

Ms. Rebekah Reams
Alaska Department of Environmental Conservation
Spill Prevention and Response, Contaminated Sites Program
610 University Avenue
Fairbanks, Alaska 99709

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Date: June 14, 2023
Our Ref: 30064225
Subject: First Half 2023 Semi-Annual Status Report
Unocal #5057 Former (306450)
4351 Old International Airport Road, Anchorage Alaska
ADEC File No.: 2100.26.115
ADEC Hazard ID: 23369

Dear Ms. Reams,

On behalf of Chevron Environmental Management Company (CEMC), Arcadis U.S., Inc. (Arcadis), has prepared this report to document the first half 2023 groundwater monitoring activities of for the Unocal #5057 Former (306450) located at 4351 Old International Airport Road, Anchorage, Alaska (site). This work was conducted under the direction of a "Qualified Environmental Professional" and "Qualified Sampler" (18 Alaska Administrative Code [AAC] 75.333).

If you have any questions, please do not hesitate to contact me.

Sincerely,

Arcadis U.S., Inc.

A handwritten signature in blue ink that reads "Gerald A. Robinson".

Gerald A. Robinson
Project Manager
Email: Gerald.Robinson@arcadis.com
Direct Line: 724.934.9507

Copies

James Kiernan, CEMC (*electronic copy*)

SEMI-ANNUAL STATUS REPORT

First Half 2023

June 14, 2023

Work Conducted This Period [First Half 2023]:

1. Conducted quarterly groundwater monitoring activities on April 14, 2023.
2. Prepared the *First Half 2023 Semi-Annual Status Report*.

Work Proposed Next Period [Second Half 2023]:

1. Conduct the second half 2023 groundwater monitoring activities.
2. Prepare the *Second Half 2023 Semi-Annual Status Report*.

Site Description

The site is a vacant lot located in a commercial area on Anchorage Airport property at the intersection of Old International Airport Road and South Aircraft Drive. The geology of Anchorage area is dominated by glacial outwash. The Bootlegger Cove formation underlies most of Anchorage and consists of fine-grained sediments (fine sand and silt). The site geology consists of inter-bedded sand and silt layers to approximately 60 feet below ground surface (bgs). A clay layer has been observed at depths from 28 to 45 feet bgs at thicknesses ranging from 0.5 to 5 feet. These clay lenses appear to act as localized confining layers causing a perched groundwater table in some areas onsite (Arcadis 2008). The depth to water in groundwater monitoring wells has ranged from 23.05 to 59.40 feet bgs. The general historical groundwater flow direction is to the south-southwest to southwest. Union Oil Company of California (Unocal), a Chevron Environmental Management Company (CEMC) affiliate, formerly operated the service station from 1953 through 1988 when it was decommissioned. In 1988, the facility building, six petroleum underground storage tanks (USTs), dispenser pumps, and three vertical above-ground petroleum storage tanks (ASTs) were removed from the property. Five of the six USTs have been removed and one state-owned UST remains on site. This UST was abandoned in place and is currently situated underneath an off-site building; therefore, could not be removed. During facility decommissioning activities, approximately 2,800 cubic yards of petroleum hydrocarbon impacted soil were removed from the site. Limitations of the excavation equipment prevented complete removal of all impacted soil in the former pump island and AST areas. Confirmation soil samples indicated petroleum hydrocarbon-impacted soils remain in place outside the excavation limits. Impacted soil located near the former ASTs and in the former dispenser island area remains.

On March 21, 2023, the Alaska Department of Environmental Conservation (ADEC) approved a *Groundwater Sampling Analyte Reduction Request – Groundwater Sampling Work Plan Addendum* which included the monitoring and sampling of monitoring wells MW-5, MW-5A, MW-7, MW-7A, MW-9, MW-14, and RW-14 semi-annual, and monitoring wells MW-10 through MW-13 annually during the third quarter. The surrounding properties include Anchorage International Airport commercial offices and warehouses. Previously soil vapor investigations were completed on the adjacent property located at 4510 Airport Road. is the location for the soil vapor investigation. A site location map and site plan are shown as **Figures 1** and **2**, respectively.

