ug/L		106	78 - 123	2	20
Chlorodibromomethane	50.0	54.5		ug/L		109	74 - 126	1	20
Chloroethane	50.0	57.8		ug/L		116	60 - 138	2	20
Chloroform	50.0	51.5		ug/L		103	79 - 124	1	20
Chloromethane	50.0	61.1		ug/L		122	50 - 139	20	20
cis-1,2-Dichloroethene	50.0	50.0		ug/L		100	78 - 123	0	20
cis-1,3-Dichloropropene	50.0	55.0		ug/L		110	75 - 124	0	20
Dibromomethane	50.0	53.6		ug/L		107	79 - 123	1	20
Dichlorobromomethane	50.0	52.5		ug/L		105	79 - 125	1	20
Dichlorodifluoromethane	50.0	42.8		ug/L		86	32 - 152	5	20
Ethylbenzene	50.0	48.6		ug/L		97	79 - 121	1	20
Ethylene Dibromide	50.0	54.1		ug/L		108	75 - 127	3	20
Hexachlorobutadiene	50.0	45.6		ug/L		91	66 - 134	0	20
Isopropylbenzene	50.0	48.8		ug/L		98	72 - 131	3	20
Methyl tert-butyl ether	50.0	56.1		ug/L		112	71 - 124	3	20
Methylene Chloride	50.0	51.9		ug/L		104	74 - 124	0	20
m-Xylene & p-Xylene	50.0	49.7		ug/L		99	80 - 121	2	20
Naphthalene	50.0	48.1		ug/L		96	61 - 128	2	20
n-Butylbenzene	50.0	46.7		ug/L		93	75 - 128	0	20
N-Propylbenzene	50.0	49.3		ug/L		99	76 - 126	2	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 680-691431/4
Matrix: Water
Analysis Batch: 691431

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
o-Xylene			50.0	49.5		ug/L		99	78 - 122	2	20
sec-Butylbenzene			50.0	48.9		ug/L		98	77 - 126	2	20
Styrene			50.0	50.2		ug/L		100	78 - 123	1	20
tert-Butylbenzene			50.0	48.3		ug/L		97	78 - 124	1	20
Tetrachloroethene			50.0	50.7		ug/L		101	74 - 129	1	20
Toluene			50.0	52.1		ug/L		104	80 - 121	0	20
trans-1,2-Dichloroethene			50.0	52.3		ug/L		105	75 - 124	0	20
trans-1,3-Dichloropropene			50.0	54.8		ug/L		110	73 - 127	2	20
Trichloroethene			50.0	52.4		ug/L		105	79 - 123	0	20
Trichlorofluoromethane			50.0	45.8		ug/L		92	65 - 141	5	20
Vinyl acetate			100	118	J1	ug/L		118	54 - 146	5	20
Vinyl chloride			50.0	52.2		ug/L		104	58 - 137	5	20
Xylenes, Total			100	99.2		ug/L		99	79 - 121	2	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*93*		*85 - 114*
Dibromofluoromethane (Surr)	*105*		*80 - 119*
Toluene-d8 (Surr)	*95*		*89 - 112*
1,2-Dichloroethane-d4 (Surr)	*110*		*81 - 118*

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 680-690170/37
Matrix: Water
Analysis Batch: 690170

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Ethane	0.76	U	1.1	0.76	0.30	ug/L		10/20/21 18:46	1
Ethylene	0.71	U	1.0	0.71	0.31	ug/L		10/20/21 18:46	1
Methane	1.2	U	1.2	1.2	0.57	ug/L		10/20/21 18:46	1

Lab Sample ID: LCS 680-690170/33
Matrix: Water
Analysis Batch: 690170

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methane (TCD)			1920	1760		ug/L		91	73 - 125

Lab Sample ID: LCS 680-690170/35
Matrix: Water
Analysis Batch: 690170

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane			288	328		ug/L		114	74 - 131
Ethylene			269	300		ug/L		112	72 - 133
Methane			154	173		ug/L		112	73 - 125

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: LCSD 680-690170/34
Matrix: Water
Analysis Batch: 690170

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methane (TCD)			1920	1740		ug/L		91	73 - 125	1	30

Lab Sample ID: LCSD 680-690170/36
Matrix: Water
Analysis Batch: 690170

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane			288	283		ug/L		98	74 - 131	15	30
Ethylene			269	256		ug/L		95	72 - 133	16	30
Methane			154	147		ug/L		96	73 - 125	16	30

Lab Sample ID: 680-206032-4 MS
Matrix: Water
Analysis Batch: 690170

Client Sample ID: G6M-04-10A-FAL21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethane	6.9		288	310		ug/L		105	74 - 131		
Ethylene	9.3		269	283		ug/L		102	72 - 133		

Lab Sample ID: 680-206032-4 MSD
Matrix: Water
Analysis Batch: 690170

Client Sample ID: G6M-04-10A-FAL21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane	6.9		288	302		ug/L		102	74 - 131	3	30
Ethylene	9.3		269	274		ug/L		98	72 - 133	3	30

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 680-690809/2
Matrix: Water
Analysis Batch: 690809

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Sulfate	1.0	U	1.0	1.0	0.40	mg/L		10/23/21 13:17	1

Lab Sample ID: LCS 680-690809/3
Matrix: Water
Analysis Batch: 690809

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			10.0	10.3		mg/L		103	87 - 112		

Lab Sample ID: LCSD 680-690809/4
Matrix: Water
Analysis Batch: 690809

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate			10.0	10.3		mg/L		103	87 - 112	0	15

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: 680-206032-4 MS
Matrix: Water
Analysis Batch: 690809

Client Sample ID: G6M-04-10A-FAL21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	2.8	M	10.0	13.2		mg/L		104	87 - 112

Lab Sample ID: 680-206032-4 MSD
Matrix: Water
Analysis Batch: 690809

Client Sample ID: G6M-04-10A-FAL21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	2.8	M	10.0	13.2		mg/L		104	87 - 112	0	15

Lab Sample ID: MB 680-690810/33
Matrix: Water
Analysis Batch: 690810

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Sulfate	1.0	U	1.0	1.0	0.40	mg/L		10/23/21 21:01	1

Lab Sample ID: LCS 680-690810/34
Matrix: Water
Analysis Batch: 690810

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	10.0	10.4		mg/L		104	87 - 112

Lab Sample ID: LCSD 680-690810/35
Matrix: Water
Analysis Batch: 690810

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	10.0	10.4		mg/L		104	87 - 112	0	15

Lab Sample ID: 680-206032-9 MS
Matrix: Water
Analysis Batch: 690810

Client Sample ID: XSA-12-96X-FAL21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	5.7	M	10.0	15.9		mg/L		101	87 - 112

Lab Sample ID: 680-206032-9 MSD
Matrix: Water
Analysis Batch: 690810

Client Sample ID: XSA-12-96X-FAL21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	5.7	M	10.0	16.2		mg/L		105	87 - 112	2	15

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-689811/1-A
Matrix: Water
Analysis Batch: 690133

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 689811

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	50	U	50	50	17	ug/L		10/20/21 06:55	1
Manganese	3.0	U	10	3.0	1.0	ug/L		10/20/21 06:55	1

Lab Sample ID: LCS 680-689811/2-A
Matrix: Water
Analysis Batch: 690133

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 689811

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	5000	4740		ug/L		95	87 - 115
Manganese	400	383		ug/L		96	90 - 114

Lab Sample ID: MB 680-689820/1-A
Matrix: Water
Analysis Batch: 690133

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 689820

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Iron	50	U	50	50	17	ug/L		10/20/21 02:27	1
Manganese	3.0	U	10	3.0	1.0	ug/L		10/20/21 02:27	1

Lab Sample ID: LCS 680-689820/2-A
Matrix: Water
Analysis Batch: 690133

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 689820

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	5000	4840		ug/L		97	87 - 115
Manganese	400	393		ug/L		98	90 - 114

Lab Sample ID: 680-206032-4 MS
Matrix: Water
Analysis Batch: 690133

Client Sample ID: G6M-04-10A-FAL21
Prep Type: Dissolved
Prep Batch: 689811

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	85000	J1	5000	88100	4	ug/L		65	87 - 115
Manganese	1100		400	1470		ug/L		93	90 - 114

Lab Sample ID: 680-206032-4 MSD
Matrix: Water
Analysis Batch: 690133

Client Sample ID: G6M-04-10A-FAL21
Prep Type: Dissolved
Prep Batch: 689811

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	85000	J1	5000	88400	4	ug/L		73	87 - 115	0	20
Manganese	1100		400	1480		ug/L		96	90 - 114	1	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 680-689813/1-A
Matrix: Water
Analysis Batch: 690084

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 689813

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	3.0	U	3.0	3.0	1.5	ug/L		10/19/21 16:42	1

Lab Sample ID: LCS 680-689813/2-A
Matrix: Water
Analysis Batch: 690084

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 689813

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	100	102		ug/L		102	84 - 116

Lab Sample ID: MB 680-689821/1-A
Matrix: Water
Analysis Batch: 690084

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 689821

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Arsenic	3.0	U	3.0	3.0	1.5	ug/L		10/19/21 17:23	1

Lab Sample ID: LCS 680-689821/2-A
Matrix: Water
Analysis Batch: 690084

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 689821

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	100	101		ug/L		101	84 - 116

Lab Sample ID: 680-206032-4 MS
Matrix: Water
Analysis Batch: 690084

Client Sample ID: G6M-04-10A-FAL21
Prep Type: Dissolved
Prep Batch: 689813

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	320	J1	100	436	J1	ug/L		120	84 - 116

Lab Sample ID: 680-206032-4 MSD
Matrix: Water
Analysis Batch: 690084

Client Sample ID: G6M-04-10A-FAL21
Prep Type: Dissolved
Prep Batch: 689813

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	320	J1	100	423		ug/L		106	84 - 116	3	20

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 280-555077/104
Matrix: Water
Analysis Batch: 555077

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Nitrate/Nitrite-N	0.050	U	0.10	0.050	0.019	mg/L		10/26/21 19:49	1

Method: 353.2 - Nitrogen, Nitrate-Nitrite (Continued)

Lab Sample ID: LCS 280-555077/103
Matrix: Water
Analysis Batch: 555077

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrate/Nitrite-N			5.00	4.97		mg/L		99	90 - 110		

Lab Sample ID: 680-206032-4 MS
Matrix: Water
Analysis Batch: 555077

Client Sample ID: G6M-04-10A-FAL21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrate/Nitrite-N	0.050	U J1	4.00	2.55	J1	mg/L		64	90 - 110		

Lab Sample ID: 680-206032-4 MSD
Matrix: Water
Analysis Batch: 555077

Client Sample ID: G6M-04-10A-FAL21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate/Nitrite-N	0.050	U J1	4.00	2.48	J1	mg/L		62	90 - 110	3	10

Method: 9034 - Sulfide, Acid Soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 680-689931/1
Matrix: Water
Analysis Batch: 689931

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Sulfide	1.0	U	1.0	1.0	1.0	mg/L		10/19/21 11:08	1

Lab Sample ID: LCS 680-689931/2
Matrix: Water
Analysis Batch: 689931

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfide			10.0	10.7		mg/L		107	75 - 125		

Lab Sample ID: LCSD 680-689931/3
Matrix: Water
Analysis Batch: 689931

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfide			10.0	10.5		mg/L		105	75 - 125	1	30

Lab Sample ID: 680-206032-4 MS
Matrix: Water
Analysis Batch: 689931

Client Sample ID: G6M-04-10A-FAL21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfide	0.81	U	6.50	6.89		mg/L		106	75 - 125		

Method: 9034 - Sulfide, Acid Soluble and Insoluble (Titrimetric) (Continued)

Lab Sample ID: 680-206032-4 MSD
Matrix: Water
Analysis Batch: 689931

Client Sample ID: G6M-04-10A-FAL21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfide	0.81	U	6.50	7.12		mg/L		110	75 - 125	3	30

Lab Sample ID: 680-206032-3 DU
Matrix: Water
Analysis Batch: 689931

Client Sample ID: G6M-04-03X-FAL21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Sulfide	0.81	U		0.81	U	mg/L				NC	30

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 280-554589/36
Matrix: Water
Analysis Batch: 554589

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	0.35	U	1.0	0.80	0.35	mg/L		10/21/21 21:57	1

Lab Sample ID: MB 280-554589/4
Matrix: Water
Analysis Batch: 554589

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	0.35	U	1.0	0.80	0.35	mg/L		10/21/21 13:09	1

Lab Sample ID: LCS 280-554589/34
Matrix: Water
Analysis Batch: 554589

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon - Duplicates			25.0	25.1		mg/L		100	88 - 112		

Lab Sample ID: LCSD 280-554589/35
Matrix: Water
Analysis Batch: 554589

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Duplicates			25.0	25.2		mg/L		101	88 - 112	0	15

Lab Sample ID: 680-206032-4 MS
Matrix: Water
Analysis Batch: 554589

Client Sample ID: G6M-04-10A-FAL21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon - Duplicates	22		25.0	47.7		mg/L		102	88 - 112		

Method: 9060A - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: 680-206032-4 MSD
Matrix: Water
Analysis Batch: 554589

Client Sample ID: G6M-04-10A-FAL21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Duplicates	22		25.0	47.7		mg/L		102	88 - 112	0	15

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 280-554753/141
Matrix: Water
Analysis Batch: 554753

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	4.88	J	10	6.4	3.1	mg/L		10/23/21 07:46	1

Lab Sample ID: MB 280-554753/168
Matrix: Water
Analysis Batch: 554753

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Alkalinity	4.77	J	10	6.4	3.1	mg/L		10/23/21 10:57	1

Lab Sample ID: LCS 280-554753/139
Matrix: Water
Analysis Batch: 554753

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	200	214		mg/L		107	89 - 109

Lab Sample ID: LCS 280-554753/166
Matrix: Water
Analysis Batch: 554753

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	200	217		mg/L		109	89 - 109

Lab Sample ID: LCSD 280-554753/140
Matrix: Water
Analysis Batch: 554753

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity	200	216		mg/L		108	89 - 109	1	10

Lab Sample ID: LCSD 280-554753/167
Matrix: Water
Analysis Batch: 554753

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity	200	216		mg/L		108	89 - 109	0	10

Client: Seres Engineering & Services LLC
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Job ID: 680-206032-1

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: 680-206032-9 DU
Matrix: Water
Analysis Batch: 554753

Client Sample ID: XSA-12-96X-FAL21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Alkalinity	250			254		mg/L				1	10

GC/MS VOA

Analysis Batch: 691186

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-206032-5	G6M-04-10X-FAL21	Total/NA	Water	8260B	
MB 680-691186/9	Method Blank	Total/NA	Water	8260B	
LCSD 680-691186/4	Lab Control Sample Dup	Total/NA	Water	8260B	

Analysis Batch: 691213

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-206032-1	G6M-02-01X-FAL21	Total/NA	Water	8260B	
680-206032-2	G6M-04-01X-FAL21	Total/NA	Water	8260B	
680-206032-3	G6M-04-03X-FAL21	Total/NA	Water	8260B	
680-206032-4	G6M-04-10A-FAL21	Total/NA	Water	8260B	
680-206032-10	AOC50-RB02-FAL21	Total/NA	Water	8260B	
680-206032-11	AOC50-TB01-FAL21	Total/NA	Water	8260B	
MB 680-691213/8	Method Blank	Total/NA	Water	8260B	
LCS 680-691213/3	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-691213/4	Lab Control Sample Dup	Total/NA	Water	8260B	
680-206032-4 MS	G6M-04-10A-FAL21	Total/NA	Water	8260B	
680-206032-4 MSD	G6M-04-10A-FAL21	Total/NA	Water	8260B	

Analysis Batch: 691431

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-206032-6	G6M-04-13X-FAL21	Total/NA	Water	8260B	
680-206032-7	G6M-97-05B-FAL21	Total/NA	Water	8260B	
680-206032-8	XSA-12-95X-FAL21	Total/NA	Water	8260B	
680-206032-9	XSA-12-96X-FAL21	Total/NA	Water	8260B	
MB 680-691431/8	Method Blank	Total/NA	Water	8260B	
LCS 680-691431/3	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-691431/4	Lab Control Sample Dup	Total/NA	Water	8260B	

GC VOA

Analysis Batch: 690170

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-206032-3	G6M-04-03X-FAL21	Total/NA	Water	RSK-175	
680-206032-4	G6M-04-10A-FAL21	Total/NA	Water	RSK-175	
680-206032-7	G6M-97-05B-FAL21	Total/NA	Water	RSK-175	
680-206032-9	XSA-12-96X-FAL21	Total/NA	Water	RSK-175	
680-206032-10	AOC50-RB02-FAL21	Total/NA	Water	RSK-175	
MB 680-690170/37	Method Blank	Total/NA	Water	RSK-175	
LCS 680-690170/33	Lab Control Sample	Total/NA	Water	RSK-175	
LCS 680-690170/35	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 680-690170/34	Lab Control Sample Dup	Total/NA	Water	RSK-175	
LCSD 680-690170/36	Lab Control Sample Dup	Total/NA	Water	RSK-175	
680-206032-4 MS	G6M-04-10A-FAL21	Total/NA	Water	RSK-175	
680-206032-4 MSD	G6M-04-10A-FAL21	Total/NA	Water	RSK-175	

HPLC/IC

Analysis Batch: 690809

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-206032-4	G6M-04-10A-FAL21	Total/NA	Water	9056A	
MB 680-690809/2	Method Blank	Total/NA	Water	9056A	
LCS 680-690809/3	Lab Control Sample	Total/NA	Water	9056A	

HPLC/IC (Continued)

Analysis Batch: 690809 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 680-690809/4	Lab Control Sample Dup	Total/NA	Water	9056A	
680-206032-4 MS	G6M-04-10A-FAL21	Total/NA	Water	9056A	
680-206032-4 MSD	G6M-04-10A-FAL21	Total/NA	Water	9056A	

Analysis Batch: 690810

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-206032-3	G6M-04-03X-FAL21	Total/NA	Water	9056A	
680-206032-7	G6M-97-05B-FAL21	Total/NA	Water	9056A	
680-206032-9	XSA-12-96X-FAL21	Total/NA	Water	9056A	
680-206032-10	AOC50-RB02-FAL21	Total/NA	Water	9056A	
MB 680-690810/33	Method Blank	Total/NA	Water	9056A	
LCS 680-690810/34	Lab Control Sample	Total/NA	Water	9056A	
LCSD 680-690810/35	Lab Control Sample Dup	Total/NA	Water	9056A	
680-206032-9 MS	XSA-12-96X-FAL21	Total/NA	Water	9056A	
680-206032-9 MSD	XSA-12-96X-FAL21	Total/NA	Water	9056A	

Metals

Prep Batch: 689811

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-206032-1	G6M-02-01X-FAL21	Dissolved	Water	3005A	
680-206032-2	G6M-04-01X-FAL21	Dissolved	Water	3005A	
680-206032-3	G6M-04-03X-FAL21	Dissolved	Water	3005A	
680-206032-4	G6M-04-10A-FAL21	Dissolved	Water	3005A	
680-206032-7	G6M-97-05B-FAL21	Dissolved	Water	3005A	
MB 680-689811/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 680-689811/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
680-206032-4 MS	G6M-04-10A-FAL21	Dissolved	Water	3005A	
680-206032-4 MSD	G6M-04-10A-FAL21	Dissolved	Water	3005A	

Prep Batch: 689813

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-206032-1	G6M-02-01X-FAL21	Dissolved	Water	3005A	
680-206032-2	G6M-04-01X-FAL21	Dissolved	Water	3005A	
680-206032-3	G6M-04-03X-FAL21	Dissolved	Water	3005A	
680-206032-4	G6M-04-10A-FAL21	Dissolved	Water	3005A	
680-206032-7	G6M-97-05B-FAL21	Dissolved	Water	3005A	
MB 680-689813/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 680-689813/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
680-206032-4 MS	G6M-04-10A-FAL21	Dissolved	Water	3005A	
680-206032-4 MSD	G6M-04-10A-FAL21	Dissolved	Water	3005A	

Prep Batch: 689820

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-206032-8	XSA-12-95X-FAL21	Dissolved	Water	3005A	
680-206032-9	XSA-12-96X-FAL21	Dissolved	Water	3005A	
680-206032-10	AOC50-RB02-FAL21	Dissolved	Water	3005A	
MB 680-689820/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 680-689820/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Metals

Prep Batch: 689821

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-206032-8	XSA-12-95X-FAL21	Dissolved	Water	3005A	
680-206032-9	XSA-12-96X-FAL21	Dissolved	Water	3005A	
680-206032-10	AOC50-RB02-FAL21	Dissolved	Water	3005A	
MB 680-689821/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 680-689821/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 690084

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-206032-1	G6M-02-01X-FAL21	Dissolved	Water	6020A	689813
680-206032-2	G6M-04-01X-FAL21	Dissolved	Water	6020A	689813
680-206032-3	G6M-04-03X-FAL21	Dissolved	Water	6020A	689813
680-206032-4	G6M-04-10A-FAL21	Dissolved	Water	6020A	689813
680-206032-7	G6M-97-05B-FAL21	Dissolved	Water	6020A	689813
680-206032-8	XSA-12-95X-FAL21	Dissolved	Water	6020A	689821
680-206032-9	XSA-12-96X-FAL21	Dissolved	Water	6020A	689821
680-206032-10	AOC50-RB02-FAL21	Dissolved	Water	6020A	689821
MB 680-689813/1-A	Method Blank	Total Recoverable	Water	6020A	689813
MB 680-689821/1-A	Method Blank	Total Recoverable	Water	6020A	689821
LCS 680-689813/2-A	Lab Control Sample	Total Recoverable	Water	6020A	689813
LCS 680-689821/2-A	Lab Control Sample	Total Recoverable	Water	6020A	689821
680-206032-4 MS	G6M-04-10A-FAL21	Dissolved	Water	6020A	689813
680-206032-4 MSD	G6M-04-10A-FAL21	Dissolved	Water	6020A	689813

Analysis Batch: 690133

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-206032-1	G6M-02-01X-FAL21	Dissolved	Water	6010C	689811
680-206032-2	G6M-04-01X-FAL21	Dissolved	Water	6010C	689811
680-206032-3	G6M-04-03X-FAL21	Dissolved	Water	6010C	689811
680-206032-4	G6M-04-10A-FAL21	Dissolved	Water	6010C	689811
680-206032-7	G6M-97-05B-FAL21	Dissolved	Water	6010C	689811
680-206032-8	XSA-12-95X-FAL21	Dissolved	Water	6010C	689820
680-206032-9	XSA-12-96X-FAL21	Dissolved	Water	6010C	689820
680-206032-10	AOC50-RB02-FAL21	Dissolved	Water	6010C	689820
MB 680-689811/1-A	Method Blank	Total Recoverable	Water	6010C	689811
MB 680-689820/1-A	Method Blank	Total Recoverable	Water	6010C	689820
LCS 680-689811/2-A	Lab Control Sample	Total Recoverable	Water	6010C	689811
LCS 680-689820/2-A	Lab Control Sample	Total Recoverable	Water	6010C	689820
680-206032-4 MS	G6M-04-10A-FAL21	Dissolved	Water	6010C	689811
680-206032-4 MSD	G6M-04-10A-FAL21	Dissolved	Water	6010C	689811

General Chemistry

Analysis Batch: 554589

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-206032-3	G6M-04-03X-FAL21	Total/NA	Water	9060A	
680-206032-4	G6M-04-10A-FAL21	Total/NA	Water	9060A	
680-206032-7	G6M-97-05B-FAL21	Total/NA	Water	9060A	
680-206032-9	XSA-12-96X-FAL21	Total/NA	Water	9060A	
680-206032-10	AOC50-RB02-FAL21	Total/NA	Water	9060A	
MB 280-554589/36	Method Blank	Total/NA	Water	9060A	
MB 280-554589/4	Method Blank	Total/NA	Water	9060A	

General Chemistry (Continued)

Analysis Batch: 554589 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 280-554589/34	Lab Control Sample	Total/NA	Water	9060A	
LCSD 280-554589/35	Lab Control Sample Dup	Total/NA	Water	9060A	
680-206032-4 MS	G6M-04-10A-FAL21	Total/NA	Water	9060A	
680-206032-4 MSD	G6M-04-10A-FAL21	Total/NA	Water	9060A	

Analysis Batch: 554753

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-206032-3	G6M-04-03X-FAL21	Total/NA	Water	SM 2320B	
680-206032-4	G6M-04-10A-FAL21	Total/NA	Water	SM 2320B	
680-206032-7	G6M-97-05B-FAL21	Total/NA	Water	SM 2320B	
680-206032-9	XSA-12-96X-FAL21	Total/NA	Water	SM 2320B	
680-206032-10	AOC50-RB02-FAL21	Total/NA	Water	SM 2320B	
MB 280-554753/141	Method Blank	Total/NA	Water	SM 2320B	
MB 280-554753/168	Method Blank	Total/NA	Water	SM 2320B	
LCS 280-554753/139	Lab Control Sample	Total/NA	Water	SM 2320B	
LCS 280-554753/166	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 280-554753/140	Lab Control Sample Dup	Total/NA	Water	SM 2320B	
LCSD 280-554753/167	Lab Control Sample Dup	Total/NA	Water	SM 2320B	
680-206032-9 DU	XSA-12-96X-FAL21	Total/NA	Water	SM 2320B	

Analysis Batch: 555077

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-206032-3	G6M-04-03X-FAL21	Total/NA	Water	353.2	
680-206032-4	G6M-04-10A-FAL21	Total/NA	Water	353.2	
680-206032-7	G6M-97-05B-FAL21	Total/NA	Water	353.2	
680-206032-9	XSA-12-96X-FAL21	Total/NA	Water	353.2	
680-206032-10	AOC50-RB02-FAL21	Total/NA	Water	353.2	
MB 280-555077/104	Method Blank	Total/NA	Water	353.2	
LCS 280-555077/103	Lab Control Sample	Total/NA	Water	353.2	
680-206032-4 MS	G6M-04-10A-FAL21	Total/NA	Water	353.2	
680-206032-4 MSD	G6M-04-10A-FAL21	Total/NA	Water	353.2	

Analysis Batch: 689931

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-206032-3	G6M-04-03X-FAL21	Total/NA	Water	9034	
680-206032-4	G6M-04-10A-FAL21	Total/NA	Water	9034	
680-206032-7	G6M-97-05B-FAL21	Total/NA	Water	9034	
680-206032-9	XSA-12-96X-FAL21	Total/NA	Water	9034	
680-206032-10	AOC50-RB02-FAL21	Total/NA	Water	9034	
MB 680-689931/1	Method Blank	Total/NA	Water	9034	
LCS 680-689931/2	Lab Control Sample	Total/NA	Water	9034	
LCSD 680-689931/3	Lab Control Sample Dup	Total/NA	Water	9034	
680-206032-4 MS	G6M-04-10A-FAL21	Total/NA	Water	9034	
680-206032-4 MSD	G6M-04-10A-FAL21	Total/NA	Water	9034	
680-206032-3 DU	G6M-04-03X-FAL21	Total/NA	Water	9034	

Lab Chronicle

Client: Seres Engineering & Services LLC
Job ID: 680-206032-1
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Client Sample ID: G6M-02-01X-FAL21
Lab Sample ID: 680-206032-1
Date Collected: 10/13/21 13:45
Matrix: Water
Date Received: 10/15/21 10:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	691213	10/26/21 20:31	P1C	TAL SAV
	Instrument ID: CMSB									
Dissolved	Prep	3005A			50 mL	50 mL	689811	10/18/21 15:19	JE	TAL SAV
Dissolved	Analysis	6010C		1			690133	10/20/21 08:26	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	689813	10/18/21 15:19	JE	TAL SAV
Dissolved	Analysis	6020A		1			690084	10/19/21 17:05	BWR	TAL SAV
	Instrument ID: ICPMSD									

Client Sample ID: G6M-04-01X-FAL21
Lab Sample ID: 680-206032-2
Date Collected: 10/13/21 12:35
Matrix: Water
Date Received: 10/15/21 10:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	691213	10/26/21 19:28	P1C	TAL SAV
	Instrument ID: CMSB									
Dissolved	Prep	3005A			50 mL	50 mL	689811	10/18/21 15:19	JE	TAL SAV
Dissolved	Analysis	6010C		1			690133	10/20/21 08:30	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	689813	10/18/21 15:19	JE	TAL SAV
Dissolved	Analysis	6020A		1			690084	10/19/21 17:13	BWR	TAL SAV
	Instrument ID: ICPMSD									

Client Sample ID: G6M-04-03X-FAL21
Lab Sample ID: 680-206032-3
Date Collected: 10/13/21 15:40
Matrix: Water
Date Received: 10/15/21 10:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	691213	10/26/21 19:49	P1C	TAL SAV
	Instrument ID: CMSB									
Total/NA	Analysis	RSK-175		1	17 mL	17 mL	690170	10/20/21 22:22	JCK	TAL SAV
	Instrument ID: CVGU									
Total/NA	Analysis	9056A		1	5 mL	5 mL	690810	10/23/21 23:58	OK	TAL SAV
	Instrument ID: CICK									
Dissolved	Prep	3005A			50 mL	50 mL	689811	10/18/21 15:19	JE	TAL SAV
Dissolved	Analysis	6010C		1			690133	10/20/21 07:36	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	689813	10/18/21 15:19	JE	TAL SAV
Dissolved	Analysis	6020A		1			690084	10/19/21 17:00	BWR	TAL SAV
	Instrument ID: ICPMSD									
Total/NA	Analysis	353.2		1	100 mL	100 mL	555077	10/26/21 20:33	SVC	TAL DEN
	Instrument ID: WC_Alp 2									
Total/NA	Analysis	9034		1	310 mL	310 mL	689931	10/19/21 11:08	AE	TAL SAV
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Seres Engineering & Services LLC
Job ID: 680-206032-1
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Client Sample ID: G6M-04-03X-FAL21
Lab Sample ID: 680-206032-3
Date Collected: 10/13/21 15:40
Matrix: Water
Date Received: 10/15/21 10:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060A		1	20 mL	20 mL	554589	10/22/21 02:38	RAF	TAL DEN
Total/NA	Analysis	SM 2320B		1			554753	10/23/21 10:21	ECC	TAL DEN
	Instrument ID: WC_AT4									

Client Sample ID: G6M-04-10A-FAL21
Lab Sample ID: 680-206032-4
Date Collected: 10/13/21 12:15
Matrix: Water
Date Received: 10/15/21 10:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	691213	10/26/21 20:52	P1C	TAL SAV
	Instrument ID: CMSB									
Total/NA	Analysis	RSK-175		1	17 mL	17 mL	690170	10/20/21 23:40	JCK	TAL SAV
	Instrument ID: CVGU									
Total/NA	Analysis	9056A		1	5 mL	5 mL	690809	10/23/21 15:07	OK	TAL SAV
	Instrument ID: CICK									
Dissolved	Prep	3005A			50 mL	50 mL	689811	10/18/21 15:19	JE	TAL SAV
Dissolved	Analysis	6010C		1			690133	10/20/21 07:04	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	689813	10/18/21 15:19	JE	TAL SAV
Dissolved	Analysis	6020A		1			690084	10/19/21 16:48	BWR	TAL SAV
	Instrument ID: ICPMSD									
Total/NA	Analysis	353.2		1	100 mL	100 mL	555077	10/26/21 20:27	SVC	TAL DEN
	Instrument ID: WC_Alp 2									
Total/NA	Analysis	9034		1	310 mL	310 mL	689931	10/19/21 11:08	AE	TAL SAV
	Instrument ID: NOEQUIP									
Total/NA	Analysis	9060A		1	20 mL	20 mL	554589	10/22/21 02:53	RAF	TAL DEN
	Instrument ID: WC_SHI3									
Total/NA	Analysis	SM 2320B		1			554753	10/23/21 10:15	ECC	TAL DEN
	Instrument ID: WC_AT4									

Client Sample ID: G6M-04-10X-FAL21
Lab Sample ID: 680-206032-5
Date Collected: 10/13/21 09:32
Matrix: Water
Date Received: 10/15/21 10:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	691186	10/26/21 18:16	P1C	TAL SAV
	Instrument ID: CMSAA									

Client Sample ID: G6M-04-13X-FAL21
Lab Sample ID: 680-206032-6
Date Collected: 10/13/21 15:03
Matrix: Water
Date Received: 10/15/21 10:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	691431	10/27/21 14:04	UI	TAL SAV
	Instrument ID: CMSB									

Lab Chronicle

Client: Seres Engineering & Services LLC
Job ID: 680-206032-1
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Client Sample ID: G6M-97-05B-FAL21
Lab Sample ID: 680-206032-7
Date Collected: 10/13/21 09:35
Matrix: Water
Date Received: 10/15/21 10:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	691431	10/27/21 14:25	UI	TAL SAV
	Instrument ID: CMSB									
Total/NA	Analysis	RSK-175		1	17 mL	17 mL	690170	10/20/21 22:35	JCK	TAL SAV
	Instrument ID: CVGU									
Total/NA	Analysis	9056A		1	5 mL	5 mL	690810	10/23/21 23:46	OK	TAL SAV
	Instrument ID: CICK									
Dissolved	Prep	3005A			50 mL	50 mL	689811	10/18/21 15:19	JE	TAL SAV
Dissolved	Analysis	6010C		1			690133	10/20/21 07:54	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	689813	10/18/21 15:19	JE	TAL SAV
Dissolved	Analysis	6020A		1			690084	10/19/21 17:03	BWR	TAL SAV
	Instrument ID: ICPMSD									
Total/NA	Analysis	353.2		1	100 mL	100 mL	555077	10/26/21 20:35	SVC	TAL DEN
	Instrument ID: WC_Alp 2									
Total/NA	Analysis	9034		1	310 mL	310 mL	689931	10/19/21 11:08	AE	TAL SAV
	Instrument ID: NOEQUIP									
Total/NA	Analysis	9060A		1	20 mL	20 mL	554589	10/22/21 03:39	RAF	TAL DEN
	Instrument ID: WC_SHI3									
Total/NA	Analysis	SM 2320B		1			554753	10/23/21 10:09	ECC	TAL DEN
	Instrument ID: WC_AT4									

Client Sample ID: XSA-12-95X-FAL21
Lab Sample ID: 680-206032-8
Date Collected: 10/13/21 11:20
Matrix: Water
Date Received: 10/15/21 10:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	691431	10/27/21 15:28	UI	TAL SAV
	Instrument ID: CMSB									
Dissolved	Prep	3005A			50 mL	50 mL	689820	10/18/21 15:50	JE	TAL SAV
Dissolved	Analysis	6010C		1			690133	10/20/21 02:59	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	689821	10/18/21 15:50	JE	TAL SAV
Dissolved	Analysis	6020A		1			690084	10/19/21 17:41	BWR	TAL SAV
	Instrument ID: ICPMSD									

Client Sample ID: XSA-12-96X-FAL21
Lab Sample ID: 680-206032-9
Date Collected: 10/13/21 14:45
Matrix: Water
Date Received: 10/15/21 10:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	691431	10/27/21 15:50	UI	TAL SAV
	Instrument ID: CMSB									
Total/NA	Analysis	RSK-175		1	17 mL	17 mL	690170	10/20/21 22:48	JCK	TAL SAV
	Instrument ID: CVGU									

Lab Chronicle

Client: Seres Engineering & Services LLC
Job ID: 680-206032-1
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Client Sample ID: XSA-12-96X-FAL21
Lab Sample ID: 680-206032-9
Date Collected: 10/13/21 14:45
Matrix: Water
Date Received: 10/15/21 10:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		1	5 mL	5 mL	690810	10/23/21 21:39	OK	TAL SAV
Dissolved	Prep	3005A			50 mL	50 mL	689820	10/18/21 15:50	JE	TAL SAV
Dissolved	Analysis	6010C		1			690133	10/20/21 03:03	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	689821	10/18/21 15:50	JE	TAL SAV
Dissolved	Analysis	6020A		1			690084	10/19/21 17:44	BWR	TAL SAV
	Instrument ID: ICPMSD									
Total/NA	Analysis	353.2		1	100 mL	100 mL	555077	10/26/21 20:37	SVC	TAL DEN
	Instrument ID: WC_Alp 2									
Total/NA	Analysis	9034		1	310 mL	310 mL	689931	10/19/21 11:08	AE	TAL SAV
	Instrument ID: NOEQUIP									
Total/NA	Analysis	9060A		1	20 mL	20 mL	554589	10/22/21 03:54	RAF	TAL DEN
	Instrument ID: WC_SHI3									
Total/NA	Analysis	SM 2320B		1			554753	10/23/21 11:04	ECC	TAL DEN
	Instrument ID: WC_AT4									

Client Sample ID: AOC50-RB02-FAL21
Lab Sample ID: 680-206032-10
Date Collected: 10/13/21 10:30
Matrix: Water
Date Received: 10/15/21 10:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	691213	10/26/21 19:07	P1C	TAL SAV
	Instrument ID: CMSB									
Total/NA	Analysis	RSK-175		1	17 mL	17 mL	690170	10/20/21 23:01	JCK	TAL SAV
	Instrument ID: CVGU									
Total/NA	Analysis	9056A		1	5 mL	5 mL	690810	10/24/21 01:14	OK	TAL SAV
	Instrument ID: CICK									
Dissolved	Prep	3005A			50 mL	50 mL	689820	10/18/21 15:50	JE	TAL SAV
Dissolved	Analysis	6010C		1			690133	10/20/21 03:08	BCB	TAL SAV
	Instrument ID: ICPE									
Dissolved	Prep	3005A			50 mL	250 mL	689821	10/18/21 15:50	JE	TAL SAV
Dissolved	Analysis	6020A		1			690084	10/19/21 17:47	BWR	TAL SAV
	Instrument ID: ICPMSD									
Total/NA	Analysis	353.2		1	100 mL	100 mL	555077	10/26/21 20:39	SVC	TAL DEN
	Instrument ID: WC_Alp 2									
Total/NA	Analysis	9034		1	310 mL	310 mL	689931	10/19/21 11:08	AE	TAL SAV
	Instrument ID: NOEQUIP									
Total/NA	Analysis	9060A		1	20 mL	20 mL	554589	10/22/21 04:08	RAF	TAL DEN
	Instrument ID: WC_SHI3									
Total/NA	Analysis	SM 2320B		1			554753	10/23/21 11:17	ECC	TAL DEN
	Instrument ID: WC_AT4									

Lab Chronicle

Client: Seres Engineering & Services LLC
Job ID: 680-206032-1
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Client Sample ID: AOC50-TB01-FAL21
Lab Sample ID: 680-206032-11
Date Collected: 10/13/21 00:00
Matrix: Water
Date Received: 10/15/21 10:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	691213	10/26/21 14:32	P1C	TAL SAV
	Instrument ID: CMSB									

Laboratory References:

TAL DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SAV = Eurofins Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Accreditation/Certification Summary

Client: Seres Engineering & Services LLC
Job ID: 680-206032-1
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Laboratory: Eurofins Savannah

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
ANAB	Dept. of Defense ELAP	L2463	09-18-22

Laboratory: Eurofins Denver

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	11-02-21

Method Summary

Client: Seres Engineering & Services LLC
Job ID: 680-206032-1
Project/Site: Seres-Arcadis JV, LTM, AOC 50, Fall 2021

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
RSK-175	Dissolved Gases (GC)	RSK	TAL SAV
9056A	Anions, Ion Chromatography	SW846	TAL SAV
6010C	Metals (ICP)	SW846	TAL SAV
6020A	Metals (ICP/MS)	SW846	TAL SAV
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL DEN
9034	Sulfide, Acid Soluble and Insoluble (Titrimetric)	SW846	TAL SAV
9060A	Organic Carbon, Total (TOC)	SW846	TAL DEN
SM 2320B	Alkalinity	SM	TAL DEN
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL SAV
5030B	Purge and Trap	SW846	TAL SAV

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SAV = Eurofins Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

CHAIN-OF-CUSTODY RECORD

Seres-Arcadis JV
Nathan Mullens
669 Marina Drive, Suite B7, Charleston, SC 29492
(843) 478.0336, jennifer.singer@arcadis.com

COC # AOC50

Boston #215

Project Name: Former Fort Devens, Long Term Monitoring	Laboratory: Eurofins Environment Testing TestAmerica, Savannah, GA	Event: Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021
Project Number: DEVNS-LTM	POC: Jerry Lanier, jerry.lanier@eurofinset.com, 912-250-0281	
WBS Code:	Ship to:	

Comments:
A2320B (A) = Alkalinity
E353.2 (A) = Nitrite Nitrate as N
RSK175 (A) = Dissolved Gases
SW6010C/FLDFLT (B) = Fe Mn
SW6020A/FLDFLT (B) = As
SW9034 (A) = Sulfide

Equipment:

Code	Matrix
WG	Ground Water

Code	Container/Preservative
5	1x 125mL plastic, Cool < 6degC
7	2x 250mL plastic, ZnAc/NaOH Cool < 6degC
8	3x 40mL glass VOA Vials, HCl, pH < 2, Cool < 6degC
9	1x 250mL, plastic, HNO3, pH < 2, Cool < 6degC
10	1x 250mL, plastic, HNO3, pH < 2, Cool < 6degC
29	3x 40mL glass VOA Vials, HCl, pH < 2, Cool < 6degC
46	1x 250mL, plastic, Cool < 6degC
47	1x 500mL, amber glass, H2SO4, Cool < 6degC

						Analytical Test Method	A2320B (A)	E353.2 (A)	RSK175 (A)	SW6010C/FLDFLT (B)	SW6020A/FLDFLT (B)	SW8260B - VOCs	SW9034 (A)	SW9056A - SO4	SW9060A - TOC			Sample	Depth (ft bgs)		
	Event: Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021						46	47	8	9	9	29	7	5	10						
	Sample ID	Matrix	Date	Time	Samp Init.												Location ID	Type	Top	Bottom	Cooler
1	G6M-02-01X-FAL21	WG	10.13.21	1345	DC					X	X	X					G6M-02-01X	N1	80.00	95.00	
2	G6M-02-04X-FAL21	WG								X	X	X					G6M-02-04X	N1	90.00	105.00	
3	G6M-02-06X-FAL21	WG								X	X	X					G6M-02-06X	N1	55.00	65.00	
4	G6M-02-07X-FAL21	WG								X	X	X					G6M-02-07X	N1	30.00	40.00	
5	G6M-02-08X-FAL21	WG					X	X	X	X	X	X	X	X	X		G6M-02-08X	N1	60.00	70.00	
6	G6M-02-11X-FAL21	WG								X	X	X					G6M-02-11X	N1	125.00	135.00	
7	G6M-02-13X-FAL21	WG								X	X	X					G6M-02-13X	N1	110.00	120.00	
8	G6M-03-07X-FAL21	WG					X	X	X	X	X	X	X	X	X		G6M-03-07X	N1	80.00	90.00	
9	G6M-03-10X-FAL21	WG								X	X	X					G6M-03-10X	N1	120.00	135.00	
10	G6M-04-01X-FAL21	WG	10.13.21	1235	DC					X	X	X					G6M-04-01X	N1	82.00	92.00	
11	G6M-04-02X-FAL21	WG					X	X	X	X	X	X	X	X	X		G6M-04-02X	N1	80.00	90.00	
12	G6M-04-03X-FAL21	WG	10.13.21	1540	DC		X	X	X	X	X	X	X	X	X		G6M-04-03X	N1	85.00	95.00	
13	G6M-04-04X-FAL21	WG								X	X	X					G6M-04-04X	N1	94.00	104.00	
14	AOC50-DUP03-FAL21	WG								X	X	X					G6M-04-04X	FD1	94.00	104.00	
15	G6M-04-06X-FAL21	WG								X	X	X					G6M-04-06X	N1	95.00	136.00	
16	G6M-04-07X-FAL21	WG					X	X	X	X	X	X	X	X	X		G6M-04-07X	N1	120.00	130.00	
17	G6M-04-09X-FAL21	WG								X	X	X					G6M-04-09X	N1	55.00	65.00	

680-206032 Chain of Custody

Relinquished by: *(Signature)* [signature]
Date 10/13/21
Time 1800
Received by: *(Signature)* [signature]
Devens eCOCs_Fall 2021

Date 10/14/21 1700
Time
Shipping Date:
Received by Laboratory: *(Signature, Date, Time)* & conditio [signature] TA 10-15-21 1050

3.2/3.3
3.1/3.2

3/9/2022 (Rev. 1)

CHAIN-OF-CUSTODY RECORD

Seres-Arcadis JV
Nathan Mullens
669 Marina Drive, Suite B7, Charleston, SC 29492
(843) 478.0336, jennifer.singer@arcadis.com

COC # AOC50

Boston #215

Project Name: Former Fort Devens, Long Term Monitoring	Laboratory: Eurofins Environment Testing TestAmerica, Savannah, GA	Event: Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021
Project Number: DEVNS-LTM	POC: Jerry Lanier, jerry.lanier@eurofinset.com, 912-250-0281	
WBS Code:	Ship to:	

Comments:
A2320B (A) = Alkalinity
E353.2 (A) = Nitrite Nitrate as N
RSK175 (A) = Dissolved Gases
SW6010C/FLDFLT (B) = Fe Mn
SW6020A/FLDFLT (B) = As
SW9034 (A) = Sulfide

Equipment:

Code	Matrix
WG	Ground Water

Code	Container/Preservative
5	1x 125mL plastic, Cool < 6degC
7	2x 250mL plastic, ZnAc/NaOH Cool < 6degC
8	3x 40mL glass VOA Vials, HCl, pH < 2; Cool < 6degC
9	1x 250mL, plastic, HNO3, pH < 2; Cool < 6degC
10	1x 250mL, plastic, HNO3, pH < 2; Cool < 6degC
29	3x 40mL glass VOA Vials, HCl, pH < 2; Cool < 6degC
46	1x 250mL, plastic, Cool < 6degC
47	1x 500mL, amber glass, H2SO4, Cool < 6degC

Event: Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021

						Analytical Test Method	A2320B (A)	E353.2 (A)	RSK175 (A)	SW6010C/FLDFLT (B)	SW6020A/FLDFLT (B)	SW8260B - VOCs	SW9034 (A)	SW9056A - SO4	SW9060A - TOC			Sample	Depth (ft bgs)			
							46	47	8	9	9	29	7	5	10							
	Sample ID	Matrix	Date	Time	Samp Init.												Location ID	Sample Type	Top	Bottom	Cooler	Comments
18	G6M-04-10A-FAL21	WG	10.13.21	1215	MS		X	X	X	X	X	X	X	X	X		G6M-04-10A	N1	30.00	40.00		
19	G6M-04-10A-FAL21	WG	10.13.21	1215	MS		X	X	X	X	X	X	X	X	X		G6M-04-10A	MS1	30.00	40.00		
20	G6M-04-10A-FAL21	WG	10.13.21	1215	MS		X	X	X	X	X	X	X	X	X		G6M-04-10A	SD1	30.00	40.00		
21	G6M-04-10X-FAL21	WG	10.13.21	932	MS							X					G6M-04-10X	N1	52.00	62.00		
22	G6M-04-13X-FAL21	WG	10.13.21	1503	MS							X					G6M-04-13X	N1	30.00	40.00		
23	G6M-04-14X-FAL21	WG								X	X	X					G6M-04-14X	N1	80.00	90.00		
24	G6M-04-15X-FAL21	WG								X	X	X					G6M-04-15X	N1	70.00	80.00		
25	G6M-07-02X-FAL21	WG					X	X	X	X	X	X	X	X	X		G6M-07-02X	N1	22.50	27.50		
26	AOC50-DUP02-FAL21	WG					X	X	X	X	X	X	X	X	X		G6M-07-02X	FD1	22.50	27.50		
27	G6M-13-01X-FAL21	WG					X	X	X	X	X	X	X	X	X		G6M-13-01X	N1	125.00	135.00		
28	G6M-13-02X-FAL21	WG					X	X	X	X	X	X	X	X	X		G6M-13-02X	N1	115.00	125.00		
29	AOC50-DUP04-FAL21	WG					X	X	X	X	X	X	X	X	X		G6M-13-02X	FD1	115.00	125.00		
30	G6M-13-04X-FAL21	WG								X	X	X					G6M-13-04X	N1	125.00	135.00		
31	G6M-13-05X-FAL21	WG					X	X	X	X	X	X	X	X	X		G6M-13-05X	N1	45.00	55.00		
32	G6M-13-06X-FAL21	WG					X	X	X	X	X	X	X	X	X		G6M-13-06X	N1	50.00	60.00		
33	G6M-95-19X-FAL21	WG										X					G6M-95-19X	N1	48.00	58.00		
34	G6M-95-20X-FAL21	WG								X	X	X					G6M-95-20X	N1	18.00	23.00		

Relinquished by: *(Signature)* [signature]
Date 10/13/21
Time 1800
Received by: *(Signature)* [signature]
Devens eCOCs_Fall 2021

Date 10/14/21 1703
Time
Shipping Date:
Received by Laboratory: ***(Signature, Date, Time)*** & conditio [signature] FIA 10-15-21 0950

3/9/2022 (Rev. 1)

CHAIN-OF-CUSTODY RECORD

Seres-Arcadis JV
Nathan Mullens
669 Marina Drive, Suite B7, Charleston, SC 29492
(843) 478.0336, jennifer.singer@arcadis.com

COC # AOC50

Boston #215

Project Name: Former Fort Devens, Long Term Monitoring	Laboratory: Eurofins Environment Testing TestAmerica, Savannah, GA	Event: Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021
Project Number: DEVNS-LTM	POC: Jerry Lanier, jerry.lanier@eurofinset.com, 912-250-0281	
WBS Code:	Ship to:	

Comments:
A2320B (A) = Alkalinity
E353.2 (A) = Nitrite Nitrate as N
RSK175 (A) = Dissolved Gases
SW6010C/FLDFLT (B) = Fe Mn
SW6020A/FLDFLT (B) = As
SW9034 (A) = Sulfide

Equipment:

Code	Matrix
WG	Ground Water

Code	Container/Preservative
5	1x 125mL plastic, Cool < 6degC
7	2x 250mL plastic, ZnAc/NaOH Cool < 6degC
8	3x 40mL glass VOA Vials, HCl, pH < 2; Cool < 6degC
9	1x 250mL, plastic, HNO3, pH < 2, Cool < 6degC
10	1x 250mL, plastic, HNO3, pH < 2, Cool < 6degC
29	3x 40mL glass VOA Vials, HCl, pH < 2; Cool < 6degC
46	1x 250mL, plastic, Cool < 6degC
47	1x 500mL, amber glass, H2SO4, Cool < 6degC

Event: Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021

					Analytical Test Method	A2320B (A)	E353.2 (A)	RSK175 (A)	SW6010C/FLDFLT (B)	SW6020A/FLDFLT (B)	SW8260B - VOCs	SW9034 (A)	SW9056A - SO4	SW9060A - TOC					
						46	47	8	9	9	29	7	5	10					
	Sample ID	Matrix	Date	Time	Samp Init.										Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom	Cooler	Comments
35	AOC50-DUP01-FAL21	WG							X	X	X				G6M-95-20X	FD1	18.00	23.00		
36	G6M-97-05B-FAL21	WG	10.13.21	935	DC	X	X	X	X	X	X	X	X	X	G6M-97-05B	N1	130.00	135.00		
37	G6M-97-28X-FAL21	WG							X	X					G6M-97-28X	N1	100.00	105.00		
38	MW-3-FAL21	WG							X	X	X				MW-3	N1	126.00	137.00		
39	MW-3-FAL21	WG							X	X	X				MW-3	MS1	126.00	137.00		
40	MW-3-FAL21	WG							X	X	X				MW-3	SD1	126.00	137.00		
41	MW-7-FAL21	WG							X	X	X				MW-7	N1	6.58	135.00		
42	XSA-12-95X-FAL21	WG							X	X	X				XSA-12-95X	N1	120.00	130.00		
43	XSA-12-96X-FAL21	WG	10.13.21	1445	BK	X	X	X	X	X	X	X	X	X	XSA-12-96X	N1	120.00	130.00		1445 sample time
44	XSA-12-97X-FAL21	WG	10.13.21	1120	BK				X	X	X				XSA-12-97X	N1	120.00	130.00		
45	XSA-12-98X-FAL21	WG							X	X	X				XSA-12-98X	N1	60.00	70.00		
46	RB-02-101321-FAL21		10-13-21	1030	DC	X	X	X	X	X	X	X	X	X	X	Rinse blank				
47	TB-AOC50-101321-FAL21		—	—	—						X				—	TB				
48																				
49																				
50																				
51																				
52																				

Relinquished by: *(Signature)* WJK
Date 10/13/21
Time 1820
Received by: *(Signature)*
Devens eCOCs_Fall 2021

Date 10/14/21, 1200
Time
Shipping Date:
Received by Laboratory *(Signature, Date, Time)* & conditio

10-15-21 1050

3/9/2022 (Rev. 1)

Eurofins TestAmerica, Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Phone: 912-354-7858 Fax: 912-352-0165

Chain of Custody Record

eurofins Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Lanier, Jerry A	Carrier Tracking No(s):	COC No: 680-671099.1
Client Contact: Shipping/Receiving	Phone	E-Mail: Jerry.Lanier@Eurofinset.com	State of Origin: Massachusetts	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): Dept. of Defense ELAP - A2LA; DoD - ANAB		Job #: 680-206032-1
Address: 4955 Yarrow Street,	Due Date Requested: 10/28/2021			
City: Arvada	TAT Requested (days):			
State, Zip: CO, 80002				
Phone: 303-736-0100(Tel) 303-431-7171(Fax)	PO #:			
Email	WO #:			
Project Name: Seres-Arcadis JV, LTM, AOC 50, Fall 2021	Project #: 68023801			
Site	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2320B/ Alkalinity	353.2_Pres/ Nitrogen, Nitrate-Nitrite	9060A/ (MOD) Waters - TOC Duplicates	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
G6M-04-03X-FAL21 (680-206032-3)	10/13/21	15:40 Eastern		Water			X	X	X	3	
G6M-04-10A-FAL21 (680-206032-4)	10/13/21	12:15 Eastern		Water			X	X	X	3	
G6M-04-10A-FAL21 (680-206032-4MS)	10/13/21	12:15 Eastern	MS	Water				X	X	3	
G6M-04-10A-FAL21 (680-206032-4MSD)	10/13/21	12:15 Eastern	MSD	Water				X	X	3	
G6M-97-05B-FAL21 (680-206032-7)	10/13/21	09:35 Eastern		Water			X	X	X	3	
XSA-12-96X-FAL21 (680-206032-9)	10/13/21	14:45 Eastern		Water			X	X	X	3	
RB-02-101321-FAL21 (680-206032-10)	10/13/21	10:30 Eastern		Water			X	X	X	3	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time:	Company
[signature]	10/18 1530		[signature]	10/19/21 1020	GTA/ODN
Relinquished by	Date/Time	Company	Received by	Date/Time:	Company
Relinquished by	Date/Time	Company	Received by	Date/Time:	Company

Custody Seals Intact: ☒ Yes ☐ No	Custody Seal No.: 1758450 1758444	Cooler Temperature(s) °C and Other Remarks: 0.4, 0.4 IR#1 CF #1-0

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Seres Engineering & Services LLC

Job Number: 680-206032-1

Login Number: 206032
List Number: 1
Creator: Sims, Robert D

List Source: Eurofins Savannah

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Seres Engineering & Services LLC

Job Number: 680-206032-1

Login Number: 206032
List Number: 2
Creator: Lee, Jerry

List Source: Eurofins Denver
List Creation: 10/19/21 05:06 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Appendix C

Summary of Quality Control Exceedances and Data Validation Reports

Spring 2021

- The MS/MSD analysis performed using sample G6M-04-03X-SPR21 exhibited an MSD recovery for TOC below the acceptance criteria. The TOC result in sample G6M-04-03X-SPR21 was qualified as estimated (J) with a potential for low bias in the reported result.
- The continuing calibration verification (CCV) associated with VOC analysis exhibited results for chloroethane, dichlorodifluoromethane, and vinyl acetate above the acceptance criteria. Chloroethane also exhibited a result above the acceptance criteria in the closing CCV. The non-detect results of chloroethane, dichlorodifluoromethane, and vinyl acetate in samples AOC50-DUP01-SPR1, G6M-02-01X-SPR21, G6M-03-07X-SPR21, G6M04-07X-SPR21, G6M-07-01X-SPR21, and G6M-07-02X-SPR21 were qualified as estimated (UJ).
- The CCV associated with VOC analysis exhibited results for 1,2,3-trichlorobenzene and naphthalene below the acceptance criteria. The non-detect results of 1,2,3-trichlorobenzene and naphthalene in the trip blank sample AOC50-TB01-SPR21 were qualified as estimated (UJ).
- The CCV associated with VOC analysis exhibited result for chloroethane above the acceptance criteria. The chloroethane result in sample XSA-12-96X-SPR21 was qualified as estimated (J). The chloroethane result may be biased high.
- Due to a detection of TOC in the associated method blank, TOC result in sample G6M-04-07X-SPR21 was qualified as not detected (U).

Fall 2021

- The VOC analysis of sample AOC50-DUP01-FAL21was analyzed outside of the method-specified 14-day holding time (analysis: 15 days). The non-detect results of VOCs in sample AOC50-DUP01-FAL21 were qualified as estimated (UJ).
- The CCV associated with VOC analysis exhibited results for 2,2-dichloropropane, chloroethane, dichlorodifluoromethane, trichlorofluoromethane, and vinyl acetate above the acceptance criteria. Dichlorodifluoromethane also exhibited a result above the acceptance criteria in the closing CCV. The non-detect results of 2,2-dichloropropane, chloroethane, dichlorodifluoromethane, trichlorofluoromethane, and vinyl acetate in samples G6M-02-04X-FAL21, G6M-02-11X-FAL21, and MW-3-FAL21 were qualified as estimated (UJ).
- The CCV associated with VOC analysis exhibited results for 2,2-dichloropropane, acetate, bromochloromethane, and vinyl acetate above the acceptance criteria. The non-detect results of 2,2-dichloropropane, acetate, bromochloromethane, and vinyl acetate in samples G6M-03-10X-FAL21 and G6M-07-02X-FAL21 were qualified as estimated (UJ).
- The initial calibration verification (ICV) associated with VOC analysis exhibited a result for vinyl acetate below the acceptance criteria. In addition, the CCV exhibited results for chloroethane and vinyl acetate above the acceptance criteria. The non-detect results of chloroethane and vinyl acetate in samples AOC50-DUP02-FAL21, AOC50-RB01-FAL21, G6M-01X-FAL21, G6M-13-04X-FAL21, G6M-13-06X-FAL21, and MW-7-FAL21 were qualified as estimated (UJ).
- The CCV associated with VOC analysis exhibited results for bromochloromethane and chloroethane above the acceptance criteria. The non-detect results of bromochloromethane and chloroethane in sample AOC50-RB02-FAL21 were qualified as estimated (UJ).

- The ICV associated with VOC analysis exhibited a result for vinyl acetate below the acceptance criteria. In addition, the CCV associated with VOC analysis exhibited results for bromomethane, chloroethane, chloromethane, and vinyl acetate above the acceptance criteria. The non-detect results of bromomethane, chloroethane, and vinyl acetate in samples AOC50-RB02-FAL21, AOC50-TB01-FAL21, G6M-02-01X-FAL21, G6M-04-01X-FAL21, G6M-04-03X-FAL21, and G6M-04-10A-FAL21 were qualified as estimated (UJ).
- The CCV associated with VOC analysis exhibited a result for chloroethane above the acceptance criteria. Chloroethane also exhibited a result above the acceptance criteria in the closing CCV. The non-detect result of chloroethane in sample G6M-04-10X-FAL21 was qualified as estimated (UJ).
- The CCV associated with VOC analysis exhibited results for dichlorodifluoromethane below the acceptance criteria and vinyl acetate above the acceptance criteria. The non-detect results of dichlorodifluoromethane and vinyl acetate in sample AOC50-DUP01-FAL21 were qualified as estimated (UJ).
- The CCV associated with VOC analysis exhibited results for chloroethane and vinyl acetate above the acceptance criteria. Chloroethane also exhibited a result above the acceptance criteria in the closing CCV. The non-detect results of chloroethane and vinyl acetate in samples AOC50-TB02-FAL21, G6M04-07X-FAL21, G6M-13-05X-FAL21, G6M-95-19X-FAL21, G6M-95-20X-FAL21, XSA-12-97X-FAL21, and XSA-12-98X-FAL21 were qualified as estimated (UJ).
- No closing CCV was included in the analysis sequence in association with the 1,2-dichloroethene, cis-1,2-dichlorothene, and tetrachloroethene analysis of sample G6M-95-20X-FAL21. The non-detect results of 1,2-dichloroethene, cis-1,2-dichlorothene, and tetrachloroethene were qualified as estimated (UJ).
- The ICV associated with VOC analysis exhibited a result for vinyl acetate below the acceptance criteria. In addition, the CCV associated with VOC analysis exhibited a result for chloromethane and vinyl acetate above the acceptance criteria. The non-detect results of chloromethane and vinyl acetate in samples G6M-04-13X-FAL21, G6M-97-05B-FAL21, XSA-12-95X-FAL21, and XSA-12-96X-FAL21 were qualified as estimated (UJ).
- The ICV associated with VOC analysis exhibited a result for vinyl acetate below the acceptance criteria. The non-detect results of vinyl acetate in samples AOC50-DUP01-FAL21, G6M-02-06X-FAL21, G6M-02-07X-FAL21, G6M-02-08X-FAL21, and G6M-04-06X-FAL21 were qualified as estimated (UJ).
- The ICV associated with VOC analysis exhibited a result for vinyl acetate below the acceptance criteria. In addition, the CCV associated with VOC analysis exhibited a result for 2-butanone below the acceptance criteria. The non-detect results of 2-butanone in samples AOC50-DUP04-FAL21, AOC50-RB03-FAL21, AOC50-TB03-FAL21, G6M-04-09X-FAL21, G6M-04-15X-FAL21, and G3M-13-02X-FAL21 were qualified as estimated (UJ).
- The CCV associated with VOC analysis exhibited results for acetone, bromomethane, and chloroethane above the acceptance criteria and dichlorodifluoromethane below the acceptance criteria. Bromomethane and chloroethane also exhibited results above the acceptance criteria in the closing CCV. The non-detect results of acetone, bromomethane, chloroethane, and dichlorodifluoromethane in samples G6M-02-13X-FAL21 and G6M-04-14X-FAL21 were qualified as estimated (UJ).

- The CCV associated with VOC analysis exhibited results for chloroethane and vinyl acetate above the acceptance criteria. Chloroethane also exhibited a result above the acceptance criteria in the closing CCV. The non-detect results of chloroethane and vinyl acetate in samples AOC50-DUP03-FAL21, G6M-03-07X-FAL21, G6M-04-02X-FAL21, and G6M-04-04X-FAL21 were qualified as estimated (UJ).
- The CCV associated with VOC analysis exhibited results for bromomethane and chloroethane above the acceptance criteria and dichlorodifluoromethane below the acceptance criteria. Bromomethane and chloroethane also exhibited results above the acceptance criteria in the closing CCV. The non-detect results of bromomethane, chloroethane, and dichlorodifluoromethane in sample AOC50-TB04-FAL21 were qualified as estimated (UJ).
- The CCV associated with VOC analysis exhibited results for 2-butanone and 2-hexanone below the acceptance criteria and chloroethane above the acceptance criteria. Chloroethane and vinyl acetate also exhibited results outside of the acceptance criteria in the closing CCV. The non-detect results of 2-butanone, 2-hexanone, chloroethane, and vinyl acetate in samples AOC50-RB04-FAL21 and G6M-07-01X-FAL21 were qualified as estimated (UJ).
- The laboratory control sample associated with dissolved gases analysis exhibited recoveries of methane above the acceptance criteria. The methane result in sample G6M-07-01X-FAL21 was qualified as estimated (J). The reported result may be biased high.
- The MS/MSD performed using sample G6M-04-10A-FAL21 exhibited recoveries for nitrate-nitrite (as nitrogen) below the acceptance criteria and dissolved arsenic above the acceptance criteria. The non-detect result of nitrate-nitrite (as nitrogen) in the sample was qualified as estimated (UJ) with a potential for low bias in the reported result. The dissolved arsenic result in the sample was qualified as estimated (J) with a potential for high bias in the reported result.
- Low-level calibration blank or method blank detections of alkalinity resulted in qualification of samples AOC50-RB02-FAL21 and G6M-07-01X-FAL21 as not detected (U).
- Due to a detection of TOC in the associated equipment blank AOC50-RB02-FAL21, TOC result in sample XSA-12-96X-FAL21 was qualified as not detected (U).
- Low-level equipment blank or calibration blank detections of dissolved iron resulted in qualification of samples AOC50-RB03-FAL21 and G6M-04-14X-FAL21 as not detected (U).

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

ARCADIS U.S., Inc.
3109 West Martin Luther King Jr. Blvd, Suite 350
Tampa, FL 33607
ATTN: Mr. Nathan Mullens
nrmullens@seres-es.com

July 30, 2021

SUBJECT: Fort Devens - Data Validation

Dear Mr. Mullens,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on July 15, 2021. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #51621:

SDG #	Fraction
680-198882-1 680-199581-1	Volatiles, Dissolved Metals, Methane, Ethane, & Ethene, Wet Chemistry

The data validation was performed under Stage 2B guidelines. The analyses were validated using the following documents and variances, as applicable to each method:

- Quality Assurance Project Plan, Long Term Monitoring Program, Former Fort Devens, 2020
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist
pgeng@lab-data.com

88 pages-ADV

Attachment 1

Stage 2B EQUIS EDD

LDC# 51621 (Arcadis - Millersville, MD / Fort Devens)

LDC	SDG#	DATE REC'D	(2) DATE DUE	VOA (8260B)		3 D.Met. (6010C/ 6020A)		Methane Ethane Ethene		Alk (2320B)		DOC (9060A)		Cl (9056A)		NO_3 /NO_2-N (353.2)		SO_4 (9056A)		S= (9034)		TOC (9060A)															
Matrix: Water/Soil				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	680-198882-1	07/15/21	07/29/21	6	0	6	0	6	0	6	0	-	-	-	-	6	0	6	0	6	0	7	0														
B	680-199581-1	07/15/21	07/29/21	-	-	9	0	-	-	9	0	9	0	9	0	-	-	9	0	-	-	-	-														
Total	T/PG			6	0	15	0	6	0	15	0	9	0	9	0	6	0	15	0	6	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	94

Shaded cells indicate Stage 4 validation (all other cells are Stage 2B validation). These sample counts do not include MS/MSD, and DUPs

L:\Arcadis\Fort Devens\51621ST.wpd

Data Validation Report for 6801988821

Facility:	Former Fort Devens, Long Term Monitoring
Event:	Seres-Arcadis JV, Long Term Monitoring, AOC 50, Spring 2021
SDG:	6801988821
Guidance Document:	Quality Assurance Project Plan, Long Term Monitoring Program, Former Fort Devens, 2020
Prime Contractor:	Seres-Arcadis JV
Project Manager:	Jennifer Singer
Contract Laboratory(ies):	Eurofins Environment Testing TestAmerica, Arvada, CO
Data Review Contractor:	Laboratory Data Consultants, Inc.
Data Review Level:	2B
Primary Data Reviewer:	Kevin Kha, Environmental Scientist
Second Reviewer:	Pei Geng, Senior Scientist
Date Submitted:	July 29, 2021

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	A2320B	E353.2	RSK175	SW6010C - Dissolved	SW6020A - Dissolved	SW8260B	SW9034	SW9056A	SW9060A
AOC50-DUP01-SPR21	680-198882-8	Water	Field Duplicate/FD	X	X	X	X	X	X	X	X	X
G6M-02-01X-SPR21	680-198882-1	Water	Field Sample/N	X	X	X	X	X	X	X	X	X
G6M-03-07X-SPR21	680-198882-2	Water	Field Sample/N	X	X	X	X	X	X	X	X	X
G6M-04-02X-SPR21	680-198882-3	Water	Field Sample/N									X
G6M-04-07X-SPR21	680-198882-4	Water	Field Sample/N	X	X	X	X	X	X	X	X	X
G6M-07-01X-SPR21	680-198882-6	Water	Field Sample/N	X	X	X	X	X	X	X	X	X
G6M-07-02X-SPR21	680-198882-7	Water	Field Sample/N	X	X	X	X	X	X	X	X	X

This report assesses the analytical data quality associated with the analyses listed on the preceding cover page at 2B data validation level. This assessment has been made through a combination of automated data review (ADR) and supplemental manual review, the details of which are described below. The approach taken in the review of this data set is consistent with the requirements contained in the Quality Assurance Project Plan, Long Term Monitoring Program, Former Fort Devens, 2020 and the additional guidance documents incorporated by reference to the extent possible. Where definitive guidance is not provided, results have been evaluated in a conservative manner using professional judgment.

Sample collection was managed and directed by Seres-Arcadis JV; analyses were performed by Eurofins Environment Testing TestAmerica, Arvada, CO and were reported under sample delivery group (SDG) 6801988821. Data have been evaluated electronically based on electronic data deliverables (EDDs) provided by the laboratory, and hard copy data summary forms have also been reviewed during this effort and compared to the automated review output by the reviewers whose signatures appear on the following page. Findings based on the automated data submission and manual data verification processes are detailed in the ADR narrative and throughout this report.

All quality control (QC) elements associated with this SDG have been reviewed by a project chemist in accordance with the requirements defined for the project. This review is documented in the attached Data Review Checklists. The QC elements listed below were supported by the electronic deliverable and were evaluated using ADR processes.

- Blank - Negative
- Calibration Blank
- Calibration Blank - Negative
- Continuing Calibration Verification
- Field Duplicate RPD
- Interference Check Sample A
- Interference Check Sample A - Negative
- Interference Check Sample AB
- Lab Blank
- Lab Replicate RPD
- LCS Recovery
- LCS RPD
- MS Recovery
- MS RPD
- Prep Hold Time
- Surrogate
- Test Hold Time

Results of the ADR process were subsequently reviewed and updated as applicable by the data review chemists identified on the signature page. Quality control elements that were not included in the electronic deliverable were reviewed manually and findings are documented within this report. Summaries of findings and associated qualified results are documented throughout this report.

A total of 19 results (4.00%) out of the 475 results (sample and field QC samples) reported are qualified based on review and 0 results (0.00%) have been rejected or deemed a serious deficiency (X qualifier). Trace values, defined as results that are qualified as estimated because they fall between the detection limit and the reporting limit/limit of quantitation, are not counted as qualified results in the above count. The qualified results are detailed throughout this report and discussed in the narrative below, where appropriate.

Narrative Comments

Analytical Method	Data Reviewer Comment
A2320B	No additional comments; see Checklist for detail.
E353.2	No additional comments; see Checklist for detail.
RSK175	No additional comments; see Checklist for detail.
SW6010C	No additional comments; see Checklist for detail.
SW6020A	No additional comments; see Checklist for detail.
SW8260B	No additional comments; see Checklist for detail.
SW9034	No additional comments; see Checklist for detail.
SW9056A	No additional comments; see Checklist for detail.
SW9060A	No additional comments; see Checklist for detail.

July 29, 2021

Reviewed by Kevin Kha, Environmental Scientist, Laboratory Data Consultants, Inc.

As the First Reviewer, I certify that I have performed a data review process in accordance with the requirements of the project guidance document, and have compared the electronic data to the laboratory's hard copy report and have verified the consistency of the reported sample results and method quality control data between the two deliverables.

Reviewed by Pei Geng, Senior Scientist, Laboratory Data Consultants, Inc.

July 29, 2021

As the Second Reviewer, I certify that I have performed a quality assurance review of the report generated by the First Reviewer.

Quality Control Outliers for test method A2320B, Calibration Blank

The purpose of calibration blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in calibration blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCB28053650217 (CB)/ CCB28053650217	Alkalinity, Total (as CaCO3)	3.350	< 3.1	< 10	mg/l	U/None*	B2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

*Blank flags displayed in the above table identify qualification of the sample result when it is less than or equal to the LOQ/RL. Sample results above the LOQ will be qualified based on the validation type such as J+ at the sample result.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW6010C, Dissolved, Calibration Blank

The purpose of calibration blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in calibration blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCB680669599216 (CB)/ CCB680669599216	Iron	26.00	< 17	< 50	ug/l	U/None*	B2	
CCB680669599228 (CB)/ CCB680669599228	Iron	23.60	< 17	< 50	ug/l	U/None*	B2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

*Blank flags displayed in the above table identify qualification of the sample result when it is less than or equal to the LOQ/RL. Sample results above the LOQ will be qualified based on the validation type such as J+ at the sample result.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW6010C, Dissolved, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
G6M-03-07X-SPR21 (MS)/ 680-198882-2	Iron	150.0	87 - 115	10 - 125	percent	J/None	M	Spike amount Insignificant
G6M-03-07X-SPR21 (MS)/ 680-198882-2	Manganese	67.50	90 - 114	10 - 125	percent	J/UJ	M	Spike amount Insignificant
G6M-03-07X-SPR21 (SD)/ 680-198882-2	Manganese	62.50	90 - 114	10 - 125	percent	J/UJ	M	Spike amount Insignificant

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW6020A, Dissolved, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
G6M-03-07X-SPR21 (MS)/ 680-198882-2	Arsenic	72.00	84 - 116	10 - 125	percent	J/UJ	M	Spike amount Insignificant
G6M-03-07X-SPR21 (SD)/ 680-198882-2	Arsenic	81.00	84 - 116	10 - 125	percent	J/UJ	M	Spike amount Insignificant

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW8260B, Continuing Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCVIS68066 (CV)/ CCVIS6806698184	Chloroethane	159.4	80 - 120	80 - 120	percent	J/UJ	V2	
CCVIS68066 (CV)/ CCVIS6806698184	Dichlorodifluoromethane	128.2	80 - 120	80 - 120	percent	J/UJ	V2	
CCVIS68066 (CV)/ CCVIS6806698184	Vinyl acetate	129.0	80 - 120	80 - 120	percent	J/UJ	V2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Continuing Calibration Verification for SW8260B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
AOC50-DUP01-SPR21	FD	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
AOC50-DUP01-SPR21	FD	Dichlorodifluoromethane	2.00	2.00 U Q	2.00 UJ		ug/l	V2
AOC50-DUP01-SPR21	FD	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V2
G6M-02-01X-SPR21	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
G6M-02-01X-SPR21	N	Dichlorodifluoromethane	2.00	2.00 U Q	2.00 UJ		ug/l	V2
G6M-02-01X-SPR21	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V2
G6M-03-07X-SPR21	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
G6M-03-07X-SPR21	N	Dichlorodifluoromethane	2.00	2.00 U Q	2.00 UJ		ug/l	V2
G6M-03-07X-SPR21	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V2
G6M-04-07X-SPR21	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
G6M-04-07X-SPR21	N	Dichlorodifluoromethane	2.00	2.00 U Q	2.00 UJ		ug/l	V2
G6M-04-07X-SPR21	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V2
G6M-07-01X-SPR21	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
G6M-07-01X-SPR21	N	Dichlorodifluoromethane	2.00	2.00 U Q	2.00 UJ		ug/l	V2
G6M-07-01X-SPR21	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V2
G6M-07-02X-SPR21	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
G6M-07-02X-SPR21	N	Dichlorodifluoromethane	2.00	2.00 U Q	2.00 UJ		ug/l	V2
G6M-07-02X-SPR21	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260B, Ending Continuing Calibration Verification

Compliance requirements for satisfactory closing continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCVC680669 (EV)/ CCVC68066981826	Chloroethane	162.2	50 - 150	50 - 150	percent	J/UJ	V5	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Ending Continuing Calibration Verification for SW8260B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
AOC50-DUP01-SPR21	FD	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
G6M-02-01X-SPR21	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
G6M-03-07X-SPR21	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
G6M-04-07X-SPR21	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
G6M-07-01X-SPR21	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
G6M-07-02X-SPR21	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260B, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
LCS6806698185 (BS)/ LCS6806698185	Chloroethane	154.2	60 - 138	10 - 138	percent	J/None	C	
LCSD6806698186 (BD)/ LCSD6806698186	Chloroethane	158.2	60 - 138	10 - 138	percent	J/None	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW9060A, Calibration Blank

The purpose of calibration blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in calibration blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCB28053761328 (CB)/ CCB28053761328	Total Organic Carbon	0.4740	< 0.35	< 1	mg/l	U/None*	B2	
CCB28053761340 (CB)/ CCB28053761340	Total Organic Carbon	0.5140	< 0.35	< 1	mg/l	U/None*	B2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

*Blank flags displayed in the above table identify qualification of the sample result when it is less than or equal to the LOQ/RL. Sample results above the LOQ will be qualified based on the validation type such as J+ at the sample result.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW9060A, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
MB28053761335 (LB)/ MB28053761335	Total Organic Carbon	0.4140	< 0.35	< 1	mg/l	U/None*	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

*Blank flags displayed in the above table identify qualification of the sample result when it is less than or equal to the LOQ/RL. Sample results above the LOQ will be qualified based on the validation type such as J+ at the sample result.

Qualified Results associated with the Lab Blank for SW9060A

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
G6M-04-07X-SPR21	N	Total Organic Carbon	1.40	1.40	1.40 U		mg/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Table of All Qualified Results

Test Method: SW8260B		**Extraction Method: SW5030B**						
FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
AOC50-DUP01-SPR21 680-198882-8	FD	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
AOC50-DUP01-SPR21 680-198882-8	FD	Dichlorodifluoromethane	2.00	2.00 U Q	2.00 UJ		ug/l	V2
AOC50-DUP01-SPR21 680-198882-8	FD	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V2
G6M-02-01X-SPR21 680-198882-1	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
G6M-02-01X-SPR21 680-198882-1	N	Dichlorodifluoromethane	2.00	2.00 U Q	2.00 UJ		ug/l	V2
G6M-02-01X-SPR21 680-198882-1	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V2
G6M-03-07X-SPR21 680-198882-2	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
G6M-03-07X-SPR21 680-198882-2	N	Dichlorodifluoromethane	2.00	2.00 U Q	2.00 UJ		ug/l	V2
G6M-03-07X-SPR21 680-198882-2	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V2
G6M-04-07X-SPR21 680-198882-4	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
G6M-04-07X-SPR21 680-198882-4	N	Dichlorodifluoromethane	2.00	2.00 U Q	2.00 UJ		ug/l	V2
G6M-04-07X-SPR21 680-198882-4	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V2
G6M-07-01X-SPR21 680-198882-6	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
G6M-07-01X-SPR21 680-198882-6	N	Dichlorodifluoromethane	2.00	2.00 U Q	2.00 UJ		ug/l	V2
G6M-07-01X-SPR21 680-198882-6	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V2
G6M-07-02X-SPR21 680-198882-7	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
G6M-07-02X-SPR21 680-198882-7	N	Dichlorodifluoromethane	2.00	2.00 U Q	2.00 UJ		ug/l	V2
G6M-07-02X-SPR21 680-198882-7	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V2

Test Method: SW9060A		**Extraction Method: NONE**						
FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
G6M-04-07X-SPR21 680-198882-4	N	Total Organic Carbon	1.40	1.40	1.40 U		mg/l	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Table of Results with Modified Qualifiers

Modified Qualifiers for test method RSK175

FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
AOC50-DUP01-SPR21 680-198882-8	FD	Methane	390	21000	21000 J	21000	
G6M-02-01X-SPR21 680-198882-1	N	Methane	390	24000	24000 J	24000	
G6M-03-07X-SPR21 680-198882-2	N	Methane	390	34000	34000 J	34000	
G6M-04-07X-SPR21 680-198882-4	N	Methane	1.20	350	350 J	350	
G6M-07-01X-SPR21 680-198882-6	N	Methane	1.20	17.0	17.0 J	17.0	
G6M-07-02X-SPR21 680-198882-7	N	Methane	390	20000	20000 J	20000	

Modified Qualifiers for test method SW8260B

FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
AOC50-DUP01-SPR21 680-198882-8	FD	Chloroethane	5.00	5.00 U Q	5.00 U	5.00 UJ	V2/V5
AOC50-DUP01-SPR21 680-198882-8	FD	Dichlorodifluoromethane	2.00	2.00 U Q	2.00 U	2.00 UJ	V2
AOC50-DUP01-SPR21 680-198882-8	FD	Vinyl acetate	2.00	2.00 U Q	2.00 U	2.00 UJ	V2
G6M-02-01X-SPR21 680-198882-1	N	Chloroethane	5.00	5.00 U Q	5.00 U	5.00 UJ	V2/V5
G6M-02-01X-SPR21 680-198882-1	N	Dichlorodifluoromethane	2.00	2.00 U Q	2.00 U	2.00 UJ	V2
G6M-02-01X-SPR21 680-198882-1	N	Vinyl acetate	2.00	2.00 U Q	2.00 U	2.00 UJ	V2
G6M-03-07X-SPR21 680-198882-2	N	Chloroethane	5.00	5.00 U Q	5.00 U	5.00 UJ	V2/V5
G6M-03-07X-SPR21 680-198882-2	N	Dichlorodifluoromethane	2.00	2.00 U Q	2.00 U	2.00 UJ	V2
G6M-03-07X-SPR21 680-198882-2	N	Vinyl acetate	2.00	2.00 U Q	2.00 U	2.00 UJ	V2
G6M-04-07X-SPR21 680-198882-4	N	Chloroethane	5.00	5.00 U Q	5.00 U	5.00 UJ	V2/V5
G6M-04-07X-SPR21 680-198882-4	N	Dichlorodifluoromethane	2.00	2.00 U Q	2.00 U	2.00 UJ	V2
G6M-04-07X-SPR21 680-198882-4	N	Vinyl acetate	2.00	2.00 U Q	2.00 U	2.00 UJ	V2
G6M-07-01X-SPR21 680-198882-6	N	Chloroethane	5.00	5.00 U Q	5.00 U	5.00 UJ	V2/V5
G6M-07-01X-SPR21 680-198882-6	N	Dichlorodifluoromethane	2.00	2.00 U Q	2.00 U	2.00 UJ	V2
G6M-07-01X-SPR21 680-198882-6	N	Vinyl acetate	2.00	2.00 U Q	2.00 U	2.00 UJ	V2
G6M-07-02X-SPR21 680-198882-7	N	Chloroethane	5.00	5.00 U Q	5.00 U	5.00 UJ	V2/V5
G6M-07-02X-SPR21 680-198882-7	N	Dichlorodifluoromethane	2.00	2.00 U Q	2.00 U	2.00 UJ	V2
G6M-07-02X-SPR21 680-198882-7	N	Vinyl acetate	2.00	2.00 U Q	2.00 U	2.00 UJ	V2

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW9056A							
FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
AOC50-DUP01-SPR21 680-198882-8	FD	Sulfate	1.00	1.20	1.20 J	1.20	
G6M-07-02X-SPR21 680-198882-7	N	Sulfate	1.00	1.00 U	1.00 UJ	1.00 U	

Modified Qualifiers for test method SW9060A							
FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
G6M-04-07X-SPR21 680-198882-4	N	Total Organic Carbon	1.40	1.40	1.40 U	1.40 U	L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Reason Code Definitions

Code	Definition
B2	CCB
C	LCS Recovery
L	Lab Blank
M	MS Recovery
TR	Trace Level Detect
V2	CCV
V5	Ending Continuing Calibration Verification

Flag Code and Definitions

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

Bias

-	The result may be biased low
+	The result may be biased high

Note - The bias field is a separate field; however, it is an integral part of the final flag (qualifier) on the sample result

Review Questions

Method: A2320B (Alkalinity by Titrimetric Method)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		Although alkalinity was detected in the calibration blank, the associated sample results were significantly greater than the concentrations found in the blank, therefore no data were qualified.
Were field blanks (EBs or FBs) submitted with these samples?		•		A field blank was not submitted with these samples.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	Only a LCS was performed.
Was a MS/MSD pair prepared with each batch?		•		MS/MSD not performed.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Review Questions

Method: E353.2 (Nitrogen, Nitrate-Nitrite (Colorimetric Automated, Cadmium Reduction))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were field blanks (EBs or FBs) submitted with these samples?		•		A field blank was not submitted with these samples.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	Only a LCS was performed.
Was a MS/MSD pair prepared with each batch?		•		MS/MSD not performed.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Review Questions

Method: RSK175 (Dissolved Gas Analysis in Water Samples Using a GC Headspace Equilibrium Technique)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Were the required minimum levels of calibration standards used in the initial calibration?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Were surrogate recoveries within project acceptance limits?			•	Surrogates not required.
Was a method blank prepared and analyzed with each batch?	•			
Were field blanks (EBs or FBs) submitted with these samples?		•		A field blank was not submitted with these samples.
Were target analytes reported in the field blank(s) less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?		•		MS/MSD not performed.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Review Questions

Method: SW6010C (Trace Metals by Inductively Coupled Plasma/Atomic Emission Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		Although iron was detected in the calibration blanks, the associated sample results were significantly greater than the concentration found in the blanks, therefore no data were qualified.
Were field blanks (EBs or FBs) submitted with these samples?		•		A field blank was not submitted with these samples.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	Only a LCS was performed.
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?		•		Although iron and manganese MS/MSD %R were not within criteria, the parent sample results were significantly greater (>4x) the spike amount, therefore no data were qualified.
Was the MS/MSD RPD within project acceptance limits?	•			
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Review Questions

Method: SW6020A (Trace Metals by Inductively Coupled Plasma/Mass Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were field blanks (EBs or FBs) submitted with these samples?		•		A field blank was not submitted with these samples.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	Only a LCS was performed.
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?		•		Although arsenic MS/MSD %R was not within criteria, the parent sample results were significantly greater (>4x) than the spike amount, therefore no data were qualified.
Was the MS/MSD RPD within project acceptance limits?	•			
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Data Validation Report for 6801988821

Review Questions

Method: SW8260B (Volatile Organic Compounds by Capillary GC/MS)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Were the required minimum levels of calibration standards used in the initial calibration?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?		•		Due to CCV and ending CCV %D, several results were qualified as non-detected estimated (UJ).
Were surrogate recoveries within project acceptance limits?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were field blanks (EBs or FBs) submitted with these samples?		•		A field blank was not submitted with these samples.
Were target analytes reported in the field blank(s) less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?		•		Although chloroethane LCS/LCSD %R was above criteria, the associated sample results were non-detected, therefore no data were qualified.
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?		•		MS/MSD not performed.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported or as qualified during data validation.

Data Validation Report for 6801988821

Review Questions

Method: SW9034 (Titrimetric Procedure for Acid-Soluble and Acid-Insoluble Sulfides)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were field blanks (EBs or FBs) submitted with these samples?		•		A field blank was not submitted with these samples.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?		•		MS/MSD not performed.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?	•			Laboratory DUP performed and was within project acceptance limits.
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Data Validation Report for 6801988821

Review Questions

Method: SW9056A (Anion Chromatography)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were field blanks (EBs or FBs) submitted with these samples?		•		A field blank was not submitted with these samples.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?	•			
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Data Validation Report for 6801988821

Review Questions

Method: SW9060A (Total Organic Carbon)

Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		Due to method blank contamination, one TOC result was qualified as non-detected (U) at a raised LOQ.
Were field blanks (EBs or FBs) submitted with these samples?		•		A field blank was not submitted with these samples.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	Only a LCS was performed.
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?	•			
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported or as qualified during data validation.

Field Duplicate Report By SDG
Former Fort Devens, Long Term Monitoring
Seres-Arcadis JV, Long Term Monitoring, AOC 50, Spring 2021
Field Duplicates for SDG: 6801988821

Location	Analysis
G6M-07-02X	A2320B

Field ID - Primary/Field Dup	Lab ID - Primary/Field Dup	Analyte	Primary Result	FD Result	RL	RPD	RPD Criteria	RPD Check	RL Check
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	Alkalinity, Total (as CaCO3)	230	190	10.0	19.0	30	OK	NA

Location	Analysis
G6M-07-02X	E353.2

Field ID - Primary/Field Dup	Lab ID - Primary/Field Dup	Analyte	Primary Result	FD Result	RL	RPD	RPD Criteria	RPD Check	RL Check
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	Nitrate-Nitrite (as N)	0.120	0.140	0.100	15.4	30	NA	OK

Location	Analysis
G6M-07-02X	RSK175

Field ID - Primary/Field Dup	Lab ID - Primary/Field Dup	Analyte	Primary Result	FD Result	RL	RPD	RPD Criteria	RPD Check	RL Check
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	Ethane	4.60	5.00	1.10	8.33	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	Ethene	5.70	5.80	1.00	1.74	30	OK	NA
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	Methane	20000	21000	390	4.88	30	OK	NA

Location	Analysis
G6M-07-02X	SW6010C

Field ID - Primary/Field Dup	Lab ID - Primary/Field Dup	Analyte	Primary Result	FD Result	RL	RPD	RPD Criteria	RPD Check	RL Check
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	Iron (FLDFLT)	240000	240000	50.0	0.00	30	OK	NA
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	Manganese (FLDFLT)	4500	4600	10.0	2.20	30	OK	NA

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Field Duplicate Report By SDG

Former Fort Devens, Long Term Monitoring
Seres-Arcadis JV, Long Term Monitoring, AOC 50, Spring 2021
Field Duplicates for SDG: 6801988821

Location	Analysis
G6M-07-02X	SW6020A

Field ID - Primary/Field Dup	Lab ID - Primary/Field Dup	Analyte	Primary Result	FD Result	RL	RPD	RPD Criteria	RPD Check	RL Check
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	Arsenic (FLDFLT)	6.20	7.50	3.00	19.0	30	NA	OK

Location	Analysis
G6M-07-02X	SW8260B

Field ID - Primary/Field Dup	Lab ID - Primary/Field Dup	Analyte	Primary Result	FD Result	RL	RPD	RPD Criteria	RPD Check	RL Check
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	1,1,1,2-Tetrachloroethane	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	1,1,1-Trichloroethane	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	1,1,2,2-Tetrachloroethane	ND	ND	2.00	NA	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	1,1,2-Trichloroethane	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	1,1-Dichloroethane	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	1,1-Dichloroethene	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	1,1-Dichloropropene	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	1,2,3-Trichlorobenzene	ND	ND	5.00	NA	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	1,2,3-Trichloropropane	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	1,2,4-Trichlorobenzene	ND	ND	5.00	NA	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	1,2,4-Trimethylbenzene	1.20	1.30	1.00	8.00	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	1,2-Dibromo-3-chloropropane	ND	ND	5.00	NA	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	1,2-Dibromoethane (EDB)	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	1,2-Dichlorobenzene	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	1,2-Dichloroethane	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	1,2-Dichloroethene	14.0	13.0	2.00	7.41	30	OK	NA
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	1,2-Dichloropropane	ND	ND	2.00	NA	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	1,3,5-Trimethylbenzene	0.650	0.720	1.00	10.2	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	1,3-Dichlorobenzene	ND	ND	1.00	NA	30	NA	OK

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Field Duplicate Report By SDG
Former Fort Devens, Long Term Monitoring
Seres-Arcadis JV, Long Term Monitoring, AOC 50, Spring 2021
Field Duplicates for SDG: 6801988821

Location	Analysis
G6M-07-02X	SW8260B

Field ID - Primary/Field Dup	Lab ID - Primary/Field Dup	Analyte	Primary Result	FD Result	RL	RPD	RPD Criteria	RPD Check	RL Check
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	1,3-Dichloropropane	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	1,4-Dichlorobenzene	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	2,2-Dichloropropane	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	2-Butanone (MEK)	13.0	15.0	10.0	14.3	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	2-Chlorotoluene	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	2-Hexanone	ND	ND	10.0	NA	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	4-Chlorotoluene	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	4-Methyl-2-pentanone (MIBK)	ND	ND	10.0	NA	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	Acetone	14.0	12.0	25.0	15.4	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	Benzene	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	Bromobenzene	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	Bromochloromethane	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	Bromodichloromethane	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	Bromoform	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	Bromomethane	ND	ND	5.00	NA	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	Carbon disulfide	ND	ND	2.00	NA	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	Carbon tetrachloride	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	Chlorobenzene	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	Chloroethane	ND	ND	5.00	NA	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	Chloroform	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	Chloromethane	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	cis-1,2-Dichloroethene	14.0	13.0	1.00	7.41	30	OK	NA
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	cis-1,3-Dichloropropene	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	Dibromochloromethane	ND	ND	1.00	NA	30	NA	OK

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Field Duplicate Report By SDG

Former Fort Devens, Long Term Monitoring
Seres-Arcadis JV, Long Term Monitoring, AOC 50, Spring 2021
Field Duplicates for SDG: 6801988821

Location	Analysis
G6M-07-02X	SW8260B

Field ID - Primary/Field Dup	Lab ID - Primary/Field Dup	Analyte	Primary Result	FD Result	RL	RPD	RPD Criteria	RPD Check	RL Check
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	Dibromomethane	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	Dichlorodifluoromethane	ND	ND	2.00	NA	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	Ethylbenzene	0.640	0.660	1.00	3.08	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	Hexachlorobutadiene	ND	ND	5.00	NA	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	Isopropylbenzene (Cumene)	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	m,p-Xylene	1.10	1.10	1.00	0.00	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	Methyl tert-butyl ether (MTBE)	ND	ND	10.0	NA	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	Methylene chloride	ND	ND	5.00	NA	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	n-Butylbenzene	0.810	ND	1.00	NA	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	n-Propylbenzene	ND	0.700	1.00	NA	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	Naphthalene	3.50	4.10	5.00	15.8	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	o-Xylene	0.760	0.760	1.00	0.00	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	p-Cymene (p-Isopropyltoluene)	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	sec-Butylbenzene	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	Styrene	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	tert-Butylbenzene	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	Tetrachloroethene (PCE)	ND	ND	2.00	NA	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	Toluene	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	trans-1,2-Dichloroethene	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	trans-1,3-Dichloropropene	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	Trichloroethene (TCE)	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	Trichlorofluoromethane	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	Vinyl acetate	ND	ND	2.00	NA	30	NA	OK
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	Vinyl chloride	2.60	2.30	1.00	12.2	30	NA	OK

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RPD = Relative Percent Difference

RL Check = If either the primary sample or field duplicate result is less than 5 times the RL then the criteria used to determine if the field duplicate is outside QC limits is +/- RL for Water and +/- 2 times RL for Soil"

Field Duplicate Report By SDG
Former Fort Devens, Long Term Monitoring
Seres-Arcadis JV, Long Term Monitoring, AOC 50, Spring 2021
Field Duplicates for SDG: 6801988821

Location	Analysis
G6M-07-02X	SW8260B

Field ID - Primary/Field Dup	Lab ID - Primary/Field Dup	Analyte	Primary Result	FD Result	RL	RPD	RPD Criteria	RPD Check	RL Check
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	Xylenes, Total	1.90	1.90	2.00	0.00	30	NA	OK

Location	Analysis
G6M-07-02X	SW9034

Field ID - Primary/Field Dup	Lab ID - Primary/Field Dup	Analyte	Primary Result	FD Result	RL	RPD	RPD Criteria	RPD Check	RL Check
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	Sulfide	ND	ND	4.00	NA	30	NA	OK

Location	Analysis
G6M-07-02X	SW9056A

Field ID - Primary/Field Dup	Lab ID - Primary/Field Dup	Analyte	Primary Result	FD Result	RL	RPD	RPD Criteria	RPD Check	RL Check
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	Sulfate	ND	1.20	1.00	NA	30	NA	1.2

Location	Analysis
G6M-07-02X	SW9060A

Field ID - Primary/Field Dup	Lab ID - Primary/Field Dup	Analyte	Primary Result	FD Result	RL	RPD	RPD Criteria	RPD Check	RL Check
G6M-07-02X-SPR21 / AOC50-DUP01-SPR21	680-198882-7 / 680-198882-8	Total Organic Carbon	260	250	6.00	3.92	30	OK	NA

FD = Field Duplicate
RL = Reporting Limit
RPD = Relative Percent Difference

RL Check = If either the primary sample or field duplicate result is less than 5 times the RL then the criteria used to determine if the field duplicate is outside QC limits is +/- RL for Water and +/- 2 times RL for Soil"

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

ARCADIS U.S., Inc.
3109 West Martin Luther King Jr. Blvd, Suite 350
Tampa, FL 33607
ATTN: Mr. Nathan Mullens
nrmullens@seres-es.com

June 28, 2021

SUBJECT: Fort Devens, Data Validation

Dear Mr. Mullens,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on June 14, 2021. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #51379:

SDG #	Fraction
680-198996-1	Volatiles, Metals, VPH, Methane, Ethane, & Ethene, Wet Chemistry
680-199075-1	
680-199079-1/SO2954	
680-199137-2	
680-199223-1	
680-199325-1	

The data validation was performed under Stage 2B guidelines. The analyses were validated using the following documents and variances, as applicable to each method:

- Quality Assurance Project Plan, Long Term Monitoring Program, Former Fort Devens, 2020
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist
pgeng@lab-data.com

239 pages-ADV

Attachment 1

Stage 2B EQUIS EDD

LDC# 51379 (Arcadis - Millersville, MD / Fort Devens)

LDC	SDG#	DATE REC'D	(2) DATE DUE	VOA (8260B)		As,Mn (6010C/ 6020A)		3 D.Met. (6010C/ 6020A)		VPH (MADEP -VPH		Methane Ethane Ethene		Alk (2320B)		DOC (9060A)		Cl (9056A)		NO_3 /NO_2-N (353.2)		SO_4 (9056A)		S= (9034)		TOC (9060A)											
Matrix: Water/Soil				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	680-198996-1	06/14/21	06/28/21	4	0	-	-	3	0	-	-	2	0	2	0	-	-	-	-	2	0	2	0	2	0	2	0										
B	680-199075-1	06/14/21	06/28/21	-	-	-	-	5	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-										
C	680-199079-1/SO2954	06/14/21	06/28/21	4	0	3	0	-	-	3	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-										
D	680-199137-2	06/14/21	06/28/21	-	-	-	-	6	0	-	-	-	-	6	0	6	0	6	0	-	-	6	0	-	-	-	-										
E	680-199223-1	06/14/21	06/28/21	-	-	-	-	20	0	-	-	-	-	20	0	20	0	20	0	-	-	20	0	-	-	-	-										
F	680-199325-1	06/14/21	06/28/21	-	-	-	-	7	0	-	-	-	-	7	0	7	0	7	0	-	-	7	0	-	-	-	-										
Total	T/PG			8	0	3	0	41	0	3	0	2	0	35	0	33	0	33	0	2	0	35	0	2	0	2	0	0	0	0	0	0	0	0	0	0	199

Shaded cells indicate Stage 4 validation (all other cells are Stage 2B validation). These sample counts do not include MS/MSD, and DUPs

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Data Validation Report for 6801989961

Facility:	Former Fort Devens, Long Term Monitoring
Event:	Seres-Arcadis JV, Long Term Monitoring, AOC 50, Spring 2021
SDG:	6801989961
Guidance Document:	Quality Assurance Project Plan, Long Term Monitoring Program, Former Fort Devens, 2020
Prime Contractor:	Seres-Arcadis JV
Project Manager:	Jennifer Singer
Contract Laboratory(ies):	Eurofins Environment Testing TestAmerica, Arvada, CO
Data Review Contractor:	Laboratory Data Consultants, Inc.
Data Review Level:	2B
Primary Data Reviewer:	Kevin Kha, Environmental Scientist
Second Reviewer:	Pei Geng, Senior Scientist
Date Submitted:	June 25, 2021

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	A2320B	E353.2	RSK175	SW6010C - Dissolved	SW6020A - Dissolved	SW8260B	SW9034	SW9056A	SW9060A
AOC50-TB01-SPR21	680-198996-4	Water	Trip Blank/TB						X			
G6M-04-09X-SPR21	680-198996-1	Water	Field Sample/N	X	X	X	X	X	X	X	X	X
G6M-13-02X-SPR21	680-198996-2	Water	Field Sample/N	X	X	X	X	X	X	X	X	X
XSA-12-96X-SPR21	680-198996-3	Water	Field Sample/N				X	X	X			

This report assesses the analytical data quality associated with the analyses listed on the preceding cover page at 2B data validation level. This assessment has been made through a combination of automated data review (ADR) and supplemental manual review, the details of which are described below. The approach taken in the review of this data set is consistent with the requirements contained in the Quality Assurance Project Plan, Long Term Monitoring Program, Former Fort Devens, 2020 and the additional guidance documents incorporated by reference to the extent possible. Where definitive guidance is not provided, results have been evaluated in a conservative manner using professional judgment.

Sample collection was managed and directed by Seres-Arcadis JV; analyses were performed by Eurofins Environment Testing TestAmerica, Arvada, CO and were reported under sample delivery group (SDG) 6801989961. Data have been evaluated electronically based on electronic data deliverables (EDDs) provided by the laboratory, and hard copy data summary forms have also been reviewed during this effort and compared to the automated review output by the reviewers whose signatures appear on the following page. Findings based on the automated data submission and manual data verification processes are detailed in the ADR narrative and throughout this report.

All quality control (QC) elements associated with this SDG have been reviewed by a project chemist in accordance with the requirements defined for the project. This review is documented in the attached Data Review Checklists. The QC elements listed below were supported by the electronic deliverable and were evaluated using ADR processes.

- Blank - Negative
- Calibration Blank
- Calibration Blank - Negative
- Continuing Calibration Verification
- Interference Check Sample A
- Interference Check Sample A - Negative
- Interference Check Sample AB
- Lab Blank
- Lab Replicate RPD
- LCS Recovery
- LCS RPD
- MS Recovery
- MS RPD
- Prep Hold Time
- Surrogate
- Test Hold Time
- Trip Blank

Results of the ADR process were subsequently reviewed and updated as applicable by the data review chemists identified on the signature page. Quality control elements that were not included in the electronic deliverable were reviewed manually and findings are documented within this report. Summaries of findings and associated qualified results are documented throughout this report.

A total of 3 results (1.01%) out of the 297 results (sample and field QC samples) reported are qualified based on review and 0 results (0.00%) have been rejected or deemed a serious deficiency (X qualifier). Trace values, defined as results that are qualified as estimated because they fall between the detection limit and the reporting limit/limit of quantitation, are not counted as qualified results in the above count. The qualified results are detailed throughout this report and discussed in the narrative below, where appropriate.

Narrative Comments

Analytical Method	Data Reviewer Comment
A2320B	No additional comments; see Checklist for detail.
E353.2	No additional comments; see Checklist for detail.
RSK175	No additional comments; see Checklist for detail.
SW6010C	No additional comments; see Checklist for detail.
SW6020A	No additional comments; see Checklist for detail.
SW8260B	No additional comments; see Checklist for detail.
SW9034	No additional comments; see Checklist for detail.
SW9056A	No additional comments; see Checklist for detail.
SW9060A	No additional comments; see Checklist for detail.

June 25, 2021

Reviewed by Kevin Kha, Environmental Scientist, Laboratory Data Consultants, Inc.

As the First Reviewer, I certify that I have performed a data review process in accordance with the requirements of the project guidance document, and have compared the electronic data to the laboratory's hard copy report and have verified the consistency of the reported sample results and method quality control data between the two deliverables.

Reviewed by Pei Geng, Senior Scientist, Laboratory Data Consultants, Inc.

June 28, 2021

As the Second Reviewer, I certify that I have performed a quality assurance review of the report generated by the First Reviewer.

Quality Control Outliers for test method SW8260B, Continuing Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCVIS6806702082 (CV)/ CCVIS6806702082	1,2,3-Trichlorobenzene	67.20	80 - 120	80 - 120	percent	J/UJ	V2	
CCVIS6806702082 (CV)/ CCVIS6806702082	Naphthalene	67.80	80 - 120	80 - 120	percent	J/UJ	V2	
CCVIS6806702503 (CV)/ CCVIS6806702503	Chloroethane	129.2	80 - 120	80 - 120	percent	J/None	V2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Continuing Calibration Verification for SW8260B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
AOC50-TB01-SPR21	TB	1,2,3-Trichlorobenzene	5.00	5.00 U Q	5.00 UJ		ug/l	V2
AOC50-TB01-SPR21	TB	Naphthalene	5.00	5.00 U Q	5.00 UJ		ug/l	V2
XSA-12-96X-SPR21	N	Chloroethane	5.00	2.50 J Q	2.50 J	+	ug/l	TR/V2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260B, Initial Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
ICV 680-664341/15 (IV)/ 680-198996-4	Chloromethane	121.8	80 - 120	80 - 120	percent	J/None	V1	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW8260B, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
MB6806702088 (LB)/ MB6806702088	Acetone	11.90	< 7	< 25	ug/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW8260B, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
LCS6806702504 (BS)/ LCS6806702504	Bromomethane	151.8	53 - 141	10 - 141	percent	J/None	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW9034, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
G6M-13-02X-SPR21 (MS)/ 680-198996-2	Sulfide	155.4	75 - 125	10 - 125	percent	J/None	M	
G6M-13-02X-SPR21 (SD)/ 680-198996-2	Sulfide	155.4	75 - 125	10 - 125	percent	J/None	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Table of All Qualified Results

Test Method: E353.2		**Extraction Method: NONE**						
FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
G6M-04-09X-SPR21 680-198996-1	N	Nitrate-Nitrite (as N)	0.100	0.0710 J	0.0710 J		mg/l	TR
G6M-13-02X-SPR21 680-198996-2	N	Nitrate-Nitrite (as N)	0.100	0.0200 J	0.0200 J		mg/l	TR

Test Method: SW6020A		**Extraction Method: FLDFLT**						
FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
XSA-12-96X-SPR21 680-198996-3	N	Arsenic	3.00	1.80 J	1.80 J		ug/l	TR

Test Method: SW8260B		**Extraction Method: SW5030B**						
FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
AOC50-TB01-SPR21 680-198996-4	TB	1,2,3-Trichlorobenzene	5.00	5.00 U Q	5.00 UJ		ug/l	V2
AOC50-TB01-SPR21 680-198996-4	TB	Naphthalene	5.00	5.00 U Q	5.00 UJ		ug/l	V2
G6M-04-09X-SPR21 680-198996-1	N	Isopropylbenzene (Cumene)	1.00	0.380 J	0.380 J		ug/l	TR
G6M-04-09X-SPR21 680-198996-1	N	m,p-Xylene	1.00	0.540 J	0.540 J		ug/l	TR
G6M-04-09X-SPR21 680-198996-1	N	o-Xylene	1.00	0.280 J M	0.280 J		ug/l	TR
G6M-04-09X-SPR21 680-198996-1	N	Xylenes, Total	2.00	0.820 J	0.820 J		ug/l	TR
G6M-13-02X-SPR21 680-198996-2	N	trans-1,2-Dichloroethene	1.00	0.730 J	0.730 J		ug/l	TR
XSA-12-96X-SPR21 680-198996-3	N	Chloroethane	5.00	2.50 J Q	2.50 J	+	ug/l	TR/V2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Table of Results with Modified Qualifiers

Modified Qualifiers for test method RSK175

FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
G6M-04-09X-SPR21 680-198996-1	N	Methane	390	38000	38000 J	38000	
G6M-13-02X-SPR21 680-198996-2	N	Methane	390	13000	13000 J	13000	

Modified Qualifiers for test method SW8260B

FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
G6M-04-09X-SPR21 680-198996-1	N	Vinyl acetate	2.00	2.00 U	2.00 UJ	2.00 U	
G6M-13-02X-SPR21 680-198996-2	N	Vinyl acetate	2.00	2.00 U	2.00 UJ	2.00 UJ	
XSA-12-96X-SPR21 680-198996-3	N	Chloroethane	5.00	2.50 J Q	2.50 J	2.50 J	TR/V2
XSA-12-96X-SPR21 680-198996-3	N	Vinyl acetate	2.00	2.00 U	2.00 UJ	2.00 U	

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Reason Code Definitions

Code	Definition
C	LCS Recovery
L	Lab Blank
M	MS Recovery
TR	Trace Level Detect
V1	ICV
V2	CCV

Flag Code and Definitions

Flag	Definition
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.

Bias

-	The result may be biased low
+	The result may be biased high

Note - The bias field is a separate field; however, it is an integral part of the final flag (qualifier) on the sample result

Review Questions

Method: A2320B (Alkalinity by Titrimetric Method)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were field blanks (EBs or FBs) submitted with these samples?		•		No field blanks were submitted with these samples.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?		•		MS/MSD not performed.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?		•		No field duplicates were submitted with these samples.
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Review Questions

Method: E353.2 (Nitrogen, Nitrate-Nitrite (Colorimetric Automated, Cadmium Reduction))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were field blanks (EBs or FBs) submitted with these samples?		•		No field blanks were submitted with these samples.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	Only a LCS was performed.
Was a MS/MSD pair prepared with each batch?		•		MS/MSD not performed.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?		•		No field duplicates were submitted with these samples.
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Data Validation Report for 6801989961

Review Questions

Method: RSK175 (Dissolved Gas Analysis in Water Samples Using a GC Headspace Equilibrium Technique)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Were the required minimum levels of calibration standards used in the initial calibration?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Were surrogate recoveries within project acceptance limits?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were field blanks (EBs or FBs) submitted with these samples?		•		No field blanks were submitted with these samples.
Were target analytes reported in the field blank(s) less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?		•		MS/MSD not performed.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?		•		No field duplicates were submitted with these samples.
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Review Questions

Method: SW6010C (Trace Metals by Inductively Coupled Plasma/Atomic Emission Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were field blanks (EBs or FBs) submitted with these samples?		•		No field blanks were submitted with these samples.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	Only a LCS was performed.
Was a MS/MSD pair prepared with each batch?		•		MS/MSD not performed.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?		•		No field duplicates were submitted with these samples.
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Review Questions

Method: SW6020A (Trace Metals by Inductively Coupled Plasma/Mass Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were field blanks (EBs or FBs) submitted with these samples?		•		No field blanks were submitted with these samples.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	Only a LCS was performed.
Was a MS/MSD pair prepared with each batch?		•		MS/MSD not performed.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?		•		No field duplicates were submitted with these samples.
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Data Validation Report for 6801989961

Review Questions

Method: SW8260B (Volatile Organic Compounds by Capillary GC/MS)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Were the required minimum levels of calibration standards used in the initial calibration?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?		•		Although chloromethane ICV %D was above criteria, the associated sample results were non-detected, therefore no data were qualified.
Were CCVs run at the required frequency and within acceptance criteria?		•		Due to CCV %D above criteria, 1 chloroethane result was qualified as detected estimated (J) with a high bias (+). Due to CCV %D below criteria, 1 naphthalene and 1 1,2,3-trichlorobenzene results were qualified as non-detected estimated (UJ).
Were surrogate recoveries within project acceptance limits?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were field blanks (EBs or FBs) submitted with these samples?	•			
Were target analytes reported in the field blank(s) less than MDL?	•			
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?		•		Although bromomethane LCS %R was above criteria, the associated sample results were non-detected, therefore no data were qualified.
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?		•		MS/MSD not performed.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?		•		No field duplicates were submitted with these samples.
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported or as qualified during data validation.

Review Questions

Method: SW9034 (Titrimetric Procedure for Acid-Soluble and Acid-Insoluble Sulfides)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were field blanks (EBs or FBs) submitted with these samples?		•		No field blanks were submitted with these samples.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?		•		Although sulfide MS/MSD %R were above criteria, the associated sample results were non-detected, therefore no data were qualified.
Was the MS/MSD RPD within project acceptance limits?	•			
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?		•		No field duplicates were submitted with these samples.
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Review Questions

Method: SW9056A (Anion Chromatography)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were field blanks (EBs or FBs) submitted with these samples?		•		No field blanks were submitted with these samples.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?		•		MS/MSD not performed.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?		•		No field duplicates were submitted with these samples.
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Review Questions

Method: SW9060A (Total Organic Carbon)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were field blanks (EBs or FBs) submitted with these samples?		•		No field blanks were submitted with these samples.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	Only a LCS was performed.
Was a MS/MSD pair prepared with each batch?		•		MS/MSD not performed.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?		•		No field duplicates were submitted with these samples.
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

ARCADIS U.S., Inc.
3109 West Martin Luther King Jr. Blvd, Suite 350
Tampa, FL 33607
ATTN: Mr. Nathan Mullens
nrmullens@seres-es.com

July 13, 2021

SUBJECT: Fort Devens, Data Validation

Dear Mr. Mullens,

Enclosed are the final validation reports for the fractions listed below. This SDG was received on June 28, 2021. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #51482:

SDG #	Fraction
680-198842-1	Volatiles, Dissolved Metals, Methane, Ethane, & Ethene, Wet Chemistry

The data validation was performed under Stage 2B guidelines. The analyses were validated using the following documents and variances, as applicable to each method:

- Quality Assurance Project Plan, Long Term Monitoring Program, Former Fort Devens, 2020
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist
pgeng@lab-data.com

Stage 2B EQUIS EDD

LDC# 51482 (Arcadis - Millersville, MD / Fort Devens)

LDC	SDG#	DATE REC'D	(2) DATE DUE	VOA (8260B)		3 D.Met. (6010C/ 6020A)		Methane Ethane Ethene		Alk (2320B)		NO_3 /NO_2-N (353.2)		SO_4 (9056A)		S= (9034)		TOC (9060A)																	
Matrix: Water/Soil				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	680-198842-1	06/28/21	07/13/21	4	0	4	0	4	0	4	0	4	0	4	0	4	0	4	0																
Total	J/PG			4	0	4	0	4	0	4	0	4	0	4	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32

Shaded cells indicate Stage 4 validation (all other cells are Stage 2B validation). These sample counts do not include MS/MSD, and DUPs

Data Validation Report for 6801988421

Facility:	Former Fort Devens, Long Term Monitoring
Event:	Seres-Arcadis JV, Long Term Monitoring, AOC 50, Spring 2021
SDG:	6801988421
Guidance Document:	Quality Assurance Project Plan, Long Term Monitoring Program, Former Fort Devens, 2020
Prime Contractor:	Seres-Arcadis JV
Project Manager:	Jennifer Singer
Contract Laboratory(ies):	Eurofins Environment Testing TestAmerica, Arvada, CO
Data Review Contractor:	Laboratory Data Consultants, Inc.
Data Review Level:	2B
Primary Data Reviewer:	Kevin Kha, Environmental Scientist
Second Reviewer:	Pei Geng, Senior Scientist
Date Submitted:	July 12, 2021

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	A2320B	E353.2	RSK175	SW6010C - Dissolved	SW6020A - Dissolved	SW8260B	SW9034	SW9056A	SW9060A
G6M-04-03X-SPR21	680-198842-1	Water	Field Sample/N	X	X	X	X	X	X	X	X	X
G6M-13-01X-SPR21	680-198842-2	Water	Field Sample/N	X	X	X	X	X	X	X	X	X
G6M-13-05X-SPR21	680-198842-3	Water	Field Sample/N	X	X	X	X	X	X	X	X	X
G6M-97-05B-SPR21	680-198842-4	Water	Field Sample/N	X	X	X	X	X	X	X	X	X

This report assesses the analytical data quality associated with the analyses listed on the preceding cover page at 2B data validation level. This assessment has been made through a combination of automated data review (ADR) and supplemental manual review, the details of which are described below. The approach taken in the review of this data set is consistent with the requirements contained in the Quality Assurance Project Plan, Long Term Monitoring Program, Former Fort Devens, 2020 and the additional guidance documents incorporated by reference to the extent possible. Where definitive guidance is not provided, results have been evaluated in a conservative manner using professional judgment.

Sample collection was managed and directed by Seres-Arcadis JV; analyses were performed by Eurofins Environment Testing TestAmerica, Arvada, CO and were reported under sample delivery group (SDG) 6801988421. Data have been evaluated electronically based on electronic data deliverables (EDDs) provided by the laboratory, and hard copy data summary forms have also been reviewed during this effort and compared to the automated review output by the reviewers whose signatures appear on the following page. Findings based on the automated data submission and manual data verification processes are detailed in the ADR narrative and throughout this report.

All quality control (QC) elements associated with this SDG have been reviewed by a project chemist in accordance with the requirements defined for the project. This review is documented in the attached Data Review Checklists. The QC elements listed below were supported by the electronic deliverable and were evaluated using ADR processes.

- Blank - Negative
- Calibration Blank
- Calibration Blank - Negative
- Continuing Calibration Verification
- Interference Check Sample A
- Interference Check Sample A - Negative
- Interference Check Sample AB
- Lab Blank
- LCS Recovery
- LCS RPD
- MS Recovery
- MS RPD
- Prep Hold Time
- Surrogate
- Test Hold Time

Results of the ADR process were subsequently reviewed and updated as applicable by the data review chemists identified on the signature page. Quality control elements that were not included in the electronic deliverable were reviewed manually and findings are documented within this report. Summaries of findings and associated qualified results are documented throughout this report.

A total of 1 results (0.32%) out of the 316 results (sample and field QC samples) reported are qualified based on review and 0 results (0.00%) have been rejected or deemed a serious deficiency (X qualifier). Trace values, defined as results that are qualified as estimated because they fall between the detection limit and the reporting limit/limit of quantitation, are not counted as qualified results in the above count. The qualified results are detailed throughout this report and discussed in the narrative below, where appropriate.

Narrative Comments

Analytical Method	Data Reviewer Comment
A2320B	No additional comments; see Checklist for detail.
E353.2	No additional comments; see Checklist for detail.
RSK175	No additional comments; see Checklist for detail.
SW6010C	No additional comments; see Checklist for detail.
SW6020A	No additional comments; see Checklist for detail.
SW8260B	No additional comments; see Checklist for detail.
SW9034	No additional comments; see Checklist for detail.
SW9056A	No additional comments; see Checklist for detail.
SW9060A	No additional comments; see Checklist for detail.

July 12, 2021

Reviewed by Kevin Kha, Environmental Scientist, Laboratory Data Consultants, Inc.

As the First Reviewer, I certify that I have performed a data review process in accordance with the requirements of the project guidance document, and have compared the electronic data to the laboratory's hard copy report and have verified the consistency of the reported sample results and method quality control data between the two deliverables.

Reviewed by Pei Geng, Senior Scientist, Laboratory Data Consultants, Inc.

July 12, 2021

As the Second Reviewer, I certify that I have performed a quality assurance review of the report generated by the First Reviewer.

Quality Control Outliers for test method A2320B, Calibration Blank

The purpose of calibration blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in calibration blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCB28053650217 (CB)/ CCB28053650217	Alkalinity, Total (as CaCO3)	3.350	< 3.1	< 10	mg/l	U/None	B2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW6010C, Dissolved, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
G6M-04-03X-SPR21 (MS)/ 680-198842-1	Iron	-40.00	87 - 115	10 - 125	percent	J/X	M	Spike amount Insignificant
G6M-04-03X-SPR21 (MS)/ 680-198842-1	Manganese	22.50	90 - 114	10 - 125	percent	J/UJ	M	Spike amount Insignificant
G6M-04-03X-SPR21 (SD)/ 680-198842-1	Iron	20.00	87 - 115	10 - 125	percent	J/UJ	M	Spike amount Insignificant
G6M-04-03X-SPR21 (SD)/ 680-198842-1	Manganese	55.00	90 - 114	10 - 125	percent	J/UJ	M	Spike amount Insignificant

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW8260B, Continuing Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCVIS6806698184 (CV)/ CCVIS6806698184	Chloroethane	159.4	80 - 120	80 - 120	percent	J/None	V2	
CCVIS6806698184 (CV)/ CCVIS6806698184	Dichlorodifluoromethane	128.2	80 - 120	80 - 120	percent	J/None	V2	
CCVIS6806698184 (CV)/ CCVIS6806698184	Vinyl acetate	129.0	80 - 120	80 - 120	percent	J/None	V2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW8260B, Ending Continuing Calibration Verification

Compliance requirements for satisfactory closing continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCVC68066981826 (EV)/ CCVC68066981826	Chloroethane	162.2	50 - 150	50 - 150	percent	J/None	V5	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW8260B, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
LCS6806698185 (BS)/ LCS6806698185	Chloroethane	154.2	60 - 138	10 - 138	percent	J/None	C	
LCSD6806698186 (BD)/ LCSD6806698186	Chloroethane	158.2	60 - 138	10 - 138	percent	J/None	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW9060A, Calibration Blank

The purpose of calibration blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in calibration blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCB28053742040 (CB)/ CCB28053742040	Total Organic Carbon	0.3520	< 0.35	< 1	mg/l	U/None	B2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW9060A, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
MB28053742035 (LB)/ MB28053742035	Total Organic Carbon	0.3750	< 0.35	< 1	mg/l	U/None	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW9060A, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
G6M-04-03X-SPR21 (SD)/ 680-198842-1	Total Organic Carbon	87.60	88 - 112	10 - 112	percent	J/UJ	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for SW9060A

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
G6M-04-03X-SPR21	N	Total Organic Carbon	1.00	6.70 J	6.70 J	-	mg/l	M

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Table of All Qualified Results

Test Method: E353.2		Extraction Method: NONE						
FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
G6M-04-03X-SPR21 680-198842-1	N	Nitrate-Nitrite (as N)	0.100	0.0300 J	0.0300 J		mg/l	TR
G6M-13-05X-SPR21 680-198842-3	N	Nitrate-Nitrite (as N)	0.100	0.0280 J	0.0280 J		mg/l	TR
G6M-97-05B-SPR21 680-198842-4	N	Nitrate-Nitrite (as N)	0.100	0.0460 J	0.0460 J		mg/l	TR

Test Method: RSK175		Extraction Method: METHOD						
FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
G6M-04-03X-SPR21 680-198842-1	N	Ethane	1.10	0.730 J	0.730 J		ug/l	TR

Test Method: SW8260B		Extraction Method: SW5030B						
FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
G6M-13-05X-SPR21 680-198842-3	N	m,p-Xylene	1.00	0.580 J	0.580 J		ug/l	TR
G6M-13-05X-SPR21 680-198842-3	N	Xylenes, Total	2.00	0.580 J	0.580 J		ug/l	TR
G6M-97-05B-SPR21 680-198842-4	N	2-Hexanone	10.0	2.40 J	2.40 J		ug/l	TR
G6M-97-05B-SPR21 680-198842-4	N	Acetone	25.0	18.0 J	18.0 J		ug/l	TR
G6M-97-05B-SPR21 680-198842-4	N	Tetrachloroethene (PCE)	2.00	1.90 J	1.90 J		ug/l	TR

Test Method: SW9056A		Extraction Method: NONE						
FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
G6M-13-05X-SPR21 680-198842-3	N	Sulfate	1.00	0.590 J M	0.590 J		mg/l	TR

Test Method: SW9060A		Extraction Method: NONE						
FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
G6M-04-03X-SPR21 680-198842-1	N	Total Organic Carbon	1.00	6.70 J	6.70 J	-	mg/l	M

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Table of Results with Modified Qualifiers

Modified Qualifiers for test method RSK175

FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
G6M-04-03X-SPR21 680-198842-1	N	Methane	390	16000	16000 J	16000	
G6M-13-01X-SPR21 680-198842-2	N	Methane	390	9300	9300 J	9300	
G6M-13-05X-SPR21 680-198842-3	N	Methane	390	17000	17000 J	17000	
G6M-97-05B-SPR21 680-198842-4	N	Methane	390	27000	27000 J	27000	

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Reason Code Definitions

Code	Definition
B2	CCB
C	LCS Recovery
L	Lab Blank
M	MS Recovery
TR	Trace Level Detect
V2	CCV
V5	Ending Continuing Calibration Verification

Flag Code and Definitions

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

Bias

-	The result may be biased low
+	The result may be biased high

Note - The bias field is a separate field; however, it is an integral part of the final flag (qualifier) on the sample result

Review Questions

Method: A2320B (Alkalinity by Titrimetric Method)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		Although alkalinity was detected in a CCB, the associated sample results were non-detected or significantly greater than the concentration found in the blank, therefore no data were qualified.
Were field blanks (EBs or FBs) submitted with these samples?		•		No field blanks were submitted with these samples.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	Only a LCS was performed.
Was a MS/MSD pair prepared with each batch?		•		MS/MSD not performed.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?		•		No field duplicates were submitted with these samples.
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Review Questions

Method: E353.2 (Nitrogen, Nitrate-Nitrite (Colorimetric Automated, Cadmium Reduction))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were field blanks (EBs or FBs) submitted with these samples?		•		No field blanks were submitted with these samples.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	Only a LCS was performed.
Was a MS/MSD pair prepared with each batch?		•		MS/MSD not performed.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?		•		No field duplicates were submitted with these samples.
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Review Questions

Method: RSK175 (Dissolved Gas Analysis in Water Samples Using a GC Headspace Equilibrium Technique)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Were the required minimum levels of calibration standards used in the initial calibration?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Were surrogate recoveries within project acceptance limits?			•	Surrogates not required by the method.
Was a method blank prepared and analyzed with each batch?	•			
Were field blanks (EBs or FBs) submitted with these samples?		•		No field blanks were submitted with these samples.
Were target analytes reported in the field blank(s) less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?		•		MS/MSD not performed.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?		•		No field duplicates were submitted with these samples.
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Review Questions

Method: SW6010C (Trace Metals by Inductively Coupled Plasma/Atomic Emission Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were field blanks (EBs or FBs) submitted with these samples?		•		No field blanks were submitted with these samples.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	Only a LCS was performed.
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?		•		Although iron and manganese MS/MSD %R were not within criteria, the parent sample results were significantly greater than the spike amounts, therefore no qualification was necessary.
Was the MS/MSD RPD within project acceptance limits?	•			
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?		•		No field duplicates were submitted with these samples.
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Review Questions

Method: SW6020A (Trace Metals by Inductively Coupled Plasma/Mass Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were field blanks (EBs or FBs) submitted with these samples?		•		No field blanks were submitted with these samples.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	Only a LCS was performed.
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?	•			
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?		•		No field duplicates were submitted with these samples.
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Review Questions

Method: SW8260B (Volatile Organic Compounds by Capillary GC/MS)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Were the required minimum levels of calibration standards used in the initial calibration?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?		•		Although CCV %D for several VOCs were above criteria, the associated sample results were non-detected, therefore no data were qualified.
Were surrogate recoveries within project acceptance limits?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were field blanks (EBs or FBs) submitted with these samples?		•		No field blanks were submitted with these samples.
Were target analytes reported in the field blank(s) less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?		•		Although LCS/LCSD chloroethane %R was above criteria, the associated sample results were non-detected, therefore no data were qualified.
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?		•		MS/MSD not performed.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?		•		No field duplicates were submitted with these samples.
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Review Questions

Method: SW9034 (Titrimetric Procedure for Acid-Soluble and Acid-Insoluble Sulfides)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were field blanks (EBs or FBs) submitted with these samples?		•		No field blanks were submitted with these samples.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?		•		MS/MSD not performed.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?		•		No field duplicates were submitted with these samples.
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Review Questions

Method: SW9056A (Anion Chromatography)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were field blanks (EBs or FBs) submitted with these samples?		•		No field blanks were submitted with these samples.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?	•			
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?		•		No field duplicates were submitted with these samples.
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Review Questions

Method: SW9060A (Total Organic Carbon)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		Although TOC was detected in the method blank and a CCB, the associated sample results were non-detected or significantly greater than the concentrations found in the blanks, therefore no data were qualified.
Were field blanks (EBs or FBs) submitted with these samples?		•		No field blanks were submitted with these samples.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	Only a LCS was performed.
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?		•		Due to MSD %R below criteria, 1 TOC result was qualified as detected estimated (J) with a low bias (-).
Was the MS/MSD RPD within project acceptance limits?	•			
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?		•		No field duplicates were submitted with these samples.
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported or as qualified during data validation.

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

ARCADIS U.S., Inc.
3109 West Martin Luther King Jr. Blvd, Suite 350
Tampa, FL 33607
ATTN: Mr. Nathan Mullens
nrmullens@seres-es.com

January 3, 2022

SUBJECT: Fort Devens - Data Validation

Dear Mr. Mullens,

Enclosed are the final validation reports for the fractions listed below. This SDG was received on December 13, 2021. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #52899:

SDG #	Fraction
680-206032-1	Volatiles, Metals, Methane, Ethane, & Ethene, Wet Chemistry

The data validation was performed under Stage 2B guidelines. The analyses were validated using the following documents and variances, as applicable to each method:

- Quality Assurance Project Plan, Long Term Monitoring Program, Former Fort Devens, 2020
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014; update VI, July 2018

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist
pgeng@lab-data.com

76 pages-ADV

Attachment 1

Stage 2B EQUIS EDD

LDC# 52899 (Arcadis - Millersville, MD / Fort Devens)

LDC	SDG#	DATE REC'D	(2) DATE DUE	VOA (8260B)		3 D.Met. (6010C/ 6020A)		Methane Ethane Ethene		Alk (2320B)		NO_3 /NO_2-N (353.2)		SO_4 (9056A)		S= (9034)		TOC (9060A)																	
Matrix: Water/Soil				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	680-206032-1	12/13/21	12/28/21	11	0	8	0	5	0	5	0	5	0	5	0	5	0	5	0																
Total	T/PG			11	0	8	0	5	0	5	0	5	0	5	0	5	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	49

Shaded cells indicate Stage 4 validation (all other cells are Stage 2B validation). These sample counts do not include MS/MSD, and DUPs

V:\LOGIN\Arcadis\Fort Devens\52899ST.wpd

Data Validation Report for 6802060321

Facility:	Former Fort Devens, Long Term Monitoring
Event:	Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021
SDG:	6802060321
Guidance Document:	Quality Assurance Project Plan, Long Term Monitoring Program, Former Fort Devens, 2020
Prime Contractor:	Seres-Arcadis JV
Project Manager:	Jennifer Singer
Contract Laboratory(ies):	Eurofins Environment Testing TestAmerica, Arvada, CO | Eurofins Environment Testing TestAmerica, Savannah, GA
Data Review Contractor:	Laboratory Data Consultants, Inc.
Data Review Level:	2B
Primary Data Reviewer:	Kevin Kha, Environmental Scientist
Second Reviewer:	Pei Geng, Senior Scientist
Date Submitted:	December 30, 2021

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	A2320B	E353.2	RSK175	SW6010C - Dissolved	SW6020A - Dissolved	SW8260B	SW9034	SW9056A	SW9060A
AOC50-RB02-FAL21	680-206032-10	Water	Equipment Blank/EB	X	X	X	X	X	X	X	X	X
AOC50-TB01-FAL21	680-206032-11	Water	Trip Blank/TB						X			
G6M-02-01X-FAL21	680-206032-1	Water	Field Sample/N				X	X	X			
G6M-04-01X-FAL21	680-206032-2	Water	Field Sample/N				X	X	X			
G6M-04-03X-FAL21	680-206032-3	Water	Field Sample/N	X	X	X	X	X	X	X	X	X
G6M-04-10A-FAL21	680-206032-4	Water	Field Sample/N	X	X	X	X	X	X	X	X	X
G6M-04-10X-FAL21	680-206032-5	Water	Field Sample/N						X			
G6M-04-13X-FAL21	680-206032-6	Water	Field Sample/N						X			
G6M-97-05B-FAL21	680-206032-7	Water	Field Sample/N	X	X	X	X	X	X	X	X	X
XSA-12-95X-FAL21	680-206032-8	Water	Field Sample/N				X	X	X			
XSA-12-96X-FAL21	680-206032-9	Water	Field Sample/N	X	X	X	X	X	X	X	X	X

This report assesses the analytical data quality associated with the analyses listed on the preceding cover page at 2B data validation level. This assessment has been made through a combination of automated data review (ADR) and supplemental manual review, the details of which are described below. The approach taken in the review of this data set is consistent with the requirements contained in the Quality Assurance Project Plan, Long Term Monitoring Program, Former Fort Devens, 2020 and the additional guidance documents incorporated by reference to the extent possible. Where definitive guidance is not provided, results have been evaluated in a conservative manner using professional judgment.

Sample collection was managed and directed by Seres-Arcadis JV; analyses were performed by Eurofins Environment Testing TestAmerica, Arvada, CO | Eurofins Environment Testing TestAmerica, Savannah, GA and were reported under sample delivery group (SDG) 6802060321. Data have been evaluated electronically based on electronic data deliverables (EDDs) provided by the laboratory, and hard copy data summary forms have also been reviewed during this effort and compared to the automated review output by the reviewers whose signatures appear on the following page. Findings based on the automated data submission and manual data verification processes are detailed in the ADR narrative and throughout this report.

All quality control (QC) elements associated with this SDG have been reviewed by a project chemist in accordance with the requirements defined for the project. This review is documented in the attached Data Review Checklists. The QC elements listed below were supported by the electronic deliverable and were evaluated using ADR processes.

- Blank - Negative
- Calibration Blank
- Calibration Blank - Negative
- Continuing Calibration Verification
- Equipment Blank
- Interference Check Sample A
- Interference Check Sample A - Negative
- Interference Check Sample AB
- Lab Blank
- Lab Replicate RPD
- LCS Recovery
- LCS RPD
- MS Recovery
- MS RPD
- Prep Hold Time
- Surrogate
- Test Hold Time
- Trip Blank

Results of the ADR process were subsequently reviewed and updated as applicable by the data review chemists identified on the signature page. Quality control elements that were not included in the electronic deliverable were reviewed manually and findings are documented within this report. Summaries of findings and associated qualified results are documented throughout this report.

A total of 37 results (4.56%) out of the 812 results (sample and field QC samples) reported are qualified based on review and 0 results (0.00%) have been rejected or deemed a serious deficiency (X qualifier). Trace values, defined as results that are qualified as estimated because they fall between the detection limit and the reporting limit/limit of quantitation, are not counted as qualified results in the above count. The qualified results are detailed throughout this report and discussed in the narrative below, where appropriate.

Narrative Comments

Analytical Method	Data Reviewer Comment
RSK175	No additional comments; see Checklist for detail.
SW6010C	No additional comments; see Checklist for detail.
E353.2	No additional comments; see Checklist for detail.
SW9056A	No additional comments; see Checklist for detail.
SW8260B	No additional comments; see Checklist for detail.
A2320B	No additional comments; see Checklist for detail.
SW9034	No additional comments; see Checklist for detail.
SW6020A	No additional comments; see Checklist for detail.
SW9060A	No additional comments; see Checklist for detail.

December 30, 2021

Reviewed by Kevin Kha, Environmental Scientist, Laboratory Data Consultants, Inc.

As the First Reviewer, I certify that I have performed a data review process in accordance with the requirements of the project guidance document, and have compared the electronic data to the laboratory's hard copy report and have verified the consistency of the reported sample results and method quality control data between the two deliverables.

Reviewed by Pei Geng, Senior Scientist, Laboratory Data Consultants, Inc.

January 03, 2022

As the Second Reviewer, I certify that I have performed a quality assurance review of the report generated by the First Reviewer.

Quality Control Outliers for test method A2320B, Calibration Blank

The purpose of calibration blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in calibration blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCB280554753138 (CB)	Alkalinity, Total (as CaCO3)	4.620	< 3.1	< 10	mg/l	U/None*	B2	
CCB280554753153 (CB)	Alkalinity, Total (as CaCO3)	5.170	< 3.1	< 10	mg/l	U/None*	B2	
CCB280554753165 (CB)	Alkalinity, Total (as CaCO3)	4.160	< 3.1	< 10	mg/l	U/None*	B2	
CCB280554753173 (CB)	Alkalinity, Total (as CaCO3)	3.540	< 3.1	< 10	mg/l	U/None*	B2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

*Blank flags displayed in the above table identify qualification of the sample result when it is less than or equal to the LOQ/RL. Sample results above the LOQ will be qualified based on the validation type such as J+ at the sample result.

Qualified Results associated with the Calibration Blank for A2320B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
AOC50-RB02-FAL21 680-206032-10	EB	Alkalinity, Total (as CaCO3)	10.0	3.70 J	10.0 U		mg/l	B2/L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method A2320B, Equipment Blank

The purpose of equipment blanks is to determine the existence and magnitude of cross-contamination problems resulting from the process during sampling. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in equipment blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
AOC50-RB02-FAL21 (EB)	Alkalinity, Total (as CaCO3)	3.700	< 3.1	< 10	mg/l	U/None*	V	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

*Blank flags displayed in the above table identify qualification of the sample result when it is less than or equal to the LOQ/RL. Sample results above the LOQ will be qualified based on the validation type such as J+ at the sample result.

No results associated with this QC element required qualification.

Quality Control Outliers for test method A2320B, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
MB280554753141 (LB)	Alkalinity, Total (as CaCO3)	4.880	< 3.1	< 10	mg/l	U/None*	L	
MB280554753168 (LB)	Alkalinity, Total (as CaCO3)	4.770	< 3.1	< 10	mg/l	U/None*	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

*Blank flags displayed in the above table identify qualification of the sample result when it is less than or equal to the LOQ/RL. Sample results above the LOQ will be qualified based on the validation type such as J+ at the sample result.

Qualified Results associated with the Lab Blank for A2320B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
AOC50-RB02-FAL21 680-206032-10	EB	Alkalinity, Total (as CaCO3)	10.0	3.70 J	10.0 U		mg/l	B2/L

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method E353.2, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
G6M-04-10A-FAL21 (MS)	Nitrate-Nitrite (as N)	64.00	90 - 110	10 - 110	percent	J/UJ	M	
G6M-04-10A-FAL21 (SD)	Nitrate-Nitrite (as N)	62.00	90 - 110	10 - 110	percent	J/UJ	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for E353.2

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
G6M-04-10A-FAL21 680-206032-4	N	Nitrate-Nitrite (as N)	0.100	0.0500 U J	0.0500 UJ		mg/l	M

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Dissolved, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
G6M-04-10A-FAL21 (MS)	Iron	62.00	87 - 115	10 - 125	percent	J/UJ	M	Spike amount Insignificant
G6M-04-10A-FAL21 (SD)	Iron	68.00	87 - 115	10 - 125	percent	J/UJ	M	Spike amount Insignificant

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW6020A, Dissolved, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
G6M-04-10A-FAL21 (MS)	Arsenic	120.0	84 - 116	10 - 125	percent	J/None	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the MS Recovery for SW6020A, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
G6M-04-10A-FAL21 680-206032-4	N	Arsenic	3.00	320 J	320 J	+	ug/l	M

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260B, Continuing Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCVIS6806911862 (CV)	Chloroethane	180.0	80 - 120	80 - 120	percent	J/UJ	V2	
CCVIS6806911862 (CV)	Vinyl acetate	151.0	80 - 120	80 - 120	percent	J/UJ	V2	
CCVIS6806912132 (CV)	Bromomethane	127.0	80 - 120	80 - 120	percent	J/UJ	V2	
CCVIS6806912132 (CV)	Chloroethane	127.0	80 - 120	80 - 120	percent	J/UJ	V2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Continuing Calibration Verification for SW8260B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
AOC50-RB02-FAL21 680-206032-10	EB	Bromomethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2
AOC50-RB02-FAL21 680-206032-10	EB	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2
AOC50-RB02-FAL21 680-206032-10	EB	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V1/V2
AOC50-TB01-FAL21 680-206032-11	TB	Bromomethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2
AOC50-TB01-FAL21 680-206032-11	TB	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2
AOC50-TB01-FAL21 680-206032-11	TB	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V1/V2
G6M-02-01X-FAL21 680-206032-1	N	Bromomethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2
G6M-02-01X-FAL21 680-206032-1	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2
G6M-02-01X-FAL21 680-206032-1	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V1/V2
G6M-04-01X-FAL21 680-206032-2	N	Bromomethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2
G6M-04-01X-FAL21 680-206032-2	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2
G6M-04-01X-FAL21 680-206032-2	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V1/V2
G6M-04-03X-FAL21 680-206032-3	N	Bromomethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2
G6M-04-03X-FAL21 680-206032-3	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2
G6M-04-03X-FAL21 680-206032-3	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V1/V2
G6M-04-10A-FAL21 680-206032-4	N	Bromomethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2
G6M-04-10A-FAL21 680-206032-4	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2
G6M-04-10A-FAL21 680-206032-4	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V1/V2

Qualified Results associated with the Continuing Calibration Verification for SW8260B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
G6M-04-10X-FAL21 680-206032-5	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
G6M-04-13X-FAL21 680-206032-6	N	Vinyl acetate	2.00	2.00 U	2.00 UJ		ug/l	V1/V2
G6M-97-05B-FAL21 680-206032-7	N	Vinyl acetate	2.00	2.00 U	2.00 UJ		ug/l	V1/V2
XSA-12-95X-FAL21 680-206032-8	N	Vinyl acetate	2.00	2.00 U	2.00 UJ		ug/l	V1/V2
XSA-12-96X-FAL21 680-206032-9	N	Vinyl acetate	2.00	2.00 U	2.00 UJ		ug/l	V1/V2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260B, Continuing Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCVIS6806912132 (CV)	Chloromethane	120.1	80 - 120	80 - 120	percent	J/UJ	V2	
CCVIS6806912132 (CV)	Vinyl acetate	120.2	80 - 120	80 - 120	percent	J/UJ	V2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Continuing Calibration Verification for SW8260B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
AOC50-RB02-FAL21 680-206032-10	EB	Chloromethane	1.00	1.00 U Q	1.00 UJ		ug/l	V2
AOC50-RB02-FAL21 680-206032-10	EB	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V1/V2
AOC50-TB01-FAL21 680-206032-11	TB	Chloromethane	1.00	1.00 U Q	1.00 UJ		ug/l	V2
AOC50-TB01-FAL21 680-206032-11	TB	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V1/V2
G6M-02-01X-FAL21 680-206032-1	N	Chloromethane	1.00	1.00 U Q	1.00 UJ		ug/l	V2
G6M-02-01X-FAL21 680-206032-1	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V1/V2
G6M-04-01X-FAL21 680-206032-2	N	Chloromethane	1.00	1.00 U Q	1.00 UJ		ug/l	V2
G6M-04-01X-FAL21 680-206032-2	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V1/V2
G6M-04-03X-FAL21 680-206032-3	N	Chloromethane	1.00	1.00 U Q	1.00 UJ		ug/l	V2
G6M-04-03X-FAL21 680-206032-3	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V1/V2
G6M-04-10A-FAL21 680-206032-4	N	Chloromethane	1.00	1.00 U Q	1.00 UJ		ug/l	V2
G6M-04-10A-FAL21 680-206032-4	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V1/V2
G6M-04-13X-FAL21 680-206032-6	N	Chloromethane	1.00	1.00 U	1.00 UJ		ug/l	V2
G6M-04-13X-FAL21 680-206032-6	N	Vinyl acetate	2.00	2.00 U	2.00 UJ		ug/l	V1/V2
G6M-97-05B-FAL21 680-206032-7	N	Chloromethane	1.00	1.00 U	1.00 UJ		ug/l	V2
G6M-97-05B-FAL21 680-206032-7	N	Vinyl acetate	2.00	2.00 U	2.00 UJ		ug/l	V1/V2
XSA-12-95X-FAL21 680-206032-8	N	Chloromethane	1.00	1.00 U	1.00 UJ		ug/l	V2
XSA-12-95X-FAL21 680-206032-8	N	Vinyl acetate	2.00	2.00 U	2.00 UJ		ug/l	V1/V2
XSA-12-96X-FAL21 680-206032-9	N	Chloromethane	1.00	1.00 U	1.00 UJ		ug/l	V2

Qualified Results associated with the Continuing Calibration Verification for SW8260B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
XSA-12-96X-FAL21 680-206032-9	N	Vinyl acetate	2.00	2.00 U	2.00 UJ		ug/l	V1/V2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260B, Ending Continuing Calibration Verification

Compliance requirements for satisfactory closing continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCVC68069118632 (EV)	Chloroethane	171.0	50 - 150	50 - 150	percent	J/UJ	V5	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Ending Continuing Calibration Verification for SW8260B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
G6M-04-10X-FAL21 680-206032-5	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260B, Initial Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
ICV 680-690817/16 (IV)	Vinyl acetate	71.50	80 - 120	80 - 120	percent	J/UJ	V1	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Initial Calibration Verification for SW8260B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
AOC50-RB02-FAL21 680-206032-10	EB	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V1/V2
AOC50-TB01-FAL21 680-206032-11	TB	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V1/V2
G6M-02-01X-FAL21 680-206032-1	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V1/V2
G6M-04-01X-FAL21 680-206032-2	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V1/V2
G6M-04-03X-FAL21 680-206032-3	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V1/V2
G6M-04-10A-FAL21 680-206032-4	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V1/V2
G6M-04-13X-FAL21 680-206032-6	N	Vinyl acetate	2.00	2.00 U	2.00 UJ		ug/l	V1/V2
G6M-97-05B-FAL21 680-206032-7	N	Vinyl acetate	2.00	2.00 U	2.00 UJ		ug/l	V1/V2
XSA-12-95X-FAL21 680-206032-8	N	Vinyl acetate	2.00	2.00 U	2.00 UJ		ug/l	V1/V2
XSA-12-96X-FAL21 680-206032-9	N	Vinyl acetate	2.00	2.00 U	2.00 UJ		ug/l	V1/V2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260B, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
LCSD6806911864 (BD)	Chloroethane	178.0	60 - 138	10 - 138	percent	J/None	C	
LCSD6806911864 (BD)	Vinyl acetate	154.0	54 - 146	10 - 146	percent	J/None	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW8260B, LCS RPD

The objective of laboratory control sample/laboratory control sample duplicate (LCS/LCSD) RPD analysis is to demonstrate acceptable method precision by the laboratory at the time of analysis. LCS/LCSD analyses are also performed to generate data that determines the long-term precision of the analytical method on various matrices. Non-homogenous samples can impact the apparent method precision. Summary forms were evaluated and compared to electronic data deliverables. Laboratory control sample/laboratory control sample duplicate RPD results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
LCSD6806914314 (BD)	Chloromethane	20.38	< 20	< 20	rpd	J/None	Z	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW8260B, Test Hold Time

Hold times are ascertained based on project requirements. Holding times were determined by comparing the chain of custody records with the dates of analysis found in the electronic data deliverable and laboratory summary forms. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
G6M-97-05B-FAL21 (N)		14.20	< 14	< 28	days	J/UJ	H1	Test Exceeds UWL
XSA-12-95X-FAL21 (N)		14.17	< 14	< 28	days	J/UJ	H1	Test Exceeds UWL
XSA-12-96X-FAL21 (N)		14.05	< 14	< 28	days	J/UJ	H1	Test Exceeds UWL

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW9060A, Equipment Blank

The purpose of equipment blanks is to determine the existence and magnitude of cross-contamination problems resulting from the process during sampling. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in equipment blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
AOC50-RB02-FAL21 (EB)	Total Organic Carbon	0.4900	< 0.35	< 1	mg/l	U/None*	V	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

*Blank flags displayed in the above table identify qualification of the sample result when it is less than or equal to the LOQ/RL. Sample results above the LOQ will be qualified based on the validation type such as J+ at the sample result.

Qualified Results associated with the Equipment Blank for SW9060A

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
XSA-12-96X-FAL21 680-206032-9	N	Total Organic Carbon	2.20	2.20	2.20 U		mg/l	V

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Table of All Qualified Results

Test Method: A2320B		Extraction Method: NONE						
FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
AOC50-RB02-FAL21 680-206032-10	EB	Alkalinity, Total (as CaCO3)	10.0	3.70 J	10.0 U		mg/l	B2/L

Test Method: E353.2		Extraction Method: NONE						
FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
G6M-04-10A-FAL21 680-206032-4	N	Nitrate-Nitrite (as N)	0.100	0.0500 U J	0.0500 UJ		mg/l	M

Test Method: SW6020A		Extraction Method: FLDFLT						
FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
G6M-04-10A-FAL21 680-206032-4	N	Arsenic	3.00	320 J	320 J	+	ug/l	M

Test Method: SW8260B		Extraction Method: SW5030B						
FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
AOC50-RB02-FAL21 680-206032-10	EB	Bromomethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2
AOC50-RB02-FAL21 680-206032-10	EB	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2
AOC50-RB02-FAL21 680-206032-10	EB	Chloromethane	1.00	1.00 U Q	1.00 UJ		ug/l	V2
AOC50-RB02-FAL21 680-206032-10	EB	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V1/V2
AOC50-TB01-FAL21 680-206032-11	TB	Bromomethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2
AOC50-TB01-FAL21 680-206032-11	TB	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2
AOC50-TB01-FAL21 680-206032-11	TB	Chloromethane	1.00	1.00 U Q	1.00 UJ		ug/l	V2
AOC50-TB01-FAL21 680-206032-11	TB	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V1/V2
G6M-02-01X-FAL21 680-206032-1	N	Bromomethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2
G6M-02-01X-FAL21 680-206032-1	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2
G6M-02-01X-FAL21 680-206032-1	N	Chloromethane	1.00	1.00 U Q	1.00 UJ		ug/l	V2
G6M-02-01X-FAL21 680-206032-1	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V1/V2
G6M-04-01X-FAL21 680-206032-2	N	Bromomethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2
G6M-04-01X-FAL21 680-206032-2	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2
G6M-04-01X-FAL21 680-206032-2	N	Chloromethane	1.00	1.00 U Q	1.00 UJ		ug/l	V2
G6M-04-01X-FAL21 680-206032-2	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V1/V2
G6M-04-03X-FAL21 680-206032-3	N	Bromomethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2

Table of All Qualified Results

Test Method: SW8260B		Extraction Method: SW5030B						
FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
G6M-04-03X-FAL21 680-206032-3	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2
G6M-04-03X-FAL21 680-206032-3	N	Chloromethane	1.00	1.00 U Q	1.00 UJ		ug/l	V2
G6M-04-03X-FAL21 680-206032-3	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V1/V2
G6M-04-10A-FAL21 680-206032-4	N	Bromomethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2
G6M-04-10A-FAL21 680-206032-4	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2
G6M-04-10A-FAL21 680-206032-4	N	Chloromethane	1.00	1.00 U Q	1.00 UJ		ug/l	V2
G6M-04-10A-FAL21 680-206032-4	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V1/V2
G6M-04-10X-FAL21 680-206032-5	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
G6M-04-13X-FAL21 680-206032-6	N	Chloromethane	1.00	1.00 U	1.00 UJ		ug/l	V2
G6M-04-13X-FAL21 680-206032-6	N	Vinyl acetate	2.00	2.00 U	2.00 UJ		ug/l	V1/V2
G6M-97-05B-FAL21 680-206032-7	N	Chloromethane	1.00	1.00 U	1.00 UJ		ug/l	V2
G6M-97-05B-FAL21 680-206032-7	N	Vinyl acetate	2.00	2.00 U	2.00 UJ		ug/l	V1/V2
XSA-12-95X-FAL21 680-206032-8	N	Chloromethane	1.00	1.00 U	1.00 UJ		ug/l	V2
XSA-12-95X-FAL21 680-206032-8	N	Vinyl acetate	2.00	2.00 U	2.00 UJ		ug/l	V1/V2
XSA-12-96X-FAL21 680-206032-9	N	Chloromethane	1.00	1.00 U	1.00 UJ		ug/l	V2
XSA-12-96X-FAL21 680-206032-9	N	Vinyl acetate	2.00	2.00 U	2.00 UJ		ug/l	V1/V2

Test Method: SW9060A		Extraction Method: NONE						
FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
XSA-12-96X-FAL21 680-206032-9	N	Total Organic Carbon	2.20	2.20	2.20 U		mg/l	V

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Table of Results with Modified Qualifiers

Modified Qualifiers for test method RSK175

FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
G6M-04-03X-FAL21 680-206032-3	N	Methane	390	20000	20000 J	20000	
G6M-04-10A-FAL21 680-206032-4	N	Methane	390	27000	27000 J	27000	
G6M-97-05B-FAL21 680-206032-7	N	Methane	390	28000	28000 J	28000	
XSA-12-96X-FAL21 680-206032-9	N	Methane	1.20	25.0	25.0 J	25.0	

Modified Qualifiers for test method SW6020A, Dissolved

FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
G6M-04-10A-FAL21 680-206032-4	N	Arsenic	3.00	320 J	320	320 J	M

Modified Qualifiers for test method SW8260B

FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
AOC50-RB02-FAL21 680-206032-10	EB	Bromomethane	5.00	5.00 U Q	5.00 U	5.00 UJ	V2
AOC50-RB02-FAL21 680-206032-10	EB	Chloroethane	5.00	5.00 U Q	5.00 U	5.00 UJ	V2
AOC50-RB02-FAL21 680-206032-10	EB	Chloromethane	1.00	1.00 U Q	1.00 U	1.00 UJ	V2
AOC50-RB02-FAL21 680-206032-10	EB	Vinyl acetate	2.00	2.00 U Q	2.00 U	2.00 UJ	V1/V2
AOC50-TB01-FAL21 680-206032-11	TB	Bromomethane	5.00	5.00 U Q	5.00 U	5.00 UJ	V2
AOC50-TB01-FAL21 680-206032-11	TB	Chloroethane	5.00	5.00 U Q	5.00 U	5.00 UJ	V2
AOC50-TB01-FAL21 680-206032-11	TB	Chloromethane	1.00	1.00 U Q	1.00 U	1.00 UJ	V2
AOC50-TB01-FAL21 680-206032-11	TB	Vinyl acetate	2.00	2.00 U Q	2.00 U	2.00 UJ	V1/V2
G6M-02-01X-FAL21 680-206032-1	N	Bromomethane	5.00	5.00 U Q	5.00 U	5.00 UJ	V2
G6M-02-01X-FAL21 680-206032-1	N	Chloroethane	5.00	5.00 U Q	5.00 U	5.00 UJ	V2
G6M-02-01X-FAL21 680-206032-1	N	Chloromethane	1.00	1.00 U Q	1.00 U	1.00 UJ	V2
G6M-02-01X-FAL21 680-206032-1	N	Vinyl acetate	2.00	2.00 U Q	2.00 U	2.00 UJ	V1/V2
G6M-04-01X-FAL21 680-206032-2	N	Bromomethane	5.00	5.00 U Q	5.00 U	5.00 UJ	V2
G6M-04-01X-FAL21 680-206032-2	N	Chloroethane	5.00	5.00 U Q	5.00 U	5.00 UJ	V2
G6M-04-01X-FAL21 680-206032-2	N	Chloromethane	1.00	1.00 U Q	1.00 U	1.00 UJ	V2
G6M-04-01X-FAL21 680-206032-2	N	Vinyl acetate	2.00	2.00 U Q	2.00 U	2.00 UJ	V1/V2
G6M-04-03X-FAL21 680-206032-3	N	Bromomethane	5.00	5.00 U Q	5.00 U	5.00 UJ	V2

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW8260B

FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
G6M-04-03X-FAL21 680-206032-3	N	Chloroethane	5.00	5.00 U Q	5.00 U	5.00 UJ	V2
G6M-04-03X-FAL21 680-206032-3	N	Chloromethane	1.00	1.00 U Q	1.00 U	1.00 UJ	V2
G6M-04-03X-FAL21 680-206032-3	N	Vinyl acetate	2.00	2.00 U Q	2.00 U	2.00 UJ	V1/V2
G6M-04-10A-FAL21 680-206032-4	N	Bromomethane	5.00	5.00 U Q	5.00 U	5.00 UJ	V2
G6M-04-10A-FAL21 680-206032-4	N	Chloroethane	5.00	5.00 U Q	5.00 U	5.00 UJ	V2
G6M-04-10A-FAL21 680-206032-4	N	Chloromethane	1.00	1.00 U Q	1.00 U	1.00 UJ	V2
G6M-04-10A-FAL21 680-206032-4	N	Vinyl acetate	2.00	2.00 U Q	2.00 U	2.00 UJ	V1/V2
G6M-04-10X-FAL21 680-206032-5	N	Chloroethane	5.00	5.00 U Q	5.00 U	5.00 UJ	V2/V5
G6M-04-13X-FAL21 680-206032-6	N	Chloromethane	1.00	1.00 U	1.00 U	1.00 UJ	V2
G6M-04-13X-FAL21 680-206032-6	N	Vinyl acetate	2.00	2.00 U	2.00 U	2.00 UJ	V1/V2
G6M-97-05B-FAL21 680-206032-7	N	1,1,1,2-Tetrachloroethane	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-97-05B-FAL21 680-206032-7	N	1,1,1-Trichloroethane	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-97-05B-FAL21 680-206032-7	N	1,1,2,2-Tetrachloroethane	2.00	2.00 U	2.00 UJ	2.00 U	
G6M-97-05B-FAL21 680-206032-7	N	1,1,2-Trichloroethane	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-97-05B-FAL21 680-206032-7	N	1,1-Dichloroethane	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-97-05B-FAL21 680-206032-7	N	1,1-Dichloroethene	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-97-05B-FAL21 680-206032-7	N	1,1-Dichloropropene	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-97-05B-FAL21 680-206032-7	N	1,2,3-Trichlorobenzene	5.00	5.00 U	5.00 UJ	5.00 U	
G6M-97-05B-FAL21 680-206032-7	N	1,2,3-Trichloropropane	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-97-05B-FAL21 680-206032-7	N	1,2,4-Trichlorobenzene	5.00	5.00 U	5.00 UJ	5.00 U	
G6M-97-05B-FAL21 680-206032-7	N	1,2,4-Trimethylbenzene	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-97-05B-FAL21 680-206032-7	N	1,2-Dibromo-3-chloropropane	5.00	4.00 U	4.00 UJ	4.00 U	
G6M-97-05B-FAL21 680-206032-7	N	1,2-Dibromoethane (EDB)	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-97-05B-FAL21 680-206032-7	N	1,2-Dichlorobenzene	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-97-05B-FAL21 680-206032-7	N	1,2-Dichloroethane	1.00	1.00 U M	1.00 UJ	1.00 U	
G6M-97-05B-FAL21 680-206032-7	N	1,2-Dichloroethene	2.00	21.0	21.0 J	21.0	
G6M-97-05B-FAL21 680-206032-7	N	1,2-Dichloropropane	2.00	2.00 U	2.00 UJ	2.00 U	

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW8260B

FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
G6M-97-05B-FAL21 680-206032-7	N	1,3,5-Trimethylbenzene	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-97-05B-FAL21 680-206032-7	N	1,3-Dichlorobenzene	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-97-05B-FAL21 680-206032-7	N	1,3-Dichloropropane	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-97-05B-FAL21 680-206032-7	N	1,4-Dichlorobenzene	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-97-05B-FAL21 680-206032-7	N	2,2-Dichloropropane	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-97-05B-FAL21 680-206032-7	N	2-Butanone (MEK)	10.0	31.0	31.0 J	31.0	
G6M-97-05B-FAL21 680-206032-7	N	2-Chlorotoluene	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-97-05B-FAL21 680-206032-7	N	2-Hexanone	10.0	13.0	13.0 J	13.0	
G6M-97-05B-FAL21 680-206032-7	N	4-Chlorotoluene	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-97-05B-FAL21 680-206032-7	N	4-Methyl-2-pentanone (MIBK)	10.0	5.00 U	5.00 UJ	5.00 U	
G6M-97-05B-FAL21 680-206032-7	N	Acetone	25.0	14.0 J	14.0 J	14.0 J	TR
G6M-97-05B-FAL21 680-206032-7	N	Benzene	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-97-05B-FAL21 680-206032-7	N	Bromobenzene	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-97-05B-FAL21 680-206032-7	N	Bromochloromethane	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-97-05B-FAL21 680-206032-7	N	Bromodichloromethane	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-97-05B-FAL21 680-206032-7	N	Bromoform	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-97-05B-FAL21 680-206032-7	N	Bromomethane	5.00	5.00 U	5.00 UJ	5.00 U	
G6M-97-05B-FAL21 680-206032-7	N	Carbon disulfide	2.00	1.00 U	1.00 UJ	1.00 U	
G6M-97-05B-FAL21 680-206032-7	N	Carbon tetrachloride	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-97-05B-FAL21 680-206032-7	N	Chlorobenzene	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-97-05B-FAL21 680-206032-7	N	Chloroethane	5.00	5.00 U	5.00 UJ	5.00 U	
G6M-97-05B-FAL21 680-206032-7	N	Chloroform	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-97-05B-FAL21 680-206032-7	N	Chloromethane	1.00	1.00 U	1.00 UJ	1.00 UJ	V2
G6M-97-05B-FAL21 680-206032-7	N	cis-1,2-Dichloroethene	1.00	21.0	21.0 J	21.0	
G6M-97-05B-FAL21 680-206032-7	N	cis-1,3-Dichloropropene	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-97-05B-FAL21 680-206032-7	N	Dibromochloromethane	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-97-05B-FAL21 680-206032-7	N	Dibromomethane	1.00	1.00 U	1.00 UJ	1.00 U	

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW8260B

FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
G6M-97-05B-FAL21 680-206032-7	N	Dichlorodifluoromethane	2.00	2.00 U	2.00 UJ	2.00 U	
G6M-97-05B-FAL21 680-206032-7	N	Ethylbenzene	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-97-05B-FAL21 680-206032-7	N	Hexachlorobutadiene	5.00	5.00 U	5.00 UJ	5.00 U	
G6M-97-05B-FAL21 680-206032-7	N	Isopropylbenzene (Cumene)	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-97-05B-FAL21 680-206032-7	N	m,p-Xylene	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-97-05B-FAL21 680-206032-7	N	Methyl tert-butyl ether (MTBE)	10.0	1.00 U	1.00 UJ	1.00 U	
G6M-97-05B-FAL21 680-206032-7	N	Methylene chloride	5.00	5.00 U	5.00 UJ	5.00 U	
G6M-97-05B-FAL21 680-206032-7	N	Naphthalene	5.00	5.00 U	5.00 UJ	5.00 U	
G6M-97-05B-FAL21 680-206032-7	N	n-Butylbenzene	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-97-05B-FAL21 680-206032-7	N	n-Propylbenzene	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-97-05B-FAL21 680-206032-7	N	o-Xylene	1.00	0.500 U	0.500 UJ	0.500 U	
G6M-97-05B-FAL21 680-206032-7	N	p-Cymene (p-Isopropyltoluene)	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-97-05B-FAL21 680-206032-7	N	sec-Butylbenzene	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-97-05B-FAL21 680-206032-7	N	Styrene	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-97-05B-FAL21 680-206032-7	N	tert-Butylbenzene	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-97-05B-FAL21 680-206032-7	N	Tetrachloroethene (PCE)	2.00	2.00 U	2.00 UJ	2.00 U	
G6M-97-05B-FAL21 680-206032-7	N	Toluene	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-97-05B-FAL21 680-206032-7	N	trans-1,2-Dichloroethene	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-97-05B-FAL21 680-206032-7	N	trans-1,3-Dichloropropene	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-97-05B-FAL21 680-206032-7	N	Trichloroethene (TCE)	1.00	3.10	3.10 J	3.10	
G6M-97-05B-FAL21 680-206032-7	N	Trichlorofluoromethane	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-97-05B-FAL21 680-206032-7	N	Vinyl acetate	2.00	2.00 U	2.00 UJ	2.00 UJ	V1/V2
G6M-97-05B-FAL21 680-206032-7	N	Vinyl chloride	1.00	8.00	8.00 J	8.00	
G6M-97-05B-FAL21 680-206032-7	N	Xylenes, Total	2.00	2.00 U	2.00 UJ	2.00 U	
XSA-12-95X-FAL21 680-206032-8	N	1,1,1,2-Tetrachloroethane	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-95X-FAL21 680-206032-8	N	1,1,1-Trichloroethane	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-95X-FAL21 680-206032-8	N	1,1,2,2-Tetrachloroethane	2.00	2.00 U	2.00 UJ	2.00 U	

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW8260B							
FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
XSA-12-95X-FAL21 680-206032-8	N	1,1,2-Trichloroethane	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-95X-FAL21 680-206032-8	N	1,1-Dichloroethane	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-95X-FAL21 680-206032-8	N	1,1-Dichloroethene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-95X-FAL21 680-206032-8	N	1,1-Dichloropropene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-95X-FAL21 680-206032-8	N	1,2,3-Trichlorobenzene	5.00	5.00 U	5.00 UJ	5.00 U	
XSA-12-95X-FAL21 680-206032-8	N	1,2,3-Trichloropropane	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-95X-FAL21 680-206032-8	N	1,2,4-Trichlorobenzene	5.00	5.00 U	5.00 UJ	5.00 U	
XSA-12-95X-FAL21 680-206032-8	N	1,2,4-Trimethylbenzene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-95X-FAL21 680-206032-8	N	1,2-Dibromo-3-chloropropane	5.00	4.00 U	4.00 UJ	4.00 U	
XSA-12-95X-FAL21 680-206032-8	N	1,2-Dibromoethane (EDB)	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-95X-FAL21 680-206032-8	N	1,2-Dichlorobenzene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-95X-FAL21 680-206032-8	N	1,2-Dichloroethane	1.00	1.00 U M	1.00 UJ	1.00 U	
XSA-12-95X-FAL21 680-206032-8	N	1,2-Dichloroethene	2.00	6.00	6.00 J	6.00	
XSA-12-95X-FAL21 680-206032-8	N	1,2-Dichloropropane	2.00	2.00 U	2.00 UJ	2.00 U	
XSA-12-95X-FAL21 680-206032-8	N	1,3,5-Trimethylbenzene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-95X-FAL21 680-206032-8	N	1,3-Dichlorobenzene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-95X-FAL21 680-206032-8	N	1,3-Dichloropropane	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-95X-FAL21 680-206032-8	N	1,4-Dichlorobenzene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-95X-FAL21 680-206032-8	N	2,2-Dichloropropane	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-95X-FAL21 680-206032-8	N	2-Butanone (MEK)	10.0	10.0 U	10.0 UJ	10.0 U	
XSA-12-95X-FAL21 680-206032-8	N	2-Chlorotoluene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-95X-FAL21 680-206032-8	N	2-Hexanone	10.0	5.00 U	5.00 UJ	5.00 U	
XSA-12-95X-FAL21 680-206032-8	N	4-Chlorotoluene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-95X-FAL21 680-206032-8	N	4-Methyl-2-pentanone (MIBK)	10.0	5.00 U	5.00 UJ	5.00 U	
XSA-12-95X-FAL21 680-206032-8	N	Acetone	25.0	25.0 U	25.0 UJ	25.0 U	
XSA-12-95X-FAL21 680-206032-8	N	Benzene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-95X-FAL21 680-206032-8	N	Bromobenzene	1.00	1.00 U	1.00 UJ	1.00 U	

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW8260B

FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
XSA-12-95X-FAL21 680-206032-8	N	Bromochloromethane	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-95X-FAL21 680-206032-8	N	Bromodichloromethane	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-95X-FAL21 680-206032-8	N	Bromoform	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-95X-FAL21 680-206032-8	N	Bromomethane	5.00	5.00 U	5.00 UJ	5.00 U	
XSA-12-95X-FAL21 680-206032-8	N	Carbon disulfide	2.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-95X-FAL21 680-206032-8	N	Carbon tetrachloride	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-95X-FAL21 680-206032-8	N	Chlorobenzene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-95X-FAL21 680-206032-8	N	Chloroethane	5.00	5.00 U	5.00 UJ	5.00 U	
XSA-12-95X-FAL21 680-206032-8	N	Chloroform	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-95X-FAL21 680-206032-8	N	Chloromethane	1.00	1.00 U	1.00 UJ	1.00 UJ	V2
XSA-12-95X-FAL21 680-206032-8	N	cis-1,2-Dichloroethene	1.00	4.30	4.30 J	4.30	
XSA-12-95X-FAL21 680-206032-8	N	cis-1,3-Dichloropropene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-95X-FAL21 680-206032-8	N	Dibromochloromethane	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-95X-FAL21 680-206032-8	N	Dibromomethane	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-95X-FAL21 680-206032-8	N	Dichlorodifluoromethane	2.00	2.00 U	2.00 UJ	2.00 U	
XSA-12-95X-FAL21 680-206032-8	N	Ethylbenzene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-95X-FAL21 680-206032-8	N	Hexachlorobutadiene	5.00	5.00 U	5.00 UJ	5.00 U	
XSA-12-95X-FAL21 680-206032-8	N	Isopropylbenzene (Cumene)	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-95X-FAL21 680-206032-8	N	m,p-Xylene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-95X-FAL21 680-206032-8	N	Methyl tert-butyl ether (MTBE)	10.0	1.00 U	1.00 UJ	1.00 U	
XSA-12-95X-FAL21 680-206032-8	N	Methylene chloride	5.00	5.00 U	5.00 UJ	5.00 U	
XSA-12-95X-FAL21 680-206032-8	N	Naphthalene	5.00	5.00 U	5.00 UJ	5.00 U	
XSA-12-95X-FAL21 680-206032-8	N	n-Butylbenzene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-95X-FAL21 680-206032-8	N	n-Propylbenzene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-95X-FAL21 680-206032-8	N	o-Xylene	1.00	0.500 U	0.500 UJ	0.500 U	
XSA-12-95X-FAL21 680-206032-8	N	p-Cymene (p-Isopropyltoluene)	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-95X-FAL21 680-206032-8	N	sec-Butylbenzene	1.00	1.00 U	1.00 UJ	1.00 U	

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW8260B

FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
XSA-12-95X-FAL21 680-206032-8	N	Styrene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-95X-FAL21 680-206032-8	N	tert-Butylbenzene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-95X-FAL21 680-206032-8	N	Tetrachloroethene (PCE)	2.00	2.80	2.80 J	2.80	
XSA-12-95X-FAL21 680-206032-8	N	Toluene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-95X-FAL21 680-206032-8	N	trans-1,2-Dichloroethene	1.00	1.70	1.70 J	1.70	
XSA-12-95X-FAL21 680-206032-8	N	trans-1,3-Dichloropropene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-95X-FAL21 680-206032-8	N	Trichloroethene (TCE)	1.00	2.70	2.70 J	2.70	
XSA-12-95X-FAL21 680-206032-8	N	Trichlorofluoromethane	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-95X-FAL21 680-206032-8	N	Vinyl acetate	2.00	2.00 U	2.00 UJ	2.00 UJ	V1/V2
XSA-12-95X-FAL21 680-206032-8	N	Vinyl chloride	1.00	0.860 J	0.860 J	0.860 J	TR
XSA-12-95X-FAL21 680-206032-8	N	Xylenes, Total	2.00	2.00 U	2.00 UJ	2.00 U	
XSA-12-96X-FAL21 680-206032-9	N	1,1,1,2-Tetrachloroethane	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-96X-FAL21 680-206032-9	N	1,1,1-Trichloroethane	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-96X-FAL21 680-206032-9	N	1,1,2,2-Tetrachloroethane	2.00	2.00 U	2.00 UJ	2.00 U	
XSA-12-96X-FAL21 680-206032-9	N	1,1,2-Trichloroethane	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-96X-FAL21 680-206032-9	N	1,1-Dichloroethane	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-96X-FAL21 680-206032-9	N	1,1-Dichloroethene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-96X-FAL21 680-206032-9	N	1,1-Dichloropropene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-96X-FAL21 680-206032-9	N	1,2,3-Trichlorobenzene	5.00	5.00 U	5.00 UJ	5.00 U	
XSA-12-96X-FAL21 680-206032-9	N	1,2,3-Trichloropropane	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-96X-FAL21 680-206032-9	N	1,2,4-Trichlorobenzene	5.00	5.00 U	5.00 UJ	5.00 U	
XSA-12-96X-FAL21 680-206032-9	N	1,2,4-Trimethylbenzene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-96X-FAL21 680-206032-9	N	1,2-Dibromo-3-chloropropane	5.00	4.00 U	4.00 UJ	4.00 U	
XSA-12-96X-FAL21 680-206032-9	N	1,2-Dibromoethane (EDB)	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-96X-FAL21 680-206032-9	N	1,2-Dichlorobenzene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-96X-FAL21 680-206032-9	N	1,2-Dichloroethane	1.00	1.00 U M	1.00 UJ	1.00 U	
XSA-12-96X-FAL21 680-206032-9	N	1,2-Dichloroethene	2.00	12.0	12.0 J	12.0	

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW8260B							
FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
XSA-12-96X-FAL21 680-206032-9	N	1,2-Dichloropropane	2.00	2.00 U	2.00 UJ	2.00 U	
XSA-12-96X-FAL21 680-206032-9	N	1,3,5-Trimethylbenzene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-96X-FAL21 680-206032-9	N	1,3-Dichlorobenzene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-96X-FAL21 680-206032-9	N	1,3-Dichloropropane	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-96X-FAL21 680-206032-9	N	1,4-Dichlorobenzene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-96X-FAL21 680-206032-9	N	2,2-Dichloropropane	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-96X-FAL21 680-206032-9	N	2-Butanone (MEK)	10.0	10.0 U	10.0 UJ	10.0 U	
XSA-12-96X-FAL21 680-206032-9	N	2-Chlorotoluene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-96X-FAL21 680-206032-9	N	2-Hexanone	10.0	5.00 U	5.00 UJ	5.00 U	
XSA-12-96X-FAL21 680-206032-9	N	4-Chlorotoluene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-96X-FAL21 680-206032-9	N	4-Methyl-2-pentanone (MIBK)	10.0	5.00 U	5.00 UJ	5.00 U	
XSA-12-96X-FAL21 680-206032-9	N	Acetone	25.0	25.0 U	25.0 UJ	25.0 U	
XSA-12-96X-FAL21 680-206032-9	N	Benzene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-96X-FAL21 680-206032-9	N	Bromobenzene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-96X-FAL21 680-206032-9	N	Bromochloromethane	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-96X-FAL21 680-206032-9	N	Bromodichloromethane	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-96X-FAL21 680-206032-9	N	Bromoform	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-96X-FAL21 680-206032-9	N	Bromomethane	5.00	5.00 U	5.00 UJ	5.00 U	
XSA-12-96X-FAL21 680-206032-9	N	Carbon disulfide	2.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-96X-FAL21 680-206032-9	N	Carbon tetrachloride	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-96X-FAL21 680-206032-9	N	Chlorobenzene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-96X-FAL21 680-206032-9	N	Chloroethane	5.00	5.00 U	5.00 UJ	5.00 U	
XSA-12-96X-FAL21 680-206032-9	N	Chloroform	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-96X-FAL21 680-206032-9	N	Chloromethane	1.00	1.00 U	1.00 UJ	1.00 UJ	V2
XSA-12-96X-FAL21 680-206032-9	N	cis-1,2-Dichloroethene	1.00	8.60	8.60 J	8.60	
XSA-12-96X-FAL21 680-206032-9	N	cis-1,3-Dichloropropene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-96X-FAL21 680-206032-9	N	Dibromochloromethane	1.00	1.00 U	1.00 UJ	1.00 U	

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW8260B

FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
XSA-12-96X-FAL21 680-206032-9	N	Dibromomethane	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-96X-FAL21 680-206032-9	N	Dichlorodifluoromethane	2.00	2.00 U	2.00 UJ	2.00 U	
XSA-12-96X-FAL21 680-206032-9	N	Ethylbenzene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-96X-FAL21 680-206032-9	N	Hexachlorobutadiene	5.00	5.00 U	5.00 UJ	5.00 U	
XSA-12-96X-FAL21 680-206032-9	N	Isopropylbenzene (Cumene)	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-96X-FAL21 680-206032-9	N	m,p-Xylene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-96X-FAL21 680-206032-9	N	Methyl tert-butyl ether (MTBE)	10.0	1.00 U	1.00 UJ	1.00 U	
XSA-12-96X-FAL21 680-206032-9	N	Methylene chloride	5.00	5.00 U	5.00 UJ	5.00 U	
XSA-12-96X-FAL21 680-206032-9	N	Naphthalene	5.00	5.00 U	5.00 UJ	5.00 U	
XSA-12-96X-FAL21 680-206032-9	N	n-Butylbenzene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-96X-FAL21 680-206032-9	N	n-Propylbenzene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-96X-FAL21 680-206032-9	N	o-Xylene	1.00	0.500 U	0.500 UJ	0.500 U	
XSA-12-96X-FAL21 680-206032-9	N	p-Cymene (p-Isopropyltoluene)	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-96X-FAL21 680-206032-9	N	sec-Butylbenzene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-96X-FAL21 680-206032-9	N	Styrene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-96X-FAL21 680-206032-9	N	tert-Butylbenzene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-96X-FAL21 680-206032-9	N	Tetrachloroethene (PCE)	2.00	2.10	2.10 J	2.10	
XSA-12-96X-FAL21 680-206032-9	N	Toluene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-96X-FAL21 680-206032-9	N	trans-1,2-Dichloroethene	1.00	3.10	3.10 J	3.10	
XSA-12-96X-FAL21 680-206032-9	N	trans-1,3-Dichloropropene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-96X-FAL21 680-206032-9	N	Trichloroethene (TCE)	1.00	8.30	8.30 J	8.30	
XSA-12-96X-FAL21 680-206032-9	N	Trichlorofluoromethane	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-96X-FAL21 680-206032-9	N	Vinyl acetate	2.00	2.00 U	2.00 UJ	2.00 UJ	V1/V2
XSA-12-96X-FAL21 680-206032-9	N	Vinyl chloride	1.00	4.40	4.40 J	4.40	
XSA-12-96X-FAL21 680-206032-9	N	Xylenes, Total	2.00	2.00 U	2.00 UJ	2.00 U	

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW9060A							
FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
AOC50-RB02-FAL21 680-206032-10	EB	Total Organic Carbon	1.00	0.490 J	0.490 J	0.490	TR

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Reason Code Definitions

Code	Definition
B2	CCB
C	LCS Recovery
H1	Test Hold Time
L	Lab Blank
M	MS Recovery
TR	Trace Level Detect
V	Equipment Blank
V1	ICV
V2	CCV
V5	Ending Continuing Calibration Verification
Z	LCS RPD

Flag Code and Definitions

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

Bias

-	The result may be biased low
+	The result may be biased high

Note - The bias field is a separate field; however, it is an integral part of the final flag (qualifier) on the sample result

Review Questions

Method: A2320B (Alkalinity by Titrimetric Method)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		Due to method blank and calibration blank contamination, one alkalinity result was qualified as not detected (U) at the LOQ.
Were target analytes reported in the field blank(s) less than MDL?		•		Although the equipment blank had detections for alkalinity, the associated sample results were significantly greater than the concentrations found in the equipment blank, therefore no data were qualified.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?		•		MS/MSD not performed.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	No field duplicates were submitted with these samples.
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported or as qualified during data validation.

Review Questions

Method: E353.2 (Nitrogen, Nitrate-Nitrite (Colorimetric Automated, Cadmium Reduction))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes reported in the field blank(s) less than MDL?	•			
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCSD not performed.
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?		•		Due to MS/MSD %R below criteria, one nitrate/nitrite as N result was qualified as non-detected estimated (UJ).
Was the MS/MSD RPD within project acceptance limits?	•			
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	No field duplicates were submitted with these samples.
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported or as qualified during data validation.

Review Questions

Method: RSK175 (Dissolved Gas Analysis in Water Samples Using a GC Headspace Equilibrium Technique)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Were the required minimum levels of calibration standards used in the initial calibration?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Were surrogate recoveries within project acceptance limits?			•	Surrogates not required per the method.
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes reported in the field blank(s) less than MDL?	•			
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?	•			
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	No field duplicates were submitted with these samples.
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Review Questions

Method: SW6010C (Trace Metals by Inductively Coupled Plasma/Atomic Emission Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes reported in the field blank(s) less than MDL?	•			
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCSD not performed.
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?		•		Although MS/MSD %R was outside criteria for iron, the parent sample result was significantly greater than the spike amount, therefore no data were qualified.
Was the MS/MSD RPD within project acceptance limits?	•			
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	No field duplicates were submitted with these samples.
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Review Questions

Method: SW6020A (Trace Metals by Inductively Coupled Plasma/Mass Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes reported in the field blank(s) less than MDL?	•			
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCSD not performed.
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?		•		Due to MS %R above criteria, one arsenic result was qualified as estimated (J) with a high bias (+).
Was the MS/MSD RPD within project acceptance limits?	•			
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	No field duplicates were submitted with these samples.
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Review Questions

Method: SW8260B (Volatile Organic Compounds by Capillary GC/MS)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			Although FUDSChem ADR flagged three samples as outside the hold time, the samples were analyzed on the 14th day of hold and are considered within hold time, therefore no data were qualified.
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Were the required minimum levels of calibration standards used in the initial calibration?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?		•		Due to ICV %D outside criteria, ten vinyl acetate results were qualified as non-detected estimated (UJ).
Were CCVs run at the required frequency and within acceptance criteria?		•		Due to CCV %R, several chloroethane, vinyl acetate, chloromethane, and bromomethane results were qualified as non-detected estimated (UJ). Due to ending CCV %R, one chloroethane result was qualified as non-detected estimated (UJ).
Were surrogate recoveries within project acceptance limits?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were field blanks (EBs or FBs) submitted with these samples?	•			
Were target analytes reported in the field blank(s) less than MDL?	•			
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?		•		Although LCSD %R were above criteria for chloroethane and vinyl acetate, the associated sample results were not detected, therefore no data were qualified.
Was the LCS/LCSD RPD within project acceptance limits?		•		Although LCS/LCSD RPD was above criteria for chloromethane, the associated sample results were not detected, therefore no data were qualified.
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?	•			
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	No field duplicates were submitted with these samples.
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported or as qualified during data validation.

Review Questions

Method: SW9034 (Titrimetric Procedure for Acid-Soluble and Acid-Insoluble Sulfides)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were field blanks (EBs or FBs) submitted with these samples?	•			
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?	•			
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	No field duplicates were submitted with these samples.
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Review Questions

Method: SW9056A (Anion Chromatography)

Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were field blanks (EBs or FBs) submitted with these samples?	•			
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?	•			
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	No field duplicates were submitted with these samples.
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Review Questions

Method: SW9060A (Total Organic Carbon)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were field blanks (EBs or FBs) submitted with these samples?	•			
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?	•			
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	No field duplicates were submitted with these samples.
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported or as qualified during data validation.

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

ARCADIS U.S., Inc.
3109 West Martin Luther King Jr. Blvd, Suite 350
Tampa, FL 33607
ATTN: Mr. Nathan Mullens
nrmullens@seres-es.com

January 3, 2022

SUBJECT: Fort Devens - Data Validation

Dear Mr. Mullens,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on December 3, 2021. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #52768:

SDG #	Fraction
680-206061-1, 680-207141-1 680-207200-1	Volatiles, Dissolved Metals, Methane, Ethane, & Ethene, Wet Chemistry

The data validation was performed under Stage 2B guidelines. The analyses were validated using the following documents and variances, as applicable to each method:

- Quality Assurance Project Plan, Long Term Monitoring Program, Former Fort Devens, 2020
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014; update VI, July 2018

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist
pgeng@lab-data.com

186 pages-ADV

Attachment 1

Stage 2B EQUIS EDD

LDC# 52768 (Arcadis - Millersville, MD / Fort Devens)

LDC	SDG#	DATE REC'D	(2) DATE DUE	VOA (8260B)		3 D.Met. (6010C/ 6020A)		Methane Ethane Ethene		Alk (2320B)		DOC (9060A)		Cl (9056A)		NO_3 /NO_2-N (353.2)		SO_4 (9056A)		S= (9034)		TOC (9060A)																	
Matrix: Water/Soil				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	680-206061-1	12/03/21	12/17/21	12	0	10	0	3	0	3	0	-	-	-	-	3	0	3	0	3	0	3	0														
B	680-207141-1	12/03/21	12/17/21	-	-	25	0	-	-	25	0	25	0	25	0	-	-	25	0	-	-	-	-														
C	680-207200-1	12/03/21	12/17/21	-	-	13	0	-	-	13	0	13	0	13	0	-	-	13	0	-	-	-	-														
Total	T/PG			12	0	48	0	3	0	41	0	38	0	38	0	3	0	41	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	230

Shaded cells indicate Stage 4 validation (all other cells are Stage 2B validation). These sample counts do not include MS/MSD, and DUPs

V:\LOGIN\Arcadis\Fort Devens\52768ST.wpd

Data Validation Report for 6802060611

Facility:	Former Fort Devens, Long Term Monitoring
Event:	Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021
SDG:	6802060611
Guidance Document:	Quality Assurance Project Plan, Long Term Monitoring Program, Former Fort Devens, 2020
Prime Contractor:	Seres-Arcadis JV
Project Manager:	Jennifer Singer
Contract Laboratory(ies):	Eurofins Environment Testing TestAmerica, Arvada, CO | Eurofins Environment Testing TestAmerica, Savannah, GA
Data Review Contractor:	Laboratory Data Consultants, Inc.
Data Review Level:	2B
Primary Data Reviewer:	Kevin Kha, Environmental Scientist
Second Reviewer:	Pei Geng, Senior Scientist
Date Submitted:	December 29, 2021

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	A2320B	E353.2	RSK175	SW6010C - Dissolved	SW6020A - Dissolved	SW8260B	SW9034	SW9056A	SW9060A
AOC50-DUP01-FAL21	680-206061-9	Water	Field Duplicate/FD				X	X	X			
AOC50-TB02-FAL21	680-206061-12	Water	Trip Blank/TB						X			
G6M-02-06X-FAL21	680-206061-1	Water	Field Sample/N				X	X	X			
G6M-02-07X-FAL21	680-206061-2	Water	Field Sample/N				X	X	X			
G6M-02-08X-FAL21	680-206061-3	Water	Field Sample/N	X	X	X	X	X	X	X	X	X
G6M-04-06X-FAL21	680-206061-4	Water	Field Sample/N				X	X	X			
G6M-04-07X-FAL21	680-206061-5	Water	Field Sample/N	X	X	X	X	X	X	X	X	X
G6M-13-05X-FAL21	680-206061-6	Water	Field Sample/N	X	X	X	X	X	X	X	X	X
G6M-95-19X-FAL21	680-206061-7	Water	Field Sample/N						X			
G6M-95-20X-FAL21	680-206061-8	Water	Field Sample/N				X	X	X			
XSA-12-97X-FAL21	680-206061-10	Water	Field Sample/N				X	X	X			
XSA-12-98X-FAL21	680-206061-11	Water	Field Sample/N				X	X	X			

This report assesses the analytical data quality associated with the analyses listed on the preceding cover page at 2B data validation level. This assessment has been made through a combination of automated data review (ADR) and supplemental manual review, the details of which are described below. The approach taken in the review of this data set is consistent with the requirements contained in the Quality Assurance Project Plan, Long Term Monitoring Program, Former Fort Devens, 2020 and the additional guidance documents incorporated by reference to the extent possible. Where definitive guidance is not provided, results have been evaluated in a conservative manner using professional judgment.

Sample collection was managed and directed by Seres-Arcadis JV; analyses were performed by Eurofins Environment Testing TestAmerica, Arvada, CO | Eurofins Environment Testing TestAmerica, Savannah, GA and were reported under sample delivery group (SDG) 6802060611. Data have been evaluated electronically based on electronic data deliverables (EDDs) provided by the laboratory, and hard copy data summary forms have also been reviewed during this effort and compared to the automated review output by the reviewers whose signatures appear on the following page. Findings based on the automated data submission and manual data verification processes are detailed in the ADR narrative and throughout this report.

All quality control (QC) elements associated with this SDG have been reviewed by a project chemist in accordance with the requirements defined for the project. This review is documented in the attached Data Review Checklists. The QC elements listed below were supported by the electronic deliverable and were evaluated using ADR processes.

- Blank - Negative
- Calibration Blank
- Calibration Blank - Negative
- Continuing Calibration Verification
- Field Duplicate RPD
- Interference Check Sample A
- Interference Check Sample A - Negative
- Interference Check Sample AB
- Lab Blank
- LCS Recovery
- LCS RPD
- MS Recovery
- MS RPD
- Prep Hold Time
- Surrogate
- Test Hold Time
- Trip Blank

Results of the ADR process were subsequently reviewed and updated as applicable by the data review chemists identified on the signature page. Quality control elements that were not included in the electronic deliverable were reviewed manually and findings are documented within this report. Summaries of findings and associated qualified results are documented throughout this report.

A total of 90 results (10.34%) out of the 870 results (sample and field QC samples) reported are qualified based on review and 0 results (0.00%) have been rejected or deemed a serious deficiency (X qualifier). Trace values, defined as results that are qualified as estimated because they fall between the detection limit and the reporting limit/limit of quantitation, are not counted as qualified results in the above count. The qualified results are detailed throughout this report and discussed in the narrative below, where appropriate.

Narrative Comments

Analytical Method	Data Reviewer Comment
SW8260B	No additional comments; see Checklist for detail.
RSK175	No additional comments; see Checklist for detail.
A2320B	No additional comments; see Checklist for detail.
E353.2	No additional comments; see Checklist for detail.
SW9056A	No additional comments; see Checklist for detail.
SW9034	No additional comments; see Checklist for detail.
SW9060A	No additional comments; see Checklist for detail.
SW6010C	No additional comments; see Checklist for detail.
SW6020A	No additional comments; see Checklist for detail.

December 29, 2021

Reviewed by Kevin Kha, Environmental Scientist, Laboratory Data Consultants, Inc.

As the First Reviewer, I certify that I have performed a data review process in accordance with the requirements of the project guidance document, and have compared the electronic data to the laboratory's hard copy report and have verified the consistency of the reported sample results and method quality control data between the two deliverables.

Reviewed by Pei Geng, Senior Scientist, Laboratory Data Consultants, Inc.

January 03, 2022

As the Second Reviewer, I certify that I have performed a quality assurance review of the report generated by the First Reviewer.

Quality Control Outliers for test method A2320B, Calibration Blank

The purpose of calibration blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in calibration blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCB280554753138 (CB)	Alkalinity, Total (as CaCO3)	4.620	< 3.1	< 10	mg/l	U/None*	B2	
CCB280554753153 (CB)	Alkalinity, Total (as CaCO3)	5.170	< 3.1	< 10	mg/l	U/None*	B2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

*Blank flags displayed in the above table identify qualification of the sample result when it is less than or equal to the LOQ/RL. Sample results above the LOQ will be qualified based on the validation type such as J+ at the sample result.

No results associated with this QC element required qualification.

Quality Control Outliers for test method A2320B, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
MB280554753141 (LB)	Alkalinity, Total (as CaCO3)	4.880	< 3.1	< 10	mg/l	U/None*	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

*Blank flags displayed in the above table identify qualification of the sample result when it is less than or equal to the LOQ/RL. Sample results above the LOQ will be qualified based on the validation type such as J+ at the sample result.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW8260B, Continuing Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCVIS 680-69182/2 (CV)	Dichlorodifluoromethane	79.90	80 - 120	80 - 120	percent	J/UJ	V2	
CCVIS6806915433 (CV)	Chloroethane	177.0	80 - 120	80 - 120	percent	J/UJ	V2	
CCVIS6806915433 (CV)	Vinyl acetate	156.0	80 - 120	80 - 120	percent	J/UJ	V2	
CCVIS6806916073 (CV)	Chloroethane	180.0	80 - 120	80 - 120	percent	J/UJ	V2	
CCVIS6806916073 (CV)	Vinyl acetate	140.0	80 - 120	80 - 120	percent	J/UJ	V2	
CCVIS6806918252 (CV)	Vinyl acetate	129.0	80 - 120	80 - 120	percent	J/UJ	V2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Continuing Calibration Verification for SW8260B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
AOC50-DUP01-FAL21 680-206061-9	FD	Dichlorodifluoromethane	2.00	2.00 U H Q	2.00 UJ		ug/l	H1/V2
AOC50-DUP01-FAL21 680-206061-9	FD	Vinyl acetate	2.00	2.00 U H Q	2.00 UJ		ug/l	H1/V1/V2
AOC50-TB02-FAL21 680-206061-12	TB	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
AOC50-TB02-FAL21 680-206061-12	TB	Vinyl acetate	2.00	2.00 U	2.00 UJ		ug/l	V2
G6M-04-07X-FAL21 680-206061-5	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
G6M-04-07X-FAL21 680-206061-5	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V2
G6M-13-05X-FAL21 680-206061-6	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
G6M-13-05X-FAL21 680-206061-6	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V2
G6M-95-19X-FAL21 680-206061-7	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
G6M-95-19X-FAL21 680-206061-7	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V2
G6M-95-20X-FAL21 680-206061-8	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
G6M-95-20X-FAL21 680-206061-8	N	Vinyl acetate	2.00	2.00 U	2.00 UJ		ug/l	V2
XSA-12-97X-FAL21 680-206061-10	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
XSA-12-97X-FAL21 680-206061-10	N	Vinyl acetate	2.00	2.00 U	2.00 UJ		ug/l	V2
XSA-12-98X-FAL21 680-206061-11	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5

Qualified Results associated with the Continuing Calibration Verification for SW8260B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
XSA-12-98X-FAL21 680-206061-11	N	Vinyl acetate	2.00	2.00 U	2.00 UJ		ug/l	V2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260B, Ending Continuing Calibration Verification

Compliance requirements for satisfactory closing continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCVC68069154333 (EV)	Chloroethane	175.0	50 - 150	50 - 150	percent	J/UJ	V5	
CCVC68069160734 (EV)	Chloroethane	175.0	50 - 150	50 - 150	percent	J/UJ	V5	
No closing CCV (EV)	1,2-Dichloroethene	0.000	50 - 150	50 - 150	percent	J/UJ	V5	
No closing CCV (EV)	cis-1,2-Dichloroethene	0.000	50 - 150	50 - 150	percent	J/UJ	V5	
No closing CCV (EV)	Tetrachloroethene (PCE)	0.000	50 - 150	50 - 150	percent	J/UJ	V5	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Ending Continuing Calibration Verification for SW8260B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
AOC50-TB02-FAL21 680-206061-12	TB	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
G6M-04-07X-FAL21 680-206061-5	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
G6M-13-05X-FAL21 680-206061-6	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
G6M-95-19X-FAL21 680-206061-7	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
G6M-95-20X-FAL21 680-206061-8	N	1,2-Dichloroethene	2.00	2.00 U H	2.00 UJ		ug/l	V5/H1
G6M-95-20X-FAL21 680-206061-8	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
G6M-95-20X-FAL21 680-206061-8	N	cis-1,2-Dichloroethene	1.00	1.00 U H	1.00 UJ		ug/l	V5/H1
G6M-95-20X-FAL21 680-206061-8	N	Tetrachloroethene (PCE)	2.00	2.00 U H M	2.00 UJ		ug/l	V5/H1
XSA-12-97X-FAL21 680-206061-10	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
XSA-12-98X-FAL21 680-206061-11	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260B, Field Duplicate RPD

Field duplicate analyses are performed in order to assess sample collection/laboratory precision for each sample matrix. Summary forms were evaluated and compared to electronic data deliverables. Field duplicate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
AOC50-DUP01-FAL21 (N)	Tetrachloroethene (PCE)	2.800	< 2	< 2	ug/l	J/None	D3	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW8260B, Initial Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
ICV 680-690817/16 (IV)	Vinyl acetate	71.50	80 - 120	80 - 120	percent	J/UJ	V1	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Initial Calibration Verification for SW8260B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
AOC50-DUP01-FAL21 680-206061-9	FD	Vinyl acetate	2.00	2.00 U H Q	2.00 UJ		ug/l	H1/V1/V2
G6M-02-06X-FAL21 680-206061-1	N	Vinyl acetate	2.00	2.00 U	2.00 UJ		ug/l	V1
G6M-02-07X-FAL21 680-206061-2	N	Vinyl acetate	2.00	2.00 U	2.00 UJ		ug/l	V1
G6M-02-08X-FAL21 680-206061-3	N	Vinyl acetate	2.00	2.00 U	2.00 UJ		ug/l	V1
G6M-04-06X-FAL21 680-206061-4	N	Vinyl acetate	2.00	2.00 U	2.00 UJ		ug/l	V1

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260B, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
LCS6806916074 (BS)	Chloroethane	177.0	60 - 138	10 - 138	percent	J/None	C	
LCSD6806915435 (BD)	Chloroethane	171.0	60 - 138	10 - 138	percent	J/None	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW8260B, LCS RPD

The objective of laboratory control sample/laboratory control sample duplicate (LCS/LCSD) RPD analysis is to demonstrate acceptable method precision by the laboratory at the time of analysis. LCS/LCSD analyses are also performed to generate data that determines the long-term precision of the analytical method on various matrices. Non-homogenous samples can impact the apparent method precision. Summary forms were evaluated and compared to electronic data deliverables. Laboratory control sample/laboratory control sample duplicate RPD results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
LCSD6806914314 (BD)	Chloromethane	20.38	< 20	< 20	rpd	J/None	Z	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW8260B, Test Hold Time

Hold times are ascertained based on project requirements. Holding times were determined by comparing the chain of custody records with the dates of analysis found in the electronic data deliverable and laboratory summary forms. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
AOC50-DUP01-FAL21 (FD)		15.14	< 14	< 28	days	J/UJ	H1	Test Exceeds UWL
AOC50-TB02-FAL21 (TB)		14.77	< 14	< 28	days	J/UJ	H1	Test Exceeds UWL
G6M-95-20X-FAL21 (N)		14.29	< 14	< 28	days	J/UJ	H1	Test Exceeds UWL
XSA-12-97X-FAL21 (N)		14.10	< 14	< 28	days	J/UJ	H1	Test Exceeds UWL
XSA-12-98X-FAL21 (N)		14.23	< 14	< 28	days	J/UJ	H1	Test Exceeds UWL

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Test Hold Time for SW8260B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
AOC50-DUP01-FAL21 680-206061-9	FD	1,1,1,2-Tetrachloroethane	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	1,1,1-Trichloroethane	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	1,1,2,2-Tetrachloroethane	2.00	2.00 U H	2.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	1,1,2-Trichloroethane	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	1,1-Dichloroethane	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	1,1-Dichloroethene	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	1,1-Dichloropropene	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	1,2,3-Trichlorobenzene	5.00	5.00 U H	5.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	1,2,3-Trichloropropane	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	1,2,4-Trichlorobenzene	5.00	5.00 U H	5.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	1,2,4-Trimethylbenzene	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	1,2-Dibromo-3-chloropropane	5.00	4.00 U H	4.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	1,2-Dibromoethane (EDB)	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	1,2-Dichlorobenzene	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	1,2-Dichloroethane	1.00	1.00 U H M	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	1,2-Dichloroethene	2.00	2.00 U H	2.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	1,2-Dichloropropane	2.00	2.00 U H	2.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	1,3,5-Trimethylbenzene	1.00	1.00 U H	1.00 UJ		ug/l	H1

Qualified Results associated with the Test Hold Time for SW8260B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
AOC50-DUP01-FAL21 680-206061-9	FD	1,3-Dichlorobenzene	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	1,3-Dichloropropane	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	1,4-Dichlorobenzene	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	2,2-Dichloropropane	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	2-Butanone (MEK)	10.0	10.0 U H	10.0 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	2-Chlorotoluene	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	2-Hexanone	10.0	5.00 U H	5.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	4-Chlorotoluene	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	4-Methyl-2-pentanone (MIBK)	10.0	5.00 U H	5.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Acetone	25.0	25.0 U H	25.0 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Benzene	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Bromobenzene	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Bromochloromethane	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Bromodichloromethane	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Bromoform	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Bromomethane	5.00	5.00 U H	5.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Carbon disulfide	2.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Carbon tetrachloride	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Chlorobenzene	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Chloroethane	5.00	5.00 U H	5.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Chloroform	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Chloromethane	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	cis-1,2-Dichloroethene	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	cis-1,3-Dichloropropene	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Dibromochloromethane	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Dibromomethane	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Dichlorodifluoromethane	2.00	2.00 U H Q	2.00 UJ		ug/l	H1/V2
AOC50-DUP01-FAL21 680-206061-9	FD	Ethylbenzene	1.00	1.00 U H	1.00 UJ		ug/l	H1

Qualified Results associated with the Test Hold Time for SW8260B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
AOC50-DUP01-FAL21 680-206061-9	FD	Hexachlorobutadiene	5.00	5.00 U H	5.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Isopropylbenzene (Cumene)	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	m,p-Xylene	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Methyl tert-butyl ether (MTBE)	10.0	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Methylene chloride	5.00	5.00 U H	5.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Naphthalene	5.00	5.00 U H	5.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	n-Butylbenzene	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	n-Propylbenzene	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	o-Xylene	1.00	0.500 U H	0.500 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	p-Cymene (p-Isopropyltoluene)	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	sec-Butylbenzene	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Styrene	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	tert-Butylbenzene	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Tetrachloroethene (PCE)	2.00	2.00 U H	2.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Toluene	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	trans-1,2-Dichloroethene	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	trans-1,3-Dichloropropene	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Trichloroethene (TCE)	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Trichlorofluoromethane	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Vinyl acetate	2.00	2.00 U H Q	2.00 UJ		ug/l	H1/V1/V2
AOC50-DUP01-FAL21 680-206061-9	FD	Vinyl chloride	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Xylenes, Total	2.00	2.00 U H	2.00 UJ		ug/l	H1
G6M-95-20X-FAL21 680-206061-8	N	1,2-Dichloroethene	2.00	2.00 U H	2.00 UJ		ug/l	V5/H1
G6M-95-20X-FAL21 680-206061-8	N	cis-1,2-Dichloroethene	1.00	1.00 U H	1.00 UJ		ug/l	V5/H1
G6M-95-20X-FAL21 680-206061-8	N	Tetrachloroethene (PCE)	2.00	2.00 U H M	2.00 UJ		ug/l	V5/H1
XSA-12-98X-FAL21 680-206061-11	N	Tetrachloroethene (PCE)	2.00	0.830 J H	0.830 J		ug/l	TR/H1

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Table of All Qualified Results

Test Method: SW8260B		Extraction Method: SW5030B						
FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
AOC50-DUP01-FAL21 680-206061-9	FD	1,1,1,2-Tetrachloroethane	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	1,1,1-Trichloroethane	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	1,1,2,2-Tetrachloroethane	2.00	2.00 U H	2.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	1,1,2-Trichloroethane	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	1,1-Dichloroethane	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	1,1-Dichloroethene	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	1,1-Dichloropropene	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	1,2,3-Trichlorobenzene	5.00	5.00 U H	5.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	1,2,3-Trichloropropane	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	1,2,4-Trichlorobenzene	5.00	5.00 U H	5.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	1,2,4-Trimethylbenzene	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	1,2-Dibromo-3-chloropropane	5.00	4.00 U H	4.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	1,2-Dibromoethane (EDB)	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	1,2-Dichlorobenzene	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	1,2-Dichloroethane	1.00	1.00 U H M	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	1,2-Dichloroethene	2.00	2.00 U H	2.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	1,2-Dichloropropane	2.00	2.00 U H	2.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	1,3,5-Trimethylbenzene	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	1,3-Dichlorobenzene	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	1,3-Dichloropropane	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	1,4-Dichlorobenzene	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	2,2-Dichloropropane	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	2-Butanone (MEK)	10.0	10.0 U H	10.0 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	2-Chlorotoluene	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	2-Hexanone	10.0	5.00 U H	5.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	4-Chlorotoluene	1.00	1.00 U H	1.00 UJ		ug/l	H1

Table of All Qualified Results

Test Method: SW8260B		Extraction Method: SW5030B						
FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
AOC50-DUP01-FAL21 680-206061-9	FD	4-Methyl-2-pentanone (MIBK)	10.0	5.00 U H	5.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Acetone	25.0	25.0 U H	25.0 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Benzene	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Bromobenzene	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Bromochloromethane	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Bromodichloromethane	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Bromoform	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Bromomethane	5.00	5.00 U H	5.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Carbon disulfide	2.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Carbon tetrachloride	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Chlorobenzene	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Chloroethane	5.00	5.00 U H	5.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Chloroform	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Chloromethane	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	cis-1,2-Dichloroethene	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	cis-1,3-Dichloropropene	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Dibromochloromethane	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Dibromomethane	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Dichlorodifluoromethane	2.00	2.00 U H Q	2.00 UJ		ug/l	H1/V2
AOC50-DUP01-FAL21 680-206061-9	FD	Ethylbenzene	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Hexachlorobutadiene	5.00	5.00 U H	5.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Isopropylbenzene (Cumene)	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	m,p-Xylene	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Methyl tert-butyl ether (MTBE)	10.0	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Methylene chloride	5.00	5.00 U H	5.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Naphthalene	5.00	5.00 U H	5.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	n-Butylbenzene	1.00	1.00 U H	1.00 UJ		ug/l	H1

Table of All Qualified Results

Test Method: SW8260B		Extraction Method: SW5030B						
FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
AOC50-DUP01-FAL21 680-206061-9	FD	n-Propylbenzene	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	o-Xylene	1.00	0.500 U H	0.500 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	p-Cymene (p-Isopropyltoluene)	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	sec-Butylbenzene	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Styrene	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	tert-Butylbenzene	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Tetrachloroethene (PCE)	2.00	2.00 U H	2.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Toluene	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	trans-1,2-Dichloroethene	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	trans-1,3-Dichloropropene	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Trichloroethene (TCE)	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Trichlorofluoromethane	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Vinyl acetate	2.00	2.00 U H Q	2.00 UJ		ug/l	H1/V1/V2
AOC50-DUP01-FAL21 680-206061-9	FD	Vinyl chloride	1.00	1.00 U H	1.00 UJ		ug/l	H1
AOC50-DUP01-FAL21 680-206061-9	FD	Xylenes, Total	2.00	2.00 U H	2.00 UJ		ug/l	H1
AOC50-TB02-FAL21 680-206061-12	TB	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
AOC50-TB02-FAL21 680-206061-12	TB	Vinyl acetate	2.00	2.00 U	2.00 UJ		ug/l	V2
G6M-02-06X-FAL21 680-206061-1	N	Vinyl acetate	2.00	2.00 U	2.00 UJ		ug/l	V1
G6M-02-07X-FAL21 680-206061-2	N	Vinyl acetate	2.00	2.00 U	2.00 UJ		ug/l	V1
G6M-02-08X-FAL21 680-206061-3	N	Vinyl acetate	2.00	2.00 U	2.00 UJ		ug/l	V1
G6M-04-06X-FAL21 680-206061-4	N	Vinyl acetate	2.00	2.00 U	2.00 UJ		ug/l	V1
G6M-04-07X-FAL21 680-206061-5	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
G6M-04-07X-FAL21 680-206061-5	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V2
G6M-13-05X-FAL21 680-206061-6	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
G6M-13-05X-FAL21 680-206061-6	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V2
G6M-95-19X-FAL21 680-206061-7	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
G6M-95-19X-FAL21 680-206061-7	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V2

Table of All Qualified Results

Test Method: SW8260B		Extraction Method: SW5030B						
FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
G6M-95-20X-FAL21 680-206061-8	N	1,2-Dichloroethene	2.00	2.00 U H	2.00 UJ		ug/l	V5/H1
G6M-95-20X-FAL21 680-206061-8	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
G6M-95-20X-FAL21 680-206061-8	N	cis-1,2-Dichloroethene	1.00	1.00 U H	1.00 UJ		ug/l	V5/H1
G6M-95-20X-FAL21 680-206061-8	N	Tetrachloroethene (PCE)	2.00	2.00 U H M	2.00 UJ		ug/l	V5/H1
G6M-95-20X-FAL21 680-206061-8	N	Vinyl acetate	2.00	2.00 U	2.00 UJ		ug/l	V2
XSA-12-97X-FAL21 680-206061-10	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
XSA-12-97X-FAL21 680-206061-10	N	Vinyl acetate	2.00	2.00 U	2.00 UJ		ug/l	V2
XSA-12-98X-FAL21 680-206061-11	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
XSA-12-98X-FAL21 680-206061-11	N	Tetrachloroethene (PCE)	2.00	0.830 J H	0.830 J		ug/l	TR/H1
XSA-12-98X-FAL21 680-206061-11	N	Vinyl acetate	2.00	2.00 U	2.00 UJ		ug/l	V2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Table of Results with Modified Qualifiers

Modified Qualifiers for test method RSK175

FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
G6M-02-08X-FAL21 680-206061-3	N	Methane	390	25000	25000 J	25000	
G6M-04-07X-FAL21 680-206061-5	N	Methane	390	520	520 J	520	
G6M-13-05X-FAL21 680-206061-6	N	Methane	390	17000	17000 J	17000	

Modified Qualifiers for test method SW8260B

FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
AOC50-DUP01-FAL21 680-206061-9	FD	Dichlorodifluoromethane	2.00	2.00 U H Q	2.00 UJ	2.00 UJ	H1/V2
AOC50-DUP01-FAL21 680-206061-9	FD	Vinyl acetate	2.00	2.00 U H Q	2.00 UJ	2.00 UJ	H1/V1/V2
AOC50-TB02-FAL21 680-206061-12	TB	1,1,1,2-Tetrachloroethane	1.00	1.00 U	1.00 UJ	1.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	1,1,1-Trichloroethane	1.00	1.00 U	1.00 UJ	1.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	1,1,2,2-Tetrachloroethane	2.00	2.00 U	2.00 UJ	2.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	1,1,2-Trichloroethane	1.00	1.00 U	1.00 UJ	1.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	1,1-Dichloroethane	1.00	1.00 U	1.00 UJ	1.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	1,1-Dichloroethene	1.00	1.00 U	1.00 UJ	1.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	1,1-Dichloropropene	1.00	1.00 U	1.00 UJ	1.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	1,2,3-Trichlorobenzene	5.00	5.00 U	5.00 UJ	5.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	1,2,3-Trichloropropane	1.00	1.00 U	1.00 UJ	1.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	1,2,4-Trichlorobenzene	5.00	5.00 U	5.00 UJ	5.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	1,2,4-Trimethylbenzene	1.00	1.00 U	1.00 UJ	1.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	1,2-Dibromo-3-chloropropane	5.00	4.00 U	4.00 UJ	4.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	1,2-Dibromoethane (EDB)	1.00	1.00 U	1.00 UJ	1.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	1,2-Dichlorobenzene	1.00	1.00 U	1.00 UJ	1.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	1,2-Dichloroethane	1.00	1.00 U M	1.00 UJ	1.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	1,2-Dichloroethene	2.00	2.00 U	2.00 UJ	2.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	1,2-Dichloropropane	2.00	2.00 U	2.00 UJ	2.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	1,3,5-Trimethylbenzene	1.00	1.00 U	1.00 UJ	1.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	1,3-Dichlorobenzene	1.00	1.00 U	1.00 UJ	1.00 U	