Site Activities this Reporting Period

Current phase of project:	Monitoring
Frequency of monitoring and sampling:	Semi-annual
Monitoring wells containing light non-aqueous phase liquid (LNAPL):	None
Cumulative LNAPL recovered to date: (gallons)	0.00
Approximate depth to groundwater: (feet below top of casing)	32.77 (MW-5A) to 54.36 (MW-7A)
Approximate groundwater elevation: (feet relative to NAVD88)	31.88 (MW-12) to 50.32 (MW-5A)
Groundwater flow direction	South-southwest
Groundwater gradient (feet per foot)	0.092
Current remediation techniques:	None
Summary of unusual activity:	Monitoring wells MW-14 had insufficient water to sample.
Agency directive requirements:	None

Groundwater Gauging and Sampling Methods

On April 14, 2023, the first half 2023 groundwater monitoring and sampling activities were conducted. Groundwater monitoring wells scheduled to be gauged and/or sampled are summarized in **Table 1**. Monitoring wells were gauged with an oil/water interface probe in the order of lowest to highest historical petroleum hydrocarbon concentrations in groundwater to determine groundwater elevations and ascertain if LNAPL was present. Following gauging, groundwater was purged and sampled using low flow purge technology via bladder pump in accordance with the ADEC Field Sampling Guidance (ADEC 2022) and Arcadis *Standard Groundwater Sampling and Monitoring Wells* (Arcadis 2022).

Non-disposable groundwater gauging equipment was decontaminated prior to and after each use with a detergent solution and rinsed in potable water. Water table drawdown was continuously monitored during purging with an oil/water interface probe and the flow rate of the pump was adjusted to limit drawdown to 0.1 meter. Water quality parameters were monitored during purging with a multi-parameter water quality meter equipped with a flow through cell and turbidity meter. Parameters were recorded every 3 to 5 minutes until a minimum of three (minimum of four if using temperature as an indicator) of the parameters listed below stabilized. Water quality parameters were considered stable when three successive readings were within the following ADEC limits:

- $\pm 3\%$ for temperature (minimum of $\pm 0.2\text{ C}^\circ$),

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- ± 0.1 for pH,
- $\pm 3\%$ for conductivity,
- ± 10 mv for redox potential,
- $\pm 10\%$ for dissolved oxygen, and
- $\pm 10\%$ for turbidity.

Following well stabilization, the flow rate was reduced to between 100 to 150 milliliters per minute and samples were collected into laboratory sample bottles. Groundwater samples were collected from the top foot of the water column in monitoring wells per the sampling schedule (**Table 1**) with the following exception: monitoring wells MW-14 had insufficient water to be sampled. The groundwater potentiometric surface elevation and a rose diagram of historical groundwater flow directions are illustrated on **Figure 3**.

Groundwater samples collected were analyzed by Pace Analytical National Center for Testing & Innovation (Pace) of Mt. Juliet, Tennessee for the following constituents:

- Full-Scan volatile organic compounds (VOCs) by United States Environmental Protection Agency (USEPA) Method 8260D
- Poly Aromatic Hydrocarbons (PAH) by United States Environmental Protection Agency (USEPA) Method 8270E-SIM
- Total petroleum hydrocarbons as gasoline range organics (GRO) by Alaska Method AK101
- Total petroleum hydrocarbons as diesel range organics (DRO) by Alaska Method AK102.
- Total Lead by United States Environmental Protection Agency (USEPA) Method 6010D

A groundwater duplicate sample (BD-1) was collected from monitoring well MW-7 and submitted blind to Pace. Additionally, an equipment blank sample was collected, and trip blanks were included in sample coolers for quality assurance purposes. Field notes collected during groundwater monitoring activities including monitoring well purge rates and drawdown are presented in **Attachment A**.

Groundwater Sampling Results

Groundwater analytical results obtained during this event indicate constituents of potential concern (COPCs) exceed the ADEC Oil Pollution Prevention Requirements (18 AAC 75) identified in Table C - Groundwater Cleanup Levels (GCLs). Analytical data from the most recent sampling event are summarized in **Tables 2** and **3**. COPCs exceeding GCLs are summarized below and are illustrated on **Figures 4** and **5**. The laboratory report is included as **Attachment B**.

- DRO was detected at concentrations above the ADEC GCL of 1,500 micrograms per liter ($\mu\text{g/L}$) in groundwater samples collected from MW-7 at a concentration of 21,700 $\mu\text{g/L}$ and 21,400 $\mu\text{g/L}$ in BD-1, in MW-7A at a concentration of 1,520 $\mu\text{g/L}$, and in MW-9 at a concentration of 11,300 $\mu\text{g/L}$.
- GRO was detected at concentrations above the ADEC GCL of 2,200 $\mu\text{g/L}$ in groundwater samples collected from MW-7 at a concentration of 108,000 $\mu\text{g/L}$ and 113,000 $\mu\text{g/L}$ in BD-1, in MW-7A at a concentration of 4,680 $\mu\text{g/L}$, and in MW-9 at a concentration of 4,130 $\mu\text{g/L}$.
- Benzene was detected at concentrations above the ADEC GCL of 4.6 $\mu\text{g/L}$ in groundwater samples collected from MW-5 at a concentration of 11.3 $\mu\text{g/L}$, in MW-7 at a concentration of 3,310 $\mu\text{g/L}$ and 3,250 $\mu\text{g/L}$ in BD-1, in MW-7A at a concentration of 22.6 $\mu\text{g/L}$, and in MW-9 at a concentration of 159 $\mu\text{g/L}$.

- Toluene was detected at concentrations above the ADEC GCL of 1,100 µg/L in groundwater samples collected from MW-7 at a concentration of 32,900 D µg/L and 30,900 D µg/L in BD-1.
- Ethylbenzene was detected at concentrations above the ADEC GCL of 15 µg/L in groundwater samples collected from MW-5 at a concentration of 64.9 µg/L, in MW-7 at a concentration of 3,650 D µg/L and 3,490 µg/L in BD-1, and in MW-7A at a concentration of 32.7 µg/L.
- Total Xylenes were detected at concentrations above the ADEC GCL of 190 µg/L in groundwater samples collected from MW-7 at a concentration of 24,000 D µg/L and 22,500 D µg/L in BD-1, and in MW-7A at a concentration of 2,170 D µg/L.
- 1,2-dibromoethane (EDB) was detected at concentrations above the ADEC GCL of 0.075 µg/L in groundwater samples collected from MW-7 at a concentration of 228 D µg/L and 228 D µg/L in BD-1, and in MW-7A at a concentration of 7.25 D µg/L.
- 1,2-dichloroethane (EDC) was detected at concentrations above the ADEC GCL of 1.7 µg/L in groundwater samples collected from MW-7 at a concentration of 104 µg/L and 105 D µg/L in BD-1, in MW-7A at a concentration of 8.62 J µg/L, in MW-9 at a concentration of 10.0 µg/L, and in RW-14 at a concentration of 3.13 µg/L.
- Lead was detected at concentrations above the ADEC GCL of 15 µg/L in groundwater samples collected from MW-7 at a concentration of 252 µg/L and 257 µg/L in the BD-1.
- Naphthalene was detected at concentrations above the ADEC GCL of 1.7 µg/L in groundwater samples collected from MW-7 at a concentration of 267 J µg/L and 277 J µg/L in BD-1, in MW-7A at a concentration of 23.6 J µg/L for the method 8260D; and in MW-7 at a concentration of 233 J D µg/L and 249 J D µg/L in BD-1, and in MW-7A at a concentration of 19.9 µg/L for the method 8270E-SIM.
- 1,2,4-Trimethylbenzene was detected at concentrations above the ADEC GCL of 56 µg/L in groundwater samples collected from MW-7 at a concentration of 2,030 D µg/L and 2,380 µg/L in BD-1, and in MW-7A at a concentration of 581 D µg/L.
- 1,3,5-Trimethylbenzene was detected at concentrations above the ADEC GCL of 60 µg/L in groundwater samples collected from MW-7 at a concentration of 565 µg/L and 566 µg/L in BD-1, and in MW-7A at a concentration of 192 µg/L.
- 1-Methylnaphthalene was detected at concentrations above the ADEC GCL of 11 µg/L in groundwater samples collected from MW-7 at a concentration of 31.1 µg/L and 29.4 µg/L in BD-1.
- 2-Methylnaphthalene was detected at concentrations above the ADEC GCL of 36 µg/L in groundwater samples collected from MW-7 at a concentration of 56.9 µg/L and 54.2 µg/L in BD-1.

Historical analytical results (pre-2023) are presented in **Attachment C**.

Laboratory Data Review

As required by the ADEC Guidelines for Data Reporting (ADEC 2022), Arcadis completed a laboratory data review checklist for the laboratory report generated for this event. The data review checklist is included as **Attachment D**. Quality assurance and quality control parameters related to the precision, accuracy, representativeness, comparability, completeness, and sensitivity of the data presented in this report suggest that the data quality objectives have been met with the following exceptions:

- Accuracy:
 - Laboratory control sample / Laboratory control sample Duplicate recovery was exceeded for isopropylbenzene for USEPA Method 8260D. The analytical result in the associated sample