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW8260B							
FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
AOC50-TB02-FAL21 680-206061-12	TB	1,3-Dichloropropane	1.00	1.00 U	1.00 UJ	1.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	1,4-Dichlorobenzene	1.00	1.00 U	1.00 UJ	1.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	2,2-Dichloropropane	1.00	1.00 U	1.00 UJ	1.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	2-Butanone (MEK)	10.0	10.0 U	10.0 UJ	10.0 U	
AOC50-TB02-FAL21 680-206061-12	TB	2-Chlorotoluene	1.00	1.00 U	1.00 UJ	1.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	2-Hexanone	10.0	5.00 U	5.00 UJ	5.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	4-Chlorotoluene	1.00	1.00 U	1.00 UJ	1.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	4-Methyl-2-pentanone (MIBK)	10.0	5.00 U	5.00 UJ	5.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	Acetone	25.0	25.0 U	25.0 UJ	25.0 U	
AOC50-TB02-FAL21 680-206061-12	TB	Benzene	1.00	1.00 U	1.00 UJ	1.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	Bromobenzene	1.00	1.00 U	1.00 UJ	1.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	Bromochloromethane	1.00	1.00 U	1.00 UJ	1.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	Bromodichloromethane	1.00	1.00 U	1.00 UJ	1.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	Bromoform	1.00	1.00 U	1.00 UJ	1.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	Bromomethane	5.00	5.00 U	5.00 UJ	5.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	Carbon disulfide	2.00	1.00 U	1.00 UJ	1.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	Carbon tetrachloride	1.00	1.00 U	1.00 UJ	1.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	Chlorobenzene	1.00	1.00 U	1.00 UJ	1.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	Chloroethane	5.00	5.00 U Q	5.00 UJ	5.00 UJ	V2/V5
AOC50-TB02-FAL21 680-206061-12	TB	Chloroform	1.00	1.00 U	1.00 UJ	1.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	Chloromethane	1.00	1.00 U	1.00 UJ	1.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	cis-1,2-Dichloroethene	1.00	1.00 U	1.00 UJ	1.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	cis-1,3-Dichloropropene	1.00	1.00 U	1.00 UJ	1.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	Dibromochloromethane	1.00	1.00 U	1.00 UJ	1.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	Dibromomethane	1.00	1.00 U	1.00 UJ	1.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	Dichlorodifluoromethane	2.00	2.00 U	2.00 UJ	2.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	Ethylbenzene	1.00	1.00 U	1.00 UJ	1.00 U	

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW8260B

FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
AOC50-TB02-FAL21 680-206061-12	TB	Hexachlorobutadiene	5.00	5.00 U	5.00 UJ	5.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	Isopropylbenzene (Cumene)	1.00	1.00 U	1.00 UJ	1.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	m,p-Xylene	1.00	1.00 U	1.00 UJ	1.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	Methyl tert-butyl ether (MTBE)	10.0	1.00 U	1.00 UJ	1.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	Methylene chloride	5.00	5.00 U	5.00 UJ	5.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	Naphthalene	5.00	5.00 U	5.00 UJ	5.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	n-Butylbenzene	1.00	1.00 U	1.00 UJ	1.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	n-Propylbenzene	1.00	1.00 U	1.00 UJ	1.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	o-Xylene	1.00	0.500 U	0.500 UJ	0.500 U	
AOC50-TB02-FAL21 680-206061-12	TB	p-Cymene (p-Isopropyltoluene)	1.00	1.00 U	1.00 UJ	1.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	sec-Butylbenzene	1.00	1.00 U	1.00 UJ	1.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	Styrene	1.00	1.00 U	1.00 UJ	1.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	tert-Butylbenzene	1.00	1.00 U	1.00 UJ	1.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	Tetrachloroethene (PCE)	2.00	2.00 U	2.00 UJ	2.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	Toluene	1.00	1.00 U	1.00 UJ	1.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	trans-1,2-Dichloroethene	1.00	1.00 U	1.00 UJ	1.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	trans-1,3-Dichloropropene	1.00	1.00 U	1.00 UJ	1.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	Trichloroethene (TCE)	1.00	1.00 U	1.00 UJ	1.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	Trichlorofluoromethane	1.00	1.00 U	1.00 UJ	1.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	Vinyl acetate	2.00	2.00 U	2.00 UJ	2.00 UJ	V2
AOC50-TB02-FAL21 680-206061-12	TB	Vinyl chloride	1.00	1.00 U	1.00 UJ	1.00 U	
AOC50-TB02-FAL21 680-206061-12	TB	Xylenes, Total	2.00	2.00 U	2.00 UJ	2.00 U	
G6M-02-06X-FAL21 680-206061-1	N	Vinyl acetate	2.00	2.00 U	2.00 U	2.00 UJ	V1
G6M-02-07X-FAL21 680-206061-2	N	Vinyl acetate	2.00	2.00 U	2.00 U	2.00 UJ	V1
G6M-02-08X-FAL21 680-206061-3	N	Vinyl acetate	2.00	2.00 U	2.00 U	2.00 UJ	V1
G6M-04-06X-FAL21 680-206061-4	N	Vinyl acetate	2.00	2.00 U	2.00 U	2.00 UJ	V1
G6M-04-07X-FAL21 680-206061-5	N	Chloroethane	5.00	5.00 U Q	5.00 U	5.00 UJ	V2/V5

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW8260B

FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
G6M-04-07X-FAL21 680-206061-5	N	Vinyl acetate	2.00	2.00 U Q	2.00 U	2.00 UJ	V2
G6M-13-05X-FAL21 680-206061-6	N	Chloroethane	5.00	5.00 U Q	5.00 U	5.00 UJ	V2/V5
G6M-13-05X-FAL21 680-206061-6	N	Vinyl acetate	2.00	2.00 U Q	2.00 U	2.00 UJ	V2
G6M-95-19X-FAL21 680-206061-7	N	Chloroethane	5.00	5.00 U Q	5.00 U	5.00 UJ	V2/V5
G6M-95-19X-FAL21 680-206061-7	N	Vinyl acetate	2.00	2.00 U Q	2.00 U	2.00 UJ	V2
G6M-95-20X-FAL21 680-206061-8	N	1,1,1,2-Tetrachloroethane	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-95-20X-FAL21 680-206061-8	N	1,1,1-Trichloroethane	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-95-20X-FAL21 680-206061-8	N	1,1,2,2-Tetrachloroethane	2.00	2.00 U	2.00 UJ	2.00 U	
G6M-95-20X-FAL21 680-206061-8	N	1,1,2-Trichloroethane	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-95-20X-FAL21 680-206061-8	N	1,1-Dichloroethane	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-95-20X-FAL21 680-206061-8	N	1,1-Dichloroethene	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-95-20X-FAL21 680-206061-8	N	1,1-Dichloropropene	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-95-20X-FAL21 680-206061-8	N	1,2,3-Trichlorobenzene	5.00	5.00 U	5.00 UJ	5.00 U	
G6M-95-20X-FAL21 680-206061-8	N	1,2,3-Trichloropropane	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-95-20X-FAL21 680-206061-8	N	1,2,4-Trichlorobenzene	5.00	5.00 U	5.00 UJ	5.00 U	
G6M-95-20X-FAL21 680-206061-8	N	1,2,4-Trimethylbenzene	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-95-20X-FAL21 680-206061-8	N	1,2-Dibromo-3-chloropropane	5.00	4.00 U	4.00 UJ	4.00 U	
G6M-95-20X-FAL21 680-206061-8	N	1,2-Dibromoethane (EDB)	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-95-20X-FAL21 680-206061-8	N	1,2-Dichlorobenzene	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-95-20X-FAL21 680-206061-8	N	1,2-Dichloroethane	1.00	1.00 U M	1.00 UJ	1.00 U	
G6M-95-20X-FAL21 680-206061-8	N	1,2-Dichloroethene	2.00	2.00 U H	2.00 U	2.00 UJ	V5/H1
G6M-95-20X-FAL21 680-206061-8	N	1,2-Dichloropropane	2.00	2.00 U	2.00 UJ	2.00 U	
G6M-95-20X-FAL21 680-206061-8	N	1,3,5-Trimethylbenzene	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-95-20X-FAL21 680-206061-8	N	1,3-Dichlorobenzene	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-95-20X-FAL21 680-206061-8	N	1,3-Dichloropropane	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-95-20X-FAL21 680-206061-8	N	1,4-Dichlorobenzene	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-95-20X-FAL21 680-206061-8	N	2,2-Dichloropropane	1.00	1.00 U	1.00 UJ	1.00 U	

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW8260B

FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
G6M-95-20X-FAL21 680-206061-8	N	2-Butanone (MEK)	10.0	10.0 U	10.0 UJ	10.0 U	
G6M-95-20X-FAL21 680-206061-8	N	2-Chlorotoluene	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-95-20X-FAL21 680-206061-8	N	2-Hexanone	10.0	5.00 U	5.00 UJ	5.00 U	
G6M-95-20X-FAL21 680-206061-8	N	4-Chlorotoluene	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-95-20X-FAL21 680-206061-8	N	4-Methyl-2-pentanone (MIBK)	10.0	5.00 U	5.00 UJ	5.00 U	
G6M-95-20X-FAL21 680-206061-8	N	Acetone	25.0	25.0 U	25.0 UJ	25.0 U	
G6M-95-20X-FAL21 680-206061-8	N	Benzene	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-95-20X-FAL21 680-206061-8	N	Bromobenzene	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-95-20X-FAL21 680-206061-8	N	Bromochloromethane	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-95-20X-FAL21 680-206061-8	N	Bromodichloromethane	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-95-20X-FAL21 680-206061-8	N	Bromoform	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-95-20X-FAL21 680-206061-8	N	Bromomethane	5.00	5.00 U	5.00 UJ	5.00 U	
G6M-95-20X-FAL21 680-206061-8	N	Carbon disulfide	2.00	1.00 U	1.00 UJ	1.00 U	
G6M-95-20X-FAL21 680-206061-8	N	Carbon tetrachloride	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-95-20X-FAL21 680-206061-8	N	Chlorobenzene	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-95-20X-FAL21 680-206061-8	N	Chloroethane	5.00	5.00 U Q	5.00 UJ	5.00 UJ	V2/V5
G6M-95-20X-FAL21 680-206061-8	N	Chloroform	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-95-20X-FAL21 680-206061-8	N	Chloromethane	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-95-20X-FAL21 680-206061-8	N	cis-1,2-Dichloroethene	1.00	1.00 U H	1.00 U	1.00 UJ	V5/H1
G6M-95-20X-FAL21 680-206061-8	N	cis-1,3-Dichloropropene	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-95-20X-FAL21 680-206061-8	N	Dibromochloromethane	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-95-20X-FAL21 680-206061-8	N	Dibromomethane	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-95-20X-FAL21 680-206061-8	N	Dichlorodifluoromethane	2.00	2.00 U	2.00 UJ	2.00 U	
G6M-95-20X-FAL21 680-206061-8	N	Ethylbenzene	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-95-20X-FAL21 680-206061-8	N	Hexachlorobutadiene	5.00	5.00 U	5.00 UJ	5.00 U	
G6M-95-20X-FAL21 680-206061-8	N	Isopropylbenzene (Cumene)	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-95-20X-FAL21 680-206061-8	N	m,p-Xylene	1.00	1.00 U	1.00 UJ	1.00 U	

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW8260B							
FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
G6M-95-20X-FAL21 680-206061-8	N	Methyl tert-butyl ether (MTBE)	10.0	1.00 U	1.00 UJ	1.00 U	
G6M-95-20X-FAL21 680-206061-8	N	Methylene chloride	5.00	5.00 U	5.00 UJ	5.00 U	
G6M-95-20X-FAL21 680-206061-8	N	Naphthalene	5.00	5.00 U	5.00 UJ	5.00 U	
G6M-95-20X-FAL21 680-206061-8	N	n-Butylbenzene	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-95-20X-FAL21 680-206061-8	N	n-Propylbenzene	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-95-20X-FAL21 680-206061-8	N	o-Xylene	1.00	0.500 U	0.500 UJ	0.500 U	
G6M-95-20X-FAL21 680-206061-8	N	p-Cymene (p-Isopropyltoluene)	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-95-20X-FAL21 680-206061-8	N	sec-Butylbenzene	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-95-20X-FAL21 680-206061-8	N	Styrene	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-95-20X-FAL21 680-206061-8	N	tert-Butylbenzene	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-95-20X-FAL21 680-206061-8	N	Tetrachloroethene (PCE)	2.00	2.00 U H M	2.00 U	2.00 UJ	V5/H1
G6M-95-20X-FAL21 680-206061-8	N	Toluene	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-95-20X-FAL21 680-206061-8	N	trans-1,2-Dichloroethene	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-95-20X-FAL21 680-206061-8	N	trans-1,3-Dichloropropene	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-95-20X-FAL21 680-206061-8	N	Trichloroethene (TCE)	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-95-20X-FAL21 680-206061-8	N	Trichlorofluoromethane	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-95-20X-FAL21 680-206061-8	N	Vinyl acetate	2.00	2.00 U	2.00 UJ	2.00 UJ	V2
G6M-95-20X-FAL21 680-206061-8	N	Vinyl chloride	1.00	1.00 U	1.00 UJ	1.00 U	
G6M-95-20X-FAL21 680-206061-8	N	Xylenes, Total	2.00	2.00 U	2.00 UJ	2.00 U	
XSA-12-97X-FAL21 680-206061-10	N	1,1,1,2-Tetrachloroethane	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-97X-FAL21 680-206061-10	N	1,1,1-Trichloroethane	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-97X-FAL21 680-206061-10	N	1,1,2,2-Tetrachloroethane	2.00	2.00 U	2.00 UJ	2.00 U	
XSA-12-97X-FAL21 680-206061-10	N	1,1,2-Trichloroethane	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-97X-FAL21 680-206061-10	N	1,1-Dichloroethane	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-97X-FAL21 680-206061-10	N	1,1-Dichloroethene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-97X-FAL21 680-206061-10	N	1,1-Dichloropropene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-97X-FAL21 680-206061-10	N	1,2,3-Trichlorobenzene	5.00	5.00 U	5.00 UJ	5.00 U	

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW8260B							
FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
XSA-12-97X-FAL21 680-206061-10	N	1,2,3-Trichloropropane	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-97X-FAL21 680-206061-10	N	1,2,4-Trichlorobenzene	5.00	5.00 U	5.00 UJ	5.00 U	
XSA-12-97X-FAL21 680-206061-10	N	1,2,4-Trimethylbenzene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-97X-FAL21 680-206061-10	N	1,2-Dibromo-3-chloropropane	5.00	4.00 U	4.00 UJ	4.00 U	
XSA-12-97X-FAL21 680-206061-10	N	1,2-Dibromoethane (EDB)	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-97X-FAL21 680-206061-10	N	1,2-Dichlorobenzene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-97X-FAL21 680-206061-10	N	1,2-Dichloroethane	1.00	1.00 U M	1.00 UJ	1.00 U	
XSA-12-97X-FAL21 680-206061-10	N	1,2-Dichloroethene	2.00	11.0	11.0 J	11.0	
XSA-12-97X-FAL21 680-206061-10	N	1,2-Dichloropropane	2.00	2.00 U	2.00 UJ	2.00 U	
XSA-12-97X-FAL21 680-206061-10	N	1,3,5-Trimethylbenzene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-97X-FAL21 680-206061-10	N	1,3-Dichlorobenzene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-97X-FAL21 680-206061-10	N	1,3-Dichloropropane	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-97X-FAL21 680-206061-10	N	1,4-Dichlorobenzene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-97X-FAL21 680-206061-10	N	2,2-Dichloropropane	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-97X-FAL21 680-206061-10	N	2-Butanone (MEK)	10.0	10.0 U	10.0 UJ	10.0 U	
XSA-12-97X-FAL21 680-206061-10	N	2-Chlorotoluene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-97X-FAL21 680-206061-10	N	2-Hexanone	10.0	5.00 U	5.00 UJ	5.00 U	
XSA-12-97X-FAL21 680-206061-10	N	4-Chlorotoluene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-97X-FAL21 680-206061-10	N	4-Methyl-2-pentanone (MIBK)	10.0	5.00 U	5.00 UJ	5.00 U	
XSA-12-97X-FAL21 680-206061-10	N	Acetone	25.0	25.0 U	25.0 UJ	25.0 U	
XSA-12-97X-FAL21 680-206061-10	N	Benzene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-97X-FAL21 680-206061-10	N	Bromobenzene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-97X-FAL21 680-206061-10	N	Bromochloromethane	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-97X-FAL21 680-206061-10	N	Bromodichloromethane	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-97X-FAL21 680-206061-10	N	Bromoform	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-97X-FAL21 680-206061-10	N	Bromomethane	5.00	5.00 U	5.00 UJ	5.00 U	
XSA-12-97X-FAL21 680-206061-10	N	Carbon disulfide	2.00	1.00 U	1.00 UJ	1.00 U	

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW8260B							
FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
XSA-12-97X-FAL21 680-206061-10	N	Carbon tetrachloride	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-97X-FAL21 680-206061-10	N	Chlorobenzene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-97X-FAL21 680-206061-10	N	Chloroethane	5.00	5.00 U Q	5.00 UJ	5.00 UJ	V2/V5
XSA-12-97X-FAL21 680-206061-10	N	Chloroform	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-97X-FAL21 680-206061-10	N	Chloromethane	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-97X-FAL21 680-206061-10	N	cis-1,2-Dichloroethene	1.00	11.0	11.0 J	11.0	
XSA-12-97X-FAL21 680-206061-10	N	cis-1,3-Dichloropropene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-97X-FAL21 680-206061-10	N	Dibromochloromethane	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-97X-FAL21 680-206061-10	N	Dibromomethane	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-97X-FAL21 680-206061-10	N	Dichlorodifluoromethane	2.00	2.00 U	2.00 UJ	2.00 U	
XSA-12-97X-FAL21 680-206061-10	N	Ethylbenzene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-97X-FAL21 680-206061-10	N	Hexachlorobutadiene	5.00	5.00 U	5.00 UJ	5.00 U	
XSA-12-97X-FAL21 680-206061-10	N	Isopropylbenzene (Cumene)	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-97X-FAL21 680-206061-10	N	m,p-Xylene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-97X-FAL21 680-206061-10	N	Methyl tert-butyl ether (MTBE)	10.0	1.00 U	1.00 UJ	1.00 U	
XSA-12-97X-FAL21 680-206061-10	N	Methylene chloride	5.00	5.00 U	5.00 UJ	5.00 U	
XSA-12-97X-FAL21 680-206061-10	N	Naphthalene	5.00	5.00 U	5.00 UJ	5.00 U	
XSA-12-97X-FAL21 680-206061-10	N	n-Butylbenzene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-97X-FAL21 680-206061-10	N	n-Propylbenzene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-97X-FAL21 680-206061-10	N	o-Xylene	1.00	0.500 U	0.500 UJ	0.500 U	
XSA-12-97X-FAL21 680-206061-10	N	p-Cymene (p-Isopropyltoluene)	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-97X-FAL21 680-206061-10	N	sec-Butylbenzene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-97X-FAL21 680-206061-10	N	Styrene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-97X-FAL21 680-206061-10	N	tert-Butylbenzene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-97X-FAL21 680-206061-10	N	Tetrachloroethene (PCE)	2.00	2.00 U	2.00 UJ	2.00 U	
XSA-12-97X-FAL21 680-206061-10	N	Toluene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-97X-FAL21 680-206061-10	N	trans-1,2-Dichloroethene	1.00	1.00 U	1.00 UJ	1.00 U	

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW8260B

FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
XSA-12-97X-FAL21 680-206061-10	N	trans-1,3-Dichloropropene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-97X-FAL21 680-206061-10	N	Trichloroethene (TCE)	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-97X-FAL21 680-206061-10	N	Trichlorofluoromethane	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-97X-FAL21 680-206061-10	N	Vinyl acetate	2.00	2.00 U	2.00 UJ	2.00 UJ	V2
XSA-12-97X-FAL21 680-206061-10	N	Vinyl chloride	1.00	3.30	3.30 J	3.30	
XSA-12-97X-FAL21 680-206061-10	N	Xylenes, Total	2.00	2.00 U	2.00 UJ	2.00 U	
XSA-12-98X-FAL21 680-206061-11	N	1,1,1,2-Tetrachloroethane	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-98X-FAL21 680-206061-11	N	1,1,1-Trichloroethane	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-98X-FAL21 680-206061-11	N	1,1,2,2-Tetrachloroethane	2.00	2.00 U	2.00 UJ	2.00 U	
XSA-12-98X-FAL21 680-206061-11	N	1,1,2-Trichloroethane	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-98X-FAL21 680-206061-11	N	1,1-Dichloroethane	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-98X-FAL21 680-206061-11	N	1,1-Dichloroethene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-98X-FAL21 680-206061-11	N	1,1-Dichloropropene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-98X-FAL21 680-206061-11	N	1,2,3-Trichlorobenzene	5.00	5.00 U	5.00 UJ	5.00 U	
XSA-12-98X-FAL21 680-206061-11	N	1,2,3-Trichloropropane	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-98X-FAL21 680-206061-11	N	1,2,4-Trichlorobenzene	5.00	5.00 U	5.00 UJ	5.00 U	
XSA-12-98X-FAL21 680-206061-11	N	1,2,4-Trimethylbenzene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-98X-FAL21 680-206061-11	N	1,2-Dibromo-3-chloropropane	5.00	4.00 U	4.00 UJ	4.00 U	
XSA-12-98X-FAL21 680-206061-11	N	1,2-Dibromoethane (EDB)	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-98X-FAL21 680-206061-11	N	1,2-Dichlorobenzene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-98X-FAL21 680-206061-11	N	1,2-Dichloroethane	1.00	1.00 U M	1.00 UJ	1.00 U	
XSA-12-98X-FAL21 680-206061-11	N	1,2-Dichloroethene	2.00	2.00 U	2.00 UJ	2.00 U	
XSA-12-98X-FAL21 680-206061-11	N	1,2-Dichloropropane	2.00	2.00 U	2.00 UJ	2.00 U	
XSA-12-98X-FAL21 680-206061-11	N	1,3,5-Trimethylbenzene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-98X-FAL21 680-206061-11	N	1,3-Dichlorobenzene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-98X-FAL21 680-206061-11	N	1,3-Dichloropropane	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-98X-FAL21 680-206061-11	N	1,4-Dichlorobenzene	1.00	1.00 U	1.00 UJ	1.00 U	

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW8260B							
FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
XSA-12-98X-FAL21 680-206061-11	N	2,2-Dichloropropane	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-98X-FAL21 680-206061-11	N	2-Butanone (MEK)	10.0	10.0 U	10.0 UJ	10.0 U	
XSA-12-98X-FAL21 680-206061-11	N	2-Chlorotoluene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-98X-FAL21 680-206061-11	N	2-Hexanone	10.0	5.00 U	5.00 UJ	5.00 U	
XSA-12-98X-FAL21 680-206061-11	N	4-Chlorotoluene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-98X-FAL21 680-206061-11	N	4-Methyl-2-pentanone (MIBK)	10.0	5.00 U	5.00 UJ	5.00 U	
XSA-12-98X-FAL21 680-206061-11	N	Acetone	25.0	25.0 U	25.0 UJ	25.0 U	
XSA-12-98X-FAL21 680-206061-11	N	Benzene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-98X-FAL21 680-206061-11	N	Bromobenzene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-98X-FAL21 680-206061-11	N	Bromochloromethane	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-98X-FAL21 680-206061-11	N	Bromodichloromethane	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-98X-FAL21 680-206061-11	N	Bromoform	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-98X-FAL21 680-206061-11	N	Bromomethane	5.00	5.00 U	5.00 UJ	5.00 U	
XSA-12-98X-FAL21 680-206061-11	N	Carbon disulfide	2.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-98X-FAL21 680-206061-11	N	Carbon tetrachloride	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-98X-FAL21 680-206061-11	N	Chlorobenzene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-98X-FAL21 680-206061-11	N	Chloroethane	5.00	5.00 U Q	5.00 UJ	5.00 UJ	V2/V5
XSA-12-98X-FAL21 680-206061-11	N	Chloroform	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-98X-FAL21 680-206061-11	N	Chloromethane	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-98X-FAL21 680-206061-11	N	cis-1,2-Dichloroethene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-98X-FAL21 680-206061-11	N	cis-1,3-Dichloropropene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-98X-FAL21 680-206061-11	N	Dibromochloromethane	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-98X-FAL21 680-206061-11	N	Dibromomethane	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-98X-FAL21 680-206061-11	N	Dichlorodifluoromethane	2.00	2.00 U	2.00 UJ	2.00 U	
XSA-12-98X-FAL21 680-206061-11	N	Ethylbenzene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-98X-FAL21 680-206061-11	N	Hexachlorobutadiene	5.00	5.00 U	5.00 UJ	5.00 U	
XSA-12-98X-FAL21 680-206061-11	N	Isopropylbenzene (Cumene)	1.00	1.00 U	1.00 UJ	1.00 U	

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW8260B							
FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
XSA-12-98X-FAL21 680-206061-11	N	m,p-Xylene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-98X-FAL21 680-206061-11	N	Methyl tert-butyl ether (MTBE)	10.0	1.00 U	1.00 UJ	1.00 U	
XSA-12-98X-FAL21 680-206061-11	N	Methylene chloride	5.00	5.00 U	5.00 UJ	5.00 U	
XSA-12-98X-FAL21 680-206061-11	N	Naphthalene	5.00	5.00 U	5.00 UJ	5.00 U	
XSA-12-98X-FAL21 680-206061-11	N	n-Butylbenzene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-98X-FAL21 680-206061-11	N	n-Propylbenzene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-98X-FAL21 680-206061-11	N	o-Xylene	1.00	0.500 U	0.500 UJ	0.500 U	
XSA-12-98X-FAL21 680-206061-11	N	p-Cymene (p-Isopropyltoluene)	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-98X-FAL21 680-206061-11	N	sec-Butylbenzene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-98X-FAL21 680-206061-11	N	Styrene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-98X-FAL21 680-206061-11	N	tert-Butylbenzene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-98X-FAL21 680-206061-11	N	Tetrachloroethene (PCE)	2.00	0.830 J H	0.830 J	0.830 J	TR/H1
XSA-12-98X-FAL21 680-206061-11	N	Toluene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-98X-FAL21 680-206061-11	N	trans-1,2-Dichloroethene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-98X-FAL21 680-206061-11	N	trans-1,3-Dichloropropene	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-98X-FAL21 680-206061-11	N	Trichloroethene (TCE)	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-98X-FAL21 680-206061-11	N	Trichlorofluoromethane	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-98X-FAL21 680-206061-11	N	Vinyl acetate	2.00	2.00 U	2.00 UJ	2.00 UJ	V2
XSA-12-98X-FAL21 680-206061-11	N	Vinyl chloride	1.00	1.00 U	1.00 UJ	1.00 U	
XSA-12-98X-FAL21 680-206061-11	N	Xylenes, Total	2.00	2.00 U	2.00 UJ	2.00 U	

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Reason Code Definitions

Code	Definition
B2	CCB
C	LCS Recovery
D3	Field Duplicate RPD
H1	Test Hold Time

Reason Code Definitions

Code	Definition
L	Lab Blank
TR	Trace Level Detect
V1	ICV
V2	CCV
V5	Ending Continuing Calibration Verification
Z	LCS RPD

Flag Code and Definitions

Flag	Definition
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.

Bias

-	The result may be biased low
+	The result may be biased high

Note - The bias field is a separate field; however, it is an integral part of the final flag (qualifier) on the sample result

Review Questions

Method: A2320B (Alkalinity by Titrimetric Method)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		Although the method blanks and calibration blanks had detections for alkalinity, the associated sample results were significantly greater than the concentrations found in the blanks, therefore no data were qualified.
Were field blanks (EBs or FBs) submitted with these samples?		•		No field blanks were submitted with these samples.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?		•		MS/MSD not performed.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	No field duplicates were submitted with these samples.
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Review Questions

Method: E353.2 (Nitrogen, Nitrate-Nitrite (Colorimetric Automated, Cadmium Reduction))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were field blanks (EBs or FBs) submitted with these samples?		•		No field blanks were submitted with these samples.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCSD not performed.
Was a MS/MSD pair prepared with each batch?		•		MS/MSD not performed.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	No field duplicates were submitted with these samples.
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Review Questions

Method: RSK175 (Dissolved Gas Analysis in Water Samples Using a GC Headspace Equilibrium Technique)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Were the required minimum levels of calibration standards used in the initial calibration?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Were surrogate recoveries within project acceptance limits?			•	Surrogates not required per the method.
Was a method blank prepared and analyzed with each batch?	•			
Were field blanks (EBs or FBs) submitted with these samples?		•		No field blanks were submitted with these samples.
Were target analytes reported in the field blank(s) less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			Although FUDSChem ADR flagged LCS/LCSD RPD as above criteria, the ADR RPD calculations are incorrect. The RPDs were reviewed manually.
Was a MS/MSD pair prepared with each batch?		•		MS/MSD not performed.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	No field duplicates were submitted with these samples.
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Review Questions

Method: SW6010C (Trace Metals by Inductively Coupled Plasma/Atomic Emission Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were field blanks (EBs or FBs) submitted with these samples?		•		No field blanks were submitted with these samples.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCSD not performed.
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?	•			
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Review Questions

Method: SW6020A (Trace Metals by Inductively Coupled Plasma/Mass Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes reported in the field blank(s) less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCSD not performed.
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?	•			
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Review Questions

Method: SW8260B (Volatile Organic Compounds by Capillary GC/MS)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?		•		Due to holding time exceedance, one sample was qualified as detected estimated (J) with a low bias (-) or non-detected estimated (UJ). Although several samples were flagged as outside of the holding time by FUDSChem ADR, the samples were analyzed on the last day of hold and considered within holding time.
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Were the required minimum levels of calibration standards used in the initial calibration?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?		•		Due to ICV %R outside criteria, five vinyl acetate results were qualified as non-detected estimated (UJ).
Were CCVs run at the required frequency and within acceptance criteria?		•		Due to CCV %R outside criteria, eight vinyl acetate, seven chloroethene, and one dichlorodifluoromethane results were qualified as non-detected estimated (UJ). Due to ending CCV %R outside criteria, seven chloroethane results were qualified as non-detected estimated (UJ). Due to no closing CCV, one 1,2-dichloroethene, one cis-1,2-dichloroethene, and one tetrachloroethene results were qualified as non-detected estimated (UJ).
Were surrogate recoveries within project acceptance limits?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were field blanks (EBs or FBs) submitted with these samples?	•			
Were target analytes reported in the field blank(s) less than MDL?	•			
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?		•		Although chloroethane LCS %R was above criteria, the associated sample results were not detected, therefore no data were qualified.
Was the LCS/LCSD RPD within project acceptance limits?		•		Although chloromethane LCS/LCSD RPD was above criteria, the associated sample results were not detected, therefore no data were qualified.
Was a MS/MSD pair prepared with each batch?		•		MS/MSD not performed.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory LOQs/RLs achieved?	•			

Review Questions

Method: SW8260B (Volatile Organic Compounds by Capillary GC/MS)				
Review Questions	Yes	No	NA	Comment
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported or as qualified during data validation.

Review Questions

Method: SW9034 (Titrimetric Procedure for Acid-Soluble and Acid-Insoluble Sulfides)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes reported in the field blank(s) less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?		•		MS/MSD not performed.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	No field duplicates were submitted with these samples.
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Review Questions

Method: SW9056A (Anion Chromatography)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes reported in the field blank(s) less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?		•		MS/MSD not performed.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	No field duplicates were submitted with these samples.
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Review Questions

Method: SW9060A (Total Organic Carbon)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes reported in the field blank(s) less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?		•		MS/MSD not performed.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	No field duplicates were submitted with these samples.
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Field Duplicate Report By SDG

Former Fort Devens, Long Term Monitoring
Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021
Field Duplicates for SDG: 6802060611

Location	Analysis
G6M-95-20X	SW6010C

Field ID - Primary/Field Dup	Lab ID - Primary/Field Dup	Analyte	Primary Result	FD Result	RL	RPD	RPD Criteria	RPD Check	RL Check
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	Iron (FLDFLT)	6500	6400	50.0	1.55	30	OK	NA
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	Manganese (FLDFLT)	440	430	10.0	2.30	30	OK	NA

Location	Analysis
G6M-95-20X	SW6020A

Field ID - Primary/Field Dup	Lab ID - Primary/Field Dup	Analyte	Primary Result	FD Result	RL	RPD	RPD Criteria	RPD Check	RL Check
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	Arsenic (FLDFLT)	37.0	36.0	3.00	2.74	30	OK	NA

Location	Analysis
G6M-95-20X	SW8260B

Field ID - Primary/Field Dup	Lab ID - Primary/Field Dup	Analyte	Primary Result	FD Result	RL	RPD	RPD Criteria	RPD Check	RL Check
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	1,1,1,2-Tetrachloroethane	ND	ND	1.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	1,1,1-Trichloroethane	ND	ND	1.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	1,1,2,2-Tetrachloroethane	ND	ND	2.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	1,1,2-Trichloroethane	ND	ND	1.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	1,1-Dichloroethane	ND	ND	1.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	1,1-Dichloroethene	ND	ND	1.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	1,1-Dichloropropene	ND	ND	1.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	1,2,3-Trichlorobenzene	ND	ND	5.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	1,2,3-Trichloropropane	ND	ND	1.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	1,2,4-Trichlorobenzene	ND	ND	5.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	1,2,4-Trimethylbenzene	ND	ND	1.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	1,2-Dibromo-3-chloropropane	ND	ND	5.00	NA	30	NA	OK

FD = Field Duplicate
RL = Reporting Limit
RPD = Relative Percent Difference

RL Check = If either the primary sample or field duplicate result is less than 5 times the RL then the criteria used to determine if the field duplicate is outside QC limits is +/- RL for Water and +/- 2 times RL for Soil"

Field Duplicate Report By SDG
Former Fort Devens, Long Term Monitoring
Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021
Field Duplicates for SDG: 6802060611

Location	Analysis
G6M-95-20X	SW8260B

Field ID - Primary/Field Dup	Lab ID - Primary/Field Dup	Analyte	Primary Result	FD Result	RL	RPD	RPD Criteria	RPD Check	RL Check
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	1,2-Dibromoethane (EDB)	ND	ND	1.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	1,2-Dichlorobenzene	ND	ND	1.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	1,2-Dichloroethane	ND	ND	1.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	1,2-Dichloroethene	ND	ND	2.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	1,2-Dichloropropane	ND	ND	2.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	1,3,5-Trimethylbenzene	ND	ND	1.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	1,3-Dichlorobenzene	ND	ND	1.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	1,3-Dichloropropane	ND	ND	1.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	1,4-Dichlorobenzene	ND	ND	1.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	2,2-Dichloropropane	ND	ND	1.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	2-Butanone (MEK)	ND	ND	10.0	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	2-Chlorotoluene	ND	ND	1.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	2-Hexanone	ND	ND	10.0	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	4-Chlorotoluene	ND	ND	1.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	4-Methyl-2-pentanone (MIBK)	ND	ND	10.0	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	Acetone	ND	ND	25.0	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	Benzene	ND	ND	1.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	Bromobenzene	ND	ND	1.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	Bromochloromethane	ND	ND	1.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	Bromodichloromethane	ND	ND	1.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	Bromoform	ND	ND	1.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	Bromomethane	ND	ND	5.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	Carbon disulfide	ND	ND	2.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	Carbon tetrachloride	ND	ND	1.00	NA	30	NA	OK

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RL Check = If either the primary sample or field duplicate result is less than 5 times the RL then the criteria used to determine if the field duplicate is outside QC limits is +/- RL for Water and +/- 2 times RL for Soil"

Field Duplicate Report By SDG
Former Fort Devens, Long Term Monitoring
Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021
Field Duplicates for SDG: 6802060611

Location	Analysis
G6M-95-20X	SW8260B

Field ID - Primary/Field Dup	Lab ID - Primary/Field Dup	Analyte	Primary Result	FD Result	RL	RPD	RPD Criteria	RPD Check	RL Check
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	Chlorobenzene	ND	ND	1.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	Chloroethane	ND	ND	5.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	Chloroform	ND	ND	1.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	Chloromethane	ND	ND	1.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	cis-1,2-Dichloroethene	ND	ND	1.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	cis-1,3-Dichloropropene	ND	ND	1.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	Dibromochloromethane	ND	ND	1.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	Dibromomethane	ND	ND	1.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	Dichlorodifluoromethane	ND	ND	2.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	Ethylbenzene	ND	ND	1.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	Hexachlorobutadiene	ND	ND	5.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	Isopropylbenzene (Cumene)	ND	ND	1.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	m,p-Xylene	ND	ND	1.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	Methyl tert-butyl ether (MTBE)	ND	ND	10.0	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	Methylene chloride	ND	ND	5.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	n-Butylbenzene	ND	ND	1.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	n-Propylbenzene	ND	ND	1.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	Naphthalene	ND	ND	5.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	o-Xylene	ND	ND	1.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	p-Cymene (p-Isopropyltoluene)	ND	ND	1.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	sec-Butylbenzene	ND	ND	1.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	Styrene	ND	ND	1.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	tert-Butylbenzene	ND	ND	1.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	Tetrachloroethene (PCE)	ND	ND	2.00	NA	30	NA	OK

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Field Duplicate Report By SDG
Former Fort Devens, Long Term Monitoring
Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021
Field Duplicates for SDG: 6802060611

Location	Analysis
G6M-95-20X	SW8260B

Field ID - Primary/Field Dup	Lab ID - Primary/Field Dup	Analyte	Primary Result	FD Result	RL	RPD	RPD Criteria	RPD Check	RL Check
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	Toluene	ND	ND	1.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	trans-1,2-Dichloroethene	ND	ND	1.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	trans-1,3-Dichloropropene	ND	ND	1.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	Trichloroethene (TCE)	ND	ND	1.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	Trichlorofluoromethane	ND	ND	1.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	Vinyl acetate	ND	ND	2.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	Vinyl chloride	ND	ND	1.00	NA	30	NA	OK
G6M-95-20X-FAL21 / AOC50-DUP01-FAL21	680-206061-8 / 680-206061-9	Xylenes, Total	ND	ND	2.00	NA	30	NA	OK

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RL = Reporting Limit
RPD = Relative Percent Difference

RL Check = If either the primary sample or field duplicate result is less than 5 times the RL then the criteria used to determine if the field duplicate is outside QC limits is +/- RL for Water and +/- 2 times RL for Soil"

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

ARCADIS U.S., Inc.
3109 West Martin Luther King Jr. Blvd, Suite 350
Tampa, FL 33607
ATTN: Mr. Nathan Mullens
nrmullens@seres-es.com

January 3, 2022

SUBJECT: Fort Devens - Data Validation

Dear Mr. Mullens,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on December 6, 2021. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #52770:

SDG #	Fraction
680-205985-1, 680-206221-1 680-206349-1, 680-206403-1 608-207349-1, SO7301	Volatiles, Dissolved Metals, VPH, Methane, Ethane, & Ethene, Wet Chemistry

The data validation was performed under Stage 2B guidelines. The analyses were validated using the following documents and variances, as applicable to each method:

- Quality Assurance Project Plan, Long Term Monitoring Program, Former Fort Devens, 2020
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014; update VI, July 2018

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist
pgeng@lab-data.com

309 pages-ADV

Attachment 1

Stage 2B EQUIS EDD

LDC# 52770 (Arcadis - Millersville, MD / Fort Devens)

LDC	SDG#	DATE REC'D	(2) DATE DUE	VOA (8260B)		Mn (6010C)		Fe,Mn (6010C)		3 D.Met. (6010C/ 6020A)		VPH (MADEP -VPH		Methane Ethane Ethene		Alk (2320B)		DOC (9060A)		Cl (9056A)		NO_3 /NO_2-N (353.2)		SO_4 (9056A)		S= (9034)		TOC (9060A)									
Matrix: Water/Soil				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	680-205985-1	12/06/21	12/20/21	11	0	-	-	-	-	12	0	-	-	4	0	4	0	-	-	-	-	4	0	4	0	4	0	4	0								
B	680-206221-1	12/06/21	12/20/21	12	0	-	-	-	-	11	0	-	-	4	0	4	0	-	-	-	-	4	0	4	0	4	0	4	0								
C	680-206349-1	12/06/21	12/20/21	-	-	1	0	6	0	-	-	-	-	-	-	6	0	-	-	-	-	-	-	-	-	-	-	-	-								
D	680-206403-1	12/06/21	12/20/21	-	-	-	-	-	-	10	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-								
E	680-207349-1	12/06/21	12/20/21	-	-	-	-	-	-	27	0	-	-	-	-	27	0	27	0	27	0	-	-	27	0	-	-	-	-								
F	SO7301	12/06/21	12/20/21	-	-	-	-	-	-	-	-	10	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-								
Total	T/PG			23	0	1	0	6	0	60	0	10	0	8	0	41	0	27	0	27	0	8	0	35	0	8	0	8	0	0	0	0	0	0	0	0	262

Shaded cells indicate Stage 4 validation (all other cells are Stage 2B validation). These sample counts do not include MS/MSD, and DUPs

V:\LOGIN\Arcadis\Fort Devens\52770ST.wpd

Data Validation Report for 6802062211

Facility:	Former Fort Devens, Long Term Monitoring
Event:	Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021
SDG:	6802062211
Guidance Document:	Quality Assurance Project Plan, Long Term Monitoring Program, Former Fort Devens, 2020
Prime Contractor:	Seres-Arcadis JV
Project Manager:	Jennifer Singer
Contract Laboratory(ies):	Eurofins Environment Testing TestAmerica, Arvada, CO | Eurofins Environment Testing TestAmerica, Savannah, GA
Data Review Contractor:	Laboratory Data Consultants, Inc.
Data Review Level:	2B
Primary Data Reviewer:	Kevin Kha, Environmental Scientist
Second Reviewer:	Pei Geng, Senior Scientist
Date Submitted:	December 29, 2021

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	A2320B	E353.2	RSK175	SW6010C - Dissolved	SW6020A - Dissolved	SW8260B	SW9034	SW9056A	SW9060A
AOC50-DUP03-FAL21	680-206221-6	Water	Field Duplicate/FD				X	X	X			
AOC50-DUP04-FAL21	680-206221-10	Water	Field Duplicate/FD	X	X	X	X	X	X	X	X	X
AOC50-RB03-FAL21	680-206221-12	Water	Equipment Blank/EB				X	X	X			
AOC50-TB03-FAL21	680-206221-11	Water	Trip Blank/TB						X			
G6M-02-13X-FAL21	680-206221-1	Water	Field Sample/N				X	X	X			
G6M-03-07X-FAL21	680-206221-3	Water	Field Sample/N	X	X	X	X	X	X	X	X	X
G6M-04-02X-FAL21	680-206221-4	Water	Field Sample/N	X	X	X	X	X	X	X	X	X
G6M-04-04X-FAL21	680-206221-5	Water	Field Sample/N				X	X	X			
G6M-04-09X-FAL21	680-206221-7	Water	Field Sample/N				X	X	X			
G6M-04-14X-FAL21	680-206221-2	Water	Field Sample/N				X	X	X			
G6M-04-15X-FAL21	680-206221-8	Water	Field Sample/N				X	X	X			
G6M-13-02X-FAL21	680-206221-9	Water	Field Sample/N	X	X	X	X	X	X	X	X	X

This report assesses the analytical data quality associated with the analyses listed on the preceding cover page at 2B data validation level. This assessment has been made through a combination of automated data review (ADR) and supplemental manual review, the details of which are described below. The approach taken in the review of this data set is consistent with the requirements contained in the Quality Assurance Project Plan, Long Term Monitoring Program, Former Fort Devens, 2020 and the additional guidance documents incorporated by reference to the extent possible. Where definitive guidance is not provided, results have been evaluated in a conservative manner using professional judgment.

Sample collection was managed and directed by Seres-Arcadis JV; analyses were performed by Eurofins Environment Testing TestAmerica, Arvada, CO | Eurofins Environment Testing TestAmerica, Savannah, GA and were reported under sample delivery group (SDG) 6802062211. Data have been evaluated electronically based on electronic data deliverables (EDDs) provided by the laboratory, and hard copy data summary forms have also been reviewed during this effort and compared to the automated review output by the reviewers whose signatures appear on the following page. Findings based on the automated data submission and manual data verification processes are detailed in the ADR narrative and throughout this report.

All quality control (QC) elements associated with this SDG have been reviewed by a project chemist in accordance with the requirements defined for the project. This review is documented in the attached Data Review Checklists. The QC elements listed below were supported by the electronic deliverable and were evaluated using ADR processes.

- Blank - Negative
- Calibration Blank
- Calibration Blank - Negative
- Continuing Calibration Verification
- Equipment Blank
- Field Duplicate RPD
- Interference Check Sample A
- Interference Check Sample A - Negative
- Interference Check Sample AB
- Lab Blank
- LCS Recovery
- LCS RPD
- MS Recovery
- MS RPD
- Prep Hold Time
- Surrogate
- Test Hold Time
- Trip Blank

Results of the ADR process were subsequently reviewed and updated as applicable by the data review chemists identified on the signature page. Quality control elements that were not included in the electronic deliverable were reviewed manually and findings are documented within this report. Summaries of findings and associated qualified results are documented throughout this report.

A total of 30 results (3.41%) out of the 881 results (sample and field QC samples) reported are qualified based on review and 0 results (0.00%) have been rejected or deemed a serious deficiency (X qualifier). Trace values, defined as results that are qualified as estimated because they fall between the detection limit and the reporting limit/limit of quantitation, are not counted as qualified results in the above count. The qualified results are detailed throughout this report and discussed in the narrative below, where appropriate.

Narrative Comments

Analytical Method	Data Reviewer Comment
RSK175	No additional comments; see Checklist for detail.
SW6010C	No additional comments; see Checklist for detail.
E353.2	No additional comments; see Checklist for detail.
SW9056A	No additional comments; see Checklist for detail.
SW8260B	No additional comments; see Checklist for detail.
A2320B	No additional comments; see Checklist for detail.
SW9034	No additional comments; see Checklist for detail.
SW6020A	No additional comments; see Checklist for detail.
SW9060A	No additional comments; see Checklist for detail.

December 29, 2021

Reviewed by Kevin Kha, Environmental Scientist, Laboratory Data Consultants, Inc.

As the First Reviewer, I certify that I have performed a data review process in accordance with the requirements of the project guidance document, and have compared the electronic data to the laboratory's hard copy report and have verified the consistency of the reported sample results and method quality control data between the two deliverables.

Reviewed by Pei Geng, Senior Scientist, Laboratory Data Consultants, Inc.

January 03, 2022

As the Second Reviewer, I certify that I have performed a quality assurance review of the report generated by the First Reviewer.

Quality Control Outliers for test method A2320B, Calibration Blank

The purpose of calibration blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in calibration blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCB28055545717 (CB)	Alkalinity, Total (as CaCO3)	5.800	< 3.1	< 10	mg/l	U/None*	B2	
CCB28055545729 (CB)	Alkalinity, Total (as CaCO3)	6.090	< 3.1	< 10	mg/l	U/None*	B2	
CCB28055545743 (CB)	Alkalinity, Total (as CaCO3)	6.540	< 3.1	< 10	mg/l	U/None*	B2	
CCB28055545755 (CB)	Alkalinity, Total (as CaCO3)	6.560	< 3.1	< 10	mg/l	U/None*	B2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

*Blank flags displayed in the above table identify qualification of the sample result when it is less than or equal to the LOQ/RL. Sample results above the LOQ will be qualified based on the validation type such as J+ at the sample result.

No results associated with this QC element required qualification.

Quality Control Outliers for test method A2320B, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
MB28055545731 (LB)	Alkalinity, Total (as CaCO3)	7.540	< 3.1	< 10	mg/l	U/None*	L	
MB2805554575 (LB)	Alkalinity, Total (as CaCO3)	6.500	< 3.1	< 10	mg/l	U/None*	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

*Blank flags displayed in the above table identify qualification of the sample result when it is less than or equal to the LOQ/RL. Sample results above the LOQ will be qualified based on the validation type such as J+ at the sample result.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW6010C, Dissolved, Calibration Blank

The purpose of calibration blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in calibration blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCB680691312337 (CB)	Iron	21.50	< 17	< 50	ug/l	U/None*	B2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

*Blank flags displayed in the above table identify qualification of the sample result when it is less than or equal to the LOQ/RL. Sample results above the LOQ will be qualified based on the validation type such as J+ at the sample result.

Qualified Results associated with the Calibration Blank for SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
AOC50-RB03-FAL21 680-206221-12	EB	Iron	50.0	19.0 J	50.0 U		ug/l	B2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW6010C, Dissolved, Equipment Blank

The purpose of equipment blanks is to determine the existence and magnitude of cross-contamination problems resulting from the process during sampling. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in equipment blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
AOC50-RB03-FAL21 (EB)	Iron	19.00	< 17	< 50	ug/l	U/None*	V	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

*Blank flags displayed in the above table identify qualification of the sample result when it is less than or equal to the LOQ/RL. Sample results above the LOQ will be qualified based on the validation type such as J+ at the sample result.

Qualified Results associated with the Equipment Blank for SW6010C, Dissolved

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
G6M-04-14X-FAL21 680-206221-2	N	Iron	54.0	54.0	54.0 U		ug/l	V

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260B, Continuing Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCVIS 680-692128/2 (CV)	2-Butanone (MEK)	79.90	80 - 120	80 - 120	percent	J/UJ	V2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Continuing Calibration Verification for SW8260B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
AOC50-DUP04-FAL21 680-206221-10	FD	2-Butanone (MEK)	10.0	10.0 U Q	10.0 UJ		ug/l	V2
AOC50-RB03-FAL21 680-206221-12	EB	2-Butanone (MEK)	10.0	10.0 U Q	10.0 UJ		ug/l	V2
AOC50-TB03-FAL21 680-206221-11	TB	2-Butanone (MEK)	10.0	10.0 U Q	10.0 UJ		ug/l	V2
G6M-04-09X-FAL21 680-206221-7	N	2-Butanone (MEK)	10.0	10.0 U Q	10.0 UJ		ug/l	V2
G6M-04-15X-FAL21 680-206221-8	N	2-Butanone (MEK)	10.0	10.0 U Q	10.0 UJ		ug/l	V2
G6M-13-02X-FAL21 680-206221-9	N	2-Butanone (MEK)	10.0	10.0 U Q	10.0 UJ		ug/l	V2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260B, Continuing Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCVIS6806916662 (CV)	Acetone	123.0	80 - 120	80 - 120	percent	J/UJ	V2	
CCVIS6806916662 (CV)	Bromomethane	159.0	80 - 120	80 - 120	percent	J/UJ	V2	
CCVIS6806916662 (CV)	Chloroethane	197.0	80 - 120	80 - 120	percent	J/UJ	V2	
CCVIS6806916662 (CV)	Dichlorodifluoromethane	76.00	80 - 120	80 - 120	percent	J/UJ	V2	
CCVIS6806920212 (CV)	Chloroethane	188.0	80 - 120	80 - 120	percent	J/UJ	V2	
CCVIS6806920212 (CV)	Vinyl acetate	151.0	80 - 120	80 - 120	percent	J/UJ	V2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Continuing Calibration Verification for SW8260B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
AOC50-DUP03-FAL21 680-206221-6	FD	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
AOC50-DUP03-FAL21 680-206221-6	FD	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V2
G6M-02-13X-FAL21 680-206221-1	N	Acetone	25.0	25.0 U Q	25.0 UJ		ug/l	V2
G6M-02-13X-FAL21 680-206221-1	N	Bromomethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
G6M-02-13X-FAL21 680-206221-1	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
G6M-02-13X-FAL21 680-206221-1	N	Dichlorodifluoromethane	2.00	2.00 U Q	2.00 UJ		ug/l	V2
G6M-03-07X-FAL21 680-206221-3	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
G6M-03-07X-FAL21 680-206221-3	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V2
G6M-04-02X-FAL21 680-206221-4	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
G6M-04-02X-FAL21 680-206221-4	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V2
G6M-04-04X-FAL21 680-206221-5	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
G6M-04-04X-FAL21 680-206221-5	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V2
G6M-04-14X-FAL21 680-206221-2	N	Acetone	25.0	25.0 U Q	25.0 UJ		ug/l	V2
G6M-04-14X-FAL21 680-206221-2	N	Bromomethane	5.00	5.00 U Q M	5.00 UJ		ug/l	V2/V5
G6M-04-14X-FAL21 680-206221-2	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5

Qualified Results associated with the Continuing Calibration Verification for SW8260B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
G6M-04-14X-FAL21 680-206221-2	N	Dichlorodifluoromethane	2.00	2.00 U Q	2.00 UJ		ug/l	V2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260B, Ending Continuing Calibration Verification

Compliance requirements for satisfactory closing continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCVC68069166627 (EV)	Bromomethane	167.0	50 - 150	50 - 150	percent	J/UJ	V5	
CCVC68069166627 (EV)	Chloroethane	202.0	50 - 150	50 - 150	percent	J/UJ	V5	
CCVC68069202130 (EV)	Chloroethane	186.0	50 - 150	50 - 150	percent	J/UJ	V5	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Ending Continuing Calibration Verification for SW8260B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
AOC50-DUP03-FAL21 680-206221-6	FD	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
G6M-02-13X-FAL21 680-206221-1	N	Bromomethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
G6M-02-13X-FAL21 680-206221-1	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
G6M-03-07X-FAL21 680-206221-3	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
G6M-04-02X-FAL21 680-206221-4	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
G6M-04-04X-FAL21 680-206221-5	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
G6M-04-14X-FAL21 680-206221-2	N	Bromomethane	5.00	5.00 U Q M	5.00 UJ		ug/l	V2/V5
G6M-04-14X-FAL21 680-206221-2	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260B, Initial Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
ICV 680-690817/16 (IV)	Vinyl acetate	71.50	80 - 120	80 - 120	percent	J/UJ	V1	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Initial Calibration Verification for SW8260B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
AOC50-DUP04-FAL21 680-206221-10	FD	Vinyl acetate	2.00	2.00 U	2.00 UJ		ug/l	V1
AOC50-RB03-FAL21 680-206221-12	EB	Vinyl acetate	2.00	2.00 U	2.00 UJ		ug/l	V1
AOC50-TB03-FAL21 680-206221-11	TB	Vinyl acetate	2.00	2.00 U	2.00 UJ		ug/l	V1
G6M-04-09X-FAL21 680-206221-7	N	Vinyl acetate	2.00	2.00 U	2.00 UJ		ug/l	V1
G6M-04-15X-FAL21 680-206221-8	N	Vinyl acetate	2.00	2.00 U M	2.00 UJ		ug/l	V1
G6M-13-02X-FAL21 680-206221-9	N	Vinyl acetate	2.00	2.00 U	2.00 UJ		ug/l	V1

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260B, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
LCS6806916663 (BS)	Bromomethane	160.0	53 - 141	10 - 141	percent	J/None	C	
LCS6806916663 (BS)	Chloroethane	187.0	60 - 138	10 - 138	percent	J/None	C	
LCS6806920213 (BS)	Chloroethane	187.0	60 - 138	10 - 138	percent	J/None	C	
LCS6806920213 (BS)	Vinyl acetate	151.0	54 - 146	10 - 146	percent	J/None	C	
LCSD6806916664 (BD)	Bromomethane	178.0	53 - 141	10 - 141	percent	J/None	C	
LCSD6806916664 (BD)	Chloroethane	181.0	60 - 138	10 - 138	percent	J/None	C	
LCSD6806920214 (BD)	Chloroethane	187.0	60 - 138	10 - 138	percent	J/None	C	
LCSD6806920214 (BD)	Vinyl acetate	150.0	54 - 146	10 - 146	percent	J/None	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Table of All Qualified Results

Test Method: SW6010C		Extraction Method: FLDFLT						
FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
AOC50-RB03-FAL21 680-206221-12	EB	Iron	50.0	19.0 J	50.0 U		ug/l	B2
G6M-04-14X-FAL21 680-206221-2	N	Iron	54.0	54.0	54.0 U		ug/l	V

Test Method: SW8260B		Extraction Method: SW5030B						
FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
AOC50-DUP03-FAL21 680-206221-6	FD	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
AOC50-DUP03-FAL21 680-206221-6	FD	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V2
AOC50-DUP04-FAL21 680-206221-10	FD	2-Butanone (MEK)	10.0	10.0 U Q	10.0 UJ		ug/l	V2
AOC50-DUP04-FAL21 680-206221-10	FD	Vinyl acetate	2.00	2.00 U	2.00 UJ		ug/l	V1
AOC50-RB03-FAL21 680-206221-12	EB	2-Butanone (MEK)	10.0	10.0 U Q	10.0 UJ		ug/l	V2
AOC50-RB03-FAL21 680-206221-12	EB	Vinyl acetate	2.00	2.00 U	2.00 UJ		ug/l	V1
AOC50-TB03-FAL21 680-206221-11	TB	2-Butanone (MEK)	10.0	10.0 U Q	10.0 UJ		ug/l	V2
AOC50-TB03-FAL21 680-206221-11	TB	Vinyl acetate	2.00	2.00 U	2.00 UJ		ug/l	V1
G6M-02-13X-FAL21 680-206221-1	N	Acetone	25.0	25.0 U Q	25.0 UJ		ug/l	V2
G6M-02-13X-FAL21 680-206221-1	N	Bromomethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
G6M-02-13X-FAL21 680-206221-1	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
G6M-02-13X-FAL21 680-206221-1	N	Dichlorodifluoromethane	2.00	2.00 U Q	2.00 UJ		ug/l	V2
G6M-03-07X-FAL21 680-206221-3	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
G6M-03-07X-FAL21 680-206221-3	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V2
G6M-04-02X-FAL21 680-206221-4	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
G6M-04-02X-FAL21 680-206221-4	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V2
G6M-04-04X-FAL21 680-206221-5	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
G6M-04-04X-FAL21 680-206221-5	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V2
G6M-04-09X-FAL21 680-206221-7	N	2-Butanone (MEK)	10.0	10.0 U Q	10.0 UJ		ug/l	V2
G6M-04-09X-FAL21 680-206221-7	N	Vinyl acetate	2.00	2.00 U	2.00 UJ		ug/l	V1
G6M-04-14X-FAL21 680-206221-2	N	Acetone	25.0	25.0 U Q	25.0 UJ		ug/l	V2
G6M-04-14X-FAL21 680-206221-2	N	Bromomethane	5.00	5.00 U Q M	5.00 UJ		ug/l	V2/V5

Table of All Qualified Results

Test Method: SW8260B		Extraction Method: SW5030B						
FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
G6M-04-14X-FAL21 680-206221-2	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
G6M-04-14X-FAL21 680-206221-2	N	Dichlorodifluoromethane	2.00	2.00 U Q	2.00 UJ		ug/l	V2
G6M-04-15X-FAL21 680-206221-8	N	2-Butanone (MEK)	10.0	10.0 U Q	10.0 UJ		ug/l	V2
G6M-04-15X-FAL21 680-206221-8	N	Vinyl acetate	2.00	2.00 U M	2.00 UJ		ug/l	V1
G6M-13-02X-FAL21 680-206221-9	N	2-Butanone (MEK)	10.0	10.0 U Q	10.0 UJ		ug/l	V2
G6M-13-02X-FAL21 680-206221-9	N	Vinyl acetate	2.00	2.00 U	2.00 UJ		ug/l	V1

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Table of Results with Modified Qualifiers

Modified Qualifiers for test method RSK175

FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
AOC50-DUP04-FAL21 680-206221-10	FD	Methane	390	6100	6100 J	6100	
G6M-03-07X-FAL21 680-206221-3	N	Methane	390	37000	37000 J	37000	
G6M-04-02X-FAL21 680-206221-4	N	Methane	390	19000	19000 J	19000	
G6M-13-02X-FAL21 680-206221-9	N	Methane	390	6500	6500 J	6500	

Modified Qualifiers for test method SW6010C, Dissolved

FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
G6M-04-14X-FAL21 680-206221-2	N	Iron	54.0	54.0	50.0 J	54.0 U	V

Modified Qualifiers for test method SW8260B

FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
AOC50-DUP03-FAL21 680-206221-6	FD	Chloroethane	5.00	5.00 U Q	5.00 U	5.00 UJ	V2/V5
AOC50-DUP03-FAL21 680-206221-6	FD	Vinyl acetate	2.00	2.00 U Q	2.00 U	2.00 UJ	V2
AOC50-DUP04-FAL21 680-206221-10	FD	2-Butanone (MEK)	10.0	10.0 U Q	10.0 U	10.0 UJ	V2
AOC50-DUP04-FAL21 680-206221-10	FD	Vinyl acetate	2.00	2.00 U	2.00 U	2.00 UJ	V1
AOC50-RB03-FAL21 680-206221-12	EB	2-Butanone (MEK)	10.0	10.0 U Q	10.0 U	10.0 UJ	V2
AOC50-RB03-FAL21 680-206221-12	EB	Vinyl acetate	2.00	2.00 U	2.00 U	2.00 UJ	V1
AOC50-TB03-FAL21 680-206221-11	TB	2-Butanone (MEK)	10.0	10.0 U Q	10.0 U	10.0 UJ	V2
AOC50-TB03-FAL21 680-206221-11	TB	Vinyl acetate	2.00	2.00 U	2.00 U	2.00 UJ	V1
G6M-02-13X-FAL21 680-206221-1	N	Acetone	25.0	25.0 U Q	25.0 U	25.0 UJ	V2
G6M-02-13X-FAL21 680-206221-1	N	Bromomethane	5.00	5.00 U Q	5.00 U	5.00 UJ	V2/V5
G6M-02-13X-FAL21 680-206221-1	N	Chloroethane	5.00	5.00 U Q	5.00 U	5.00 UJ	V2/V5
G6M-03-07X-FAL21 680-206221-3	N	Chloroethane	5.00	5.00 U Q	5.00 U	5.00 UJ	V2/V5
G6M-03-07X-FAL21 680-206221-3	N	Vinyl acetate	2.00	2.00 U Q	2.00 U	2.00 UJ	V2
G6M-04-02X-FAL21 680-206221-4	N	Chloroethane	5.00	5.00 U Q	5.00 U	5.00 UJ	V2/V5
G6M-04-02X-FAL21 680-206221-4	N	Vinyl acetate	2.00	2.00 U Q	2.00 U	2.00 UJ	V2
G6M-04-04X-FAL21 680-206221-5	N	Chloroethane	5.00	5.00 U Q	5.00 U	5.00 UJ	V2/V5
G6M-04-04X-FAL21 680-206221-5	N	Vinyl acetate	2.00	2.00 U Q	2.00 U	2.00 UJ	V2

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW8260B

FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
G6M-04-09X-FAL21 680-206221-7	N	2-Butanone (MEK)	10.0	10.0 U Q	10.0 U	10.0 UJ	V2
G6M-04-09X-FAL21 680-206221-7	N	Vinyl acetate	2.00	2.00 U	2.00 U	2.00 UJ	V1
G6M-04-14X-FAL21 680-206221-2	N	Acetone	25.0	25.0 U Q	25.0 U	25.0 UJ	V2
G6M-04-14X-FAL21 680-206221-2	N	Bromomethane	5.00	5.00 U Q M	5.00 U	5.00 UJ	V2/V5
G6M-04-14X-FAL21 680-206221-2	N	Chloroethane	5.00	5.00 U Q	5.00 U	5.00 UJ	V2/V5
G6M-04-15X-FAL21 680-206221-8	N	2-Butanone (MEK)	10.0	10.0 U Q	10.0 U	10.0 UJ	V2
G6M-04-15X-FAL21 680-206221-8	N	Vinyl acetate	2.00	2.00 U M	2.00 U	2.00 UJ	V1
G6M-13-02X-FAL21 680-206221-9	N	2-Butanone (MEK)	10.0	10.0 U Q	10.0 U	10.0 UJ	V2
G6M-13-02X-FAL21 680-206221-9	N	Vinyl acetate	2.00	2.00 U	2.00 U	2.00 UJ	V1

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Reason Code Definitions

Code	Definition
B2	CCB
C	LCS Recovery
L	Lab Blank
TR	Trace Level Detect
V	Equipment Blank
V1	ICV
V2	CCV
V5	Ending Continuing Calibration Verification

Flag Code and Definitions

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

Bias

-	The result may be biased low
+	The result may be biased high

Note - The bias field is a separate field; however, it is an integral part of the final flag (qualifier) on the sample result

Review Questions

Method: A2320B (Alkalinity by Titrimetric Method)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		Although the method blanks and calibration blanks had detections for alkalinity, the associated sample results were significantly greater than the concentrations found in the blanks, therefore no data were qualified.
Were field blanks (EBs or FBs) submitted with these samples?		•		No field blanks were submitted with these samples.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCSD not performed.
Was a MS/MSD pair prepared with each batch?		•		MS/MSD not performed.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Review Questions

Method: E353.2 (Nitrogen, Nitrate-Nitrite (Colorimetric Automated, Cadmium Reduction))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were field blanks (EBs or FBs) submitted with these samples?		•		No field blanks were submitted with these sampleps.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCSD not performed.
Was a MS/MSD pair prepared with each batch?		•		MS/MSD not performed.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Review Questions

Method: RSK175 (Dissolved Gas Analysis in Water Samples Using a GC Headspace Equilibrium Technique)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Were the required minimum levels of calibration standards used in the initial calibration?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Were surrogate recoveries within project acceptance limits?			•	Surrogates not required per the method.
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes reported in the field blank(s) less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?		•		MS/MSD not performed.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Review Questions

Method: SW6010C (Trace Metals by Inductively Coupled Plasma/Atomic Emission Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		Due to calibration blank contamination, one iron result was qualified as not detected (U) at the LOQ.
Were target analytes reported in the field blank(s) less than MDL?		•		Due to equipment blank contamination, one iron result was qualified as not detected (U).
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCSD not performed.
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?	•			
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported or as qualified during data validation.

Review Questions

Method: SW6020A (Trace Metals by Inductively Coupled Plasma/Mass Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes reported in the field blank(s) less than MDL?	•			
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCSD not performed.
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?	•			
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Review Questions

Method: SW8260B (Volatile Organic Compounds by Capillary GC/MS)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Were the required minimum levels of calibration standards used in the initial calibration?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?		•		Due to ICV %R outside criteria, six vinyl acetate results were qualified as non-detected estimated (UJ).
Were CCVs run at the required frequency and within acceptance criteria?		•		Due to CCV %R outside criteria, several results were qualified as non-detected estimated (UJ).
Were surrogate recoveries within project acceptance limits?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were field blanks (EBs or FBs) submitted with these samples?	•			
Were target analytes reported in the field blank(s) less than MDL?	•			
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?		•		Although LCS/LCSD %R were above criteria for several analytes, the associated sample results were not detected, therefore no data were qualified.
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?		•		MS/MSD not performed.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported or as qualified during data validation.

Review Questions

Method: SW9034 (Titrimetric Procedure for Acid-Soluble and Acid-Insoluble Sulfides)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were field blanks (EBs or FBs) submitted with these samples?		•		No field blanks were submitted with these samples.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?		•		MS/MSD not performed.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Review Questions

Method: SW9056A (Anion Chromatography)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were field blanks (EBs or FBs) submitted with these samples?		•		No field blanks were submitted with these samples.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?		•		MS/MSD not performed.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Data Validation Report for 6802062211

Review Questions

Method: SW9060A (Total Organic Carbon)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes reported in the field blank(s) less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCSD not performed.
Was a MS/MSD pair prepared with each batch?		•		MS/MSD not performed.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Field Duplicate Report By SDG
Former Fort Devens, Long Term Monitoring
Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021
Field Duplicates for SDG: 6802062211

Location	Analysis
G6M-04-04X	SW6010C

Field ID - Primary/Field Dup	Lab ID - Primary/Field Dup	Analyte	Primary Result	FD Result	RL	RPD	RPD Criteria	RPD Check	RL Check
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	Iron (FLDFLT)	88000	85000	50.0	3.47	30	OK	NA
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	Manganese (FLDFLT)	19000	18000	10.0	5.41	30	OK	NA

Location	Analysis
G6M-04-04X	SW6020A

Field ID - Primary/Field Dup	Lab ID - Primary/Field Dup	Analyte	Primary Result	FD Result	RL	RPD	RPD Criteria	RPD Check	RL Check
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	Arsenic (FLDFLT)	470	480	3.00	2.11	30	OK	NA

Location	Analysis
G6M-04-04X	SW8260B

Field ID - Primary/Field Dup	Lab ID - Primary/Field Dup	Analyte	Primary Result	FD Result	RL	RPD	RPD Criteria	RPD Check	RL Check
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	1,1,1,2-Tetrachloroethane	ND	ND	1.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	1,1,1-Trichloroethane	ND	ND	1.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	1,1,2,2-Tetrachloroethane	ND	ND	2.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	1,1,2-Trichloroethane	ND	ND	1.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	1,1-Dichloroethane	ND	ND	1.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	1,1-Dichloroethene	ND	ND	1.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	1,1-Dichloropropene	ND	ND	1.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	1,2,3-Trichlorobenzene	ND	ND	5.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	1,2,3-Trichloropropane	ND	ND	1.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	1,2,4-Trichlorobenzene	ND	ND	5.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	1,2,4-Trimethylbenzene	ND	ND	1.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	1,2-Dibromo-3-chloropropane	ND	ND	5.00	NA	30	NA	OK

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Field Duplicate Report By SDG

Former Fort Devens, Long Term Monitoring
Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021
Field Duplicates for SDG: 6802062211

Location	Analysis
G6M-04-04X	SW8260B

Field ID - Primary/Field Dup	Lab ID - Primary/Field Dup	Analyte	Primary Result	FD Result	RL	RPD	RPD Criteria	RPD Check	RL Check
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	1,2-Dibromoethane (EDB)	ND	ND	1.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	1,2-Dichlorobenzene	ND	ND	1.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	1,2-Dichloroethane	ND	ND	1.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	1,2-Dichloroethene	ND	ND	2.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	1,2-Dichloropropane	ND	ND	2.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	1,3,5-Trimethylbenzene	ND	ND	1.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	1,3-Dichlorobenzene	ND	ND	1.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	1,3-Dichloropropane	ND	ND	1.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	1,4-Dichlorobenzene	ND	ND	1.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	2,2-Dichloropropane	ND	ND	1.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	2-Butanone (MEK)	ND	ND	10.0	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	2-Chlorotoluene	ND	ND	1.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	2-Hexanone	ND	ND	10.0	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	4-Chlorotoluene	ND	ND	1.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	4-Methyl-2-pentanone (MIBK)	ND	ND	10.0	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	Acetone	ND	ND	25.0	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	Benzene	ND	ND	1.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	Bromobenzene	ND	ND	1.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	Bromochloromethane	ND	ND	1.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	Bromodichloromethane	ND	ND	1.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	Bromoform	ND	ND	1.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	Bromomethane	ND	ND	5.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	Carbon disulfide	ND	ND	2.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	Carbon tetrachloride	ND	ND	1.00	NA	30	NA	OK

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Field Duplicate Report By SDG

Former Fort Devens, Long Term Monitoring
Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021
Field Duplicates for SDG: 6802062211

Location	Analysis
G6M-04-04X	SW8260B

Field ID - Primary/Field Dup	Lab ID - Primary/Field Dup	Analyte	Primary Result	FD Result	RL	RPD	RPD Criteria	RPD Check	RL Check
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	Chlorobenzene	ND	ND	1.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	Chloroethane	ND	ND	5.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	Chloroform	ND	ND	1.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	Chloromethane	ND	ND	1.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	cis-1,2-Dichloroethene	0.680	0.550	1.00	21.1	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	cis-1,3-Dichloropropene	ND	ND	1.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	Dibromochloromethane	ND	ND	1.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	Dibromomethane	ND	ND	1.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	Dichlorodifluoromethane	ND	ND	2.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	Ethylbenzene	ND	ND	1.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	Hexachlorobutadiene	ND	ND	5.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	Isopropylbenzene (Cumene)	ND	ND	1.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	m,p-Xylene	ND	ND	1.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	Methyl tert-butyl ether (MTBE)	ND	ND	10.0	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	Methylene chloride	ND	ND	5.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	n-Butylbenzene	ND	ND	1.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	n-Propylbenzene	ND	ND	1.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	Naphthalene	ND	ND	5.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	o-Xylene	ND	ND	1.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	p-Cymene (p-Isopropyltoluene)	ND	ND	1.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	sec-Butylbenzene	ND	ND	1.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	Styrene	ND	ND	1.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	tert-Butylbenzene	ND	ND	1.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	Tetrachloroethene (PCE)	ND	ND	2.00	NA	30	NA	OK

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Field Duplicate Report By SDG
Former Fort Devens, Long Term Monitoring
Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021
Field Duplicates for SDG: 6802062211

Location	Analysis
G6M-04-04X	SW8260B

Field ID - Primary/Field Dup	Lab ID - Primary/Field Dup	Analyte	Primary Result	FD Result	RL	RPD	RPD Criteria	RPD Check	RL Check
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	Toluene	ND	ND	1.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	trans-1,2-Dichloroethene	ND	ND	1.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	trans-1,3-Dichloropropene	ND	ND	1.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	Trichloroethene (TCE)	ND	ND	1.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	Trichlorofluoromethane	ND	ND	1.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	Vinyl acetate	ND	ND	2.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	Vinyl chloride	ND	ND	1.00	NA	30	NA	OK
G6M-04-04X-FAL21 / AOC50-DUP03-FAL21	680-206221-5 / 680-206221-6	Xylenes, Total	ND	ND	2.00	NA	30	NA	OK

Location	Analysis
G6M-13-02X	A2320B

Field ID - Primary/Field Dup	Lab ID - Primary/Field Dup	Analyte	Primary Result	FD Result	RL	RPD	RPD Criteria	RPD Check	RL Check
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	Alkalinity, Total (as CaCO3)	100	100	10.0	0.00	30	OK	NA

Location	Analysis
G6M-13-02X	E353.2

Field ID - Primary/Field Dup	Lab ID - Primary/Field Dup	Analyte	Primary Result	FD Result	RL	RPD	RPD Criteria	RPD Check	RL Check
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	Nitrate-Nitrite (as N)	ND	ND	0.100	NA	30	NA	OK

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Field Duplicate Report By SDG
Former Fort Devens, Long Term Monitoring
Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021
Field Duplicates for SDG: 6802062211

Location	Analysis
G6M-13-02X	RSK175

Field ID - Primary/Field Dup	Lab ID - Primary/Field Dup	Analyte	Primary Result	FD Result	RL	RPD	RPD Criteria	RPD Check	RL Check
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	Ethane	0.690	0.710	1.10	2.86	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	Ethene	0.840	0.990	1.00	16.4	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	Methane	6500	6100	390	6.35	30	OK	NA

Location	Analysis
G6M-13-02X	SW6010C

Field ID - Primary/Field Dup	Lab ID - Primary/Field Dup	Analyte	Primary Result	FD Result	RL	RPD	RPD Criteria	RPD Check	RL Check
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	Iron (FLDFLT)	1700	1600	50.0	6.06	30	OK	NA
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	Manganese (FLDFLT)	2700	2600	10.0	3.77	30	OK	NA

Location	Analysis
G6M-13-02X	SW6020A

Field ID - Primary/Field Dup	Lab ID - Primary/Field Dup	Analyte	Primary Result	FD Result	RL	RPD	RPD Criteria	RPD Check	RL Check
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	Arsenic (FLDFLT)	14.0	14.0	3.00	0.00	30	NA	OK

Location	Analysis
G6M-13-02X	SW8260B

Field ID - Primary/Field Dup	Lab ID - Primary/Field Dup	Analyte	Primary Result	FD Result	RL	RPD	RPD Criteria	RPD Check	RL Check
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	1,1,1,2-Tetrachloroethane	ND	ND	1.00	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	1,1,1-Trichloroethane	ND	ND	1.00	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	1,1,2,2-Tetrachloroethane	ND	ND	2.00	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	1,1,2-Trichloroethane	ND	ND	1.00	NA	30	NA	OK

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Field Duplicate Report By SDG

Former Fort Devens, Long Term Monitoring
Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021
Field Duplicates for SDG: 6802062211

Location	Analysis
G6M-13-02X	SW8260B

Field ID - Primary/Field Dup	Lab ID - Primary/Field Dup	Analyte	Primary Result	FD Result	RL	RPD	RPD Criteria	RPD Check	RL Check
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	1,1-Dichloroethane	ND	ND	1.00	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	1,1-Dichloroethene	ND	ND	1.00	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	1,1-Dichloropropene	ND	ND	1.00	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	1,2,3-Trichlorobenzene	ND	ND	5.00	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	1,2,3-Trichloropropane	ND	ND	1.00	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	1,2,4-Trichlorobenzene	ND	ND	5.00	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	1,2,4-Trimethylbenzene	ND	ND	1.00	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	1,2-Dibromo-3-chloropropane	ND	ND	5.00	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	1,2-Dibromoethane (EDB)	ND	ND	1.00	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	1,2-Dichlorobenzene	ND	ND	1.00	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	1,2-Dichloroethane	ND	ND	1.00	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	1,2-Dichloroethene	13.0	14.0	2.00	7.41	30	OK	NA
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	1,2-Dichloropropane	ND	ND	2.00	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	1,3,5-Trimethylbenzene	ND	ND	1.00	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	1,3-Dichlorobenzene	ND	ND	1.00	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	1,3-Dichloropropane	ND	ND	1.00	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	1,4-Dichlorobenzene	ND	ND	1.00	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	2,2-Dichloropropane	ND	ND	1.00	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	2-Butanone (MEK)	ND	ND	10.0	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	2-Chlorotoluene	ND	ND	1.00	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	2-Hexanone	ND	ND	10.0	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	4-Chlorotoluene	ND	ND	1.00	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	4-Methyl-2-pentanone (MIBK)	ND	ND	10.0	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	Acetone	ND	ND	25.0	NA	30	NA	OK

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Field Duplicate Report By SDG

Former Fort Devens, Long Term Monitoring
Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021
Field Duplicates for SDG: 6802062211

Location	Analysis
G6M-13-02X	SW8260B

Field ID - Primary/Field Dup	Lab ID - Primary/Field Dup	Analyte	Primary Result	FD Result	RL	RPD	RPD Criteria	RPD Check	RL Check
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	Benzene	ND	ND	1.00	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	Bromobenzene	ND	ND	1.00	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	Bromochloromethane	ND	ND	1.00	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	Bromodichloromethane	ND	ND	1.00	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	Bromoform	ND	ND	1.00	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	Bromomethane	ND	ND	5.00	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	Carbon disulfide	ND	ND	2.00	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	Carbon tetrachloride	ND	ND	1.00	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	Chlorobenzene	ND	ND	1.00	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	Chloroethane	ND	ND	5.00	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	Chloroform	ND	ND	1.00	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	Chloromethane	ND	ND	1.00	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	cis-1,2-Dichloroethene	13.0	13.0	1.00	0.00	30	OK	NA
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	cis-1,3-Dichloropropene	ND	ND	1.00	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	Dibromochloromethane	ND	ND	1.00	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	Dibromomethane	ND	ND	1.00	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	Dichlorodifluoromethane	ND	ND	2.00	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	Ethylbenzene	ND	ND	1.00	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	Hexachlorobutadiene	ND	ND	5.00	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	Isopropylbenzene (Cumene)	ND	ND	1.00	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	m,p-Xylene	ND	ND	1.00	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	Methyl tert-butyl ether (MTBE)	ND	ND	10.0	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	Methylene chloride	ND	ND	5.00	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	n-Butylbenzene	ND	ND	1.00	NA	30	NA	OK

FD = Field Duplicate
RL = Reporting Limit
RPD = Relative Percent Difference

RL Check = If either the primary sample or field duplicate result is less than 5 times the RL then the criteria used to determine if the field duplicate is outside QC limits is +/- RL for Water and +/- 2 times RL for Soil"

Field Duplicate Report By SDG
Former Fort Devens, Long Term Monitoring
Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021
Field Duplicates for SDG: 6802062211

Location	Analysis
G6M-13-02X	SW8260B

Field ID - Primary/Field Dup	Lab ID - Primary/Field Dup	Analyte	Primary Result	FD Result	RL	RPD	RPD Criteria	RPD Check	RL Check
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	n-Propylbenzene	ND	ND	1.00	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	Naphthalene	ND	ND	5.00	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	o-Xylene	ND	ND	1.00	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	p-Cymene (p-Isopropyltoluene)	ND	ND	1.00	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	sec-Butylbenzene	ND	ND	1.00	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	Styrene	ND	ND	1.00	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	tert-Butylbenzene	ND	ND	1.00	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	Tetrachloroethene (PCE)	11.0	10.0	2.00	9.52	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	Toluene	ND	ND	1.00	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	trans-1,2-Dichloroethene	0.680	1.00	1.00	38.1	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	trans-1,3-Dichloropropene	ND	ND	1.00	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	Trichloroethene (TCE)	12.0	11.0	1.00	8.70	30	OK	NA
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	Trichlorofluoromethane	ND	ND	1.00	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	Vinyl acetate	ND	ND	2.00	NA	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	Vinyl chloride	2.30	2.20	1.00	4.44	30	NA	OK
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	Xylenes, Total	ND	ND	2.00	NA	30	NA	OK

Location	Analysis
G6M-13-02X	SW9034

Field ID - Primary/Field Dup	Lab ID - Primary/Field Dup	Analyte	Primary Result	FD Result	RL	RPD	RPD Criteria	RPD Check	RL Check
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	Sulfide	ND	ND	0.810	NA	30	NA	OK

FD = Field Duplicate
RL = Reporting Limit
RPD = Relative Percent Difference

RL Check = If either the primary sample or field duplicate result is less than 5 times the RL then the criteria used to determine if the field duplicate is outside QC limits is +/- RL for Water and +/- 2 times RL for Soil"

Field Duplicate Report By SDG
Former Fort Devens, Long Term Monitoring
Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021
Field Duplicates for SDG: 6802062211

Location	Analysis
G6M-13-02X	SW9056A

Field ID - Primary/Field Dup	Lab ID - Primary/Field Dup	Analyte	Primary Result	FD Result	RL	RPD	RPD Criteria	RPD Check	RL Check
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	Sulfate	8.00	8.10	1.00	1.24	30	OK	NA

Location	Analysis
G6M-13-02X	SW9060A

Field ID - Primary/Field Dup	Lab ID - Primary/Field Dup	Analyte	Primary Result	FD Result	RL	RPD	RPD Criteria	RPD Check	RL Check
G6M-13-02X-FAL21 / AOC50-DUP04-FAL21	680-206221-9 / 680-206221-10	Total Organic Carbon	7.00	6.60	1.00	5.88	30	OK	NA

FD = Field Duplicate
RL = Reporting Limit
RPD = Relative Percent Difference

RL Check = If either the primary sample or field duplicate result is less than 5 times the RL then the criteria used to determine if the field duplicate is outside QC limits is +/- RL for Water and +/- 2 times RL for Soil"

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

ARCADIS U.S., Inc.
3109 West Martin Luther King Jr. Blvd, Suite 350
Tampa, FL 33607
ATTN: Mr. Nathan Mullens
nrmullens@seres-es.com

January 3, 2022

SUBJECT: Fort Devens - Data Validation

Dear Mr. Mullens,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on November 24, 2021. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #52754:

SDG #	Fraction
680-206406-1, 680-206599-1 680-206680-1, 680-206906-1 680-206909-1, 680-207006-1 680-207006-2	Volatiles, Dissolved Metals, Methane, Ethane, & Ethene, Wet Chemistry

The data validation was performed under Stage 2B guidelines. The analyses were validated using the following documents and variances, as applicable to each method:

- Quality Assurance Project Plan, Long Term Monitoring Program, Former Fort Devens, 2020
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014; update VI, July 2018

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist
pgeng@lab-data.com

260 pages-ADV

Attachment 1

Stage 2B EQUIS EDD

LDC# 52754 (Arcadis - Millersville, MD / Fort Devens)

LDC	SDG#	DATE REC'D	(2) DATE DUE	VOA (8260B)		3 D.Met. (6010C/ 6020A)		Methane Ethane Ethene		Alk (2320B)		DOC (9060A)		Cl (9056A)		NO_3 /NO_2-N (353.2)		SO_4 (9056A)		S= (9034)		TOC (9060A)															
Matrix: Water/Soil				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	680-206406-1	11/24/21	12/10/21	-	-	4	0	-	-	4	0	4	0	4	0	-	-	4	0	-	-	-	-														
B	680-206599-1	11/24/21	12/10/21	-	-	18	0	-	-	18	0	18	0	18	0	-	-	18	0	-	-	-	-														
C	680-206680-1	11/24/21	12/10/21	-	-	8	0	-	-	8	0	8	0	8	0	-	-	8	0	-	-	-	-														
D	680-206906-1	11/24/21	12/10/21	-	-	12	0	-	-	12	0	12	0	12	0	-	-	12	0	-	-	-	-														
E	680-206909-1	11/24/21	12/10/21	-	-	2	0	-	-	2	0	2	0	2	0	-	-	2	0	-	-	-	-														
F	680-207006-1	11/24/21	12/10/21	-	-	17	0	-	-	17	0	17	0	17	0	-	-	17	0	-	-	-	-														
G	680-207006-2	11/24/21	12/10/21	2	0	2	0	1	0	1	0	-	-	-	-	1	0	1	0	1	0	1	0														
Total	T/PG			2	0	63	0	1	0	62	0	61	0	61	0	1	0	62	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	315

Shaded cells indicate Stage 4 validation (all other cells are Stage 2B validation). These sample counts do not include MS/MSD, and DUPs

V:\LOGIN\Arcadis\Fort Devens\52754ST.wpd

Data Validation Report for 6802070062

Facility:	Former Fort Devens, Long Term Monitoring
Event:	Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021
SDG:	6802070062
Guidance Document:	Quality Assurance Project Plan, Long Term Monitoring Program, Former Fort Devens, 2020
Prime Contractor:	Seres-Arcadis JV
Project Manager:	Jennifer Singer
Contract Laboratory(ies):	Eurofins Environment Testing TestAmerica, Arvada, CO | Eurofins Environment Testing TestAmerica, Savannah, GA
Data Review Contractor:	Laboratory Data Consultants, Inc.
Data Review Level:	2B
Primary Data Reviewer:	Kevin Kha, Environmental Scientist
Second Reviewer:	Pei Geng, Senior Scientist
Date Submitted:	December 29, 2021

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	A2320B	E353.2	RSK175	SW6010C - Dissolved	SW6020A - Dissolved	SW8260B	SW9034	SW9056A	SW9060A
AOC50-RB04-FAL21	680-207006-19	Water	Equipment Blank/EB				X	X	X			
AOC50-TB04-FAL21	680-207006-20	Water	Trip Blank/TB						X			
G6M-07-01X-FAL21	680-207006-18	Water	Field Sample/N	X	X	X	X	X	X	X	X	X

This report assesses the analytical data quality associated with the analyses listed on the preceding cover page at 2B data validation level. This assessment has been made through a combination of automated data review (ADR) and supplemental manual review, the details of which are described below. The approach taken in the review of this data set is consistent with the requirements contained in the Quality Assurance Project Plan, Long Term Monitoring Program, Former Fort Devens, 2020 and the additional guidance documents incorporated by reference to the extent possible. Where definitive guidance is not provided, results have been evaluated in a conservative manner using professional judgment.

Sample collection was managed and directed by Seres-Arcadis JV; analyses were performed by Eurofins Environment Testing TestAmerica, Arvada, CO | Eurofins Environment Testing TestAmerica, Savannah, GA and were reported under sample delivery group (SDG) 6802070062. Data have been evaluated electronically based on electronic data deliverables (EDDs) provided by the laboratory, and hard copy data summary forms have also been reviewed during this effort and compared to the automated review output by the reviewers whose signatures appear on the following page. Findings based on the automated data submission and manual data verification processes are detailed in the ADR narrative and throughout this report.

All quality control (QC) elements associated with this SDG have been reviewed by a project chemist in accordance with the requirements defined for the project. This review is documented in the attached Data Review Checklists. The QC elements listed below were supported by the electronic deliverable and were evaluated using ADR processes.

- Blank - Negative
- Calibration Blank
- Calibration Blank - Negative
- Continuing Calibration Verification
- Equipment Blank
- Interference Check Sample A
- Interference Check Sample A - Negative
- Interference Check Sample AB
- Lab Blank
- LCS Recovery
- LCS RPD
- MS Recovery
- MS RPD
- Prep Hold Time
- Surrogate
- Test Hold Time
- Trip Blank

Results of the ADR process were subsequently reviewed and updated as applicable by the data review chemists identified on the signature page. Quality control elements that were not included in the electronic deliverable were reviewed manually and findings are documented within this report. Summaries of findings and associated qualified results are documented throughout this report.

A total of 13 results (5.96%) out of the 218 results (sample and field QC samples) reported are qualified based on review and 0 results (0.00%) have been rejected or deemed a serious deficiency (X qualifier). Trace values, defined as results that are qualified as estimated because they fall between the detection limit and the reporting limit/limit of quantitation, are not counted as qualified results in the above count. The qualified results are detailed throughout this report and discussed in the narrative below, where appropriate.

Narrative Comments

Analytical Method	Data Reviewer Comment
RSK175	No additional comments; see Checklist for detail.
SW6010C	No additional comments; see Checklist for detail.
E353.2	No additional comments; see Checklist for detail.
SW9056A	No additional comments; see Checklist for detail.
SW8260B	No additional comments; see Checklist for detail.
A2320B	No additional comments; see Checklist for detail.
SW9034	No additional comments; see Checklist for detail.
SW6020A	No additional comments; see Checklist for detail.
SW9060A	No additional comments; see Checklist for detail.

December 29, 2021

Reviewed by Kevin Kha, Environmental Scientist, Laboratory Data Consultants, Inc.

As the First Reviewer, I certify that I have performed a data review process in accordance with the requirements of the project guidance document, and have compared the electronic data to the laboratory's hard copy report and have verified the consistency of the reported sample results and method quality control data between the two deliverables.

Reviewed by Pei Geng, Senior Scientist, Laboratory Data Consultants, Inc.

January 03, 2022

As the Second Reviewer, I certify that I have performed a quality assurance review of the report generated by the First Reviewer.

Quality Control Outliers for test method A2320B, Calibration Blank

The purpose of calibration blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in calibration blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCB28055722929 (CB)	Alkalinity, Total (as CaCO3)	3.110	< 3.1	< 10	mg/l	U/None*	B2	
CCB28055722943 (CB)	Alkalinity, Total (as CaCO3)	3.160	< 3.1	< 10	mg/l	U/None*	B2	
CCB28055722955 (CB)	Alkalinity, Total (as CaCO3)	3.420	< 3.1	< 10	mg/l	U/None*	B2	
CCB28055722969 (CB)	Alkalinity, Total (as CaCO3)	15.60	< 3.1	< 10	mg/l	U/None*	B2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

*Blank flags displayed in the above table identify qualification of the sample result when it is less than or equal to the LOQ/RL. Sample results above the LOQ will be qualified based on the validation type such as J+ at the sample result.

Qualified Results associated with the Calibration Blank for A2320B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
G6M-07-01X-FAL21 680-207006-18	N	Alkalinity, Total (as CaCO3)	45.0	45.0 B	45.0 U		mg/l	B2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method A2320B, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
MB28055722931 (LB)	Alkalinity, Total (as CaCO3)	3.640	< 3.1	< 10	mg/l	U/None*	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

*Blank flags displayed in the above table identify qualification of the sample result when it is less than or equal to the LOQ/RL. Sample results above the LOQ will be qualified based on the validation type such as J+ at the sample result.

No results associated with this QC element required qualification.

Quality Control Outliers for test method E353.2, Calibration Blank

The purpose of calibration blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in calibration blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCB280557161101 (CB)	Nitrate-Nitrite (as N)	0.02780	< 0.019	< 0.1	mg/l	U/None*	B2	
CCB280557161135 (CB)	Nitrate-Nitrite (as N)	0.02160	< 0.019	< 0.1	mg/l	U/None*	B2	
CCB280557161149 (CB)	Nitrate-Nitrite (as N)	0.02170	< 0.019	< 0.1	mg/l	U/None*	B2	
CCB28055716153 (CB)	Nitrate-Nitrite (as N)	0.02140	< 0.019	< 0.1	mg/l	U/None*	B2	
CCB28055716169 (CB)	Nitrate-Nitrite (as N)	0.02150	< 0.019	< 0.1	mg/l	U/None*	B2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

*Blank flags displayed in the above table identify qualification of the sample result when it is less than or equal to the LOQ/RL. Sample results above the LOQ will be qualified based on the validation type such as J+ at the sample result.

No results associated with this QC element required qualification.

Quality Control Outliers for test method E353.2, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
MB280557161104 (LB)	Nitrate-Nitrite (as N)	0.02620	< 0.019	< 0.1	mg/l	U/None*	L	
MB28055716160 (LB)	Nitrate-Nitrite (as N)	0.02180	< 0.019	< 0.1	mg/l	U/None*	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

*Blank flags displayed in the above table identify qualification of the sample result when it is less than or equal to the LOQ/RL. Sample results above the LOQ will be qualified based on the validation type such as J+ at the sample result.

No results associated with this QC element required qualification.

Quality Control Outliers for test method RSK175, LCS RPD

The objective of laboratory control sample/laboratory control sample duplicate (LCS/LCSD) RPD analysis is to demonstrate acceptable method precision by the laboratory at the time of analysis. LCS/LCSD analyses are also performed to generate data that determines the long-term precision of the analytical method on various matrices. Non-homogenous samples can impact the apparent method precision. Summary forms were evaluated and compared to electronic data deliverables. Laboratory control sample/laboratory control sample duplicate RPD results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
LCSD6806932834 (BD)	Methane	171.0	< 30	< 30	rpd	J/None	Z	
LCSD6806932837 (BD)	Methane	171.7	< 30	< 30	rpd	J/None	Z	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the LCS RPD for RSK175

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
G6M-07-01X-FAL21 680-207006-18	N	Methane	1.20	13.0	13.0 J		ug/l	Z

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260B, Continuing Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCVIS6806941633 (CV)	Bromomethane	182.0	80 - 120	80 - 120	percent	J/UJ	V2	
CCVIS6806941633 (CV)	Chloroethane	208.0	80 - 120	80 - 120	percent	J/UJ	V2	
CCVIS6806941633 (CV)	Dichlorodifluoromethane	73.00	80 - 120	80 - 120	percent	J/UJ	V2	
CCVIS6806944532 (CV)	2-Butanone (MEK)	79.00	80 - 120	80 - 120	percent	J/UJ	V2	
CCVIS6806944532 (CV)	2-Hexanone	78.00	80 - 120	80 - 120	percent	J/UJ	V2	
CCVIS6806944532 (CV)	Chloroethane	165.0	80 - 120	80 - 120	percent	J/UJ	V2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Continuing Calibration Verification for SW8260B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
AOC50-RB04-FAL21 680-207006-19	EB	2-Butanone (MEK)	10.0	10.0 U Q	10.0 UJ		ug/l	V2
AOC50-RB04-FAL21 680-207006-19	EB	2-Hexanone	10.0	5.00 U Q	5.00 UJ		ug/l	V2
AOC50-RB04-FAL21 680-207006-19	EB	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
AOC50-TB04-FAL21 680-207006-20	TB	Bromomethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
AOC50-TB04-FAL21 680-207006-20	TB	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
AOC50-TB04-FAL21 680-207006-20	TB	Dichlorodifluoromethane	2.00	2.00 U Q	2.00 UJ		ug/l	V2
G6M-07-01X-FAL21 680-207006-18	N	2-Butanone (MEK)	10.0	10.0 U Q	10.0 UJ		ug/l	V2
G6M-07-01X-FAL21 680-207006-18	N	2-Hexanone	10.0	5.00 U Q	5.00 UJ		ug/l	V2
G6M-07-01X-FAL21 680-207006-18	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260B, Ending Continuing Calibration Verification

Compliance requirements for satisfactory closing continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCVC68069416330 (EV)	Bromomethane	178.0	50 - 150	50 - 150	percent	J/UJ	V5	
CCVC68069416330 (EV)	Chloroethane	214.0	50 - 150	50 - 150	percent	J/UJ	V5	
CCVC68069445331 (EV)	Chloroethane	165.0	50 - 150	50 - 150	percent	J/UJ	V5	
CCVC68069445331 (EV)	Vinyl acetate	39.00	50 - 150	50 - 150	percent	J/UJ	V5	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Ending Continuing Calibration Verification for SW8260B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
AOC50-RB04-FAL21 680-207006-19	EB	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
AOC50-RB04-FAL21 680-207006-19	EB	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V5
AOC50-TB04-FAL21 680-207006-20	TB	Bromomethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
AOC50-TB04-FAL21 680-207006-20	TB	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
G6M-07-01X-FAL21 680-207006-18	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
G6M-07-01X-FAL21 680-207006-18	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V5

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260B, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
LCS6806941634 (BS)	Bromomethane	195.0	53 - 141	10 - 141	percent	J/None	C	
LCS6806941634 (BS)	Chloroethane	206.0	60 - 138	10 - 138	percent	J/None	C	
LCS6806944533 (BS)	Chloroethane	162.0	60 - 138	10 - 138	percent	J/None	C	
LCSD6806941635 (BD)	Bromomethane	202.0	53 - 141	10 - 141	percent	J/None	C	
LCSD6806941635 (BD)	Chloroethane	206.0	60 - 138	10 - 138	percent	J/None	C	
LCSD6806944534 (BD)	Chloroethane	165.0	60 - 138	10 - 138	percent	J/None	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW9034, Test Hold Time

Hold times are ascertained based on project requirements. Holding times were determined by comparing the chain of custody records with the dates of analysis found in the electronic data deliverable and laboratory summary forms. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
G6M-07-01X-FAL21 (N)		7.180	< 7	< 14	days	J/UJ	H1	Test Exceeds UWL

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Table of All Qualified Results

Test Method: A2320B		Extraction Method: NONE						
FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
G6M-07-01X-FAL21 680-207006-18	N	Alkalinity, Total (as CaCO3)	45.0	45.0 B	45.0 U		mg/l	B2

Test Method: RSK175		Extraction Method: METHOD						
FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
G6M-07-01X-FAL21 680-207006-18	N	Methane	1.20	13.0	13.0 J		ug/l	Z

Test Method: SW8260B		Extraction Method: SW5030B						
FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
AOC50-RB04-FAL21 680-207006-19	EB	2-Butanone (MEK)	10.0	10.0 U Q	10.0 UJ		ug/l	V2
AOC50-RB04-FAL21 680-207006-19	EB	2-Hexanone	10.0	5.00 U Q	5.00 UJ		ug/l	V2
AOC50-RB04-FAL21 680-207006-19	EB	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
AOC50-RB04-FAL21 680-207006-19	EB	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V5
AOC50-TB04-FAL21 680-207006-20	TB	Bromomethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
AOC50-TB04-FAL21 680-207006-20	TB	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
AOC50-TB04-FAL21 680-207006-20	TB	Dichlorodifluoromethane	2.00	2.00 U Q	2.00 UJ		ug/l	V2
G6M-07-01X-FAL21 680-207006-18	N	2-Butanone (MEK)	10.0	10.0 U Q	10.0 UJ		ug/l	V2
G6M-07-01X-FAL21 680-207006-18	N	2-Hexanone	10.0	5.00 U Q	5.00 UJ		ug/l	V2
G6M-07-01X-FAL21 680-207006-18	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2/V5
G6M-07-01X-FAL21 680-207006-18	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V5

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW8260B

FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
AOC50-RB04-FAL21 680-207006-19	EB	Chloroethane	5.00	5.00 U Q	5.00 U	5.00 UJ	V2/V5
AOC50-TB04-FAL21 680-207006-20	TB	Bromomethane	5.00	5.00 U Q	5.00 U	5.00 UJ	V2/V5
AOC50-TB04-FAL21 680-207006-20	TB	Chloroethane	5.00	5.00 U Q	5.00 U	5.00 UJ	V2/V5
G6M-07-01X-FAL21 680-207006-18	N	Chloroethane	5.00	5.00 U Q	5.00 U	5.00 UJ	V2/V5

Modified Qualifiers for test method SW9034

FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
G6M-07-01X-FAL21 680-207006-18	N	Sulfide	0.810	0.810 U	0.810 UJ	0.810 U	

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Reason Code Definitions

Code	Definition
B2	CCB
C	LCS Recovery
H1	Test Hold Time
L	Lab Blank
TR	Trace Level Detect
V2	CCV
V5	Ending Continuing Calibration Verification
Z	LCS RPD

Flag Code and Definitions

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

Bias

-	The result may be biased low
+	The result may be biased high

Note - The bias field is a separate field; however, it is an integral part of the final flag (qualifier) on the sample result

Review Questions

Method: A2320B (Alkalinity by Titrimetric Method)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		Due to calibration blank contamination, one alkalinity result was qualified as not detected (U).
Were target analytes reported in the field blank(s) less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCSD not performed.
Was a MS/MSD pair prepared with each batch?		•		MS/MSD not performed.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	No field duplicates were submitted with these samples.
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Review Questions

Method: E353.2 (Nitrogen, Nitrate-Nitrite (Colorimetric Automated, Cadmium Reduction))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		Although nitrate/nitrite as N was detected in the method blanks and calibration blanks, the associated sample results were significantly greater than the concentrations found in the blanks, therefore no data were qualified.
Were target analytes reported in the field blank(s) less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCSD not performed.
Was a MS/MSD pair prepared with each batch?		•		MS/MSD not performed.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	No field duplicates were submitted with these samples.
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Review Questions

Method: RSK175 (Dissolved Gas Analysis in Water Samples Using a GC Headspace Equilibrium Technique)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Were the required minimum levels of calibration standards used in the initial calibration?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Were surrogate recoveries within project acceptance limits?			•	Surrogates not required per the method.
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes reported in the field blank(s) less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?		•		Due to LCS/LCSD RPD above criteria, one methane result was qualified as detected estimated (J).
Was a MS/MSD pair prepared with each batch?		•		MS/MSD not performed.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	No field duplicates were submitted with these samples.
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported or as qualified during data validation.

Review Questions

Method: SW6010C (Trace Metals by Inductively Coupled Plasma/Atomic Emission Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes reported in the field blank(s) less than MDL?	•			
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCSD not performed.
Was a MS/MSD pair prepared with each batch?		•		MS/MSD not performed.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	No field duplicate was submitted with these samples.
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Review Questions

Method: SW6020A (Trace Metals by Inductively Coupled Plasma/Mass Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes reported in the field blank(s) less than MDL?	•			
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCSD not performed.
Was a MS/MSD pair prepared with each batch?		•		MS/MSD not performed.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	No field duplicates were submitted with these samples.
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Review Questions

Method: SW8260B (Volatile Organic Compounds by Capillary GC/MS)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Were the required minimum levels of calibration standards used in the initial calibration?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?		•		Due to CCV %D and ending CCV %D outside criteria, eleven results were qualified as non-detected estimated (UJ).
Were surrogate recoveries within project acceptance limits?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were field blanks (EBs or FBs) submitted with these samples?	•			
Were target analytes reported in the field blank(s) less than MDL?	•			
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?		•		Although LCS %R for bromomethane and chloroethane were above criteria, the associated sample results were not detected, therefore no data were qualified.
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?		•		MS/MSD not performed.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	No field duplicates were submitted with these samples.
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported or as qualified during data validation.

Review Questions

Method: SW9034 (Titrimetric Procedure for Acid-Soluble and Acid-Insoluble Sulfides)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?				
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were field blanks (EBs or FBs) submitted with these samples?		•		No field blanks were submitted with these samples.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?		•		MS/MSD not performed.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	No field duplicates were submitted with these samples.
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Review Questions

Method: SW9056A (Anion Chromatography)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?				
Were holding times met?				
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?				
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were field blanks (EBs or FBs) submitted with these samples?		•		No field blanks were submitted with these samples.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?		•		MS/MSD not performed.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	No field duplicates were submitted with these samples.
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Data Validation Report for 6802070062

Review Questions

Method: SW9060A (Total Organic Carbon)

Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were field blanks (EBs or FBs) submitted with these samples?		•		No field blanks were submitted with these samples.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCSD not performed.
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?	•			
Was the MS/MSD RPD within project acceptance limits?	•			
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?			•	No field duplicates were submitted with these samples.
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

ARCADIS U.S., Inc.
3109 West Martin Luther King Jr. Blvd, Suite 350
Tampa, FL 33607
ATTN: Mr. Nathan Mullens
nrmullens@seres-es.com

January 3, 2022

SUBJECT: Fort Devens - Data Validation

Dear Mr. Mullens,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on December 6, 2021. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #52770:

SDG #	Fraction
680-205985-1, 680-206221-1 680-206349-1, 680-206403-1 608-207349-1, SO7301	Volatiles, Dissolved Metals, VPH, Methane, Ethane, & Ethene, Wet Chemistry

The data validation was performed under Stage 2B guidelines. The analyses were validated using the following documents and variances, as applicable to each method:

- Quality Assurance Project Plan, Long Term Monitoring Program, Former Fort Devens, 2020
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014; update VI, July 2018

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Project Manager/Senior Chemist
pgeng@lab-data.com

309 pages-ADV

Attachment 1

Stage 2B EQUIS EDD

LDC# 52770 (Arcadis - Millersville, MD / Fort Devens)

LDC	SDG#	DATE REC'D	(2) DATE DUE	VOA (8260B)		Mn (6010C)		Fe,Mn (6010C)		3 D.Met. (6010C/ 6020A)		VPH (MADEP -VPH		Methane Ethane Ethene		Alk (2320B)		DOC (9060A)		Cl (9056A)		NO_3 /NO_2-N (353.2)		SO_4 (9056A)		S= (9034)		TOC (9060A)									
Matrix: Water/Soil				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	680-205985-1	12/06/21	12/20/21	11	0	-	-	-	-	12	0	-	-	4	0	4	0	-	-	-	-	4	0	4	0	4	0	4	0								
B	680-206221-1	12/06/21	12/20/21	12	0	-	-	-	-	11	0	-	-	4	0	4	0	-	-	-	-	4	0	4	0	4	0	4	0								
C	680-206349-1	12/06/21	12/20/21	-	-	1	0	6	0	-	-	-	-	-	-	6	0	-	-	-	-	-	-	-	-	-	-	-	-								
D	680-206403-1	12/06/21	12/20/21	-	-	-	-	-	-	10	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-								
E	680-207349-1	12/06/21	12/20/21	-	-	-	-	-	-	27	0	-	-	-	-	27	0	27	0	27	0	-	-	27	0	-	-	-	-								
F	SO7301	12/06/21	12/20/21	-	-	-	-	-	-	-	-	10	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-								
Total	T/PG			23	0	1	0	6	0	60	0	10	0	8	0	41	0	27	0	27	0	8	0	35	0	8	0	8	0	0	0	0	0	0	0	0	262

Shaded cells indicate Stage 4 validation (all other cells are Stage 2B validation). These sample counts do not include MS/MSD, and DUPs

V:\LOGIN\Arcadis\Fort Devens\52770ST.wpd

Data Validation Report for 6802059851

Facility:	Former Fort Devens, Long Term Monitoring
Event:	Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021
SDG:	6802059851
Guidance Document:	Quality Assurance Project Plan, Long Term Monitoring Program, Former Fort Devens, 2020
Prime Contractor:	Seres-Arcadis JV
Project Manager:	Jennifer Singer
Contract Laboratory(ies):	Eurofins Environment Testing TestAmerica, Arvada, CO | Eurofins Environment Testing TestAmerica, Savannah, GA
Data Review Contractor:	Laboratory Data Consultants, Inc.
Data Review Level:	2B
Primary Data Reviewer:	Kevin Kha, Environmental Scientist
Second Reviewer:	Pei Geng, Senior Scientist
Date Submitted:	December 29, 2021

Field Sample ID	Lab Sample ID	Matrix	Type/Type Code	A2320B	E353.2	RSK175	SW6010C - Dissolved	SW6020A - Dissolved	SW8260B	SW9034	SW9056A	SW9060A
AOC50-DUP02-FAL21	680-205985-5	Water	Field Duplicate/FD	X	X	X	X	X	X	X	X	X
AOC50-RB01-FAL21	680-205985-14	Water	Equipment Blank/EB				X	X	X			
G6M-02-04X-FAL21	680-205985-1	Water	Field Sample/N				X	X	X			
G6M-02-11X-FAL21	680-205985-2	Water	Field Sample/N				X	X	X			
G6M-03-10X-FAL21	680-205985-3	Water	Field Sample/N				X	X	X			
G6M-07-02X-FAL21	680-205985-4	Water	Field Sample/N	X	X	X	X	X	X	X	X	X
G6M-13-01X-FAL21	680-205985-6	Water	Field Sample/N	X	X	X	X	X	X	X	X	X
G6M-13-04X-FAL21	680-205985-7	Water	Field Sample/N				X	X	X			
G6M-13-06X-FAL21	680-205985-8	Water	Field Sample/N	X	X	X	X	X	X	X	X	X
G6M-97-28X-FAL21	680-205985-9	Water	Field Sample/N				X	X				
MW-3-FAL21	680-205985-10	Water	Field Sample/N				X	X	X			
MW-7-FAL21	680-205985-13	Water	Field Sample/N				X	X	X			

This report assesses the analytical data quality associated with the analyses listed on the preceding cover page at 2B data validation level. This assessment has been made through a combination of automated data review (ADR) and supplemental manual review, the details of which are described below. The approach taken in the review of this data set is consistent with the requirements contained in the Quality Assurance Project Plan, Long Term Monitoring Program, Former Fort Devens, 2020 and the additional guidance documents incorporated by reference to the extent possible. Where definitive guidance is not provided, results have been evaluated in a conservative manner using professional judgment.

Sample collection was managed and directed by Seres-Arcadis JV; analyses were performed by Eurofins Environment Testing TestAmerica, Arvada, CO | Eurofins Environment Testing TestAmerica, Savannah, GA and were reported under sample delivery group (SDG) 6802059851. Data have been evaluated electronically based on electronic data deliverables (EDDs) provided by the laboratory, and hard copy data summary forms have also been reviewed during this effort and compared to the automated review output by the reviewers whose signatures appear on the following page. Findings based on the automated data submission and manual data verification processes are detailed in the ADR narrative and throughout this report.

All quality control (QC) elements associated with this SDG have been reviewed by a project chemist in accordance with the requirements defined for the project. This review is documented in the attached Data Review Checklists. The QC elements listed below were supported by the electronic deliverable and were evaluated using ADR processes.

- Blank - Negative
- Calibration Blank
- Calibration Blank - Negative
- Continuing Calibration Verification
- Equipment Blank
- Field Duplicate RPD
- Interference Check Sample A
- Interference Check Sample A - Negative
- Interference Check Sample AB
- Lab Blank
- LCS Recovery
- LCS RPD
- MS Recovery
- MS RPD
- Prep Hold Time
- Surrogate
- Test Hold Time

Results of the ADR process were subsequently reviewed and updated as applicable by the data review chemists identified on the signature page. Quality control elements that were not included in the electronic deliverable were reviewed manually and findings are documented within this report. Summaries of findings and associated qualified results are documented throughout this report.

A total of 36 results (4.41%) out of the 816 results (sample and field QC samples) reported are qualified based on review and 0 results (0.00%) have been rejected or deemed a serious deficiency (X qualifier). Trace values, defined as results that are qualified as estimated because they fall between the detection limit and the reporting limit/limit of quantitation, are not counted as qualified results in the above count. The qualified results are detailed throughout this report and discussed in the narrative below, where appropriate.

Narrative Comments

Analytical Method	Data Reviewer Comment
SW9060A	No additional comments; see Checklist for detail.
SW6020A	No additional comments; see Checklist for detail.
E353.2	No additional comments; see Checklist for detail.
SW9034	No additional comments; see Checklist for detail.
A2320B	No additional comments; see Checklist for detail.
SW8260B	No additional comments; see Checklist for detail.
SW9056A	No additional comments; see Checklist for detail.
SW6010C	No additional comments; see Checklist for detail.
RSK175	No additional comments; see Checklist for detail.

December 29, 2021

Reviewed by Kevin Kha, Environmental Scientist, Laboratory Data Consultants, Inc.

As the First Reviewer, I certify that I have performed a data review process in accordance with the requirements of the project guidance document, and have compared the electronic data to the laboratory's hard copy report and have verified the consistency of the reported sample results and method quality control data between the two deliverables.

Reviewed by Pei Geng, Senior Scientist, Laboratory Data Consultants, Inc.

January 03, 2022

As the Second Reviewer, I certify that I have performed a quality assurance review of the report generated by the First Reviewer.

Quality Control Outliers for test method A2320B, Calibration Blank

The purpose of calibration blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in calibration blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCB280554753138 (CB)	Alkalinity, Total (as CaCO3)	4.620	< 3.1	< 10	mg/l	U/None*	B2	
CCB280554753153 (CB)	Alkalinity, Total (as CaCO3)	5.170	< 3.1	< 10	mg/l	U/None*	B2	
CCB280554753165 (CB)	Alkalinity, Total (as CaCO3)	4.160	< 3.1	< 10	mg/l	U/None*	B2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

*Blank flags displayed in the above table identify qualification of the sample result when it is less than or equal to the LOQ/RL. Sample results above the LOQ will be qualified based on the validation type such as J+ at the sample result.

No results associated with this QC element required qualification.

Quality Control Outliers for test method A2320B, Lab Blank

The purpose of laboratory blanks is to determine the existence and magnitude of cross-contamination problems resulting from laboratory activities. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in laboratory blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
MB280554753141 (LB)	Alkalinity, Total (as CaCO3)	4.880	< 3.1	< 10	mg/l	U/None*	L	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

*Blank flags displayed in the above table identify qualification of the sample result when it is less than or equal to the LOQ/RL. Sample results above the LOQ will be qualified based on the validation type such as J+ at the sample result.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW6010C, Dissolved, Equipment Blank

The purpose of equipment blanks is to determine the existence and magnitude of cross-contamination problems resulting from the process during sampling. Reported results were evaluated to determine compliance with the required acceptance criteria. Summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and contaminants found in equipment blanks are listed below along with any associated qualified results.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
AOC50-RB01-FAL21 (EB)	Manganese	1.000	< 1	< 10	ug/l	U/None*	V	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

*Blank flags displayed in the above table identify qualification of the sample result when it is less than or equal to the LOQ/RL. Sample results above the LOQ will be qualified based on the validation type such as J+ at the sample result.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW6010C, Dissolved, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
MW-3-FAL21 (MS)	Iron	78.00	87 - 115	10 - 125	percent	J/UJ	M	Spike amount Insignificant
MW-3-FAL21 (SD)	Iron	64.00	87 - 115	10 - 125	percent	J/UJ	M	Spike amount Insignificant
MW-3-FAL21 (MS)	Manganese	38.00	90 - 114	10 - 125	percent	J/UJ	M	Spike amount Insignificant
MW-3-FAL21 (SD)	Manganese	3.000	90 - 114	10 - 125	percent	J/X	M	Spike amount Insignificant

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW6020A, Dissolved, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
MW-3-FAL21 (MS)	Arsenic	124.0	84 - 116	10 - 125	percent	J/None	M	Spike amount Insignificant

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW8260B, Continuing Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCVIS6806909864 (CV)	2,2-Dichloropropane	124.0	80 - 120	80 - 120	percent	J/UJ	V2	
CCVIS6806909864 (CV)	Chloroethane	187.0	80 - 120	80 - 120	percent	J/UJ	V2	
CCVIS6806909864 (CV)	Dichlorodifluoromethane	129.0	80 - 120	80 - 120	percent	J/UJ	V2	
CCVIS6806909864 (CV)	Trichlorofluoromethane	124.0	80 - 120	80 - 120	percent	J/UJ	V2	
CCVIS6806909864 (CV)	Vinyl acetate	157.0	80 - 120	80 - 120	percent	J/UJ	V2	
CCVIS6806910403 (CV)	2,2-Dichloropropane	132.0	80 - 120	80 - 120	percent	J/UJ	V2	
CCVIS6806910403 (CV)	Acetone	124.0	80 - 120	80 - 120	percent	J/UJ	V2	
CCVIS6806910403 (CV)	Bromochloromethane	121.0	80 - 120	80 - 120	percent	J/UJ	V2	
CCVIS6806910403 (CV)	Vinyl acetate	130.0	80 - 120	80 - 120	percent	J/UJ	V2	
CCVIS6806910485 (CV)	Chloroethane	122.0	80 - 120	80 - 120	percent	J/UJ	V2	
CCVIS6806910485 (CV)	Vinyl acetate	131.0	80 - 120	80 - 120	percent	J/UJ	V2	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Continuing Calibration Verification for SW8260B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
AOC50-DUP02-FAL21 680-205985-5	FD	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2
AOC50-DUP02-FAL21 680-205985-5	FD	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V1/V2
AOC50-RB01-FAL21 680-205985-14	EB	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2
AOC50-RB01-FAL21 680-205985-14	EB	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V1/V2
G6M-02-04X-FAL21 680-205985-1	N	2,2-Dichloropropane	1.00	1.00 U Q	1.00 UJ		ug/l	V2
G6M-02-04X-FAL21 680-205985-1	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2
G6M-02-04X-FAL21 680-205985-1	N	Dichlorodifluoromethane	2.00	2.00 U Q	2.00 UJ		ug/l	V2/V5
G6M-02-04X-FAL21 680-205985-1	N	Trichlorofluoromethane	1.00	1.00 U Q	1.00 UJ		ug/l	V2
G6M-02-04X-FAL21 680-205985-1	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V2
G6M-02-11X-FAL21 680-205985-2	N	2,2-Dichloropropane	1.00	1.00 U Q	1.00 UJ		ug/l	V2
G6M-02-11X-FAL21 680-205985-2	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2
G6M-02-11X-FAL21 680-205985-2	N	Dichlorodifluoromethane	2.00	2.00 U Q	2.00 UJ		ug/l	V2/V5

Qualified Results associated with the Continuing Calibration Verification for SW8260B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
G6M-02-11X-FAL21 680-205985-2	N	Trichlorofluoromethane	1.00	1.00 U Q	1.00 UJ		ug/l	V2
G6M-02-11X-FAL21 680-205985-2	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V2
G6M-03-10X-FAL21 680-205985-3	N	2,2-Dichloropropane	1.00	1.00 U Q	1.00 UJ		ug/l	V2
G6M-03-10X-FAL21 680-205985-3	N	Acetone	25.0	25.0 U Q	25.0 UJ		ug/l	V2
G6M-03-10X-FAL21 680-205985-3	N	Bromochloromethane	1.00	1.00 U Q	1.00 UJ		ug/l	V2
G6M-03-10X-FAL21 680-205985-3	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V2
G6M-07-02X-FAL21 680-205985-4	N	2,2-Dichloropropane	1.00	1.00 U Q	1.00 UJ		ug/l	V2
G6M-07-02X-FAL21 680-205985-4	N	Acetone	25.0	19.0 J Q	19.0 J		ug/l	TR/V2
G6M-07-02X-FAL21 680-205985-4	N	Bromochloromethane	1.00	1.00 U Q	1.00 UJ		ug/l	V2
G6M-07-02X-FAL21 680-205985-4	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V2
G6M-13-01X-FAL21 680-205985-6	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2
G6M-13-01X-FAL21 680-205985-6	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V1/V2
G6M-13-04X-FAL21 680-205985-7	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2
G6M-13-04X-FAL21 680-205985-7	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V1/V2
G6M-13-06X-FAL21 680-205985-8	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2
G6M-13-06X-FAL21 680-205985-8	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V1/V2
MW-3-FAL21 680-205985-10	N	2,2-Dichloropropane	1.00	1.00 U Q	1.00 UJ		ug/l	V2
MW-3-FAL21 680-205985-10	N	Chloroethane	5.00	5.00 U Q J	5.00 UJ		ug/l	V2
MW-3-FAL21 680-205985-10	N	Dichlorodifluoromethane	2.00	2.00 U Q	2.00 UJ		ug/l	V2/V5
MW-3-FAL21 680-205985-10	N	Trichlorofluoromethane	1.00	1.00 U Q	1.00 UJ		ug/l	V2
MW-3-FAL21 680-205985-10	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V2
MW-7-FAL21 680-205985-13	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2
MW-7-FAL21 680-205985-13	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V1/V2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260B, Ending Continuing Calibration Verification

Compliance requirements for satisfactory closing continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
CCVC68069098639 (EV)	Dichlorodifluoromethane	49.00	50 - 150	50 - 150	percent	J/UJ	V5	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Ending Continuing Calibration Verification for SW8260B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
G6M-02-04X-FAL21 680-205985-1	N	Dichlorodifluoromethane	2.00	2.00 U Q	2.00 UJ		ug/l	V2/V5
G6M-02-11X-FAL21 680-205985-2	N	Dichlorodifluoromethane	2.00	2.00 U Q	2.00 UJ		ug/l	V2/V5
MW-3-FAL21 680-205985-10	N	Dichlorodifluoromethane	2.00	2.00 U Q	2.00 UJ		ug/l	V2/V5

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260B, Field Duplicate RPD

Field duplicate analyses are performed in order to assess sample collection/laboratory precision for each sample matrix. Summary forms were evaluated and compared to electronic data deliverables. Field duplicate results that were outside of the acceptance criteria are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
AOC50-DUP02-FAL21 (N)	Trichloroethene (TCE)	2.300	< 2	< 2	ug/l	J/None	D3	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Field Duplicate RPD for SW8260B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
AOC50-DUP02-FAL21 680-205985-5	FD	Trichloroethene (TCE)	1.00	2.30	2.30		ug/l	D3

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260B, Initial Calibration Verification

Compliance requirements for satisfactory continuing calibration are established to ensure that the instrument is capable of producing acceptable qualitative and quantitative data. Continuing calibration is performed to verify and evaluate instrument performance during sample analysis. Summary forms were evaluated against project acceptance criteria, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
ICV 680-690817/16 (IV)	Vinyl acetate	71.50	80 - 120	80 - 120	percent	J/UJ	V1	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

Qualified Results associated with the Initial Calibration Verification for SW8260B

FieldSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
AOC50-DUP02-FAL21 680-205985-5	FD	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V1/V2
AOC50-RB01-FAL21 680-205985-14	EB	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V1/V2
G6M-13-01X-FAL21 680-205985-6	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V1/V2
G6M-13-04X-FAL21 680-205985-7	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V1/V2
G6M-13-06X-FAL21 680-205985-8	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V1/V2
MW-7-FAL21 680-205985-13	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V1/V2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.

Quality Control Outliers for test method SW8260B, LCS Recovery

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
LCS6806909865 (BS)	Chloroethane	172.0	60 - 138	10 - 138	percent	J/None	C	
LCSD6806909866 (BD)	Chloroethane	169.0	60 - 138	10 - 138	percent	J/None	C	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Quality Control Outliers for test method SW8260B, MS Recovery

Data for matrix spikes/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices and to demonstrate acceptable compound recovery by the laboratory at the time of sample analysis. These data alone cannot be used to evaluate the precision and accuracy of individual samples. However, when exercising professional judgment, MS/MSD data can be used in conjunction with other available QC information. Reported results were evaluated to determine compliance with the required acceptance criteria, and summary forms were evaluated and compared to electronic data deliverables. Findings of this review, and any associated qualified results, are listed below.

Sample ID/ Lab Sample ID	Analyte	Result	Warning Limits	Control Limits	Units	Qualifier	Reason Code	Comment
MW-3-FAL21 (MS)	Chloroethane	181.0	60 - 138	10 - 138	percent	J/None	M	
MW-3-FAL21 (SD)	Chloroethane	178.0	60 - 138	10 - 138	percent	J/None	M	

Where two qualifiers are listed, such as 'J/UJ', the first applies to positive results, and the second to non-detect results.
Upper and Lower Warning and Control Limits are abbreviated UWL, LWL, UCL, and LCL in the Comment field.

No results associated with this QC element required qualification.

Table of All Qualified Results

Test Method: SW8260B		Extraction Method: SW5030B						
FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
AOC50-DUP02-FAL21 680-205985-5	FD	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2
AOC50-DUP02-FAL21 680-205985-5	FD	Trichloroethene (TCE)	1.00	2.30	2.30		ug/l	D3
AOC50-DUP02-FAL21 680-205985-5	FD	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V1/V2
AOC50-RB01-FAL21 680-205985-14	EB	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2
AOC50-RB01-FAL21 680-205985-14	EB	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V1/V2
G6M-02-04X-FAL21 680-205985-1	N	2,2-Dichloropropane	1.00	1.00 U Q	1.00 UJ		ug/l	V2
G6M-02-04X-FAL21 680-205985-1	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2
G6M-02-04X-FAL21 680-205985-1	N	Dichlorodifluoromethane	2.00	2.00 U Q	2.00 UJ		ug/l	V2/V5
G6M-02-04X-FAL21 680-205985-1	N	Trichlorofluoromethane	1.00	1.00 U Q	1.00 UJ		ug/l	V2
G6M-02-04X-FAL21 680-205985-1	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V2
G6M-02-11X-FAL21 680-205985-2	N	2,2-Dichloropropane	1.00	1.00 U Q	1.00 UJ		ug/l	V2
G6M-02-11X-FAL21 680-205985-2	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2
G6M-02-11X-FAL21 680-205985-2	N	Dichlorodifluoromethane	2.00	2.00 U Q	2.00 UJ		ug/l	V2/V5
G6M-02-11X-FAL21 680-205985-2	N	Trichlorofluoromethane	1.00	1.00 U Q	1.00 UJ		ug/l	V2
G6M-02-11X-FAL21 680-205985-2	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V2
G6M-03-10X-FAL21 680-205985-3	N	2,2-Dichloropropane	1.00	1.00 U Q	1.00 UJ		ug/l	V2
G6M-03-10X-FAL21 680-205985-3	N	Acetone	25.0	25.0 U Q	25.0 UJ		ug/l	V2
G6M-03-10X-FAL21 680-205985-3	N	Bromochloromethane	1.00	1.00 U Q	1.00 UJ		ug/l	V2
G6M-03-10X-FAL21 680-205985-3	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V2
G6M-07-02X-FAL21 680-205985-4	N	2,2-Dichloropropane	1.00	1.00 U Q	1.00 UJ		ug/l	V2
G6M-07-02X-FAL21 680-205985-4	N	Acetone	25.0	19.0 J Q	19.0 J		ug/l	TR/V2
G6M-07-02X-FAL21 680-205985-4	N	Bromochloromethane	1.00	1.00 U Q	1.00 UJ		ug/l	V2
G6M-07-02X-FAL21 680-205985-4	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V2
G6M-13-01X-FAL21 680-205985-6	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2
G6M-13-01X-FAL21 680-205985-6	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V1/V2
G6M-13-04X-FAL21 680-205985-7	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2

Table of All Qualified Results

Test Method: SW8260B		Extraction Method: SW5030B						
FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	Qualified Result	Bias	Units	Reason
G6M-13-04X-FAL21 680-205985-7	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V1/V2
G6M-13-06X-FAL21 680-205985-8	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2
G6M-13-06X-FAL21 680-205985-8	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V1/V2
MW-3-FAL21 680-205985-10	N	2,2-Dichloropropane	1.00	1.00 U Q	1.00 UJ		ug/l	V2
MW-3-FAL21 680-205985-10	N	Chloroethane	5.00	5.00 U Q J	5.00 UJ		ug/l	V2
MW-3-FAL21 680-205985-10	N	Dichlorodifluoromethane	2.00	2.00 U Q	2.00 UJ		ug/l	V2/V5
MW-3-FAL21 680-205985-10	N	Trichlorofluoromethane	1.00	1.00 U Q	1.00 UJ		ug/l	V2
MW-3-FAL21 680-205985-10	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V2
MW-7-FAL21 680-205985-13	N	Chloroethane	5.00	5.00 U Q	5.00 UJ		ug/l	V2
MW-7-FAL21 680-205985-13	N	Vinyl acetate	2.00	2.00 U Q	2.00 UJ		ug/l	V1/V2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Table of Results with Modified Qualifiers

Modified Qualifiers for test method RSK175

FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
AOC50-DUP02-FAL21 680-205985-5	FD	Methane	390	18000	18000 J	18000	
G6M-07-02X-FAL21 680-205985-4	N	Methane	390	15000	15000 J	15000	
G6M-13-01X-FAL21 680-205985-6	N	Methane	390	2200	2200 J	2200	
G6M-13-06X-FAL21 680-205985-8	N	Methane	390	12000	12000 J	12000	

Modified Qualifiers for test method SW8260B

FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
AOC50-DUP02-FAL21 680-205985-5	FD	1,2-Dichloroethene	2.00	12.0	12.0 J	12.0	
AOC50-DUP02-FAL21 680-205985-5	FD	Chloroethane	5.00	5.00 U Q	5.00 U	5.00 UJ	V2
AOC50-DUP02-FAL21 680-205985-5	FD	Trichloroethene (TCE)	1.00	2.30	2.30 J	2.30	D3
AOC50-DUP02-FAL21 680-205985-5	FD	Vinyl acetate	2.00	2.00 U Q	2.00 U	2.00 UJ	V1/V2
AOC50-RB01-FAL21 680-205985-14	EB	Chloroethane	5.00	5.00 U Q	5.00 U	5.00 UJ	V2
AOC50-RB01-FAL21 680-205985-14	EB	Vinyl acetate	2.00	2.00 U Q	2.00 U	2.00 UJ	V1/V2
G6M-02-04X-FAL21 680-205985-1	N	2,2-Dichloropropane	1.00	1.00 U Q	1.00 U	1.00 UJ	V2
G6M-02-04X-FAL21 680-205985-1	N	Chloroethane	5.00	5.00 U Q	5.00 U	5.00 UJ	V2
G6M-02-04X-FAL21 680-205985-1	N	Dichlorodifluoromethane	2.00	2.00 U Q	2.00 UJ	2.00 UJ	V2/V5
G6M-02-04X-FAL21 680-205985-1	N	Trichlorofluoromethane	1.00	1.00 U Q	1.00 U	1.00 UJ	V2
G6M-02-04X-FAL21 680-205985-1	N	Vinyl acetate	2.00	2.00 U Q	2.00 U	2.00 UJ	V2
G6M-02-11X-FAL21 680-205985-2	N	2,2-Dichloropropane	1.00	1.00 U Q	1.00 U	1.00 UJ	V2
G6M-02-11X-FAL21 680-205985-2	N	Chloroethane	5.00	5.00 U Q	5.00 U	5.00 UJ	V2
G6M-02-11X-FAL21 680-205985-2	N	Dichlorodifluoromethane	2.00	2.00 U Q	2.00 UJ	2.00 UJ	V2/V5
G6M-02-11X-FAL21 680-205985-2	N	Trichlorofluoromethane	1.00	1.00 U Q	1.00 U	1.00 UJ	V2
G6M-02-11X-FAL21 680-205985-2	N	Vinyl acetate	2.00	2.00 U Q	2.00 U	2.00 UJ	V2
G6M-03-10X-FAL21 680-205985-3	N	2,2-Dichloropropane	1.00	1.00 U Q	1.00 U	1.00 UJ	V2
G6M-03-10X-FAL21 680-205985-3	N	Acetone	25.0	25.0 U Q	25.0 U	25.0 UJ	V2
G6M-03-10X-FAL21 680-205985-3	N	Bromochloromethane	1.00	1.00 U Q	1.00 U	1.00 UJ	V2
G6M-03-10X-FAL21 680-205985-3	N	Vinyl acetate	2.00	2.00 U Q	2.00 U	2.00 UJ	V2

Table of Results with Modified Qualifiers

Modified Qualifiers for test method SW8260B

FieldSample ID / LabSample ID	Type	Analyte	LOQ	Lab Result	ADR Result	Modified Result	Reason
G6M-07-02X-FAL21 680-205985-4	N	1,2-Dichloroethene	2.00	9.80	9.80 J	9.80	
G6M-07-02X-FAL21 680-205985-4	N	2,2-Dichloropropane	1.00	1.00 U Q	1.00 U	1.00 UJ	V2
G6M-07-02X-FAL21 680-205985-4	N	Acetone	25.0	19.0 J Q	19.0 J	19.0 J	TR/V2
G6M-07-02X-FAL21 680-205985-4	N	Bromochloromethane	1.00	1.00 U Q	1.00 U	1.00 UJ	V2
G6M-07-02X-FAL21 680-205985-4	N	Vinyl acetate	2.00	2.00 U Q	2.00 U	2.00 UJ	V2
G6M-13-01X-FAL21 680-205985-6	N	Chloroethane	5.00	5.00 U Q	5.00 U	5.00 UJ	V2
G6M-13-01X-FAL21 680-205985-6	N	Vinyl acetate	2.00	2.00 U Q	2.00 U	2.00 UJ	V1/V2
G6M-13-04X-FAL21 680-205985-7	N	Chloroethane	5.00	5.00 U Q	5.00 U	5.00 UJ	V2
G6M-13-04X-FAL21 680-205985-7	N	Vinyl acetate	2.00	2.00 U Q	2.00 U	2.00 UJ	V1/V2
G6M-13-06X-FAL21 680-205985-8	N	Chloroethane	5.00	5.00 U Q	5.00 U	5.00 UJ	V2
G6M-13-06X-FAL21 680-205985-8	N	Vinyl acetate	2.00	2.00 U Q	2.00 U	2.00 UJ	V1/V2
MW-3-FAL21 680-205985-10	N	2,2-Dichloropropane	1.00	1.00 U Q	1.00 U	1.00 UJ	V2
MW-3-FAL21 680-205985-10	N	Chloroethane	5.00	5.00 U Q J	5.00 U	5.00 UJ	V2
MW-3-FAL21 680-205985-10	N	Dichlorodifluoromethane	2.00	2.00 U Q	2.00 UJ	2.00 UJ	V2/V5
MW-3-FAL21 680-205985-10	N	Trichlorofluoromethane	1.00	1.00 U Q	1.00 U	1.00 UJ	V2
MW-3-FAL21 680-205985-10	N	Vinyl acetate	2.00	2.00 U Q	2.00 U	2.00 UJ	V2
MW-7-FAL21 680-205985-13	N	Chloroethane	5.00	5.00 U Q	5.00 U	5.00 UJ	V2
MW-7-FAL21 680-205985-13	N	Vinyl acetate	2.00	2.00 U Q	2.00 U	2.00 UJ	V1/V2

Analytes not found in project samples are reported as not detected at the limit of detection (LOD) unless blank contamination occurs and then the sample may be reported as not detected at the (LOQ) based on the sample concentration.
In instances where no LOD is provided, results are reported down to the LOQ.
Trace values are not included in the qualified results table unless additional reason codes are associated.

Reason Code Definitions

Code	Definition
B2	CCB
C	LCS Recovery
D3	Field Duplicate RPD
L	Lab Blank
M	MS Recovery
TR	Trace Level Detect
V	Equipment Blank

Reason Code Definitions

Code	Definition
V1	ICV
V2	CCV
V5	Ending Continuing Calibration Verification

Flag Code and Definitions

Flag	Definition
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.

Bias

-	The result may be biased low
+	The result may be biased high

Note - The bias field is a separate field; however, it is an integral part of the final flag (qualifier) on the sample result

Review Questions

Method: A2320B (Alkalinity by Titrimetric Method)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?		•		Although the method blanks and calibration blanks had detections for alkalinity, the associated sample results were significantly greater than the concentrations found in the blanks, therefore no data were qualified.
Were field blanks (EBs or FBs) submitted with these samples?		•		No field blanks were submitted with these samples.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?		•		MS/MSD not performed.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Review Questions

Method: E353.2 (Nitrogen, Nitrate-Nitrite (Colorimetric Automated, Cadmium Reduction))				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes reported in the field blank(s) less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCSD not performed.
Was a MS/MSD pair prepared with each batch?		•		MS/MSD not performed.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Review Questions

Method: RSK175 (Dissolved Gas Analysis in Water Samples Using a GC Headspace Equilibrium Technique)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Were the required minimum levels of calibration standards used in the initial calibration?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Were surrogate recoveries within project acceptance limits?			•	Surrogates not required per the method.
Was a method blank prepared and analyzed with each batch?	•			
Were field blanks (EBs or FBs) submitted with these samples?		•		No field blanks were submitted with these samples.
Were target analytes reported in the field blank(s) less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?		•		MS/MSD not performed.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Review Questions

Method: SW6010C (Trace Metals by Inductively Coupled Plasma/Atomic Emission Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were field blanks (EBs or FBs) submitted with these samples?	•			
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCSD not performed.
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?		•		Although MS/MSD %R were not within criteria, the parent sample results were significantly greater than the spike amount, therefore no data were qualified.
Was the MS/MSD RPD within project acceptance limits?	•			
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Review Questions

Method: SW6020A (Trace Metals by Inductively Coupled Plasma/Mass Spectrometry)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes reported in the field blank(s) less than MDL?	•			
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?			•	LCSD not performed.
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?		•		Although MS %R was not within criteria, the parent sample results were significantly greater than the spike amount, therefore no data were qualified.
Was the MS/MSD RPD within project acceptance limits?	•			
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Review Questions

Method: SW8260B (Volatile Organic Compounds by Capillary GC/MS)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Were the required minimum levels of calibration standards used in the initial calibration?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?		•		Due to ICV %R, six vinyl acetate results were qualified as non-detected estimated (UJ).
Were CCVs run at the required frequency and within acceptance criteria?		•		Due to CCV %R, several results were qualified as detected estimated (J) or non-detected estimated (UJ).
Were surrogate recoveries within project acceptance limits?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were field blanks (EBs or FBs) submitted with these samples?	•			
Were target analytes reported in the field blank(s) less than MDL?	•			
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?		•		Although LCS/LCSD %R was above criteria for chloroethane, the associated sample results were not detected, therefore no data were qualified.
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?	•			
Were MS/MSD recoveries within project acceptance limits?		•		Although MS/MSD %R was above criteria for chloroethane, the associated sample results were not detected, therefore no data were qualified.
Was the MS/MSD RPD within project acceptance limits?	•			
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?		•		Due to field duplicate difference, one trichloroethene result was qualified as detected estimated (J).
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were DoD QSM corrective actions followed if deviations were noted?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported or as qualified during data validation.

Review Questions

Method: SW9034 (Titrimetric Procedure for Acid-Soluble and Acid-Insoluble Sulfides)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes reported in the field blank(s) less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?		•		MS/MSD not performed.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Review Questions

Method: SW9056A (Anion Chromatography)				
Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were target analytes reported in the field blank(s) less than MDL?			•	
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?		•		MS/MSD not performed.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Data Validation Report for 6802059851

Review Questions

Method: SW9060A (Total Organic Carbon)

Review Questions	Yes	No	NA	Comment
Did Chain-of-Custody information agree with laboratory report and EDD for requested field samples and tests?	•			
Were samples preserved properly and received in good condition?	•			
Were holding times met?	•			
Were all requested target analytes reported?	•			
Was the Calibration within acceptance criteria?	•			
Was either analysis of an ICV performed after each ICAL or a second source standard prior to sample analysis?	•			
Were all reported analytes for the ICV within the required criteria?	•			
Were CCVs run at the required frequency and within acceptance criteria?	•			
Was a method blank prepared and analyzed with each batch?	•			
Were target analytes in the method blank less than MDL?	•			
Were field blanks (EBs or FBs) submitted with these samples?		•		No field blanks were submitted with these samples.
Was an LCS/LCSD pair prepared and analyzed with each batch?	•			
Were LCS/LCSD recoveries within project acceptance limits?	•			
Was the LCS/LCSD RPD within project acceptance limits?	•			
Was a MS/MSD pair prepared with each batch?		•		MS/MSD not performed.
Were MS/MSD recoveries within project acceptance limits?			•	
Was the MS/MSD RPD within project acceptance limits?			•	
If a field duplicate was analyzed, were the RPDs within QAPP acceptance limits?	•			
Were QAPP specified laboratory LOQs/RLs achieved?	•			
Have all Laboratory Case Narrative comments/findings been addressed in the data review process?	•			
Were any data recommended for rejection (exclusion) in the data validation process?		•		All data is acceptable as reported.

Field Duplicate Report By SDG
Former Fort Devens, Long Term Monitoring
Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021
Field Duplicates for SDG: 6802059851

Location	Analysis
G6M-07-02X	A2320B

Field ID - Primary/Field Dup	Lab ID - Primary/Field Dup	Analyte	Primary Result	FD Result	RL	RPD	RPD Criteria	RPD Check	RL Check
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	Alkalinity, Total (as CaCO3)	130	150	10.0	14.3	30	OK	NA

Location	Analysis
G6M-07-02X	E353.2

Field ID - Primary/Field Dup	Lab ID - Primary/Field Dup	Analyte	Primary Result	FD Result	RL	RPD	RPD Criteria	RPD Check	RL Check
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	Nitrate-Nitrite (as N)	0.0740	0.0670	0.100	9.93	30	NA	OK

Location	Analysis
G6M-07-02X	RSK175

Field ID - Primary/Field Dup	Lab ID - Primary/Field Dup	Analyte	Primary Result	FD Result	RL	RPD	RPD Criteria	RPD Check	RL Check
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	Ethane	3.40	3.90	1.10	13.7	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	Ethene	3.20	3.60	1.00	11.8	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	Methane	15000	18000	390	18.2	30	OK	NA

Location	Analysis
G6M-07-02X	SW6010C

Field ID - Primary/Field Dup	Lab ID - Primary/Field Dup	Analyte	Primary Result	FD Result	RL	RPD	RPD Criteria	RPD Check	RL Check
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	Iron (FLDFLT)	170000	180000	50.0	5.71	30	OK	NA
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	Manganese (FLDFLT)	4300	4400	10.0	2.30	30	OK	NA

FD = Field Duplicate
RL = Reporting Limit
RPD = Relative Percent Difference

RL Check = If either the primary sample or field duplicate result is less than 5 times the RL then the criteria used to determine if the field duplicate is outside QC limits is +/- RL for Water and +/- 2 times RL for Soil"

Field Duplicate Report By SDG

Former Fort Devens, Long Term Monitoring
Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021
Field Duplicates for SDG: 6802059851

Location	Analysis
G6M-07-02X	SW6020A

Field ID - Primary/Field Dup	Lab ID - Primary/Field Dup	Analyte	Primary Result	FD Result	RL	RPD	RPD Criteria	RPD Check	RL Check
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	Arsenic (FLDFLT)	25.0	27.0	3.00	7.69	30	OK	NA

Location	Analysis
G6M-07-02X	SW8260B

Field ID - Primary/Field Dup	Lab ID - Primary/Field Dup	Analyte	Primary Result	FD Result	RL	RPD	RPD Criteria	RPD Check	RL Check
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	1,1,1,2-Tetrachloroethane	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	1,1,1-Trichloroethane	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	1,1,2,2-Tetrachloroethane	ND	ND	2.00	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	1,1,2-Trichloroethane	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	1,1-Dichloroethane	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	1,1-Dichloroethene	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	1,1-Dichloropropene	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	1,2,3-Trichlorobenzene	ND	ND	5.00	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	1,2,3-Trichloropropane	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	1,2,4-Trichlorobenzene	ND	ND	5.00	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	1,2,4-Trimethylbenzene	1.40	0.970	1.00	36.3	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	1,2-Dibromo-3-chloropropane	ND	ND	5.00	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	1,2-Dibromoethane (EDB)	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	1,2-Dichlorobenzene	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	1,2-Dichloroethane	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	1,2-Dichloroethene	9.80	12.0	2.00	20.2	30	NA	2.2
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	1,2-Dichloropropane	ND	ND	2.00	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	1,3,5-Trimethylbenzene	0.800	ND	1.00	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	1,3-Dichlorobenzene	ND	ND	1.00	NA	30	NA	OK

FD = Field Duplicate
RL = Reporting Limit
RPD = Relative Percent Difference

RL Check = If either the primary sample or field duplicate result is less than 5 times the RL then the criteria used to determine if the field duplicate is outside QC limits is +/- RL for Water and +/- 2 times RL for Soil"

Field Duplicate Report By SDG
Former Fort Devens, Long Term Monitoring
Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021
Field Duplicates for SDG: 6802059851

Location	Analysis
G6M-07-02X	SW8260B

Field ID - Primary/Field Dup	Lab ID - Primary/Field Dup	Analyte	Primary Result	FD Result	RL	RPD	RPD Criteria	RPD Check	RL Check
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	1,3-Dichloropropane	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	1,4-Dichlorobenzene	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	2,2-Dichloropropane	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	2-Butanone (MEK)	ND	8.10	10.0	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	2-Chlorotoluene	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	2-Hexanone	ND	ND	10.0	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	4-Chlorotoluene	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	4-Methyl-2-pentanone (MIBK)	ND	ND	10.0	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	Acetone	19.0	21.0	25.0	10.0	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	Benzene	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	Bromobenzene	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	Bromochloromethane	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	Bromodichloromethane	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	Bromoform	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	Bromomethane	ND	ND	5.00	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	Carbon disulfide	ND	ND	2.00	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	Carbon tetrachloride	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	Chlorobenzene	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	Chloroethane	ND	ND	5.00	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	Chloroform	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	Chloromethane	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	cis-1,2-Dichloroethene	9.80	12.0	1.00	20.2	30	OK	NA
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	cis-1,3-Dichloropropene	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	Dibromochloromethane	ND	ND	1.00	NA	30	NA	OK

FD = Field Duplicate
RL = Reporting Limit
RPD = Relative Percent Difference

RL Check = If either the primary sample or field duplicate result is less than 5 times the RL then the criteria used to determine if the field duplicate is outside QC limits is +/- RL for Water and +/- 2 times RL for Soil"

Field Duplicate Report By SDG
Former Fort Devens, Long Term Monitoring
Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021
Field Duplicates for SDG: 6802059851

Location	Analysis
G6M-07-02X	SW8260B

Field ID - Primary/Field Dup	Lab ID - Primary/Field Dup	Analyte	Primary Result	FD Result	RL	RPD	RPD Criteria	RPD Check	RL Check
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	Dibromomethane	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	Dichlorodifluoromethane	ND	ND	2.00	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	Ethylbenzene	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	Hexachlorobutadiene	ND	ND	5.00	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	Isopropylbenzene (Cumene)	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	m,p-Xylene	0.570	0.760	1.00	28.6	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	Methyl tert-butyl ether (MTBE)	ND	ND	10.0	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	Methylene chloride	ND	ND	5.00	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	n-Butylbenzene	0.800	ND	1.00	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	n-Propylbenzene	0.840	ND	1.00	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	Naphthalene	5.20	4.20	5.00	21.3	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	o-Xylene	1.00	0.490	1.00	68.5	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	p-Cymene (p-Isopropyltoluene)	0.800	ND	1.00	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	sec-Butylbenzene	0.860	ND	1.00	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	Styrene	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	tert-Butylbenzene	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	Tetrachloroethene (PCE)	ND	0.900	2.00	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	Toluene	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	trans-1,2-Dichloroethene	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	trans-1,3-Dichloropropene	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	Trichloroethene (TCE)	ND	2.30	1.00	NA	30	NA	2.3
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	Trichlorofluoromethane	ND	ND	1.00	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	Vinyl acetate	ND	ND	2.00	NA	30	NA	OK
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	Vinyl chloride	1.50	2.30	1.00	42.1	30	NA	OK

FD = Field Duplicate
RL = Reporting Limit
RPD = Relative Percent Difference

RL Check = If either the primary sample or field duplicate result is less than 5 times the RL then the criteria used to determine if the field duplicate is outside QC limits is +/- RL for Water and +/- 2 times RL for Soil"

Field Duplicate Report By SDG
Former Fort Devens, Long Term Monitoring
Seres-Arcadis JV, Long Term Monitoring, AOC 50, Fall 2021
Field Duplicates for SDG: 6802059851

Location	Analysis
G6M-07-02X	SW8260B

Field ID - Primary/Field Dup	Lab ID - Primary/Field Dup	Analyte	Primary Result	FD Result	RL	RPD	RPD Criteria	RPD Check	RL Check
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	Xylenes, Total	1.60	1.30	2.00	20.7	30	NA	OK

Location	Analysis
G6M-07-02X	SW9034

Field ID - Primary/Field Dup	Lab ID - Primary/Field Dup	Analyte	Primary Result	FD Result	RL	RPD	RPD Criteria	RPD Check	RL Check
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	Sulfide	ND	ND	8.10	NA	30	NA	OK

Location	Analysis
G6M-07-02X	SW9056A

Field ID - Primary/Field Dup	Lab ID - Primary/Field Dup	Analyte	Primary Result	FD Result	RL	RPD	RPD Criteria	RPD Check	RL Check
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	Sulfate	ND	ND	1.00	NA	30	NA	OK

Location	Analysis
G6M-07-02X	SW9060A

Field ID - Primary/Field Dup	Lab ID - Primary/Field Dup	Analyte	Primary Result	FD Result	RL	RPD	RPD Criteria	RPD Check	RL Check
G6M-07-02X-FAL21 / AOC50-DUP02-FAL21	680-205985-4 / 680-205985-5	Total Organic Carbon	190	190	10.0	0.00	30	OK	NA

FD = Field Duplicate
RL = Reporting Limit
RPD = Relative Percent Difference

RL Check = If either the primary sample or field duplicate result is less than 5 times the RL then the criteria used to determine if the field duplicate is outside QC limits is +/- RL for Water and +/- 2 times RL for Soil"

Appendix D

Historical Groundwater Analytical Results

Appendix D
Historical Groundwater Analytical Results
2021 Annual Operations, Maintenance, and Monitoring Report
Area of Contamination 50, Former Fort Devens Army Installation
Devens, Massachusetts

		Analytical Method	VOCs						Dissolved Metals			Dissolved Gases			General Chemistry					Field Parameters					
		Analyte	1,1-DCE	cis-1,2-DCE	PCE	trans-1,2-DCE	TCE	VC	Arsenic	Iron	Manganese	Ethane	Ethene	Methane	Alkalinity	Nitrate/ Nitrite	Sulfate	Sulfide	TOC	pH	SpC	Turbidity	DO	Temp	ORP
		Unit	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(SU)	(mS/cm)	(NTU)	(mg/L)	°C	(mV)
		Cleanup Level[1]	7	70	5		5	2	10	3.129	1,460					10,000									
Area	Well ID	Date Sampled																							
Area 1	G6M-02-08X	5/17/2002	1.0 U	**250**	**2,300**	2.0 U	**35**	**5.8**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13.04	-
Area 1		1/31/2003	1.0 U	**480**	**3,600**	2.3	**46**	**2.2**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.98	-
Area 1		3/31/2005	50 U	**250**	**1,300**	50 U	**38 J**	50 U	5.0 U	0.3 J	770	0.049	0.79	1.2	62	1.1	6.2	2.0 U	15	7.08	0.563	24.6	9.10	9.64	-50.0
Area 1		7/5/2005	12 U	**1,800**	**1,000**	12 U	**130**	12 U	**33**	**110**	**29,000**	0.16	0.22	3.0	350	0.05 U	3.7	8.3	450	4.23	1.616	4.72	1.66	14.95	19.1
Area 1		9/27/2005	1.8	**1,300**	**560**	1.0 U	**26**	**2.5**	**270**	**310 J**	75 U	0.11	0.25	21	466	0.05 U	320 J	16	1,200	5.03	1.965	3.16	0.33	18.79	-68.6
Area 1		12/16/2005	2.0 U	**1,200**	**300**	4.0 U	**24**	4.0 U	4.4	**350 J**	15 U	0.19	0.36	2.1	520	0.05 U	57	9.4	1,500	5.46	1.999	66.4	0.03	9.72	-31.4
Area 1		3/21/2006	2.1	**1,300**	**180**	2.0 U	**25**	**2.3**	**80**	**470**	**40,000**	0.084	0.24	15	1,400	1.0 U	245	14	3,000	5.46	2.450	6.98	0.33	15.04	-62.5
Area 1		6/21/2006	1.0 U	**850**	**230**	2.0 U	**30**	2.0 U	**100**	**970**	**44,000**	0.14	0.23	19	1,800	1.7	759	40	5,700	4.80	4.528	45.4	1.32	12.38	-25.2
Area 1		9/20/2006	1.6	**1,300**	**150**	2.0 U	**25**	2.0 U	**77**	**860**	**29,000**	0.072	0.14	11	1,000	2.0 U	655	16	4,400	5.20	4.503	53.4	1.57	19.59	-14.4
Area 1		12/11/2006	1.6	**620**	**830**	2.0 U	**340**	**7.3**	**190**	**130**	**27,000**	0.020 J	0.047	9,000	-	-	6.1	1.2	360	6.28	1.930	2.10	14.1	11.04	-260.0
Area 1		3/28/2007	1.0 U	**500**	**60**	2.0 U	**14**	2.0 U	**72**	**1,200**	**30,000 J**	0.31	0.14	62	-	-	1,170	80	7,200	4.46	7.243	60.9	0.21	11.74	-144.5
Area 1		6/13/2007	1.0 U	**420**	**110**	2.0 U	**8.4**	2.0 U	**130**	**1,200**	**33,000**	0.092	0.11	180	-	-	1,160	82	6,800	4.70	6.948	1,328	1.78	9.25	24.1
Area 1		9/13/2007	1.0 U	**1,400**	**140**	2.0 U	**74**	2.0 U	**410**	**1,100**	**37,000**	0.22	0.17	120	3,000	0.2 U	890	200	4,400	5.34	6.823	28.2	2.68	11.52	-150.5
Area 1		12/10/2007	2.0	**1,100**	**250**	2.0 U	**66**	**3.3**	**360**	**1,200**	**42,000**	0.14	0.23	240	-	-	414	120	7,700	5.17	7.569	10.8	0.15	11.11	-115.7
Area 1		3/10/2008	1.0 U	**170**	**32**	2.0 U	**5.5**	2.0 U	**570**	**970**	**20,000**	0.36	0.15	280	-	-	770	16	11,000	4.28	7.828	13.8	0.50	15.40	-55.7
Area 1		10/6/2008	5.0 U	**81**	**49**	5.0 U	4.5 J	5.0 U	**103 J**	**598**	**7,630**	6.3 U	7.9 U	3,000	1,800	0.13 U	610	0.75 U	4,190	4.52	4.495	65.0	0.00	12.25	-25.9
Area 1		1/21/2009	14 U	39	**29**	11 U	18 U	11 U	**76**	**474 J**	**6,650**	1.2 U	1.5 U	3,400	3,000	0.13 U	710	0.39	2,900 J	4.76	3.739	46.4	0.15	13.10	39.2
Area 1		5/7/2009	20 U	29	**25**	20 U	20 U	20 U	**53**	**356**	**5,130**	1.3 U	5.8	3,500	550 J	0.092 J	410	0.053	3,000	3.97	3.538	15.4	0.40	14.96	71.4
Area 1		10/20/2009	0.5 U	0.31 J	0.5 U	0.5 U	0.5 U	0.5 U	**71**	**486**	**6,840**	1.3 U	1.6 U	2,300 J	40	1.3 U	440	0.3 U	2,300	4.61	3.973	20.1	1.88	12.49	79.4
Area 1		4/21/2010	2.0 U	**75 J**	**11 J**	2.0 U	2.0 U	2.0 U	**99**	**447 J**	**8,720**	1.3 U	1.6 U	4,400	40	1.3 U	130	0.28	3,400	4.49	3.353	22.3	0.10	11.07	28.2
Area 1		10/7/2010	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**73**	**381**	**8,080**	1.3 U	1.6 U	27,000	860	2.6 U	100	0.095	2,400	4.47	3.209	4.33	0.33	12.69	58.0
Area 1		6/9/2011	0.5 U	**140**	**13**	0.5 U	0.5 U	1.6	**155**	**473**	**14,000**	1.2 U	1.5 U	83,000	1,100	6.5 U	99 J	0.38	2,800	4.64	2.968	11.0	0.11	11.14	18.9
Area 1		10/4/2011	8.0 U	**210**	8.0 U	8.0U	8.0 U	8.0 U	**194**	**491**	**15,900**	1.2 U	1.5 U	28,000	230	0.13 U	86	0.091	2,400	4.81	2.376	4.99	0.02	13.73	18.1
Area 1		5/10/2012	8.0 U	**270**	**9.8**	8.0U	8.0 U	8.0 U	**184**	**581**	**19,000**	1.2 U	1.5 U	14,000	730	0.13 U	64	1.8	1,900	5.16	3.338	3.29	0.21	11.46	-9.9
Area 1		10/15/2012	4.0 U	**270**	**12**	4.0 U	4.0 U	**6.2**	**121**	**523**	**20,300**	1.2 U	1.5 U	3,600	900	0.08 J	37	0.096	1,800	4.85	2.915	3.76	0.32	10.42	-1.0
Area 1		5/23/2013	8.0 U	**510**	**20**	8.0U	8.0 U	**24**	**160**	**460**	**18,200**	1.2 U	1.5 U	11,000	610	0.041 J	5.3	3.5 j	1,600	4.88	2.618	4.01	0.10	-	9.4
Area 1		10/22/2013	13 U	**500**	13 U	13 U	13 U	**51**	**200**	**428**	**15,400**	3.6	84	40,000	630	0.13 U	8.9	3.8	1,100	5.23	1.308	10.8	0.27	8.20	1.1
Area 1		6/12/2014	0.70	**400**	**12**	0.5 U	1.5	**140**	**241**	**420**	**10,100**	1.3 U	1.6 U	9,400	700 J	0.13 U	1.0 J	0.03 U	670	5.23	2.023	6.68	0.21	16.60	11.2
Area 1		11/3/2014	5.0 U	**260**	**8.3**	5.0 U	5.0 U	**44**	**258**	**461**	**10,400**	4.4	7.7	26,000	590	0.13 U	0.96 J	0.03 U	1,400	5.28	0.994	33.6	0.12	15.00	-33.6
Area 1		6/16/2015	10 U	**99**	10 U	10 U	10 U	10 U	**318**	**455**	**10,200**	10 U	10 U	1,410	582	0.15	8.6 J	1.0 U	1,020	5.43	1.476	110	2.94	13.62	43.0
Area 1		9/9/2015	20 U	**84**	20 U	20 U	20 U	20 U	**340**	**428**	**8,780**	10 U	10 U	10,600	-	0.078 J	16	4.8	976	5.59	1.337	12.0	0.07	13.71	-39.2
Area 1		10/13/2015	21 U	**84**	20 U	21 U	21 U	21 U	**320**	**483**	**9,410**	10 U	10 U	18,400	526	0.11 U	7.1 J	2.0 U	1,280	5.02	1.689	47.8	0.33	9.80	0.4
Area 1		2/10/2016	2.0 U	49	2.9	2.0 U	2.0 U	**4.7**	**272**	**1,150**	**12,100**	10 U	10 U	14,500	879	0.10 J	5.3 J	2.0 U	3,110	4.89	2.906	17.2	0.47	10.44	52.6
Area 1		6/14/2016	10 U	35	10 U	10 U	10 U	10 U	**220**	**1,200**	**8,000**	2.8	1.0 U	19,000	1,200	0.05 U	1.3	1.0 U	2,600	5.21	3.370	10.7	0.33	16.41	29.1
Area 1		11/10/2016	1.0 U	27	4.3	1.0 U	1.0 U	**2.1**	**230**	**880**	**8,600**	1.1 U	1.0 U	11,000	1,000	0.053 J	0.58 J	7.0	2,100	5.27	1.370	9.44	0.77	8.30	-0.9
Area 1		5/18/2017	20 U	51	20 U	20 U	20 U	20 U	**410**	**770**	**4,300**	1.1 U	1.0 U	15,000	930	0.10 U	1.0 U	1.0 U	740	12.31	2.650	30.4	0.01	13.04	-111.3
Area 1		10/18/2017	20 U	20 U	20 U	20 U	20 U	20 U	**370**	**640**	**3,300**	1.1 U	1.0 U	16,000	680	0.26	2.0 U	1.6	250	6.66	1.970	38.1	0.44	12.23	-144.8
Area 1		10/19/2018	10 U	8.0 J	10 U	10 U	10 U	10 U	**300**	**240**	1,400	1.1 U	1.0 U	38,000	190	0.23	2.0 U	1.0 U	110	6.37	1.439	41.6	0.35	11.20	111.3
Area 1		10/16/2019	5.0 U	5.9 J	5.0 U	5.0 U	5.0 U	5.0 U	**370**	**180**	1,100	1.1 U	4.3	31,000	120	0.054 J	1.0 U	1.8	89	6.43	1.400	44.0	1.82	12.00	-115.0
Area 1		10/13/2020	1.0 U	3.5	1.0 U	1.0 U	1.0 U	1.0 U	**390**	**78**	420	1.1 U	0.76 J	12,000	95	0.12	5.0 U	0.81 U	37	6.61	0.522	8.12	0.51	11.60	-93.1
Area 1		10/14/2021	1.0 U	3.3	2.0 U	1.0 U	1.0 U	1.6	**260**	**22**	110	2.5	6.7	25,000	87	0.047 J	2.0 U	0.81 U	25	6.95	0.597	28.90	0.63	13.40	-119.0
Area 1	G6M-03-01X	10/21/2009	25 U	**670**	**380**	25 U	**65**	25 U	-	-	-	-	-	-	-	-	-	-	-	6.52	0.559	7.25	0.88	11.99	-153.5
Area 1		10/16/2012	10 U	**200**	**200**	10 U	**60**	**550**	-	-	-	-	-	-	-	-	-	-	-	6.51	1.776	2.28	0.95	20.17	-69.4
Area 1		6/12/2014	0.51	19	0.29 J	0.59	**37**	**68**	-	-	-	-	-	-	-	-	-	-	-	6.52	0.812	13.1	1.95	16.73	11.7
Area 1		10/31/2014	0.5 U	**98**	**300**	0.5 U	**310**	**34**	-	-	-	-	-	-	-	-	-	-	-	6.40	1.263	8.57	0.75	9.60	-106.6
Area 1		6/18/2015	0.55 J	53	0.65 J	0.5 U	**37**	**19**	-	-	-	-	-	-	-	-	-	-	-	6.36	1.093	22.9	1.82	13.63	19.9
Area 1		9/10/2015	1.4	65	**103**	2.4	**67**	**63**	**46**	**42**	**7,080**	10 U	69	8,640	-	0.076 J	10	2.0 U	5.3	6.00	1.881	4.38	0.61	12.57	-55.0
Area 1		10/13/2015	1.5	**141**	**126**	5.2	**190**	**58**	-	-	-	-	-	-	-	-	-	-	-	6.27	2.096	3.61	0.28	13.25	-83.5
Area 1		2/22/2016	1.0 U	**87**	1.0 U	1.9	**81**	**51**	**24**	**20**	**6,330**	10 U	96	16,300	144	0.11 U	3.4 J	2.0 U	6.4	6.62	1.162	4.98	2.11	8.46	33.6
Area 1		6/15/2016	1.4	**180**	**9.6**	8.8	**180**	**99**	-	-	-	-	-	-	-	-	-	-	-	5.84	1.726	5.61	2.81	12.87	-48.3
Area 1		11/10/2016	1.4	**180**	1.0 U	4.0	**130**	**140**	-	-	-	-	-	-	-	-	-	-	-	6.25	1.097	2.40	0.47	8.21	-84.7
Area 1		5/18/2017	0.70 J	**210**	**61**	2.3	**77**	**73**	**75**	**120**	**70,000**	1.1 U	120	7,900	310	0.08 J	8.6	1.0 U	26	12.52	2.275	8.51	0.12	13.56	-93.1
Area 1		10/12/2017	2.0 U	**240 J**	2.0 U	2.0 U	**9.7 J**	**160 J**	**130**	**210**	**65,000**	1.1 U	1.0 U	8,000	390	0.12	0.50 J	1.0 U	72	6.42	2.020	7.96	2.23	12.49	-69.7
Area 1	G6M-03-02X	5/12/2003	1.0 U	4.4	**1,300**	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13.92	-
Area 1		10/11/2004	1.0 U	5.6	**690**	2.0 U	2.0 U	2.0 U	5.0 U	1.0 U	17	0.051	0.030	2.6	12	3.7	20	1.7 J	1.0 U	6.29	0.321	12.1	8.25	8.83	97.4
Area 1		12/15/2004	1.0 U	5.0	**200**	2.0 U	2.0 U	2.0 U	5.0 U	1.0 U	610	0.056	0.063	3.4	29	2.4	30	2.0 U	390	5.86	0.382	1.93	1.75	12.75	-132.9
Area 1		3/29/2005	10 U	14 J	**340**	20 U	20 U	20 U	**640**	**140**	**49,000**	0.15	0.34	5.1	366	0.2 U	230	6.7 J	1,300	5.23	1.654	28.7	0.65	15.46	-20.1
Area 1		6/29/2005	2.5 U	**91**	**190**	2.5 U	**11**	2.5 U	**130**	**220 J**	**35,000 J**	0.29	0.65	43	431	0.05 U	74	11	1,200	4.62	1.723	29.1	1.13	15.57	2.9
Area 1		9/29/2005	2.5 U	**190**	**57**	2.5 U	**7.8**	2.5 U	**150**	**260 J**	**37,000**	0.20	0.29	560	345	0.05 U	62	16	850	4.94	1.752	23.8	0.53	11.33	-73.7
Area 1		12/15/2005	4.0 U	**190**	**39**	8.0U	8.0 U	8.0 U	**146**	**290 J**	**38,000**	0.17	0.26	4,300	550	0.05 U	66	16	1,100	5.42	1.650	19.7	4.55	12.12	13.9
Area 1		3/21/2006	1.0 U	**140**	**17**	2.0 U	2.0 U	2.0 U	**140**	**320**	**37,000**	0.016 J	0.14	6,700	1,200	2.0 U	88	8.8	1,400	5.56	1.731	17.3	0.16	13.35	-47.7
Area 1		6/21/2006	1.0 U	**160**	**8.2**	2.0 U	2.0 U	2.0 U	**240**	**410**	**23,000**	0.044	0.12	10,000	1,000	1.0 U	120	9.6	1,300	3.21	2.428	11.6	0.89	10.08	140.1
Area 1		9/20/2006	1.0 U	**230**	**9.7**	2.0 U	2.3	2.0 U	**200**	**440**	**21,000**	0.050	0.20	8,700	570	1.0 U	115	8.4	1,300	5.55	2.029	13.7	0.71	11.46	-27.8
Area 1		12/11/2006	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	5.0 U	0.1 U	15 U	0.008 J	0.038	11	-	-	6.6	1.0 U	5.0 U	6.38	0.076	2.23	10.7	12.11	91.3
Area 1		12/12/2006	1.1	**910**	**140**	2.0 U	**28**	2.0 U	**73**	**1,000**	**32,000**	0.18	0.17	30	-	-	14	110	6,400	4.93	6.436	109	0.67	7.42	-38.3
Area 1		3/28/2007	1.0 U	**320**	**13**	2.0 U	2.2	2.0 U	**230**	**470**	**14,000 J**	0.033	0.11	9,800	-	-	75	9.2	920	5.38	2.523	14.9	0.17	12.75	-62.3
Area 1		6/12/2007	1.4	**650**	**11**	2.0 U	2.0 U	**17**	**200**	**360**	**10,000**	0.025 U	0.14	21,000	-	-	39	8.4	840	5.77	2.268	39.5	0.38	12.00	-59.3
Area 1		9/12/2007	1.0 U	**800**	**12**	2.0 U	2.1	**81**	**230**	**350**	**12,000**	0.006 J	0.60	17,000	790	0.2 U	580	20	740	5.44	2.156	18.1	10.3	12.29	-122.8
Area 1		12/10/2007	1.8	**720**	3.8	2.0 U	2.0 U	**94**	**290**	**390**	**29,000**	0.005 J	1.4	14,000	-	-	25	7.0	1,000	5.67	2.802	5.30	6.03	12.33	-80.2
Area 1		3/10/2008	1.8	**590**	2.0 U	2.0 U	2.0 U	**50**	**320**	**410**	**100,000**	0.098	3.4	11,000	-	-	50 U	4.8	2,000	5.47	3.113	24.5	0.51	11.74	-55.9
Area 1		10/15/2008	5.0 U	**260**	5.0 U	5.0 U	5.0 U	**27**	**193**	**366**	**108,000**	1.2 U	10	12,000	860	0.13 U	59	0.03 U	454	5.60	2.376	15.0	0.75	11.00	-28.1

Appendix D
Historical Groundwater Analytical Results
2021 Annual Operations, Maintenance, and Monitoring Report
Area of Contamination 50, Former Fort Devens Army Installation
Devens, Massachusetts

		Analytical Method	VOCs						Dissolved Metals			Dissolved Gases			General Chemistry					Field Parameters					
		Analyte	1,1-DCE	cis-1,2-DCE	PCE	trans-1,2-DCE	TCE	VC	Arsenic	Iron	Manganese	Ethane	Ethene	Methane	Alkalinity	Nitrate/ Nitrite	Sulfate	Sulfide	TOC	pH	SpC	Turbidity	DO	Temp	ORP
		Unit	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(SU)	(mS/cm)	(NTU)	(mg/L)	°C	(mV)
		Cleanup Level[1]	7	70	5		5	2	10	3.129	1,460					10,000									
Area	Well ID	Date Sampled																							
Area 1		5/7/2009	4.0 U	**220**	4.0 U	4.0 U	4.0 U	**12**	**188**	**396**	**56,700**	1.2 U	18	23,000	1,100 J	0.13 U	44	0.03 U	900	5.45	1.962	4.81	0.32	11.27	-46.7
Area 1		10/19/2009	10 U	**290**	10 U	10 U	20 U	**9.5 J**	**205**	**423**	**43,400**	1.3 U	14	18,000	920	0.13 U	300	0.03 U	290	5.99	1.832	11.9	2.56	-	-44.2
Area 1		4/21/2010	2.0 U	**120 J**	2.0 U	2.0 U	2.0 U	**9.3 J**	**189**	**566 J**	**39,600**	1.3 U	16	16,000	1,000	0.13 U	0.28 J	0.03 U	1,200	5.85	1.902	7.28	0.29	18.13	18.9
Area 1		10/6/2010	0.5 U	3.2	0.5 U	0.5 U	0.5 U	0.42 J	**118**	**580**	**36,100**	1.2 U	20	35,000	1,100	0.29	0.40 J	0.03 U	810	5.65	2.137	5.47	0.57	13.03	-21.1
Area 1		10/4/2011	13 U	**410**	13 U	13 U	13 U	**30**	**379**	**352**	**12,400**	1.2 U	63	47,000	3,300	0.13 U	0.51 J	0.035	190	6.32	1.140	13.0	0.09	16.73	-86.1
Area 1		10/11/2012	2.0 U	59	2.0 U	2.0 U	2.0 U	**34**	**270**	**295**	**10,200**	1.2 U	540	39,000	500	0.051 J	5.0 U	0.49	140	6.13	1.310	9.50	0.46	23.98	-68.9
Area 1		10/22/2013	1.3 U	44	1.3 U	1.3 U	1.3 J	**36**	**296**	**212**	**6,750**	1.2 U	200	44,000	300	0.13 U	5.0 U	0.19	57	6.24	0.609	9.19	0.41	17.97	-68.8
Area 1		10/30/2014	0.5 U	6.6	0.5 U	0.5 U	0.27 J	**6.3**	**254**	**251**	**6,090**	1.2 U	12	38,000	450	0.13 U	0.23 J	0.03 U	340	6.45	0.820	13.6	0.33	10.20	-61.7
Area 1		10/13/2015	1.0 U	6.0	1.0 U	1.0 U	1.0 U	**5.3**	**168**	**116**	**3,540**	10 U	10 U	17,600	156	0.062 J	10	2.0 U	33	5.85	0.679	23.1	0.39	13.10	-86.6
Area 1		11/10/2016	1.0 U	18	1.0 U	1.0 U	0.54 J	**6.4**	**180**	**260**	**3,900**	1.1 U	1.0 U	17,000	300	0.05 U	0.44 J	1.9	120	6.21	0.730	8.87	0.25	9.15	-57.0
Area 1		10/12/2017	1.0 U	3.5	1.0 U	1.0 U	1.0 U	**4.0**	**250**	**150**	**2,000**	1.1 U	13	16,000	140	0.15	1.0 U	1.0 U	21	6.29	1.130	13.9	1.29	11.17	-44.1
Area 1	G6M-04-09X	9/24/2004	1.0 U	9.0	**7,400**	2.0 U	4.2	2.0 U	5.0 U	1.0 U	160	-	-	-	-	-	-	-	-	5.15	0.495	0.82	3.84	9.54	637.6
Area 1		9/28/2005	5.0 U	5.0 U	**3,200**	5.0 U	5.0 U	5.0 U	5.0 U	1.0 U	37	-	-	-	-	-	-	-	-	5.92	0.169	2.07	3.41	10.21	678.4
Area 1		9/21/2006	1.0 U	2.0 U	**190**	2.0 U	2.0 U	2.0 U	5.0 U	0.1 U	50	-	-	-	-	-	-	-	-	5.83	0.102	5.51	8.18	15.40	215.6
Area 1		9/12/2007	1.0 U	31	**440**	2.0 U	**22**	2.0 U	5.0 U	0.83	390	-	-	-	-	-	-	-	-	6.22	0.179	4.30	2.18	14.00	49.7
Area 1		10/17/2008	50 U	**410**	**4,000**	50 U	**330**	**44**	**63**	**13**	**5,700**	-	-	-	-	-	-	-	-	6.23	0.497	9.20	0.66	10.50	-36.2
Area 1		10/21/2009	50 U	**210**	**1,600**	50 U	**210**	**51**	**71**	**13**	**3,960**	-	-	-	-	-	-	-	-	5.80	0.376	4.53	0.58	12.35	33.3
Area 1		10/8/2010	0.89	**990**	**1,000**	0.79	**420**	**7.8**	**70**	**14**	**15,300**	-	-	-	-	-	-	-	-	6.17	0.388	1.58	0.99	11.90	-20.8
Area 1		6/9/2011	1.7	**950**	**260**	0.56	**140**	**200**	**203**	**43**	**9,820**	-	-	-	-	-	-	-	-	6.14	0.562	0.03	0.35	11.27	-49.3
Area 1		10/7/2011	20 U	**910**	20 U	20 U	**23**	**240**	**291**	**107**	**50,900**	-	-	-	-	-	-	-	45	6.45	0.626	2.00	0.14	10.10	-105.8
Area 1		5/9/2012	40 U	**510**	**970**	40 U	**250**	**340**	**344**	**77**	**17,800**	-	-	-	-	-	-	-	9.1 J	6.66	0.495	12.5	0.08	10.11	-85.2
Area 1		10/16/2012	20 U	**100**	**260**	20 U	**70**	**350**	**225**	**42**	**13,800**	-	-	-	-	-	-	-	3.0 J	6.24	0.289	10.3	0.31	10.75	-79.9
Area 1		5/22/2013	0.5 U	5.9	**5.9**	0.81	3.6	**9.9**	**321**	**135**	**30,800**	-	-	-	-	-	-	-	11	6.29	0.812	4.21	0.15	8.74	-84.7
Area 1		10/22/2013	0.5 U	52	0.5 U	0.53	0.5 U	**38**	**551**	**303**	**27,100**	-	-	-	-	-	-	-	34	6.64	0.917	18.5	3.30	10.00	-130.9
Area 1		6/12/2014	0.5 U	12	1.4	0.60	0.75	**26**	**607**	**315**	**19,200**	-	-	-	-	-	-	-	29	6.37	1.392	3.64	0.26	10.42	-82.0
Area 1		11/3/2014	0.5 U	0.43 J	0.21 J	0.21 J	0.5 U	0.83	**600**	**339**	**16,500**	-	-	-	-	-	-	-	31	6.59	1.030	21.8	0.05	10.47	-129.2
Area 1		6/17/2015	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**351**	**159**	**3,560**	-	-	-	-	-	-	-	14	6.33	1.384	96.0	0.64	14.03	-65.0
Area 1		10/14/2015	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**577**	**241**	**5,600**	-	-	-	-	-	-	-	16	6.61	1.604	15.3	0.13	10.75	134.9
Area 1		2/19/2016	1.0 U	0.55 J	1.0 U	1.0 U	1.0 U	1.0 U	**514**	**202**	**3,600**	10 U	10 U	16,700	439	0.37	4.5 J	2.0 U	13	6.74	1.280	12.4	1.09	9.90	-95.7
Area 1		6/15/2016	1.0 U	1.0	1.0 U	1.0 U	0.85 J	0.61 J	**550**	**200**	**3,100**	-	-	-	-	-	-	-	14	6.38	2.118	11.5	2.56	11.23	-87.6
Area 1		11/9/2016	1.0 U	0.67 J	1.0 U	1.0 U	1.0 U	0.56 J	**430**	**160**	**2,600**	-	-	-	-	-	-	-	-	7.32	1.277	21.7	0.52	8.53	-139.7
Area 1		5/18/2017	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**430**	**180**	**3,200**	1.1 U	1.0 U	14,000	190	0.15	5.4	1.0 U	11	6.58	1.813	17.0	0.45	10.40	-116.7
Area 1		10/23/2017	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.74 J	**370**	**110**	**2,400**	-	-	-	-	-	-	-	7.8	6.72	1.860	30.7	0.13	10.44	-106.4
Area 1		10/19/2018	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**330**	**140**	**2,600**	-	-	-	-	-	-	-	-	6.42	1.315	16.8	0.81	10.31	14.3
Area 1		10/10/2019	1.0 U	23	2.8	1.4	**11**	**11**	**310**	**64**	**1,600**	-	-	-	-	-	-	-	-	6.48	0.443	43.6	0.28	10.00	-116.9
Area 1		10/20/2020	0.94 J	68	**110**	2.3	**110**	**34**	**200**	**44**	**2,100**	-	-	-	-	-	-	-	-	6.62	0.298	20.3	0.54	11.60	-122.0
Area 1		5/14/2021	1.0 U	3.2	< 2.0	2.2	2.5	**2.5**	**380**	**100**	**4,800**	5.8	52	38,000	140	0.071 J	3.7	0.81 U	9.5	6.48	0.936	426.7	1.12	10.50	-139.2
Area 1		10/18/2021	1.0 U	12	< 2.0	1.1	3.2	1.7	**460**	**94**	**3,100**	-	-	-	-	-	-	-	-	6.57	0.515	22.3	0.74	10.30	-138.0
Area 1	G6M-04-11X	9/20/2004	1.0 U	2.0 U	**8.5**	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	6.54	0.782	16.8	3.42	14.39	374.7
Area 1		9/26/2005	1.0 U	2.0 U	**7.8**	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	6.96	0.390	8.70	5.14	10.63	94.6
Area 1		9/20/2006	1.0 U	2.0 U	4.0	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	6.24	0.380	5.99	6.00	14.35	129.0
Area 1		9/11/2007	1.0 U	2.0 U	2.1	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	6.87	0.380	14.8	6.59	11.82	46.5
Area 1		10/17/2008	0.5 U	0.5 U	1.4	0.5 U	0.5 U	0.5 U	-	-	-	-	-	-	-	-	-	-	-	6.53	0.302	3.50	5.62	9.54	98.1
Area 1		10/16/2009	1.0 U	1.0 U	1.1	1.0 U	**53**	1.0 U	-	-	-	-	-	-	-	-	-	-	-	6.46	0.225	4.20	7.04	9.76	176.0
Area 1		10/8/2010	0.5 U	0.5 U	0.41 J	0.5 U	0.5 U	0.5 U	-	-	-	-	-	-	-	-	-	-	-	6.71	0.247	3.15	6.95	9.59	152.6
Area 1		10/6/2011	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	-	-	-	-	-	-	-	-	-	-	-	6.77	0.219	4.00	2.50	10.61	87.7
Area 1		10/16/2012	0.5 U	0.5 U	0.62	0.5 U	0.5 U	0.5 U	-	-	-	-	-	-	-	-	-	-	-	6.36	0.224	< 0.01	9.40	10.14	161.8
Area 1		10/31/2014	0.5 U	0.5 U	0.54	0.5 U	0.5 U	0.5 U	-	-	-	-	-	-	-	-	-	-	-	6.88	0.163	0.91	7.12	10.43	167.7
Area 1		11/10/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	-	-	-	-	-	-	-	-	-	-	-	6.65	0.167	1.18	6.67	10.28	25.6
Area 1		10/22/2018	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U	0.05 U	3.0 U	-	-	-	-	-	-	-	-	6.23	0.254	2.65	6.24	10.40	206.0
Area 1		10/16/2020	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U	0.05 U	1.6 J	-	-	-	-	-	-	-	-	6.62	0.144	1.57	7.29	16.60	135.0
Area 1	G6M-04-12X	9/20/2004	1.0 U	56	**310**	2.0 U	**7.5**	2.0 U	5.0 U	1.0	44	-	-	-	-	-	-	-	-	11.03	2.003	5.22	0.86	9.63	102.6
Area 1		9/26/2005	1.0 U	49	**250**	2.0 U	**6.8**	2.0 U	**15**	1.0 U	360	-	-	-	-	-	-	-	-	8.41	1.961	1.65	1.05	-	234.2
Area 1		9/18/2006	1.0 U	60	**470**	2.0 U	**9.4**	2.0 U	6.5	0.1 U	550	-	-	-	-	-	-	-	-	7.21	1.764	7.11	3.22	12.69	253.5
Area 1		9/10/2007	1.0 U	50	**350**	2.0 U	**11**	2.0 U	2.0 U	0.1 U	580	-	-	-	-	-	-	-	-	6.84	2.613	29.8	1.73	12.19	90.2
Area 1		10/16/2008	10 U	35	**360**	10 U	**7.7 J**	10 U	3.1 J	0.2 U	360	-	-	-	-	-	-	-	-	7.23	2.623	2.00	1.45	12.44	91.2
Area 1		10/19/2009	10 U	28	**170**	10 U	22 U	10 U	2.3 J	0.2 U	308	-	-	-	-	-	-	-	-	6.72	2.543	5.91	1.80	11.50	66.7
Area 1		10/8/2010	0.5 U	22	**100**	0.5 U	4.4	0.5 U	5.0 U	0.1 U	336	-	-	-	-	-	-	-	-	6.57	3.632	2.35	1.75	10.62	208.0
Area 1		6/9/2011	0.5 U	19	**180**	0.5 U	3.9	0.5 U	5.0 U	0.1 U	209	-	-	-	-	-	-	-	-	7.26	2.816	9.00	1.38	10.24	25.6
Area 1		10/4/2011	4.0 U	27	**280**	4.0 U	4.6	4.0 U	5.0 U	0.1 U	200	-	-	-	-	-	-	-	-	6.62	2.332	2.44	1.06	13.35	63.8
Area 1		5/9/2012	5.0 U	12	**160**	5.0 U	5.0 U	5.0 U	4.1 J	0.1 U	155	-	-	-	-	-	-	-	-	6.70	2.680	1.42	1.34	12.32	85.1
Area 1		10/16/2012	5.0 U	14	**120**	5.0 U	5.0 U	5.0 U	5.0 U	0.1 U	156	-	-	-	-	-	-	-	-	6.60	3.799	2.03	2.11	12.96	62.5
Area 1		5/22/2013	5.0 U	18	**220**	5.0 U	3.4 J	5.0 U	3.8 J	0.1 U	93	-	-	-	-	-	-	-	-	6.55	2.927	2.58	0.87	12.50	120.8
Area 1		10/22/2013	4.0 U	23	**190**	4.0 U	3.7 J	4.0 U	5.0 U	0.1 U	106	-	-	-	-	-	-	-	-	6.58	2.231	4.88	1.60	12.27	133.7
Area 1		6/10/2014	0.5 U	13	**130**	0.5 U	2.7	0.5 U	5.0 U	0.1 U	75	-	-	-	-	-	-	-	-	6.59	2.675	13.0	0.84	14.40	178.9
Area 1	G6M-04-15X	9/21/2004	1.0 U	5.3	**5.2**	2.0 U	2.0 U	2.0 U	5.0 U	**4.8**	**8,100**	-	-	-	-	-	-	-	-	5.26	2.640	0.23	0.82	11.25	410.0
Area 1		9/28/2005	1.0 U	6.4	**9.1**	2.0 U	2.0 U	2.0 U	**33**	1.8	**4,400**	-	-	-	-	-	-	-	-	5.11	0.674	0.29	0.39	11.78	248.1
Area 1		9/20/2006	1.0 U	5.2	3.5	2.0 U	2.0 U	2.0 U	**20**	2.0	**4,300**	-	-	-	-	-	-	-	-	4.60	1.555	0.95	1.07	11.07	-100.3
Area 1		9/11/2007	1.0 U	2.0 U	2.7	2.0 U	2.0 U	2.0 U	**18**	0.75	**2,100**	-	-	-	-	-	-	-	-	6.21	1.353	3.50	3.21	11.29	85.1
Area 1		10/17/2008	0.5 U	2.3	4.8	0.5 U	1.0	0.5 U	**36**	3.0	**3,010**	-	-	-	-	-	-	-	-	6.34	0.910	4.00	1.50	11.10	-8.1
Area 1		10/19/2009	0.5 U	3.2	1.9	0.5 U	**14**	0.5 U	**49**	**4.8**	**3,130**	-	-	-	-	-	-	-	-	6.19	0.799	4.68	0.31	11.10	24.4

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Devens, Massachusetts

		Analytical Method	VOCs						Dissolved Metals			Dissolved Gases			General Chemistry					Field Parameters					
		Analyte	1,1-DCE	cis-1,2-DCE	PCE	trans-1,2-DCE	TCE	VC	Arsenic	Iron	Manganese	Ethane	Ethene	Methane	Alkalinity	Nitrate/ Nitrite	Sulfate	Sulfide	TOC	pH	SpC	Turbidity	DO	Temp	ORP
		Unit	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(SU)	(mS/cm)	(NTU)	(mg/L)	°C	(mV)
		Cleanup Level[1]	7	70	5		5	2	10	3.129	1,460					10,000									
Area	Well ID	Date Sampled																							
Area 1		10/8/2010	0.5 U	3.2	0.65	0.5 U	0.34 J	0.5 U	**59**	**4.8**	**2,900**	-	-	-	-	-	-	-	-	6.14	0.704	1.34	0.30	10.85	3.2
Area 1		10/6/2011	0.5 U	3.7	0.52	0.5 U	0.5 U	0.5 U	**56**	**3.8**	**3,470**	-	-	-	-	-	-	-	-	6.12	0.446	4.89	0.05	19.25	37.3
Area 1		10/16/2012	0.5 U	3.9	1.0	0.5 U	0.5 U	0.5 U	**111**	**11**	**4,300**	-	-	-	-	-	-	-	-	6.15	0.760	1.08	0.49	14.33	-48.6
Area 1		10/18/2013	0.5 U	2.2	0.97	0.5 U	0.27 J	0.5 U	**112**	**15**	**3,530**	-	-	-	-	-	-	-	-	5.68	0.838	1.33	0.24	18.79	14.1
Area 1		11/4/2014	0.5 U	2.2	1.6	0.5 U	0.29 J	0.5 U	**135**	**33**	**14,000**	-	-	-	-	-	-	-	-	6.08	1.937	3.61	0.14	12.98	-16.0
Area 1		10/14/2015	1.0 U	1.0 U	0.76 J	1.0 U	1.0 U	1.0 U	**103**	**45**	**21,200**	-	-	-	-	-	-	-	-	5.93	4.011	1.24	0.69	13.62	-38.2
Area 1		11/10/2016	1.0 U	1.0 U	1.0 U	1.0 U	0.95 J	1.0 U	**55**	**16**	**14,000**	-	-	-	-	-	-	-	-	4.64	2.929	4.60	0.50	13.90	-21.4
Area 1		10/9/2017	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**70**	**15**	**19,000**	-	-	-	-	-	-	-	-	6.13	4.280	8.90	0.59	14.50	0.6
Area 1		10/19/2018	1.0 U	1.0 U	1.5	1.0 U	0.60 J	1.0 U	**62**	**11**	**5,900**	-	-	-	-	-	-	-	-	6.21	3.171	7.49	0.12	11.99	116.0
Area 1		10/9/2019	1.0 U	0.64 J	2.2	1.0 U	1.1	1.0 U	**71**	**8.9**	**2,500**	-	-	-	-	-	-	-	-	6.45	2.500	5.50	0.19	11.00	-10.0
Area 1		10/20/2020	1.0 U	0.62 J	1.0 U	1.0 U	0.86 J	1.0 U	**75**	**5.2**	630	-	-	-	-	-	-	-	-	7.06	1.000	3.81	0.49	11.20	-121.0
Area 1		10/18/2021	1.0 U	1.6	0.87 J	1.0 U	0.88 J	1.0 U	**94**	**4.3**	670	-	-	-	-	-	-	-	-	6.56	0.940	2.97	0.75	11.90	-53.4
Area 1	G6M-04-22X	9/21/2004	1.0 U	**110**	**900**	2.0 U	**24**	2.0 U	5.0 U	1.0 U	990	-	-	-	-	-	-	-	-	6.30	0.897	19.0	4.78	13.17	192.2
Area 1		9/28/2005	1.0 U	45	**210**	2.5	**6.8**	2.0 U	5.0 U	1.0 U	120	-	-	-	-	-	-	-	-	5.52	0.757	21.0	6.13	14.07	391.3
Area 1		9/20/2006	1.0 U	54	**200**	2.0 U	**8.7**	2.0 U	5.0 U	0.43	**4,500**	-	-	-	-	-	-	-	-	5.68	1.048	6.98	2.80	15.37	197.8
Area 1		9/11/2007	1.0 U	**75**	**95**	2.0 U	**12**	**9.4**	**390**	**250**	**44,000**	-	-	-	-	-	-	-	-	6.92	2.250	20.7	0.28	13.43	-160.8
Area 1		10/17/2008	1.0 U	53	**18**	0.44 J	3.7	**26**	**439**	**421**	**15,900**	-	-	-	-	-	-	-	-	6.34	2.104	18.0	0.28	12.88	-106.1
Area 1		10/19/2009	0.5 U	16	**7.2**	0.5 U	**9.7**	**4.9**	**320**	**355**	**9,360**	-	-	-	-	-	-	-	-	6.26	2.181	290	1.27	14.32	-48.7
Area 1		10/8/2010	0.5 U	7.1	0.39 J	0.23 J	2.2	**4.7**	**522**	**210**	**3,020**	-	-	-	-	-	-	-	-	6.32	1.691	22.2	2.51	14.77	-59.7
Area 1		10/6/2011	0.5 U	13	0.5 U	0.5 U	0.5 U	**7.5**	**534**	**232**	**15,800**	-	-	-	-	-	-	-	-	6.25	0.016	6.47	0.39	12.20	-53.4
Area 1		10/12/2012	0.5 U	5.7	0.5 U	0.5 U	0.5 U	**6.6**	**657**	**162**	**9,080**	-	-	-	-	-	-	-	-	6.41	1.701	8.66	0.60	12.39	-66.8
Area 1		10/18/2013	-	-	-	-	-	-	**767**	-	-	-	-	-	-	-	-	-	-	6.12	1.113	14.3	0.29	12.78	-68.7
Area 1		11/4/2014	0.5 U	2.0	0.5 U	0.72	0.5 U	**4.6**	**667**	**150**	**1,600**	-	-	-	-	-	-	-	-	6.39	0.951	42.9	0.20	13.26	-64.0
Area 1		10/13/2015	-	-	-	-	-	-	**223**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Area 1		11/9/2016	1.0 U	1.2	2.5	1.0 U	1.4	1.0 U	**650**	**150**	960	-	-	-	-	-	-	-	-	6.92	0.740	55.5	1.22	7.02	-73.1
Area 1		10/18/2017	--	--	--	--	--	--	**970**	-	-	-	-	-	-	-	-	-	-	6.32	1.270	120	0.48	11.74	-66.9
Area 1		10/22/2018	1.0 U	2.8 J	1.0 U	1.0 U	1.0 U	**3.4 J**	**820**	**140**	760	-	-	-	-	-	-	-	-	6.18	1.371	35.9	0.24	12.00	49.6
Area 1		10/20/2020	1.0 U	2.0	1.0 U	1.0 U	1.0 U	1.8	**780**	**120**	890	-	-	-	-	-	-	-	-	6.25	0.717	< 0.01	0.49	11.00	-81.1
Area 1	G6M-04-31X	9/21/2004	1.0 U	4.2	**1,600**	2.0 U	2.0 U	2.0 U	5.0 U	1.0 U	190	-	-	-	-	-	-	-	-	5.69	1.000	2.99	5.10	13.27	211.0
Area 1		9/28/2005	5.0 U	5.2	**1,900**	5.0 U	5.0 U	5.0 U	5.0 U	1.0 U	35	-	-	-	-	-	-	-	-	5.63	0.388	2.20	3.66	9.28	305.4
Area 1		9/20/2006	1.0 U	2.5	**600**	2.0 U	**6.1**	2.0 U	5.0 U	0.1 U	15 U	-	-	-	-	-	-	-	-	6.52	0.729	3.56	0.28	9.22	-108.5
Area 1		9/11/2007	1.3	**330**	**340**	2.8	**260**	2.0 U	5.0 U	0.10	890	-	-	-	-	-	-	-	-	6.38	0.217	6.90	5.61	10.90	101.6
Area 1		10/17/2008	20 U	**340**	**110**	20 U	**72**	**730**	**103**	**68**	**9,710**	-	-	-	-	-	-	-	-	6.43	0.636	9.00	2.00	9.42	-72.7
Area 1		10/21/2009	10 U	**270**	**86**	10 U	**11**	**560**	**311**	**181**	**16,900**	-	-	-	-	-	-	-	-	5.82	0.626	6.23	1.96	10.26	-102.0
Area 1		10/8/2010	0.5 U	7.4	3.1	0.30 J	1.1	**31**	**428**	**127**	**9,620**	-	-	-	-	-	-	-	-	6.41	0.728	1.21	0.93	9.54	-107.6
Area 1		10/6/2011	0.5 U	38	**18**	0.5 U	**5.3**	**37**	**635**	**223**	**15,800**	-	-	-	-	-	-	-	-	6.62	1.333	2.89	0.07	11.23	-112.4
Area 1		10/12/2012	2.0 U	61	**25**	2.0 U	**31**	**72**	**556**	**181**	**8,940**	-	-	-	-	-	-	-	-	6.62	1.193	4.58	0.43	11.36	-104.6
Area 1		10/18/2013	-	-	-	-	-	-	**498**	-	-	-	-	-	-	-	-	-	-	6.36	1.656	1.13	1.71	10.83	-87.6
Area 1		11/4/2014	0.5 U	6.9	0.5 U	0.23 J	0.51	**3.4**	**468**	**121**	**9,690**	-	-	-	-	-	-	-	-	6.51	1.775	9.01	0.12	11.58	-95.5
Area 1		10/13/2015	-	-	-	-	-	-	**420**	-	-	-	-	-	-	-	-	-	-	5.93	3.980	9.80	0.84	8.97	-144.3
Area 1		11/10/2016	1.0 U	1.0 U	1.0 U	1.0 U	0.95 J	1.0 U	**430**	-	-	-	-	-	-	-	-	-	-	6.15	2.490	2.95	0.89	14.11	-95.8
Area 1		10/9/2017	--	--	--	--	--	--	**410**	-	-	-	-	-	-	-	-	-	-	6.52	2.830	8.70	0.58	14.26	-83.5
Area 1		10/22/2018	1.0 U	1.0 U	1.0 U	1.0 U	0.58 J	1.0 U	**370**	**60**	**6,800**	-	-	-	-	-	-	-	-	6.59	2.999	4.49	0.20	10.60	111.5
Area 1		10/20/2020	1.0 U	1.0 U	1.5 U	1.0 U	1.0 U	0.98 J	**360 J**	**30**	**2,100**	-	-	-	-	-	-	-	-	6.71	1.580	0.93	0.51	13.20	-124.0
Area 1	G6M-13-05X	1/30/2014	10 U	16	**250**	10 U	10U	10 U	-	-	-	-	-	-	-	-	-	-	-	8.63	1.112	3.09	0.37	11.35	-86.6
Area 1		6/10/2014	0.54	70	**1,200**	0.40 J	**12**	0.5 U	**11**	0.299 J	556	-	-	-	-	-	-	-	-	7.65	0.515	8.19	0.46	11.34	-107.0
Area 1		11/4/2014	32 U	**77**	**1,700**	32 U	**13 J**	32 U	6.6	0.23	565	-	-	-	-	-	-	-	-	7.43	0.417	9.73	0.47	18.31	-93.6
Area 1		6/16/2015	0.5 U	62	**1,520**	0.5 U	**12**	0.5 U	5.2	0.05 U	229	-	-	-	-	-	-	-	-	7.04	0.398	33.2	1.63	12.71	57.0
Area 1		10/13/2015	1.0 U	63	**1,120**	1.0 U	**11**	1.0 U	2.3 J	0.1 U	235	-	-	-	-	-	-	-	-	7.22	0.525	2.14	0.99	11.23	59.5
Area 1		2/10/2016	10 U	24	**770**	10 U	**5.2 J**	10 U	4.0 U	0.1 U	199	10 U	10 U	10 U	25	1.4	10 U	2.0 U	1.0 U	6.20	0.523	20.2	4.39	9.67	244.6
Area 1		6/15/2016	10 U	50	**1,200**	10 U	**9.6**	10 U	3.0	0.022 J	130	-	-	-	-	-	-	-	-	6.41	0.582	2.59	0.89	12.33	55.2
Area 1		11/10/2016	10 U	31	**830**	10 U	**7.2 J**	10 U	3.0 U	0.05 U	54	-	-	-	-	-	-	-	-	6.57	0.404	2.47	2.63	9.16	20.9
Area 1		5/18/2017	20 U	64 J	**1,300**	20 U	20 U	20 U	3.0 U	0.28	350	1.1 U	1.0 U	0.58 U	32 J	1.5	1.0 U	1.0 U	1.0 U	11.40	0.550	7.65	3.97	12.67	25.1
Area 1		10/5/2017	10 U	**750**	**280**	10 U	**69**	10 U	**35**	**12**	**1,700**	1.1 U	1.0 U	32	49	0.04 J	1.0 U	1.0 U	28	5.95	0.630	27.4	0.51	12.80	19.7
Area 1		4/5/2018	10 U	**410**	**59**	10 U	**81**	**5.6 J**	**85**	**32**	**3,900**	0.75 J	1.1	6,800	77	0.10	0.95 J	1.0 U	85	6.31	0.641	5.92	0.89	10.27	-20.9
Area 1		10/16/2018	5.0 U	**250**	5.0 U	5.0 U	2.7 J	**57**	**95**	**66**	**15,000**	4.1	39	16,000	170	0.05 U	5.0 U	1.0 U	210	4.99	0.973	4.83	0.45	11.21	87.2
Area 1		4/5/2019	1.0 U	**120**	1.0 U	1.2	0.62 J	**39**	**120**	**83**	**20,000**	8.7	65	25,000	-	0.23	1.0 U	1.0 U	150	6.00	1.100	1.80	0.74	8.60	-13.0
Area 1		10/10/2019	1.0 U	33	1.5 J	0.93 J	1.8	**38**	**130**	**94**	**19,000**	3.3	33	12,000	140	0.05 U	1.0 U	0.83 U	37	7.80	0.950	7.00	0.14	12.00	-65.6
Area 1		5/12/2020	1.0 U	8.4	1.0 U	0.88 J	1.3 J	**10**	**120**	**100**	**16,000**	27	57	19,000	160	0.10 U	5.0 U	0.81 U	27	6.30	1.010	7.30	0.60	12.70	-54.2
Area 1		10/13/2020	1.0 U	1.3	1.0 U	0.48 J	1.0 U	1.7	**150**	**110**	**15,000**	21	11	4,000	130	0.12 U	1.0 U	0.81 U	12	6.82	0.689	4.82	0.61	11.10	-104.0
Area 1		5/11/2021	1.0 U	42	**50**	1.0	**18**	**29**	**120**	**53**	**6,400**	45	77	17,000	71	0.028 J	0.59 J	0.81 U	4.4	6.51	0.567	154.92	0.97	14.20	-75.5
Area 1		10/14/2021	1.0 U	23	**9.2**	0.64 J	2.8	**13**	**130**	**92**	**10,000**	30	35	17,000	91	0.043 J	1.0 U	0.81 U	11	6.74	1.800	21.4	0.74	12.50	-117
Area 1	G6M-13-06X	1/30/2014	8.0 U	**300**	3.9 J	8.0U	8.0 U	**95**	-	-	-	-	-	-	-	-	-	-	-	6.61	2.521	35.9	0.33	10.81	-38.3
Area 1		6/12/2014	0.37 J	**180**	0.5 U	0.68	0.44 J	**330**	**444**	**365**	**16,900**	1.3 U	33 J	18,000 J	710 J	0.13 U	0.68 J	0.03 U	160	6.42	1.710	13.7	0.24	19.03	-88.9
Area 1		10/30/2014	0.5 U	14	0.5 U	0.70	0.5 U	**15**	**558**	**274**	**12,500**	1.2 U	63	79,000	580	0.13 U	0.42 J	0.03 U	42	6.31	1.943	20.1	0.24	18.31	-99.0
Area 1		6/16/2015	0.5 U	3.9	0.5 U	0.98 J	0.5 U	**6.0**	**546**	**246**	**16,900**	10 U	27	10,300	510	0.15	1.0 J	1.0 U	55	6.25	1.989	31.9	0.11	11.27	-40.1
Area 1		9/9/2015	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	**4.0 J**	**511**	**269**	**22,500**	5.0 U	37	18,200	-	0.11	10 U	6.5	82	6.02	1.745	4.09	0.16	12.15	-53.6
Area 1		10/14/2015	5.0 U	3.2 J	5.0 U	5.0 U	5.0 U	5.0 U	**531**	**260**	**21,300**	10 U	30	11,300	434	0.071 J	1.7	1.5	62	5.71	0.904	1.46	1.19	19.27	100.7
Area 1		2/9/2016	1.0 U	2.0	1.0 U	0.80 J	1.0 U	**4.6**	**536**	**226**	**12,000**	10 U	32	14,500	409	0.17	10 U	2.0 U	46	6.35	1.204	3.69	1.07	7.11	-23.7
Area 1		6/14/2016	1.0 U	1.9	1.0 U	0.59 J	1.0 U	**4.2**	**490**	**280**	**18,000**	1.1 U	41	13,000	640	0.05 U	0.8 U	1.0 U	150	6.40	2.223	2.27	0.57	10.67	-48.4
Area 1		11/8/2016	1.0 U	9.8	1.0 U	0.55 J	1.0 U	**7.7**	**470**	**250**	**9,600**	1.1 U	23	11,000	560	0.05 U	1.0 U	5.8	55	6.42	1.230	4.72	1.47	8.19	-127.3

Appendix D
Historical Groundwater Analytical Results
2021 Annual Operations, Maintenance, and Monitoring Report
Area of Contamination 50, Former Fort Devens Army Installation
Devens, Massachusetts