- locations, MW-5A, MW-5, MW-7A, MW-7, MW-9, RW-14, and BD-1, were qualified as estimated. Results for the equipment blank and both trip blanks were also qualified as estimated.
- Matrix Spike / Matrix Spike Duplicate (MS/MSD) recovery was exceeded for 1,2-dichloroethane and n-propylbenzene for USEPA Method 8260D and 2-methylnaphthalene for USEPA Method 8270E-SIM. Analytical results in associated sample location MW-7A were qualified as estimated.
 - Surrogate recovery exceedances were observed in sample location MW-9 for USEPA Method 8270E-SIM. Target compounds in the associated sample locations were qualified as rejected (R) or estimated (J).
 - Continuing calibration recovery was less than the control limit for acrolein, and naphthalene for USEPA Method 8260D. Analytical results in sample locations MW-5A, MW-5, MW-7A, MW-7, MW-9, RW-14, and BD-1 were qualified as estimated. Results for the equipment blank and both trip blanks were also qualified as estimated.
- Comparability:
 - DRO was detected below the reporting limit in the method blank and equipment blank for Alaska Method AK102. Based on blank evaluation, the results for DRO in sample locations MW-5A and MW-5 were qualified as non-detect.
 - Benzo(a)anthracene was detected below the reporting limit in the equipment blank for USEPA Method 8270E-SIM. Based on blank evaluation, the result for benzo(a)anthracene in sample location MW-7A was qualified as non-detect.
 - Benzo(b)fluoranthene was detected below the reporting limit in the equipment blank for USEPA Method 8270E-SIM. Based on blank evaluation, the result for benzo(b)fluoranthene in sample locations MW-7A, MW-7 and RW-14 were qualified as non-detect.
 - Benzo(g,h,i)perylene and indeno(1,2,3-cd)pyrene were detected below the reporting limit in the equipment blank for USEPA Method 8270E-SIM. Based on blank evaluation, the results for benzo(g,h,i)perylene and indeno(1,2,3-cd)pyrene in sample location MW-7 were qualified as non-detect.
 - Chrysene was detected below the reporting limit in the equipment blank for USEPA Method 8270E-SIM. Based on blank evaluation, the result for chrysene in sample location MW-7A was qualified as non-detect.
 - Fluoranthene was detected below the reporting limit in the equipment blank for USEPA Method 8270E-SIM. Based on blank evaluation, the result for fluoranthene in sample locations MW-5A, MW-5, MW-7A, MW-7, MW-9, RW-14, and BD-1 were qualified as non-detect.
 - Sensitivity:
 - The concentration of DRO and GRO exceeded the ADEC groundwater GCLs in sample locations MW-7, MW-7A, MW-9, and BD-1.
 - The concentration of benzene exceeded the ADEC GCLs in sample locations MW-5, MW-7A, MW-7 MW-9, and BD-1.
 - The concentration of toluene and lead exceeded the ADEC GCLs in sample locations MW-7 and BD-1.
 - The concentration of ethylbenzene exceeded the ADEC GCLs in sample locations MW-5, MW-7A, MW-7, and BD-1.
 - The concentration of total xylenes and EDB exceeded the ADEC GCLs in sample locations MW-7A, MW-7 and BD-1.

- The concentration of EDC exceeded the ADEC GCLs in sample locations MW-7A, MW-7, RW-14, and BD-1.
- The concentration of 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene exceeded the ADEC GCLs in sample locations MW-7A, MW-7, and BD-1.
- The concentration of dibenz(a,h)anthracene exceeded the GCLs in sample location EB.
- The concentration of 1-methylnaphthalene and 2-methylnaphthalene exceeded the ADEC GCLs in sample location MW-7 and BD-1.
- The concentration of naphthalene exceeded the ADEC GCLs in sample locations MW-7A, MW-7 and BD-1.
- The laboratory reported detection limit for bromodichloromethane, bromomethane, carbon tetrachloride, chlorodibromomethane, chloroform, methylene bromide, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,2-dichloropropane, cis-1,3-dichloropropene, trans-1,3-dichloropropene, hexachloro-1,3-butadiene, 1,1,1,2-tetrachloroethane, 1,1,2,2-tetrachloroethane, 1,2,3-trichlorobenzene, 1,2,4-trichlorobenzene, 1,1,2-trichloroethane, and trichloroethene, exceeded the ADEC GCL; however, the laboratory method detection limit is below the ADEC GCL. 1,2,3-trichloropropane and vinyl chloride had elevated method detection limits that exceeded the ADEC GCL; however, the sensitivity of the analyses was still adequate for the samples. The sensitivity of the analyses was adequate for the samples as the detection limits were less than the ADEC GCLs for compounds with above exceptions.

Investigation Derived Waste

Purge water and decontamination water collected during groundwater sampling was temporarily collected into 5-gallon buckets and treated onsite via a Granular Activated Carbon bucket. The treatment of purge water and decontamination water was completed per the Arcadis *Summary of Procedures for Investigation Derived Waste Treatment Utilizing Granular Activated Carbon* (Arcadis 2022). Approximately 8 gallons of groundwater were treated during this event.