		Analytical Method	VOCs						Dissolved Metals			Dissolved Gases			General Chemistry					Field Parameters					
		Analyte	1,1-DCE	cis-1,2-DCE	PCE	trans-1,2-DCE	TCE	VC	Arsenic	Iron	Manganese	Ethane	Ethene	Methane	Alkalinity	Nitrate/ Nitrite	Sulfate	Sulfide	TOC	pH	SpC	Turbidity	DO	Temp	ORP
		Unit	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(SU)	(mS/cm)	(NTU)	(mg/L)	°C	(mV)
		Cleanup Level[1]	7	70	5		5	2	10	3.129	1,460					10,000									
Area	Well ID	Date Sampled																							
Area 1		5/19/2017	1.0 U	2.2	1.0 U	0.45 J	1.0 U	**2.6**	**500**	**250**	**7,000**	14	16	17,000	470	0.14 J	3.0	1.0 U	70 J	5.96	1.450	7.43	1.01	10.87	-64.8
Area 1		10/5/2017	1.0 U	2.3 J	1.0 U	1.0 U	1.0 U	1.1	**490**	**220**	**7,500**	6.0	6.3	6,000	440	0.17 J	1.0 U	1.0 U	72	6.20	1.460	15.2	0.31	10.97	-88.6
Area 1		10/19/2018	1.0 U	0.67 J	1.0 U	1.0 U	1.0 U	1.2	**400**	**220**	**5,300**	12	18	17,000	480	0.18	2.0 U	1.0 U	120	6.25	2.131	13.2	1.50	10.53	-61.9
Area 1		10/10/2019	1.0 U	1.0	1.0 U	1.0 U	1.0 U	0.82 J	**500**	**220**	**2,900**	11	14	11,000	420	0.29 J	1.0 U	1.2	110	7.00	1.500	18.0	0.11	11.00	-35.0
Area 1		10/13/2020	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**430**	**220**	**2,500**	10	3.0	11,000	540	0.22 U	1.0 U	0.81 U	120	6.26	1.080	41.5	0.39	11.20	-63.2
Area 1		10/12/2021	1.0 U	1.5	2.0 U	1.0 U	1.0 U	0.59 J	**440**	**220**	**2,300**	8.4	4.7	12,000	310	0.064 J	1.0 U	0.81 U	150	6.28	2.080	23.8	0.76	11.80	-69.2
Area 1	G6M-93-13X	10/15/2001	1.0 U	2.0 U	0.55 J	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	5.30	6.000	1.20	9.90	14.88	355.0
Area 1		9/20/2004	1.0 U	2.0 U	3.8	2.0 U	2.0 U	2.0 U	5.0 U	1.0	15 U	0.008	0.014	0.89	23	1.3 J	10	2.7 J	1.0 U	6.14	0.059	4.31	13.1	12.36	250.7
Area 1		12/13/2004	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	5.0 U	1.0 U	15 U	0.005 U	0.005 U	3.8	20	1.2	9.6	2.0 U	5.0 U	6.16	0.080	1.42	10.4	14.80	192.5
Area 1		3/29/2005	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	5.0 U	1.0 U	15 U	0.006	0.28	3.1	22	0.2 U	9.1	2.0 U	0.6 J	6.24	0.090	0.64	10.4	15.91	97.3
Area 1		6/28/2005	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	1.0 U	10 U	0.023	0.020	9.4	41	0.081	8.2	1.0 U	4.9	11.30	0.275	2.46	11.4	13.31	146.1
Area 1		9/26/2005	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	5.0 U	1.0 U	15 U	0.006 J	0.018 J	4.9	27	0.083	9.5	1.0 U	3.1	6.04	0.126	18.2	7.98	15.19	191.8
Area 1		12/13/2005	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	5.0 U	1.0 U	15 U	0.008 J	0.011 J	9.3	41	3.4	9.4	1.0 U	4.4 J	6.48	0.086	0.50	9.55	13.70	69.6
Area 1		3/21/2006	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	5.0 U	0.1 U	19	0.025 U	0.046	9.5	24	0.2 U	6.8	1.0 U	6.8	6.87	0.058	0.61	9.55	13.00	-9.4
Area 1		6/19/2006	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	5.0 U	0.1 U	28	0.008 J	0.008 J	5.3	46	0.2 U	4.4	1.0 U	1.4 J	6.33	0.087	1.34	9.14	11.49	190.1
Area 1		9/18/2006	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	5.0 U	0.1 U	15 U	0.006 J	0.014 J	5.0	22	0.2 U	7.8	1.0 U	4.6 J	6.22	0.062	4.62	9.33	10.39	173.6
Area 1		3/28/2007	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	5.0 U	0.1 U	15 U	0.005 J	0.014 J	9.6	-	-	5.7	1.0 U	5.0 U	6.14	0.071	8.73	9.80	12.58	-3.1
Area 1		6/11/2007	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	5.0 U	0.1 U	15 U	0.034	0.30	13	-	-	9.0	1.0 U	0.4 J	6.64	0.121	3.30	10.1	13.98	125.4
Area 1		9/11/2007	1.0 U	2.0 U	3.0	2.0 U	2.0 U	2.0 U	6.0 U	0.1 U	15 U	0.005 J	0.025 U	2.8	99	0.2 U	12	1.0 U	0.70 J	6.31	0.095	7.10	9.67	12.44	96.7
Area 1		12/10/2007	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	5.0 U	0.1 U	15 U	0.004 J	0.007 J	1.1	-	-	6.9	1.0 U	5.0 U	6.25	0.156	0.60	8.81	11.83	71.0
Area 1		3/10/2008	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	5.0 U	0.20	**12,000**	0.008 J	0.050	10	-	-	100	1.0 U	34	6.30	0.953	< 0.01	3.84	16.00	141.0
Area 1		10/15/2008	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	8.0 U	0.2 U	**3,270**	1.3 U	1.6 U	5.6	110	3.6	34	0.03 U	10 U	6.31	0.304	< 0.01	2.97	15.24	116.4
Area 1		5/7/2009	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3.5 J	0.2 U	50 U	1.2 U	1.5 U	2.2	67 J	0.71	16	0.03 U	10 U	6.26	0.164	1.10	6.10	-	79.6
Area 1		10/19/2009	0.5 U	0.5 U	0.5 U	0.5 U	**15**	0.5 U	8.0 U	0.142 U	50 U	1.3 U	1.6 U	6.3	54	0.058 J	9.2	0.03 U	10 U	6.42	0.110	1.01	4.79	15.69	182.0
Area 1		4/21/2010	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5.0 U	0.115 U	25 U	1.2 U	1.5 U	440	140	0.13 U	10	0.03 U	6.5 J	6.19	0.109	< 0.01	9.03	15.22	37.3
Area 1		10/6/2010	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5.0 U	0.1 U	25 U	1.2 U	1.5 U	16	63	0.05 J	11	0.03 U	10 U	6.12	0.116	3.42	4.77	17.33	114.0
Area 1		9/9/2015	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.0 U	0.1 U	207	10 U	10 U	10 U	-	0.11 U	50	2.0 U	-	6.02	1.745	4.09	0.16	12.15	-53.6
Area 1		2/9/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.0 U	0.1 U	12 J	10 U	10 U	10 U	86	0.11 U	73	2.0 U	2.2	6.21	0.350	10.7	1.64	8.96	232.3
Area 1		6/14/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U	0.045 J	130	-	-	-	-	-	-	-	-	6.35	0.306	14.0	1.01	13.39	63.1
Area 1		11/8/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U	0.15	230	-	-	-	-	-	-	-	-	6.47	0.192	11.4	0.91	9.52	-29.7
Area 1	G6M-95-19X	10/15/2001	1.0 U	42	**110**	1.5 J	**6.6**	2.0 U	-	-	-	-	-	-	-	-	-	-	-	5.46	2.870	8.50	6.24	9.84	202.0
Area 1		9/20/2004	1.0 U	16	**41**	2.0 U	2.9	2.0 U	5.0 U	1.0	210	-	-	-	-	-	-	-	-	5.45	4.170	3.10	7.92	14.08	467.5
Area 1		9/26/2005	1.0 U	5.4	**21**	2.0 U	2.0 U	2.0 U	8.3	1.0 U	160	-	-	-	-	-	-	-	-	4.00	4.361	0.72	4.51	14.45	595.3
Area 1		9/19/2006	1.0 U	2.0 U	**12**	2.0 U	2.0 U	2.0 U	5.0 U	0.1 U	160	-	-	-	-	-	-	-	-	3.82	4.236	2.41	6.77	11.78	281.0
Area 1		9/12/2007	1.0 U	4.0	**21**	2.0 U	2.0 U	2.0 U	5.0 U	0.1 U	200	-	-	-	-	-	-	-	-	5.28	6.566	0.40	7.62	12.46	175.1
Area 1		10/15/2008	0.5 U	1.6 J	**14 J**	0.5 U	0.39 J	0.5 U	8.0 U	0.2 U	212	-	-	-	-	-	-	-	-	5.35	5.306	0.90	6.63	12.15	267.9
Area 1		10/16/2009	20 U	20 U	20 U	20 U	**540**	20 U	8.0 U	0.2 U	153	-	-	-	-	-	-	-	-	5.22	4.529	1.49	4.53	11.54	232.0
Area 1		1/15/2010	0.75 U	0.46 J	**6.9**	0.75 U	0.5 U	1.0 U	-	-	-	-	-	-	-	-	-	-	-	5.46	4.733	2.17	4.09	10.45	243.8
Area 1		10/7/2010	0.5 U	0.5 U	1.8	0.5 U	0.5 U	0.5 U	5.0 U	0.1 U	186	-	-	-	-	-	-	-	-	5.34	4.211	3.88	3.35	9.77	159.4
Area 1		10/7/2011	0.5 U	0.5 U	2.2	0.5 U	0.5 U	0.5 U	5.0 U	0.1 U	242	-	-	-	-	-	-	-	-	5.51	2.319	1.10	2.90	12.69	132.2
Area 1		10/15/2012	0.5 U	0.5 U	3.3	0.5 U	0.5 U	0.5 U	5.0 U	0.1 U	1,450	-	-	-	-	-	-	-	-	5.53	7.618	0.19	2.80	9.91	225.1
Area 1		10/18/2013	0.5 U	0.5 U	2.4	0.5 U	0.5 U	0.5 U	5.0 U	0.1 U	**2,250**	-	-	-	-	-	-	-	-	5.49	3.827	5.42	1.44	10.34	154.9
Area 1		11/3/2014	0.5 U	0.5 U	3.0	0.5 U	0.5 U	0.5 U	2.5 U	0.085 U	1,190	-	-	-	-	-	-	-	-	5.73	2.189	2.78	3.06	10.00	202.5
Area 1		10/14/2015	1.0 U	1.0 U	1.9	1.0 U	1.0 U	1.0 U	4.0 U	0.1 U	739	-	-	-	-	-	-	-	-	5.85	4.126	1.43	1.10	10.94	170.4
Area 1		11/8/2016	1.0 U	1.0 U	1.6	1.0 U	1.0 U	1.0 U	3.0 U	0.05 U	760	-	-	-	-	-	-	-	-	2.68	2.952	3.39	1.70	12.48	67.5
Area 1		10/5/2017	1.0 U	1.0 U	1.9	1.0 U	1.0 U	1.0 U	3.0 U	0.05 U	1,400	-	-	-	-	-	-	-	-	5.60	3.530	3.41	1.22	13.04	171.7
Area 1		10/17/2018	1.0 U	1.0 U	1.6	1.0 U	1.0 U	1.0 U	-	-	-	-	-	-	-	-	-	-	-	5.43	4.601	1.99	2.08	11.71	246.1
Area 1		10/9/2019	1.0 U	1.0 U	1.9	1.0 U	1.0 U	1.0 U	-	-	-	-	-	-	-	-	-	-	-	5.58	4.800	0.77	2.75	12.00	103.0
Area 1		10/16/2020	1.0 U	1.0 U	1.4	1.0 U	1.0 U	1.0 U	-	-	-	-	-	-	-	-	-	-	-	5.54	3.020	3.38	1.88	14.60	170.0
Area 1		10/14/2021	1.0 U	1.0 U	0.92 J	1.0 U	1.0 U	1.0 U	-	-	-	-	-	-	-	-	-	-	-	5.44	5.980	2.38	4.46	11.30	242.0
Area 1	G6M-95-20X	10/16/2001	1.0 U	2.0 U	4.4	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	5.90	0.270	4.10	7.20	11.20	212.0
Area 1		2/25/2002	1.0 U	2.0 U	5.0	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	6.59	0.171	7.67	12.4	11.53	155.7
Area 1		2/27/2002	-	-	-	-	-	-	-	-	-	-	-	-	-	4.7	-	-	-	-	-	-	-	10.42	-
Area 1		9/21/2004	1.0 U	2.0 U	2.8	2.0 U	2.0 U	2.0 U	5.0 U	1.0 U	15 U	-	-	-	-	-	-	-	-	5.76	0.544	< 0.01	8.88	11.25	205.5
Area 1		9/26/2005	1.0 U	2.0 U	2.3	2.0 U	2.0 U	2.0 U	5.0 U	1.0 U	15 U	-	-	-	-	-	-	-	-	5.62	0.741	0.95	8.75	11.42	328.7
Area 1		9/19/2006	1.0 U	42	2.2	2.0 U	2.0 U	2.0 U	**71**	**350**	**39,000**	-	-	-	-	-	-	-	-	6.31	2.715	4.19	0.76	12.17	-108.0
Area 1		9/12/2007	1.0 U	11	2.0 U	2.0 U	2.0 U	2.0 U	**160**	**110**	**15,000**	-	-	-	-	-	-	-	-	6.49	0.740	73.7	3.19	12.60	-114.3
Area 1		10/15/2008	0.5 U	2.5	0.38 J	0.5 U	0.20 J	0.5 U	**97**	**46**	**5,250**	-	-	-	-	-	-	-	-	6.45	0.511	4.20	0.49	9.54	-104.4
Area 1		10/16/2009	0.5 U	3.1	0.5 U	0.5 U	**37 J**	0.5 U	**166**	**206**	**7,660**	-	-	-	-	-	-	-	-	6.61	0.898	8.81	0.29	13.42	-81.4
Area 1		10/6/2010	0.5 U	5.1	0.5 U	0.5 U	0.5 U	1.8	**149**	**546**	**12,200**	-	-	-	-	-	-	-	-	6.49	2.047	36.6	0.11	14.15	-124.3
Area 1		10/7/2011	0.5 U	1.5	0.5 U	0.5 U	0.5 U	0.5 U	**108**	**58**	**3,610**	-	-	-	-	-	-	-	-	6.59	0.234	4.00	0.10	14.30	-112.9
Area 1		10/15/2012	0.5 U	1.0	0.5 U	0.5 U	0.5 U	0.5 U	**112**	**68**	**3,140**	-	-	-	-	-	-	-	-	6.58	0.526	4.83	0.60	12.73	-98.2
Area 1		10/18/2013	0.5 U	0.59	0.5 U	0.5 U	0.29 J	0.5 U	**80**	**30**	**1,760**	-	-	-	-	-	-	-	-	6.56	0.410	3.37	0.18	12.63	-79.5
Area 1		10/31/2014	0.5 U	0.5 U	2.7	0.5 U	0.53	0.5 U	7.9	**20**	1,160	-	-	-	-	-	-	-	-	6.59	0.688	4.03	0.16	10.88	-105.1
Area 1		10/13/2015	1.0 U	1.0 U	1.2	1.0 U	1.0 U	1.0 U	**32**	**110**	614	-	-	-	-	-	-	-	-	6.61	0.722	2.86	0.55	12.15	-55.0
Area 1		11/8/2016	1.0 U	1.0 U	0.82 J	1.0 U	1.0	1.0 U	**26**	**14**	940	-	-	-	-	-	-	-	-	4.99	0.799	7.04	0.54	13.62	-5.6
Area 1		10/5/2017	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**18**	**6.3**	410	-	-	-	-	-	-	-	-	5.80	0.603	11.0	0.35	14.46	27.8
Area 1		10/17/2018	1.0 U	1.0 U	1.1	1.0 U	0.64 J	1.0 U	**18**	**3.5**	170	-	-	-	-	-	-	-	-	5.84	0.426	24.9	0.13	12.21	154.3
Area 1		10/10/2019	1.0 U	1.5	1.0 U	1.0 U	0.55 J	1.0 U	**73**	**39**	**1,500**	-	-	-	-	-	-	-	-	6.92	0.310	9.70	0.15	12.00	-39.8
Area 1		10/14/2020	1.0 U	0.41 J	1.0 U	1.0 U	1.0 U	1.0 U	**87**	**54**	**2,200**	-	-	-	-	-	-	-	-	6.49	0.255	3.45	0.50	11.80	-52.1
Area 1		10/14/2021	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	**37**	**6.5**	440	-	-	-	-	-	-	-	-	6.04	0.887	44.80	1.11	11.50	22.9

Appendix D
Historical Groundwater Analytical Results
2021 Annual Operations, Maintenance, and Monitoring Report
Area of Contamination 50, Former Fort Devens Army Installation
Devens, Massachusetts

		Analytical Method	VOCs						Dissolved Metals			Dissolved Gases			General Chemistry					Field Parameters					
		Analyte	1,1-DCE	cis-1,2-DCE	PCE	trans-1,2-DCE	TCE	VC	Arsenic	Iron	Manganese	Ethane	Ethene	Methane	Alkalinity	Nitrate/ Nitrite	Sulfate	Sulfide	TOC	pH	SpC	Turbidity	DO	Temp	ORP
		Unit	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(SU)	(mS/cm)	(NTU)	(mg/L)	°C	(mV)
		Cleanup Level[1]	7	70	5		5	2	10	3.129	1,460					10,000									
Area	Well ID	Date Sampled																							
Area 1	G6M-96-13B	10/15/2001	1.0 U	**220**	**3,600**	12	**39**	1.1 J	-	-	-	-	-	-	-	-	-	-	-	6.10	0.120	6.80	2.90	12.55	219.0
Area 1		2/25/2002	1.0 U	**200**	**5,200**	1.4 J	**34**	1.5 J	-	-	-	-	-	-	-	-	-	-	-	6.40	1.142	6.59	3.85	13.56	181.5
Area 1		1/31/2003	1.0 U	**190**	**3,800**	2.0 U	**31**	2.0 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12.13	-
Area 1		9/20/2004	1.0 U	**210**	**4,500**	2.0 U	**35**	**2.1**	5.0 U	1.0	15 U	0.022	0.12	1.7	38	5.4 J	19	2.0	1.0 U	6.30	1.035	0.50	3.57	11.41	186.4
Area 1		12/13/2004	1.0 U	**150**	**2,500**	2.0 U	**24**	2.0 U	5.0 U	1.0 U	23	0.050	0.025	24	35	5.0	31 J	2.0 U	5.0 U	6.26	0.787	2.68	2.57	12.51	316.5
Area 1		3/28/2005	200 U	**180 J**	**4,500**	200 U	200 U	200 U	5.0 U	2.6	**1,600**	0.17	0.22	37	47	0.46	17	2.0 U	5.7	6.24	0.943	0.68	0.87	10.08	21.2
Area 1		8/10/2005	4.8	**1,500**	**2,800**	3.6	**190**	**6.8**	**32**	**24 J**	**8,100**	0.15	0.44	2.9	99	0.23	4.6	5.3	140	4.35	0.838	3.50	0.16	-	-35.6
Area 1		9/26/2005	5.0 U	**570**	**3,700**	5.0 U	**140**	5.0 U	**44**	**51 J**	**12,000**	0.054	0.33	18	134	0.28	11	11	200	4.98	1.071	4.54	1.32	13.50	-45.9
Area 1		12/13/2005	5.0 U	**350**	**3,400**	10 U	**130**	10 U	**46**	**63 J**	**12,100**	0.069	0.35	31	150	0.05 U	11	4.5	140	5.51	0.851	0.90	0.13	16.38	-52.1
Area 1		3/20/2006	1.2	**400**	**2,100**	2.0 U	**250**	**2.5**	**38**	**96**	**17,000**	0.036	0.42	97	300	0.21	6.8	2.4	360	5.68	0.759	7.10	0.17	15.13	-161.5
Area 1		6/20/2006	1.0 U	**370**	**1,900**	2.0 U	**280**	**3.5**	**48 J**	**100**	**16,000**	0.044	0.27	200	310	0.2 U	4.2	4.8	110	5.46	1.252	2.63	0.62	13.27	-86.8
Area 1		9/18/2006	1.3	**530**	**880**	2.0 U	**370**	**9.4**	**150**	**110**	**20,000**	0.022 J	0.43	2,400	370	0.26	4.6	3.0	300	6.14	1.555	2.19	0.48	12.50	-120.9
Area 1		3/27/2007	2.1	**590**	**940**	2.6	**290**	**26**	**250**	**230**	**35,000 J**	0.025 U	0.96	22,000	-	-	4.3	1.6	140	5.71	1.861	1.79	0.10	12.50	-16.8
Area 1		6/11/2007	1.7	**610**	**1,200**	2.0 U	**280**	**55**	**200**	**200**	15 U	0.025 U	0.68	22,000	-	-	8.2	2.2	260	6.24	1.870	1,322	0.15	12.04	-97.5
Area 1		9/10/2007	1.6	**590**	**2,600**	2.0 U	**130 J**	**38**	**240**	**210**	**25,000**	0.036	6.3	32,000	410	0.2 U	580	2.8	270	6.25	1.866	15.5	0.40	12.96	-136.3
Area 1		12/11/2007	1.5	**830**	**750**	2.0 U	**99**	**110**	**260**	**230**	**25,000**	0.005 J	3.6	26,000	-	-	429	2.4	240	6.11	1.907	8.00	1.92	11.98	-25.7
Area 1		3/10/2008	1.7	**1,000**	**1,200**	2.0 U	**140**	**140**	**240**	**240**	**26,000**	0.025 U	8.3	29,000	-	-	5.0 U	2.0	210	6.18	1.958	6.40	1.55	11.33	-90.2
Area 1		10/15/2008	10 U	**490**	**7.3 J**	10 U	**6.5 J**	**350**	**172**	**290**	**39,500**	1.2 U	5.7	9,700	470	0.13 U	21	0.03 U	92	6.19	2.046	11.0	0.90	12.96	-59.2
Area 1		5/7/2009	10 U	**310**	**190**	10 U	**75**	**95**	**169**	**323**	**38,600**	1.2 U	13	46,000	740 J	0.13 U	32	0.03 U	74	6.09	1.909	4.00	0.10	10.53	-97.6
Area 1		10/19/2009	10 U	**290**	**440**	10 U	**140**	**89**	**173**	**325**	**36,000**	1.2 U	9.2	52,000	630	0.022 U	53	0.041	54	6.32	2.054	13.6	1.53	-	-93.1
Area 1		4/21/2010	2.0 U	**100**	**93**	2.0 U	**29**	**57**	**217**	**400 J**	**39,100**	1.3 U	15	37,000	610	0.13 U	0.71 J	0.041	130	6.21	2.496	11.0	0.13	-	18.2
Area 1		10/6/2010	0.70	**150**	**360**	1.5	**150**	**65**	**222**	**366**	**37,500**	1.2 U	18	96,000	95	0.045 J	1.1 J	0.03 U	57	6.19	2.547	12.9	0.22	12.34	-103.4
Area 1		6/9/2011	1.4	**270**	**740**	1.9	**90**	**86**	**242**	**304**	**25,100**	3.7	44	110,000	300	0.023 J	0.49J	0.03 U	75	6.22	2.126	13.1	0.09	11.49	-112.0
Area 1		10/4/2011	8.0 U	**79**	**160**	8.0U	**24**	**43**	**284**	**335**	**25,300**	1.2 U	1.5 U	98,000	620	0.13 U	0.35 J	0.03 U	73	6.36	1.733	20.0	0.02	10.82	-77.8
Area 1		5/9/2012	5.0 U	**150**	**130**	5.0 U	**47**	**38**	**298**	**231**	**16,600**	44	100	29,000	500	0.13 U	0.58 J	0.13	51	6.47	1.680	12.1	1.70	16.85	-89.7
Area 1		10/11/2012	5.0 U	**130**	**130**	5.0 U	**48**	**76**	**282**	**209**	**17,100**	81	190	62,000	480	0.13 U	5.0 U	0.14	38	6.26	2.335	7.09	0.44	10.87	-66.4
Area 1		5/22/2013	5.0 U	**230**	**170**	2.7 J	**55**	**100**	**395**	**241**	**18,600**	1.1 U	86	23,000	540 J	0.13 U	5.0 U	0.12 J	29	6.23	2.270	13.0	0.15	9.71	-84.3
Area 1		10/17/2013	4.0 U	**200**	**78**	4.0 U	**38**	**170**	**365**	**234**	**17,600**	2.4	36	18,000	560	0.13 U	5.0 U	0.058	37	6.46	1.728	17.3	0.15	10.91	-113.1
Area 1	G6M-96-25B	10/15/2001	1.0 U	2.0 U	**360**	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	5.81	0.498	3.90	5.30	12.00	142.0
Area 1		2/25/2002	1.0 U	2.0 U	**130**	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	7.2	-	-	-	6.70	0.150	9.75	11.5	13.80	158.5
Area 1		1/31/2003	1.0 U	2.0 U	**52**	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17.00	-
Area 1		9/20/2004	1.0 U	2.0 U	**56**	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	4.98	0.589	< 0.01	7.63	13.70	593.0
Area 1		9/26/2005	1.0 U	2.0 U	**40**	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	5.82	0.587	1.10	6.74	17.00	314.1
Area 1		9/19/2006	1.0 U	2.0 U	**44**	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	5.20	0.496	1.46	7.64	12.20	223.5
Area 1		9/11/2007	1.0 U	2.0 U	**16**	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	5.91	0.802	9.50	6.29	16.30	96.6
Area 1		10/17/2008	0.5 U	0.5 U	1.7	0.5 U	0.5 U	0.5 U	-	-	-	-	-	-	-	-	-	-	-	6.80	0.151	4.00	8.41	14.50	89.7
Area 1		10/16/2009	0.5 U	0.5 U	1.9	0.5 U	**38 J**	0.5 U	-	-	-	-	-	-	-	-	-	-	-	6.27	0.404	4.70	8.08	10.50	183.5
Area 1		10/8/2010	0.5 U	0.5 U	3.1	0.5 U	0.5 U	0.5 U	-	-	-	-	-	-	-	-	-	-	-	5.80	0.622	1.59	6.70	16.30	190.2
Area 1		10/6/2011	0.5 U	0.5 U	0.58	0.5 U	0.5 U	0.5 U	-	-	-	-	-	-	-	-	-	-	-	6.85	0.131	4.50	8.11	16.80	69.8
Area 1		10/16/2012	0.5 U	0.5 U	2.0	0.5 U	0.5 U	0.5 U	-	-	-	-	-	-	-	-	-	-	-	5.87	0.572	7.76	7.09	12.70	181.7
Area 1/FDSA	G6M-03-04X	10/21/2009	4.0 U	**81**	4.2 U	4.0 U	4.0 U	**4.1**	-	-	-	-	-	-	-	-	-	-	-	6.04	0.635	24.5	0.70	19.60	-99.6
Area 1/FDSA		10/16/2012	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.3	-	-	-	-	-	-	-	-	-	-	-	6.79	0.622	80.4	0.70	22.98	-123.0
Area 1/FDSA	G6M-04-10A	9/20/2004	1.0 U	3.4	**2,900**	2.0 U	2.5	2.0 U	5.0 U	1.0	170	0.021	0.030	1.1	41	4.5 J	22	2.0	1.0 U	5.91	0.552	1.70	3.75	10.79	206.5
Area 1/FDSA		12/14/2004	1.0 U	2.0 U	**2,400**	2.0 U	2.0 U	2.0 U	5.0 U	1.0 U	120	0.015	0.096	1,500	25	1.7	13	2.0 U	5.0 U	5.89	0.965	2.04	2.81	9.62	215.4
Area 1/FDSA		3/30/2005	40 U	40 U	**640**	40 U	40 U	40 U	8.4	1.2	**8,100**	0.33	0.070	1.4	107	0.33	16	2.0 U	52	5.90	1.010	1.76	4.22	10.99	68.3
Area 1/FDSA		8/11/2005	2.0 U	**390**	**380**	2.0 U	**45**	2.0 U	**77**	**87 J**	**50,000 J**	0.24	0.23	3.4	359	0.05 U	7.8	1.0 U	240	5.65	0.977	14.9	1.84	10.06	11.9
Area 1/FDSA		9/27/2005	1.0 U	**260**	**340**	1.0 U	**88**	1.0 U	**190**	**230 J**	**76,000**	0.080	0.15	110	442	0.084	3.0 J	5.9	330	6.33	1.135	4.30	1.89	10.77	-1.9
Area 1/FDSA		12/14/2005	1.0 U	**220**	**1,500**	2.0 U	**180**	2.0 U	**179**	**250 J**	**32,500**	0.048	0.13	6,800	480	0.05 U	3.7	7.4	370	6.41	0.985	1.90	1.57	10.24	-64.8
Area 1/FDSA		3/21/2006	1.0 U	**450**	**4,400**	2.0 U	**180**	**8.3**	**180**	**220**	**8,100**	0.025 U	0.69	20,000	390	0.2 U	4.1	2.0	180	6.72	0.676	7.51	0.27	9.75	-121.4
Area 1/FDSA		6/20/2006	1.0 U	**330**	**6,100**	2.0 U	**650**	**27**	**160**	**220**	**5,700**	0.025 U	0.12	16,000	340	0.2 U	4.3	3.2	120	6.34	0.893	9.82	0.22	10.97	-99.8
Area 1/FDSA		9/19/2006	1.0 U	59	**1,000**	2.0 U	**15**	**14**	**170**	**97**	**5,000**	0.23	0.11	11,000	150	0.31	5.2	1.2	61	6.56	0.430	6.00	1.14	14.64	-86.9
Area 1/FDSA		3/28/2007	1.6 J	**680 J**	**1,200 J**	2.0 U	**230 J**	**60 J**	**380**	**260**	**27,000 J**	0.65	0.26	20,000	-	-	2.1	1.0 U	130	6.10	1.188	15.4	0.19	11.18	-89.9
Area 1/FDSA		6/12/2007	2.1	**900**	**760**	2.0 U	**140**	**130**	**310**	**260**	**15,000**	0.54	1.1	23,000	-	-	1.0 U	2.4	190	6.58	1.295	129	0.19	15.77	-145.2
Area 1/FDSA		9/11/2007	1.0 U	**400**	**2,700**	2.0 U	**99 J**	**91**	**240**	**290**	**13,000**	0.35	0.47	18,000	440	0.2 U	54	2.4	220	6.42	0.864	42.3	1.72	13.97	-138.2
Area 1/FDSA		12/11/2007	1.0 U	**280**	**830**	2.0 U	**8.8**	**90**	**330**	**280**	**12,000**	0.30	0.52	31,000	-	-	3.6	3.0	270	6.40	1.366	8.00	1.20	10.09	-70.1
Area 1/FDSA		3/10/2008	1.8	**670**	**200**	3.4	**830**	**37**	**340**	**230**	**35,000**	0.34	0.61	25,000	-	-	10	2.2	210	6.53	1.362	24.0	0.94	9.82	-123.8
Area 1/FDSA		10/6/2008	100 U	**990**	**4,000**	100 U	**450**	**1,400**	**247**	**187**	**9,100**	1.3 U	11	16,000	210	0.13 U	12	0.03 U	34	6.38	0.948	15.0	0.21	15.25	-168.0
Area 1/FDSA		1/21/2009	0.67 J	**1,400**	**1,500**	1.0 U	**390**	**1,200**	**250**	**234 J**	7.8	1.2 U	9.6	53,000	20 U	0.13 U	20	0.03 U	46 J	6.60	0.937	7.02	0.20	14.25	-112.6
Area 1/FDSA		5/7/2009	10 U	**390 J**	**380**	10 U	**41**	**420**	**292**	**194**	**17,200**	1.2 U	11	34,000	590 J	0.13 U	24	0.03 U	49	6.40	1.165	4.20	0.80	11.25	-125.0
Area 1/FDSA		10/20/2009	50 U	**2,100**	**2,700**	50 U	**290**	**1,400**	**220**	**127**	**8,960**	1.3 U	15	11,000	350	0.13 U	8.7	0.03 U	21	6.42	0.805	11.4	0.17	12.63	-121.4
Area 1/FDSA		4/21/2010	4.0 U	**170**	**170**	4.0 U	**21**	**130**	**286**	**297 J**	**18,200 J**	1.3 U	15	21,000 J	670	0.017 J	0.65 J	0.03 U	120	6.58	0.880	7.00	0.70	14.71	-139.5
Area 1/FDSA		10/6/2010	20 U	**600**	**25**	20 U	**10 J**	**190**	**296**	**119**	**4,280**	1.2 U	14	51,000	260	0.13 U	0.98 J	0.03 U	26	6.32	0.694	6.24	0.17	13.56	-85.2
Area 1/FDSA		6/9/2011	0.5 U	**300**	**110**	0.5 U	**36**	**170**	**295**	**198**	**9,140**	1.2 U	5.7	92,000	660	0.13 U	1.2 J	0.03 U	63	6.40	1.243	5.10	0.39	10.45	-105.1
Area 1/FDSA		10/4/2011	40 U	**1,100**	**850**	40 U	**170**	**270**	**322**	**304**	**17,600**	1.2 U	74	36,000	750	0.13 U	1.1 J	0.22	160	6.07	0.629	8.18	0.21	8.25	-94.0
Area 1/FDSA		5/10/2012	20 U	**610**	**180**	20 U	**120**	**200**	**367**	**183**	**6,700**	1.1 U	250	46,000	340	0.13 U	0.70 J	0.10	16	6.49	0.710	9.05	0.48	10.96	-107.7
Area 1/FDSA		10/15/2012	2.0 U	26	2.0 U	2.0 U	2.0 U	**110**	**291**	**185**	**8,250**	1.2 U	44	14,000	340	0.092 J	5.0 U	0.13 J	64	6.43	0.920	5.50	0.60	10.36	-103.7
Area 1/FDSA		5/23/2013	0.5 U	13	0.5 U	0.53	0.5 U	**15**	**342**	**400**	**7,110**	1.2 U	1.5 U	18,000	650	0.11 J	0.84 J	0.10 J	200	6.37	1.311	11.0	1.30	10.60	-84.4
Area 1/FDSA		10/17/2013	10 U	**130 J**	**360 J**	10 U	**92 J**	**14 J**	**292**	**341**	**5,000**	1.2 U	9.4	24,000 J	650	0.13 U	1.1 J	0.034 J	150	6.37	1.756	9.78	0.29	10.48	-95.5
Area 1/FDSA		6/12/2014	0.5 U	1.4	0.5 U	0.5 U	0.23 J	**5.1**	**264**	**164**	**3,730**	2.2 J	1.6 U	9,500 J	200 J	0.13 U	17	0.03 U	29	6.36	1.761	10.9	0.59	10.89	-82.7
Area 1/FDSA		11/3/2014	0.5 U	0.92	0.5 U	0.5 U	0.5 U	**4.4**	**288**	**184**	**2,100**	1.2 U	3.6 J	21,000	240	0.13 U	16 J	0.03 U	34	6.62	1.742	17.0	0.15	11.17	-136.9

Appendix D
Historical Groundwater Analytical Results
2021 Annual Operations, Maintenance, and Monitoring Report
Area of Contamination 50, Former Fort Devens Army Installation
Devens, Massachusetts

		Analytical Method	VOCs						Dissolved Metals			Dissolved Gases			General Chemistry					Field Parameters					
		Analyte	1,1-DCE	cis-1,2-DCE	PCE	trans-1,2-DCE	TCE	VC	Arsenic	Iron	Manganese	Ethane	Ethene	Methane	Alkalinity	Nitrate/ Nitrite	Sulfate	Sulfide	TOC	pH	SpC	Turbidity	DO	Temp	ORP
		Unit	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(SU)	(mS/cm)	(NTU)	(mg/L)	°C	(mV)
		Cleanup Level[1]	7	70	5		5	2	10	3.129	1,460					10,000									
Area	Well ID	Date Sampled																							
Area 1/FDSA		6/19/2015	0.5 U	0.50 J	0.5 U	0.5 U	0.5 U	**5.0**	**274**	**145**	**1,940**	5.0 U	5.0 U	7,510	278	0.11 U	22	1.0 U	18	6.62	2.201	8.06	0.51	10.47	-94.6
Area 1/FDSA		10/13/2015	1.0 U	0.72 J	1.0 U	1.0 U	1.0 U	1.6	**292**	**205**	**2,360**	10 U	10 U	15,000	241	0.099 J	8.6 J	2.0 U	27	6.53	2.367	17.0	0.08	11.30	-119.6
Area 1/FDSA		6/14/2016	1.0 U	1.1	1.0 U	1.0 U	0.64 J	**4.0**	**220**	**82**	**1,700**	1.1 U	1.0 U	13,000	190	0.05 U	7.3	1.0 U	10	5.94	1.878	7.73	0.23	11.89	-66.6
Area 1/FDSA		11/9/2016	1.0 U	0.96 J	1.0 U	1.0 U	0.49 J	1.4	**220**	**92**	**3,200**	1.1 U	1.0 U	7,100	86	0.05 U	17	1.5	5.5	6.50	1.440	5.27	0.37	8.47	-96.9
Area 1/FDSA		5/18/2017	1.0 U	1.4	1.0 U	1.0 U	0.52 J	0.85 J	**170**	**74**	**4,800**	1.1 U	1.0 U	5,500	38	0.12	15	1.0 U	5.7	6.59	1.780	19.2	0.33	10.93	-98.6
Area 1/FDSA		10/12/2017	1.0 U	1.2	1.0 U	1.0 U	1.0 U	0.81 J	**290**	**100**	**4,600**	1.1 U	3.6	9,200	78	0.12	8.4	1.2	8.4	6.62	1.870	16.0	0.97	10.01	-94.7
Area 1/FDSA		4/4/2018	1.0 U	0.89 J	1.0 U	1.0 U	1.0 U	0.60 J	**250**	**98**	**2,600**	1.1 U	3.6	25,000	190	0.17	11	1.0 U	19	6.61	1.279	9.76	1.04	9.57	-90.7
Area 1/FDSA		10/16/2018	1.0 U	1.9	1.0 U	1.0 U	1.0 U	1.2	**230**	**140**	**6,100**	0.99 J	1.0 U	32,000	210	0.05 U	6.5 J	1.0 U	240	5.51	1.243	346	0.72	10.72	-47.2
Area 1/FDSA		4/4/2019	1.0 U	29	1.0 U	1.0 U	**12**	**9.3**	**240**	**140**	**4,400**	3.8	46	19,000 J	-	0.26	4.3	1.0 U	95	5.80	0.800	11.0	1.70	9.50	-29.0
Area 1/FDSA		10/16/2019	1.0 U	**150**	**11**	1.2	**34**	**45**	**210**	**89**	**2,300**	4.0	160	33,000	170	0.05 U	5.6	0.96 U	65	6.37	0.700	21.0	1.12	10.00	-75.7
Area 1/FDSA		05/12/2020	1.0 U	11	1.0 U	0.93 J	1.0 U	**2.9**	**270**	**130**	**3,700**	0.90 J	18	14,000	300	0.10 U	3.8 J	0.83 U	44	6.26	0.628	30.8	0.25	9.88	29.8
Area 1/FDSA		10/14/2020	1.0 U	**120**	**35**	0.65 J	**49**	**26**	**230**	**96**	**3,000**	1.2	25	10,000	210	0.087 J	6.2	0.81 U	22	6.52	0.530	9.96	0.37	15.40	-91.2
Area 1/FDSA		6/17/2021	1.0 U	4.7	0.5 U	0.62 J	0.5 U	1.5 J	**310**	**85**	1,200 J	5.0 U	5.0 U	17,000	220 J	0.025 U	13 J	0.80 U	17	6.22	0.739	7.84	2.80	11.60	-68.8
Area 1/FDSA		10/13/2021	1.0 U	3.6	2.0 U	1.0 U	1.0 U	1.7	**320 J**	**85**	**1,100**	6.9	9.3	27,000	140	0.05 U	2.8	0.81 U	22	6.52	0.596	76.20	0.54	11.40	-121.0
Area 1/FDSA	G6M-04-10X	9/20/2004	1.0 U	32	**70**	2.0 U	**7.5**	2.0 U	5.0 U	1.0	260	0.019	0.039	1.0	11	6.7 J	21	3.4	1.0 U	5.59	0.902	0.95	6.87	10.24	246.2
Area 1/FDSA		12/14/2004	1.0 U	35	**65**	2.0 U	**7.8**	2.0 U	5.0 U	1.0 U	200	0.022	0.053	2.2	10 U	6.6	23	2.0 U	5.0 U	5.40	0.816	5.50	7.57	16.22	424.2
Area 1/FDSA		3/31/2005	2.0 U	30	**56**	2.0 U	**6.8**	2.0 U	5.0 U	1.0 U	190	0.022	0.86	1.1	10 U	1.5	25	2.0 U	0.4 J	5.18	1.337	0.41	7.65	13.05	256.7
Area 1/FDSA		7/1/2005	1.0 U	23	**50**	2.0 U	**5.4**	2.0 U	4.2	1.0 U	10 U	0.035	0.050	12	44	1.7	12	1.0 U	5.9	5.33	1.502	0.90	6.09	17.50	265.2
Area 1/FDSA		9/27/2005	1.0 U	23	**48**	2.0 U	4.7	2.0 U	5.0 U	1.0 U	170	0.010 J	0.018 J	16	7.7	1.4	26	1.0 U	4.0	5.26	1.123	0.50	6.68	14.74	450.9
Area 1/FDSA		12/14/2005	1.0 U	27	**67**	2.0 U	**6.3**	2.0 U	5.0 U	1.0 U	164	0.016 J	0.034	11	9.8	1.5	28	1.0 U	5.0 U	5.49	1.032	3.40	6.78	10.78	205.1
Area 1/FDSA		3/22/2006	1.0 U	32	**76**	2.0 U	**9.1 J**	2.0 U	5.0 U	1.0 U	200	0.015 J	0.025 J	25	10 U	1.4	24	1.0 U	5.6	5.57	0.940	1.45	6.74	10.62	195.7
Area 1/FDSA		6/20/2006	1.0 U	47	**87**	2.0 U	**10**	2.0 U	5.0 U	0.1 U	240	0.013 J	0.012 J	18	10 U	1.7	25	1.0 U	5.0 U	5.08	1.512	1.90	6.23	10.93	248.8
Area 1/FDSA		9/19/2006	1.0 U	32	**65**	2.0 U	**6.8**	2.0 U	5.0 U	0.1 U	240	0.026	0.025 J	13	8.0	1.3	22	1.0 U	2.2 J	5.21	1.660	4.68	6.94	12.18	273.9
Area 1/FDSA		12/13/2006	1.0 U	35	**64**	2.0 U	**7.2**	2.0 U	5.0 U	0.1 U	280	0.008 J	0.011 J	28	-	-	27	1.0 U	5.0 U	5.38	2.160	0.59	7.90	11.34	39.3
Area 1/FDSA		3/28/2007	1.0 U	26	**56**	2.0 U	**5.9**	2.0 U	5.0 U	0.21	290 J	0.017 J	0.054	21	-	-	28	1.0 U	5.0 U	5.21	1.947	3.71	6.37	10.56	77.9
Area 1/FDSA		6/12/2007	1.0 U	9.9	**28**	2.0 U	2.4	2.0 U	5.0 U	0.1 U	250	0.010 J	0.065	18	-	-	31	1.0 U	5.0 U	5.35	3.150	14.0	6.31	15.88	230.7
Area 1/FDSA		9/11/2007	1.0 U	13	**35**	2.0 U	3.4	2.0 U	6.0 U	0.1 U	270	0.008 J	0.010 J	13	10 U	1.4	2,000	1.0 U	5.0 U	5.29	2.617	10.5	8.98	14.25	-40.6
Area 1/FDSA		12/11/2007	1.0 U	6.4	**20**	2.0 U	2.0 U	2.0 U	5.0 U	0.1 U	230	0.010 J	0.028	5.3	-	-	35	1.0 U	5.0 U	5.46	3.660	2.80	5.62	14.50	27.7
Area 1/FDSA		3/11/2008	1.0 U	9.7	**22**	2.0 U	2.1	2.0 U	5.0 U	0.16	250	0.004 J	0.010 J	4.1	-	-	28	1.0 U	5.0 U	4.99	2.890	< 0.01	6.42	13.63	213.5
Area 1/FDSA		10/15/2008	0.5 U	8.4	**18**	0.5 U	1.6	0.5 U	8.0 U	0.2 U	265	1.2 U	1.5 U	6.1	30	1.4	27	0.03 U	10 U	5.28	3.339	1.40	6.58	11.75	247.1
Area 1/FDSA		5/7/2009	0.5 U	5.0	**15**	0.5 U	1.2	0.5 U	8.0 U	0.2 U	213	1.3 U	1.6 U	0.76	20 U	1.2	33	0.03 U	10 U	5.20	2.229	1.53	5.86	11.22	196.8
Area 1/FDSA		10/20/2009	0.5 U	5.2	**9.8**	0.5 U	4.8	0.27 J	8.0 U	0.139 U	197	1.3 U	1.6 U	19	20 U	1.1	29	0.03 U	10 U	5.20	2.651	2.68	5.72	11.56	226.2
Area 1/FDSA		4/21/2010	0.5 U	6.5	**24**	0.5 U	1.5	0.5 U	5.0 U	0.1 U	200	1.3 U	1.6 U	87	25	1.4	31	0.03 U	10 U	5.26	2.760	4.00	5.13	14.40	187.2
Area 1/FDSA		10/6/2010	0.5 U	7.9	**24**	0.5 U	1.8	0.5 U	5.0 U	0.1 U	208	1.2 U	1.5 U	3.7	25	1.8	28	0.03 U	10 U	5.18	2.937	< 0.01	5.63	12.40	225.7
Area 1/FDSA		10/4/2011	0.5 U	1.9	**9.0**	0.5 U	0.5 U	0.5 U	5.0 U	0.1 U	173	1.2 U	1.5 U	47	20 U	1.3	28	0.03 U	4.5 J	5.01	1.078	1.16	4.46	11.30	192.8
Area 1/FDSA		10/15/2012	0.5 U	1.9	**15**	0.5 U	0.72	0.5 U	5.0 U	0.1 U	224	1.2 U	1.5 U	32	20 U	1.2	35	0.03 U	10 U	5.53	3.135	0.33	5.25	12.88	204.0
Area 1/FDSA		10/17/2013	0.5 U	0.50 J	**6.2**	0.5 U	0.28 J	0.5 U	3.3 J	1.3	262	1.2 U	1.5 U	5,500	20 U	0.95	37	0.03 U	2.7 J	5.32	4.698	2.89	3.90	13.02	164.1
Area 1/FDSA		11/3/2014	0.5 U	0.47 J	**7.4**	0.5 U	0.27 J	0.5 U	2.5 U	1.3	308	1.2 U	1.5 U	200	20 U	1.3 J	30 J	0.03 U	5.0 U	5.27	2.562	0.97	5.28	12.55	148.4
Area 1/FDSA		9/9/2015	0.5 U	0.5 U	2.8	0.5 U	0.5 U	0.5 U	2.0 U	0.11	383	5.0 U	5.0 U	5.0 U	-	0.92	35	1.0 U	0.81 U	5.38	2.257	4.98	3.32	13.13	169.9
Area 1/FDSA		10/13/2015	1.0 U	1.0 U	3.1	1.0 U	1.0 U	1.0 U	4.0 U	0.1 U	344	10 U	10 U	10 U	7.2	1.1	35	2.0 U	1.0 U	5.31	3.174	28.5	2.86	12.33	202.1
Area 1/FDSA		2/9/2016	1.0 U	1.0 U	2.3	1.0 U	1.0 U	1.0 U	4.0 U	0.053 J	274	10 U	10 U	6.9 J	7.1	0.91	35	2.0 U	1.0 U	5.49	1.922	19.3	2.49	8.62	196.7
Area 1/FDSA		6/14/2016	1.0 U	1.0 U	3.0	1.0 U	1.0 U	1.0 U	3.0 U	0.073	330	5.3	5.1 J	27	9.4	1.0	35	1.0 U	0.63 J	5.72	3.364	0.96	1.77	11.60	102.1
Area 1/FDSA		11/9/2016	1.0 U	1.0 U	2.1	1.0 U	1.0 U	1.0 U	3.0 U	0.036 J	420	1.1 U	1.0 U	170	10	0.58	32	2.2	0.72 J	5.70	1.546	4.27	0.76	9.16	67.9
Area 1/FDSA		5/18/2017	1.0 U	1.0 U	1.2	1.0 U	1.0 U	1.0 U	3.0 U	0.020 J	1,100	1.1 U	1.0 U	180	12	0.42	32	1.0 U	1.0 U	5.51	1.523	11.3	0.63	10.93	162.1
Area 1/FDSA		10/12/2017	1.0 U	1.0 U	1.2	1.0 U	1.0 U	1.0 U	3.0 U	0.075 U	1,200	1.1 U	1.0 U	760	13	0.46	34	1.0 U	1.0 U	5.56	2.020	4.17	1.11	10.29	195.3
Area 1/FDSA		10/17/2018	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	-	-	-	-	-	-	-	-	-	-	-	5.20	1.534	4.23	0.26	11.32	181.2
Area 1/FDSA		10/9/2019	1.0 U	1.0 U	1.3	1.0 U	1.0 U	1.0 U	-	-	-	-	-	-	-	-	-	-	1.3	7.21	2.300	2.10	0.30	11.00	93.9
Area 1/FDSA		10/14/2020	1.0 U	1.0 U	1.1	1.0 U	1.0 U	1.0 U	-	-	-	-	-	-	-	-	-	-	-	5.28	1.910	3.33	0.44	13.20	118.0
Area 1/FDSA		10/13/2021	1.0 U	1.0 U	1.7 J	1.0 U	1.0 U	1.0 U	-	-	-	-	-	-	-	-	-	-	-	5.26	2.260	1.40	0.89	12.00	122.0
Area 1/FDSA	G6M-04-13X	9/21/2004	1.0 U	2.0 U	**8.0**	2.0 U	2.0 U	2.0 U	5.0 U	1.0 U	350	-	-	-	-	-	-	-	-	5.96	0.138	1.75	8.00	16.01	551.8
Area 1/FDSA		9/26/2005	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	5.0 U	1.0 U	15 U	-	-	-	-	-	-	-	-	6.43	0.042	3.80	10.5	17.24	180.0
Area 1/FDSA		9/18/2006	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	5.0 U	0.1 U	15 U	-	-	-	-	-	-	-	-	5.65	0.076	12.1	8.63	13.33	213.9
Area 1/FDSA		9/12/2007	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	5.0 U	0.1 U	15 U	-	-	-	-	-	-	-	-	6.07	0.140	14.1	8.70	13.36	147.4
Area 1/FDSA		10/17/2008	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	8.0 U	0.2 U	50 U	-	-	-	-	-	-	-	-	5.22	0.046	45.0	9.98	10.56	124.4
Area 1/FDSA		10/20/2009	25 U	25 U	25 U	25 U	**16 J**	25 U	2.0 J	0.132 U	50 U	-	-	-	-	-	-	-	-	5.78	0.049	12.2	10.6	11.05	283.7
Area 1/FDSA		10/7/2010	0.5 U	0.5 U	0.29 J	0.5 U	0.5 U	0.5 U	5.0 U	0.1 U	25 U	-	-	-	-	-	-	-	-	5.83	0.048	2.87	8.84	10.33	147.3
Area 1/FDSA		10/4/2011	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5.0 U	0.1 U	14 J	-	-	-	-	-	-	-	-	5.54	0.024	13.5	9.15	11.43	208.7
Area 1/FDSA		10/16/2012	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5.0 U	0.1 U	5.1 J	-	-	-	-	-	-	-	-	6.28	0.047	17.2	9.95	11.11	108.1
Area 1/FDSA		10/22/2013	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5.0 U	0.1 U	25 U	-	-	-	-	-	-	-	-	5.92	0.021	45.6	10.7	10.28	120.9
Area 1/FDSA		11/3/2014	0.5 U	0.5 U	0.36 J	0.5 U	0.5 U	0.5 U	2.5 U	0.024 J	7.5 U	-	-	-	-	-	-	-	-	6.23	0.029	35.2	6.38	15.24	147.6
Area 1/FDSA		10/14/2015	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.0 U	0.1 U	15 U	-	-	-	-	-	-	-	-	6.85	0.045	1.07	8.83	14.69	114.7
Area 1/FDSA		11/10/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U	0.05 U	3.0 U	-	-	-	-	-	-	-	-	6.13	0.027	2.69	8.22	6.80	-8.8
Area 1/FDSA		5/16/2017	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U	0.05 U	3.6 J	12	10	21	9.5	0.62	4.8	1.0 U	1.0 U	6.47	0.034	2.36	9.01	9.67	210.7
Area 1/FDSA		10/6/2017	1.0 U	1.0 U	1.3	1.0 U	1.0 U	1.0 U	3.0 U	0.05 U	3.0 U	1.1 U	1.0 U	0.33 J	8.7 U	0.84	4.6	1.0 U	0.45 J	5.86	0.056	2.60	3.64	10.42	223.4
Area 1/FDSA		10/19/2018	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	-	-	-	-	-	-	-	-	-	-	-	5.02	0.162	3.31	10.4	10.35	77.8
Area 1/FDSA		10/9/2019	1.0 U	2.4	1.0 U	1.0 U	1.0 U	1.0 U	-	-	-	-	-	-	-	-	-	-	-	7.41	0.100	3.10	1.6	10.00	14.3
Area 1/FDSA		10/14/2020	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	-	-	-	-	-	-	-	-	-	-	-	6.45	0.060	3.32	1.77	12.10	-14.6
Area 1/FDSA		10/13/2021	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	-	-	-	-	-	-	-	-	-	-	-	6.69	0.070	8.48	1.91	12.00	-75.5
Area 1/FDSA	G6M-07-02X	12/12/2007	1.0 U	2.0 U	**50**	2.0 U	2.0 U	2.0 U	5.0 U	0.1 U	64	0.024 J	0.022 J	0.73	-	-	16	1.0 U	5.0 U	5.90	0.148	5.40	7.54	9.80	194.2
Area 1/FDSA		3/11/2008	1.0 U	2.0 U	**1,800**	2.0 U	2.0 U	2.0 U	5.0 U	0.1 U	35	0.014 J	0.019 J	7.1	-	-	26	1.0 U	5.0 U	5.70	0.108	< 0.01	7.50	10.96	165.5
Area 1/FDSA		10/15/2008	5.0 U	5.0 U	**170**	5.0 U	5.0 U	5.0 U	5.5 J	0.2 U	21 J	1.2 U	10	12,000	20 U	0.13 U	11	0.03 U	10 U	5.34	0.067	19.0	9.25	10.69	93.2

Appendix D
Historical Groundwater Analytical Results
2021 Annual Operations, Maintenance, and Monitoring Report
Area of Contamination 50, Former Fort Devens Army Installation
Devens, Massachusetts

		Analytical Method	VOCs						Dissolved Metals			Dissolved Gases			General Chemistry					Field Parameters					
		Analyte	1,1-DCE	cis-1,2-DCE	PCE	trans-1,2-DCE	TCE	VC	Arsenic	Iron	Manganese	Ethane	Ethene	Methane	Alkalinity	Nitrate/ Nitrite	Sulfate	Sulfide	TOC	pH	SpC	Turbidity	DO	Temp	ORP
		Unit	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(SU)	(mS/cm)	(NTU)	(mg/L)	°C	(mV)
		Cleanup Level[1]	7	70	5		5	2	10	3.129	1,460					10,000									
Area	Well ID	Date Sampled																							
Area 1/FDSA		5/11/2009	0.5 U	0.5 U	**46**	0.5 U	0.5 U	0.5 U	7.1	0.2 U	5.8 J	1.2 U	1.5 U	7.0	20 U	0.062	8.6 J	0.03 U	5.7 J	6.17	0.055	4.00	9.40	11.27	115.7
Area 1/FDSA		10/20/2009	0.5 U	0.5 U	**30 J**	0.5 U	0.5 U	0.5 U	6.6	0.2 U	50 U	1.3 U	1.6 U	6.2 J	20 U	0.13 U	7.2	0.03 U	10 U	6.00	0.053	9.35	9.34	14.50	128.9
Area 1/FDSA		4/21/2010	2.0 U	2.0 U	**63**	2.0 U	2.0 U	2.0 U	6.2	0.176 U	25 U	1.2 U	1.5 U	3,200	30	0.0098 J	6.8	0.03 U	10 U	6.10	0.034	12.0	0.33	16.26	139.3
Area 1/FDSA		10/6/2010	0.5 U	0.5 U	**26 J**	0.5 U	0.5 U	0.5 U	3.4 J	0.1 U	25 U	1.2 U	1.5 U	28	32	0.21	5.6	0.03 U	10 U	5.31	0.053	5.48	6.13	12.95	170.0
Area 1/FDSA		10/4/2011	0.5 U	0.5 U	**700**	0.5 U	0.5 U	0.5 U	4.6 J	0.1 U	80	1.2 U	1.5 U	46,000	31	0.13 U	4.4 J	0.03 U	10 U	5.17	0.045	8.20	0.09	10.89	176.5
Area 1/FDSA		10/11/2012	5.0 U	6.4	**90**	5.0 U	**190**	5.0 U	5.0 U	0.29	40	1.2 U	1.5 U	46,000 J	20 U	0.056 J	6.4	0.03 U	10 U	6.28	0.068	11.3	1.60	19.81	76.1
Area 1/FDSA		10/17/2013	20 U	20 U	**1,000**	20 U	**8.7 J**	20 U	5.0 U	0.1 U	32	1.2 U	1.5 U	520 J	21	0.13 U	4.5 J	0.03 U	10 U	6.03	0.060	1.17	4.25	20.19	143.0
Area 1/FDSA		11/3/2014	50 U	31 J	**14,000**	50 U	**40 J**	50 U	2.2 J	0.421 J	43	1.2 U	1.5 U	6,200	22	0.13 U	4.2 J	0.03 U	5.0 U	5.85	0.040	12.1	0.23	9.22	70.2
Area 1/FDSA		12/11/2014	50 U	50 U	**6,200**	50 U	**57**	50 U	-	-	-	-	-	-	-	-	-	-	-	5.39	0.098	0.85	0.51	7.38	218.1
Area 1/FDSA		10/13/2015	1.0 U	1.0 U	**482**	3.1 J	**13**	1.0 U	4.0 U	0.30	33	10 U	10 U	3,200 J	10	0.11 U	10	2.0 U	1.0 U	5.86	0.055	5.95	0.27	15.55	59.3
Area 1/FDSA		6/14/2016	20 U	20 U	**1,400**	20 U	**10 J**	20 U	3.0 U	0.11	37	1.1 U	1.0 U	970	12	0.05 U	6.6	1.0 U	1.2	5.56	0.060	0.92	1.86	10.27	94.3
Area 1/FDSA		11/9/2016	20 U	20 U	**3,200**	20 U	20 U	20 U	3.0 U	0.10	41	1.1 U	1.0 U	100	15	0.062 J	6.0	1.0 U	0.93 J	5.91	0.042	2.63	1.18	8.23	39.5
Area 1/FDSA		5/16/2017	20 U	20 U	**1,800**	20 U	20 U	20 U	3.0 U	0.05 U	17	1.1 U	1.0 U	1.8	14	0.32	6.2	1.0 U	1.0 U	5.70	0.042	2.73	3.69	9.73	213.3
Area 1/FDSA		10/10/2017	20 U	20 U	**910 J**	20 U	20 U	20 U	**37 J**	**220 J**	**14,000 J**	24 J	4.3 J	1,200	520	2.0	20	1.0 U	3,400	6.21	2.080	> 5,000	0.51	11.07	-161.2
Area 1/FDSA		4/4/2018	5.0 U	33	**350**	5.0 U	5.0 U	5.0 U	**89**	**85**	**2,800**	10	17	25,000	150	0.13	10	1.0 U	580	5.91	0.652	1,700	0.81	8.99	-69.7
Area 1/FDSA		10/17/2018	5.0 U	**110**	**370**	5.0 U	4.1 J	**3.3 J**	**69**	**370**	**6,100**	14	43	25,000	400	0.43 J	6.6 J	1.0 U	1,300	5.48	1.315	> 5,000	0.15	10.65	44.9
Area 1/FDSA		4/5/2019	1.0 U	**110**	**71 J**	1.0 U	1.8	**3.4**	**40**	**210**	**5,600**	7.6	11	16,000	-	0.27	1.0 U	1.0 U	350	6.10	0.850	35.0	0.37	8.40	82.0
Area 1/FDSA		10/9/2019	5.0 U	**140**	**5.3**	5.0 U	5.0 U	**4.6 J**	**48**	**210**	**5,500**	5.0	6.2	13,000	210	0.39	1.0 U	0.83 U	260	7.34	0.730	12.0	0.21	11.00	-55.3
Area 1/FDSA		05/12/2020	1.0 U	**110**	2.4	1.0 U	0.72 J	**3.6**	**43**	**250**	**4,900**	3.6	4.4	14,000	250	0.13 U	5.0 U	1.9	290	6.58	0.620	27.8	0.32	9.79	7.0
Area 1/FDSA		10/14/2020	1.0 U	40	1.1	1.0 U	1.0 U	1.7	**42**	**220**	**4,500**	1.3	2.0	6,600	190	0.17	5.0 U	0.81 U	230	6.63	0.526	20.9	0.51	12.00	-111.0
Area 1/FDSA		5/12/2021	1.0 U	14	2.0 U	1.0 U	1.0 U	**2.6**	6.2	**240**	**4,500**	4.6	5.7	20,000	230	0.12	1.0 U	4.0 U	260	6.50	0.737	23.4	1.46	19.40	-166.9
Area 1/FDSA		10/12/2021	1.0 U	9.8	2.0 U	1.0 U	1.0 U	1.5	**25**	**170**	**4,300**	3.4	3.2	15,000	130	0.074 J	1.0 U	8.1 U	190	6.96	0.459	62.4	0.64	13.30	-169.9
Area 2	G6M-02-01X	2/28/2002	1.0 U	2.0 U	**11**	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	6.91	0.624	14.0	4.70	13.53	66.6
Area 2		9/23/2004	1.0 U	2.0 U	**24**	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	6.64	0.784	6.11	2.54	19.41	145.0
Area 2		9/30/2005	1.0 U	3.1	**110**	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	6.07	0.555	10.9	3.82	18.04	384.8
Area 2		9/20/2006	1.0 U	**91**	**1,300**	2.0 U	**12**	2.0 U	-	-	-	-	-	-	-	-	-	-	-	6.19	0.708	9.07	3.68	17.33	-108.2
Area 2		3/30/2007	1.0 U	**120**	**1,700**	2.0 U	**19**	2.0 U	5.0 U	0.1 U	120 J	0.012 J	0.081	-	-	-	9.4	1.0 U	3.3 J	6.64	0.800	0.78	4.22	14.06	-35.3
Area 2		6/14/2007	1.0 U	**97**	**1,700**	2.0 U	**16**	2.0 U	-	-	-	-	-	-	-	-	-	-	1.9 J	6.72	0.853	10.4	3.30	14.82	69.6
Area 2		9/14/2007	1.0 U	**150**	**1,900**	2.0 U	**24**	2.0 U	-	-	-	-	-	-	-	-	-	-	-	6.57	0.747	0.10	3.32	14.44	102.4
Area 2		12/13/2007	1.0 U	**130 J**	**1,600**	2.0 U	**21 J**	2.0 U	-	-	-	-	-	-	-	-	-	-	3.6 J	6.61	0.807	< 0.01	2.73	12.57	128.0
Area 2		3/14/2008	2.2	**600**	**520**	2.0 U	**70**	2.0 U	**150**	**26**	**23,000**	0.052	0.16	12	-	-	5.0 U	1.0 U	180	6.45	1.620	2.70	0.38	13.35	-99.2
Area 2		10/7/2008	10 U	**360**	**180**	10 U	**49**	10 U	**141**	**15**	**5,880**	6.3 U	9.5	5,000	200	0.13 U	11	0.03 U	18	6.97	1.193	8.40	0.18	12.07	-112.9
Area 2		1/21/2009	1.2 J	**170**	**280**	1.3 U	76 U	94 U	**148**	**11.2 J**	**4,500**	1.3 U	24	4,000	170	0.13 U	7.0 U	0.03 U	11 J	7.13	1.279	1.20	0.39	11.08	-142.7
Area 2		5/6/2009	10 U	**100**	**610**	10 U	**190**	**54**	**133**	**19**	**3,950**	1.2 U	29	29,000	220 J	0.059 J	8.4	0.03 U	13	6.69	1.085	1.15	0.20	11.42	-127.7
Area 2		10/20/2009	40 U	**76**	**820**	40 U	**180**	**47**	**108**	**12**	**2,470**	1.3 U	9.0	5,000 J	130	0.074 J	7.6	0.03 U	4.6 J	6.66	0.925	3.52	1.24	11.45	32.9
Area 2		4/21/2010	2.0 U	0.47 J	**37 J**	2.0 U	**53 J**	**69 J**	**164**	**20.5 J**	**4,480**	1.3 U	43	12,000 J	280 J	0.024 J	4.0 J	0.03 U	40	6.70	1.180	1.60	0.42	11.63	-122.0
Area 2		10/6/2010	1.4	**72**	**470**	1.4	**120**	**84**	**133**	**14**	**3,050**	1.2 U	49	25,000	120	0.13 U	5.2	0.03 U	10 U	6.39	1.039	3.65	0.28	12.53	-77.8
Area 2		6/9/2011	0.5 U	11	0.5 U	0.69	4.3	**12**	**173**	**46**	**7,380**	1.2 U	230	71,000	400	0.11 J	3.3 J	0.03 U	90	6.42	1.423	< 0.01	0.30	14.56	-86.3
Area 2		10/5/2011	0.5 U	3.6	0.5 U	0.5 U	0.88	**7.3**	**271**	**27**	**5,470**	1.2 U	290	72,000 J	190	0.13 U	1.4 J	0.03 U	18	6.60	0.681	0.87	0.02	12.53	-106.0
Area 2		5/9/2012	8.0 U	65	**250**	8.0U	**310**	**63**	**271**	**11**	**2,050**	1.1 U	260	41,000	86	0.13 U	6.8	0.081	2.3 J	6.66	0.798	1.60	0.07	12.38	-79.2
Area 2		10/10/2012	10 U	**75**	**350**	10 U	**120**	**160**	**220**	**10**	**2,080**	1.2 U	250	37,000 J	120 J	0.13 U	6.5	0.36 J	10 U	6.64	0.906	3.71	0.50	13.24	-80.5
Area 2		5/21/2013	0.5 U	8.4	0.25 J	0.67	4.7	**5.2**	**272**	**36**	**7,450**	1.2 U	220	22,000	240 J	0.13 U	3.0 J	0.076 J	43	6.57	1.439	0.71	0.14	14.22	-91.7
Area 2		10/17/2013	0.5 U	11	0.5 U	0.58	2.4	**14**	**323**	**40**	**4,000**	1.2 U	450 J	52,000	140	0.13 U	5.0 U	0.078	2.6 J	6.66	0.753	2.24	0.22	13.12	-117.5
Area 2		6/11/2014	0.5 U	1.4	0.5 U	0.5 U	0.5 U	**2.6**	**449**	**84 J**	**4,260**	1.3 U	16 J	5,300 J	210 J	0.13 U	1.2 U	0.03 U	9.5 J	6.73	1.174	4.68	0.25	13.08	-103.1
Area 2		10/30/2014	0.5 U	1.5	0.5 U	0.5 U	0.21 J	0.87	**384**	**48**	**1,820**	15	40	24,000	86	0.13 U	2.3 J	0.03 U	5.0 U	6.57	0.959	1.81	0.23	12.73	-130.8
Area 2		6/17/2015	0.5 U	0.53 J	0.5 U	0.5 U	0.5 U	0.5 U	**418**	**62**	**1,760**	5.0 U	6.0 J	712	67	0.11 U	0.5 U	1.0 U	6.2	6.80	0.671	8.45	0.25	13.66	-91.1
Area 2		9/10/2015	1.0 U	1.0 U	1.0 U	1.0 U	0.50 J	1.0 U	**374**	**61**	**1,750**	10 U	5.3 J	8,550	-	0.061 J	0.96 J	2.0 U	2.1	6.77	0.807	0.81	0.24	16.00	-110.5
Area 2		10/16/2015	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**360**	**56**	**1,750**	10 U	10 U	14,200	55	0.11 U	1.1 J	2.0 U	2.1	6.86	1.109	2.79	0.11	16.08	-128.2
Area 2		2/18/2016	1.0 U	0.89 J	1.0 U	1.0 U	1.0 U	0.53 J	**347**	**53**	**2,420**	10 U	10 U	12,500	155	0.10 U	1.5 J	2.0 U	6.8	7.01	1.659	3.95	0.80	10.29	31.9
Area 2		6/13/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**450**	**100**	**2,700**	1.1 U	1.0 U	22,000	150	0.021 J	0.8 U	1.0 U	7.7	6.87	1.691	5.91	0.21	17.21	-145.7
Area 2		11/9/2016	1.0 U	0.69 J	1.0 U	1.0 U	1.0 U	1.0 U	**430**	**62**	**2,100**	1.1 U	1.0 U	18,000	140	0.05 U	1.0 U	1.8	3.1	6.92	1.743	4.67	0.23	13.12	-13.0
Area 2		5/19/2017	1.0 U	0.52 J	1.0 U	1.0 U	1.0 U	1.0 U	**500**	**110**	**2,600**	1.1 U	1.0 U	24,000	220	0.09 J	0.51 J	1.0 U	4.9	6.85	1.590	7.23	0.42	14.39	-132.4
Area 2		10/13/2017	1.0 U	0.77 J	1.0 U	1.0 U	1.0 U	0.52 J	**400**	**76**	1,300	1.1 U	3.8	12,000	64	0.10	0.57 J	1.0 U	3.3	6.66	0.958	7.14	0.46	12.14	-107.4
Area 2		10/29/2018	1.0 U	1.3	1.0 U	1.0 U	0.73 J	1.0 U	**51**	3.1	**2,700**	-	-	-	-	-	-	-	-	7.48	3.070	18.2	0.17	12.80	-115.8
Area 2		10/16/2019	1.0 U	2.0	1.0 U	1.0 U	4.1	0.63 J	**100**	**5.3**	**2,700**	-	-	-	-	-	-	-	-	6.60	2.700	16.0	0.13	12.00	-120.0
Area 2		10/20/2020	1.0 U	4.5	**5.3**	1.0 U	**25**	**2.8**	**270**	**27**	**2,000**	-	-	-	-	-	-	-	-	6.95	1.450	17.8	0.20	13.70	-103.0
Area 2		5/12/2021	1.0 U	1.2	2.0 U	1.0 U	2.2	1.0 U	**230**	**16**	**2,200**	0.76 U	11	24,000	140	0.05 U	13	0.81 U	2.0	6.94	1.968	109.0	0.55	13.80	-126.0
Area 2		10/13/2021	1.0 U	1.4	2.0 U	1.0 U	2.4	0.72 J	**310**	**22**	**1,900**	-	-	-	-	-	-	-	-	6.87	3.780	39.9	0.51	15.40	-127.0
Area 2	G6M-04-01X	9/23/2004	1.0 U	21	**250**	2.0 U	3.6	2.0 U	5.0 U	1.0 U	220	-	-	-	-	-	-	-	-	6.82	2.391	9.42	3.92	15.38	245.2
Area 2		9/28/2005	1.0 U	9.2	**140**	2.0 U	2.0 U	2.0 U	5.1	1.0 U	170	-	-	-	-	-	-	-	-	6.49	2.699	7.29	5.85	13.21	202.3
Area 2		9/20/2006	1.0 U	7.2	**150**	2.0 U	2.0 U	2.0 U	5.0 U	0.1 U	220	-	-	-	-	-	-	-	-	5.87	2.920	3.53	4.88	11.85	-91.4
Area 2		12/13/2006	1.0 U	**75**	**200**	2.0 U	**11**	2.0 U	**160**	**83**	**20,000**	0.004 J	0.038	1,700	-	-	50	2.8	440	6.07	3.107	5.21	1.43	13.56	-72.8
Area 2		9/14/2007	1.0 U	8.6	**290**	2.0 U	2.0 U	2.0 U	6.0 U	0.1 U	130	-	-	-	-	-	-	-	-	6.00	2.055	35.8	5.21	12.16	155.3
Area 2		10/20/2008	10 U	10 U	**270 J**	10 U	**11 J**	10 U	8.0 U	0.2 U	53.1 J	-	-	-	-	-	-	-	-	7.32	0.999	3.50	3.37	17.25	96.2
Area 2		10/20/2009	13 U	**360**	**190**	13 U	**130**	**15**	8.0 U	0.1 U	113	-	-	-	-	-	-	-	-	5.79	0.908	4.80	2.25	13.38	342.4
Area 2		10/7/2010	0.29 J	**120**	**27**	0.68	**19**	**140**	5.0 U	1.1	164	-	-	-	-	-	-	-	-	6.14	1.312	1.55	0.29	11.53	124.3
Area 2		10/5/2011	0.5 U	36	**14**	0.71	**7.6**	**160**	3.7 J	0.38	261	-	-	-	-	-	-	-	-	6.27	1.132	3.30	0.48	12.65	69.9
Area 2		10/12/2012	4.0 U	18	**5.5**	4.0 U	4.0 U	**130**	3.5 J	0.74	925	-	-	-	-	-	-	-	-	6.36	1.700	1.85	0.38	12.40	19.1
Area 2		10/17/2013	0.5 U	0.99	0.5 U	0.29 J	0.78	**14**	6.0	1.1	**8,890**	-	-	-	-	-	-	-	-	6.46	2.509	2.49	0.40	14.53	17.4
Area 2		10/31/2014	0.5 U	0.56	0.39 J	0.37 J	0.52	**7.9**	**164**	**59**	**28,900**	-	-	-	-	-	-	-	-	6.69	1.850	19.6	0.48	13.34	-95.3
Area 2		9/10/2015	1.0 U	0.93 J	1.0 U	1.0 U	1.0 U	0.75 J	**162**	**32**	**9,040**	10 U	10 U	6,240	-	0.12	3.6 J	2.0 U	19	7.15	1.880	41.6	0.45	15.91	-152.7

		Analytical Method	VOCs						Dissolved Metals			Dissolved Gases			General Chemistry					Field Parameters					
		Analyte	1,1-DCE	cis-1,2-DCE	PCE	trans-1,2-DCE	TCE	VC	Arsenic	Iron	Manganese	Ethane	Ethene	Methane	Alkalinity	Nitrate/ Nitrite	Sulfate	Sulfide	TOC	pH	SpC	Turbidity	DO	Temp	ORP
		Unit	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(SU)	(mS/cm)	(NTU)	(mg/L)	°C	(mV)
		Cleanup Level[1]	7	70	5		5	2	10	3.129	1,460					10,000									
Area	Well ID	Date Sampled																							
Area 2		10/14/2015	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**382**	**96**	**24,400**	-	-	-	-	-	-	-	-	6.78	2.878	4.83	0.10	12.46	-133.0
Area 2		2/18/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**76**	**16**	**7460**	10 U	10 U	7,060	411	0.10 U	14	2.0 U	12	6.68	1.624	6.39	1.67	9.49	182.6
Area 2		6/13/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**380**	**80**	**19,000**	-	-	-	-	-	-	-	-	6.69	3.639	17.6	0.65	17.67	-120.3
Area 2		11/9/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**320**	**95**	**19,000**	-	-	-	-	-	-	-	-	6.76	2.631	4.60	0.42	11.40	-82.0
Area 2		10/13/2017	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**450**	**81**	**18,000**	-	-	-	-	-	-	-	-	6.66	3.540	11.5	0.87	13.49	-99.2
Area 2		10/30/2018	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**470**	**68**	**19,000**	-	-	-	-	-	-	-	-	6.48	5.152	3.01	0.55	11.74	-73.1
Area 2		10/16/2019	1.0 U	0.41 J	1.0 U	1.0 U	0.48 J	1.0 U	**540**	**52**	**13,000**	-	-	-	-	-	-	-	-	6.20	4.400	3.70	0.18	13.00	-67.0
Area 2		10/19/2020	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**580**	**45**	**13,000**	-	-	-	-	-	-	-	-	6.56	2.840	34.7	0.29	12.90	-73.4
Area 2		10/13/2021	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	**680**	**42**	**11,000**	-	-	-	-	-	-	-	-	6.45	5.250	7.6	0.68	15.60	-79.2
Area 2	G6M-04-03X	9/23/2004	1.0 U	3.3	**440**	2.0 U	2.0 U	2.0 U	5.0 U	1.0 U	**3,100**	0.22	0.036	100	53	5.1	23	2.2	1.4	6.37	1.236	12.2	3.41	12.85	446.5
Area 2		9/27/2005	1.0 U	10	**680**	1.0 U	**14**	1.0 U	5.0 U	0.6 J	**3,500**	0.19	0.32	52	82	0.35	38 J	1.0 U	6.0	6.29	1.361	9.62	0.79	12.87	377.5
Area 2		9/22/2006	1.0 U	6.3	**2,600**	2.0 U	**420**	2.0 U	5.0 U	0.1 U	**2,900**	0.049	0.30	17	190	0.2 U	17	1.0 U	7.2	6.30	0.524	3.52	0.43	15.12	152.1
Area 2		12/14/2006	1.0 U	**120**	**1,600**	2.0 U	**18**	2.0 U	-	-	-	-	-	-	-	-	-	-	5.0 U	6.54	0.831	2.81	3.64	14.32	-34.8
Area 2		9/14/2007	1.0 U	2.7	**770**	2.0 U	**68**	2.0 U	**38**	0.87	**2,300**	0.062	0.11	3.0	100	0.2 U	24	1.0 U	1.6 J	7.29	0.294	3.60	0.49	14.18	-110.3
Area 2		10/16/2008	5.0 U	7.6	**160**	5.0 U	**18**	5.0 U	**95**	0.2 U	930	1.3 U	1.6 U	6.2 J	150 J	0.10 U	8.0	0.03 U	10 U	10.48	0.539	5.80	2.01	14.00	18.0
Area 2		10/15/2009	0.5 U	8.6	**16**	0.5 U	**8.4**	0.5 U	**148**	2.0	**3,270**	1.3 U	1.6 U	2,000	240	0.13 U	7.0 U	0.03 U	10 U	8.80	0.227	5.00	1.49	13.30	-46.9
Area 2		10/7/2010	0.25 J	**94**	**300**	0.62	**52**	**29**	**133**	**5.5**	**3,910**	1.2 U	3.5	29,000	120	0.13 U	4.8 J	0.03 U	10 U	6.67	0.345	9.09	2.47	14.76	-35.2
Area 2		10/5/2011	0.5 U	7.5	**7.3**	0.5 U	1.8	**4.6**	**73**	0.19 U	559	1.2 U	1.5 U	29,000	130	0.13 U	6.0	0.03 U	3.1 J	10.63	0.307	< 0.01	0.49	12.74	6.3
Area 2		10/10/2012	0.5 U	6.3	**8.7**	0.5 U	1.9	**16**	**66**	0.26	1,320	1.2 U	170	38,000	160	0.096 J	8.0	0.03 U	10 U	10.65	0.556	6.84	1.09	13.84	-18.4
Area 2		10/17/2013	4.0 U	**200**	**190**	4.0 U	**87**	**86**	**32**	**33**	**8,450**	1.2 U	270	51,000	67	0.13 U	8.6	0.03 U	2.5 J	6.55	0.583	28.0	0.69	15.41	-77.3
Area 2		10/30/2014	0.5 U	53	**20**	0.38 J	**15**	**19**	**14**	0.29	114	1.2 U	17	6,700	420	0.13 U	7.5	0.03 U	4.7 J	10.60	1.152	24.3	1.99	13.53	-70.1
Area 2		9/11/2015	1.0 U	40	**11**	1.0 U	**9.3**	**5.5**	**105**	**23**	**2,720**	10 U	10 U	3,450	-	0.068 J	7.0 J	2.0 U	5.3	7.71	1.079	11.6	0.36	14.60	-194.0
Area 2		10/14/2015	1.0 U	43	5.0	1.0 U	3.2	**6.8**	**232**	**75**	**11,300**	10 U	10 U	8,190	337	0.13 J	7.0 J	2.0 U	8.2	6.79	1.208	9.64	1.03	12.80	-68.4
Area 2		2/18/2016	1.0 U	25	0.60 J	1.0 U	0.59 J	**7.3**	**673**	**97**	**15,200**	10 U	10 U	12,500	456	0.10 U	1.2 J	2.0 U	8.1	8.56	0.799	11.2	0.99	6.66	212.9
Area 2		11/10/2016	1.0 U	5.8	1.0 U	1.0 U	0.65 J	**4.1**	**380**	**110**	**31,000**	1.1 U	25 J	20,000	390	0.05 U	2.2	1.0 U	9.8	6.47	1.018	6.66	0.43	11.47	-74.1
Area 2		10/20/2017	1.0 U	2.2	1.0 U	1.0 U	1.0 U	1.6	**260**	**85**	**20,000**	1.1 U	1.0 U	9,100	160	0.06 J	19	1.0 U	5.1	6.45	2.750	5.87	0.38	12.73	-55.0
Area 2		10/30/2018	1.0 U	0.44 J	1.0 U	1.0 U	0.93 J	1.0 U	**310**	**74**	**10,000**	-	-	-	-	-	-	-	-	6.78	2.944	6.82	0.57	13.41	-113.0
Area 2		10/16/2019	1.0 U	26	**9.0**	1.0 U	**12**	**5.8**	**220**	**59**	**7,100**	-	-	-	-	-	-	-	-	5.80	1.600	1.80	0.18	14.00	-46.0
Area 2		05/12/2020	1.0 U	10	**6.9**	1.0 U	4.5	**3.5**	**73**	**47**	**5,600**	1.1 U	2.1	11,000	140	0.10 U	13	0.81 U	4.0	5.92	1.600	5.51	1.11	12.80	28.6
Area 2		5/11/2021	1.0 U	4.2	2.0 U	1.0 U	2.3	**3.2**	**190**	**44**	**5,200**	0.73 J	4.2	16,000	160	0.03 J	4.2	0.81 U	6.7 J	6.48	1.077	18.44	0.69	18.6	-87.3
Area 2		10/13/2021	1.0 U	0.58 J	2.0 U	0.72 J	0.60 J	0.71 J	**210**	**36**	**3,600**	1.9	3.5	20,000	200	0.05 U	2.3	0.81 U	7.3	6.87	2.690	32.4	0.7	19.2	-128
Area 2	G6M-07-01X	10/15/2008	0.5 U	0.5 U	**26**	0.5 U	0.24 J	0.5 U	-	-	-	-	-	-	-	-	-	-	-	7.78	0.591	608	2.22	12.35	53.9
Area 2		10/20/2009	0.5 U	0.5 U	**21**	0.5 U	**15**	0.5 U	-	-	-	-	-	-	-	-	-	-	-	7.44	0.532	283	4.11	27.28	171.9
Area 2		10/7/2010	0.5 U	0.25J	**50**	0.5 U	0.31 J	0.5 U	-	-	-	-	-	-	-	-	-	-	-	7.03	0.414	4.78	3.62	10.05	139.0
Area 2		10/5/2011	0.5 U	0.5 U	**11**	0.5 U	0.5 U	0.5 U	5.0 U	0.1 U	11 J	-	-	-	-	-	-	-	-	7.06	0.285	130	4.43	11.95	72.9
Area 2		10/12/2012	0.5 U	0.5 U	**19**	0.5 U	0.5 U	0.5 U	5.0 U	0.088 J	11 J	-	-	-	-	-	-	-	-	6.92	0.437	30.2	3.56	11.92	59.0
Area 2		10/17/2013	0.5 U	0.5 U	**15**	0.5 U	0.37 J	0.5 U	5.0 U	0.1 U	5.4 J	-	-	-	-	-	-	-	-	6.86	0.450	16.4	4.34	12.71	95.1
Area 2		4/5/2019	1.0 U	1.0 U	**35 J**	1.0 U	1.2	1.0 U	3.5	0.21	95	1.1 U	1.0 U	36	-	1.1	6.6	1.0 U	0.61 J	6.90	0.880	6.90	1.40	12.00	32.0
Area 2		05/13/2020	1.0 U	1.0 U	**27**	1.0 U	0.97 J	1.0 U	3.0 U	0.093 U	19	1.1 U	1.0 U	1.4	35	1.2	7.6	0.83 U	0.47 J	6.12	0.972	3.81	2.30	13.80	101.0
Area 2		10/19/2020	1.0 U	1.0 U	**32 J**	1.0 U	0.71 J	1.0 U	2.1 J	0.12	30	1.1 U	1.0 U	34	31	1.5	3.6	0.81 U	3.3	6.23	0.547	6.92	2.79	13.10	107.0
Area 2		5/12/2021	1.0 U	8.6	**10**	1.0 U	2.1	1.0 U	1.6 J	0.18	61	0.76 U	0.71 U	17	39	0.84	14	0.81 U	3.2	6.50	0.991	50.07	1.40	16.90	64.0
Area 2		11/3/2021	1.0 U	0.71 J	**13**	1.0 U	1.8	1.0 U	1.6 J	0.17	42	0.76 U	0.71 U	13 J	6.4 U	1.0	12	0.81 U	5.3	6.44	1.440	17.40	1.52	8.70	81.1
Area 2	G6M-97-08B	10/18/2001	1.0 U	36	**92**	1.6 J	**6.1**	2.0 U	-	-	-	-	-	-	-	-	1.0	-	-	5.60	0.130	18.0	4.80	14.17	224.0
Area 2		2/26/2002	1.0 U	32	**100**	2.0 U	**5.9**	2.0 U	-	-	-	-	-	-	-	-	-	-	-	5.87	1.157	5.30	5.13	12.77	186.4
Area 2		9/22/2004	1.0 U	41	**220**	2.0 U	**9.3**	2.0 U	5.0 U	1.0 U	26	0.008	0.005 U	1.3	10 U	6.1	12	1.5 J	1.0 U	5.69	1.516	18.3	4.66	12.89	252.8
Area 2		12/16/2004	1.0 U	41	**200**	2.0 U	**7.7**	2.0 U	5.0 U	1.0 U	25	0.13	0.072	0.92	10 U	6.1	12	5.4	5.0 U	5.79	1.633	3.81	8.78	16.41	165.0
Area 2		3/30/2005	2.0 U	16	**95**	4.0 U	3.4 J	4.0 U	5.0 U	1.0 U	21	0.015	0.032	0.54	12	0.80	7.0	2.0 U	0.4 J	5.58	0.999	9.42	8.06	15.56	202.8
Area 2		6/28/2005	1.0 U	36	**140**	1.4	**8.0**	2.0 U	2.0 U	1.0 J	27	0.016	0.041	35	17	1.4	12	1.0 U	7.1	11.30	1.506	8.16	4.94	13.88	173.7
Area 2		9/27/2005	1.0 U	42	**180**	2.0 U	**7.5**	2.0 U	5.0 U	1.0 U	33	0.013 J	0.027	0.39	16	1.3	16	1.0 U	4.4	5.60	1.713	2.82	5.73	13.47	319.2
Area 2		12/12/2005	1.0 U	27	**120**	2.0 U	**5.7**	2.0 U	5.0 U	1.0 U	28	0.040	0.11	26	23	0.05 U	13	1.0 U	0.6 J	5.87	1.110	0.70	4.19	15.76	171.1
Area 2		3/23/2006	1.0 U	44	**240**	2.0 U	**8.8**	2.0 U	5.0 U	0.1 U	46	0.022 J	0.13	12	13	1.3	14	1.0 U	5.0 U	5.85	1.440	3.16	5.13	14.21	181.5
Area 2		6/21/2006	1.0 U	35	**220**	2.0 U	**11**	2.0 U	5.0 U	0.17	1,300	0.019 J	0.086	24	66	0.81	14	1.0	16	5.90	2.015	1.48	2.39	-	141.1
Area 2		9/19/2006	1.0 U	55	**190**	2.0 U	**14**	2.0 U	**130**	**21**	**13,000**	0.078	0.13	18	300	0.2 U	24	2.8	270	5.79	2.287	4.58	1.58	12.47	47.6
Area 3		12/14/2006	1.3	**310**	**190**	2.0 U	**30**	**160**	**220**	**400**	**38,000**	0.025	5.9	26,000	-	-	2.4	2.8	300	6.37	2.155	6.19	0.17	12.57	-160.0
Area 2		3/30/2007	1.0 U	46	**200**	2.0 U	**8.5**	2.0 U	**130**	**170**	**26,000 J**	0.028	0.19	6,000	-	-	126	4.6	620	5.36	3.626	1.13	0.46	12.47	14.8
Area 2		6/14/2007	1.0 U	37	**140**	2.0 U	**5.5**	2.0 U	**100**	**370**	**24,000**	0.025 U	0.021 J	7,900	-	-	120	6.4	760	5.66	3.659	1.00	1.68	9.90	-45.4
Area 2		9/12/2007	1.0 U	43	**170**	2.0 U	**8.4**	**3.0**	**120**	**370**	**18,000**	0.004 J	0.050	8,400	650	0.2 U	1,500	3.2	630	5.66	3.924	5.50	2.72	11.04	-31.4
Area 2		12/14/2007	1.0 U	31 J	**150 J**	2.0 U	**5.7 J**	**4.5 J**	**150**	**280**	**12,000**	0.006 J	0.054	10,000	-	-	92	5.6	520	5.84	3.673	< 0.01	0.75	11.83	-45.3
Area 2		3/12/2008	1.0 U	32	**150**	2.0 U	**6.5**	**6.8**	**160**	**190**	**8,100**	0.008 J	0.15	9,800	-	-	38	2.8	270	5.94	3.091	< 0.01	2.15	12.36	-66.4
Area 3	G6M-03-07X	5/12/2003	1.0 U	34	**1,200**	2.0 U	**7.2**	2.0 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12.74	-
Area 3		9/24/2004	1.0 U	31	**1,700**	2.0 U	**6.3**	2.0 U	5.0 U	1.0 U	20	0.035	0.28	5.7	10 U	4.3 J	12	1.6 J	1.0 U	5.77	0.341	84.6	7.00	16.04	168.3
Area 3		12/16/2004	1.0 U	35	**1,500**	2.0 U	**6.0**	2.0 U	5.0 U	1.0 U	190	0.026	0.080	0.39	10 U	4.2	12	2.9	5.0 U	6.02	0.348	8.46	17.1	14.01	321.7
Area 3		3/30/2005	20 U	**140**	**1,100**	40 U	**91**	40 U	**18**	**18**	**10,000**	0.078	0.21	1.8	76	0.33	8.0	2.0 U	29	6.33	0.671	0.70	1.90	14.14	-54.6
Area 3		6/29/2005	20 U	**940**	**940**	40 U	**78**	40 U	**31**	**39 J**	**15,000 J**	0.060	0.34	3.9	118	0.079	6.4	1.0 U	83	11.97	0.915	5.93	1.12	8.48	-20.1
Area 3		9/29/2005	2.7	**1,000**	**300**	2.3	**44**	1.0 U	**46**	**210 J**	**30,000**	0.068	0.45	660	307	0.05 U	3.2	12	290	6.20	1.266	7.68	2.70	14.74	-62.0
Area 3		12/12/2005	10 U	**710**	**92**	20 U	**22**	20 U	**96**	**190**	**46,600**	0.078	0.13	13,000	320	0.05 U	2.0 U	6.2	220	6.50	1.038	3.60	0.22	14.16	-82.1
Area 3		3/24/2006	2.0	**430**	**110**	2.0 U	**23**	**270**	**130**	**280**	**48,000**	0.010 J	2.0	22,000	590	0.2 U	1.0	8.6	260	6.87	1.390	10.1	0.17	11.35	-130.5
Area 3		6/21/2006	1.0 U	**180**	**9.5**	2.0 U	3.6	**310**	**140**	**460**	**59,000**	0.073	21	21,000	570	0.2 U	1.0 U	4.8	280	5.13	2.258	31.4	0.70	13.04	-170.4
Area 3		3/29/2007	1.0 U	35	2.0 U	2.0 U	2.0 U	**360**	**190**	**420**	**20,000 J**	0.080	5.1	15,000	-	-	1.0 U	4.4	130	6.32	1.787	39.6	2.46	13.39	-69.3
Area 3		6/14/2007	1.0 U	**190**	**37**	2.0 U	**8.1**	**200**	**220**	**490**	**37,000**	0.025 U	2.3	25,000	-	-	11	2.4	310	6.40	2.386	9.70	1.31	13.63	-159.0

Appendix D
Historical Groundwater Analytical Results
2021 Annual Operations, Maintenance, and Monitoring Report
Area of Contamination 50, Former Fort Devens Army Installation
Devens, Massachusetts

		Analytical Method	VOCs						Dissolved Metals			Dissolved Gases			General Chemistry					Field Parameters					
		Analyte	1,1-DCE	cis-1,2-DCE	PCE	trans-1,2-DCE	TCE	VC	Arsenic	Iron	Manganese	Ethane	Ethene	Methane	Alkalinity	Nitrate/ Nitrite	Sulfate	Sulfide	TOC	pH	SpC	Turbidity	DO	Temp	ORP
		Unit	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(SU)	(mS/cm)	(NTU)	(mg/L)	°C	(mV)
		Cleanup Level[1]	7	70	5		5	2	10	3.129	1,460					10,000									
Area	Well ID	Date Sampled																							
Area 3		9/13/2007	1.1	**290**	**27**	2.2	**13**	**140**	**210**	**500**	**29,000**	0.008 J	12	26,000	560	0.2 U	420	4.8	72	6.26	2.743	118	3.08	14.45	-174.9
Area 3		12/14/2007	1.0 U	9.8	2.6	3.0	2.0 U	**120**	**270**	**320**	**12,000**	0.010 J	34	25,000	-	-	10 U	4.0	140	6.51	2.138	70.9	0.99	13.23	-123.7
Area 3		3/14/2008	1.0 U	2.3	2.0 U	2.0 U	2.0 U	**4.3**	**210**	**230**	**11,000**	0.11	26	30,000	-	-	5.0 U	4.0	130	6.41	1.897	236	1.06	14.90	-85.5
Area 3		10/7/2008	5.0 U	5.0 U	5.0 U	21	2.2 J	5.0 U	**246**	**348**	**5,370**	6.3 U	12	14,000	190	190	24	0.03 U	64	6.24	1.742	16.0	0.10	14.09	-44.4
Area 3		1/22/2009	1.7 U	1.7 J	1.4 U	15	2.3 U	**3.6**	**227**	**338 J**	**5,000**	1.2 U	10	16,000	20 U	0.13 U	37	0.03 U	110 J	6.60	1.743	30.0	1.20	14.38	-74.9
Area 3		5/6/2009	0.5 U	1.8	0.5 U	20	0.5 U	**2.6**	**351**	**361**	**5,500**	1.2 U	9.9	28,000	720 J	0.025 J	32	0.03 U	66	5.88	1.735	20.3	0.21	14.21	-117.9
Area 3		10/15/2009	0.5 U	2.3	0.27 J	19	0.5 U	**2.2**	**318**	**251**	**4,870**	1.1 U	7.3	16,000	550	0.13 U	30	0.03 U	44	6.25	1.362	5.60	0.88	13.40	-100.4
Area 3		4/21/2010	0.5 U	0.88	0.5 U	5.3	0.5 U	1.3	**339**	**176 J**	**2,000**	1.3 U	6.3	27,000	320	0.13 U	0.11 J	0.03 U	46	6.46	1.086	8.90	0.69	16.20	-106.3
Area 3		10/5/2010	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**346**	**164**	**4,650**	1.2 U	14	48,000	35	0.13 U	0.27 J	0.03 U	16	6.35	1.276	4.56	0.11	-	-106.1
Area 3		6/8/2011	0.5 U	1.7	0.5 U	7.8	0.5 U	**2.1**	**381**	**158**	**3,540**	1.2 U	13	72,000	460	0.13 U	5.0 U	0.10	41	6.25	0.841	9.82	0.08	15.28	-87.0
Area 3		10/5/2011	0.5 U	0.86	0.5 U	5.6	0.5 U	1.4	**375**	**133**	**2,500**	1.2 U	1.5 U	48,000	320	0.13 U	5.0 U	0.049	39	6.40	0.764	6.00	0.02	9.73	-42.0
Area 3		5/9/2012	0.5 U	1.2	0.5 U	4.4	0.5 U	0.92	**388**	**131**	**3,090**	1.2 U	200	74,000	320	0.13 U	0.35 J	0.063	31	6.52	1.046	2.43	0.14	12.88	-111.7
Area 3		10/11/2012	0.5 U	0.74	0.5 U	3.4	0.5 U	1.5	**365**	**116**	**2,900**	1.2 U	800	97,000	270	0.027J	5.0 U	0.040	26	6.50	0.962	4.81	0.34	15.32	-96.2
Area 3		5/21/2013	0.5 U	1.0	0.5 U	3.4	0.5 U	0.77	**413**	**114**	**2,150**	1.2 U	1.5 U	22,000	180 J	0.13 U	5.0 U	0.03 U	23	6.01	0.923	1.28	0.17	14.79	-64.9
Area 3		10/16/2013	0.5 U	0.86	0.5 U	2.9	0.5 U	1.3	**434**	**120**	**2,340**	1.2 U	33	31,000	340	0.13 U	5.0 U	0.065	26	6.53	0.901	1.01	0.21	9.71	-102.4
Area 3		6/11/2014	0.5 U	0.72	0.40 J	3.0	0.5 U	**2.5**	**422**	**105 J**	**1,670**	1.3 U	3.5 J	10,000 J	260 J	0.13 U	0.52 U	0.03 U	45	6.32	0.787	2.54	0.28	11.63	-48.4
Area 3		10/30/2014	0.5 U	0.69	0.5 U	2.8	0.5 U	1.1	**355**	**79**	1,400	1.2 U	1.8	54,000	180	0.13 U	0.38 J	0.03 U	22	6.49	0.532	5.63	0.24	12.93	-120.7
Area 3		6/18/2015	0.5 U	0.62 J	0.5 U	2.1	0.5 U	0.77 J	**97**	**107**	**1,810**	5.0 U	5.7 J	12,400	262	0.15 U	0.5 U	1.0 U	27	6.40	0.626	15.1	0.16	16.20	-94.9
Area 3		9/14/2015	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	**436**	**103**	**1,700**	10 U	6.0 J	11,900	-	0.086 J	0.94 J	2.0 U	25	6.45	0.545	5.16	0.56	14.23	-112.8
Area 3		10/14/2015	1.0 U	0.59 J	1.0 U	1.8	1.0 U	0.73 J	**441**	**102**	**1,660**	10 U	6.5 J	16,600	161	0.085 J	2.3 J	2.0 U	243	6.61	0.754	5.37	0.24	12.30	-76.2
Area 3		2/10/2016	1.0 U	1.0 U	1.0 U	1.8	1.0 U	0.78 J	**461**	**97**	1,360	10 U	5.0 J	12,800	194	0.18	10 U	2.0 U	25	6.49	0.704	16.1	0.84	11.20	-68.8
Area 3		6/16/2016	1.0 U	0.73 J	1.0 U	1.5	0.61 J	0.73 J	**440**	**90**	**1,600**	1.1 U	1.0 U	28,000	200	0.05 U	0.8 U	1.0 U	26	6.46	0.759	9.00	0.29	17.00	-71.9
Area 3		11/10/2016	1.0 U	0.44 J	1.0 U	1.4	1.0 U	0.63 J	**420**	**81**	1,400	1.1 U	16	23,000	170	0.05 U	1.0 U	1.0 U	22	5.50	0.480	17.4	0.29	14.89	-86.0
Area 3		5/16/2017	1.0 U	0.51 J	1.0 U	0.76 J	1.0 U	1.0 U	**370**	**84**	**1,600**	1.2	7.2	14,000	200	0.14	1.0 U	1.0 U	19	6.59	0.589	11.0	0.35	17.46	-91.3
Area 3		10/23/2017	1.0 U	0.55 J	1.0 U	0.97 J	1.0 U	0.72 J	**450**	**94**	**1,800**	2.7	14	21,000	170	0.13	1.0 U	1.0 U	24	6.32	0.657	5.78	0.07	13.52	-75.1
Area 3		10/29/2018	1.0 U	0.55 J	1.0 U	0.66 J	1.0 U	0.74 J	**420**	**99**	**2,100**	2.8	19	37,000	170	0.20	5.0 U	1.0 U	18	6.54	0.795	3.12	0.27	13.22	-78.0
Area 3		10/18/2019	1.0 U	0.70 J	1.0 U	1.0 U	1.0 U	0.55 J	**430**	**120**	**3,100**	3.0	17	29,000	170	0.075 J	1.0 U	0.86 U	15	6.30	0.930	3.70	0.12	14.00	-84.0
Area 3		10/21/2020	1.0 U	0.58 J	1.0 U	1.0 U	1.0 U	1.0 U	**410**	**110**	**2,900**	4.3	12	34,000	150	0.057 J	1.0 U	0.89 U	14	6.07	0.816	5.61	0.42	17.40	-79.4
Area 3		5/12/2021	1.0 U	0.95 J	2.0 U	1.0 U	1.0 U	1.0 U	**480**	**100**	**2,400**	9.4	7.3	34,000	210	0.05 U	1.0 U	0.81 U	18	6.47	0.721	29.36	0.49	14.40	-99.2
Area 3		10/18/2021	1.0 U	0.50 J	2.0 U	1.0 U	1.0 U	1.0 U	**580**	**98**	**2,400**	9.4	0.71 U	37,000	190	0.026 J	1.0 U	0.81 U	19	6.35	0.955	2.34	0.51	15.00	-105.0
Area 3	G6M-04-02X	9/23/2004	1.0 U	3.8	**1,900**	2.0 U	2.0 U	2.0 U	5.0 U	1.0 U	86	-	-	-	-	-	-	-	-	6.59	0.704	9.52	7.25	13.09	152.4
Area 3		9/28/2005	5.0 U	5.0 U	**1,800**	5.0 U	5.0 U	5.0 U	5.0 U	1.0 U	15 U	-	-	-	-	-	-	-	-	5.21	0.607	12.0	6.54	18.36	294.0
Area 3		9/20/2006	1.0 U	2.2	**1,100**	2.0 U	**170**	2.0 U	5.0 U	0.1 U	24	-	-	-	-	-	-	-	-	5.22	0.696	10.6	2.88	17.15	-101.5
Area 3		9/14/2007	1.0 U	**290**	**710**	21	**98**	2.0 U	**48**	**16**	**13,000**	-	-	-	-	-	-	-	-	6.52	1.356	2.30	2.91	15.30	-31.3
Area 3		10/16/2008	5.0 U	**290**	**320**	5.0 U	**47**	5.0 U	**135**	**57**	**6,530**	-	-	-	-	-	-	-	-	6.32	1.302	3.80	0.74	15.75	-143.6
Area 3		10/15/2009	8.0 U	15	**400**	8.0U	**110**	8.0 U	**78**	**21**	**3,580**	-	-	-	-	-	-	-	-	6.19	1.011	4.00	0.90	14.12	-25.0
Area 3		10/6/2010	20 U	27	**380**	20 U	**54**	20 U	**182**	**40**	**5,530**	-	-	-	-	-	-	-	-	6.25	1.071	3.53	0.51	13.00	-50.1
Area 3		6/8/2011	-	-	-	-	-	-	**317**	**43**	**4,540**	-	-	-	-	-	-	-	-	6.44	0.678	1.90	0.76	13.61	-95.9
Area 3		10/5/2011	13 U	13 U	**630**	13 U	**93**	13 U	**172**	**18**	**4,370**	-	-	-	-	-	-	-	-	6.24	0.669	6.60	0.41	15.18	1.0
Area 3		5/8/2012	-	-	-	-	-	-	**225**	**16**	**3,980**	-	-	-	-	-	-	-	-	6.36	0.475	1.12	0.20	14.93	-25.6
Area 3		10/12/2012	5.0 U	5.0 U	**160**	5.0 U	**30**	5.0 U	**228**	**17**	**4,890**	-	-	-	-	-	-	-	-	6.33	0.534	2.02	0.44	15.92	-33.5
Area 3		5/21/2013	-	-	-	-	-	-	**143**	**7.3**	**5,400**	-	-	-	-	-	-	-	-	5.98	0.699	0.74	0.36	13.55	18.3
Area 3		10/17/2013	4.0 U	5.7	**140**	4.0 U	**31**	4.0 U	**231**	**21**	**6,800**	-	-	-	-	-	-	-	-	5.70	0.485	3.75	0.37	15.80	-12.3
Area 3		6/11/2014	-	-	-	-	-	-	**137**	13.9 U	**5,900**	-	-	-	-	-	-	-	-	6.15	0.795	2.48	0.62	18.26	4.5
Area 3		10/30/2014	0.5 U	33	**480**	0.5 U	**70**	**2.7 J**	**160**	**41**	**5,980**	-	-	-	-	-	-	-	-	6.34	0.628	1.86	0.28	19.03	-63.1
Area 3		6/18/2015	0.5 U	16	**62**	0.5 U	**20**	1.8	**362**	**82**	**7,220**	-	-	-	-	-	-	-	-	6.30	0.500	10.9	0.32	13.09	-101.0
Area 3		9/11/2015	1.0 U	8.8	**16**	1.0 U	**7.4**	1.8	**343**	**91**	**6,920**	10 U	10 U	7,390	-	0.067 J	0.87 J	2.0 U	3.3	6.59	0.663	2.50	0.39	14.02	-147.8
Area 3		10/16/2015	1.0 U	1.0 U	**105**	1.0 U	**31**	1.6	**237**	**66**	**7,570**	-	-	-	-	-	-	-	-	6.32	0.818	2.43	0.23	12.79	-56.1
Area 3		2/10/2016	2.0 U	12	**333**	2.0 U	**60 J**	1.5 J	**118**	**28**	**8,730**	10 U	10 U	4,410 J	118	0.11	10	2.0 U	2.1	6.74	0.536	10.8	0.87	10.04	-112.9
Area 3		6/13/2016	1.0 U	23	**120**	1.0 U	**48**	**3.4**	**200**	**44**	**8,000**	-	-	-	-	-	-	-	-	6.43	0.875	1.59	0.34	13.40	-56.2
Area 3		11/10/2016	1.0 U	58	**160**	0.37 J	**60**	**8.4**	**180**	**48**	**9,100**	-	-	-	-	-	-	-	-	6.62	0.629	4.32	0.51	10.30	-67.3
Area 3		5/16/2017	1.0 U	22 J	**280**	0.39 J	**120**	**2.3 J**	**42**	**15**	**11,000**	1.1 U	2.2	4,800	130	0.065 J	10	1.0 U	2.5 J	6.00	0.956	3.90	2.09	13.17	29.5
Area 3		10/20/2017	2.0 U	13	**97**	2.0 U	**26**	1.8 J	**260**	**66**	**10,000**	1.1 U	1.0 U	16,000	160	0.08 J	6.2	1.0 U	3.3	6.36	0.910	4.26	0.28	12.51	-66.9
Area 3		4/3/2018	2.0 U	19	**300**	2.0 U	**74**	1.7 J	**99**	**30**	**9,800**	1.1 U	3.4	23,000	120	0.10	11	1.0 U	2.5	6.34	1.139	1.90	0.96	10.93	-22.3
Area 3		10/30/2018	2.0 U	27	**200**	2.0 U	**64**	**3.0**	**81**	**45**	**14,000**	1.1 U	4.1	14,000 J	140	0.13	9.1	1.0 U	8.4	6.01	1.317	0.58	0.90	12.12	-22.7
Area 3		4/3/2019	1.0 U	29	**160**	0.61 J	**130**	**3.5**	**120**	**47**	**9,800**	1.1 U	7.9	16,000	-	0.17 U	7.1	1.0 U	3.1	6.20	1.500	0.49	1.10	11.00	-76.0
Area 3		10/18/2019	0.90 J	**260**	**5.4**	2.0 U	**7.0**	1.7 J	**230 J**	**81**	**13,000**	2.9	3.6	11,000	150	0.04 J	1.0 U	0.88 U	170	5.40	1.600	1,000	0.08	13.00	-52.0
Area 3		05/12/2020	0.88 J	**290 J**	1.7	0.92 J	2.3	**28**	**93**	**52**	**6,900**	1.3	31	18,000	130	0.10 U	2.0 J	0.88 U	100	5.54	1.380	344	1.19	11.90	31.6
Area 3		10/20/2020	1.0 U	**120 J**	**5.7 J**	1.0 U	**6.1 J**	**5.1 J**	**82**	**44**	**8,200**	3.7	8.6	2,600	100	0.067 J	10 U	4.0	220	6.09	1.030	313	0.10	14.10	-63.1
Area 3		6/17/2021	0.63 J	**170**	4.2	0.94 J	3.7	**32**	**50**	**28**	**7,900**	5.0 U	33	20,000	120	0.12 U	1.1	1.0 U	40	5.33	1.356	135	0.11	15.90	-45.8
Area 3		10/18/2021	1.0 U	**130**	**21**	0.84 J	**13**	**18**	**61**	**22**	**6,500**	0.56 J	37	19,000	120	0.05 U	3.4	0.81 U	17	5.87	2.080	12	0.55	11.60	-55.5
Area 3	G6M-04-04X	9/24/2004	1.0 U	24	**2,300**	2.0 U	**7.8**	2.0 U	5.0 U	1.0 U	560	0.037	0.12	13	10 U	5.5	20	2.0 U	1.0 U	5.75	1.637	169	5.05	12.51	197.3
Area 3		9/29/2005	2.5 U	15	**1,600**	2.5 U	**5.4**	2.5 U	5.0 U	1.0 U	430	0.018 J	0.060	0.44	5.3	1.4	23	1.0 U	0.5 J	5.34	1.666	7.39	5.66	13.87	295.9
Area 3		9/19/2006	1.0 U	**260**	**1,600**	2.0 U	**45**	2.0 U	**110**	**84**	**31,000**	0.12	0.095	33	190	0.2 U	10	1.6	120	6.22	1.765	7.64	0.32	13.53	-71.5
Area 3		9/13/2007	1.2	**210**	**600**	2.0	**130**	**300**	**280**	**130**	**25,000**	0.005 J	7.0	18,000	270	0.2 U	890	1.2	63	6.57	2.398	3.50	3.20	13.04	-186.6
Area 3		10/16/2008	2.5 U	48	**6.0**	2.8	**8.1**	**150 J**	**523**	**248**	**19,300**	1.3 U	62	18,000	520	0.10 U	7.0	0.03 U	35	6.40	2.239	4.00	2.39	13.16	-106.2
Area 3		10/15/2009	0.5 U	4.8	0.5 U	5.2	0.5 U	**6.9**	**615**	**239**	**16,800**	1.3 U	61	38,000 J	520	0.13 U	23 J	0.03 U	32	6.47	1.744	5.00	0.86	14.24	-123.0
Area 3		10/5/2010	0.5 U	2.8	0.5 U	2.6	0.5 U	**3.2**	**529**	**155**	**16,900**	1.2 U	210	52,000 J	81 J	0.13 U	5.0 U	0.03 U	15	6.35	2.133	3.10	0.40	13.59	-112.0
Area 3		10/5/2011	0.5 U	1.1	0.5 U	4.1	0.5 U	**2.7**	**615**	**145**	**16,400**	1.2 U	160	31,000 J	350 J	0.13 U	5.0 U	0.049	17	6.61	1.042	5.00	0.10	12.99	-88.0
Area 3		10/11/2012	0.5 U	0.80	0.5 U	3.7	0.5 U	**2.6**	**590**	**133**	**15,700**	1.3 U	460	51,000	220	0.13 U	5.0 U	0.052	13	6.66	1.693	1.53	0.39	14.02	-108.6