Conclusion and Recommendations

The observed groundwater flow direction and hydraulic gradient during this event are generally consistent with historical data. Analytical results from the monitoring wells are generally consistent with historical data.

Arcadis recommends groundwater sampling continues in accordance with the current approved schedule. The second half sampling event will be conducted in fall of 2023.

References

- ADEC. 2022. Technical Memorandum 22-001; Guidelines for Data Reporting. ADEC, Division of Spill Prevention and Response Contaminated Sites Program. August 15.
- ADEC. 2022. Field Sampling Guidance. ADEC, Division of Spill Prevention and Response Contaminated Sites Program. August.
- ADEC. 2023. 18-AAC-75 Oil and Other Hazardous Substances Pollution Control. ADEC. Amended February 5th.
- Arcadis. 2008. 2008 Site Assessment and Third Quarter 2008 Groundwater Monitoring Report, Former Chevron Facility 306450, Anchorage, Alaska. December 3.

Ms. Rebekah Reams
Alaska Department of Environmental Conservation
Date: June 14, 2023

Arcadis. 2022. Standard Groundwater Sampling for Monitoring Well. April

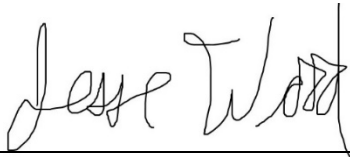
Arcadis. 2022. Summary of Procedures for Investigation Derived Waste Treatment Utilizing Granular Activated Carbon. September.

Ms. Rebekah Reams
Alaska Department of Environmental Conservation
Date: June 14, 2023

Should you have any questions or concerns regarding this submittal please do not hesitate to contact us.

Sincerely,

Arcadis U.S., Inc.



Jesse Wood
Project Task Manager

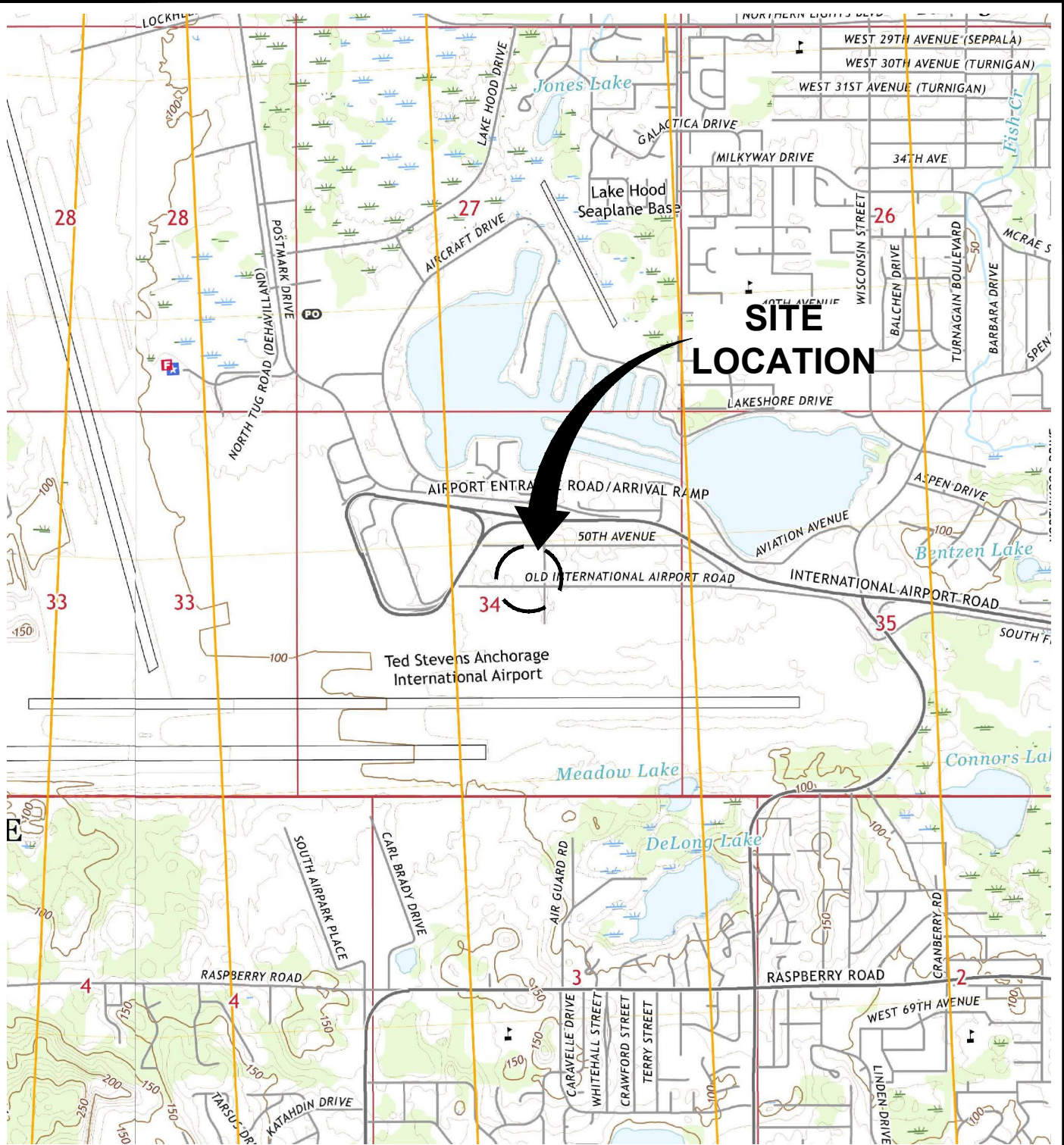


Gerald A. Robinson
Project Manager

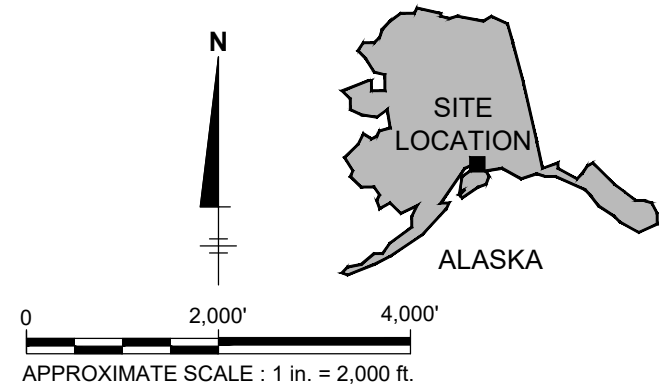
Enclosures:

- Figure 1. Site Location Map
- Figure 2. Site Plan
- Figure 3. Groundwater Elevation Contour Map
- Figure 4. Groundwater Analytical Results Map
- Table 2. Current Groundwater Gauging and Analytical Results
- Table 3. Current Poly Aromatic Hydrocarbons (PAH) Analytical Results
- Attachment A. Field Notes
- Attachment B. Laboratory Analytical Results
- Attachment C. Historical Groundwater Monitoring Results Third Quarter 2001 through 2022
- Attachment D. ADEC Data Review Checklist