Appendix D
Historical Groundwater Analytical Results
2021 Annual Operations, Maintenance, and Monitoring Report
Area of Contamination 50, Former Fort Devens Army Installation
Devens, Massachusetts

		Analytical Method	VOCs						Dissolved Metals			Dissolved Gases			General Chemistry					Field Parameters					
		Analyte	1,1-DCE	cis-1,2-DCE	PCE	trans-1,2-DCE	TCE	VC	Arsenic	Iron	Manganese	Ethane	Ethene	Methane	Alkalinity	Nitrate/ Nitrite	Sulfate	Sulfide	TOC	pH	SpC	Turbidity	DO	Temp	ORP
		Unit	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(SU)	(mS/cm)	(NTU)	(mg/L)	°C	(mV)
		Cleanup Level[1]	7	70	5		5	2	10	3.129	1,460					10,000									
Area	Well ID	Date Sampled																							
Area 3		10/16/2013	0.5 U	1.8	0.5 U	3.1	0.5 U	**3.0**	**601**	**114**	**11,000**	3.5	420	44,000	240	0.13 U	0.94 J	0.049	11	6.57	1.345	4.75	0.24	10.96	-109.9
Area 3		10/30/2014	0.5 U	0.5 U	0.5 U	1.7	0.5 U	0.39 J	**453**	**113**	**8,520**	1.2 U	85	43,000	180	0.098 J	0.18 J	0.03 U	9.0 J	6.59	1.537	6.54	0.42	11.41	-145.8
Area 3		9/14/2015	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.91 J	**486**	**11.9 J**	**10,700 J**	10 U	33	9,170	-	0.068 J	3.4 J	2.0 U	7.5	6.70	1.264	3.25	0.28	14.95	-180.4
Area 3		10/16/2015	2.8	1.0 U	0.76 J	1.0 U	1.0 U	1.0 U	**505**	**115**	**10,000**	10 U	61	20,000	167	0.11 U	1.6 J	2.0 U	8.5	5.99	1.727	3.13	0.57	10.70	-114.6
Area 3		2/19/2016	1.0 U	0.50 J	1.0 U	2.8	1.0 U	1.0	**550**	**114**	**9,760**	10 U	65	13,900	278	0.10	1.3 J	2.0 U	7.3	7.68	1.173	3.97	1.29	11.53	-38.7
Area 3		6/16/2016	1.0 U	0.65 J	1.0 U	1.0 U	1.0 U	1.1	**580**	**120**	**10,000**	9.2	86	31,000	160	0.05 U	30	1.0 U	8.6	6.51	1.407	4.20	1.46	16.19	-108.1
Area 3		11/8/2016	1.0 U	0.43 J	1.0 U	1.2	1.0 U	0.57 J	**530**	**120**	**9,700**	3.0	38	20,000	180	0.05 U	1.0 U	4.4	7.3	6.01	1.402	3.49	0.32	13.83	-106.9
Area 3		10/20/2017	1.0 U	0.51 J	1.0 U	1.4	1.0 U	1.0 U	**600**	**170**	**17,000**	3.8	39	19,000	250	0.11	0.72 J	1.0 U	11	6.64	0.940	4.39	0.24	12.69	-111.1
Area 3		10/26/2018	1.0 U	0.83 J	1.0 U	0.37 J	1.0 U	0.60 J	**460**	**110**	**21,000**	-	-	-	-	-	-	-	-	6.44	2.529	9.98	0.21	13.00	-91.7
Area 3		10/10/2019	1.0 U	0.93 J	1.0 U	1.0 U	1.0 U	0.55 J	3.0 U	50 U	61	-	-	-	-	-	-	-	-	6.40	3.000	2.30	0.34	13.00	-88.0
Area 3		10/21/2020	1.0 U	0.64 J	1.0 U	0.39 J	1.0 U	1.0 U	**510**	**130**	**16,000**	-	-	-	-	-	-	-	-	6.23	2.460	3.79	0.15	15.10	-56.9
Area 3		10/18/2021	1.0 U	0.68 J	2.0 U	1.0 U	1.0 U	1.0 U	**470**	**88**	**19,000**	-	-	-	-	-	-	-	-	6.48	2.220	29.30	0.01	15.50	-102.0
Area 3	G6M-13-03X	1/30/2014	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	-	-	-	-	-	-	-	-	-	-	-	5.58	0.248	1.11	0.69	10.87	205.0
Area 3		10/30/2014	0.5 U	0.5 U	0.50 J	0.5 U	0.5 U	0.5 U	2.5 U	0.029 J	407	-	-	-	-	-	-	-	-	6.39	0.192	15.3	1.65	6.67	183.6
Area 3		10/16/2015	1.0 U	1.0 U	0.57 J	1.0 U	1.0 U	1.0 U	4.0 U	100 U	362	-	-	-	-	-	-	-	-	5.53	2.539	36.6	1.58	11.90	157.6
Area 3		11/10/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.2 J	0.45	420	-	-	-	-	-	-	-	-	4.15	1.540	31.6	0.43	12.48	40.0
Area 3		10/18/2017	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U	0.075 U	550	-	-	-	-	-	-	-	-	5.61	2.250	4.69	0.58	11.89	170.1
Area 3		10/30/2018	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	--	--	-	-	-	-	-	-	-	-	5.01	2.618	7.29	0.81	12.06	-5.1
Area 3		10/16/2020	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U	0.05 U	430	-	-	-	-	-	-	-	-	5.33	1.820	3.11	0.42	13.70	172.0
Area 4	G6M-02-03X	2/26/2002	1.0 U	2.0 U	**210**	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	11.61	1.154	18.1	2.21	18.88	11.0
Area 4		9/23/2004	1.0 U	2.0 U	**48**	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	4.95	1.374	3.80	1.17	17.60	632.1
Area 4		9/29/2005	1.0 U	2.0 U	**12**	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	5.70	1.138	10.7	2.90	17.62	204.9
Area 4		9/18/2006	1.0 U	2.0 U	**10**	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	5.20	0.993	4.32	0.35	14.39	219.4
Area 4		9/14/2015	1.0 U	1.0 U	0.82 J	1.0 U	1.0 U	1.0 U	4.0 U	0.1 U	79	10 U	10 U	284	-	1.3	9.7 J	2.0 U	1.1	5.67	0.722	3.00	5.09	14.06	93.2
Area 4		6/16/2016	-	-	-	-	-	-	3.0 U	0.05 U	310	-	-	-	-	-	-	-	-	4.87	1.658	19.9	0.45	16.74	139.6
Area 4		11/8/2016	-	-	-	-	-	-	3.0 U	0.029 J	99	-	-	-	-	-	-	-	-	7.58	0.960	3.88	1.03	11.73	-53.7
Area 4		10/24/2018	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U	0.18	320	1.1 U	1.0 U	430	-	-	-	-	0.5 U	5.72	1.931	50.9	5.81	13.23	37.1
Area 4	G6M-02-04X	2/26/2002	1.0 U	1.3 J	**470**	2.0 U	0.88 J	2.0 U	-	-	-	-	-	-	-	-	-	-	-	6.47	0.260	24.0	3.40	17.99	189.5
Area 4		9/23/2004	1.0 U	2.9	**170**	2.0 U	2.0 U	2.0 U	5.0 U	1.0 U	15 U	-	-	-	-	-	-	-	-	6.29	0.453	8.48	3.03	19.59	175.5
Area 4		9/28/2005	1.0 U	6.2	**150**	2.0 U	2.0 U	2.0 U	5.0 U	1.0 U	15 U	-	-	-	-	-	-	-	-	5.61	0.502	12.6	2.75	17.26	302.3
Area 4		9/20/2006	1.0 U	2.0 U	**48**	2.0 U	2.0 U	2.0 U	5.0 U	0.1 U	15 U	-	-	-	-	-	-	-	-	5.84	0.467	8.45	4.57	14.49	189.0
Area 4		9/13/2007	1.0 U	2.0 U	**21**	2.0 U	4.2	2.0 U	6.0 U	0.1 U	15	-	-	-	-	-	-	-	-	6.39	0.927	4.80	3.13	14.85	93.0
Area 4		10/16/2008	2.5 U	**150**	**9.0**	2.5 U	2.5 U	2.5 U	**78**	**8.6**	**7,370**	-	-	-	-	-	-	-	-	6.91	1.126	4.00	1.05	12.08	-80.0
Area 4		10/15/2009	5.0 U	**120**	5.0 U	5.0 U	**17**	**10**	**309**	**82**	**10,900**	-	-	-	-	-	-	-	-	6.55	0.766	2.18	1.52	15.60	-139.8
Area 4		10/4/2010	0.5 U	2.1	**5.3**	0.5 U	2.6	0.5 U	**101**	**20**	1,240	-	-	-	-	-	-	-	-	6.48	0.975	2.80	0.98	14.68	-86.9
Area 4		6/9/2011	-	-	-	-	-	-	**246**	**28**	**3,180**	-	-	-	-	-	-	-	-	6.67	0.856	< 0.01	0.28	13.32	-88.3
Area 4		10/6/2011	0.5 U	0.67	0.69	0.5 U	0.80	0.5 U	**292**	**36**	**2,480**	-	-	-	-	-	-	-	-	6.84	0.601	3.71	0.26	12.68	-112.5
Area 4		5/9/2012	-	-	-	-	-	-	**451**	**43**	**2,510**	-	-	-	-	-	-	-	-	6.94	0.487	2.90	0.52	13.70	-114.8
Area 4		10/9/2012	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**374**	**30**	**1,860**	-	-	-	-	-	-	-	-	6.87	0.591	< 0.01	0.43	13.40	-129.3
Area 4		5/21/2013	-	-	-	-	-	-	**313**	**28**	**1,890**	-	-	-	-	-	-	-	-	6.88	0.745	2.26	0.30	13.62	-110.5
Area 4		10/16/2013	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**370**	**24**	1,390	-	-	-	-	-	-	-	-	6.92	0.522	1.32	0.38	13.21	-124.4
Area 4		6/11/2014	-	-	-	-	-	-	**175**	**14**	997	-	-	-	-	-	-	-	-	6.60	0.956	3.35	0.59	13.12	-10.8
Area 4		11/3/2014	0.5 U	0.5 U	0.5 U	0.5 U	0.24 J	0.5 U	**350**	**16**	971	-	-	-	-	-	-	-	-	7.08	0.550	1.38	1.42	14.70	-111.1
Area 4		6/26/2015	0.5 U	0.91 J	0.60 J	0.5 U	0.52 J	0.5 U	**157**	**10**	1,060	-	-	-	-	-	-	-	-	7.39	1.238	1.55	0.71	14.70	-55.4
Area 4		9/14/2015	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**408**	**20**	995	10 U	10 U	4,350	-	0.057 U	9.6 J	2.0 U	1.6	7.01	0.400	1.30	0.40	14.56	-152.4
Area 4		10/16/2015	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**320**	**15**	1,000	-	-	-	-	-	-	-	-	6.78	0.665	0.86	0.43	13.02	-97.3
Area 4		2/12/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**353**	**22**	1,370	10 U	10 U	964	42	0.12	8.0 J	2.0 U	1.1	7.08	0.711	1.94	0.79	11.26	-79.7
Area 4		6/15/2016	1.0 U	1.0 U	1.0 U	1.0 U	0.59 J	1.0 U	**470**	**27**	1,400	-	-	-	250	0.05 U	0.8 U	1.0 U	4.4	6.88	1.031	2.84	0.30	16.74	-106.2
Area 4		11/8/2016	1.0 U	1.2	1.0 U	1.0 U	1.0 U	1.0 U	**470**	**21**	1,100	-	-	-	-	-	-	-	-	7.00	0.268	2.57	0.89	13.15	-153.6
Area 4		10/16/2017	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**440**	**22**	1,300	-	-	-	-	-	-	-	-	7.07	0.626	4.31	0.42	12.63	-119.3
Area 4		10/26/2018	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**470**	**22**	1,400	5.1	1.0 U	6,500	-	-	-	-	-	7.12	0.741	9.32	0.25	13.47	-141.7
Area 4		10/28/2019	-	-	-	-	-	-	**520**	**53**	**2,600**	-	-	-	-	-	-	-	-	7.00	0.890	4.60	0.34	12.00	-130.0
Area 4		12/20/2019	1.0 U	1.4	1.0 U	1.0 U	0.85 J	1.0 U	-	-	-	-	-	-	-	-	-	-	-	7.21	0.391	2.80	2.93	6.35	-181.3
Area 4		10/15/2020	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**430**	**63**	**3,400**	-	-	-	-	-	-	-	-	6.91	0.731	3.10	0.46	13.70	-157.0
Area 4		10/21/2021	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	**400**	**37**	**2,000**	-	-	-	-	-	-	-	-	7.04	0.727	47.00	0.68	15.00	-143.0
Area 4	G6M-02-13X	8/2/2002	1.0 U	2.0 U	**4,600**	2.0 U	4.0	2.0 U	5.0 U	-	-	-	-	-	-	-	-	-	-	6.17	0.665	7.62	0.54	13.98	141.0
Area 4		9/23/2004	1.0 U	16	**5,000**	2.0 U	**13**	2.0 U	5.0 U	1.0 U	1,200	0.27	0.15	57	31	2.3	17	1.8 J	1.0 U	6.37	0.618	2.14	0.34	16.73	170.8
Area 4		12/13/2004	1.0 U	21	**4,600**	2.0 U	**14**	2.0 U	5.0 U	1.0 U	1,300	0.27	0.11	88	34	2.5	16 J	2.0 U	5.0 U	5.79	0.518	2.63	0.89	18.30	274.8
Area 4		3/30/2005	50 U	**210**	**2,100**	100 U	**64 J**	100 U	**36**	**4.2**	**4,000**	0.16	0.11	38	60	0.23	13	2.0 U	8.1	5.97	0.735	2.91	0.89	15.02	-22.6
Area 4		8/11/2005	2.0 U	**460**	**2,300**	5.9	**190**	2.0 U	**150**	**34 J**	**12,000 J**	0.026	0.045	46	230	0.05 U	2.3	1.0 U	66	5.82	0.897	5.60	0.74	14.76	-68.8
Area 4		9/29/2005	10 U	**470**	**3,700**	10 U	**120**	10 U	**74**	**22**	**6,800**	0.16	0.12	420	110	0.05 U	8.9	2.4	37	6.41	0.710	6.99	1.26	15.48	-89.1
Area 4		12/14/2005	2.0	**850**	**210**	2.0 U	**50**	2.0 U	**477**	**200 J**	**36,200**	0.057	0.087	11,000	420	0.083	2.0 U	8.2	290	6.60	1.389	0.60	0.11	15.43	-134.4
Area 4		3/22/2006	1.0 U	**640**	**660**	2.0 U	**37 J**	2.0 U	**320**	**170**	**29,000**	0.025 U	0.009 J	21,000	480	0.2 U	8.1	3.0	280	6.67	1.379	2.37	0.90	14.28	-214.4
Area 4		6/22/2006	1.0 U	**440**	**160**	2.0 U	**8.8**	**280**	**750**	**420**	**30,000**	0.025 J	0.51	25,000	480	0.2 U	1.2	20	140	6.54	2.175	16.1	0.28	14.68	-138.7
Area 4		9/18/2006	1.0 U	**160**	**550**	2.0 U	**52**	**280**	**420**	**160**	**9,900**	0.15	1.1	24,000	140	0.2 U	8.1	2.8	52	6.12	1.190	6.90	0.36	13.37	-119.3
Area 4		12/14/2006	1.0 U	**190**	**460**	2.0 U	**20**	**220**	**460**	**260**	**12,000**	0.025	0.35	23,000	-	-	4.3	3.6	140	6.49	1.748	8.30	0.19	10.99	-73.7
Area 4		3/27/2007	1.0 U	**120**	**460**	2.0 U	**39**	**170**	**400**	**170**	**8,400 J**	0.031	3.7	27,000	-	-	9.7	1.6	37	6.08	1.378	11.2	0.12	13.81	-14.6
Area 4		6/13/2007	1.0 U	48	**440**	2.0 U	**45**	**46**	**380**	**300**	**9,400**	0.025 U	6.3	26,000	-	-	13	3.6	78	6.58	1.926	47.5	0.46	12.34	-178.7
Area 4		9/13/2007	1.0 U	**120**	**510**	2.0 U	**150**	**53**	**230**	**88**	**4,800**	0.14	26	20,000	74	0.2 U	480	1.0 U	18	6.54	1.332	18.2	0.45	13.69	-145.3
Area 4		12/14/2007	1.0 U	58 J	**690**	2.0 U	**84 J**	**21 J**	**210**	**46**	**4,500**	0.068	21	16,000	-	-	13	1.0 U	11	6.51	1.133	3.60	0.27	14.17	-133.2
Area 4		3/12/2008	1.0 U	29	**130**	2.0 U	**96**	**12**	**260**	**68**	**7,600**	0.092	35	21,000	-	-	9.0	1.0 U	17	6.48	1.221	7.70	0.57	14.51	-140.5

Appendix D
Historical Groundwater Analytical Results
2021 Annual Operations, Maintenance, and Monitoring Report
Area of Contamination 50, Former Fort Devens Army Installation
Devens, Massachusetts

		Analytical Method	VOCs						Dissolved Metals			Dissolved Gases			General Chemistry					Field Parameters					
		Analyte	1,1-DCE	cis-1,2-DCE	PCE	trans-1,2-DCE	TCE	VC	Arsenic	Iron	Manganese	Ethane	Ethene	Methane	Alkalinity	Nitrate/ Nitrite	Sulfate	Sulfide	TOC	pH	SpC	Turbidity	DO	Temp	ORP
		Unit	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(SU)	(mS/cm)	(NTU)	(mg/L)	°C	(mV)
		Cleanup Level[1]	7	70	5		5	2	10	3.129	1,460					10,000									
Area	Well ID	Date Sampled																							
Area 4		10/6/2008	5.0 U	7.9	5.0 U	5.0 U	**9.7**	**7.5**	**380**	**91**	**4,940**	6.5 U	8.8	14,000	300	0.13 U	11	0.03 U	24	6.56	1.071	5.20	0.28	13.58	-173.6
Area 4		1/21/2009	1.7 U	5.4	1.4 U	1.3 U	5.0	**5.7**	**371**	**72 J**	**3,990**	0.25 U	3.8	17,000	200	0.13 U	14	0.03 U	11 J	6.88	0.821	4.00	0.28	13.07	-121.2
Area 4		5/6/2009	0.5 U	9.8	0.5 U	0.24 J	**5.1**	**6.2**	**351**	**69**	**3,820**	1.2 U	2.6	26,000	300 J	0.012 J	12	0.03 U	9.4 J	6.01	0.916	2.09	0.29	14.16	-93.4
Area 4		10/15/2009	0.5 U	16	0.92	0.70	**8.6**	**8.5**	**369**	**93**	**6,800**	1.2 U	2.2	7,400	370	0.13 U	13	0.03 U	7.0 J	6.47	0.932	1.71	0.24	14.48	-148.8
Area 4		4/20/2010	0.5 U	14	0.5 U	0.42 J	0.29 J	**13**	**322**	**134 J**	**5,790**	1.3 U	6.4	44,000	500	0.13 U	5.0 U	0.03 U	36	6.47	1.219	2.98	0.28	14.34	-7.3
Area 4		10/4/2010	0.5 U	8.3	0.30 J	0.24 J	1.6	**8.4**	**281**	**59**	**4,690**	1.2 U	9.5	48,000	370	0.046 J	3.3 J	0.03 U	10 U	6.57	1.168	0.90	0.18	13.69	-124.5
Area 4		6/9/2011	-	-	-	-	-	-	**302**	**72**	**6,820**	-	-	-	-	-	-	-	-	6.49	1.210	2.19	0.21	13.41	-110.8
Area 4		10/6/2011	0.5 U	0.96	0.5 U	0.5 U	0.5 U	**2.4**	**258**	**36**	**5,690**	1.2 U	1.5 U	12,000	110	0.13 U	0.45 J	0.056	6.7 J	6.65	1.235	2.00	0.07	14.62	-94.6
Area 4		5/9/2012	-	-	-	-	-	-	**205**	**26**	**6,670**	-	-	-	-	-	-	-	-	7.00	1.281	1.01	0.16	11.53	-118.5
Area 4		10/11/2012	0.5 U	0.69	0.5 U	0.5 U	0.83	0.5 U	**159**	**25**	**8,190**	1.3 U	87	22,000	380	0.013 J	5.0 U	0.03 U	2.7 J	6.68	1.195	< 0.01	0.34	12.32	-109.8
Area 4		5/21/2013	-	-	-	-	-	-	**212**	**22**	**12,500**	-	-	-	-	-	-	-	-	6.88	0.900	4.89	0.12	11.97	-118.0
Area 4		10/16/2013	0.5 U	1.8	0.5 U	0.27 J	0.78	1.1	**140**	**19**	**11,400**	1.8	3.9	34,000	350	0.13 U	5.0 U	0.037	2.5 J	6.87	0.916	< 0.01	0.37	11.96	-110.0
Area 4		6/11/2014	-	-	-	-	-	-	**195**	**20**	**15,800**	-	-	-	-	-	-	-	-	6.74	0.958	3.92	0.27	13.63	-85.0
Area 4		10/29/2014	0.5 U	2.8	0.5 U	0.5 U	1.3	1.8	**128**	**12 J**	**7,920 J**	1.2 U	1.5 U	7,300	280	0.13 U	0.16 J	0.03 U	5.0 U	6.86	0.822	6.49	0.26	-	-81.0
Area 4		6/23/2015	0.5 U	3.4	0.5 U	0.5 U	1.7	**2.5**	**142**	**13**	**11,100**	5.0 U	5.0 U	1,840	250	0.11 U	2.6 J	1.0 U	2.9	6.74	0.817	5.37	1.24	14.62	-107.2
Area 4		9/11/2015	1.0 U	5.2	1.0 U	1.0 U	2.8	**4.9**	**142**	**11**	**9,980**	10 U	10 U	832	-	0.067 J	0.52 J	2.0 U	2.3	6.45	0.619	2.85	0.25	13.41	-76.0
Area 4		10/16/2015	1.0 U	1.0 U	1.0 U	1.0 U	3.6	**3.3**	**114**	**9.8**	**12,300**	10 U	10 U	473	261	0.11 U	1.5 J	2.0 U	3.2	6.84	0.667	2.90	0.31	8.40	-87.2
Area 4		2/12/2016	1.0 U	13	4.5	0.51 J	**14**	**7.7**	**145**	**10**	**11,100**	10 U	10 U	500	252	0.11	10 U	2.0 U	2.1	7.02	0.671	2.00	0.59	9.48	-102.3
Area 4		6/16/2016	1.0 U	20	1.0 U	0.65 J	**22**	**9.4**	**96**	**7.9**	**11,000**	0.87 J	8.2	3,400	210	0.05 U	0.8 U	1.0 U	2.4	7.03	0.618	4.63	0.66	16.47	-86.6
Area 4		11/8/2016	1.0 U	65	1.0 U	0.59 J	**9.7**	**23**	**110**	**7.7**	**12,000**	1.1 U	7.8	1,500	190	0.05 U	0.63 J	1.0 U	1.7	6.98	0.383	2.97	0.77	12.31	-152.9
Area 4		10/19/2017	1.0 U	57	3.3	0.47 J	**21**	**17**	**120**	**6.4**	**8,500**	0.73 J	5.9	1,500	180	0.05 U	3.0	1.0 U	1.8	6.75	0.501	5.52	0.22	12.40	-58.1
Area 4		10/24/2018	1.0 U	1.8	1.0 U	1.0 U	1.0 U	1.6	**150**	**11**	**18,000**	1.8	2.8	5,900	-	-	-	-	-	6.53	1.260	14.6	1.39	12.60	-40.1
Area 4		10/14/2019	1.0 U	4.4	1.0 U	1.0 U	1.0 U	**5.1**	**140**	**10**	**20,000**	-	-	-	-	-	-	-	-	6.70	1.300	4.70	0.11	14.00	-82.0
Area 4		10/16/2020	1.0 U	0.90 J	1.0 U	1.0 U	1.0 U	0.96 J	**160**	**12 J**	**26,000**	-	-	-	-	-	-	-	-	6.79	0.958	< 0.01	0.63	13.00	-79.7
Area 4		10/15/2021	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	**250**	**14**	**22,000**	-	-	-	-	-	-	-	-	6.72	2.580	1.22	0.68	12.40	-96.8
Area 4	G6M-06-01X	3/30/2006	1.0 U	2.0 U	**30**	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	6.03	0.652	70.7	3.73	8.22	-87.8
Area 4		3/30/2007	1.0 U	2.0 U	**72**	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	5.73	1.005	10.2	2.87	10.01	138.5
Area 4		9/13/2007	1.0 U	2.1	**83**	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	5.60	0.967	6.30	10.7	12.69	-93.9
Area 4		12/14/2007	1.0 U	2.3	**110**	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	5.96	0.991	3.90	2.43	17.46	132.9
Area 4		10/16/2008	1.0 U	1.4	**71**	1.0 U	1.8	1.0 U	-	-	-	-	-	-	-	-	-	-	-	5.51	0.956	20.0	3.08	10.80	118.6
Area 4		10/15/2009	8.0 U	6.3 J	**170**	8.0U	**28**	8.0 U	8.0 U	0.32	50 U	-	-	-	-	-	-	-	-	5.82	0.832	0.13	2.69	13.69	85.3
Area 4		10/4/2010	4.0 U	7.2	**120**	4.0 U	3.4 J	4.0 U	5.0 U	0.211 U	33.2 U	-	-	-	-	-	-	-	-	6.00	1.160	25.1	1.72	13.21	57.1
Area 4		6/8/2011	0.5 U	7.2	**190**	0.5 U	**7.7**	0.5 U	5.0 U	0.1 U	25 U	-	-	-	-	-	-	-	-	5.81	0.979	4.01	1.39	17.13	122.0
Area 4		10/6/2011	1.3 U	46	**96**	1.3 U	**30**	**3.5**	3.7 J	0.14	39	-	-	-	-	-	-	-	-	6.22	0.825	13.1	0.59	11.00	40.8
Area 4		5/8/2012	10 U	16	**310**	10 U	**18**	10 U	5.0 U	0.1 U	9.4 J	-	-	-	-	-	-	-	-	6.14	0.943	2.59	0.65	13.07	87.4
Area 4		10/10/2012	4.0 U	9.1	**180**	4.0 U	**7.6**	4.0 U	5.0 U	0.052 J	8.8 J	-	-	-	-	-	-	-	-	5.94	0.819	2.61	0.54	10.60	56.2
Area 4		5/21/2013	5.0 U	17	**170**	5.0 U	**30**	2.0 J	5.0 U	0.1 U	25 U	-	-	-	-	-	-	-	-	5.96	1.058	8.89	0.36	13.06	81.0
Area 4		11/05/2020	1.0 U	9.0 J	0.95 J	1.0 U	1.1 J	1.0 U	**160**	**140**	**2,600**	-	-	-	-	-	-	-	-	4.18	0.909	> 5,000	0.44	16.70	123.0
Area 4	G6M-13-02X	1/30/2014	0.5 U	34	**120**	0.34 J	**20**	**14**	-	-	-	-	-	-	-	-	-	-	-	6.44	1.099	3.11	0.88	16.01	53.9
Area 4		6/11/2014	0.29 J	**81**	**170**	0.53	**54**	**6.0**	3.2 J	0.47	33	-	-	-	-	-	-	-	-	6.05	0.900	4.29	0.71	11.56	144.8
Area 4		11/3/2014	5.0 U	**95**	**210**	5.0 U	**39**	**6.7**	2.5 U	0.146 U	20 J	-	-	-	-	-	-	-	-	6.31	0.625	2.27	1.30	5.69	75.8
Area 4		6/26/2015	0.5 U	38	**105**	0.5 U	**50**	1.1	2.1 J	0.05 U	9.4 J	-	-	-	-	-	-	-	-	5.99	0.917	9.69	1.03	17.13	101.6
Area 4		10/16/2015	1.0 U	1.0 U	**70**	1.0 U	**31**	1.4 J	4.0 U	0.087	15	-	-	-	-	-	-	-	-	6.27	1.069	2.97	0.35	8.03	72.0
Area 4		2/22/2016	1.0 U	21	**86**	0.54 J	**25**	0.65 J	4.0 U	0.1 U	22	10 U	10 U	3,560	56	0.28	16	2.0 U	0.81 J	6.23	0.818	4.89	0.90	11.54	21.6
Area 4		6/16/2016	1.0 U	61	**77**	0.89 J	**34**	1.5	1.8 J	0.19	20	-	-	-	-	-	-	-	-	6.17	0.937	11.3	1.29	16.70	3.6
Area 4		11/8/2016	1.0 U	38	**84**	1.0 U	**27**	0.93 J	3.0 U	0.05 U	4.7 J	-	-	-	-	-	-	-	-	6.30	0.689	2.01	0.94	11.90	-136.1
Area 4		5/16/2017	1.0 U	30	**79**	0.39 J	**25**	0.90 J	3.0 U	0.05 U	16	0.64 J	1.0 U	4,300	54	0.34	12	1.0 U	1.0 U	6.07	0.841	5.79	0.47	12.93	89.7
Area 4		10/19/2017	1.0 U	13	**65**	0.5 U	**15**	0.99 J	1.5 J	0.23	50	1.1 U	1.0 U	4,100	75	0.47	12	1.0 U	2.2	6.33	0.996	8.18	0.22	13.41	51.1
Area 4		4/3/2018	1.0 U	15	**58**	0.65 J	**11**	1.1	3.0 U	0.16	54	1.1 U	1.0 U	6,300	53	0.35	11	1.0 U	6.8	6.51	1.063	4.17	0.81	11.25	-19.0
Area 4		10/24/2018	1.0 U	24 J	**28 J**	1.0 J	**9.6 J**	**3.5 J**	3.6	0.10	160	1.6	1.3	6,700	67	0.095 J	10 J	1.0 U	29 J	5.79	1.217	38.7	0.32	13.40	-26.4
Area 4		4/4/2019	1.0 U	11	**22**	0.42 J	**8.5**	1.5	1.5 J	0.40	80	1.3	1.0 U	7,800	-	0.23	12	1.0 U	1.8	6.20	1.200	6.80	0.92	13.00	-120.0
Area 4		10/30/2019	-	-	-	-	-	-	2.4 J	0.75	130	1.2	1.0 U	11,000	57	0.048 J	12	0.83 U	0.86 J	6.00	1.200	7.00	0.15	13.00	4.8
Area 4		12/26/2019	1.0 U	8.8	**16**	0.53 J	**8.6**	1.0 U	-	-	-	-	-	-	-	-	-	-	-	6.22	1.171	1.84	0.86	11.70	-22.4
Area 4		05/12/2020	1.0 U	32	**5.6**	1.1	**12**	**17**	3.0 U	0.15	16	1.3	2.1	16,000	66	0.10 U	4.1	1.4	5.2	5.98	1.010	12.7	0.82	11.90	-13.9
Area 4		10/19/2020	1.0 U	8.9 J	**14 J**	0.74 J	**8.4 J**	**3.8 J**	10	2.5	540	1.0 J	1.0 U	18,000	78	0.05 U	7.3	0.93 U	4.5	6.04	0.842	11.8	0.43	13.60	-14.8
Area 4		5/14/2021	1.0 U	10	3.3	0.73 J	4.8	**3.2**	**15**	3.5	1200 J	1.5	2.5	13,000	75	0.02 J	7.9	0.81 U	2.5	6.22	0.739	7.8	2.80	11.60	-68.8
Area 4		10/18/2021	1.0 U	13	**11**	0.68 J	**12**	**2.3**	**14**	1.7	**2,700**	0.69 J	0.84 J	6,500	100	0.05 U	8.0	0.81 U	7.0	6.25	1.980	7.4	0.60	11.00	-11.9
Area 4	G6M-97-28X	9/14/2015	1.0 U	37	0.57 J	1.6	**63**	**22**	4.0 U	0.23	**2,110**	10 U	10 U	85	-	0.11 U	12	2.0 U	1.1	6.21	0.256	-	0.30	14.43	67.7
Area 4		2/12/2016	1.0 U	1.4	1.0 U	1.0 U	1.1	0.53 J	**48**	2.5	**5,690**	10 U	10 U	235	111	0.085 J	4.2 J	2.0 U	1.6	6.92	0.210	8.64	1.99	6.05	72.8
Area 4		6/16/2016	-	-	-	-	-	-	**190**	**6.0**	**2,200**	-	-	-	-	-	-	-	-	6.68	0.312	2.15	0.28	23.12	-85.3
Area 4		11/8/2016	-	-	-	-	-	-	**27**	2.2	**18,000**	-	-	-	-	-	-	-	-	6.72	0.537	11.9	0.86	12.80	-70.9
Area 5		12/13/2006	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	5.0 U	0.1 U	15 U	0.025 U	0.019 J	870	-	-	-	-	5.0 U	6.21	0.162	5.60	3.38	11.45	142.8
Area 4		10/26/2018	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**92**	**9.5**	**9,500**	1.1 U	1.0 U	210	-	-	-	-	0.5 U	6.33	0.817	20.1	0.43	11.06	-37.8
Area 4		10/28/2019	-	-	-	-	-	-	**71**	**7.9**	**10,000**	-	-	-	-	-	-	-	-	6.10	1.100	1.80	0.35	12.00	6.8
Area 4		10/15/2020	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**44**	**8.3**	**12,000**	-	-	-	-	-	-	-	-	6.08	0.875	6.24	0.59	14.70	-7.6
Area 4		10/12/2021	-	-	-	-	-	-	**120**	**7.7**	**6,800**	-	-	-	-	-	-	-	-	6.69	0.550	4.89	1.25	17.50	-125.0
Area 5	G6M-02-05X	2/28/2002	1.0 U	1.9 J	**130**	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	6.15	0.597	11.0	6.61	15.72	181.1
Area 5		1/30/2003	1.0 U	2.3	**170**	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16.65	-
Area 5		9/30/2005	1.0 U	2.6	**200**	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	4.73	0.512	7.90	3.61	15.78	441.8
Area 5		9/22/2006	1.0 U	2.2	**350**	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	5.52	0.543	7.38	2.14	12.66	94.8
Area 5		9/12/2007	1.0 U	7.9	**510**	2.0 U	**50**	2.0 U	-	-	-	-	-	-	-	-	-	-	-	6.39	0.723	30.6	0.78	12.27	-57.8

Appendix D
Historical Groundwater Analytical Results
2021 Annual Operations, Maintenance, and Monitoring Report
Area of Contamination 50, Former Fort Devens Army Installation
Devens, Massachusetts

		Analytical Method	VOCs						Dissolved Metals			Dissolved Gases			General Chemistry					Field Parameters					
		Analyte	1,1-DCE	cis-1,2-DCE	PCE	trans-1,2-DCE	TCE	VC	Arsenic	Iron	Manganese	Ethane	Ethene	Methane	Alkalinity	Nitrate/ Nitrite	Sulfate	Sulfide	TOC	pH	SpC	Turbidity	DO	Temp	ORP
		Unit	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(SU)	(mS/cm)	(NTU)	(mg/L)	°C	(mV)
		Cleanup Level[1]	7	70	5		5	2	10	3.129	1,460					10,000									
Area	Well ID	Date Sampled																							
Area 5		10/20/2008	10 U	4.4 J	**390**	10 U	**17**	10 U	-	-	-	-	-	-	-	-	-	-	-	7.00	0.588	3.00	1.83	12.42	-41.9
Area 5		10/19/2009	10 U	10 U	**370**	10 U	**53**	10 U	**49**	**3.8**	**2,490**	1.3 U	1.6 U	410	57	0.26	19	0.03 U	10 U	6.22	0.699	1.40	0.31	12.53	30.6
Area 5		10/5/2010	5.0 U	4.0 J	**240**	5.0 U	**100**	5.0 U	**71**	**5.4**	**2,420**	1.2 U	1.5 U	160	20 U	0.025 J	13	0.03 U	10 U	6.25	0.749	5.99	0.25	12.27	-37.5
Area 5		6/8/2011	0.62	**78**	**200**	3.7	**230**	**18 J**	**105**	**8.6**	**2,700**	1.2 U	10	5,400	180	0.13 U	11	0.03 U	2.6 J	6.16	0.708	< 0.01	0.24	12.27	-42.8
Area 5		10/6/2011	2.0 U	59	**37**	2.0 U	**140**	**25**	**125**	**11**	**2,300**	1.2 U	15	6,600	530	0.012 J	14	0.03 U	2.1 J	6.18	0.959	1.40	0.73	11.60	-4.0
Area 5		10/6/2011	2.0 U	59	**37**	2.0 U	**140**	**25**	**125**	**11**	**2,300**	1.2 U	15	6,600	530	0.012 J	14	0.03 U	2.1 J	6.18	0.959	1.40	0.73	12.36	-4.0
Area 5		5/9/2012	0.5 U	17	**140**	0.5 U	**68**	0.5 U	**103**	**8.6**	**2,060**	1.3 U	1.6 U	3,900	75	0.13 U	14	0.03 U	10 U	6.19	0.682	1.52	0.78	12.56	9.0
Area 5		10/10/2012	2.0 U	16	**94**	2.0 U	**44**	2.0 U	**73**	**6.8**	1,460	1.2 U	1.5 U	4,400	64	0.11 J	14	0.03 U	10 U	6.14	0.809	< 0.01	1.92	11.16	15.2
Area 5		5/21/2013	0.30 J	**78**	**38 J**	0.48 J	**33 J**	**2.3**	**84**	**8.4**	1,310	1.2 U	1.5 U	2,200	100 J	0.13 U	12	0.03 U	10 U	6.26	0.753	0.77	0.75	14.01	-19.1
Area 5	G6M-02-06X	3/1/2002	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	7.16	0.135	32.0	8.91	12.18	134.8
Area 5		9/24/2004	1.0 U	2.0 U	**5.5**	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	7.33	0.090	0.02	9.48	12.31	152.8
Area 5		9/30/2005	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	7.22	0.107	4.39	8.22	13.26	66.4
Area 5		9/21/2006	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	7.30	0.098	10.9	7.84	11.26	139.3
Area 5		9/14/2007	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	6.94	0.149	7.70	8.50	10.88	-140.7
Area 5		10/20/2008	0.5 U	0.5 U	0.47 J	0.5 U	0.5 U	0.5 U	-	-	-	-	-	-	-	-	-	-	-	7.09	0.109	6.50	7.71	11.28	88.8
Area 5		10/14/2009	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	8.0 U	0.2 U	50 U	-	-	-	-	-	-	-	-	6.98	0.115	0.20	8.96	11.43	26.1
Area 5		10/5/2010	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5.0 U	0.1 U	25 U	-	-	-	-	-	-	-	-	6.90	0.128	4.38	7.66	11.62	63.6
Area 5		10/7/2011	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.5 J	0.1 U	25 U	-	-	-	-	-	-	-	-	6.87	0.076	18.6	6.30	11.76	24.7
Area 5		10/10/2012	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5.0 U	0.1 U	25 U	-	-	-	-	-	-	-	-	7.11	0.134	10.5	8.89	11.39	16.8
Area 5		10/15/2013	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5.0 U	0.1 U	25 U	-	-	-	-	-	-	-	-	7.36	0.134	2.62	9.84	12.86	110.9
Area 5		10/30/2014	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5.0 U	0.155 U	6.0 J	-	-	-	-	-	-	-	-	7.21	0.101	2.18	7.73	13.93	73.1
Area 5		10/19/2015	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.0 U	0.1 U	15 U	-	-	-	-	-	-	-	-	7.29	0.114	2.23	8.05	12.89	82.5
Area 5		11/11/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U	0.05 U	3.0 U	-	-	-	-	-	-	-	-	7.86	0.840	4.92	6.80	9.57	-32.7
Area 5		10/19/2017	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U	0.075 U	5.0 U	-	-	-	-	-	-	-	-	7.02	0.123	4.41	5.72	11.94	40.2
Area 5		10/22/2018	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U	0.05 U	3.0 U	-	-	-	-	-	-	-	-	7.21	0.152	11.8	5.35	11.20	168.4
Area 5		10/15/2019	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.7 J	0.05 U	3.0 U	-	-	-	-	-	-	-	-	7.30	0.150	3.50	8.40	11.00	63.0
Area 5		10/16/2020	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.5 J	0.05 U	1.3 J	-	-	-	-	-	-	-	-	7.37	0.095	3.93	8.55	11.80	224.0
Area 5		10/14/2021	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.5 J	0.05 U	3.0 U	-	-	-	-	-	-	-	-	7.26	0.119	0.50	6.97	13.80	107.0
Area 5	G6M-02-07X	2/26/2002	1.0 U	2.0 U	**24**	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	7.34	0.259	46.0	0.00	11.54	110.3
Area 5		9/23/2004	1.0 U	2.0 U	**26**	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	7.26	0.423	25.0	1.72	12.39	332.8
Area 5		9/30/2005	1.0 U	2.0 U	**16**	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	7.69	0.389	7.70	6.98	11.08	121.2
Area 5		9/21/2006	1.0 U	2.0 U	**11**	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	7.58	0.251	14.3	3.72	10.80	143.6
Area 5		9/13/2007	1.0 U	2.0 U	**12**	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	7.68	0.334	3.00	3.78	10.49	43.3
Area 5		10/20/2008	0.5 U	0.5 U	**9.8 J**	0.5 U	0.27 J	0.5 U	-	-	-	-	-	-	-	-	-	-	-	7.46	0.271	12.0	3.15	10.50	42.8
Area 5		10/15/2009	10 U	10 U	**6.7 J**	10 U	**210**	10 U	8.0 U	0.127 U	50 U	-	-	-	-	-	-	-	-	7.41	0.413	3.00	1.15	11.54	-14.0
Area 5		1/15/2010	0.75 U	0.5 U	**5.7**	0.75 U	0.5 U	1.0 U	-	-	-	-	-	-	-	-	-	-	-	7.53	0.344	1.88	3.26	11.62	150.2
Area 5		10/5/2010	0.5 U	0.5 U	4.7	0.5 U	0.24 J	0.5 U	5.0 U	0.1 U	25 U	-	-	-	-	-	-	-	-	7.39	0.296	1.33	2.57	11.83	60.3
Area 5		10/3/2011	0.5 U	0.5 U	3.6	0.5 U	0.5 U	0.5 U	5.0 U	0.1 U	25 U	-	-	-	-	-	-	-	-	7.54	0.198	5.12	1.58	11.79	26.6
Area 5		10/11/2012	0.5 U	0.57	4.6	0.5 U	0.5 U	0.5 U	5.0 U	0.028 J	25 U	-	-	-	-	-	-	-	-	7.68	0.352	2.69	1.31	-	98.1
Area 5		10/15/2013	0.5 U	0.5 U	1.1	0.5 U	0.5 U	0.5 U	2.9 J	0.1 U	5.1 J	-	-	-	-	-	-	-	-	7.62	0.911	1.05	2.39	-	99.8
Area 5		10/29/2014	0.5 U	0.62	3.9	0.5 U	0.27 J	0.5 U	2.4 J	0.025 U	7.8 J	-	-	-	-	-	-	-	-	7.41	0.535	3.71	0.22	11.44	10.9
Area 5		10/19/2015	1.0 U	1.0 U	4.5	1.0 U	1.0 U	1.0 U	4.0 U	0.1 U	15 U	-	-	-	-	-	-	-	-	7.64	0.362	3.69	0.35	15.95	75.3
Area 5		11/11/2016	1.0 U	1.0	**5.4**	1.0 U	0.75 J	1.0 U	3.0 U	0.050	11	-	-	-	-	-	-	-	-	7.86	0.084	4.92	6.80	9.57	-32.7
Area 5		10/23/2017	1.0 U	1.0 U	4.2	1.0 U	1.0 U	1.0 U	1.9 J	0.11	12	-	-	-	-	-	-	-	-	7.57	0.335	9.82	0.29	11.93	-39.4
Area 5		10/23/2018	1.0 U	1.0 U	3.4	1.0 U	1.0 U	1.0 U	3.0 U	0.05 U	3.0 U	-	-	-	-	-	-	-	-	7.65	0.575	8.66	0.31	11.74	81.7
Area 5		10/9/2019	1.0 U	1.0 U	4.7	1.0 U	0.52 J	1.0 U	3.0 U	0.05 U	1.2 J	-	-	-	-	-	-	-	-	7.60	0.320	1.20	0.48	11.00	47.0
Area 5		10/16/2020	1.0 U	1.0 U	3.8 J	1.0 U	1.0 U	1.0 U	1.5 J	0.017 J	6.1 J	-	-	-	-	-	-	-	-	7.81	0.217	39.1	0.73	12.00	-5.3
Area 5		10/14/2021	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	3.0 U	0.042 J	13	-	-	-	-	-	-	-	-	7.78	1.510	4.4	0.01	14.30	-56.8
Area 5	G6M-02-11X	8/1/2002	1.0 U	2.0 U	**450**	2.0 U	2.8	2.0 U	5.0 U	-	-	-	-	-	-	-	-	-	-	6.01	0.984	8.13	0.46	13.90	184.0
Area 5		8/28/2002	1.0 U	2.0 U	**540 J**	2.0 U	2.0 U	2.0 U	5.0 U	-	-	-	-	-	44	-	-	-	5.0 U	6.05	0.905	6.49	0.51	10.70	173.0
Area 5		10/29/2002	1.0 U	3.0	**970**	2.0 U	**22**	2.0 U	5.0 U	1.0 U	**1,700**	-	-	-	51	0.10 U	17	2.0 U	5.0 U	6.02	0.920	5.04	0.49	13.20	51.0
Area 5		2/3/2003	1.0 U	2.0 U	**710**	20 U	**22**	2.0 U	5.0 U	1.0 U	-	-	-	-	65	-	-	-	5.0 U	6.22	0.971	12.7	0.71	14.12	178.0
Area 5		7/16/2003	1.0 U	33	**530**	2.0 U	**54**	2.0 U	5.0 U	1.0 U	-	0.005 U	0.014	460	120	-	16 J	2.0 U	5.0 U	6.31	0.813	11.9	0.86	16.05	166.0
Area 5		9/26/2003	1.0 U	37	**590**	2.0 U	**31**	2.0 U	5.0 U	-	**1,700**	0.005 U	0.005 U	1,200	-	-	-	-	19	6.60	0.921	7.20	0.41	8.61	146.0
Area 5		1/8/2004	1.0 U	49	**300**	2.0 U	**15**	2.0 U	5.0 U	1.0 U	**1,900**	0.005 U	0.0093	2,300	150	-	12 J	2.0 U	5.0 U	6.29	0.729	0.60	0.00	6.55	104.0
Area 5		3/10/2004	1.0 U	53	**160**	2.0 U	**11**	2.0 U	5.0 U	1.0 U	**2,200**	0.005 U	0.068	14,000	130	-	9.6	2.0 U	1.8	6.39	0.847	7.50	0.82	15.58	103.0
Area 5		6/4/2004	1.0 U	54	**440**	2.0 U	**23**	2.0 U	5.0 U	1.0 U	**1,900**	0.005 U	0.010	2,300	110	-	12	1.9 J	2.4 J	6.72	0.807	21.3	12.1	13.72	54.5
Area 5		9/22/2004	1.0 U	**140**	**540**	2.0 U	**50**	2.0 U	5.0 U	1.0 U	**2,400**	0.005 U	0.005 U	13,000	100	0.5 U	12	1.5 J	1.2	6.19	0.996	1.25	0.96	11.09	412.7
Area 5		12/15/2004	1.0 U	**120**	**760**	2.0 U	**47**	2.0 U	5.0 U	1.0 U	**2,100**	0.005 U	0.021	9,700	95	1.0	15	2.0 U	5.0 U	6.35	0.675	21.2	1.36	13.83	200.1
Area 5		3/28/2005	4.0 U	45	**1,100**	40 U	**41**	40 U	5.0 U	1.0 U	**2,200**	0.005 U	0.065	10,000	90	0.2 U	13	2.0 U	3.6 J	6.19	0.938	48.3	1.02	16.04	84.3
Area 5		7/1/2005	10 U	**280**	**1,500**	10 U	**90**	10 U	2.1	1.0 U	**1,800**	0.028	0.42	15,000	98	0.05 U	14	1.0 U	9.4	5.78	0.806	6.66	0.37	14.87	221.6
Area 5		9/27/2005	1.0 U	**260**	**240**	2.0 U	**78**	**16**	5.0 U	1.0 U	**2,500**	0.020 J	8.1	21,000	148	0.05 U	5.9 J	1.0 U	3.4	5.92	0.755	0.69	0.40	13.00	93.6
Area 5		12/12/2005	1.0 U	50	**220**	2.0 U	**28**	**9.1**	7.8	0.2 J	**3,100**	0.082	29	24,000	270	1.3 J	3.5	1.0 U	5.5	6.28	1.107	8.90	0.18	12.95	64.8
Area 5		3/21/2006	1.0 U	**230**	**520**	2.3	**94**	**60**	5.0 U	0.1 U	**1,500**	0.025 U	34	17,000	120	0.2 U	8.8	1.0 U	8.2	6.45	0.765	7.15	12.0	14.52	326.6
Area 5		6/22/2006	1.0 U	20	**130**	20	**44**	**9.2**	5.0 U	1.0 U	**6,300**	0.051	78	22,000	210	0.2 U	2.5	1.0 U	6.1	6.19	1.231	5.04	0.27	14.02	59.7
Area 5		9/22/2006	1.0 U	8.6	**37**	2.8	**17**	**4.0**	6.9	0.58	**9,300**	0.089	15	21,000	180	0.2 U	4.9	1.0 U	9.8	5.93	1.079	4.55	1.22	12.97	-158.9
Area 5		3/27/2007	1.0 U	3.6	**38**	9.8	**21**	2.0 U	**120**	**7.1**	**24,000 J**	6.8	28	23,000	-	-	-	-	10	6.25	0.912	19.0	0.61	12.57	-39.6
Area 5		6/13/2007	1.0 U	12	**30**	10	**28**	**2.8**	**310**	**6.8**	**18,000**	4.8	33	27,000	-	-	9.6	1.6	12	6.22	1.198	2.10	0.65	11.24	-36.4
Area 5		9/11/2007	1.0 U	7.9	4.4	12	**24**	**4.3**	**420**	**18**	**18,000**	2.8	36	30,000	270	0.2 U	470	1.0 U	14	6.24	1.423	9.70	3.52	10.99	-11.1
Area 5		12/13/2007	1.0 U	6.0 J	2.8 J	5.5 J	**19 J**	**4.4 J**	**470**	**47**	**18,000**	8.3	16	29,000	-	-	5.0 U	1.0	15	6.36	1.409	0.50	0.52	11.79	-117.9
Area 5		3/11/2008	1.0 U	2.5	2.0 U	9.7	**6.2**	2.0 U	**570**	**59**	**27,000**	24	5.8	28,000	-	-	5.0 U	2.8	17	6.35	1.560	0.30	0.41	11.69	-90.5

Appendix D
Historical Groundwater Analytical Results
2021 Annual Operations, Maintenance, and Monitoring Report
Area of Contamination 50, Former Fort Devens Army Installation
Devens, Massachusetts

		Analytical Method	VOCs						Dissolved Metals			Dissolved Gases			General Chemistry					Field Parameters					
		Analyte	1,1-DCE	cis-1,2-DCE	PCE	trans-1,2-DCE	TCE	VC	Arsenic	Iron	Manganese	Ethane	Ethene	Methane	Alkalinity	Nitrate/ Nitrite	Sulfate	Sulfide	TOC	pH	SpC	Turbidity	DO	Temp	ORP
		Unit	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(SU)	(mS/cm)	(NTU)	(mg/L)	°C	(mV)
		Cleanup Level[1]	7	70	5		5	2	10	3.129	1,460					10,000									
Area	Well ID	Date Sampled																							
Area 5		10/16/2008	0.5 U	6.9	1.3	0.80	**7.3**	**2.2**	**1,170**	**116**	**8,420**	1.2 U	5.4	39,000	240	0.10 U	9.3	0.03 U	21	5.80	0.154	4.00	1.51	13.68	-20.6
Area 5		5/7/2009	0.5 U	0.47 J	0.5 U	0.92	0.76	0.5 U	**1,060**	**125**	**3,950**	3.1	3.5	42,000	370 J	0.13 U	17	0.03 U	31	6.04	1.605	0.32	0.24	12.08	-117.5
Area 5		10/14/2009	0.5 U	0.58	0.23 J	0.63	1.4	0.46 J	**1,070**	**126**	**2,390**	1.2 U	1.5 U	55,000	430	0.13 U	9.7	0.03 U	8.7 J	6.46	1.342	5.00	0.52	11.10	-114.9
Area 5		4/20/2010	0.5 U	24	0.5 U	0.24 J	1.6	**5.8**	**1,050**	**106 J**	**3,760**	1.2 U	2.0	17,000	500	0.13 U	5.0 U	0.03 U	8.7 J	6.75	0.778	1.50	0.38	11.58	-130.5
Area 5		10/5/2010	0.5 U	0.52	0.5 U	0.38 J	0.94	0.66	**956**	**94**	**1,590**	1.2 U	1.5 U	47,000	700	0.13 U	1.4 J	0.03 U	10 U	6.51	1.368	0.86	0.72	11.57	-136.0
Area 5		6/9/2011	-	-	-	-	-	-	**804**	**92**	**2,480**	-	-	-	-	-	-	-	-	6.60	1.131	4.53	0.10	11.66	-111.1
Area 5		10/3/2011	0.5 U	0.64	0.5 U	0.5 U	0.5 U	1.2	**901**	**100**	**2,670**	1.2 U	1.5 U	19,000	520	0.13 U	5.0 U	0.03 U	7.6 J	6.58	0.740	0.95	0.44	11.70	-114.4
Area 5		5/8/2012	-	-	-	-	-	-	**769**	**84**	**2,560**	-	-	-	-	-	-	-	-	6.83	1.014	1.03	0.14	11.58	-128.1
Area 5		10/10/2012	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**683**	**70**	**1,840**	3.9	1.5 U	12,000	390	0.11 J	1.3 J	0.03 U	4.2 J	6.52	1.341	0.84	0.28	12.54	-122.8
Area 5		5/21/2013	-	-	-	-	-	-	**649**	**60**	**3,660**	-	-	-	-	-	-	-	-	6.70	1.247	< 0.01	0.24	18.20	-124.9
Area 5		10/16/2013	0.5 U	0.26 J	0.5 U	0.20 J	0.5 U	0.5 U	**616**	**53**	**3,230**	17	1.6 U	56,000	320	0.13 U	5.0 U	0.03 U	4.2 J	6.80	1.243	0.39	0.22	14.20	-114.8
Area 5		6/11/2014	-	-	-	-	-	-	**573**	**50**	**8,010**	-	-	-	-	-	-	-	-	6.84	1.069	1.38	0.32	13.50	-104.4
Area 5		10/29/2014	0.5 U	0.42 J	0.5 U	0.34 J	0.5 U	0.44 J	**624**	**64 J**	**4,860 J**	8.1 J	1.5 U	15,000	340	0.13 U	0.17 J	0.03 U	5.0 U	6.96	1.224	0.65	0.35	12.80	-156.8
Area 5		6/26/2015	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**578**	**51**	**10,800**	5.0 U	5.0 U	8,180	312	0.17	2.0 J	1.0 U	5.8	5.98	0.934	9.20	2.49	12.54	-62.1
Area 5		9/10/2015	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**546**	**44**	**9,920**	5.5 J	10 U	11,500	-	0.087 J	0.78 J	2.0 U	5.3	6.29	0.570	5.37	3.21	14.62	44.2
Area 5		10/15/2015	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**551**	**44**	**10,400**	5.8 J	10 U	9,710	229	0.062 J	10 U	2.0 U	4.9	7.03	0.942	1.12	0.26	14.83	-132.7
Area 5		2/11/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**584**	**46**	**9,880**	10 U	10 U	4,980	219	0.10 J	10 U	2.0 U	5.1	7.02	0.717	2.14	0.60	10.14	-117.2
Area 5		6/15/2016	1.0 U	0.63 J	1.0 U	1.0 U	1.0 U	1.0 U	**550**	**35**	**9,000**	4.6	1.0 U	11,000	250	0.05 U	0.8 U	1.0 U	4.4	6.81	0.861	20.9	2.29	18.18	-130.1
Area 5		11/14/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**530**	**32**	**7,600**	5.6	1.0 U	11,000	220	0.05 U	1.0 U	1.0 U	4.1	7.16	0.632	5.71	0.92	11.82	-127.9
Area 5		10/19/2017	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**530**	**33**	**7,300**	5.2	1.0 U	6,500	190	0.03 J	1.0 U	1.0 U	3.9	6.91	0.816	12.1	0.22	12.07	-115.9
Area 5		10/23/2018	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**480**	**38**	**8,800**	-	-	-	-	-	-	-	-	6.85	1.013	11.2	0.21	11.70	4.2
Area 5		10/15/2019	1.0 U	0.46 J	1.0 U	1.0 U	1.0 U	1.0 U	**500**	**37**	**9,900**	-	-	-	-	-	-	-	-	6.80	1.400	12.0	0.34	12.00	-120.0
Area 5		10/14/2020	1.0 U	0.47 J	1.0 U	1.0 U	0.49 J	1.0 U	**450**	**37**	**10,000**	-	-	-	-	-	-	-	-	7.08	1.070	15.2	0.73	12.90	-127.0
Area 5		10/12/2021	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	**520**	**39**	**8,800**	-	-	-	-	-	-	-	-	6.98	0.917	9.3	0.90	15.10	-129.0
Area 5	G6M-02-12X	8/1/2002	1.0 U	2.0 U	**330**	2.0 U	2.0 U	2.0 U	5.0 U	-	-	-	-	-	-	-	-	-	-	6.24	0.924	37.6	0.64	14.01	19.0
Area 5		8/28/2002	1.0 U	2.0 U	**520**	2.0 U	**6.5**	2.0 U	5.0 U	-	-	-	-	-	54	-	-	-	5.0 U	6.15	0.868	2.96	0.19	14.12	156.0
Area 5		10/29/2002	1.0 U	2.0 U	**790**	2.0 U	**10**	2.0 U	5.0 U	1.0 U	1,100	-	-	-	40	0.10 U	17	2.0 U	2.0 J	6.14	0.927	2.08	0.27	14.83	68.0
Area 5		2/3/2003	1.0 U	2.0 U	**580**	2.0 U	4.0	2.0 U	5.0 U	1.0 U	-	-	-	-	52	-	-	-	5.0 U	6.04	0.947	5.06	-	12.49	78.0
Area 5		7/14/2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.0 U	-	-	-	-	11.03	-
Area 5		9/22/2004	1.0 U	110	**1,000**	2.0 U	**43**	2.0 U	5.0 U	1.0 U	450	0.005 U	0.005 U	2,900	84	0.5 U	13	2.0 U	1.0 U	5.87	0.873	4.95	0.35	11.59	570.2
Area 5		9/27/2005	1.0 U	**250**	**1,100**	1.4	**38**	**5.4**	5.0 U	1.0 U	690	0.025 U	1.1	14,000	106	0.05 U	13 J	1.0 U	3.5	6.11	6.920	24.5	1.17	11.73	238.5
Area 5		9/21/2006	1.0 U	64	**190**	23	**88**	**67**	5.0 U	0.37	**3,200**	0.038	46	15,000	170	0.2 U	5.7	1.0 U	7.6	6.23	0.799	60.6	0.17	11.65	78.0
Area 5		12/13/2006	1.0 U	3.6	**45**	4.4	**7.9**	2.0 U	**22**	1.0	**16,000**	0.24	19	28,000	-	-	1.1	1.2	9.3	6.39	1.277	6.94	0.19	13.71	169.6
Area 5		9/12/2007	1.0 U	28	**62**	4.4	**50**	**18**	20 U	0.58	**5,500**	0.40	8.4	11,000	180	0.2 U	340	1.0	2.6 J	6.52	0.934	5.80	3.06	11.75	52.8
Area 5		10/16/2008	0.5 U	18	0.37 J	1.6	**7.1**	**4.8**	**174**	**12**	**15,800**	1.2 U	3.1	19,000	310	0.10 U	7.0 U	0.03 U	10 U	6.09	1.091	10.0	0.53	11.66	-67.4
Area 5		10/14/2009	0.5 U	13	0.5 U	0.74	0.30 J	1.6	**540**	**24**	**11,000**	1.3 U	1.6 U	6,900	350	0.13 U	7.0 U	0.03 U	4.6 J	6.27	1.025	1.50	1.27	19.70	-40.0
Area 5		10/5/2010	0.5 U	5.6	0.5 U	0.27 J	0.5 U	1.5	**1,040**	**72**	**13,700**	1.2 U	2.0	40,000	810	0.05 J	2.8 J	0.03 U	10 U	6.34	1.217	1.11	0.58	17.11	-88.1
Area 5		10/4/2011	0.5 U	6.3	0.5 U	0.5 U	0.5 U	**4.3**	**1,020**	**71**	**9,540**	1.2 U	1.5 U	21,000	440	0.13 U	0.33 J	0.03 U	6.4 J	6.65	0.807	1.90	0.48	13.11	-89.1
Area 5		10/10/2012	0.5 U	1.0	0.5 U	0.5 U	0.5 U	1.0	**865**	**66**	**5,010**	1.8	1.5 U	14,000	320	0.13 U	0.59 J	0.03 U	4.0 J	6.76	1.068	1.68	0.70	14.37	-111.4
Area 5		10/16/2013	0.5 U	0.72	0.5 U	0.21 J	0.5 U	0.54	**809**	**61**	**4,910**	10	1.5 U	55,000	83	0.13 U	5.0 U	0.03 U	4.2 J	6.85	1.010	1.87	0.45	21.32	-127.7
Area 5		10/29/2014	0.5 U	0.90	0.5 U	0.56	0.5 U	0.79	**760**	**56 J**	**4,870 J**	9.2	1.5 U	25,000	330	0.13 U	0.22 J	0.03 U	6.2 J	6.96	0.995	2.48	0.83	15.51	-103.4
Area 5		10/15/2015	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**714**	**43**	**8,540**	10 U	10 U	11,300	243	0.11 U	10 U	2.0 U	6.4	7.26	0.630	6.17	1.07	13.71	-108.0
Area 5		11/14/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**720**	**40**	**7,700**	3.2	1.0 U	9,400	210	0.05 U	2.0	1.0 U	4.5	6.90	0.530	13.9	1.24	11.88	-131.0
Area 5		10/23/2017	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**670**	**41**	**8,100**	4.0	1.0 U	8,000	200	0.055 J	1.0 U	1.0 U	4.3	6.90	0.678	7.49	0.29	12.24	-117.9
Area 5		10/23/2018	1.0 U	1.0 U	1.0 U	0.39 J	1.0 U	1.0 U	**590**	**40**	**7,800**	-	-	-	-	-	-	-	-	7.02	0.731	18.9	0.49	11.43	-16.1
Area 5		10/15/2020	1.0 U	0.42 J	1.0 U	1.0 U	1.0 U	1.0 U	**530**	**44**	**8,100**	-	-	-	-	-	-	-	-	6.95	0.871	2.03	0.62	12.10	-137.0
Area 5	G6M-03-08X	5/14/2003	1.0 U	2.0 U	**750**	2.0 U	2.0 U	2.0 U	5.0 U	1.0 U	-	-	-	-	-	-	-	-	-	-	-	-	-	13.25	-
Area 5		9/22/2004	1.0 U	5.4	**690**	2.0 U	**6.3**	2.0 U	5.0 U	1.0 U	15 U	0.005 U	0.005 U	1.8	16	8.3	13	1.5 J	1.0 U	5.89	0.463	3.22	1.81	14.12	247.6
Area 5		12/16/2004	1.0 U	9.6	**1,100**	2.0 U	**11**	2.0 U	5.0 U	1.0 U	17	0.069	0.030	4.7	20	5.7	13	2.9	5.0 U	5.93	0.495	8.98	0.70	13.25	135.7
Area 5		3/31/2005	20 U	9.6 J	**340**	20 U	20 U	20 U	5.0 U	1.0 U	15 U	0.011	0.45	14	12	2.3	17	2.0 U	0.3 J	5.94	0.205	0.93	1.96	12.82	166.3
Area 5		7/6/2005	1.0 U	15	**780**	2.0 U	**8.2**	2.0 U	4.0 U	1.0 U	10 U	0.11	0.068	410	29	1.8	14	1.0 U	5.5	5.85	0.463	5.37	0.78	13.36	236.1
Area 5		9/28/2005	1.0 U	14	**620**	1.0 U	4.8	1.0 U	5.0 U	1.0 U	15 U	0.025 U	0.009 J	2,400	28	1.6	12	1.0 U	5.0 U	5.60	0.352	8.30	3.56	10.80	172.3
Area 5		12/14/2005	1.0 U	17	**700**	2.0 U	**8.0**	2.0 U	5.0 U	1.0 U	15 U	0.025 U	0.025 U	7,000	32	1.2	12	1.0 U	5.0 U	6.16	0.404	3.70	0.54	11.48	153.8
Area 5		3/22/2006	1.0 U	34	**1,100**	2.6	**21 J**	2.0 U	5.0 U	0.1 U	15 U	0.025 U	0.006 J	12,000	29	0.59	12	1.0 U	6.5	6.28	0.299	9.75	5.43	10.71	394.2
Area 5		6/21/2006	1.0 U	48	**610**	2.0 U	**16**	2.0 U	5.0 U	1.8	42	0.004 J	0.14	16,000	41J	0.33	10	1.0 U	5.0 U	5.91	0.490	21.4	0.29	10.62	141.6
Area 5		3/29/2007	1.0 U	**74**	**570**	2.0 U	**37**	**11**	5.0 U	0.1 U	15 U	0.006 J	0.72	14,000	-	-	-	-	5.0 U	5.79	0.392	1.41	0.07	11.59	21.3
Area 5		6/12/2007	1.0 U	**88**	**740**	2.0 U	**55**	**14**	5.0 U	0.1 U	15 U	0.025 U	0.70	15,000	-	-	-	-	0.6 J	5.93	0.413	41.3	0.25	10.18	135.2
Area 5		9/10/2007	1.0 U	**75**	**520**	2.0 U	**75**	**21**	2.0 U	0.1 U	15 U	0.025 U	1.7	14,000	42	0.2 U	200	1.0 U	5.0 U	5.92	0.385	9.70	2.55	11.35	154.2
Area 5		12/11/2007	1.0 U	49	**390**	2.0 U	**53**	**15**	5.0 U	0.1 U	20	0.004 J	1.6	15,000	-	-	-	-	5.0 U	5.76	0.437	0.80	0.23	11.11	129.3
Area 5		3/13/2008	1.0 U	10	**390**	2.0 U	5.0	2.0 U	5.0 U	0.1 U	20	0.003 J	0.051	2,800	-	-	-	-	5.0 U	5.89	0.195	0.30	0.22	11.55	111.6
Area 5		10/20/2008	5.0 U	**140**	**290**	5.0 U	**61**	**26**	8.0 U	0.2 U	33	1.3 U	2.1	21,000	110	0.13 U	14	0.03 U	10 U	6.42	0.548	2.00	1.58	12.10	68.9
Area 5		5/6/2009	4.0 U	**150**	**120**	4.0 U	**38**	**15**	3.1 J	0.2 U	144	1.2 U	1.6	37,000	190 J	0.13 U	10	0.03 U	10 U	5.93	0.701	1.50	0.32	13.18	100.8
Area 5		10/14/2009	5.0 U	**120**	5.0 U	5.0 U	**20**	**11**	8.0 U	0.139 U	**1,470**	1.3 U	1.6 U	7,300 J	240	0.13 U	8.3	0.03 U	10 U	5.91	0.643	2.11	0.33	-	152.3
Area 5		4/20/2010	2.0 U	**88 J**	**26 J**	2.0 U	**9.9 J**	1.5 J	9.0	0.194 U	**6,520**	1.3 U	1.6 U	3,500	250	0.13 U	7.8	0.03 U	10 U	6.31	0.382	0.30	0.90	14.33	87.9
Area 5		10/4/2010	2.0 U	**80**	**8.2**	2.0 U	**5.2**	**3.5**	3.4 J	0.132 U	**11,300**	1.2 U	1.5 U	890	360	0.13 U	5.5	0.03 U	10 U	6.07	0.549	< 0.01	0.68	10.23	84.9
Area 5		6/8/2011	-	-	-	-	-	-	**14**	0.27	**16,100**	-	-	-	-	-	-	-	-	6.28	0.686	0.50	0.21	11.28	49.5
Area 5		10/3/2011	2.5 U	62	4.3	2.5 U	3.4	**9.6**	5.1 J	0.194 J	**16,800**	1.2 U	1.5 U	590	360	0.13 U	3.2 J	0.03 U	10 U	6.17	0.603	0.51	0.43	15.19	77.2
Area 5		5/8/2012	-	-	-	-	-	-	5.0 U	0.127 U	**17,700**	-	-	-	-	-	-	-	-	6.58	0.618	0.55	1.87	13.06	39.7
Area 5		10/9/2012	0.5 U	9.8	0.5 U	0.76	0.78	**7.4**	5.0 U	0.15	**18,600**	1.3 U	3.6	110	380	0.13 U	1.4 J	0.03 U	2.5 J	6.34	0.648	1.42	0.43	11.87	53.9
Area 5		5/22/2013	-	-	-	-	-	-	3.1 J	0.117 U	**12,500**	-	-	-	-	-	-	-	-	6.56	0.591	0.14	1.40	11.90	36.5
Area 5		10/15/2013	0.5 U	2.8	0.5 U	1.2	0.87	1.6	5.2	0.121 U	**12,300**	1.8	1.5 U	360	450	0.13 U	5.0 U	0.03 U	3.0 J	6.57	0.851	< 0.01	0.39	16.01	82.7

		Analytical Method	VOCs						Dissolved Metals			Dissolved Gases			General Chemistry					Field Parameters					
		Analyte	1,1-DCE	cis-1,2-DCE	PCE	trans-1,2-DCE	TCE	VC	Arsenic	Iron	Manganese	Ethane	Ethene	Methane	Alkalinity	Nitrate/ Nitrite	Sulfate	Sulfide	TOC	pH	SpC	Turbidity	DO	Temp	ORP
		Unit	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(SU)	(mS/cm)	(NTU)	(mg/L)	°C	(mV)
		Cleanup Level[1]	7	70	5		5	2	10	3.129	1,460					10,000									
Area	Well ID	Date Sampled																							
Area 5		6/12/2014	-	-	-	-	-	-	4.3 J	0.15	**9,850**	-	-	-	-	-	-	-	-	6.57	0.592	6.31	1.84	13.03	58.9
Area 5		6/18/2015	0.5 U	0.5 U	0.5 U	0.5 U	0.51 J	0.5 U	2.5 J	0.05 U	**2,320**	5.0 U	5.0 U	5.0 U	83	0.11 U	8.4 J	1.0 U	5.4	6.32	0.273	8.42	1.11	13.18	113.0
Area 5		10/14/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Area 5		2/24/2016	1.0 U	3.0	1.0 U	1.0 U	1.0 U	1.0 U	8.2	1.0	**4,710**	10 U	10 U	91	155	0.10 U	3.1 J	2.0 U	1.8	6.79	0.244	3.93	1.03	7.53	-54.7
Area 5		11/14/2016	1.0 U	0.84 J	1.0 U	1.0 U	0.96 J	1.0 U	**12**	0.18	**4,200**	1.1 U	1.0 U	170	140	0.053 J	9.8	1.0 U	1.3	7.03	0.339	7.46	1.19	8.32	-99.6
Area 5		10/4/2017	1.0 U	0.50 J	1.0 U	1.0 U	1.0 U	1.0 U	6.6	0.23	**6,900**	1.1 U	0.90 J	91	110	0.05 U	9.5	1.0 U	0.84 J	6.70	0.374	5.94	0.65	13.29	-29.9
Area 5		10/31/2018	1.0 U	0.60 J	1.0 U	1.0 U	1.0 U	1.0 U	8.6	0.27	**7,300**	-	-	-	-	-	-	-	-	6.67	0.478	25.0	1.69	10.75	30.9
Area 5		10/22/2020	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**87**	1.6	**7,800**	-	-	-	-	-	-	-	-	6.85	0.391	20.4	0.75	12.40	-20.0
Area 5	G6M-03-09X	5/14/2003	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	5.0 U	1.0 U	-	-	-	-	-	-	-	-	-	-	-	-	-	13.34	-
Area 5		9/23/2004	1.0 U	2.0 U	3.7	2.0 U	2.0 U	2.0 U	5.0 U	1.0 U	15 U	0.005 U	0.005 U	1.9	23	19	15	2.2	1.0 U	6.23	0.130	4.57	8.67	13.22	176.2
Area 5		12/14/2004	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	5.0 U	1.0 U	15 U	0.015	0.026	2.0	25	11	15	2.0 U	5.0 U	6.08	0.106	12.1	8.17	12.43	417.6
Area 5		3/29/2005	1.0 U	2.0 U	1.5 J	2.0 U	2.0 U	2.0 U	5.0 U	1.0 U	15 U	0.013	0.26	1.4	18	1.5	13	2.0 U	0.3 J	6.18	0.123	72.4	6.00	13.27	113.2
Area 5		6/30/2005	1.0 U	2.0 U	**5.8**	2.0 U	2.0 U	2.0 U	2.0 U	1.0 U	10 U	0.077	0.032	1.2	25	1.3	13	1.0 U	15	5.75	0.135	53.6	2.81	10.23	160.2
Area 5		9/28/2005	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	5.0 U	1.0 U	15 U	0.006 J	0.009 J	29	38	3.7	13	1.0 U	4.0 J	5.90	0.108	7.60	10.6	11.20	181.0
Area 5		12/13/2005	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	5.0 U	1.0 U	15 U	0.005 J	0.014 J	790	53	0.05 U	13	1.0 U	5.0 U	6.21	1.720	4.90	3.06	10.62	259.3
Area 5		3/22/2006	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	5.0 U	0.1 U	20	0.006 J	0.016 J	39	36	1.8	12	1.0 U	7.9	6.40	0.102	10.8	3.00	10.99	415.5
Area 5		6/23/2006	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	5.0 U	0.1 U	15 U	0.025 U	0.042	390	39	2.7	13	1.0 U	5.0 U	5.92	0.156	16.9	4.55	11.02	164.9
Area 5		9/21/2006	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	5.0 U	0.1 U	15 U	0.014 J	0.12	140	36	2.5	9.2	1.0 U	0.80 J	6.71	0.212	4.56	2.24	13.75	127.6
Area 5		3/29/2007	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	5.0 U	0.1 U	15 U	0.006 J	0.032	1,600	-	-	-	-	1.8 J	6.08	0.217	2.45	0.16	10.57	16.4
Area 5		6/13/2007	1.0 U	2.0 U	3.8	2.0 U	2.0 U	2.0 U	5.0 U	0.1 U	15 U	0.005 J	0.011 J	870	-	-	-	-	0.5 J	6.26	0.154	7.60	0.36	11.36	111.0
Area 5		9/10/2007	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	6.0 U	0.1 U	15 U	0.025 U	0.025 U	18,000	53	2.0	20	1.0 U	5.0 U	6.26	0.193	9.90	2.74	11.07	128.0
Area 5		12/11/2007	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	5.0 U	0.1 U	15 U	0.006 J	0.022 J	2,200	-	-	-	-	5.0 U	6.03	0.190	2.10	0.11	11.41	110.3
Area 5		3/12/2008	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	5.0 U	0.11	18	0.027	0.016 J	5,200	-	-	-	-	5.0 U	6.33	0.159	0.50	0.24	11.51	24.6
Area 5		10/20/2008	0.5 U	0.5 U	0.37 J	0.5 U	0.5 U	0.5 U	8.0 U	0.2 U	50 U	1.3 U	1.6 U	1,600	48	0.84	19	0.03 U	10 U	5.98	0.129	6.50	0.24	11.28	177.8
Area 5		5/6/2009	0.5 U	0.5 U	0.78	0.5 U	0.5 U	0.5 U	8.0 U	0.2 U	50 U	1.2 U	1.5 U	340	52 J	0.90	14	0.03 U	10 U	5.99	0.171	1.00	0.33	11.35	104.0
Area 5		10/14/2009	0.5 U	0.5 U	0.35 J	0.5 U	0.5 U	0.5 U	8.0 U	0.2 U	50 U	1.2 U	1.5 U	230	53	0.32	13	0.03 U	10 U	5.49	0.161	< 0.01	0.26	-	-89.9
Area 5		4/20/2010	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5.0 U	0.1 U	25 U	1.3 U	1.6 U	700	90	0.13 U	12	0.03 U	10 U	6.19	0.102	0.60	0.40	15.41	166.0
Area 5		10/4/2010	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5.0 U	0.1 U	25 U	1.2 U	1.5 U	35 J	44	0.86	12	0.03 U	10 U	5.90	0.159	0.60	1.18	12.10	146.6
Area 5		6/8/2011	-	-	-	-	-	-	5.0 U	1.7	11 J	-	-	-	-	-	-	-	-	5.99	0.154	0.40	0.42	11.09	122.8
Area 5		10/3/2011	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.2 U	50 U	1.2 U	1.5 U	230	35	0.39	11	0.03 U	10 U	5.82	0.107	0.23	0.61	16.60	163.2
Area 5		5/8/2012	-	-	-	-	-	-	5.0 U	0.1 U	25 U	-	-	-	-	-	-	-	-	6.12	0.095	0.71	2.27	13.41	186.4
Area 5		10/9/2012	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5.0 U	0.1 U	6.2 J	1.3 U	1.6 U	2.6	25	2.8	8.9	0.03 U	10 U	5.71	0.136	0.58	4.36	12.12	167.9
Area 5		5/22/2013	-	-	-	-	-	-	5.0 U	0.1 U	25 U	-	-	-	-	-	-	-	-	6.01	0.084	1.83	0.46	13.94	172.9
Area 5		10/15/2013	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5.0 U	0.1 U	9.6 J	1.2 U	1.5 U	7,600	29	0.82	10	0.03 U	10 U	6.08	0.144	< 0.01	1.16	15.96	150.3
Area 5		6/12/2014	-	-	-	-	-	-	5.0 U	0.021 J	7.4 J	-	-	-	-	-	-	-	-	5.89	0.102	2.49	0.54	14.07	163.9
Area 5		10/28/2014	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.5 U	0.268 J	13 J	1.4	1.5 U	20	35	1.6	11	0.03 U	5.0 U	6.24	0.139	2.78	1.65	13.61	124.1
Area 5		6/18/2015	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.0 U	0.05 U	20	5.0 U	5.0 U	30	27	0.057 U	8.6 J	1.0 U	0.70 U	5.39	0.191	2.25	0.45	11.35	169.7
Area 5		10/15/2015	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.0 U	0.1 U	57	10 U	10 U	1,090	28	0.11 U	11	2.0 U	1.0 U	6.06	0.144	0.81	0.22	15.66	123.1
Area 5		2/19/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.0 U	0.1 U	100	14	6.4 J	270	37	0.19	11	2.0 U	1.0 U	8.64	0.100	3.99	2.29	9.63	513.6
Area 5		6/16/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U	0.05 U	81	1.1 U	1.0 U	8.8	43	0.05 U	16	1.0 U	0.78 J	6.02	0.220	3.32	1.80	11.76	131.6
Area 5		11/14/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U	0.05 U	90	1.1 U	1.0 U	0.58 U	31	1.5	8.4	1.0 U	0.78 J	6.23	0.119	4.19	1.27	9.40	8.0
Area 5		10/17/2017	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U	0.075 U	180	1.1 U	1.0 U	0.48 J	24	1.7	11	1.0 U	1.0 U	6.10	0.158	3.92	2.03	10.69	143.1
Area 5	G6M-03-10X	5/14/2003	1.0 U	2.0 U	**15**	2.0 U	2.0 U	2.0 U	5.0 U	1.0 U	-	-	-	-	-	-	-	-	-	-	-	-	-	14.23	-
Area 5		9/22/2004	1.0 U	2.0 U	**27**	2.0 U	2.0 U	2.0 U	5.0 U	1.0 U	340	0.050	0.68	680	51	2.8	12	1.5 J	1.0 U	6.28	0.539	20.5	1.28	13.06	-77.2
Area 5		12/14/2004	1.0 U	44	**19**	2.0 U	2.0 U	2.0 U	5.0 U	1.0 U	880	0.020	0.025	1.9	110	3.8	21	2.0 U	5.0 U	6.52	0.801	1.57	0.94	13.92	62.0
Area 5		3/29/2005	1.0 U	68	**14**	1.2 J	0.98 J	2.0 U	5.0 U	1.0 U	1,200	0.005 U	0.38	2,600	146	0.2 U	12	2.0 U	5.9	6.44	0.869	6.77	0.59	11.80	-14.5
Area 5		6/30/2005	1.0 U	2.0 U	3.6	2.0 U	2.0 U	2.0 U	2.0 U	1.0 U	**1,900**	0.026	0.021	8,600	199	0.10	11	1.0 U	19	5.18	0.702	5.06	0.39	12.45	273.2
Area 5		9/28/2005	1.0 U	2.0 U	**6.7**	2.0 U	2.0 U	2.0 U	5.0 U	1.0 U	720	0.025 U	0.020 J	1,100	140	0.20	16	1.0 U	0.6 J	6.43	0.588	7.36	4.30	11.31	74.1
Area 5		12/13/2005	1.0 U	2.0 U	3.4	2.0 U	2.0 U	2.0 U	6.9	1.0 U	**3,020**	0.009 J	0.027	12,000	250	0.48	8.4	1.0 U	5.0 U	6.73	1.032	1.30	0.15	12.28	57.2
Area 5		3/23/2006	1.0 U	2.0 U	**9.9**	2.0 U	2.0 U	2.0 U	5.0 U	0.22	**3,800**	0.020 J	0.052	7,000	170	0.2 U	8.9	1.0 U	3.5 J	6.64	0.663	5.39	0.67	12.15	36.6
Area 5		6/22/2006	1.0 U	2.0 U	2.6	2.0 U	2.0 U	2.0 U	5.0 U	0.74	**7,300**	0.004 J	0.042	14,000	200	0.2 U	4.4	1.0 U	5.0 J	4.87	0.770	0.64	0.64	13.95	610.8
Area 5		9/20/2006	1.0 U	2.0 U	2.2	2.0 U	2.0 U	2.0 U	5.0 U	0.21	**6,200**	0.006 J	0.14	14,000	180	0.2 U	7.0	1.0 U	6.0	6.41	0.856	3.90	1.26	12.27	-140.2
Area 5		3/29/2007	1.0 U	4.2	2.2	2.0 U	2.1	2.0 U	8.6	0.30	**9,100 J**	0.007 J	0.16	24,000	-	-	-	-	4.8 J	6.20	0.970	2.99	0.32	12.14	-60.7
Area 5		6/11/2007	1.0 U	4.1	2.5	2.0 U	2.0 U	2.0 U	**23**	1.0	**11,000**	0.025 U	0.095	29,000	-	-	-	-	6.7	6.27	0.947	8.50	0.41	11.61	45.5
Area 5		9/10/2007	1.0 U	3.8	2.0 U	2.0 U	2.0 U	2.0 U	**29**	0.40	**8,100**	0.10	0.057	620	150	0.2 U	290	1.0 U	3.5 J	6.28	0.859	13.6	0.24	12.27	61.3
Area 5		12/12/2007	1.0 U	2.8	2.0 U	2.0 U	2.0 U	2.0 U	**26**	0.33	**9,200**	0.025 U	0.043	20,000	-	-	-	-	5.8	6.14	0.755	7.50	0.66	12.45	69.8
Area 5		3/11/2008	1.0 U	16	**16**	2.0 U	**8.7**	**4.0**	**91**	**15**	**9,200**	0.040	59	28,000	-	-	-	-	5.0 J	6.32	1.029	7.30	0.22	11.74	-62.9
Area 5		10/20/2008	0.5 U	5.4	1.0	0.5 U	2.0	1.0	**248**	**7.1**	**10,300**	1.3 U	1.6 U	21,000	170	0.13 U	8.3	0.03 U	170	5.98	0.781	8.20	0.21	18.11	-10.9
Area 5		5/6/2009	0.5 U	9.1	1.0	0.5 U	5.0	1.5	**522**	**54**	**9,210**	1.2 U	1.5 U	31,000	230 J	0.0076 J	9.3	0.03 U	11	5.91	1.040	0.50	0.33	18.59	-64.0
Area 5		10/14/2009	0.5 U	10	0.61	0.5 U	3.7	**2.2**	**518**	**58**	**7,410**	1.3 U	1.6 U	9,000 J	310	0.13 U	21	0.03 U	7.4 J	6.32	0.896	1.20	0.67	19.10	-62.2
Area 5		4/20/2010	0.5 U	2.0	1.2	0.21 J	**5.6**	1.1	**648**	**61 J**	**4,910**	1.2 U	1.5 U	4,100	130	0.13 U	6.5	0.03 U	4.7 J	6.78	0.799	1.40	0.77	16.25	-101.1
Area 5		10/4/2010	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**475**	**58**	**5,650**	1.2 U	6.2	20,000	230	0.13 U	5.9	0.03 U	10 U	6.52	0.729	0.50	0.22	11.33	-115.6
Area 5		6/9/2011	-	-	-	-	-	-	**520**	**54**	**2,550**	-	-	-	-	-	-	-	-	6.74	0.704	4.62	0.58	12.12	-118.8
Area 5		10/3/2011	0.5 U	1.2	0.5 U	0.5 U	2.7	0.53	**528**	**55**	**3,980**	1.2 U	1.5 U	9,800	100	0.21	7.6	0.03 U	3.0 J	6.75	0.633	0.85	0.10	12.31	-85.8
Area 5		5/8/2012	-	-	-	-	-	-	**480**	**56**	**4,070**	-	-	-	-	-	-	-	-	7.00	0.817	0.77	0.15	13.02	-119.1
Area 5		10/9/2012	0.5 U	0.5 U	0.5 U	0.5 U	0.55	0.5 U	**456**	**48**	**2,280**	22	1.6 U	13,000	100	0.13 U	8.4	0.03 U	10 U	6.88	0.940	< 0.01	0.43	12.11	-109.6
Area 5		5/22/2013	-	-	-	-	-	-	**514**	**57**	**2,340**	-	-	-	-	-	-	-	-	6.80	1.111	0.40	0.16	12.00	-137.6
Area 5		10/15/2013	0.5 U	0.52	0.5 U	0.5 U	0.68	0.5 U	**452**	**51**	**2,770**	1.8	1.5 U	23,000	80	0.042 U	9.2	0.03 U	10 U	6.87	1.018	0.19	4.57	12.22	-122.7
Area 5		6/12/2014	-	-	-	-	-	-	**510**	**52**	**2,400**	-	-	-	-	-	-	-	-	6.82	0.857	> 5,000	0.51	22.11	-88.0
Area 5		10/29/2014	0.5 U	0.92	0.5 U	0.5 U	0.77	0.41 J	**418**	**43 J**	3,090 J	1.2 U	1.5 U	14,000	92	0.13 U	8.6	0.03 U	5.0 U	7.02	0.787	4.94	0.29	19.60	-122.4
Area 5		9/10/2015	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**453**	**68**	**2,020**	10 U	10 U	8,910	-	0.08 J	11	2.0 U	1.5	6.56	0.787	3.00	0.51	12.58	-107.5

		Analytical Method	VOCs						Dissolved Metals			Dissolved Gases			General Chemistry					Field Parameters					
		Analyte	1,1-DCE	cis-1,2-DCE	PCE	trans-1,2-DCE	TCE	VC	Arsenic	Iron	Manganese	Ethane	Ethene	Methane	Alkalinity	Nitrate/ Nitrite	Sulfate	Sulfide	TOC	pH	SpC	Turbidity	DO	Temp	ORP
		Unit	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(SU)	(mS/cm)	(NTU)	(mg/L)	°C	(mV)
		Cleanup Level[1]	7	70	5		5	2	10	3.129	1,460					10,000									
Area	Well ID	Date Sampled																							
Area 5		10/15/2015	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**457**	**69**	**2,410**	10 U	10 U	11,500	65	0.11 U	7.8 J	2.0 U	1.9	7.03	1.206	1.74	0.49	19.32	-128.0
Area 5		2/11/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**492**	**72**	**2,370**	10 U	10 U	7,550	105	0.11	2.0 J	2.0 U	3.3	7.02	1.345	0.10	0.40	9.96	-131.1
Area 5		6/16/2016	1.0 U	1.0 U	**16**	1.0 U	0.65 J	1.0 U	**400**	**61**	**1,600**	1.1 U	1.0 U	14,000	88	0.05 U	3.3	1.0 U	1.8	6.18	1.407	8.39	1.16	13.13	-86.0
Area 5		11/14/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**430**	**68**	**2,700**	1.1 U	1.0 U	8,000	110	0.05 U	3.7	1.0 U	1.6	7.11	1.745	6.94	11.7	7.40	-101.7
Area 5		10/23/2017	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**420**	**62**	**2,100**	1.1 U	1.0 U	6,500	62	0.07 J	5.5	1.0 U	1.4	6.88	1.190	3.99	0.22	12.17	-115.0
Area 5		10/23/2018	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**380**	**51**	**1,900**	-	-	-	-	-	-	-	-	6.93	1.576	3.98	0.14	11.60	-30.2
Area 5		10/15/2019	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**360**	**45**	**2,100**	-	-	-	-	-	-	-	-	6.80	1.500	1.20	0.31	12.00	-140.0
Area 5		10/22/2020	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**360**	**59**	**2,000**	-	-	-	-	-	-	-	-	6.94	0.853	11.3	0.66	12.40	-128.0
Area 5		10/12/2021	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	**290**	**44**	**1,900**	-	-	-	-	-	-	-	-	6.94	1.070	24.7	1.10	13.70	-118.0
Area 5	G6M-04-05X	9/22/2004	1.0 U	2.0 U	**140**	2.0 U	2.0 U	2.0 U	5.0 U	1.0 U	15 U	0.005 U	0.0092	1.3	14	4.9	14	2.0 U	1.0 U	6.10	0.099	0.68	9.68	11.28	233.9
Area 5		12/15/2004	1.0 U	2.0 U	**17**	2.0 U	2.0 U	2.0 U	5.0 U	1.0 U	15 U	0.005 U	0.016	1.4	14	7.5	13	2.0 U	5.0 U	5.87	0.098	1.04	1.17	11.37	228.7
Area 5		3/30/2005	5.0 U	10 U	**130**	10 U	10U	10 U	5.0 U	1.0 U	15 U	0.007	0.028	15	14	1.2	10	2.0 U	0.5 J	6.04	0.093	1.92	2.80	11.81	123.1
Area 5		6/30/2005	1.0 U	2.0 U	**200**	2.0 U	2.0 U	2.0 U	2.0 U	1.0 U	10 U	0.041	0.022	96	16	0.87	8.9	1.0 U	2.4	5.48	0.094	8.19	0.88	11.49	207.1
Area 5		9/29/2005	1.0 U	2.0 U	**110**	2.0 U	2.0 U	2.0 U	5.0 U	1.0 U	33	0.006 J	0.012 J	220	3.3	0.98	14	1.0 U	5.0 U	6.08	0.061	2.10	0.20	10.48	215.3
Area 5		12/14/2005	1.0 U	2.0 U	**36**	2.0 U	2.0 U	2.0 U	5.0 U	1.0 U	15 U	0.007 J	0.016 J	550	21	1.6	11	1.0 U	5.0 U	6.10	0.091	0.30	0.23	11.31	179.3
Area 5		3/22/2006	1.0 U	2.0 U	**330**	2.0 U	2.0 U	2.0 U	5.0 U	0.1 U	15 U	0.025 U	0.019 J	2,200	13	1.1	9.3	1.0 U	3.4 J	6.21	0.062	0.86	0.77	11.08	343.3
Area 5		6/22/2006	1.0 U	2.0 U	**38**	2.0 U	2.0 U	2.0 U	5.0 U	0.1 U	15 U	0.025 U	0.082	33	22 J	1.8	9.0	1.0 U	5.0 U	4.40	0.083	< 0.01	2.55	11.56	760.6
Area 5		9/22/2006	1.0 U	2.0 U	**30**	2.0 U	2.0 U	2.0 U	5.0 U	0.1 U	15 U	0.009 J	0.084	140	15	1.5	11	1.0 U	5.0 U	5.78	0.123	0.34	1.48	11.56	-127.3
Area 5		3/29/2007	1.0 U	2.0 U	**16**	2.0 U	2.0 U	2.0 U	5.0 U	0.12	15 U	0.025 U	0.022 J	460	-	-	-	-	1.4 J	5.79	0.185	0.01	0.13	-	57.9
Area 5		6/12/2007	1.0 U	2.0 U	**12**	2.0 U	2.0 U	2.0 U	5.0 U	0.1 U	15 U	0.005 J	0.041	330	-	-	-	-	0.4 J	5.89	0.116	4.40	0.52	15.84	168.2
Area 5		9/10/2007	1.0 U	2.0 U	**43**	2.0 U	2.0 U	2.0 U	2.0 U	0.1 U	15 U	0.24	0.089	340	20	1.6	17	1.0 U	5.0 U	5.89	0.103	3.90	2.60	12.77	142.8
Area 5		12/11/2007	1.0 U	2.0 U	**7.2**	2.0 U	2.0 U	2.0 U	5.0 U	0.19	15 U	0.025 U	0.013 J	1,900	-	-	-	-	5.0 U	5.75	0.118	0.60	0.23	15.25	134.1
Area 5		3/13/2008	1.0 U	2.0 U	2.5	2.0 U	2.0 U	2.0 U	5.0 U	0.1 U	17	0.009 J	0.020 J	1,300	-	-	-	-	5.0 U	5.90	0.129	0.20	0.18	17.23	121.0
Area 5		10/20/2008	0.5 U	0.5 U	3.7	0.5 U	0.5 U	0.5 U	8.0 U	0.2 U	50 U	1.3 U	1.6 U	3,300	30	1.5	10	0.03 U	10 U	5.92	0.152	< 0.01	0.73	15.18	80.0
Area 5		5/6/2009	0.5 U	0.84	**16**	0.5 U	0.38 J	0.27 J	8.0 U	0.2 U	50 U	1.3 U	1.6 U	2,200	59 J	0.37	17	0.03 U	10 U	5.72	0.187	< 0.01	0.20	11.92	125.5
Area 5		10/14/2009	0.5 U	0.29 J	**8.2**	0.5 U	0.5 U	0.5 U	8.0 U	0.127 U	60 U	1.3 U	1.6 U	2,000 J	29	0.39	15	0.03 U	10 U	5.62	0.203	< 0.01	0.50	14.07	184.0
Area 5		4/20/2010	0.5 U	0.5 U	2.3 J	0.5 U	0.5 U	0.5 U	5.0 U	0.1 U	25 U	1.2 U	1.5 U	3,200	80	0.30	15	0.03 U	10 U	5.92	0.144	0.20	0.40	17.68	152.5
Area 5		10/4/2010	0.5 U	0.5 U	0.28 J	0.5 U	0.5 U	0.5 U	5.0 U	0.1 U	25 U	1.2 U	1.5 U	18	30	1.7	13	0.03 U	10 U	5.67	0.131	0.80	1.51	15.25	145.5
Area 5		6/8/2011	-	-	-	-	-	-	5.0 U	0.1 U	12.7	-	-	-	-	-	-	-	-	5.78	0.193	1.00	0.12	13.15	134.1
Area 5		10/3/2011	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	20 U	0.2 U	11 J	1.2 U	1.5 U	2,000	39	0.47	19	0.03 U	2.3 J	5.76	0.174	0.44	0.20	14.14	158.9
Area 5		5/8/2012	-	-	-	-	-	-	5.0 U	0.1 U	11 J	-	-	-	-	-	-	-	-	6.01	0.160	0.56	0.83	14.76	157.2
Area 5		10/9/2012	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5.0 U	0.1 U	22 J	1.3 U	1.6 U	1,800	32	0.063 J	16	0.03 U	10 U	5.76	0.171	0.84	0.27	14.36	108.4
Area 5		5/22/2013	-	-	-	-	-	-	2.7 J	0.1 U	25 U	-	-	-	-	-	-	-	-	5.90	0.156	1.75	0.25	13.20	134.1
Area 5		10/15/2013	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5.0 U	0.1 U	15 J	1.3 U	1.6 U	28,000	60	0.13 U	18	0.03 U	10 U	6.01	0.199	< 0.01	0.47	14.17	145.8
Area 5		6/12/2014	-	-	-	-	-	-	2.4 J	0.195 U	13 J	-	-	-	-	-	-	-	-	6.09	0.193	0.68	0.41	12.29	86.2
Area 5		10/28/2014	0.5 U	0.5 U	0.42 J	0.5 U	0.5 U	0.5 U	4.1 J	0.029	12 J	2.8	1.6	48	39	0.31	13	0.03 U	10 U	6.49	0.182	0.48	0.62	11.61	81.9
Area 5		6/17/2015	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.0 U	0.05 U	12 J	5.0 U	5.0 U	22 J	23	0.29	23	1.0 U	0.81 U	-	-	-	-	-	-
Area 5		9/10/2015	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.0 U	0.1 U	7.5 J	10 U	10 U	10 U	-	0.21	25	2.0 U	1.0 U	5.75	0.245	2.08	0.95	12.07	67.6
Area 5		10/15/2015	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.0 U	0.1 U	20	10 U	10 U	53	32	0.20	22	2.0 U	1.1	5.96	0.264	2.44	0.50	11.84	116.4
Area 5		2/22/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.0 U	0.1 U	22	10 U	10 U	305	35	0.11 U	27	2.0 U	1.0 U	5.93	0.187	1.92	1.03	10.35	112.9
Area 5		11/14/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U	0.05 U	20	1.1 U	1.0 U	15	36	0.19	24	1.0 U	0.75 J	6.33	0.176	4.16	1.22	9.56	23.9
Area 5		10/17/2017	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U	0.075 U	15	1.1 U	1.0 U	260	31	0.17	16	1.0 U	1.0 U	5.66	0.171	3.27	0.19	11.24	185.7
Area 5		10/23/2018	1.0 U	1.0 U	1.2	1.0 U	1.0 U	1.0 U	--	--	--	-	-	-	-	-	-	-	-	6.03	0.187	2.10	0.37	10.99	18.9
Area 5		10/20/2020	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	-	-	-	-	-	-	-	-	-	-	-	6.35	0.123	1.28	0.59	11.80	206.0
Area 5	G6M-04-06X	9/22/2004	1.0 U	2.0 U	**160**	2.0 U	2.0 U	2.0 U	5.0 U	1.0 U	15 U	0.056	0.005 U	3.4	110	5.3	8.7	2.0 U	1.0 U	11.01	0.341	1.34	9.17	11.37	-0.6
Area 5		12/16/2004	1.0 U	2.0 U	**24**	2.0 U	2.0 U	2.0 U	**21**	1.0 U	15 U	0.017	0.028	0.47	54	7.9	10	2.9	5.0 U	10.89	0.254	2.26	9.42	13.13	106.9
Area 5		3/30/2005	1.0 U	2.0 U	**37**	2.0 U	2.0 U	2.0 U	7.5	1.0 U	15 U	0.009	0.051	0.58	37	2.0	12	2.0 U	5.0 U	9.47	0.235	0.32	10.5	11.56	10.6
Area 5		7/1/2005	1.0 U	2.0 U	**140**	2.0 U	2.0 U	2.0 U	2.0 U	1.0 U	190	0.034	0.056	9.7	10	1.5	25	1.0 U	2.8 J	9.08	0.214	0.95	9.77	11.76	457.2
Area 5		9/29/2005	1.0 U	2.0 U	**32**	2.0 U	2.0 U	2.0 U	**11**	1.0 U	15 U	0.009 J	0.018 J	0.70	70	1.9	12	1.0 U	5.4	9.32	0.192	1.99	9.43	11.46	390.6
Area 5		12/15/2005	1.0 U	2.0 U	**26**	2.0 U	2.0 U	2.0 U	**81**	1.0 U	150	0.009 J	0.022 J	3.3	39	1.9	12	1.0 U	7.6	9.74	0.226	0.30	10.2	14.61	151.2
Area 5		3/23/2006	1.0 U	2.0 U	**100**	2.0 U	2.0 U	2.0 U	5.0 U	0.1 U	15 U	0.006 J	0.036	3.1	23	1.7	9.3	1.0 U	5.0 U	8.94	0.188	1.72	9.46	10.34	452.5
Area 5		6/23/2006	1.0 U	2.0 U	**190**	2.0 U	2.0 U	2.0 U	**13 J**	0.1 U	15 U	0.012 J	0.041	10	41	1.7	9.4	1.0 U	5.0 U	8.66	0.254	3.55	9.75	12.76	165.3
Area 5		9/21/2006	1.0 U	2.0 U	**45**	2.0 U	2.0 U	2.0 U	5.0 U	0.1 U	15 U	0.016 J	0.11	6.3	31	1.0	11	1.0 U	1.9 J	9.46	0.347	1.45	9.75	17.93	66.6
Area 5		12/11/2006	1.0 U	2.0 U	**37**	2.0 U	2.0 U	2.0 U	5.0 U	0.1 U	15 U	0.010 J	0.044	4.3	-	-	-	-	5.0 U	9.67	0.257	4.40	9.67	14.21	108.0
Area 5		12/13/2006	1.0 U	3.4	2.8	2.0 U	2.0 U	2.0 U	5.0 U	0.27	**8,500**	0.025 U	0.025 U	20,000	-	-	-	-	2.0 J	6.45	0.870	5.00	0.26	11.38	168.2
Area 5		3/29/2007	1.0 U	2.0 U	**18**	2.0 U	2.0 U	2.0 U	5.0 U	0.1 U	15 U	0.011 J	0.021 J	13	-	-	-	-	5.0 U	8.99	0.137	11.1	14.6	11.92	150.7
Area 5		6/12/2007	1.0 U	3.5	**25**	2.0 U	2.0 U	2.0 U	5.0 U	0.1 U	15 U	0.010 J	0.061	19	-	-	-	-	5.0 U	8.82	0.272	4.90	10.1	13.90	118.1
Area 5		9/10/2007	1.0 U	3.0	**23**	2.0 U	2.0 U	2.0 U	8.0 U	0.1 U	15 U	0.005 J	0.007 J	0.13	38	1.3	82	1.0 U	5.0 U	8.14	0.248	9.90	6.73	16.14	50.1
Area 5		12/12/2007	1.0 U	6.3	**22**	2.0 U	2.0 U	2.0 U	5.0 U	0.1 U	15 U	0.004 J	0.025 U	0.21	-	-	-	-	5.0 U	7.36	0.335	0.20	12.3	13.66	81.7
Area 5		3/14/2008	1.0 U	2.4	**14**	2.0 U	2.0 U	2.0 U	5.0 U	0.1 U	15 U	0.005 J	0.025 U	2.8	-	-	-	-	5.0 U	7.29	0.224	0.30	10.9	13.13	186.9
Area 5		10/16/2008	0.5 U	2.2	**24**	0.5 U	0.68	0.5 U	8.5	0.2 U	12 J	1.3 U	1.6 U	2.0	34	1.5 U	11	0.03 U	10 U	7.69	0.198	1.00	9.11	13.01	209.6
Area 5		5/6/2009	0.5 U	1.8	**13**	0.5 U	0.51	0.5 U	6.9	0.2 U	50 U	1.3 U	1.6 U	1.6	44	1.3	14	0.03 U	10 U	7.35	0.209	1.90	9.41	15.25	9.2
Area 5		10/14/2009	0.5 U	1.8	**10**	0.5 U	0.46 J	0.5 U	7.4 U	0.2 U	50 U	1.3 U	1.6 U	22 J	44	1.3	11	0.03 U	10 U	7.15	0.197	< 0.01	9.40	13.65	150.0
Area 5		4/20/2010	0.5 U	0.5 U	3.0 J	0.5 U	0.5 U	0.5 U	7.3	0.1 U	25 U	1.2 U	1.5 U	150	60	1.8	11	0.03 U	10 U	6.75	0.147	< 0.01	2.86	12.92	27.1
Area 5		10/4/2010	0.5 U	0.5 U	0.95	0.5 U	0.5 U	0.5 U	6.1	0.1 U	25 U	1.2 U	1.5 U	2,000	57	1.8	9.1	0.03 U	10 U	6.50	0.216	< 0.01	0.38	14.01	121.6
Area 5		10/3/2011	0.5 U	2.0	4.0	0.5 U	0.5 U	0.5 U	4.7 J	0.2 U	11 J	1.2 U	1.5 U	9,200	71	0.74	11	0.03 U	10 U	6.06	0.133	0.24	1.46	11.95	70.2
Area 5		10/9/2012	0.5 U	0.5 U	3.7	0.5 U	0.5 U	0.5 U	5.0 U	0.1 U	21 J	1.2 U	1.5 U	14,000	62	0.48	16	0.03 U	10 U	6.05	0.239	< 0.01	0.31	11.64	135.7
Area 5		10/15/2013	0.5 U	0.55	4.5	0.5 U	0.37 J	0.5 U	5.0 U	0.1 U	88	1.2 U	1.5 U	36,000	140	0.13 U	12	0.03 U	10 U	6.09	0.242	0.04	1.07	10.60	171.1
Area 5		10/28/2014	0.5 U	0.41 J	1.2	0.5 U	0.78	0.5 U	2.5 U	0.024 J	157 J	8.1 J	1.5 U	1,200	70	0.29	15	0.03 U	5.0 U	6.51	0.205	1.63	0.29	11.28	164.7
Area 5		10/19/2015	1.0 U	1.0 U	1.7	1.0 U	0.70 J	1.0 U	4.0 U	0.1 U	74	10 U	10 U	10 U	60	0.11 U	13	2.0 U	1.0	-	-	-	-	-	-
Area 5		11/14/2016	1.0 U	1.0 U	1.5	1.0 U	1.0 U	1.0 U	3.0 U	0.017 J	77	1.1 U	1.0 U	0.82	62	0.05 U	15	2.0	1.0	6.47	0.189	5.87	1.01	9.97	-8.6