Figures

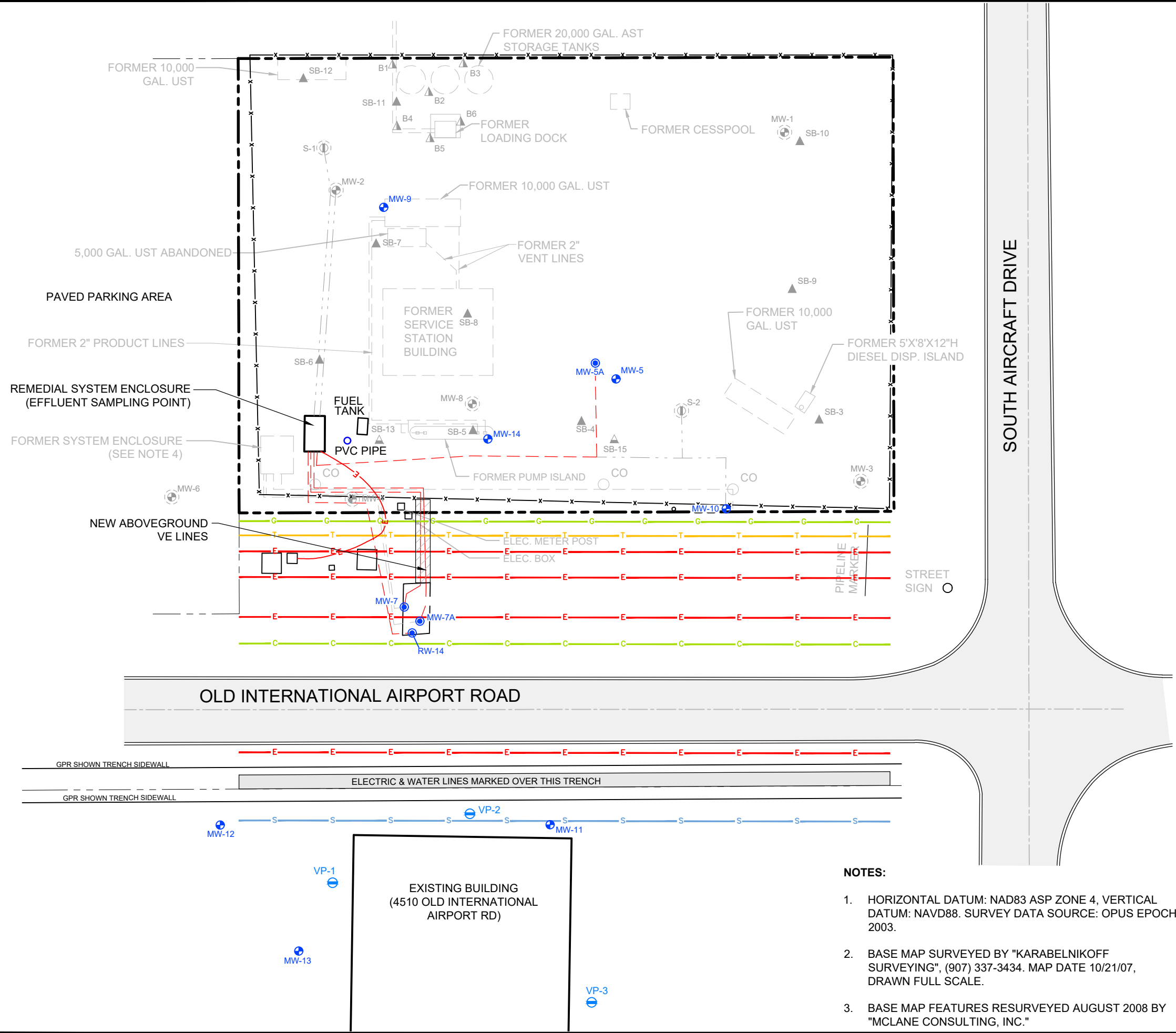


SOURCE: BASE MAP USGS 7.5. MIN. TOPO. QUAD., ANCHORAGE A-8 NW AND TYONEK A-1 NE, ALASKA 2019.



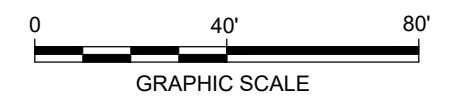
UNOCAL - #5057 FORMER (306450) 4351 OLD INTERNATIONAL AIRPORT RD, ANCHORAGE, AK FIRST SEMI-ANNUAL 2023 GROUNDWATER MONITORING REPORT	
SITE LOCATION MAP	
	FIGURE 1

CITY: (Rect) DIV: (Group) (Rect) DB: (Rect) LD: (Opt) PIC: (Opt) PM: (Rect) TM: (Opt) LVR: (Opt) ON: "OFF" REF: "REF"
 C:\Users\shankar\OneDrive\Documents\Projects\4351-ANCHORAGE-Alaska\Project Files\202301-Progress\01-DWG\GWM-2023SA1-F02-SITE PLAN.dwg LAYOUT: 2 SAVED: 5/18/2023 4:04 PM ACADVER: 24.1S (LMS TECH) PAGES: 1 OF 1 PLOT: 1 OF 1
 PLOTTED: 5/18/2023 4:06 PM BY: SHANKARAPPA, VASANTH KUMAR
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LEGEND

- PROPERTY LINE
- CHAIN LINK FENCE (TYPICAL)
- GROUNDWATER MONITORING WELL
- SOIL VAPOR EXTRACTION (SVE) WELL
- VAPOR PROBE (VP)
- ABANDONED OR DESTROYED WELL
- ABANDONED AIR SPARGE (AS) WELL
- VES LINE CLEANOUT
- SOIL BORING (1996)
- SOIL BORING (2007)
- SOIL BORING (2008)
- FORMER BELOW GROUND AIR SPARGE/ SOIL VAPOR EXTRACTION LINE (2" DIA.)
- BELOW GROUND SVE LINE (2" DIA.)
- ABOVEGROUND SVE LINE (2" DIA.)
- VAPOR EXTRACTION (VE) PROTECTIVE BERM WITH CONDUIT
- AST ABOVE GROUND STORAGE TANK
- UST UNDERGROUND STORAGE TANK
- NATURAL GAS LINE
- TELECOM LINE
- ELECTRICAL LINE
- WATER-TABLE ELEVATION (FEET)
- PETROLEUM PIPELINE
- SEWER LINE



- NOTES:**
1. HORIZONTAL DATUM: NAD83 ASP ZONE 4, VERTICAL DATUM: NAVD88. SURVEY DATA SOURCE: OPUS EPOCH 2003.
 2. BASE MAP SURVEYED BY "KARABELNIKOFF SURVEYING", (907) 337-3434. MAP DATE 10/21/07, DRAWN FULL SCALE.
 3. BASE MAP FEATURES RESURVEYED AUGUST 2008 BY "MCLANE CONSULTING, INC."