Appendix D
Historical Groundwater Analytical Results
2021 Annual Operations, Maintenance, and Monitoring Report
Area of Contamination 50, Former Fort Devens Army Installation
Devens, Massachusetts

		Analytical Method	VOCs						Dissolved Metals			Dissolved Gases			General Chemistry					Field Parameters					
		Analyte	1,1-DCE	cis-1,2-DCE	PCE	trans-1,2-DCE	TCE	VC	Arsenic	Iron	Manganese	Ethane	Ethene	Methane	Alkalinity	Nitrate/ Nitrite	Sulfate	Sulfide	TOC	pH	SpC	Turbidity	DO	Temp	ORP
		Unit	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(SU)	(mS/cm)	(NTU)	(mg/L)	°C	(mV)
		Cleanup Level[1]	7	70	5		5	2	10	3.129	1,460					10,000									
Area	Well ID	Date Sampled																							
Area 5		10/17/2017	1.0 U	0.60 J	1.8	1.0 U	1.0 U	1.0 U	3.0 U	0.03 U	98	1.1 U	1.0 U	1.6	58	0.07 J	16	1.0 U	1.0 U	6.42	0.271	5.72	0.28	10.97	81.7
Area 5		10/22/2018	1.0 U	1.0 U	1.4	1.0 U	1.0 U	1.0 U	3.0 U	0.05 U	62	-	-	-	-	-	-	-	-	5.90	0.246	8.69	0.53	10.90	51.1
Area 5		10/10/2019	1.0 U	0.54 J	1.1	1.0 U	1.0 U	1.0 U	0.55	0.13	17	-	-	-	-	-	-	-	-	6.10	0.190	2.40	0.20	11.00	100.0
Area 5		10/14/2020	1.0 U	0.94 J	1.7	1.0 U	2.1	1.0 U	3.0 U	0.086 U	140	-	-	-	-	-	-	-	-	6.39	0.132	2.51	0.64	11.40	228.0
Area 5		10/14/2021	1.0 U	0.82 J	1.5 J	1.0 U	1.1	1.0 U	3.0 U	0.026 J	100	-	-	-	-	-	-	-	-	6.32	0.174	0.25	0.89	12.10	104.8
Area 5	G6M-04-07X	9/22/2004	1.0 U	8.4	**900**	2.0 U	2.7	2.0 U	5.0 U	1.0 U	260	0.061	0.12	3.1	56	5.4	32	2.0 U	1.0 U	7.10	0.243	9.28	3.42	11.98	110.1
Area 5		12/17/2004	1.0 U	9.3	**1,100**	2.0 U	2.0	2.0 U	**28**	1.0 U	47	0.11	2.2	2.1	43	6.4	14	2.0 U	0.6 J	7.51	0.246	74.7	1.98	11.89	-38.9
Area 5		3/29/2005	5.0 U	10 U	**240**	10 U	10U	10 U	**12**	1.0 U	27	0.031	0.64	1.9	43	1.5	14	2.0 U	0.5 J	6.88	0.229	4.20	4.19	10.79	22.0
Area 5		7/5/2005	1.0 U	2.0 U	**170**	2.0 U	2.0 U	2.0 U	4.0	1.0 U	37	0.070	0.042	1.8	41	1.7	14	1.0 U	5.0 U	5.83	0.186	23.4	5.44	11.51	369.9
Area 5		9/29/2005	1.0 U	8.3	**470**	2.0 U	3.0	2.0 U	5.0 U	1.0 U	43	0.010 J	0.010 J	2.4	1.0 U	1.9	16	1.0 U	5.0 U	6.19	0.277	6.62	0.86	11.28	478.3
Area 5		12/14/2005	1.0 U	2.0	**390**	2.0 U	2.0 U	2.0 U	3.8	1.0 U	18	0.006	0.016	7.9	40	1.6	13	1.0 U	6.1	6.65	0.218	34.1	4.72	11.66	149.3
Area 5		3/23/2006	1.0 U	2.0 U	**260**	2.0 U	2.0 U	2.0 U	5.0 U	0.1 U	15 U	0.005 J	0.029	250	36	1.6	13	1.0 U	5.0 U	6.28	0.267	4.09	2.14	12.09	619.7
Area 5		6/23/2006	1.0 U	2.0 U	**150**	2.0 U	2.0 U	2.0 U	5.0 U	0.1 U	24	0.005 J	0.022 J	22	30	1.3	13	1.0 U	0.3 J	6.29	0.240	8.07	5.50	11.75	117.8
Area 5		9/21/2006	1.0 U	2.0 U	**110**	2.0 U	2.0 U	2.0 U	5.0 U	0.1 U	19	0.014 J	0.088	2.4	32	2.5	10	1.0 U	3.4 J	6.34	0.197	2.63	4.43	14.46	99.8
Area 5		12/12/2006	1.0 U	2.0 U	**8.7**	2.0 U	2.0 U	2.0 U	5.0 U	0.1 U	15 U	0.025 U	0.010 J	850	-	-	-	-	5.0 U	5.66	0.105	< 0.01	0.39	11.24	156.7
Area 5		12/12/2006	1.0 U	3.1	2.0 U	16	3.1	**7.1**	**490**	**92**	**3,700**	0.032	170	24,000	-	-	1.0 U	1.0 U	7.8	6.60	0.990	4.36	0.17	12.34	-116.0
Area 5		3/29/2007	1.0 U	2.0 U	**45**	2.0 U	2.0 U	2.0 U	5.0 U	0.1 U	17 J	0.006 J	0.018 J	5.2	-	-	-	-	5.0 U	6.55	0.123	3.71	10.3	15.42	143.7
Area 5		6/12/2007	1.0 U	2.0 U	**44**	2.0 U	2.0 U	2.0 U	5.0 U	0.67	18	0.010 J	0.079	46	-	-	-	-	1.2 J	6.26	0.129	16.1	8.12	13.18	162.7
Area 5		9/10/2007	1.0 U	2.0 U	**25**	2.0 U	2.0 U	2.0 U	2.0 U	0.1 U	15 U	0.006 J	0.006 J	0.11	19	1.9	45	1.0 U	5.0 U	6.20	0.130	31.2	8.68	14.72	117.7
Area 5		12/12/2007	1.0 U	2.0 U	**23**	2.0 U	2.0 U	2.0 U	5.0 U	0.1 U	15 U	0.004 J	0.013 J	0.48	-	-	-	-	5.0 U	6.48	0.134	3.00	10.1	10.24	140.2
Area 5		3/13/2008	1.0 U	2.0 U	**19**	2.0 U	2.0 U	2.0 U	5.2	0.1 U	15 U	0.003 J	0.025 U	1.6	-	-	-	-	5.0 U	6.54	0.143	0.30	10.5	10.47	83.4
Area 5		10/16/2008	0.5 U	0.5 U	**11**	0.5 U	0.5 U	0.5 U	8.0 U	0.2 U	15 J	1.2 U	1.5 U	390	28	1.8 U	10	0.03 U	10 U	5.85	0.129	0.45	1.62	10.72	205.0
Area 5		5/6/2009	0.5 U	0.5 U	2.2	0.5 U	0.5 U	0.5 U	2.9 J	0.2 U	50 U	1.3 U	1.6 U	660	41 J	2.3	12	0.03 U	10 U	5.90	0.103	1.25	0.70	13.18	119.2
Area 5		10/14/2009	0.5 U	0.5 U	1.3	0.5 U	0.5 U	0.5 U	8.0 U	0.2 U	50 U	1.3 U	1.6 U	2,500 J	32	1.9	15	0.03 U	10 U	6.00	0.104	< 0.01	0.35	10.81	141.6
Area 5		4/20/2010	0.5 U	0.5 U	**13 J**	0.5 U	0.5 U	0.5 U	5.0 U	0.1 U	31.8 U	1.3 U	1.6 U	630	50	1.5	12	0.03 U	10 U	5.90	0.167	< 0.01	1.11	10.30	24.2
Area 5		10/4/2010	0.5 U	4.5	**19**	0.5 U	2.2	0.5 U	5.0 U	0.1 U	25 U	1.2 U	1.5 U	5,100	43	1.1	10	0.03 U	10 U	6.06	0.181	0.32	0.94	10.45	116.9
Area 5		6/8/2011	-	-	-	-	-	-	5.0 U	0.15	68	-	-	-	-	-	-	-	-	5.81	0.172	< 0.01	1.06	10.36	34.1
Area 5		10/3/2011	0.5 U	2.2	**8.7**	0.5 U	1.2	0.5 U	20 U	0.2 U	68	1.2 U	1.5 U	8,300	53	0.59	12	0.03 U	10 U	5.76	0.105	0.96	0.28	10.69	-57.7
Area 5		5/8/2012	-	-	-	-	-	-	4.0 J	0.1 U	27	-	-	-	-	-	-	-	-	6.26	0.198	0.48	0.35	10.51	122.0
Area 5		10/9/2012	0.5 U	33 J	**31 J**	0.5 U	**6.2**	0.97	5.0 U	0.1 U	35	1.2 U	1.5 U	6,400	99	0.50	10	0.03 U	10 U	6.05	0.264	< 0.01	0.41	10.25	138.9
Area 5		5/22/2013	-	-	-	-	-	-	3.9 J	0.1 U	51	-	-	-	-	-	-	-	-	6.14	0.220	< 0.01	0.39	14.03	154.1
Area 5		10/15/2013	0.5 U	16	**26**	0.5 U	**5.7**	0.5 U	3.8 J	0.1 U	**3,480**	1.2 U	1.5 U	37,000	110	0.30	11	0.03 U	10 U	6.24	0.262	0.05	0.37	13.59	218.4
Area 5		6/10/2014	-	-	-	-	-	-	3.0 J	0.021 J	**6,710**	-	-	-	-	-	-	-	-	6.01	0.257	5.18	0.32	8.84	210.9
Area 5		10/28/2014	0.5 U	54	**55**	0.31 J	**11**	0.61	9.5	0.195 J	**4,370 J**	1.3 U	1.6 U	4,900	130	0.13	9.6	0.03 U	5.0 U	6.57	0.254	4.69	0.24	10.62	108.0
Area 5		10/19/2015	1.0 U	1.0 U	**59**	1.0 U	**12**	1.0	**14**	**564**	**4,590**	10 U	10 U	3,120	143	0.11 U	11	2.0 U	0.98 J	6.35	0.324	1.68	0.05	10.67	23.3
Area 5		11/14/2016	1.0 U	**73**	**78**	0.42 J	**18**	1.8	**29**	1.9	**4,400**	1.1 U	1.0 U	1,000	160	0.05 U	9.4	1.0 U	1.2	6.42	0.278	6.77	1.01	10.19	-28.3
Area 5		10/17/2017	1.0 U	56	**38**	0.39 J	**20**	**3.1**	**18**	1.7	**5,200**	1.1 U	1.0 U	760	170	0.05 U	7.6	1.0 U	1.1	6.47	0.409	9.59	0.38	10.78	37.8
Area 5		4/3/2018	1.0 U	7.7	4.2	1.0 U	3.4	1.0 U	7.2	0.05 U	**2,100**	-	-	-	-	-	-	-	-	7.16	0.508	2.90	1.14	10.53	39.4
Area 5		10/22/2018	2.0 U	**120**	**15**	2.0 U	**47**	**4.4**	**18**	1.5	**4,200**	-	-	-	-	-	-	-	-	6.15	0.538	4.21	0.28	11.20	33.7
Area 5		4/4/2019	1.0 U	**78**	**25**	0.52 J	**48**	**5.7**	**14**	1.2	**4,100**	-	-	-	-	-	-	-	0.89 J	6.40	0.560	4.50	0.89	11.00	7.9
Area 5		10/10/2019	1.0 U	**110**	**36**	0.77 J	**53**	**8.5**	9.3	0.86	**4,000**	-	-	-	-	-	-	-	1.2	6.20	0.610	8.40	0.42	11.00	51.0
Area 5		05/12/2020	1.0 U	**110**	**18**	0.59 J	**38**	**10**	8.3	0.95	**3,800**	1.1 U	1.0 U	360	220	0.10 U	9.4	0.83 U	1.1	6.91	1.260	18.4	10.4	11.80	-83.9
Area 5		10/14/2020	1.0 U	**76**	**9.1**	0.58 J	**37**	**11**	7.6	1.0	**3,800**	1.1 U	0.54 J	540	230	0.05 U	9.9	0.81 U	1.1	6.43	0.397	4.78	0.72	11.60	57.0
Area 5		5/12/2021	1.0 U	**89**	2.0 U	0.96 J	**22**	**10**	6.9	1.1	**3,600**	0.76 U	0.57 J	350	230	0.05 U	7.4	0.81 U	1.4 U	6.46	0.402	2.68	1.09	11.30	12.2
Area 5		10/14/2021	1.0 U	**120**	4.8	0.66 J	**38**	**14**	8.0	1.2	**4,200**	0.34 J	0.64 J	520	260	0.05 U	7.5	0.81 U	1.4	6.24	0.536	0.03	1.04	12.00	55.4
Area 5	G6M-13-01X	1/30/2014	0.5 U	0.73	**12**	0.5 U	0.42 J	0.5 U	-	-	-	-	-	-	-	-	-	-	-	6.21	0.860	38.0	1.64	16.43	188.4
Area 5		10/28/2014	0.5 U	7.8	**150**	0.5 U	2.8	0.5 U	2.5 U	0.025 U	27 J	-	-	-	-	-	-	-	-	6.25	0.495	9.14	1.77	12.81	100.3
Area 5		6/22/2015	0.5 U	1.3	**16**	0.5 U	0.65 J	0.5 U	2.3 J	0.05 U	8.7 J	-	-	-	-	-	-	-	-	5.80	0.848	1.11	0.89	17.46	172.2
Area 5		10/16/2015	1.0 U	1.0 U	**26**	1.0 U	1.1	1.0 U	4.0 U	0.061 J	16	-	-	-	-	-	-	-	-	5.57	0.727	22.1	0.52	13.66	42.7
Area 5		2/11/2016	1.0 U	1.6	**10**	1.0 U	0.69 J	1.0 U	4.0 U	0.1 U	10 J	10 U	10 U	126	32	0.31	17	2.0 U	1.0 U	6.05	0.880	1.02	0.57	10.34	38.8
Area 5		6/15/2016	1.0 U	2.8	**18**	1.0 U	1.1	1.0 U	2.1 J	0.083	14	-	-	-	-	-	-	-	-	6.09	0.891	25.0	0.65	15.57	36.9
Area 5		11/11/2016	1.0 U	6.5	**27**	1.0 U	3.5	**2.8**	3.5	1.2	29	-	-	-	-	-	-	-	-	5.63	0.638	22.1	1.11	12.35	83.3
Area 5		12/12/2006	1.0 U	**120**	**750**	2.0 U	**45**	**7.8**	5.0 U	1.0 U	15 U	0.013	0.59	16,000	-	-	-	-	5.0 U	5.98	0.350	7.00	0.22	11.90	145.0
Area 5		5/18/2017	1.0 U	3.4	**13**	1.0 U	0.85 J	1.0 U	3.0 U	0.039 J	19	1.1 U	1.0 U	830	36	0.14	14	1.0 U	1.0 U	6.02	0.631	5.47	0.37	14.52	127.6
Area 5		10/16/2017	1.0 U	0.65 J	**10**	1.0 U	0.79 J	1.0 U	3.6	0.83	34	-	-	-	-	-	-	-	-	6.09	0.809	38.9	0.40	12.11	49.7
Area 5		4/4/2018	1.0 U	1.2	3.4	1.0 U	0.99 J	1.0 U	10	1.5	260	1.1 U	1.0 U	3,200	31	0.05 U	15	1.0 U	1.8	6.15	0.907	3.35	0.71	11.09	41.9
Area 5		10/29/2018	1.0 U	3.6	0.85 J	1.0 U	1.3	1.0 U	**13**	1.5	200	1.1 U	1.0 U	2,300	35	0.05 U	14	1.0 U	6.7	5.63	0.975	23.6	0.46	12.06	-1.9
Area 5		4/3/2019	1.0 U	3.1	1.0 U	1.0 U	1.0 U	1.0 U	3.4	0.46	**3,300**	0.66 J	1.5	4,500	-	0.05 U	13	1.0 U	36	6.00	1.000	29.0	1.40	12.00	-140.0
Area 5		10/21/2019	1.0 U	30	1.8	1.0 U	**7.1**	**4.0**	6.2	1.3	**2,700**	1.1 U	2.2	6,200	34	0.21	12	0.85 U	14	5.70	0.790	190	0.15	12.00	33.0
Area 5		05/11/2020	1.0 U	4.4	0.85 J	1.0 U	0.69 J	1.0 U	6.2	0.62	**5,100**	1.1 U	0.78 J	8,000	66	0.10 U	10	0.81 U	11	5.90	0.941	94.2	0.88	12.70	3.8
Area 5		10/13/2020	1.0 U	2.2	2.0	1.0 U	1.6	1.0 U	1.8 J	0.18	**2,600**	1.1 U	1.0 U	3,100	45	0.05 U	15	0.83 U	3.8	6.20	0.639	322	1.53	11.80	-88.1
Area 5		5/11/2021	1.0 U	24	2.0 U	1.0 U	1.0 U	**6.7**	**14**	1.1	**6,000**	2.5	6.8	9,300	170	0.05 U	8.3	0.81 U	3.0	6.50	0.686	291.9	0.89	11.9	-99.8
Area 5		10/12/2021	1.0 U	1.9	2.0 U	1.0 U	1.6	1.0 U	**160**	1.4	**5,800**	0.76 U	0.60 J	2,200	98	0.05 U	11.0	0.81 U	1.3	6.48	1.620	8.77	0.69	12.2	-38.6
Area 5	G6M-13-04X	12/11/2006	1.0 U	2.0 U	**87**	2.0 U	2.0 U	2.0 U	5.0 U	0.1 U	15	0.007 J	0.033	2.2	-	-	-	-	5.0 U	6.65	0.134	10.5	6.99	17.20	116.4
Area 5		1/30/2014	0.90 J	68	**41**	2.7	**51**	**150**	-	-	-	-	-	-	-	-	-	-	-	6.57	1.414	4.60	0.98	12.60	-36.4
Area 5		6/10/2014	0.66	29	**25**	2.7	**31**	**130**	**360**	**49 J**	**5,900**	2.7 J	12 J	3,600 J	280 J	0.13 U	9.3	0.03 U	2.5 J	6.42	1.212	12.9	0.58	-	-49.4
Area 5		10/29/2014	0.56	69	1.7	1.6	**17**	**72**	**321**	**5.5 J**	**6,170 J**	4.7	41	32,000	310	0.13 U	3.5 J	0.03 U	13	6.65	1.081	5.55	0.42	12.07	-95.2
Area 5		6/22/2015	0.5 U	2.2	0.5 U	0.5 U	1.8	1.4	**360**	**29**	**3,840 J**	5.0 U	5.0 U	719	129	0.11 U	30.5 J	1.0 U	3.2	6.95	0.800	0.80	0.70	17.28	-156.6
Area 5		10/15/2015	1.0 U	52	**19**	0.76 J	**19**	**33**	**388**	**33**	**7,930**	10 U	19	9,470	269	0.16	5.8 J	2.0 U	2.8	6.60	1.595	7.50	0.29	12.33	-69.4
Area 5		2/11/2016	1.0 U	15	0.70 J	1.5	**5.9**	**51**	**392**	**34**	**7,390**	10 U	19	5,690	261	0.099 J	6.1 J	2.0 U	3.2	6.66	1.086	9.50	1.23	8.53	-2.9
Area 5		6/15/2016	0.73 J	19	**12**	1.2	**18**	**55**	**340**	**27**	**6,800**	2.8	20 J	9,300	280	0.05 U	3.6	1.0 U	1.7	6.69	1.669	11.5	0.59	14.90	-54.2

Appendix D
Historical Groundwater Analytical Results
2021 Annual Operations, Maintenance, and Monitoring Report
Area of Contamination 50, Former Fort Devens Army Installation
Devens, Massachusetts

		Analytical Method	VOCs						Dissolved Metals			Dissolved Gases			General Chemistry					Field Parameters					
		Analyte	1,1-DCE	cis-1,2-DCE	PCE	trans-1,2-DCE	TCE	VC	Arsenic	Iron	Manganese	Ethane	Ethene	Methane	Alkalinity	Nitrate/ Nitrite	Sulfate	Sulfide	TOC	pH	SpC	Turbidity	DO	Temp	ORP
		Unit	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(SU)	(mS/cm)	(NTU)	(mg/L)	°C	(mV)
		Cleanup Level[1]	7	70	5		5	2	10	3.129	1,460					10,000									
Area	Well ID	Date Sampled																							
Area 5		11/11/2016	0.62 J	17	4.9	0.86 J	**17**	**36**	**340**	**28**	**7,600**	2.2	12	7,000	250	0.05 U	4.0	1.0 U	1.6	7.21	1.175	24.1	0.88	12.73	-80.4
Area 5		10/16/2017	0.71 J	25	**40**	0.81 J	**40**	**33**	**340 J**	**27**	**7,100**	1.5	7.6	2,500	190	0.05 U	4.1	1.0 U	1.8	6.76	1.410	4.96	0.65	12.07	-79.1
Area 5		4/5/2018	1.0 U	6.9	1.0 U	1.6	4.1	**8.6**	**350**	**34**	**7,500**	8.6	14	20,000	210	0.062 J	4.5	1.0 U	1.8	6.65	1.579	1.28	0.90	10.59	-31.2
Area 5		10/29/2018	1.0 U	7.7	1.0 U	0.67 J	**6.9**	**6.1**	**330**	**23**	**8,700**	1.8	4.4	2,700	160	0.055 J	6.9	1.0 U	1.5	6.42	1.619	9.47	0.91	11.18	-53.9
Area 5		4/4/2019	1.0 U	13	1.0 J	0.52 J	**12**	**6.5**	**350 J**	**35**	**10,000**	2.4	12	21,000	-	0.05 U	5.7 J	1.0 U	4.4	6.80	1.700	2.00	1.40	10.00	-97.0
Area 5		10/23/2019	1.0 U	8.5	1.0 U	1.0 U	0.61 J	**4.5**	**440**	**81**	**13,000**	3.2	16	13,000	310	0.042 J	4.1	0.86 U	55	6.60	2.000	11.0	1.80	12.00	-95.0
Area 5		05/11/2020	1.0 U	0.68 J	1.0 U	1.0 U	1.0 U	0.52 J	**430**	**44**	**9,000**	1.5	2.5	21,000	240	0.10 U	5.5	0.81 U	6.3	6.83	1.700	0.86	0.87	11.40	-83.4
Area 5		10/16/2020	1.0 U	1.2	1.0 U	1.0 U	1.0 U	1.3	**550**	**100**	**10,000**	3.3	3.6	25,000	250	0.055 J	4.4 J	0.96 U	10	6.54	1.450	94.8	0.61	12.20	-117.0
Area 5		10/12/2021	1.0 U	0.91 J	2.0 U	1.0 U	0.88 J	1.0 U	**450**	**41**	**8,300**	-	-	-	-	-	-	-	-	6.98	1.140	32.4	0.65	13.20	-135.0
Area 5	G6M-18-01	1/14/2019	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	-	-	-	-	-	-	-	-	-	-	-	8.58	0.166	3.09	7.00	11.60	69.0
Area 5		10/14/2019	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U	0.054	14	1.1 U	1.0 U	0.33 J	26	0.50	7.1	0.93 U	0.57 J	6.00	0.140	5.50	6.80	13.00	130.0
Area 5		11/05/2020	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U	0.05 U	4.7 J	1.1 U	1.0 U	0.40	22	0.51	6.1	0.81 U	1.0 U	8.23	0.149	2.01	7.42	13.00	119.0
Area 5	G6M-18-02	1/14/2019	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	-	-	-	-	-	-	-	-	-	-	-	6.22	0.722	3.69	3.85	10.74	137.1
Area 5		10/18/2019	1.0 U	1.0 U	0.80 J	1.0 U	1.0 U	1.0 U	3.0 U	0.017 J	90	1.1 U	1.0 U	2.6	18	1.9	11	0.88 U	1.0 U	5.80	0.840	1.30	2.50	12.00	210.0
Area 5		10/14/2020	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U	0.05 U	23	1.1 U	1.0 U	0.51 J	22	1.9	14	0.81 U	1.4	6.08	0.645	1,060	4.28	17.00	201.0
Area 5	G6M-97-05B	10/3/2011	0.5 U	0.5 U	**5.7**	0.5 U	0.58	0.5 U	5.0 U	0.1 U	25 U	-	-	-	-	-	-	-	-	6.21	0.357	1.48	3.91	12.40	166.4
Area 5		10/12/2012	0.5 U	0.5 U	**13**	0.5 U	0.73	0.5 U	5.0 U	0.017 J	25 U	-	-	-	-	-	-	-	-	6.19	0.649	0.41	4.13	14.61	132.0
Area 5		10/16/2013	0.5 U	0.63	**26**	0.5 U	0.70	0.5 U	5.0 U	0.1 U	25 U	-	-	-	-	-	-	-	-	6.15	0.513	3.86	3.88	13.76	123.8
Area 5		10/28/2014	0.5 U	1.7	**83**	0.5 U	1.8	0.5 U	2.5 U	0.029 J	25 U	-	-	-	-	-	-	-	-	6.21	0.499	2.78	3.38	11.07	112.1
Area 5		6/19/2015	0.5 U	2.3	**89**	0.5 U	4.8	0.5 U	3.1 J	0.05 U	7.5 U	5.0 U	5.0 U	5.0 U	27	1.0	7.8 J	1.0 U	-	6.26	0.630	1.72	2.73	17.20	106.3
Area 5		10/15/2015	1.0 U	3.4	**117**	1.0 U	**6.9**	1.0 U	4.0 U	0.061 J	19	-	-	-	-	-	-	-	-	5.43	0.687	1.05	3.41	18.92	86.9
Area 5		2/11/2016	1.0 U	3.8	**97**	1.0 U	**11**	1.0 U	4.0 U	0.1 U	15 U	10 U	10 U	10 U	29	1.0	7.8 J	2.0 U	1.0 U	6.33	0.430	16.7	4.72	7.32	131.7
Area 5		6/15/2016	1.0 U	4.2	**87**	1.0 U	**13**	1.0 U	3.0 U	0.05 U	3.0 U	-	-	-	-	-	-	-	-	6.26	0.669	1.15	2.75	15.93	81.7
Area 5		11/15/2016	1.0 U	4.2	**140**	1.0 U	**13**	1.0 U	3.0 U	0.021 J	2.4 J	-	-	-	-	-	-	-	-	6.39	0.469	0.87	3.37	11.73	129.4
Area 5		5/17/2017	1.0 U	8.6	**190**	1.0 U	**15**	1.0 U	3.0 U	0.05 U	3.0 U	1.1 U	1.0 U	0.84	31	0.94	7.0	1.0 U	1.0 U	6.20	0.547	9.59	2.00	15.17	120.8
Area 5		10/11/2017	1.0 U	4.4	**140**	1.0 U	**16**	1.0 U	3.0 U	0.1 U	3.3 J	1.1 U	1.0 U	0.58 U	32	0.89	7.4	1.0 U	1.0 U	6.20	0.710	5.27	1.65	13.95	100.1
Area 5		4/3/2018	1.0 U	9.0	**240**	1.0 U	**19**	1.0 U	3.0 U	0.05 U	1.4 J	1.1 U	1.0 U	34	33	0.79	7.4	1.0 U	1.5	6.60	0.671	1.13	1.85	10.87	47.4
Area 5		10/30/2018	2.0 U	9.6	**190**	2.0 U	**16**	2.0 U	3.0 U	0.05 U	1.5 J	1.1 U	1.0 U	530 J	35	0.59	8.6	1.0 U	0.5 U	5.74	0.758	9.85	1.29	9.05	105.0
Area 5		4/3/2019	1.0 U	9.8	**180**	1.0 U	**22**	1.0 U	3.0 U	0.05 U	4.3 J	1.1 U	1.0 U	1,100	-	0.58	7.6	1.0 U	0.5 U	6.20	0.760	0.69	1.50	13.00	45.0
Area 5		10/21/2019	1.0 U	17	**26**	1.0 U	**7.8**	1.0 U	**56**	**22**	**5,800**	4.7	1.4	820	110	0.05 U	2.0	0.83 U	270	6.00	0.980	140	0.11	12.00	5.8
Area 5		05/11/2020	1.0 U	**77**	**6.4**	1.0 U	0.97 J	0.56 J	**220**	**100**	**16,000**	6.5	1.6	13,000	250	0.10 U	0.48 J	0.81 U	260	5.86	1.230	23.1	1.04	13.40	-61.2
Area 5		10/13/2020	1.0 U	**73**	**13**	1.0 U	3.1	**2.4**	**130**	**61**	**5,800**	25	22	10,000	150	0.10 U	1.0 U	0.81 U	210	5.32	0.655	2,600	0.42	11.80	181.0
Area 5		5/11/2021	1.0 U	32	1.9 J	1.0 U	3.4	**10**	**250**	**74**	**13,000**	5.7	24	27,000	170	0.046 J	1.0 U	0.81 U	67	6.40	0.806	330	0.56	14	-83.9
Area 5		10/13/2021	1.0 U	21	2.0 U	1.0 U	3.1	**8.0**	**170**	**52**	**6,600**	6.3	23	28,000	110	0.05 U	0.67 J	0.81 U	34	6.49	1.625	11.96	0.7	89	-105.1
Area 5	MW-3	10/17/2001	10 U	**540**	**4,300**	20 U	**1,500**	20 U	-	-	-	-	-	-	-	-	-	-	-	5.70	1.400	3.10	0.90	13.73	-127.0
Area 5		12/19/2001	6.5 J	**2,200**	**26**	20 U	**4,000**	20 U	-	-	-	-	-	-	-	-	0.43 J	-	92	6.28	0.912	7.28	0.43	12.98	-46.0
Area 5		1/3/2002	-	-	-	-	-	-	**180**	**30**	-	0.063	0.21	18	-	-	-	-	44	4.77	2.795	4.40	1.33	11.19	-48.0
Area 5		1/31/2002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	38	6.64	0.999	-	0.00	12.17	-293.0
Area 5		2/13/2002	3.7	**1,600**	**4,400**	1.6 J	**1,700**	2.0 U	**190**	**20**	**8,300**	0.079	0.29	53	-	0.10 U	14	1.0 J	15	6.65	0.893	1.30	0.75	13.54	-71.0
Area 5		3/13/2002	2.8	**1,400**	**5,200**	1.4 J	**640**	2.0 U	**180**	**16**	**8,400**	0.093	0.37	66	-	0.10 U	15	2.0 U	7.3	6.72	0.795	1.04	0.25	12.21	-75.0
Area 5		4/2/2002	4.0	**1,700**	**3,100**	2.2	**1,000**	2.0 U	-	-	-	-	-	-	-	-	-	-	3.3 J	6.74	0.634	2.08	4.28	13.17	-120.0
Area 5		4/17/2002	3.4	**1,600**	**1,200**	1.2 J	**1,300**	2.0 U	**240**	**37**	**17,000**	0.025	0.087	54	-	3.0	7.9 J	1.6 J	6.1	6.60	0.771	0.81	4.39	12.69	-102.0
Area 5		5/15/2002	6.7	**2,600**	**31**	3.5	**23**	2.0 U	**260**	**42**	**19,000**	0.052	0.24	560	-	0.10 U	3.9	1.6 J	96	6.66	1.460	1.68	0.31	14.23	-124.0
Area 5		6/27/2002	100 U	**1,800**	200 U	200 U	200 U	200 U	**490 J**	**140**	**37,000 J**	0.021	0.082	3,900	-	14	4.4 J	2.0 U	270	6.70	3.804	2.90	1.64	13.80	-107.0
Area 5		7/31/2002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31	6.76	1.606	-	0.15	13.90	-225.0
Area 5		8/26/2002	4.4	**580**	**990**	2.1	**640**	2.0 U	**270**	-	-	0.053	0.16	14,000	320	-	-	-	30	6.83	1.285	6.50	0.15	18.80	-138.0
Area 5		10/28/2002	4.2	**1,700**	**1,900**	3.9	**820**	2.0 U	**330**	**39**	**9,700**	0.30	0.23	6,300	190	0.10 U	10	2.0 U	6.3	6.70	1.129	5.01	0.40	15.70	-129.0
Area 5		2/3/2003	**7.1**	**2,900**	3.0	2.0 U	2.0 U	2.0 U	**330**	**120**	-	0.005 U	0.26	28,000	580	-	1.0 U	-	180	6.84	1.322	6.70	0.30	18.20	-159.0
Area 5		7/16/2003	**7.5**	**2,700**	2.4	2.0 U	2.0 U	**2.5**	**520**	**170**	-	0.005 U	0.10	23,000	450	-	4.0 U	2.0 U	17	7.02	1.464	39.2	1.09	16.10	-138.0
Area 5		9/24/2003	6.9	**1,900**	**670**	2.4	**1,100**	2.0 U	**460**	**89**	**7,900**	0.005 U	0.012	22,000	-	-	-	-	5.9	6.10	1.222	18.9	9.17	15.30	-138.0
Area 5		1/9/2004	5.6	**2,000**	**9.7**	2.0 U	**64**	2.0 U	**530**	**200 J**	**15,000**	0.005 U	0.005 U	45,000	500 J	-	1.0 U	2.0 U	130	6.73	1.347	14.6	0.40	-	-195.0
Area 5		3/11/2004	**7.6**	**4,700**	**680**	2.0 U	**620**	2.0 U	**420**	**11**	**8,400**	0.005 U	0.005 U	27,000	200	-	4.4	2.0 U	6.1	6.58	0.972	4.30	0.62	13.90	-161.0
Area 5		6/2/2004	4.5	**1,800**	2.0 U	2.0 U	2.0 U	2.0 U	**670**	**150**	**23,000**	0.005 U	0.014	31,000	810	-	0.98 J	2.0 U	290	6.95	1.905	38.7	0.10	15.70	-149.0
Area 5		9/21/2004	5.2	**1,900**	**210**	2.0 U	**250**	**3.5**	**660**	**200 J**	**7,200**	0.086	0.005 U	28,000	310	1.0 J	4.3 J	2.0 U	17	6.66	0.725	2.27	0.95	11.10	-153.6
Area 5		12/13/2004	1.0 U	**750**	2.0 U	2.0 U	2.0 U	**610**	**510**	**160**	**5,400**	0.092	3.5	17,000	210	1.1	1.4 J	2.0 U	8.0	6.62	1.009	15.1	1.60	13.90	-103.3
Area 5		3/28/2005	50 U	**1,000**	**23 J**	50 U	**16 J**	**280**	**670**	**150**	**7,300**	0.005 U	5.1	25,000	405	0.2 U	1.0 U	7.5 J	21	6.49	1.260	2.37	0.34	14.44	-134.9
Area 5		8/10/2005	5.1	**120**	**440**	2.0 U	**80**	**760**	**680**	**180**	**4,400**	0.061 J	13	22,000	338	0.05 U	2.0 U	8.0	43	11.13	1.401	28.9	0.71	15.67	-118.5
Area 5		9/27/2005	**9.1**	**180**	**1,100**	1.8	**240**	**360**	**480**	**71 J**	**2,500**	0.020 J	40	22,000	97	0.05 U	9.9J	3.4	5.6	6.36	0.660	2.80	0.21	14.50	-91.2
Area 5		12/12/2005	10 U	52	**37**	20 U	**67**	**480**	**566**	**100**	-	0.055	100	26,000	180	0.083 J	2.0 U	5.6	18	6.66	1.087	8.00	0.11	15.70	-152.7
Area 5		3/20/2006	3.9	**120**	**620**	3.1	**350**	**220**	**440**	**85**	**3,600**	0.025 U	130	25,000	110	0.2 U	6.3	1.0 U	13	6.95	0.871	3.71	0.77	14.88	-106.2
Area 5		6/22/2006	1.0 U	4.0	2.0 U	7.6	2.0 U	**6.1**	**520**	**87**	**3,300**	0.023 J	180	20,000	98	0.2 U	1.0 U	1.0 U	4.0 J	6.40	1.012	4.18	0.22	12.97	-127.0
Area 5		9/20/2006	5.6	**130**	**360**	12	**420**	**200**	**580**	**70**	**3,300**	0.015 J	95	17,000	70	0.2 U	7.9	1.4	9.6	6.52	0.729	3.56	0.28	13.28	-108.5
Area 5		3/27/2007	1.0 U	19	2.0 U	12	**31**	**27**	**560**	**110**	**3,300 J**	0.025 U	130	18,000	-	-	3.2	1.0 U	5.2	6.28	0.944	2.64	0.19	13.60	21.0
Area 5		6/11/2007	1.0 U	5.4	2.0 U	15	5.0	**8.0**	**570**	**190**	**5,000**	0.038	150	32,000	-	-	12	2.2	67	6.56	1.405	17.3	0.58	12.26	-124.7
Area 5		9/11/2007	2.6	**100**	**610**	6.4	**470**	**97**	**530**	**100**	**3,600**	-	-	-	150	0.2 U	400	1.0 U	-	6.76	1.016	6.80	0.23	13.48	-130.0
Area 5		10/12/2007	-	-	-	-	-	-	-	-	-	0.025 U	120	34,000	-	-	-	-	3.8 J	-	-	-	-	12.51	-
Area 5		12/13/2007	2.4	59	**250**	8.8	**180**	**78**	**420**	**91**	**4,400**	0.016 J	130	30,000	-	-	10	1.0 U	4.1 J	6.60	1.040	15.7	0.27	19.20	-159.8
Area 5		3/10/2008	1.0 U	2.0 U	2.0 U	8.3	2.0 U	2.0 U	**530**	**140**	**3,300**	18	35	29,000	-	-	5.0 U	2.4	16	6.46	1.402	5.50	0.12	14.26	-113.0
Area 5		10/6/2008	5.0 U	5.0 U	5.0 U	11	5.0 U	5.0 U	**482**	**112**	**3,720**	1.3 U	72	28,000	210	0.13 U	7.0 U	0.03 U	10 U	6.49	1.070	9.30	0.24	21.50	-158.6
Area 5		1/21/2009	1.2 U	1.6 J	1.4 U	9.2	2.3 U	1.9	**556**	**114 J**	**3,350**	3.2	58	40,000	160	0.13 U	7.0 U	0.03 U	10 U	6.69	1.044	4.01	0.50	15.50	-79.9
Area 5		5/7/2009	2.0 U	48	2.0 U	17	**59**	**66**	**519**	**115**	**3,630**	1.3	70	47,000	360 J	0.13 U	22	0.03 U	7.0 J	6.26	1.205	4.54	1.03	18.86	-89.9

Appendix D
Historical Groundwater Analytical Results
2021 Annual Operations, Maintenance, and Monitoring Report
Area of Contamination 50, Former Fort Devens Army Installation
Devens, Massachusetts

		Analytical Method	VOCs						Dissolved Metals			Dissolved Gases			General Chemistry					Field Parameters					
		Analyte	1,1-DCE	cis-1,2-DCE	PCE	trans-1,2-DCE	TCE	VC	Arsenic	Iron	Manganese	Ethane	Ethene	Methane	Alkalinity	Nitrate/ Nitrite	Sulfate	Sulfide	TOC	pH	SpC	Turbidity	DO	Temp	ORP
		Unit	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(SU)	(mS/cm)	(NTU)	(mg/L)	°C	(mV)
		Cleanup Level[1]	7	70	5		5	2	10	3.129	1,460					10,000									
Area	Well ID	Date Sampled																							
Area 5		10/19/2009	2.0 U	25	2.0 U	9.4	**35**	**40**	**551**	**120**	**5,330**	1.2 U	36	25,000	490	0.13 U	28	0.03 U	6.7 J	6.24	1.494	25.6	0.60	15.54	-62.6
Area 5		4/20/2010	0.5 U	0.47 J	0.5 U	4.7 J	0.48 J	**2.5 J**	**526**	**136 J**	**3,200**	10	19	47,000	440	0.13 U	3.4 J	0.03 U	9.0 J	6.33	1.445	0.09	0.16	11.12	5.4
Area 5		10/5/2010	0.5 U	3.4	0.5 U	7.5	4.8	**20**	**444**	**76**	**3,560**	1.2 U	69	32,000	750	0.13 U	4.5 J	0.03 U	10 U	6.20	1.799	0.58	0.20	11.94	-85.9
Area 5		6/8/2011	0.5 U	0.93	0.5 U	4.4	0.66	**17**	**374**	**54**	**2,570**	4.5	18	100,000	690	0.13 U	1.7 J	0.03 U	12	6.34	1.232	3.56	0.30	11.96	-91.1
Area 5		10/3/2011	0.5 U	0.52	0.5 U	1.7	0.5 U	1.0	**385**	**46**	**2,760**	1.2 U	1.5 U	40,000	730	0.13 U	0.74 J	0.03 U	10	6.47	1.544	0.90	0.13	12.14	-88.1
Area 5		5/8/2012	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**276**	**27**	**3,140**	51	110	66,000	600	0.13 U	0.82 J	0.03 U	7.5 J	6.77	1.856	4.60	0.08	12.24	-107.2
Area 5		10/10/2012	0.5 U	0.5 U	0.5 U	0.54	0.5 U	1.2	**267**	**26**	**4,810**	61	100	36,000	520	0.13 U	1.4 J	0.03 U	5.6 J	6.45	1.738	0.92	0.51	12.10	-87.6
Area 5		5/21/2013	0.5 U	0.30 J	0.5 U	0.39 J	0.5 U	0.75	**281**	**25**	**6,460**	1.2 U	1.5 U	10,000	530 J	0.13 U	0.64 J	0.03 U	4.3 J	6.76	1.277	2.75	0.12	11.48	-105.2
Area 5		10/16/2013	0.5 U	0.36 J	0.5 U	0.32 J	0.21 J	0.94	**298**	**27**	**7,970**	12	11	38,000	510	0.13 U	1.9 J	0.03 U	5.2 J	6.75	1.437	< 0.01	0.40	11.96	-87.4
Area 5		6/11/2014	0.5 U	0.5 U	0.5 U	0.37 J	0.5 U	0.83	**354**	**34 J**	**11,100**	2.9 J	1.6 U	5,100 J	330 J	0.13 U	1.2 U	0.03 U	8.3 J	6.70	1.062	6.18	0.51	11.84	-67.6
Area 5		10/29/2014	0.5 U	0.68	0.5 U	0.38 J	0.27 J	0.53	**334**	**30 J**	**10,500 J**	3.8	1.5 U	13,000	370	0.13 U	2.4 J	0.03 U	5.2 J	6.80	0.756	3.79	0.34	11.95	-110.1
Area 5		6/23/2015	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**409**	**37**	**11,000**	5.0 U	5.0 U	4,830	366	0.11 U	5.1 J	1.0 U	5.0	6.34	1.262	5.85	1.07	14.23	-89.4
Area 5		10/15/2015	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.54 J	**420**	**42**	**12,600**	10 U	10 U	4,570	349	0.071	10 U	2.0 U	4.9	6.97	1.215	1.38	0.48	13.86	-112.1
Area 5		2/10/2016	1.0 U	1.0	1.0 U	1.0 U	1.0 U	0.88 J	**423**	**49**	**12,000**	10 U	10 U	7,260	341	0.094 J	10 U	2.0 U	5.4	6.72	0.851	10.5	1.12	9.14	-109.7
Area 5		6/16/2016	1.0 U	1.5	1.0 U	1.0 U	1.0 U	0.89 J	**410**	**45**	**9,800**	3.0	1.0 U	20,000	350	0.05 U	1.3	1.0 U	6.1	6.81	1.360	4.93	0.66	14.27	-77.4
Area 5		11/11/2016	1.0 U	1.7	1.0 U	1.0 U	0.96 J	1.6	**410**	**47**	**9,500**	2.9	1.0 U	7,000	370	0.05 U	1.4	1.0 U	6.4	7.22	0.871	7.77	0.83	12.73	-97.8
Area 5		5/17/2017	1.0 U	0.75 J	1.0 U	1.0 U	1.0 U	1.0 U	**500**	**56**	**9,400**	1.8	1.0 U	10,000	310	0.073 J	2.2	1.0 U	5.2	6.78	0.909	6.29	0.63	12.70	-112.4
Area 5		10/11/2017	1.0 U	1.0	1.0 U	1.0 U	1.0 U	0.60 J	**440**	**56**	**9,200**	1.9	1.0 U	5,500	280	0.06 J	0.62 J	1.0 U	5.0	6.60	1.200	4.33	0.69	13.43	-102.3
Area 5		10/29/2018	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**470**	**51**	**8,300**	-	-	-	-	-	-	-	-	6.80	1.211	4.13	1.05	11.61	-102.0
Area 5		10/17/2019	1.0 U	0.71 J	1.0 U	1.0 U	1.0 U	1.0 U	**510**	**42**	**7,000**	-	-	-	-	-	-	-	-	6.70	1.100	7.60	1.10	12.00	-100.0
Area 5		10/15/2020	1.0 U	0.49 J	1.0 U	1.0 U	1.0 U	1.0 U	**610**	**43**	**7,300**	-	-	-	-	-	-	-	-	6.91	0.716	1.89	0.23	13.90	-120.0
Area 5		10/12/2021	1.0 U	0.51 J	2.0 U	1.0 U	1.0 U	1.0 U	**530**	**41**	**8,900**	-	-	-	-	-	-	-	-	6.82	1.641	13.87	1.12	12.60	-108.0
Area 5	MW-7	2/14/2002	1.0 U	2.0 U	**5,900**	2.0 U	4.5	2.0 U	5.0 U	1.0 U	170 J	0.12	0.080	8.4	-	-	20	0.6 J	-	6.12	0.787	90.0	1.58	18.84	104.0
Area 5		3/14/2002	1.0 U	2.0 U	**5,700**	2.0 U	4.2	2.0 U	5.0 U	1.0 U	1,000 U	0.094	0.18	5.9 J	-	4.1	22 J	2.0 U	2.0 J	6.12	0.808	8.85	2.29	12.76	203.0
Area 5		4/17/2002	1.0 U	2.0 U	**4,200**	2.0 U	2.9	2.0 U	2.3 J	1.0 U	1,000 U	0.072	0.20	6.0	-	4.2	18 J	1.6 J	5.0 U	6.11	0.656	19.5	0.50	-	145.0
Area 5		5/16/2002	1.0 U	2.0 U	**5,700**	2.0 U	4.3	2.0 U	5.0 U	1.0 U	1,000 U	0.097	0.20	9.0	-	4.3	18 J	2.0 U	5.0 U	6.05	0.759	23.9	0.21	10.92	185.0
Area 5		6/27/2002	10 U	2.0 U	**5,300**	2.0 U	3.8 J	2.0 U	5.0 U	1.0 U	170 J	-	-	-	-	4.2	19 J	2.0 U	5.0 U	6.13	1.198	100	0.73	11.12	163.0
Area 5		8/27/2002	1.0 U	2.0 U	**4,700**	2.0 U	3.5	2.0 U	5.0 U	-	-	-	-	-	29	-	-	-	5.0 U	6.13	0.632	1.86	0.29	12.02	136.0
Area 5		10/30/2002	1.0 U	2.0 U	**5,400**	2.0 U	2.7	2.0 U	5.0 U	1.0 U	200 J	0.047	0.18	20	23	4.9	16	2.0 U	5.0 U	6.05	0.779	3.63	0.37	11.85	66.0
Area 5		12/14/2002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.0 U	-	-	-	-	12.04	-
Area 5		1/30/2003	1.0 U	2.0 U	**4,700**	2.0 U	3.1	2.0 U	5.0 U	1.0 U	-	0.044	0.075	23	19	-	16	-	5.0 U	5.80	0.773	1.08	2.20	13.43	171.0
Area 5		9/24/2003	1.0 U	2.0 U	**4,200**	2.0 U	3.3	2.0 U	5.0 U	1.0 U	140	0.015	0.027	58	-	-	-	-	5.0 U	3.40	0.691	0.30	1.43	-	522.0
Area 5		1/8/2004	1.0 U	2.0 U	**4,300**	2.0 U	2.8	2.0 U	5.0 U	1.0 U	130	0.011	0.026	25	27	-	14 J	2.0 U	5.0 U	6.02	0.481	15.0	0.00	11.59	198.0
Area 5		3/12/2004	1.0 U	2.0 U	**3,100**	2.0 U	2.7	2.0 U	5.0 U	1.0 U	120	0.020	0.28	6.3	24	-	15 J	2.0 U	1.0 U	6.04	0.556	1.00	0.47	13.99	162.0
Area 5		6/3/2004	1.0 U	2.0 U	**2,900**	2.0 U	2.6	2.0 U	5.0 U	1.0 U	110	0.012	0.034	34	24	-	15 J	2.0 U	1.5 J	5.96	0.580	1.92	0.31	-	205.2
Area 5		9/21/2004	1.0 U	3.1	**2,900**	2.0 U	3.4	2.0 U	5.0 U	1.0 U	110	-	-	-	-	-	-	-	-	5.98	0.580	< 0.01	0.21	11.09	240.4
Area 5		9/27/2005	2.5 U	5.8	**1,600**	2.5 U	3.7	2.5 U	5.0 U	0.2 J	110	-	-	-	-	-	-	-	-	4.49	0.593	3.39	0.93	11.86	304.1
Area 5		9/22/2006	1.0 U	7.7	**4,400**	2.0 U	**9.8**	2.0 U	5.0 U	0.1 U	100	-	-	-	-	-	-	-	-	5.99	0.503	3.01	1.19	12.70	140.9
Area 5		9/11/2007	1.0 U	22	**1,200**	2.0 U	**11**	2.0 U	6.0 U	0.1 U	110	-	-	-	-	-	-	-	-	5.98	0.691	5.90	0.32	-	139.9
Area 5		10/20/2008	20 U	**150**	**600**	20 U	**40**	20 U	8.0 U	0.2 U	166	-	-	-	-	-	-	-	-	5.97	0.804	2.00	1.39	14.72	71.9
Area 5		10/19/2009	10 U	**270**	**97**	10 U	**33**	10 U	4.2 J	1.7	**2,170**	-	-	-	-	-	-	-	-	6.03	1.686	1.91	0.47	14.58	76.7
Area 5		10/6/2010	2.5 U	**120**	**45**	2.5 U	**9.5**	**3.1**	5.7	1.5	**2,090**	-	-	-	-	-	-	-	-	6.53	2.072	4.81	0.21	11.46	-21.6
Area 5		10/6/2011	0.5 U	20	1.6	0.5 U	3.7	**6.8**	**53**	**5.4**	**5,070**	-	-	-	-	-	-	-	-	6.60	1.717	3.00	0.49	-	-48.8
Area 5		10/12/2012	0.5 U	9.9	2.3	0.70	2.3	**11**	**140**	**21**	**9,900**	-	-	-	-	-	-	-	-	6.38	1.253	< 0.01	0.65	-	-65.0
Area 5		10/17/2013	0.5 U	13	1.5	0.24 J	**6.9**	**2.2**	**156**	**21**	**9,360**	-	-	-	-	-	-	-	-	6.72	1.152	< 0.01	0.58	10.50	-68.2
Area 5		11/3/2014	0.5 U	13	1.7	0.27 J	**8.4**	1.5	**205**	**30**	**15,300**	-	-	-	-	-	-	-	-	6.62	0.878	1.94	0.41	10.28	-74.2
Area 5		10/15/2015	1.0 U	12	1.0 U	1.0 U	1.7	1.1	**198**	**30**	**15,100**	-	-	-	-	-	-	-	-	6.83	0.926	1.50	0.84	11.26	-68.2
Area 5		11/14/2016	1.0 U	22	1.0 U	1.0 U	1.4	**37**	**110**	**19**	**13,000**	-	-	-	-	-	-	-	-	6.01	0.770	7.42	1.24	13.20	-63.5
Area 5		10/11/2017	1.0 U	1.4	1.0 U	1.0 U	0.53 J	**15**	**160**	**20**	**19,000**	-	-	-	-	-	-	-	-	6.37	0.730	2.75	0.67	12.73	-30.1
Area 5		10/29/2018	1.0 U	0.95 J	1.0 U	1.0 U	1.0 U	1.0 U	**250**	**20**	**14,000**	-	-	-	-	-	-	-	-	6.17	1.018	19.6	0.46	12.83	-56.8
Area 5		10/30/2019	-	-	-	-	-	-	**400**	**23**	**12,000**	-	-	-	-	-	-	-	-	6.40	0.980	96.0	0.41	13.00	-52.0
Area 5		12/20/2019	1.0 U	1.3	1.0 U	1.0 U	0.79 J	1.0 U	-	-	-	-	-	-	-	-	-	-	-	6.79	0.626	15.2	2.43	9.94	-110.7
Area 5		10/15/2020	1.0 U	2.2 J	1.0 U	1.0 U	1.0 U	2.0 J	**470**	**22**	**10,000**	-	-	-	-	-	-	-	-	6.80	0.602	2.59	0.27	14.10	-94.9
Area 5		10/12/2021	1.0 U	3.0	2.0 U	1.0 U	0.65 J	1.6	**490**	**26**	**11,000**	-	-	-	-	-	-	-	-	6.61	1.398	30.98	0.72	11.10	-93.5
Area 5	XSA-12-95X	10/12/2012	5.0 U	66	**290**	5.0 U	**36**	**10**	4.6 J	**9.5**	**11,800**	-	-	-	-	-	-	-	-	6.53	1.247	45.0	2.04	12.77	-63.9
Area 5		10/15/2013	5.0 U	**100**	**160**	4.7 J	**51**	**6.5**	**13**	**5.2**	**9,890**	-	-	-	-	-	-	-	-	6.59	1.411	24.4	0.30	13.11	-254.4
Area 5		10/28/2014	0.47 J	**94**	**110**	5.0	**39**	**9.0**	8.3	**4.5 J**	**9,310 J**	-	-	-	-	-	-	-	-	6.90	0.906	20.2	0.18	14.23	-315.7
Area 5		10/19/2015	6.7	1.0 U	**27**	1.0 U	**20**	**7.2**	4.0 U	**4.8**	**10,600**	-	-	-	-	-	-	-	-	7.97	1.385	15.3	1.77	-	-103.6
Area 5		11/14/2016	1.0 U	**78**	**23**	4.3	**9.8**	**7.4**	3.0 U	1.9	**8,400**	-	-	-	-	-	-	-	-	6.58	1.048	28.1	1.21	12.69	-59.7
Area 5		10/10/2017	1.0 U	26	**36**	3.1	**11**	**5.6**	3.2	**7.8**	**9,700**	-	-	-	-	-	-	-	-	6.65	1.410	19.5	0.35	14.73	-85.3
Area 5		10/23/2018	1.0 U	11	**13**	2.2	5.0	1.9	3.2	**3.3**	**11,000**	-	-	-	-	-	-	-	-	6.58	1.198	29.4	0.21	9.60	-2.1
Area 5		10/15/2020	1.0 U	6.1	**6.9**	2.2	3.9	1.0 U	3.0	1.9	**11,000**	-	-	-	-	-	-	-	-	6.79	1.230	202	0.61	15.70	-89.7
Area 5		10/13/2021	1.0 U	4.3	2.8	1.7	2.7	0.86 J	2.2 J	3.5	**11,000**	-	-	-	-	-	-	-	-	6.83	1.179	31	0.02	13.60	-99.5
Area 5	XSA-12-96X	10/10/2012	2.0 U	14	**120**	2.0 U	4.4	2.0 U	5.0 U	3.1	97	-	-	-	-	-	-	-	-	6.52	0.782	3.90	0.72	12.33	-87.1
Area 5		10/15/2013	2.5 U	17	**100**	2.5 U	**11**	**3.7**	3.7 J	0.94	**2,840**	-	-	-	-	-	-	-	-	6.46	0.824	0.90	0.27	15.90	-271.6
Area 5		10/28/2014	0.36 J	22	**84**	2.3	**14**	**6.0**	3.2 J	0.925 J	**5,720 J**	-	-	-	-	-	-	-	-	6.73	0.625	4.83	0.14	12.11	-300.6
Area 5		10/26/2015	3.4	1.0 U	**30**	1.0 U	**14**	**10**	4.0 U	2.2	**7,340**	-	-	-	-	-	-	-	-	6.34	0.787	9.41	0.66	12.98	-77.9
Area 5		11/14/2016	0.59 J	20	**29**	4.9	**19**	**11**	3.0 U	1.2	**6,300**	-	-	-	-	-	-	-	-	5.63	0.733	9.26	0.66	11.67	-25.5
Area 5		10/10/2017	0.64 J	20	**26**	5.0	**20**	**16**	3.0 U	**8.2**	**6,200**	-	-	-	-	-	-	-	-	6.48	1.120	9.27	0.69	14.23	-38.6
Area 5		4/3/2018	0.69 J	23	**27**	5.7	**22**	**16**	3.0 U	**3.2**	**4,400**	-	-	-	-	-	-	-	-	7.15	0.988	14.2	1.31	9.07	-187.3
Area 5		10/31/2018	1.0 U	21	**24**	3.2	**9.1**	**4.7**	2.9 J	**5.1**	**10,000**	-	-	-	-	-	-	-	-	6.53	1.221	20.8	0.38	10.50	-54.7

Appendix D
Historical Groundwater Analytical Results
2021 Annual Operations, Maintenance, and Monitoring Report
Area of Contamination 50, Former Fort Devens Army Installation
Devens, Massachusetts

		Analytical Method	VOCs						Dissolved Metals			Dissolved Gases			General Chemistry					Field Parameters					
		Analyte	1,1-DCE	cis-1,2-DCE	PCE	trans-1,2-DCE	TCE	VC	Arsenic	Iron	Manganese	Ethane	Ethene	Methane	Alkalinity	Nitrate/ Nitrite	Sulfate	Sulfide	TOC	pH	SpC	Turbidity	DO	Temp	ORP
		Unit	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(SU)	(mS/cm)	(NTU)	(mg/L)	°C	(mV)
		Cleanup Level[1]	7	70	5		5	2	10	3.129	1,460					10,000									
Area	Well ID	Date Sampled																							
Area 5		4/19/2019	0.48 J	9.9	**10**	2.9	**13**	**8.0**	3.0 U	**3.3**	**3,900**	2.9	1.0 U	270	-	-	-	-	4.8	6.90	1.000	10.0	1.20	17.00	-100.0
Area 5		10/30/2019	-	-	-	-	-	-	5.5	**3.5**	**9,900**	-	-	-	-	-	-	-	-	6.70	1.500	11.0	0.43	12.00	-56.0
Area 5		11/6/2019	0.90 J	20	**13 J**	6.7	**24**	**23**	3.0 U	2.2	**5,300**	-	-	-	-	-	-	-	-	6.92	1.032	10.1	1.15	17.09	-100.9
Area 5		12/26/2019	1.0 U	11	**11**	2.7	4.9	1.8	-	-	-	-	-	-	-	-	-	-	-	6.61	1.298	3.80	0.86	9.23	-55.9
Area 5		05/12/2020	0.88 J	25	4.2	7.0	**20 J**	**21**	3.0 U	**4.2**	**5,800**	11	1.1	780	240	0.10 U	6.2	1.0 U	1.5	6.76	1.240	8.94	9.89	11.50	-64.3
Area 5		10/15/2020	1.0 U	12	**7.4**	5.4	**16**	**15**	3.0 U	**3.2**	**5,900**	18	1.3	1,800	220	0.05 U	9.2	0.81 U	1.5	6.56	1.080	24.8	0.63	15.30	-75.8
Area 5		5/14/2021	1.0 U	10	2.9	4.6	**10**	**9.5**	1.8 J	2.3	**5,400**	-	-	-	-	-	-	-	-	6.71	1.183	90.5	0.11	13.20	-49.1
Area 5		10/13/2021	1.0 U	8.6	2.1	3.1	**8.3**	**4.4**	1.6 J	2.2	**5,600**	0.66 J	0.71 U	25	250	0.05 U	5.7	0.81 U	0.8 U	7.43	1.212	330.0	0.01	14.80	-131.2
Area 5	XSA-12-97X	10/9/2012	0.5 U	0.5 U	2.1	0.5 U	0.5 U	0.5 U	5.0 U	1.4 J	44	-	-	-	-	-	-	-	-	6.66	0.673	33.8	1.30	11.73	-11.9
Area 5		10/16/2013	0.5 U	0.5 U	2.9	0.5 U	0.5 U	0.5 U	5.0 U	2.3	29	-	-	-	-	-	-	-	-	6.74	0.721	19.6	1.74	12.06	-21.9
Area 5		10/30/2014	0.5 U	0.5 U	**5.6**	0.5 U	0.5 U	0.5 U	2.5 U	0.44	9.1 J	-	-	-	-	-	-	-	-	6.51	0.522	17.5	1.52	17.21	51.8
Area 5		10/19/2015	1.0 U	1.0 U	**7.4**	1.0 U	1.0 U	1.0 U	4.0 U	0.77	15	-	-	-	-	-	-	-	-	6.62	0.614	13.9	1.39	10.02	31.9
Area 5		11/14/2016	1.0 U	1.0 U	**10**	1.0 U	1.0 U	1.0 U	3.0 U	0.77	12	-	-	-	-	-	-	-	-	7.62	0.526	18.4	1.68	11.61	-57.9
Area 5		10/10/2017	1.0 U	1.0 U	**8.0**	1.0 U	1.0 U	1.0 U	3.0 U	1.5	78	-	-	-	-	-	-	-	-	7.88	0.813	9.83	0.28	16.81	-130.3
Area 5		10/29/2018	1.0 U	1.0 U	**6.1**	1.0 U	1.0 U	1.0 U	3.0 U	2.3	49	-	-	-	-	-	-	-	-	9.82	0.682	27.2	0.34	7.89	-283.0
Area 5		10/15/2019	1.0 U	2.9	**9.2**	1.0 U	0.98 J	1.0 U	2.2 J	2.4	200	-	-	-	-	-	-	-	-	6.90	0.980	19.0	0.72	12.00	-47.0
Area 5		11/22/2020	1.0 U	6.2	2.0 U	1.0 U	1.0 U	1.0 U	**51**	2.7	**2,700**	-	-	-	-	-	-	-	-	7.13	0.561	4.73	0.69	10.00	-401.0
Area 5		10/14/2021	1.0 U	11	2.0 U	1.0 U	1.0 U	**3.3**	**21**	**4.8**	**7,400**	-	-	-	-	-	-	-	-	7.07	0.902	124.70	0.01	14.00	-81.2
Area 5	XSA-12-98X	10/11/2012	0.5 U	0.50	**10**	0.5 U	0.59	0.5 U	5.0 U	1.4	18 J	-	-	-	-	-	-	-	-	7.75	0.308	8.89	0.76	13.14	-60.1
Area 5		10/16/2013	0.5 U	0.47 J	**5.2**	0.5 U	0.34 J	0.5 U	3.1 J	0.1 U	6.6 J	-	-	-	-	-	-	-	-	7.89	0.413	51.0	0.51	10.53	-39.8
Area 5		10/29/2014	0.5 U	0.76	**5.5**	0.5 U	0.37 J	0.5 U	2.5 U	0.31	5.6 J	-	-	-	-	-	-	-	-	8.00	0.258	44.8	0.46	10.63	-293.1
Area 5		10/19/2015	1.0 U	1.0 U	**6.3**	1.0 U	0.66 J	1.0 U	4.0 U	0.17	15 U	-	-	-	-	-	-	-	-	8.04	0.310	3.62	0.42	10.70	-194.4
Area 5		11/11/2016	1.0 U	0.81 J	**5.6**	1.0 U	0.69 J	1.0 U	3.0 U	0.095	3.1 J	-	-	-	-	-	-	-	-	7.98	0.233	16.1	0.52	9.67	-140.7
Area 5		10/23/2017	1.0 U	0.70 J	5.0	1.0 U	0.60 J	1.0 U	3.0 U	0.088 J	2.8 J	-	-	-	-	-	-	-	-	7.35	0.387	5.42	0.26	11.48	-55.5
Area 5		10/23/2018	1.0 U	1.0 U	2.8	1.0 U	1.0 U	1.0 U	3.0 U	0.05 U	3.0 U	-	-	-	-	-	-	-	-	7.71	0.948	4.99	0.25	12.00	-141.6
Area 5		10/9/2019	1.0 U	0.47 J	**5.5**	1.0 U	0.52 J	1.0 U	3.0 U	0.088	1.7 J	-	-	-	-	-	-	-	-	7.70	0.380	3.50	0.62	11.00	-65.0
Area 5		10/16/2020	1.0 U	0.61 J	4.1	1.0 U	1.0 U	1.0 U	3.0 U	0.15	4.9 J	-	-	-	-	-	-	-	-	7.72	0.360	4.10	0.86	12.30	-129.0
Area 5		10/14/2021	1.0 U	1.0 U	0.83 J	1.0 U	1.0 U	1.0 U	3.0 U	0.41	30	-	-	-	-	-	-	-	-	8.20	1.200	69.90	0.01	15.90	-147.0
Nashua River	G6M-04-08X	9/24/2004	1.0 U	2.0 U	4.2	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	2.0 U	7.29	0.632	52.8	0.81	15.68	-75.5
Nashua River	G6M-04-14X	11/16/2004	1.0 U	2.0 U	**12**	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14.30	-
Nashua River		9/27/2005	1.0 U	2.0 U	**6.9**	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	7.88	0.263	18.0	1.60	13.22	333.0
Nashua River		9/21/2006	1.0 U	2.0 U	**9.4**	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	7.98	0.211	15.7	3.00	11.11	26.1
North Plume		12/14/2006	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	5.54	0.560	0.20	0.17	16.20	74.8
Nashua River		10/1/2007	1.0 U	2.0 U	**7.1**	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	7.69	0.363	13.9	2.56	10.71	80.4
Nashua River		10/21/2008	0.5 U	0.5 U	**7.1 J**	0.5 U	0.21 J	0.5 U	-	-	-	-	-	-	-	-	-	-	-	7.78	0.237	45.0	2.51	12.98	138.8
Nashua River		10/15/2009	10 U	10 U	4.5 J	10 U	**250**	10 U	-	-	-	-	-	-	-	-	-	-	-	7.56	0.250	4.58	3.60	11.54	-69.7
Nashua River		1/15/2010	0.75 U	0.5 U	4.5	0.75 U	0.22 J	1.0 U	-	-	-	-	-	-	-	-	-	-	-	7.73	0.293	12.5	25.3	11.64	166.2
Nashua River		10/8/2010	0.5 U	0.5 U	2.4	0.5 U	0.25 J	0.5 U	-	-	-	-	-	-	-	-	-	-	-	7.55	0.307	100	1.92	12.54	72.7
Nashua River		10/5/2011	0.5 U	0.5 U	2.2	0.5 U	0.5 U	0.5 U	6.8	0.1 U	25 U	-	-	-	-	-	-	-	-	7.68	0.172	20.4	2.62	11.07	99.9
Nashua River		10/15/2012	0.5 U	0.5 U	3.3	0.5 U	0.5 U	0.5 U	9.6	0.19	7.7 J	-	-	-	-	-	-	-	-	7.71	0.297	21.7	2.58	16.33	-10.9
Nashua River		10/18/2013	0.5 U	0.5 U	1.7	0.5 U	0.34 J	0.5 U	8.2	0.1 U	7.5 U	-	-	-	-	-	-	-	-	7.89	0.479	27.1	1.25	15.03	94.0
Nashua River		10/31/2014	0.5 U	0.5 U	1.8	0.5 U	0.40 J	0.5 U	2.5 U	0.05 U	7.5 U	-	-	-	-	-	-	-	-	7.93	0.423	8.26	0.40	15.56	54.4
Nashua River		10/26/2015	1.0 U	1.0 U	1.7	1.0 U	1.0 U	1.0 U	9.8	0.073 J	15 U	-	-	-	-	-	-	-	-	7.89	0.482	18.9	1.44	13.11	79.2
Nashua River		11/11/2016	1.0 U	1.2	2.5	1.0 U	1.4	1.0 U	8.3	0.05 U	2.1 J	-	-	-	-	-	-	-	-	7.48	0.350	10.1	0.84	10.53	-106.7
Nashua River		10/6/2017	1.0 U	1.0 U	1.0	1.0 U	1.0 U	1.0 U	7.1	0.017 J	3.2 J	-	-	-	-	-	-	-	-	7.50	0.997	5.26	0.46	12.91	69.9
Nashua River		10/25/2018	1.0 U	1.0 U	1.1	1.0 U	1.0 U	1.0 U	8.1	0.05 U	1.7 J	-	-	-	-	-	-	-	-	7.65	0.767	1.56	0.36	12.68	102.7
Nashua River		10/15/2019	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	8.4	**21 J**	7.1 J	-	-	-	-	-	-	-	-	7.70	0.600	13.0	0.74	12.00	-59.0
Nashua River		10/19/2020	1.0 U	1.0 U	0.80 J	1.0 U	1.0 U	1.0 U	7.1	0.05 U	3.0 J	-	-	-	-	-	-	-	-	7.55	0.752	1.42	0.67	13.00	14.4
Nashua River		10/15/2021	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	6.3	0.054	6.4 J	-	-	-	-	-	-	-	-	7.55	0.752	1.42	0.67	13.00	14.4
North Plume	G6M-96-22A	10/16/2001	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	5.50	2.000	< 0.01	5.10	15.95	210.0
North Plume		2/28/2002	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	0.10 U	-	-	-	5.70	1.780	0.50	8.37	12.41	183.5
North Plume		9/21/2004	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	5.0 U	1.0 U	54	-	-	-	-	-	-	-	-	5.75	1.885	1.59	6.73	11.59	187.9
North Plume		9/29/2005	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	5.0 U	1.0 U	52	-	-	-	-	-	-	-	-	5.95	3.180	0.38	4.90	10.75	223.1
North Plume		9/20/2006	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	5.0 U	0.1 U	42	-	-	-	-	-	-	-	-	5.68	1.814	1.85	4.78	11.03	176.3
North Plume		9/12/2007	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	6.0 U	0.1 U	78	-	-	-	-	-	-	-	-	5.50	1.404	5.00	6.95	12.38	-101.1
North Plume		10/17/2008	0.5 U	0.5 U	0.55	0.5 U	0.5 U	0.5 U	8.0 U	0.2 U	**2,240**	-	-	-	-	-	-	-	-	5.57	1.378	1.80	1.41	10.07	123.8
North Plume		10/16/2009	0.5 U	0.27 J	0.25 J	0.5 U	**29**	0.5 U	8.0 U	0.2 U	**7,120**	-	-	-	-	-	-	-	-	5.91	2.288	< 0.01	0.25	11.31	228.5
North Plume		10/7/2010	0.5 U	0.5 U	0.22 J	0.5 U	0.5 U	0.5 U	5.0 U	0.1 U	**7,670**	-	-	-	-	-	-	-	-	5.72	3.623	< 0.01	0.21	9.31	141.2
North Plume		10/7/2011	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5.0 U	0.1 U	**6,860**	-	-	-	-	-	-	-	-	5.60	2.144	< 0.01	0.18	10.13	59.9
North Plume		10/15/2012	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5.0 U	0.1 U	**12,400**	-	-	-	-	-	-	-	-	5.82	2.915	< 0.01	0.36	14.55	110.5
North Plume		10/18/2013	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5.0 U	0.1 U	**6,010**	-	-	-	-	-	-	-	-	6.05	1.524	< 0.01	0.58	11.10	177.1
North Plume		11/4/2014	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.5 U	0.017 J	**3,160**	-	-	-	-	-	-	-	-	6.12	0.774	0.86	3.75	-	203.7
North Plume		10/14/2015	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.0 U	0.1 U	**3,810**	-	-	-	-	-	-	-	-	6.11	1.333	0.21	2.77	-	122.9
North Plume		11/8/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U	0.05 U	**2,300**	-	-	-	-	-	-	-	-	4.64	0.983	0.75	3.73	11.89	129.4
North Plume	G6M-96-22B	10/19/2001	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	6.76	2.090	0.60	6.95	13.13	176.0
North Plume		2/28/2002	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	0.10 U	-	-	-	6.35	2.002	1.50	7.83	12.89	198.5
North Plume		1/31/2003	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13.48	-
North Plume		9/21/2004	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	5.0 U	1.0 U	44	-	-	-	-	-	-	-	-	5.83	1.941	2.76	6.15	13.86	193.9
North Plume		9/29/2005	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	5.0 U	1.0 U	48	-	-	-	-	-	-	-	-	6.12	3.020	1.43	5.57	11.15	187.7
North Plume		9/20/2006	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	5.0 U	0.1 U	44	-	-	-	-	-	-	-	-	5.53	2.183	0.67	6.51	10.19	179.0
North Plume		9/12/2007	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	6.0 U	0.1 U	40	-	-	-	-	-	-	-	-	5.73	2.618	13.9	16.1	11.86	-112.1

Appendix D
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Devens, Massachusetts

		Analytical Method	VOCs						Dissolved Metals			Dissolved Gases			General Chemistry					Field Parameters					
		Analyte	1,1-DCE	cis-1,2-DCE	PCE	trans-1,2-DCE	TCE	VC	Arsenic	Iron	Manganese	Ethane	Ethene	Methane	Alkalinity	Nitrate/ Nitrite	Sulfate	Sulfide	TOC	pH	SpC	Turbidity	DO	Temp	ORP
		Unit	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(SU)	(mS/cm)	(NTU)	(mg/L)	°C	(mV)
		Cleanup Level[1]	7	70	5		5	2	10	3.129	1,460					10,000									
Area	Well ID	Date Sampled																							
North Plume		10/17/2008	0.5 U	0.24 J	0.91	0.5 U	0.5 U	0.5 U	8.0 U	0.2 U	67	-	-	-	-	-	-	-	-	5.40	1.020	0.85	1.77	11.56	121.3
North Plume		10/16/2009	0.5 U	0.32 J	0.39 J	0.5 U	**23**	0.5 U	8.0 U	0.135 U	**25,500**	-	-	-	-	-	-	-	-	6.08	1.683	0.04	0.31	11.52	209.1
North Plume		10/7/2010	0.5 U	0.5 U	0.25 J	0.5 U	0.5 U	0.5 U	3.3 J	0.1 U	**14,600**	-	-	-	-	-	-	-	-	6.00	2.295	0.49	0.48	12.85	115.1
North Plume		10/7/2011	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5.0 U	0.1 U	**9,320**	-	-	-	-	-	-	-	-	5.98	1.899	< 0.01	0.16	11.27	30.7
North Plume		10/15/2012	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5.0 U	0.120 U	**9,980**	-	-	-	-	-	-	-	-	6.14	2.358	1.17	0.25	12.41	16.4
North Plume		10/18/2013	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3.2 J	0.1 U	**14,100**	-	-	-	-	-	-	-	-	6.17	2.288	0.31	0.81	13.79	142.0
North Plume		11/4/2014	0.5 U	0.5 U	0.21 J	0.5 U	0.5 U	0.5 U	4.6 J	0.017 J	**7,180**	-	-	-	-	-	-	-	-	6.58	1.087	3.55	0.45	17.20	137.4
North Plume		10/14/2015	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.0 U	0.1 U	**5,610**	-	-	-	-	-	-	-	-	6.53	1.457	2.18	1.34	15.00	93.5
North Plume		11/8/2016	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U	0.05 U	**6,500**	-	-	-	-	-	-	-	-	5.96	1.362	2.49	2.66	11.20	174.0
North Plume	G6M-96-24B	10/16/2001	1.0 U	2.0 U	**18**	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	6.37	0.420	19.0	0.00	14.44	81.0
North Plume		3/1/2002	1.0 U	2.0 U	**11**	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	6.35	0.430	2.80	0.00	17.01	106.7
North Plume		1/31/2003	1.0 U	2.0 U	**7.5**	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13.61	-
North Plume		1/12/2004	1.0 U	2.0 U	**11**	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14.41	-
North Plume		9/24/2004	1.0 U	2.0 U	**13**	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	6.17	0.422	0.44	0.20	19.31	152.2
North Plume		12/17/2004	1.0 U	2.0 U	**8.1**	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	6.05	0.384	2.43	0.46	15.12	259.6
North Plume		4/13/2005	1.0 U	2.8	**8.2**	1.0 U	1.0 U	1.0 U	-	-	-	-	-	-	-	-	-	-	-	5.32	0.429	2.49	0.20	10.84	216.6
North Plume		7/6/2005	1.0 U	3.0	**7.6**	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	5.69	0.770	0.02	1.34	14.12	242.8
North Plume		9/30/2005	1.0 U	3.6	**7.2**	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	5.77	1.022	7.70	0.29	16.26	198.3
North Plume		12/15/2005	1.0 U	3.1	**7.4**	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	5.97	0.900	2.10	0.14	19.14	242.8
North Plume		3/23/2006	1.0 U	2.0 U	4.2	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	5.99	0.458	1.31	0.23	12.78	404.5
North Plume		6/23/2006	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	4.62	0.443	0.88	0.85	15.18	526.9
North Plume		9/22/2006	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	5.93	0.407	4.23	0.30	16.89	141.0
North Plume		3/30/2007	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	5.90	0.620	0.15	0.50	12.58	-43.6
North Plume		6/13/2007	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	6.10	0.727	220	0.16	12.48	138.9
North Plume		9/13/2007	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	6.05	0.689	9.90	3.93	11.30	-95.7
North Plume		12/12/2007	1.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	-	-	-	-	-	-	-	-	-	-	-	6.33	0.802	0.80	0.30	14.00	106.2
North Plume		10/7/2008	0.5 U	0.5 U	0.40 J	0.5 U	0.5 U	0.5 U	8.0 U	0.352 U	448	1.3 U	1.6 U	15	46	0.13 U	10	0.03 U	10 U	6.04	0.510	30.0	0.54	14.40	92.4
North Plume		1/22/2009	1.2 U	1.8 U	1.4 U	1.3 U	2.3 U	1.3 U	8.0 U	**226 J**	315	1.2 U	1.5 U	4.2	32	0.13 U	9.3	0.03 U	10 U	6.16	0.479	65.0	0.45	13.40	149.6
North Plume		5/11/2009	0.5 U	0.5 U	0.29 J	0.5 U	0.5 U	0.5 U	-	-	-	-	-	-	-	-	-	-	-	5.87	0.304	23.1	0.20	12.00	90.8

Notes:

[1]Area of Contamination (AOC) 50 cleanup levels are from the Record of Decision (United States Environmental Protection Agency 2004).

= Above Cleanup Level
= Spring 2020 sampling result
= Fall 2020 sampling result
- = not sampled

Acronyms and Abbreviations:

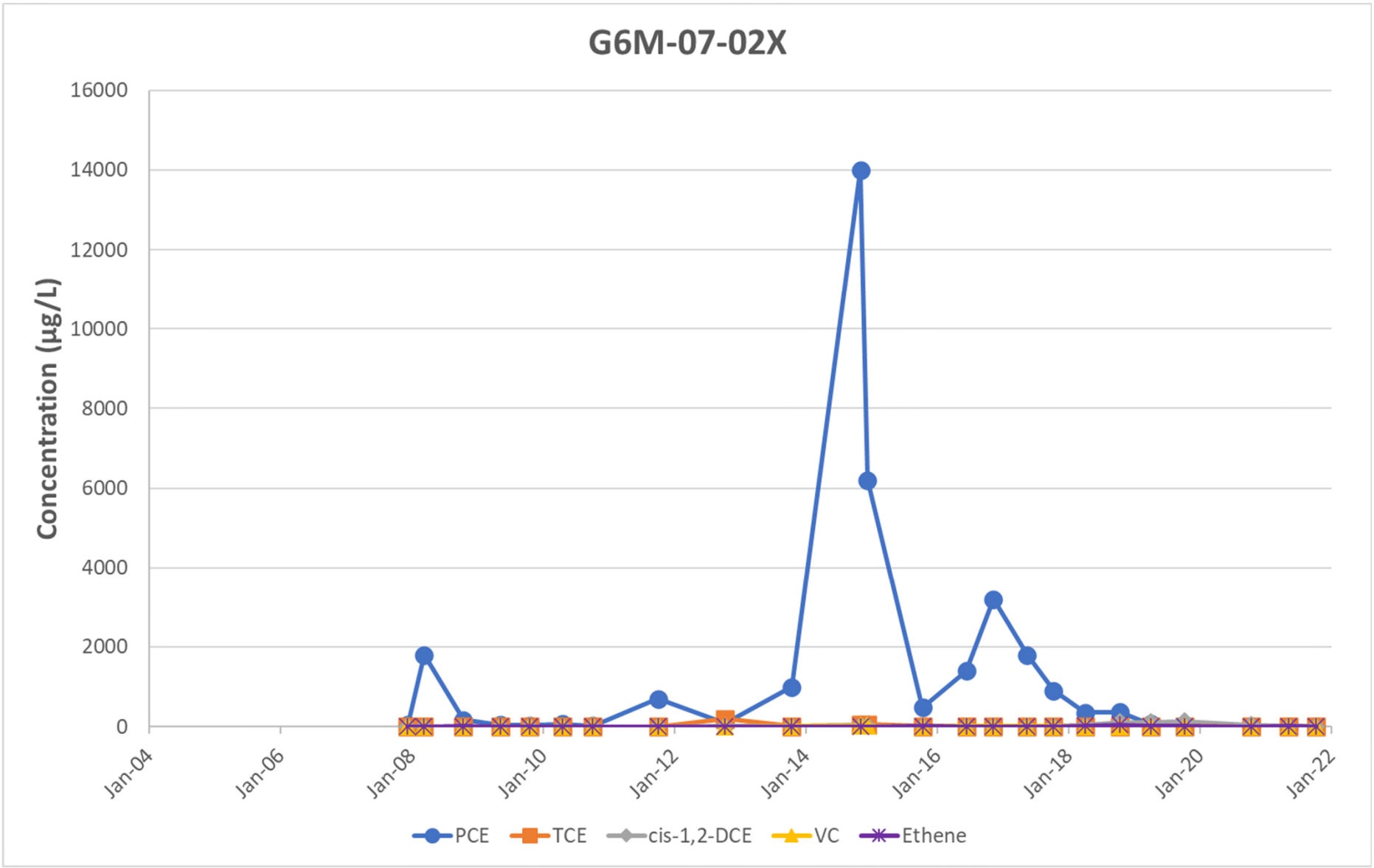
°C = degree Celsius
µg/L = microgram per liter
1,1-DCE = 1,1-dichloroethene
cis-1,2-DCE = cis-1,2-dichloroethene
DO = dissolved oxygen
mg/L = milligram per liter
mS/cm = millisiemen per centimeter
NTU = nephelometric turbidity unit
ORP = oxidation-reduction potential
PCE = tetrachloroethene
SpC = specific conductivity
SU = standard unit
TCE = trichloroethene
TOC = total organic carbon
trans-1,2-DCE = trans-1,2-dichloroethene
VC = vinyl chloride

Data Qualifiers:

J The analyte was positively identified, the quantitation is an estimation.
U The analyte was analyzed for, but not detected. The associated numerical value is at or below the limit of detection.

Appendix E

CVOC Trend Graphs



Notes:

1. Data for compounds not detected are shown at half the reporting limit.
2. µg/L = microgram per liter
3. cis-1,2-DCE = cis-1,2-dichloroethene
4. COC = contaminant of concern
5. CVOC = chlorinated volatile organic compound
6. PCE = tetrachloroethene
7. TCE = trichloroethene
8. VC = vinyl chloride

COC	AOC 50 Cleanup Level (µg/L)
PCE	5
TCE	5
cis-1-2-DCE	70
VC	2

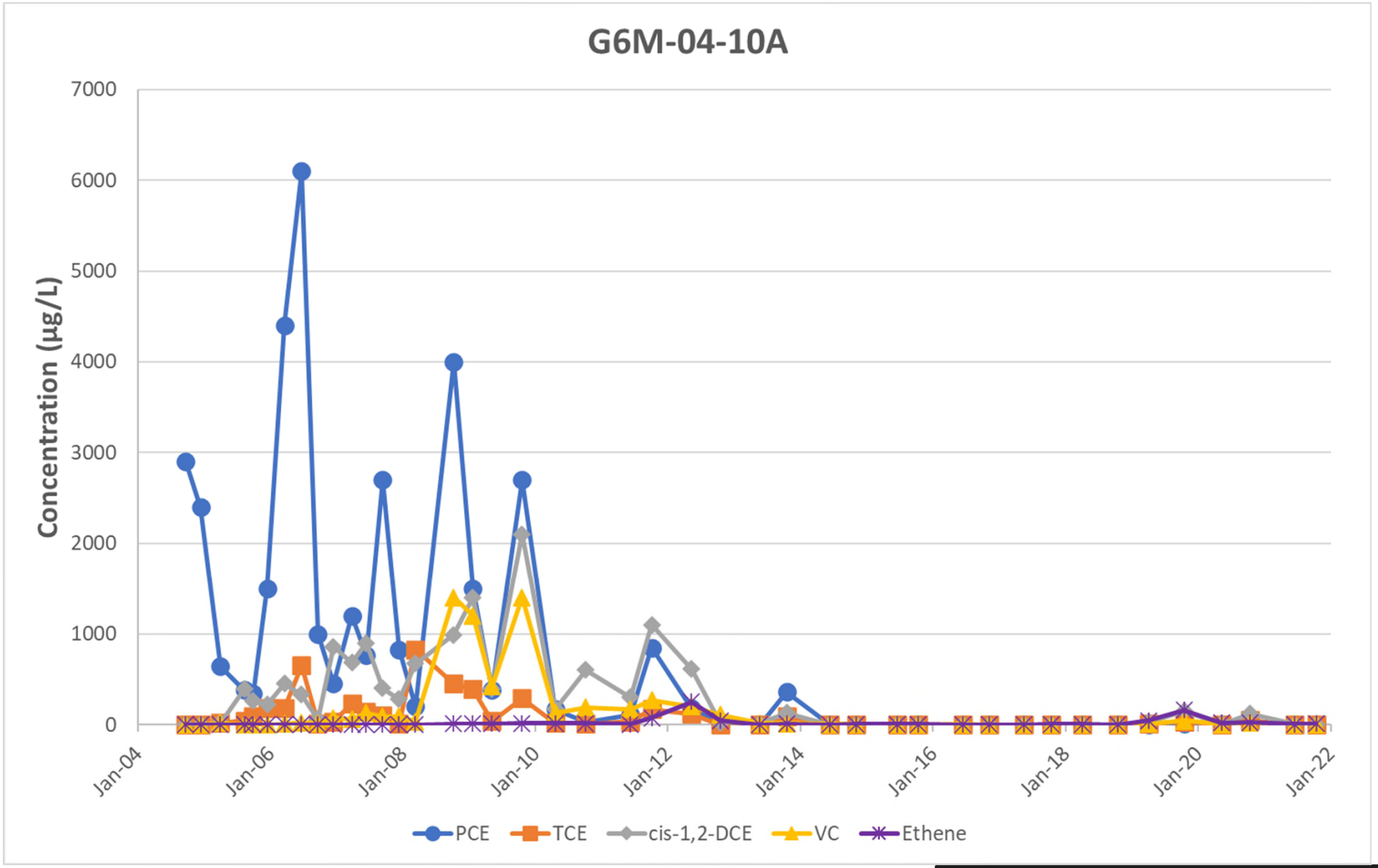
2021 ANNUAL OPERATIONS, MAINTENANCE, AND MONITORING REPORT
AREA OF CONTAMINATION 50
FORMER FORT DEVENS ARMY INSTALLATION
DEVENS, MASSACHUSETTS

CVOC TREND GRAPH
G6M-07-02X (AREA 1)

SERES Engineering & Services, LLC
ARCADIS a joint venture

FIGURE
E-1

\ARCADIS\SERES-Arcadis JV - _NE Dist Devens Task Orders\TO 1 - Seed Task\AOC 50\Reports\2. Fall 2020 Memo\Attachments



Notes:

1. Data for compounds not detected are shown at half the reporting limit.
2. µg/L = microgram per liter
3. cis-1,2-DCE = cis-1,2-dichloroethene
4. COC = contaminant of concern
5. CVOC = chlorinated volatile organic compound
6. PCE = tetrachloroethene
7. TCE = trichloroethene
8. VC = vinyl chloride

COC	AOC 50 Cleanup Level (µg/L)
PCE	5
TCE	5
cis-1-2-DCE	70
VC	2

2021 ANNUAL OPERATIONS, MAINTENANCE, AND MONITORING REPORT
AREA OF CONTAMINATION 50
FORMER FORT DEVENS ARMY INSTALLATION
DEVENS, MASSACHUSETTS

CVOC TREND GRAPH
G6M-04-10A (AREA 1)

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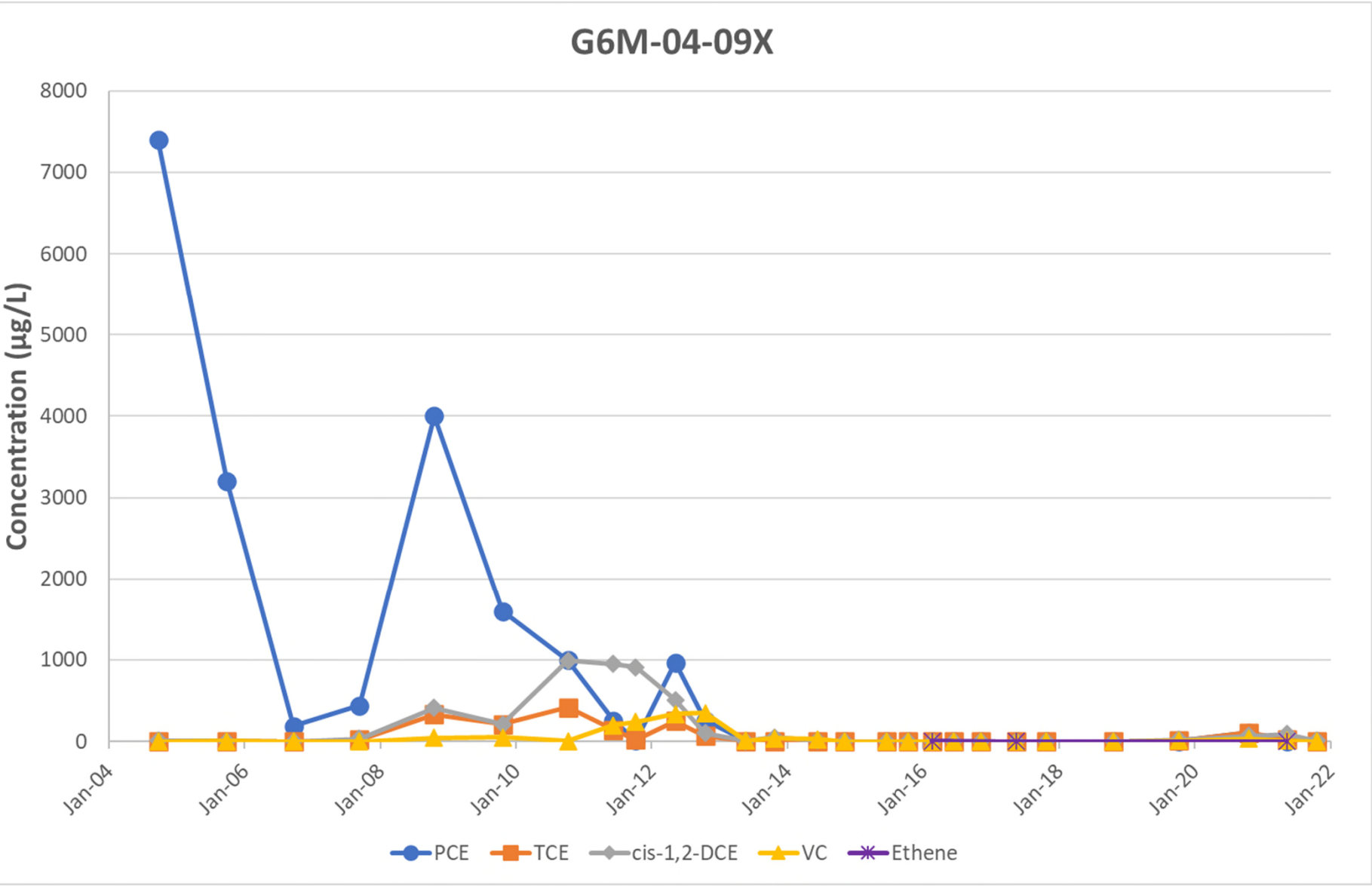
FIGURE
E-2

\ARCADIS\SERES-Arcadis JV - _NE Dist Devens Task Orders\TO 1 - Seed Task\AOC 50\Reports\2. Fall 2020 Memo\Attachments



Notes:

1. Data for compounds not detected are shown at half the reporting limit.
2. µg/L = microgram per liter
3. cis-1,2-DCE = cis-1,2-dichloroethene
4. COC = contaminant of concern
5. CVOC = chlorinated volatile organic compound
6. PCE = tetrachloroethene
7. TCE = trichloroethene
8. VC = vinyl chloride

COC	AOC 50 Cleanup Level (µg/L)
PCE	5
TCE	5
cis-1-2-DCE	70
VC	2

2021 ANNUAL OPERATIONS, MAINTENANCE, AND MONITORING REPORT
AREA OF CONTAMINATION 50
FORMER FORT DEVENS ARMY INSTALLATION
DEVENS, MASSACHUSETTS

CVOC TREND GRAPH
G6M-04-09X (AREA 1)

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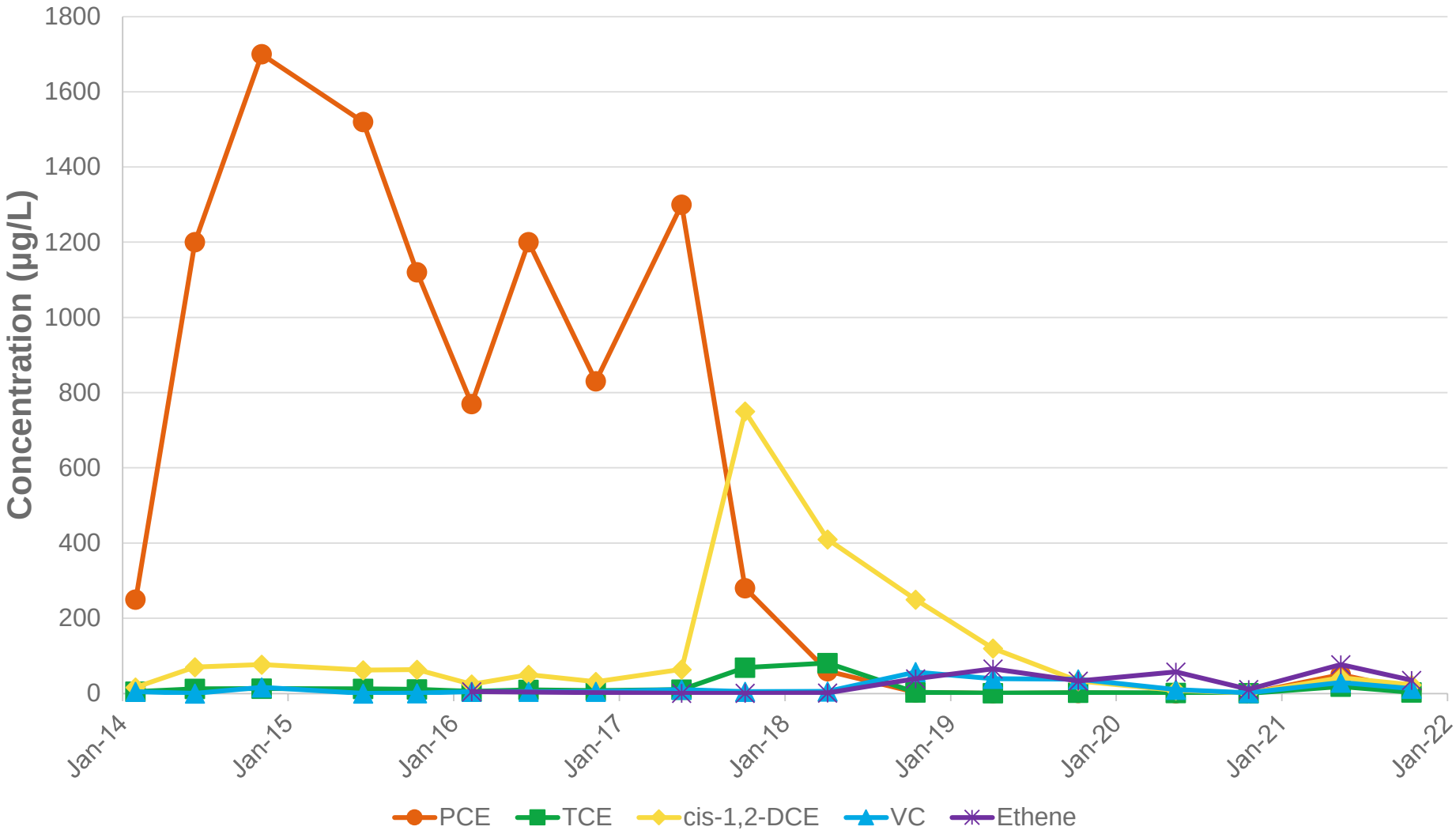
FIGURE
E-3

\ARCADIS\SERES-Arcadis JV - _NE Dist Devens Task Orders\TO 1 - Seed Task\AOC 50\Reports\2. Fall 2020 Memo\Attachments

G6M-13-05X



Notes:

1. Data for compounds not detected are shown at half the reporting limit.
2. µg/L = microgram per liter
3. cis-1,2-DCE = cis-1,2-dichloroethene
4. COC = contaminant of concern
5. CVOC = chlorinated volatile organic compound
6. PCE = tetrachloroethene
7. TCE = trichloroethene
8. VC = vinyl chloride

COC	AOC 50 Cleanup Level (µg/L)
PCE	5
TCE	5
cis-1-2-DCE	70
VC	2

2021 ANNUAL OPERATIONS, MAINTENANCE, AND MONITORING REPORT
AREA OF CONTAMINATION 50
FORMER FORT DEVENS ARMY INSTALLATION
DEVENS, MASSACHUSETTS

CVOC TREND GRAPH
G6M-13-05X (AREA 1)

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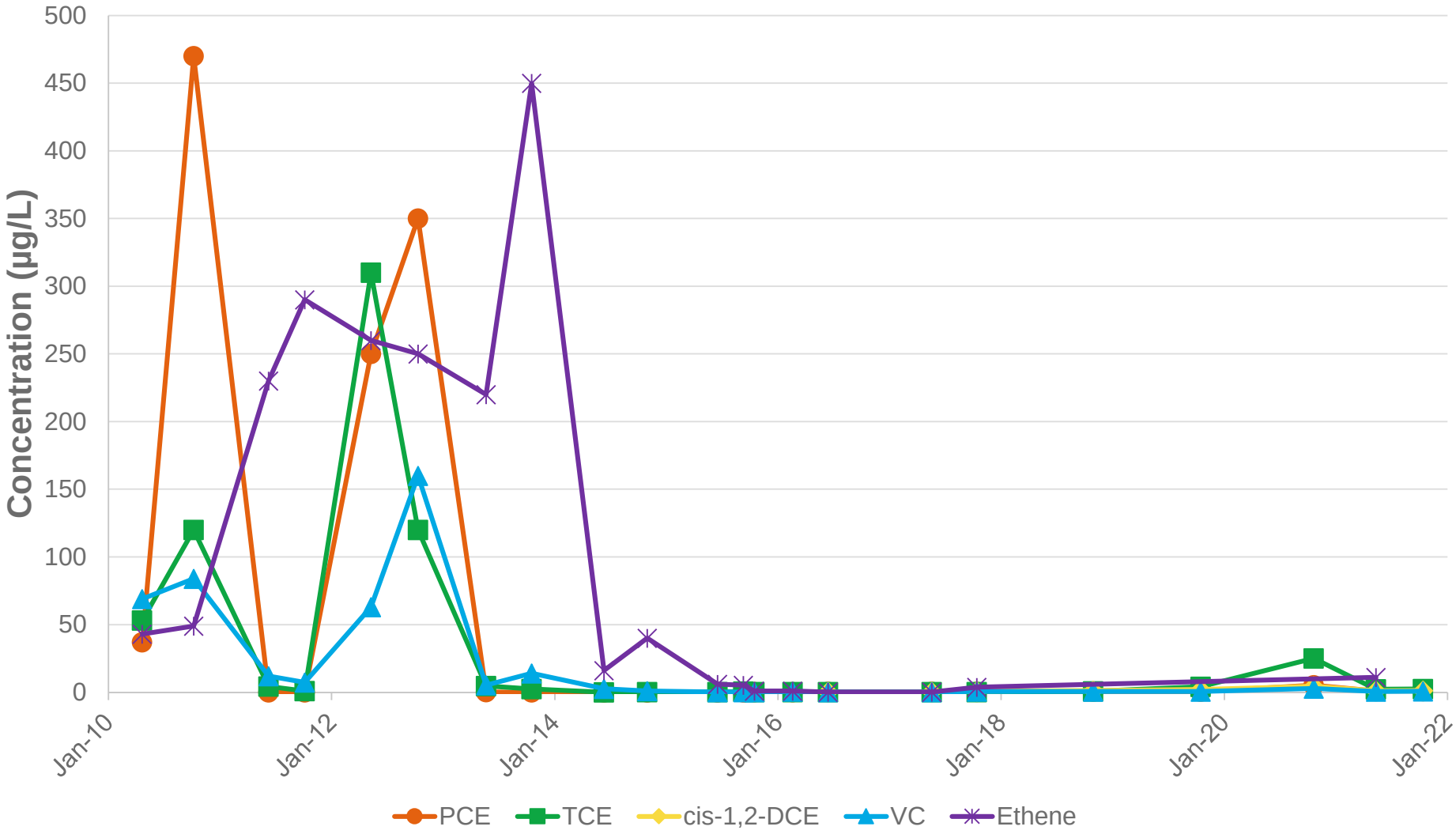
FIGURE
E-4

\ARCADIS\SERES-Arcadis JV - _NE Dist Devens Task Orders\TO 1 - Seed Task\AOC 50\Reports\2. Fall 2020 Memo\Attachments

G6M-02-01X



Notes:

1. Data for compounds not detected are shown at half the reporting limit.
2. µg/L = microgram per liter
3. cis-1,2-DCE = cis-1,2-dichloroethene
4. COC = contaminant of concern
5. CVOC = chlorinated volatile organic compound
6. PCE = tetrachloroethene
7. TCE = trichloroethene
8. VC = vinyl chloride

COC	AOC 50 Cleanup Level (µg/L)
PCE	5
TCE	5
cis-1-2-DCE	70
VC	2

2021 ANNUAL OPERATIONS, MAINTENANCE, AND MONITORING REPORT
AREA OF CONTAMINATION 50
FORMER FORT DEVENS ARMY INSTALLATION
DEVENS, MASSACHUSETTS

CVOC TREND GRAPH
G6M-02-01X (AREA 2)

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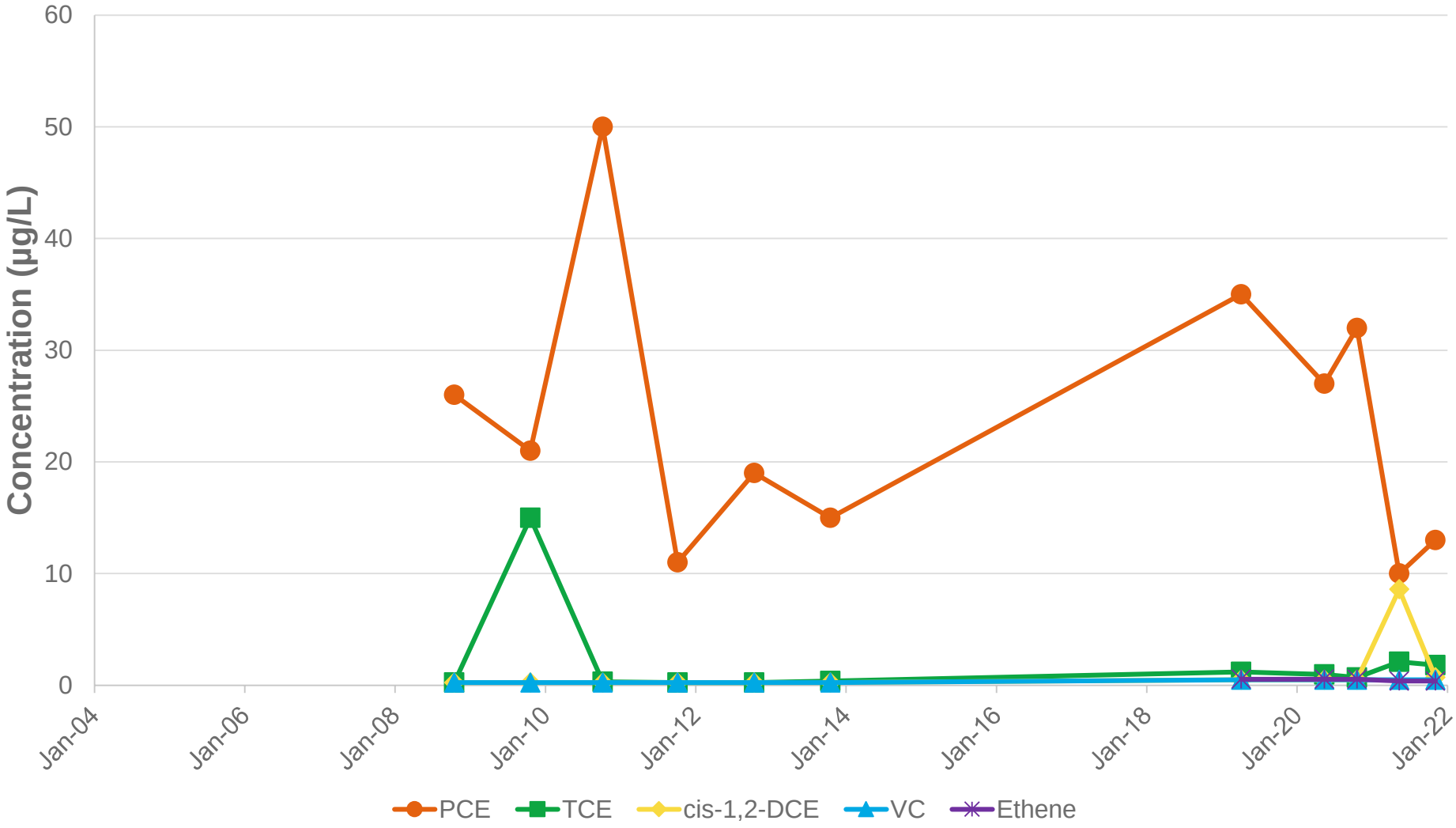
FIGURE
E-5

\ARCADIS\SERES-Arcadis JV - _NE Dist Devens Task Orders\TO 1 - Seed Task\AOC 50\Reports\2. Fall 2020 Memo\Attachments

G6M-07-01X



Notes:

1. Data for compounds not detected are shown at half the reporting limit.
2. µg/L = microgram per liter
3. cis-1,2-DCE = cis-1,2-dichloroethene
4. COC = contaminant of concern
5. CVOC = chlorinated volatile organic compound
6. PCE = tetrachloroethene
7. TCE = trichloroethene
8. VC = vinyl chloride

COC	AOC 50 Cleanup Level (µg/L)
PCE	5
TCE	5
cis-1-2-DCE	70
VC	2

2021 ANNUAL OPERATIONS, MAINTENANCE, AND MONITORING REPORT
AREA OF CONTAMINATION 50
FORMER FORT DEVENS ARMY INSTALLATION
DEVENS, MASSACHUSETTS

CVOC TREND GRAPH
G6M-07-01X (AREA 2)

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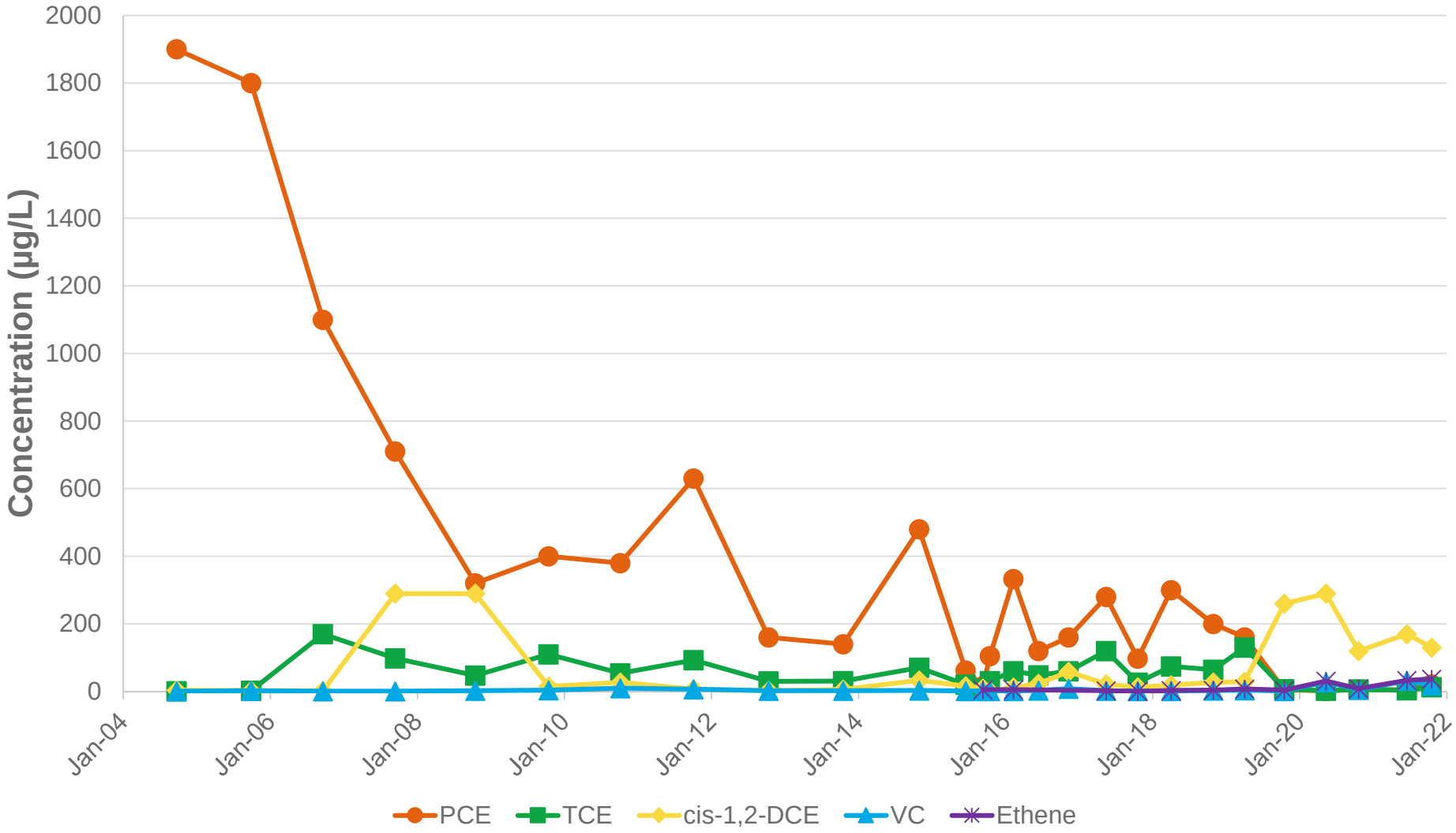
FIGURE
E-6

\\ARCADIS\SERES-Arcadis JV - _NE Dist Devens Task Orders\TO 1 - Seed Task\AOC 50\Reports\2. Fall 2020 Memo\Attachments

G6M-04-02X



Notes:

1. Data for compounds not detected are shown at half the reporting limit.
2. µg/L = microgram per liter
3. cis-1,2-DCE = cis-1,2-dichloroethene
4. COC = contaminant of concern
5. CVOC = chlorinated volatile organic compound
6. PCE = tetrachloroethene
7. TCE = trichloroethene
8. VC = vinyl chloride

COC	AOC 50 Cleanup Level (µg/L)
PCE	5
TCE	5
cis-1-2-DCE	70
VC	2

2021 ANNUAL OPERATIONS, MAINTENANCE, AND MONITORING REPORT
AREA OF CONTAMINATION 50
FORMER FORT DEVENS ARMY INSTALLATION
DEVENS, MASSACHUSETTS

CVOC TREND GRAPH
G6M-04-02X (AREA 3)

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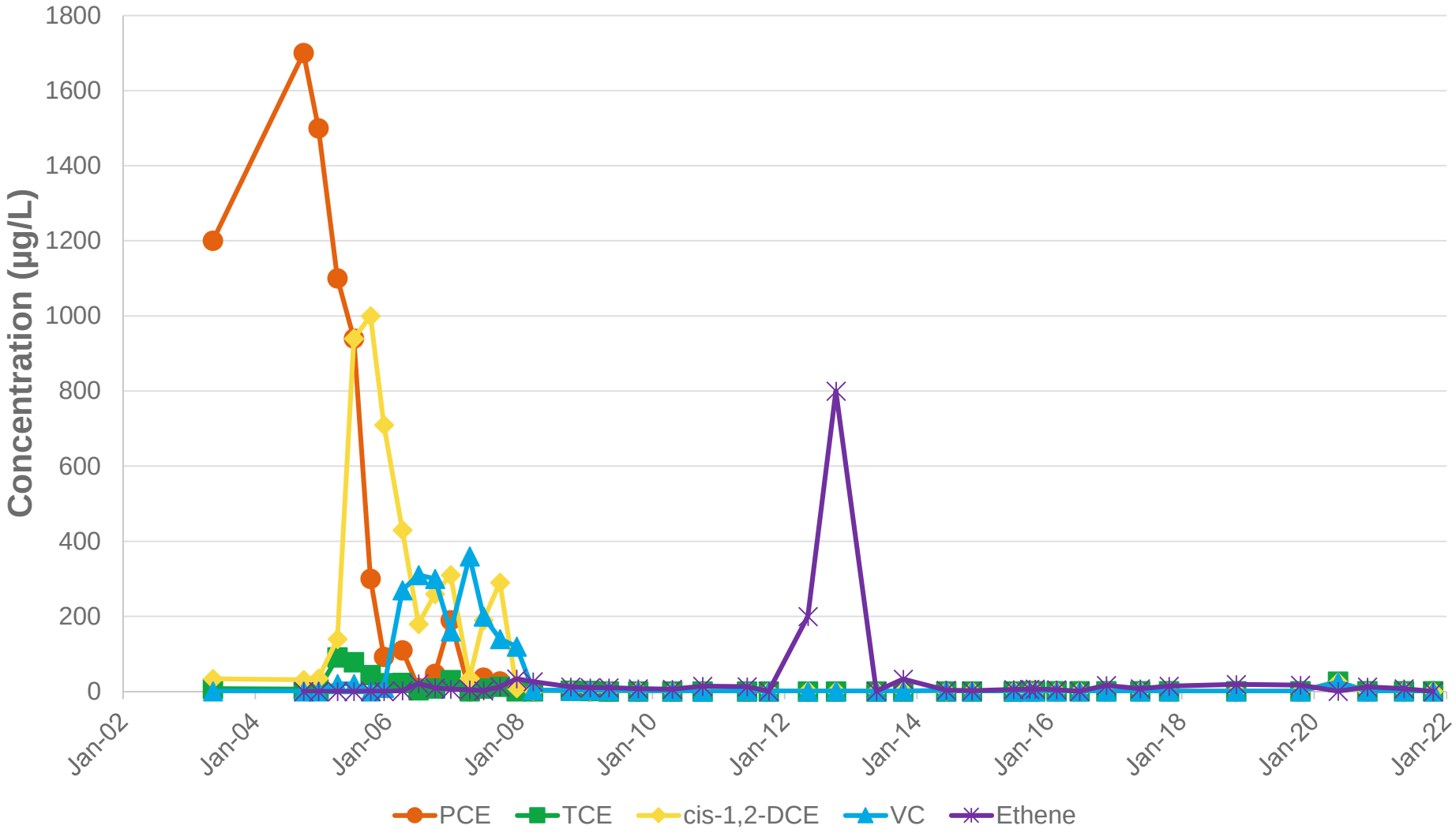
FIGURE
E-7

\ARCADIS\SERES-Arcadis JV - _NE Dist Devens Task Orders\TO 1 - Seed Task\AOC 50\Reports\2. Fall 2020 Memo\Attachments

G6M-03-07X



Notes:

1. Data for compounds not detected are shown at half the reporting limit.
2. µg/L = microgram per liter
3. cis-1,2-DCE = cis-1,2-dichloroethene
4. COC = contaminant of concern
5. CVOC = chlorinated volatile organic compound
6. PCE = tetrachloroethene
7. TCE = trichloroethene
8. VC = vinyl chloride

COC	AOC 50 Cleanup Level (µg/L)
PCE	5
TCE	5
cis-1-2-DCE	70
VC	2

2021 ANNUAL OPERATIONS, MAINTENANCE, AND MONITORING REPORT
AREA OF CONTAMINATION 50
FORMER FORT DEVENS ARMY INSTALLATION
DEVENS, MASSACHUSETTS

CVOC TREND GRAPH
G6M-03-07X (AREA 3)

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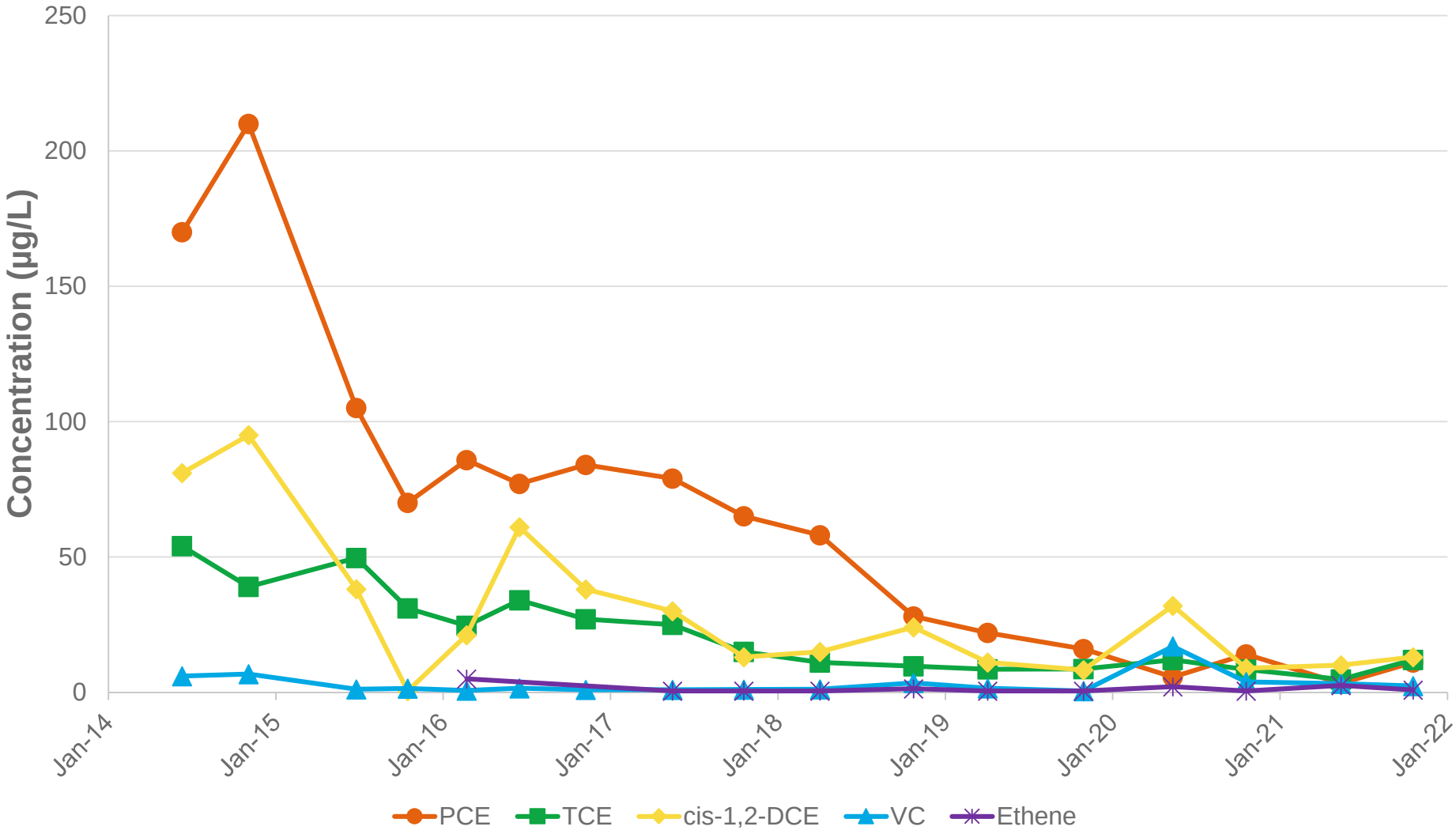
FIGURE
E-8

\\ARCADIS\SERES-Arcadis JV - _NE Dist Devens Task Orders\TO 1 - Seed Task\AOC 50\Reports\2. Fall 2020 Memo\Attachments

G6M-13-02X



Notes:

1. Data for compounds not detected are shown at half the reporting limit.
2. µg/L = microgram per liter
3. cis-1,2-DCE = cis-1,2-dichloroethene
4. COC = contaminant of concern
5. CVOC = chlorinated volatile organic compound
6. PCE = tetrachloroethene
7. TCE = trichloroethene
8. VC = vinyl chloride

COC	AOC 50 Cleanup Level (µg/L)
PCE	5
TCE	5
cis-1-2-DCE	70
VC	2

2021 ANNUAL OPERATIONS, MAINTENANCE, AND MONITORING REPORT
AREA OF CONTAMINATION 50
FORMER FORT DEVENS ARMY INSTALLATION
DEVENS, MASSACHUSETTS

CVOC TREND GRAPH
G6M-13-02X (AREA 4)

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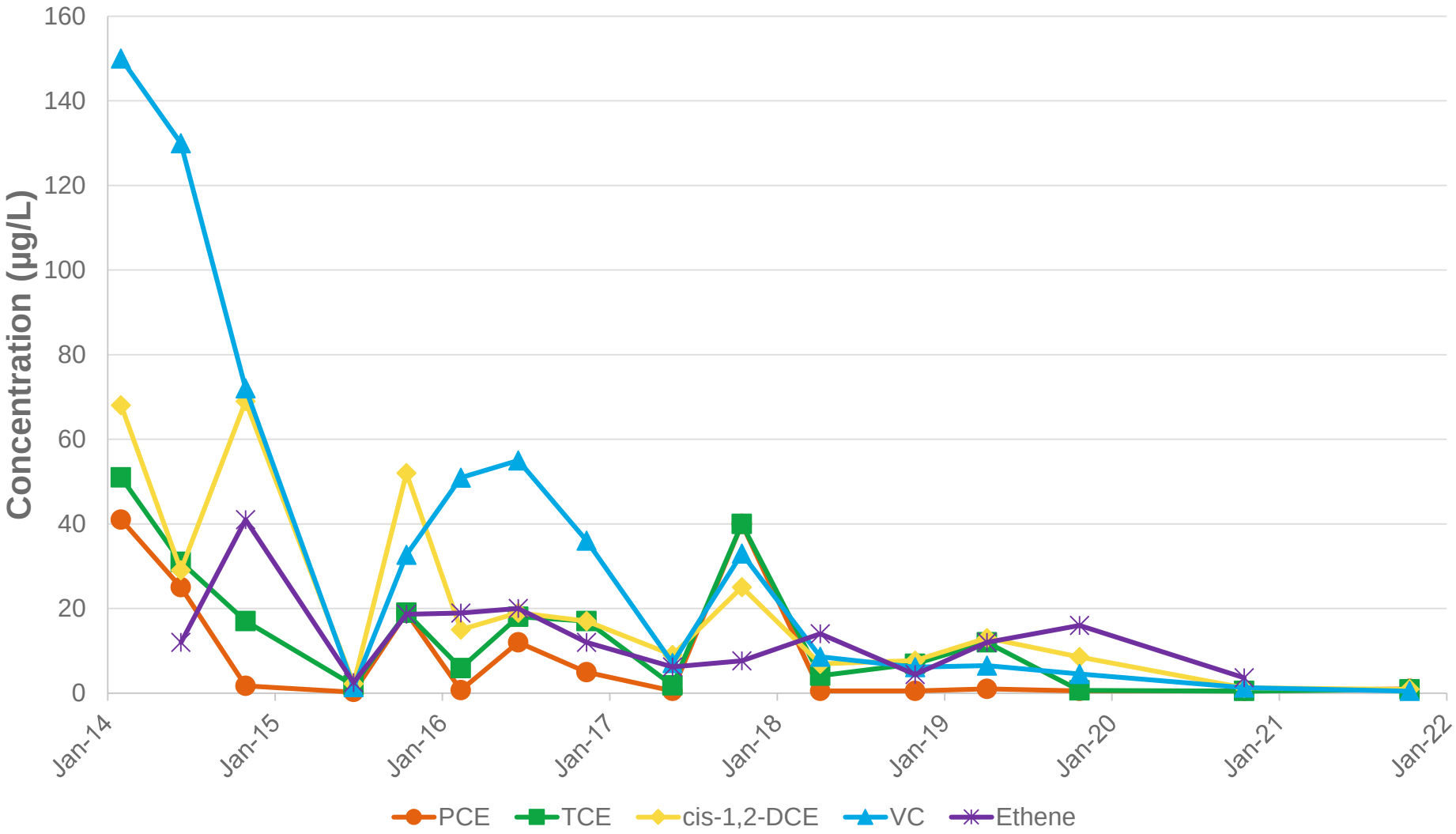
FIGURE
E-9

\\ARCADIS\SERES-Arcadis JV - _NE Dist Devens Task Orders\TO 1 - Seed Task\AOC 50\Reports\2. Fall 2020 Memo\Attachments

G6M-13-04X



Notes:

1. Data for compounds not detected are shown at half the reporting limit.
2. µg/L = microgram per liter
3. cis-1,2-DCE = cis-1,2-dichloroethene
4. COC = contaminant of concern
5. CVOC = chlorinated volatile organic compound
6. PCE = tetrachloroethene
7. TCE = trichloroethene
8. VC = vinyl chloride

COC	AOC 50 Cleanup Level (µg/L)
PCE	5
TCE	5
cis-1-2-DCE	70
VC	2

2021 ANNUAL OPERATIONS, MAINTENANCE, AND MONITORING REPORT
AREA OF CONTAMINATION 50
FORMER FORT DEVENS ARMY INSTALLATION
DEVENS, MASSACHUSETTS

CVOC TREND GRAPH
G6M-13-04X (AREA 5)

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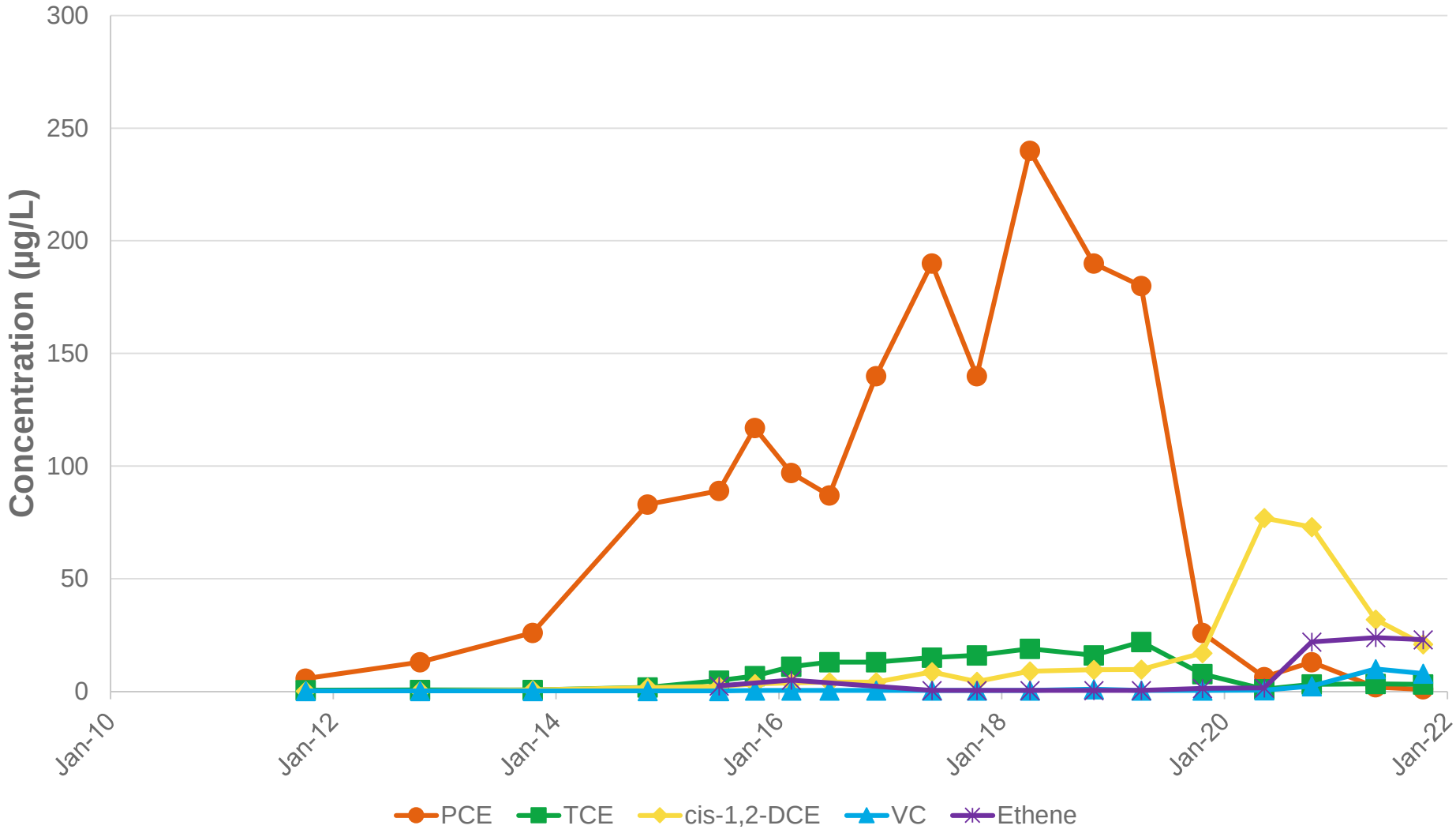
FIGURE
E-10

\ARCADIS\SERES-Arcadis JV - _NE Dist Devens Task Orders\TO 1 - Seed Task\AOC 50\Reports\2. Fall 2020 Memo\Attachments

G6M-97-05B



Notes:

1. Data for compounds not detected are shown at half the reporting limit.
2. µg/L = microgram per liter
3. cis-1,2-DCE = cis-1,2-dichloroethene
4. COC = contaminant of concern
5. CVOC = chlorinated volatile organic compound
6. PCE = tetrachloroethene
7. TCE = trichloroethene
8. VC = vinyl chloride

COC	AOC 50 Cleanup Level (µg/L)
PCE	5
TCE	5
cis-1-2-DCE	70
VC	2

2021 ANNUAL OPERATIONS, MAINTENANCE, AND MONITORING REPORT
AREA OF CONTAMINATION 50
FORMER FORT DEVENS ARMY INSTALLATION
DEVENS, MASSACHUSETTS

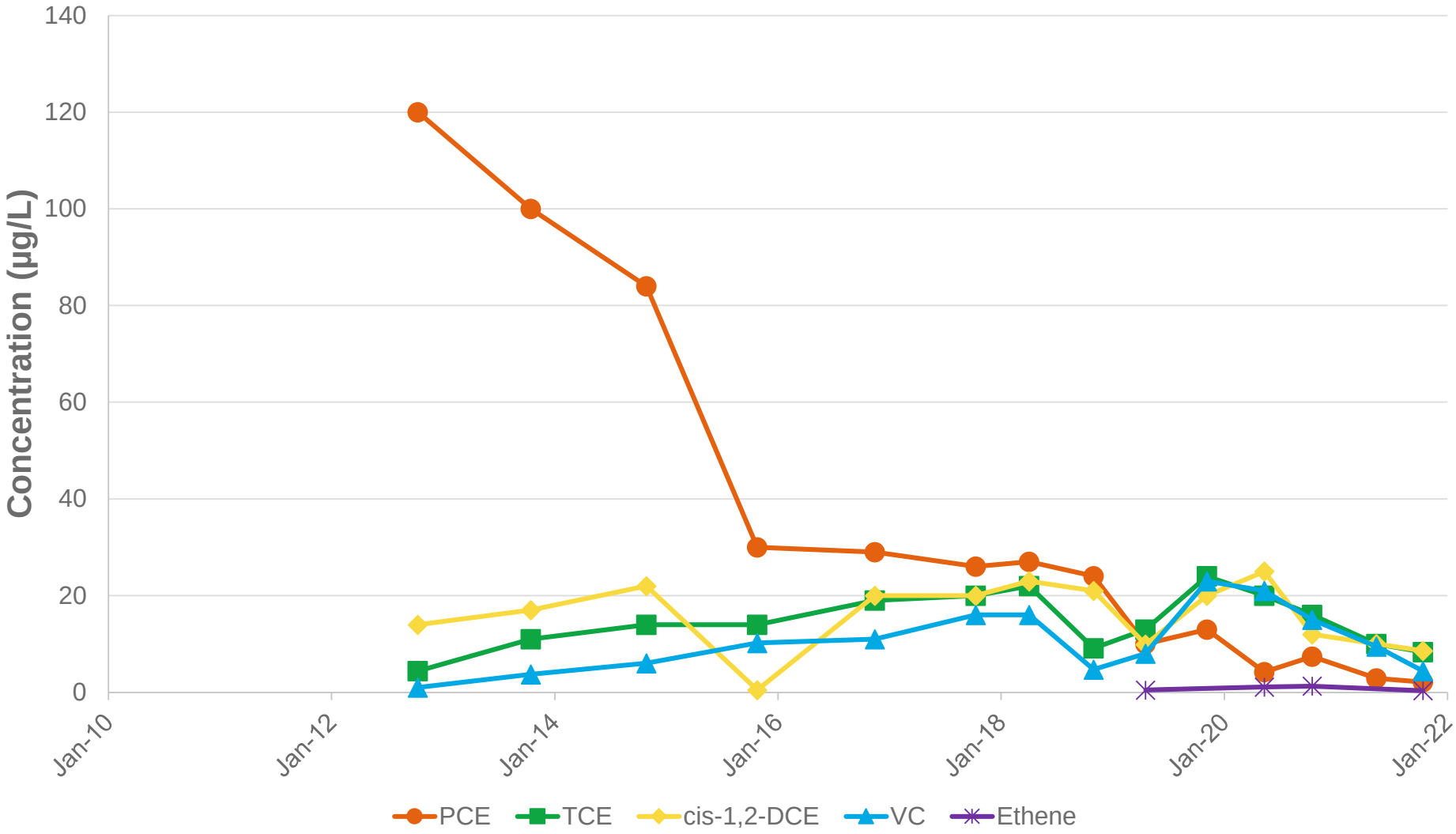
CVOC TREND GRAPH
G6M-97-05B (AREA 5)

SERES Engineering & Services, LLC
ARCADIS a joint venture

FIGURE
E-11

\\ARCADIS\SERES-Arcadis JV - _NE Dist Devens Task Orders\TO 1 - Seed Task\AOC 50\Reports\2. Fall 2020 Memo\Attachments

XSA-12-96X



Notes:

1. Data for compounds not detected are shown at half the reporting limit.
2. µg/L = microgram per liter
3. cis-1,2-DCE = cis-1,2-dichloroethene
4. COC = contaminant of concern
5. CVOC = chlorinated volatile organic compound
6. PCE = tetrachloroethene
7. TCE = trichloroethene
8. VC = vinyl chloride

COC	AOC 50 Cleanup Level (µg/L)
PCE	5
TCE	5
cis-1-2-DCE	70
VC	2

2021 ANNUAL OPERATIONS, MAINTENANCE, AND MONITORING REPORT
AREA OF CONTAMINATION 50
FORMER FORT DEVENS ARMY INSTALLATION
DEVENS, MASSACHUSETTS

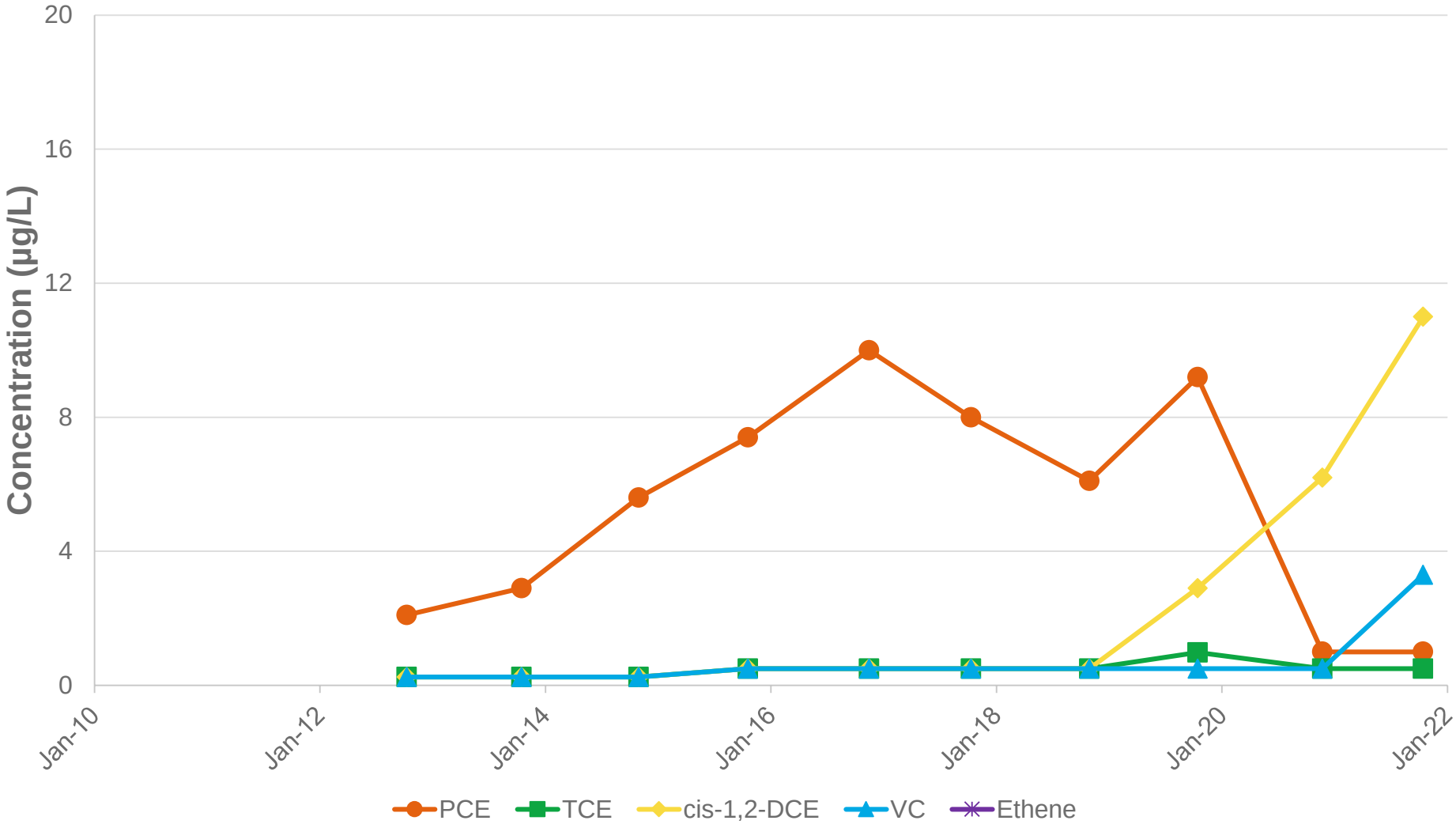
CVOC TREND GRAPH
XSA-12-96X (AREA 5)

SERES Engineering & Services, LLC
ARCADIS a joint venture

FIGURE
E-12

\ARCADIS\SERES-Arcadis JV - _NE Dist Devens Task Orders\TO 1 - Seed Task\AOC 50\Reports\2. Fall 2020 Memo\Attachments

XSA-12-97X



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7. TCE = trichloroethene
8. VC = vinyl chloride

COC	AOC 50 Cleanup Level (µg/L)
PCE	5
TCE	5
cis-1-2-DCE	70
VC	2

2021 ANNUAL OPERATIONS, MAINTENANCE, AND MONITORING REPORT
AREA OF CONTAMINATION 50
FORMER FORT DEVENS ARMY INSTALLATION
DEVENS, MASSACHUSETTS

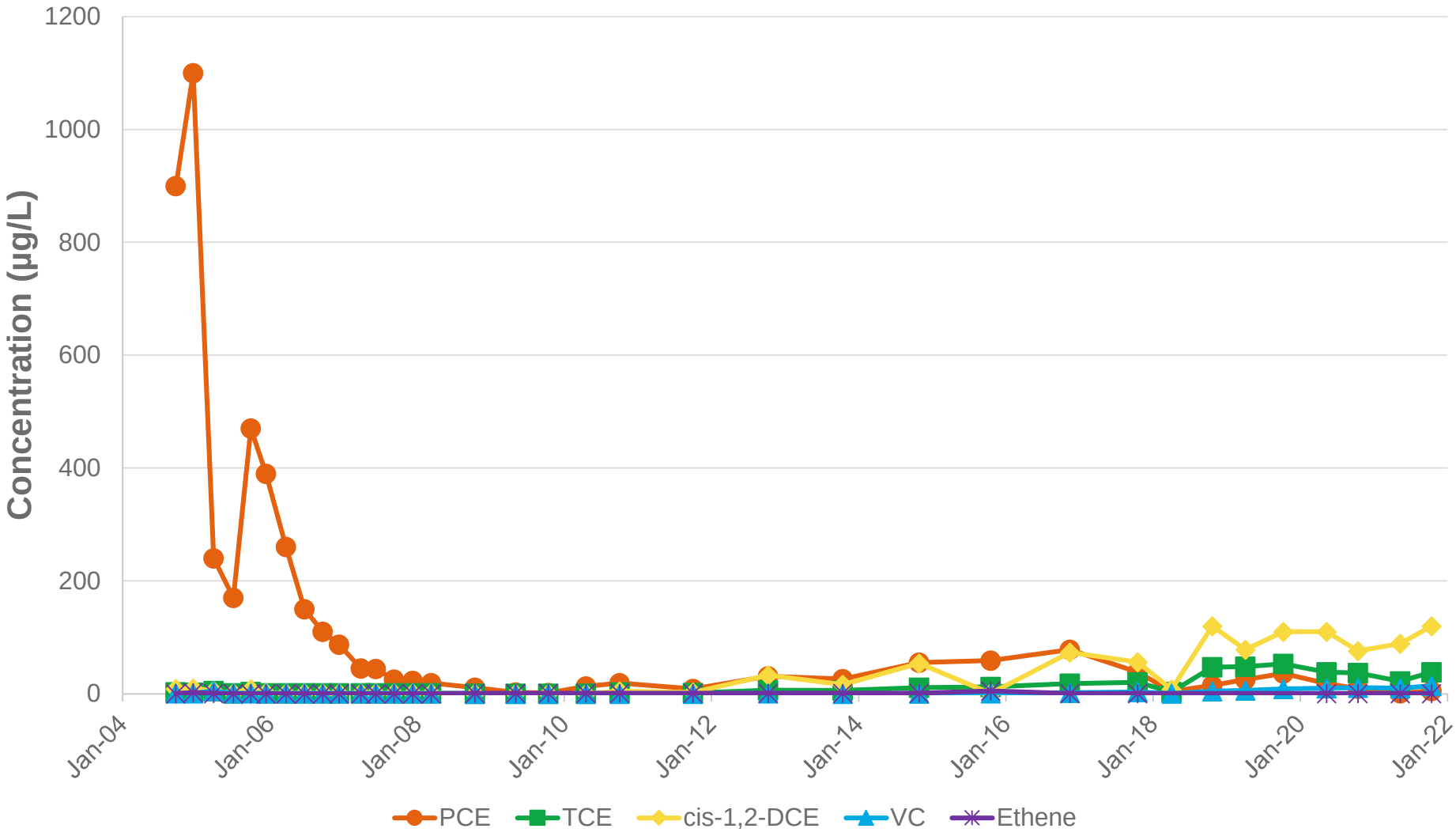
CVOC TREND GRAPH
XSA-12-97X (AREA 5)

SERES Engineering & Services, LLC
ARCADIS a joint venture

FIGURE
E-13

\ARCADIS\SERES-Arcadis JV - _NE Dist Devens Task Orders\TO 1 - Seed Task\AOC 50\Reports\2. Fall 2020 Memo\Attachments

G6M-04-07X



Notes:

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3. cis-1,2-DCE = cis-1,2-dichloroethene
4. COC = contaminant of concern
5. CVOC = chlorinated volatile organic compound
6. PCE = tetrachloroethene
7. TCE = trichloroethene
8. VC = vinyl chloride

COC	AOC 50 Cleanup Level (µg/L)
PCE	5
TCE	5
cis-1-2-DCE	70
VC	2

2021 ANNUAL OPERATIONS, MAINTENANCE, AND MONITORING REPORT
AREA OF CONTAMINATION 50
FORMER FORT DEVENS ARMY INSTALLATION
DEVENS, MASSACHUSETTS

CVOC TREND GRAPH
G6M-04-07X (AREA 5)

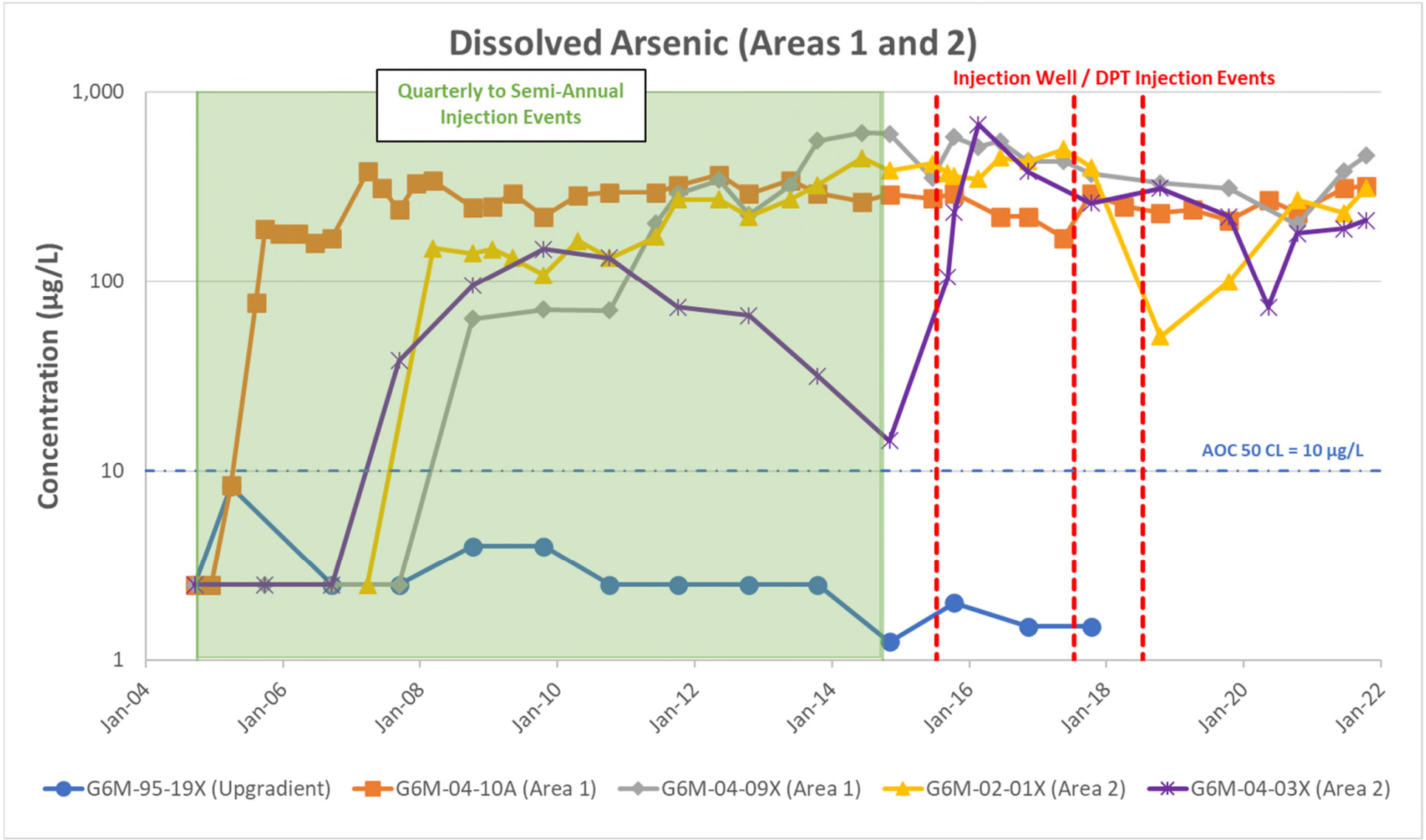
SERES Engineering & Services, LLC
ARCADIS a joint venture

FIGURE
E-14

\ARCADIS\SERES-Arcadis JV - _NE Dist Devens Task Orders\TO 1 - Seed Task\AOC 50\Reports\2. Fall 2020 Memo\Attachments

Appendix F

Arsenic Trend Graphs



Notes:

1. Not-detects are shown at half the reporting limit
2. µg/L = microgram per liter
3. CL = Cleanup Level
4. DPT = direct push technology

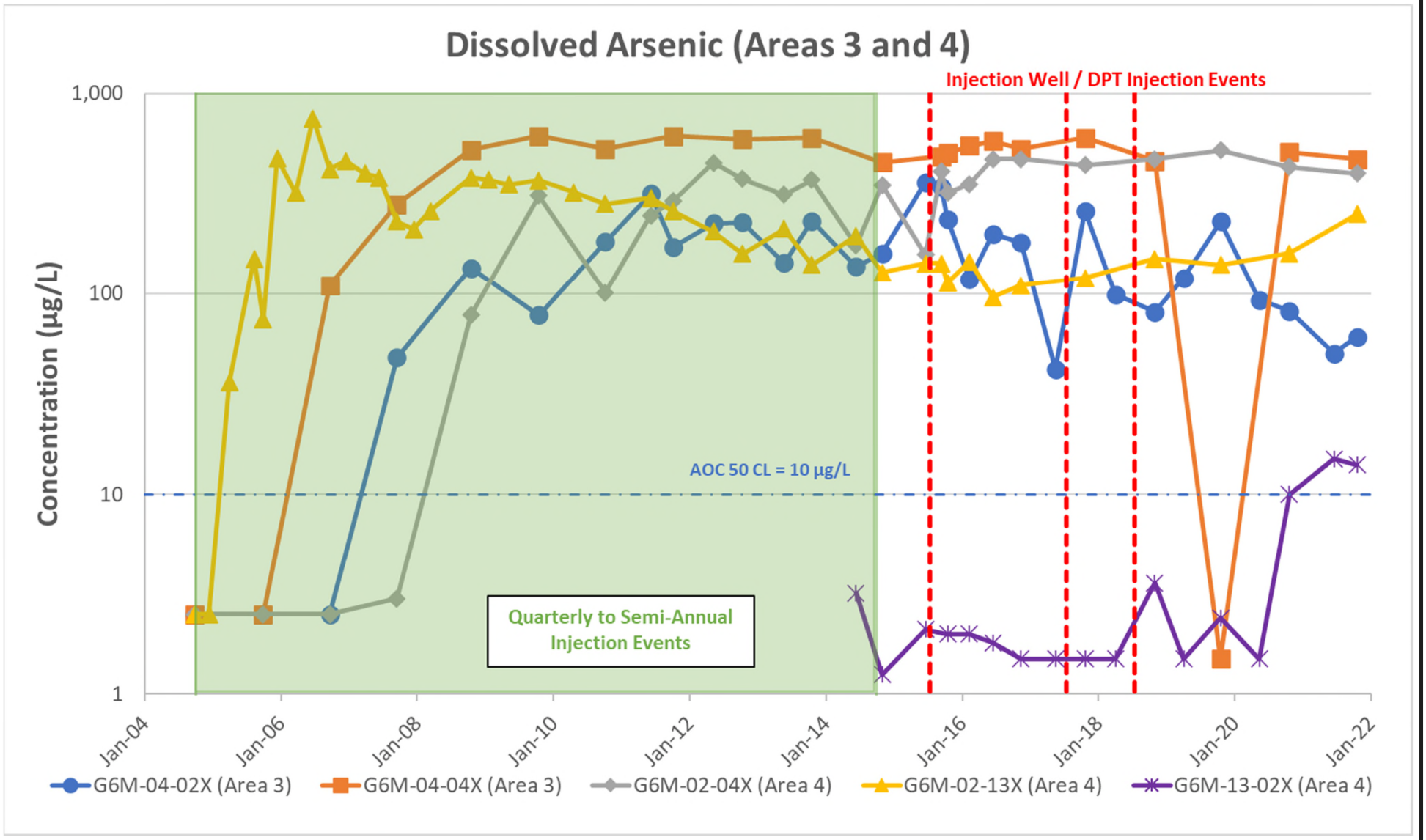
2021 ANNUAL OPERATIONS, MAINTENANCE, AND MONITORING REPORT
AREA OF CONTAMINATION 50
FORMER FORT DEVENS ARMY INSTALLATION
DEVENS, MASSACHUSETTS

DISSOLVED ARSENIC TREND GRAPH
AREAS 1 AND 2

SERES Engineering & Services, LLC
ARCADIS a joint venture

FIGURE
F-1

\ARCADIS\SERES-Arcadis JV - _NE Dist Devens Task Orders\TO 1 - Seed Task\AOC 50\Reports\2. Fall 2020 Memo\Attachments



Notes:

1. Not-detects are shown at half the reporting limit
2. µg/L = microgram per liter
3. CL = Cleanup Level
4. DPT = direct push technology

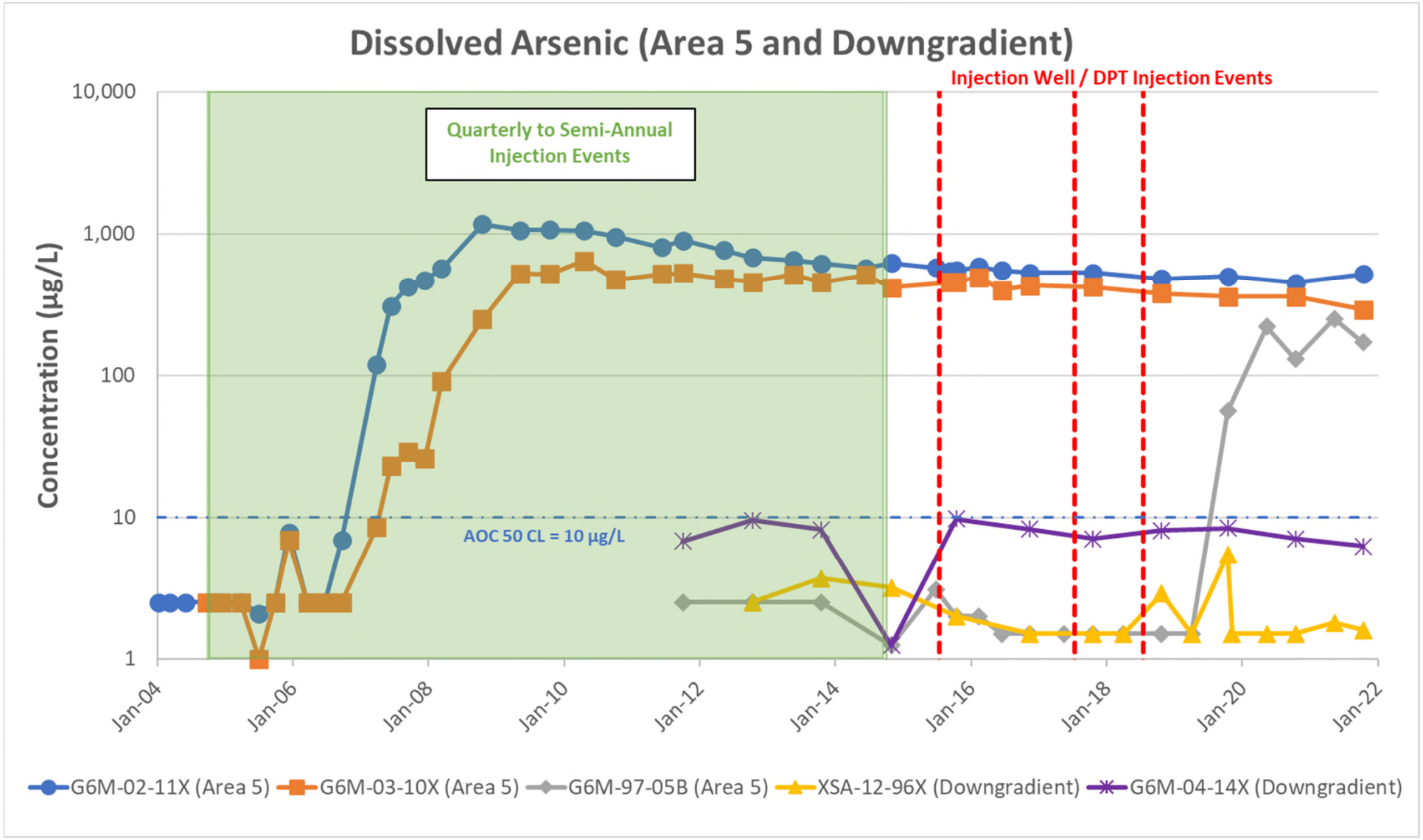
2021 ANNUAL OPERATIONS, MAINTENANCE, AND MONITORING REPORT
AREA OF CONTAMINATION 50
FORMER FORT DEVENS ARMY INSTALLATION
DEVENS, MASSACHUSETTS

DISSOLVED ARSENIC TREND GRAPH
AREAS 3 AND 4

SERES Engineering & Services, LLC
ARCADIS a joint venture

FIGURE
F-2

\ARCADIS\SERES-Arcadis JV - _NE Dist Devens Task Orders\TO 1 - Seed Task\AOC 50\Reports\2. Fall 2020 Memo\Attachments



Notes:

1. Not-detects are shown at half the reporting limit
2. µg/L = microgram per liter
3. CL = Cleanup Level
4. DPT = direct push technology

2021 ANNUAL OPERATIONS, MAINTENANCE, AND MONITORING REPORT
AREA OF CONTAMINATION 50
FORMER FORT DEVENS ARMY INSTALLATION
DEVENS, MASSACHUSETTS

DISSOLVED ARSENIC TREND GRAPH
AREA 5 AND DOWNGRADIENT

SERES Engineering & Services, LLC
ARCADIS a joint venture

FIGURE
F-3

\\ARCADIS\SERES-Arcadis JV - _NE Dist Devens Task Orders\TO 1 - Seed Task\AOC 50\Reports\2. Fall 2020 Memo\Attachments

Appendix G

Annual Land-Use Control Plan Checklist, Reinforcement Letters, and Real Property Master Plan

Annual Land Use Control Plan Checklist for AOC 50

This checklist has been developed from the USEPA guidance document Comprehensive Five Year Review Guidance dated June 2001 (OSWER No. 9355.7-03B-P) and from Section 4.6 of the Remedial Action Work Plan, AOC 50, Devens, Massachusetts Site (Arcadis, 2005). The Checklist was modified to site-specific conditions as recommended by the guidance document. The checklist will be completed annually and submitted with the AOC 50 annual operations, maintenance and monitoring report. The checklist will also be used to assist in compiling information for the five-year review.

I. Site Information	
Site Name/Location: AOC 50	**Name/Affiliation:** Ian Martz - Arcadis
Remedy Includes: Long Term Monitoring, Institutional Controls, ERD	

II. Documentation and Records			
Item	**Yes**	**No**	**Comments**
Any related notices filed with Town of Ayer, MassDEP or Nashoba BOH?		X	
Any related Devens Department of Public Works permits found?		X	No permitting activities besides the police driver training and existing permit for paving. No intrusive work or soil excavation activities.
Any related zoning permits or variances found?		X	
Any related Conservation Commission findings, proposals or notices of intent found?		X	
Any related notices or permits filed with the Devens Enterprise Commission?		X	

III.Physical On-Site Inspection			
Inspector: Desmond Bedard (Arcadis), Brent Smith (USACE)			
Item	**Yes**	**No**	**Comments**
Any construction activities or new buildings present in the area of the remedy?		X	Temporary equipment and conex boxes currently being stored on-site by the US Air Force for a drone study. Debris removal activities completed by USACE in November-December 2021 in two areas (north of site near Nashua River, and south of Area 5); work was surficial only (no excavations).
Is there evidence of damage to the remedy?		X	
Any groundwater supply wells present?		X	Several monitoring wells and injection wells observed to need minor maintenance work (new bolts, locks, etc.). Issues will be addressed in 2022.
Any construction detention ponds?		X	
Is there sufficient access to the site for monitoring?	X		Overgrown conditions observed in the area of monitoring wells in Area 1 and Area 5. A vegetation removal event is proposed to be completed in 2022, prior to the spring LTM event. Gate located immediately west of well G6M-02-11X (Area 5) is in need of repair.

Annual Land Use Control Plan Checklist for AOC 50

This checklist has been developed from the USEPA guidance document Comprehensive Five Year Review Guidance dated June 2001 (OSWER No. 9355.7-03B-P) and from Section 4.6 of the Remedial Action Work Plan, AOC 50, Devens, Massachusetts Site (Arcadis, 2005). The Checklist was modified to site-specific conditions as recommended by the guidance document. The checklist will be completed annually and submitted with the AOC 50 annual operations, maintenance and monitoring report. The checklist will also be used to assist in compiling information for the five-year review.

IV. Interview #1			
Name of Interviewer: Ian Martz (Arcadis)			
Name of Interviewee: Roy Herzig (MassDevelopment) and Neil Angus (Devens Enterprise Commission)			
Contact Information: rherzig@massdevelopment.com, 978-784-2917; neilangus@devensec.com, 978-772-8831 x3334			
Interview Notes: Emailed final 2020 LUC forms to Roy Herzig, Jessica Strunkin and Neil Angus for review on 1/18/2022. Performed phone interview on 2/18/2022 with Roy Herzig and Neil Angus.			
Site Update: The Army is currently investigating PFAS which have been detected at the Former Fort Devens. A record-of-decision has not been completed for PFAS.			
Item	**Yes**	**No**	**Comments**
Has the interviewee received/read the annual IC notification/reinforcement letter from the Army?	X		IC letters were sent to Mr. Eagle and Mr. Woodle on October 22, 2021. MassDev was cc'ed on the letter transmittals.
Is interviewee familiar with the land use controls imposed upon the property & documentation of these controls?	X		
Are there any pumping wells or other sources of water other than those supplied by the Town at the property?		X	
Are there any proposed plans for property sale, future development, construction or demolition activities at the property?		X	
Are there any issues with site access for monitoring and remediation?	X		Advance notice required due to police training activities, but has not significantly delayed any planned work.
IV. Interview #2			
Name of Interviewer: Ian Martz (Arcadis)			
Name of Interviewee: Tom Eagle - Deputy Project Leader (USFWS)			
Contact Information: tom_eagle@fws.gov, 978-579-4027			
Interview Notes: Emailed interview checklist to Tom Eagle on 1/19/2022. Received responses on 2/17/2022, which are documented below.			
Item	**Yes**	**No**	**Comments**
Has the interviewee received/read the annual IC notification/reinforcement letter from the Army?	X		An IC letter was mailed to Mr. Eagle on October 22, 2021.

Annual Land Use Control Plan Checklist for AOC 50

This checklist has been developed from the USEPA guidance document Comprehensive Five Year Review Guidance dated June 2001 (OSWER No. 9355.7-03B-P) and from Section 4.6 of the Remedial Action Work Plan, AOC 50, Devens, Massachusetts Site (Arcadis, 2005). The Checklist was modified to site-specific conditions as recommended by the guidance document. The checklist will be completed annually and submitted with the AOC 50 annual operations, maintenance and monitoring report. The checklist will also be used to assist in compiling information for the five-year review.

Is interviewee familiar with the land use controls imposed upon the property & documentation of these controls?	X		
Are there any pumping wells or other sources of water other than those supplied by the Town at the property?		X	
Are there any proposed plans for property sale, future development, construction or demolition activities at the property?		X	
Are there any issues with site access for monitoring and remediation?		X	
IV. Interview #3			
Name of Interviewer: Ian Martz (Arcadis)			
Name of Interviewee: Jeffrey Woodle (Groton Ayer Realty Trust)			
Contact Information: jpwoodle@gmail.com, 978-877-2712			
Interview Notes: Emailed interview checklist to Jeffrey Woodle on 1/19/2022. Contacted Mr. Woodle on 2/16/2022 via phone, his responses are summarized below.			
Item	**Yes**	**No**	**Comments**
Has the interviewee received/read the annual IC notification/reinforcement letter from the Army?	X		An IC letter was mailed to Mr. Woodle on October 22, 2021.
Is interviewee familiar with the land use controls imposed upon the property & documentation of these controls?	X		
Are there any pumping wells or other sources of water other than those supplied by the Town at the property?		X	
Are there any proposed plans for property sale, future development, construction or demolition activities at the property?		X	
Are there any issues with site access for monitoring and remediation?		X	
V. Response Actions			
Item	**Yes**	**No**	**Comments**
Were violations of the LUCs present ?		X	
Are there Response Actions necessary based on the violations?		X	

Annual Land Use Control Plan Checklist for AOC 50

This checklist has been developed from the USEPA guidance document Comprehensive Five Year Review Guidance dated June 2001 (OSWER No. 9355.7-03B-P) and from Section 4.6 of the Remedial Action Work Plan, AOC 50, Devens, Massachusetts Site (Arcadis, 2005). The Checklist was modified to site-specific conditions as recommended by the guidance document. The checklist will be completed annually and submitted with the AOC 50 annual operations, maintenance and monitoring report. The checklist will also be used to assist in compiling information for the five-year review.

Are modifications/ terminations of LUC's necessary?		X	
Have Enforcement Actions been taken during this reporting period?		X	

Mr. Henry and Jeffrey Woodle
Merrimack Warehouse Realty Co., Inc.
PO Box 353
Ayer, MA 01432

Arcadis U.S., Inc.
One Executive Drive
Suite 303
Chelmsford, MA 01824
Tel 978 322 4526
www.arcadis.com

Subject:
Land Use Control (LUC) Reinforcement Letter
CERCLA Remedy - Area of Contamination (AOC) 50
Former Fort Devens Army Installation – Devens, MA

ENVIRONMENT

Date:
October 22, 2021

Contact:
Ian Martz

Phone:
978.322.4526

Email:
ian.martz@arcadis.com

Our ref:
30087304

Dear Mr. Henry and Jeffrey Woodle,

On behalf of the United States Department of the Army (the Army) Seres-Arcadis is pleased to submit this LUC Reinforcement Letter. The Merrimack Warehouse Nominee Trust (Merrimack Warehouse) and the Army signed a LUC Agreement which was executed on July 18, 2006 for groundwater contamination at the AOC 50 portion of the former Fort Devens located by Route 2A in Ayer, Massachusetts.

The LUC Agreement for the Merrimack Warehouse property restricts property use, as per the Record of Decision (ROD) which was approved by the Army and U.S. Environmental Protection Agency (USEPA) pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The LUCs specific to this letter are identified below and shown on the enclosed map. The LUCs must remain in place in order to protect human health and the environment.

This letter serves as a reminder to your organization of the property use restrictions associated with the AOC 50 environmental remedy so that you may consider them in making decisions about the property. The restrictions were initially described in the Remedial Action Work Plan for AOC 50 that was provided to your organization on July 7, 2005, and the restrictions were later updated on July 20, 2006 in a LUC Agreement between Merrimack Warehouse Nominee Trust and the Army.

The following use restrictions apply to this property:

- Merrimack Warehouse will not use or allow exposure to groundwater underlying the property until the land use restrictions are removed. The parties agree and acknowledge that the contaminated groundwater that is subject of this Agreement is currently confined to the well designated as G6M-96-24B. The parties further agree and acknowledge that Merrimack shall not be prohibited by the terms of this Agreement or otherwise from using the water supplied to and stored in the Fire Pond for extinguishing fires in its building on its land, with the parties further agreeing and acknowledging that the water in the Fire Pond is automatically employed by the sprinkler systems in Merrimack's buildings in the event they are triggered as required by fire codes and Merrimack's insurer.
- Merrimack Warehouse will provide property access to the Army, USEPA, and the MassDEP in order to inspect monitor wells and make annual inspections of the property to confirm compliance with land use objectives.

If you have any further questions concerning this matter or if your contact information changes, please notify Mr. Robert Simeone at the address listed below.

Mr. Robert Simeone
U.S. Army Garrison Fort Devens
30 Quebec Street
Building 666, Room 132
Devens, MA 01434-4479
978-615-6090

The Army will continue to send LUC reinforcement letters on an annual basis as a reminder of the property restrictions. When all actions to protect human health and the environment are deemed complete by the appropriate regulatory agencies, you will receive a letter notifying you that the restrictions have been removed.

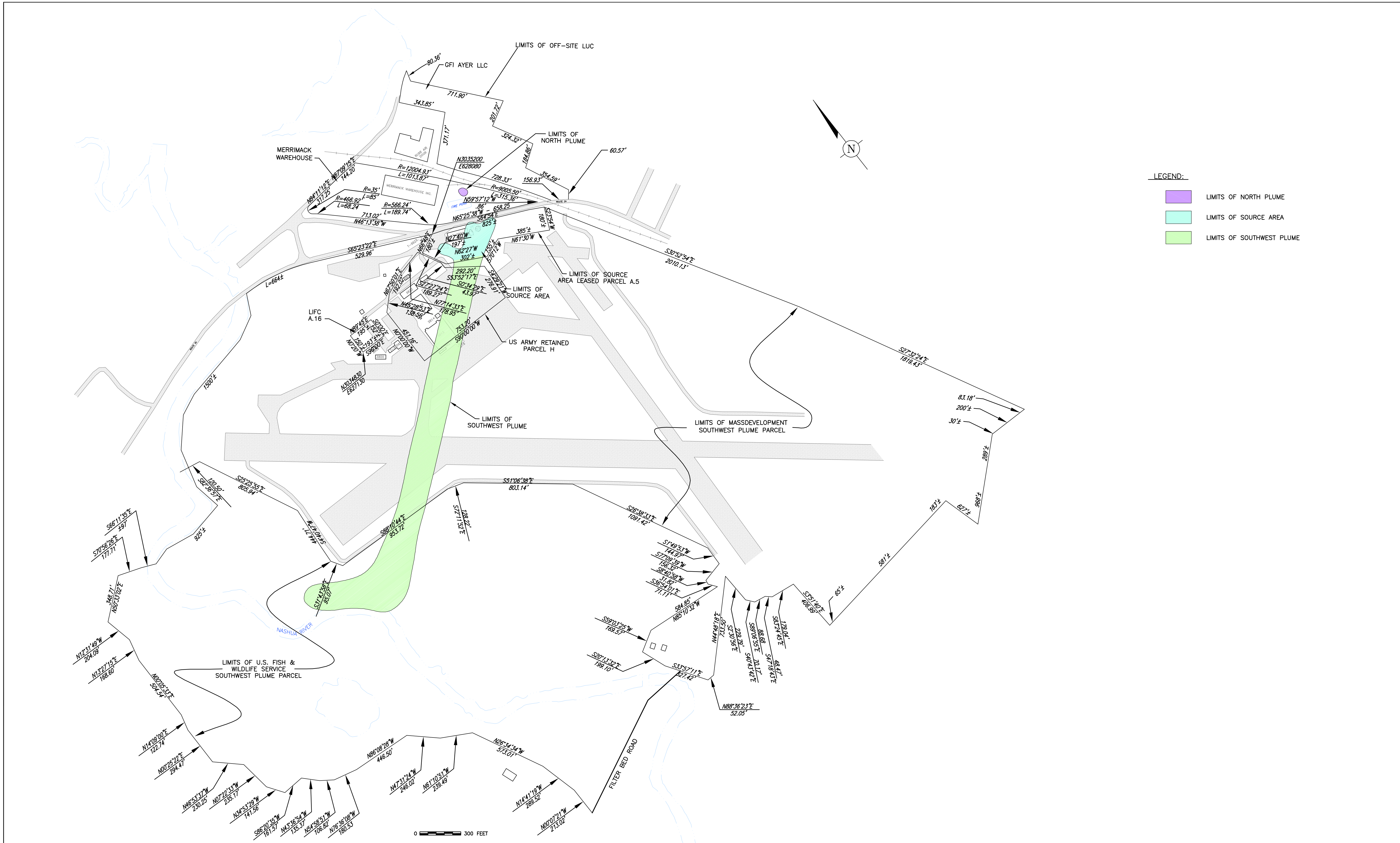
Sincerely,

Seres-Arcadis

Ian A. Martz, P.G.
Senior Geologist

Attachments:
Limits of Land Use Controls Map

Copies:
Robert Simeone – BRAC Devens
Penelope Reddy – USACE
Carol Keating – USEPA
David Chaffin – MassDEP
Roy Herzig - MassDevelopment



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User Name : bthenault Current Plotstyle : ByColor Layout Tab: Layout1

Area Manager	D. KNOX
Project Director	C. CASTELLUCCIO
Task Manager	C. CASTELLUCCIO
Technical Review	

ARCADIS
SUITE 400
175 CABOT STREET
LOWELL, MASSACHUSETTS 01854

AOC 50
FORT DEVENS, MASSACHUSETTS

LIMITS OF LAND-USE CONTROL

Project Number	MA000664.0007
Date	02/28/05
Figure	3

Tom Eagle
Deputy Wildlife Refuge Manager
Eastern MA NWR Complex
73 Weir Hill Road
Sudbury, MA 01776

Arcadis U.S., Inc.
One Executive Drive
Suite 303
Chelmsford, MA 01824
Tel 978 322 4526
www.arcadis.com

Subject:
Land Use Control (LUC) Reinforcement Letter
CERCLA Remedy - Area of Contamination (AOC) 50
Former Fort Devens Army Installation – Devens, MA

ENVIRONMENT

Date:
October 22, 2021

Contact:
Ian Martz

Phone:
978.322.4526

Email:
ian.martz@arcadis.com

Our ref:
30087304

Dear Mr. Eagle,

On behalf of the United States Department of the Army (the Army) Seres-Arcadis is pleased to submit this LUC Reinforcement Letter. The U.S. Fish & Wildlife Service (USFWS) and the Army signed a Memorandum of Agreement (MOA) for the transfer of land which is now part of the Oxbow Refuge Area. Contamination associated with the AOC 50 portion of the former Fort Devens located near Route 2A in Ayer, Massachusetts is present in the groundwater underlying the transferred land.

The MOA for the USFWS property restricts property use as per the AOC 50 Record of Decision (ROD) which was approved by the Army and U.S. Environmental Protection Agency (USEPA), pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The LUCs specific to this letter are identified below and shown on the enclosed map. The LUCs must remain in place to protect human health and the environment.

This letter serves as a reminder to your organization of the property use restrictions associated with the AOC 50 remedy, so that you may consider them in making decisions about this property. The restrictions were initially described in the Remedial Action Work Plan for AOC 50 that was provided to your organization on July 7, 2005.

The following use restrictions apply to this property:

- No extraction of groundwater for any purpose;
- Storm water discharge or recharge are subject to approval;
- Building construction over plume subject to approval; and
- Provide access to the Army, USEPA, and Massachusetts Department of Environmental Protection (MassDEP) to monitor wells, maintain the remedy, and complete annual inspections of the property to confirm compliance with land use objectives.

If you have any further questions concerning this matter or if you contact information changes, please notify Mr. Robert Simeone at the address listed below.

Mr. Robert Simeone
U.S. Army Garrison Fort Devens
30 Quebec Street
Building 666, Room 132
Devens, MA 01434-4479
978-615-6090

The Army will continue to send LUC reinforcement letters on an annual basis as a reminder of the property restrictions. When all actions to protect human health and the environment are deemed complete by the appropriate regulatory agencies, you will receive a letter notifying you that the restrictions have been removed.

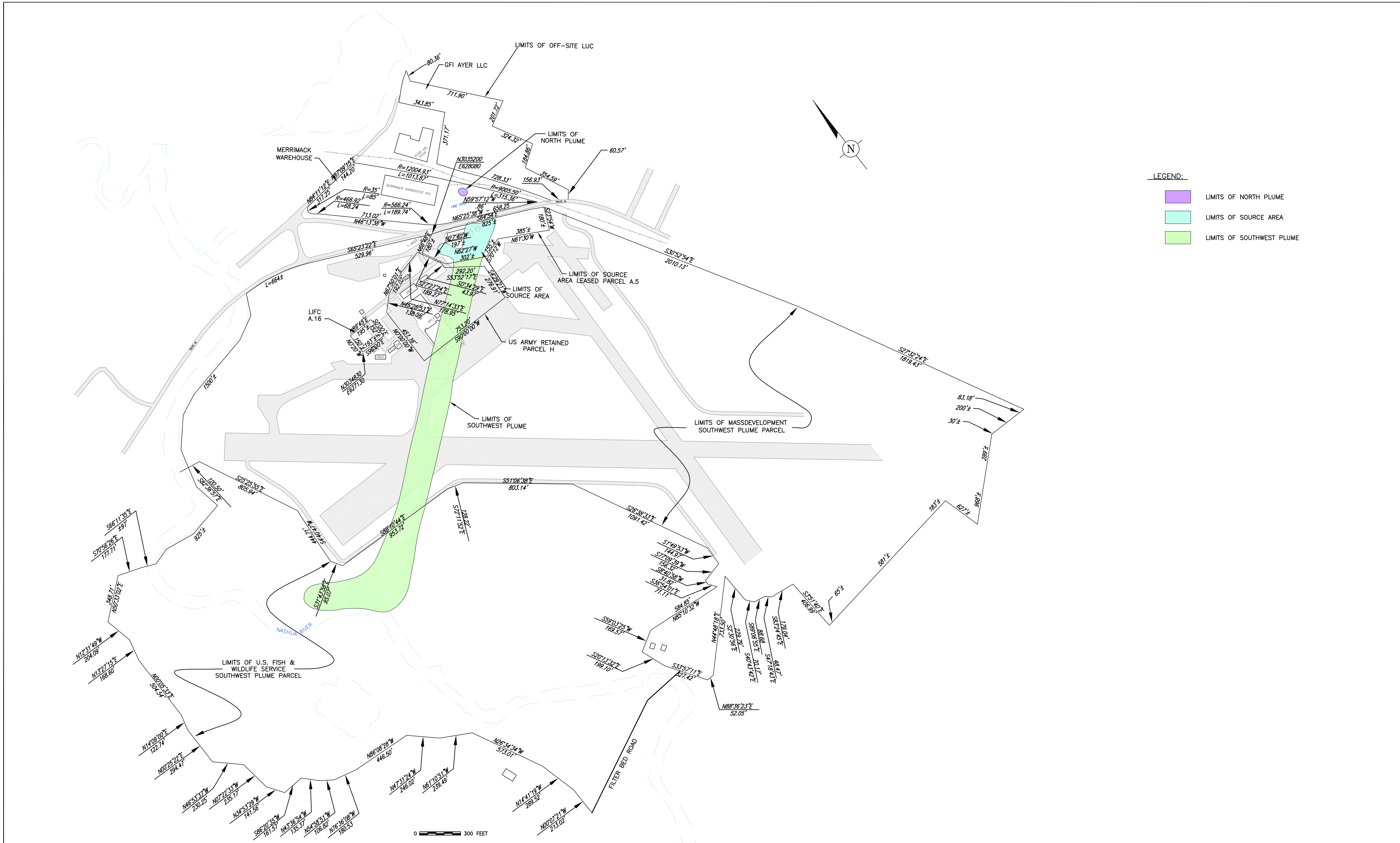
Sincerely,

Seres-Arcadis

Ian A. Martz, P.G.
Senior Geologist

Attachments:
Limits of Land Use Controls Map

Copies:
Robert Simeone – BRAC Devens
Penelope Reddy – USACE
Carol Keating – USEPA
David Chaffin – MassDEP
Linh Phu – USFWS



Area Manager	D. KNOX
Project Director	C. CASTELLUCCIO
Task Manager	C. CASTELLUCCIO
Technical Review	

ARCADIS
SUITE 400
175 CABOT STREET
LOWELL, MASSACHUSETTS 01854

AOC 50
FORT DEVENS, MASSACHUSETTS

LIMITS OF LAND-USE CONTROL

Project Number: MA000664.0007
Date: 02/28/05
Figure: 3

Acad Version : R16.2s (LMS Tech) Date\Time : Wed, 13 Feb 2008 - 1:12pm
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REAL PROPERTY MASTER PLAN
LONG RANGE COMPONENT
FOR
DEVENS RESERVE FORCES TRAINING AREA

ADDENDUM – SEPTEMBER 2007

This addendum applies to Chapter 4.C. (Land Use Policies and Constraints) and Chapter 5.E. (Environmental Concerns) of the *Real Property Master Plan, Long Range Component for Devens Reserves Forces Training Area, June 1999.* The addendum provides supplemental information on Land-Use Controls (LUCs) established under BRAC and CERCLA programs that are applicable to the following areas:

Area A (Main Cantonment)

The CERCLA remedy for the former AAFES Gas Station located on Queenstown Street is addressed in the Record of Decision (ROD) for Area of Contamination (AOC) 43G. The remedy is based on Army retention of this area and continued restricted access to ground water; however, any proposed actions that affect this property must consider the following ROD requirements and site environmental conditions:

- Assure that the Property is not used for residential purposes and prohibit the use of groundwater beneath the site. If the Army changes the land-use within the AOC, then additional assessment and/or possible remedial action may be needed based upon the possible resultant changed risk factors.

- If the Army transfers this property by lease or deed, an Environmental Baseline Assessment (EBS) will be conducted to ensure that the remedy remains protective by incorporating all necessary environmental protection provisions within the Finding of Suitability to Transfer (FOST) and the property transfer deed.

- Any intrusive construction work must consider that residual soil and groundwater contamination has been documented for AOC 43G and that such actions should be coordinated with the DPW, the BRAC Environmental Office and the BRAC Clean-up Team (BCT).

Area C (Range & Training Area)

The CERCLA remedy for the South Post range and training areas is addressed in the ROD for the South Post Impact Area (SPIA) and AOCs 25, 26, 27 and 41. The "no action" remedy is based on Army retention of the South Post; however, any proposed actions that affect this property must consider the following ROD requirements:

- If the Army should close or transfer or change the use of this property, an Environmental Baseline Survey (EBS) will be conducted, and the "no action" decision in the ROD will be re-examined in light of the changed use and risk factors resulting from this closure/transfer.

- The Army will not develop new drinking water sources within the SPIA monitored area.

Area F (3700 Area – Barnum Road Maintenance Yards)

The CERCLA remedy for the former Cannibalization Yard and TDA Maintenance Yard is addressed in the ROD for AOCs 44 and 52, respectively. The remedy is based on Army retention of this property; however, any proposed actions that affect this property must consider the following ROD requirements:

- Assure the Property is not used for residential purposes. If the Army transfers this property by lease or deed, an EBS will be conducted to ensure that the remedy remains protective by incorporating all necessary environmental protection provisions within the FOST and the property transfer deed.

- Maintain the existing paved areas and storm water collection systems to prevent long-term worker exposure to residual oil contaminated soils 2-5 feet BGS associated with AOC 44/52 remedy.

- Assure that Soil Management Plans and Health and Safety Plans are prepared and executed prior to subsurface excavations.

- Any intrusive construction work must consider that residual soil contamination has been documented for AOC 44/52 and that such actions should be coordinated with the DPW, the BRAC Environmental Office and the BCT.

Area G (3800 Area – RTS Maintenance)

The CERCLA remedy for the former Moore Army Airfield is addressed in the ROD for AOC 50. Active remediation and monitoring of the AOC 50 chlorinated solvent plume, which is under building 3813 is ongoing. Treatment transects and associated monitoring wells are located in the RTC vehicle storage area and on the Southwest Corner of Building 3813 former hanger, along the axis of the plume through Army retained Parcel H. Any proposed actions that affect this property must consider the following ROD requirements:

- Provide continued access to treatment transects and monitoring wells and access to install additional injection or monitoring wells, if necessary.

- Coordinate construction plans with the BCT to facilitate ongoing remediation and future access to plume areas

- No groundwater extraction or injection for any purpose

- Coordinate construction plans for modifications to storm water systems with the BCT including engineered storm water management plans and hydrologic/ mounding studies. (Continue use of existing storm water system to direct storm water away from the plume)

Appendix H

Response to Comments

US Army Corps of Engineers ®

New England District
696 Virginia Road
Concord, Massachusetts
01742-2751

Project Name:	Area of Contamination 50	Date:	12 August 2022
Location:	Devens, Massachusetts	Reviewer:	Multiple
Document Name:	Final 2021 Annual Operations, Maintenance, and Monitoring Report		
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No.	Ref. Page / Para.	COMMENTS	RESPONSE	Disposition
		MassDEP Comments		
1.	Section 3.2	Please confirm/correct the statement indicating that higher water levels were observed during the spring event (Figures 4 and 5 show higher water levels during the fall)	Statement has been corrected – groundwater elevations were generally higher in the fall.	
2.	Section 3.5	The report should note that two of the spring samples (G6M-04-02X and G6M-04-10A) and one of the fall samples (G6M-07-01X) were collected or recollected several weeks after the other samples in their respective rounds.	Additional details added to Section 3.5.	
3.	Table 7	Please confirm/correct the temperature listed for sample G6M-97-05B (should be 8.9 degrees?).	Value has been corrected.	
4.	Figure 10	Sample results from well G6M-04-02X may not be representative of upgradient conditions due to nearby treatment in 2019 (purple triangles).	Monitoring well G6M-04-02X is sampled to monitor conditions downgradient of a 2019 DPT injection area (not upgradient conditions).	
5.	Figure 11	Sample results from well G6M-97-05B may not be representative of upgradient conditions because the aquifer in the immediate vicinity of the well screen was treated during 2019 (purple triangles).	Monitoring well G6M-97-05B is sampled to monitor conditions within a 2019 DPT injection area (not upgradient conditions).	
6.	Appendix B	Appendix B should include the lab report presenting the results from spring samples G6M-04-02X and G6M-04-10A.	Lab report has been added to Appendix B.	
7.	Appendix F	Checklist Section IV, Interview #3, Comments Column: Should “Eagle” should be changed to “Woodle”?	Correct – name has been updated.	
		EPA Comments		
1.	General	The ERD remedy is generally producing success, with overall plume area shrinkage and PCE concentration decreases in most locations in Fall 2021. However, elevated PCE concentrations remain in areas in the western part of the current monitoring well network. These include the following: a. Area 1: G6M-13-05X (9.2 µg/L PCE) -- PCE rebounded from non-detect in fall 2020 to 50 µg/L in spring 2021 but then declined to 9.2 µg/L in fall 2021. TCE and other dechlorination “daughter products” are present, suggesting that dechlorination is proceeding. There is no well to the west of this location; the plume is unbounded in this area. b. Area 2: G6M-07-01X (13 µg/L PCE) – There is no well control to the west of this well, which is at the west end of Area 2 injection wells. PCE was 10 µg/L in spring 2021 and 13 µg/L in fall 2021. TCE and other “daughter products” are present in lower concentrations or not detected, suggesting that dechlorination may not be occurring here. See other comments on this area (west edge of transect 2) below. c. Area 4: G6M-13-02X (13 µg/L PCE) – There is limited well control to the west; no well control to the northwest. Some “daughter products” are present, suggesting that some dechlorination may be occurring, but the location is likely near the edge of the area expected to be influenced by the Area 4 injection wells, even though an additional injection point was added at the western edge of the array.	Comments noted.	

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01742-2751

No.	Ref. Page / Para.	COMMENTS	RESPONSE	Disposition
2.	General	Additional measures should be considered for the following locations, which continue to have PCE concentrations above criteria and do not have a clear downward trend in PCE concentrations: a. G6M-04-02X: EPA recommends a repeat of the geoprobe injections in this area (upgradient of Area 3) last performed in 2019. Concentrations in fall 2021 appear to have rebounded (4.2 µg/L in spring 2021 to 21 µg/L in fall 2021). b. G6M-04-07X: EPA recommends additional injections in the vicinity of this well located downgradient of Area 5. The results in Appendix D indicate that the concentrations of COCs appear to have plateaued since 2019. c. XSA-12-96X and XSA-12-95X: EPA recommends targeted injection upgradient of this area. Methane/TOC concentrations are low and some exceedances remain for PCE and "daughter products".	Comments noted. The Army recommends continued long-term monitoring, rather than proposed additional measures. As stated in Section 3 and Section 6 of the report, the historical target level for ERD injections (including the 2019 Geoprobe injections) has been 100 µg/L, and all detections of PCE and TCE at the site are below this level. In addition, the generation of advanced daughter products, including ethene, throughout site groundwater and an overall reduction in CVOC contaminant mass provides evidence that late-stage reductive dechlorination is occurring. In addition, geochemical conditions in these areas (elevated TOC and methane concentrations, pH between 5 and 8 SU, and low DO levels and negative ORP values) remained suitable throughout 2021 to support the transformation of CVOCs into harmless by-products.	
3.	General	Please include trend results for all monitoring wells that have current exceedances; please add G6M-07-01X to Appendix E and the discussion.	Appendix E has been updated with two additional wells with current VOC exceedances (G6M-07-01X and XSA-12-97X). Please see Figure E-6 and Figure E-13, respectively. These wells have also been added to the concentration trends discussion (Section 3.3.2.3).	
4.	General	Please add a figure showing the range of DO and/or ORP concentrations as isoconcentration contours, preferably on a figure showing CVOC concentrations. This will help to evaluate the distribution of both CVOC and metals exceedances.	DO and ORP measurements have been added to Figures 9 to 11 to facilitate comparison of CVOC and DO/ORP values. The data is displayed on these figures (instead of isocontours on Figure 7) to allow for a comparison between CVOCs and other biogeochemical parameters in specific sub-areas of AOC 50.	
5.	General	Section 3.3.2.1 references Army's "Spring 2021 Performance Evaluation and Recommendations, AOC 50, Former Ft Devens" (August 13, 2021) and EPA notes on this document, emailed to Army on October 14, 2021. EPA's 3rd bullet (possible need for injections in the G6M-13-05 area; see also General Comment 1a); 5th bullet (possible need for an additional injection well west of the Area 2 transect and G6M-07-01; see also General Comment 1b); and 6th bullet (continued presence of elevated arsenic southeast of previous Area 5 injections; see also General Comment 6) warrant further discussion. See the relevant specific comments below.	Reference noted.	

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01742-2751

No.	Ref. Page / Para.	COMMENTS	RESPONSE	Disposition
6.	General	Definite plans should be made to perform the following actions in 2023. While EPA might agree to postpone the actions based on 2022 results, a draft plan must be prepared and submitted for review comment and discussion. The plan should include, at a minimum, the following: a. Installation of a new monitoring well northwest of G6M-07-01X to define the west edge of the PCE exceedances near Area 2.Injections immediately upgradient of G6M-07-01X. b. Re-sampling of G6M-18-01 to confirm that the west edge of the PCE exceedances at Area 4 is defined west of G6M-13-02X. c. Injections immediately upgradient of G6M-13-02X.	As noted in the responses to Comment No. 2 and Comment No. 18, the Army recommends continued long-term monitoring at this point in time, rather than the additional actions proposed by the EPA. The low average concentrations of PCE observed in the two referenced well locations in 2021 (11.5 ug/L in well G6M-07-01X, 11 ug/L in well G6M-13-02X) do not warrant additional actions. In addition, the plume dynamics and groundwater flow direction are well documented at the site by the more than 20 years of investigation and remediation monitoring. Additional information on well G6M-18-01 is discussed in Comment No. 11. In accordance with 19 February 2021 Area of Contamination 50, Fall 2020 Remedy Performance and Recommendations Memorandum, the evaluation of remedy performance is ongoing. This evaluation, including the temporary cessation of injection activities, are required to properly evaluate the performance of the remedy and allow for optimization where necessary. Periodic cessation of injections when data indicate that ERD is ongoing in the absence of additional carbon injection is a sound remedial practice. Additional injections are not suggested because ERD is still occurring. Unnecessary additional injections or carbon can cause the aquifer pH to drop below levels conducive to treatment, as well as mobilizing additional naturally occurring metals (arsenic, iron, and manganese) into the environment.	
7.	General	Section 3.3.4 notes that arsenic is expected to re-precipitate when oxic conditions resume after injections. Site-specific data to support Army's expectation must be collected. Please provide trend graphs for arsenic in monitoring wells over time for selected wells. These trend graphs should also include injection dates for nearby and upgradient wells. EPA recommends showing concentrations in 1-2 selected wells in the source area, Area 2, Area 3, Area 4, the vicinity of the highly elevated concentrations in Area 5, and locations downgradient of wells that still exceed criteria for arsenic but are free of PCE and related impacts.	Historical arsenic trend graphs are included in the newly created Appendix F for the following wells: Area 1: G6M-95-19X (upgradient well, CVOCs below CLs since 2010), G6M-04-10A, and G6M-04-09X Area 2: G6M-02-01X and G6M-04-03X Area 3: G6M-04-02X and G6M-04-04X (CVOCs below CLs since 2013) Area 4: G6M-02-04X (CVOCs below CLs since 2010), G6M-02-13X, and G6M-13-02X Area 5: G6M-02-11X, G6M-03-10X, and G6M-97-05B Downgradient: XSA-12-96X and G6M-04-14X (CVOCs below CLs since 2009)	
8.	Page 3, ¶ 1.3, last sentence on page	EPA agrees with the summary of overall progress since 2004, but the fact that exceedances remain in some locations should also be acknowledged here.	The last part of Section 1.3 has been updated.	
9.	Page 5, § 3.2, Groundwater Level Measurements	This section describes the calculated hydraulic gradient for the site. Given the importance of determining the potential downgradient impact of injections, the expected groundwater flow rate is a significant parameter. Please calculate groundwater flow velocity based on site-specific hydraulic conductivity and gradient or provide previous groundwater flow estimates and compare to the velocities that would be expected with the 2021 hydraulic gradients.	A reference to hydraulic conductivity and seepage velocities has been added to Section 3.2.	

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01742-2751

No.	Ref. Page / Para.	COMMENTS	RESPONSE	Disposition
10.	Page 5, § 3.3, 1st bullet	EPA appreciates the addition of G6M-04-09X to the spring monitoring event, following the relatively high (110 µg/L) PCE concentration in fall 2020. Although PCE was not detected in spring or fall 2021, "daughter products" were present in 2021. Noting also that relatively few other Area 1 wells are screened at a similar intermediate depth (55 – 65 ft), please continue to monitor this well twice a year.	Noted – the Army sampled well G6M-04-09X in spring 2022 and will continue to sample on a semiannual basis.	
11.	Page 6, § 3.3, 2nd bullet at top of page	Please explain when G6M-18-01 and G6M- 18-02 were omitted from the monitoring program and why regulatory concurrence wasn't obtained before doing so. The reason provided in the second bullet (the wells were not listed for monitoring in the 2017 LTMMP) does not make sense because the wells were not installed until 2018. Army should continue to monitor these two wells unless/until it is discussed with and approved by EPA and DEP.	The correct reference has been added to Section 3.3. The Army interpreted the sampling of these wells as only being required through 2020. The plume dynamics and groundwater flow direction are well documented at the site, and the sampling events conducted so far did not detect CVOCs above laboratory limits. The lack of resampling especially at G6M-18-01 does not refute that this well bounds the PCE plume to the west.	
12.	Page 6, § 3.3.1, 1st bullet of section	This bullet lists five wells in which groundwater pH was not within the range for bioremediation in fall 2021. The last sentence states that these wells "are located west of the CVOC plume where all CVOCs are below the CLs." This is not true for G6M-04-02X, which is directly upgradient of the Area 3 injection array, not west of the CVOC plume, and this well had PCE above the CL.	This statement was erroneous and has been removed.	
13.	Page 6, § 3.3.1, last bullet on page	The area adjacent to the Nashua River, where G6M-04-14X is located, showed anoxic conditions in fall 2021 but is not near an ERC treatment area, has no CVOC detections, and relatively low arsenic (6 µg/L). What is the significance of these results?	As shown in Appendix D, anoxic conditions have been observed periodically in well G6M-04-14X. This, along with the low metals concentrations, suggest that the anoxic conditions are most likely associated with native conditions adjacent to the Nashua River.	
14.	Page 7, § 3.3.2.2, 1st sentence of section	EPA agrees that progress is being made in much of the area, but the first sentence is a bit unclear, due to the use of the term, "target wells". (The term is also used in the first sentence of Section 3.3.2.1.) Which wells are "target wells"? Are the remaining wells where PCE and other CVOCs remain above CLs and do not show clear decreasing trends not considered target wells?	Statements have been updated for clarity – the correct interpretation is "wells targeted" by the injections. As per Section 3.3.2.1, locations where PCE was greater than 100 ug/L historically had been targeted for ERD treatment.	
15.	Page 8, § 3.3.2.2	The LTMMP reference is missing from the second sentence. Also, the four bullets cite fall 2020 results. Are all the data from 2021, or is this more than a date typo?	LTMMP reference has been added. The bullets list fall 2021 results, with the fall 2020 results being included for comparison.	
16.	Pages 8-9, § 3.3.2.3, last Area 1 bullet	Well G6M-13-05X was identified by Army and EPA (Spring 2021 Performance Evaluation and EPA comments) as needing more discussion and possibly more injections. PCE jumped to 50 µg/L in spring 2021 but fell back to 9.2 µg/L in fall 2021. EPA previously (comments on the Spring 2021 Performance Evaluation Memo) advocated for injections in this area if the rebound continued. EPA is still concerned about this area because of the location cross gradient from previous injections and the fluctuating CVOC concentrations. Unless 2022 results for both spring and fall are below the CL, injections (presumably via drive points) should be conducted in 2023. Also, because the CVOC exceedances are not bounded to the west in this area, an additional well located farther west should be drilled and sampled in 2023 unless the spring and fall 2022 results are below the CL or show steady decline approaching the CL (not further fluctuation).	Preliminary data from the Spring 2022 event indicate a concentration of 8.0 ug/L in well G6M-13-05X, which represents a three order-of-magnitude decrease in concentration compared to levels in 2017. In addition, the presence of daughter products (vinyl chloride at 9.4 ug/L and dissolved gases (ethane, ethene, and methane) indicate that ERD is still occurring. The Army needs to continue to monitor concentrations on a semi-annual basis in order to establish trends. The Army does not agree with the concept that concentrations above the CL automatically warrant additional injections; the historical target concentration for injections was greater than 100 µg/L PCE, and groundwater concentrations in all site wells are currently well below this level. As mentioned in previous comments, the plume dynamics and groundwater flow direction are well documented at the site, and the installation of another well west of G6M-13-05X is not warranted (especially with the historical data already available from well G6M-04-11X to the southwest).	

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01742-2751

No.	Ref. Page / Para.	COMMENTS	RESPONSE	Disposition
17.	Page 9, § 3.3.2.3, Area 2	Please add a trend plot for G6M-07-01X, located immediately west of the Area 2 injection well transect. This is now the most important Area 2 well to track, as it shows non-decreasing, persistent PCE results above CL. This well was installed as a monitoring well at the west edge of the plume in Area 2, converted to injection well (because the west edge of the plume was missed by the original injection array). The well was last sampled in 2013, prior to its conversion to an injection well. In 2019, the well was returned to use as a monitoring well and recent results show that the west edge of the plume not only persists but is unbounded. An additional monitoring well is needed to the west or northwest. G6M-07-01X could then be converted back to an injection well or additional injections in this area could be accomplished using drive points. <u>These steps should be taken in 2023 unless 2022 results show steady declines in PCE toward or below the CL. Please provide a schedule for new well installation and injections in this area.</u>	A trend chart for well G6M-07-01X (Figure E-6) has been added to Appendix E. Please note that the PCE concentrations in 2021 (10 and 13 ug/L) represent two of the three lowest values in the historical record and represents a substantial decrease from both the historical maximum of 50 ug/L in 2010 as well as the average PCE concentration of 26 ug/L from 2008-2020. As mentioned in previous comments, the plume dynamics and groundwater flow direction are well documented at the site. The Army has installed several wells to the west of the plume edge (G6M-04-11X in Area 1, G6M-13-03X in Area 3, G6M-18-01 and G6M-18-02 in Area 5), all of which are below CLs or laboratory RLs for CVOCs. The Army does not believe that installing additional wells or completing additional injections is necessary at this time.	
18.	Page 9, § 3.3.2.3, Area 4	The first sentence states that well G6M-13-02X is “hydraulically downgradient of permanent wells used in the 2019 injections.” Unfortunately, available well control does not allow precise definition of groundwater flow direction, but the flow direction is generally southwesterly. As shown in Figure 7, G6M-13-02X is generally southwest of the western edge of the injection well array; as such, G6M-13-02X could be near or even beyond the area influenced by the injections. Further, the western most injection well in 2019 (G6M-06-01X) is a former monitoring well converted to an injection well that may not have an optimal screen depth or length for injection. Also, injections prior to 2019 would not always have used this well. <u>Unless 2022 results show a steady decline toward or below the CL, injections in this area (DPs recommended) should be planned for 2023.</u>	As mentioned in previous comments, the plume dynamics and groundwater flow direction are well documented at the site. In 2021, the groundwater elevation in well G6M-13-02X was less than the wells to the north-northeast in Area 4, and greater than the wells to the south/southwest in Area 5; this is consistent with historical groundwater elevation measurements. Based on the observed decrease in PCE by two orders-of-magnitude since 2014, the well has clearly been influenced by the upgradient injections. The Army does not agree that the average PCE concentration of 7.2 ug/L in 2021 warrants additional injections. In addition, preliminary results from the spring 2022 sampling event showed a decrease in PCE concentration to 3.4 ug/L and an increase in methane concentration.	
19.	Page 11, § 3.3.4 (and Figure 12)	The very low arsenic level at G6M-07-01X (west edge of Area 2 transect), combined with persistent PCE concentrations above CL suggests that this area has not received benefit from recent injections. New injections are needed upgradient of this location. The low (or non-detect) levels of TCE and other daughter products (Figure 9) are consistent with this interpretation.	Please see previous responses to Comments No. 2 and No. 17.	
20.	Page 11, § 3.3.4, last paragraph of section	EPA appreciates the explanation of the iron and arsenic re-precipitation process. Please continue to check remaining problematic or puzzling areas with elevated arsenic (e.g. southeast edge of Area 5 downgradient area) for consistency or inconsistency with the expected progression.	Comment noted.	
21.	Page 13, § 4	EPA agrees generally with the statements in this section, but the summary ignores key details regarding remaining exceedances. EPA notes that the lack of injections in 2020, 2021, and 2022 (next-to-last sentence) runs counter to previous EPA suggestions/requirements. EPA also notes Army’s willingness (last sentence) to re-evaluate remedial system configuration and approach. As evident from the comments above, EPA believes that the time is now for such re-evaluation, though this is necessary only in a limited manner at specific locations as described above.	The site is re-evaluated on an annual basis, with the evaluation (and the rationale for no additional injections at this time) being presented in Section 3 of the report.	
22.	Page 15, § 6, ¶ 2	The second sentence states that “The goal of the most recent injections performed in July/August 2019 was to … support/enhance reductive dechlorination within the source area ….” However, Figures 7, 9, and 12 do not show any injection points in Area 1. Please correct the text or figures as necessary. If it is the case that there were no source area injections in 2019, when and where did Area 1 injections occur most recently? Please provide the same information for Area 2.	The 2019 injection points are shown on each of these figures – please refer to the “Geoprobe Injection Location – July/Aug 2019” legend item.	

No.	Ref. Page / Para.	COMMENTS	RESPONSE	Disposition
23.	Page 16, § 6, last bullet	EPA notes Army's plan to re-evaluate the need for more injections pending 2022 results. As noted above, EPA believes that there is already enough information to indicate that more injections are needed in at least two areas (west of Area 2; west of Area 4). Delaying consideration pending 2022 data probably means that no injections will be done until 2024. More generally, although EPA agrees with most of the text in Section 6, omission of the remaining exceedances in these areas leads to an over-simplified, if not misleading, general conclusion.	Please refer to previous comment responses. Section 6 has been updated to reflect updates to Section 1.3. The statement that the Army has omitted or provided misleading data is perplexing, given that the exceedances are presented and discussed in the text (Section 3), tables, and figures.	
24.	Page 16, § 6, bullet list	An additional bullet should be added, committing to installation and sampling of a new monitoring well, west or northwest of Area 2 well G6M-07-01X. The area of PCE exceedance is unbounded in this location.	Please refer to previous comments.	
25.	Tables 4 and 5	Water level data with a single asterisk were not included when contouring groundwater potentiometric surface, based on notes at the bottom of the tables. How similar were the screen depths? It is risky to simply omit data that does not fit with an interpretation unless there is an additional reason to exclude the data. For example, do XSA wells have a different construction from the MWs that might explain unexpected water levels? Could there be local clay or silt lenses that could explain the unexpected water levels? Do the wells need to be re-developed? The number of wells for which data were excluded is large enough that this should be discussed in Section 2.1 or Section 3.2.	The XSA wells are all 1-inch diameter well points, which may partially explain the unexpected water levels in Fall 2021. The screen intervals for surrounding wells are generally within one ft NAVD88 when compared to the excluded locations, with the exception of G6M-02-08X (shallowest interval in Area 1 by ~8 feet). The Army will continue to collect water levels on a semiannual basis and will re-gauge wells with unexpected readings to confirm accuracy. As mentioned in previous comments, the plume dynamics and groundwater flow direction are well documented at the site, and the Army believes that the 48 wells used to generate the Fall 2021 provide ample coverage for the water level contour map.	
No further comments				