UNOCAL - #5057 FORMER (306450)
 4351 OLD INTERNATIONAL AIRPORT RD, ANCHORAGE, A
FIRST SEMI-ANNUAL 2023
GROUNDWATER MONITORING REPORT

SITE PLAN

FIGURE
2

CITY:\(Redd) DIV\GROUP\Regd) DB\Regd) LD\Regd) PIC\Regd) PM\Regd) TM\Regd) LVR\Regd) ON\OFF+REF+REF+REF
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 XREFS: GEN-X-BASEMAP PROJECTNAME: 4351-Old International Airport Rd

MW-5A	
Sample Date	04/14/23
DRO	<800 B
GRO	572
Benzene	<1.00
Toluene	<1.00
Ethylbenzene	0.204 J
Total Xylenes	1.31 J
EDB	<0.00500
EDC	<1.00
Naphthalene	<5.00 J
Lead	<6.00
1,2,4-Trimethylbenzene	<1.00
1,3,5-Trimethylbenzene	0.201 J

MW-9	
Sample Date	04/14/23
DRO	11,300
GRO	4,130
Benzene	159 D
Toluene	<1.00
Ethylbenzene	10.6
Total Xylenes	1.52 J
EDB	<0.00500
EDC	10.0
Naphthalene	<5.00 J
Lead	<6.00
1,2,4-Trimethylbenzene	<1.00
1,3,5-Trimethylbenzene	0.665 J

MW-5	
Sample Date	04/14/23
DRO	<888 B
GRO	380
Benzene	11.3
Toluene	5.15
Ethylbenzene	64.9
Total Xylenes	61.7
EDB	<0.250
EDC	<1.00
Naphthalene	1.12 J
Lead	<6.00
1,2,4-Trimethylbenzene	28.2
1,3,5-Trimethylbenzene	1.56

MW-7	
Sample Date	04/14/23
DRO	21,700 [21,400]
GRO	108,000 [113,000]
Benzene	3,310 D [3,250]
Toluene	32,900 D [30,900 D]
Ethylbenzene	3,650 D [3,490]
Total Xylenes	24,000 D [22,500 D]
EDB	228 D [228 D]
EDC	104 [105]
Naphthalene	267 J [277 J]
Lead	252 [257]
1,2,4-Trimethylbenzene	2,030 D [2,380]
1,3,5-Trimethylbenzene	565 [566]

MW-7A	
Sample Date	04/14/23
DRO	1,520
GRO	4,680
Benzene	22.6
Toluene	59.8
Ethylbenzene	32.7
Total Xylenes	2,170 D
EDB	7.25 D
EDC	8.62 J
Naphthalene	23.6 J
Lead	<6.00
1,2,4-Trimethylbenzene	581 D
1,3,5-Trimethylbenzene	192

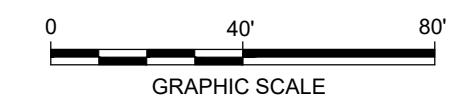
RW-14	
Sample Date	04/14/23
DRO	<800
GRO	<100
Benzene	0.831 J
Toluene	<1.00
Ethylbenzene	0.266 J
Total Xylenes	<3.00 J
EDB	<0.00500
EDC	3.13
Naphthalene	<5.00 J
Lead	<6.00
1,2,4-Trimethylbenzene	<1.00
1,3,5-Trimethylbenzene	<1.00

Analyte	ADEC Groundwater Cleanup level (µg/L)
DRO	1,500
GRO	2,200
Benzene	4.6
Toluene	1,100
Ethylbenzene	15
Total Xylenes	190
EDB	0.075
EDC	1.7
Naphthalene	1.7
Lead	15
1,2,4-Trimethylbenzene	56
1,3,5-Trimethylbenzene	60

- NOTES:**
- HORIZONTAL DATUM: NAD83 ASP ZONE 4, VERTICAL DATUM: NAVD88. SURVEY DATA SOURCE: OPUS EPC 2003.
 - BASE MAP SURVEYED BY "KARABELNIKOFF SURVEYING", (907) 337-3434. MAP DATE 10/21/07, DRAWN FULL SCALE.
 - BASE MAP FEATURES RESURVEYED AUGUST 2008 B "MCLANE CONSULTING, INC."

LEGEND

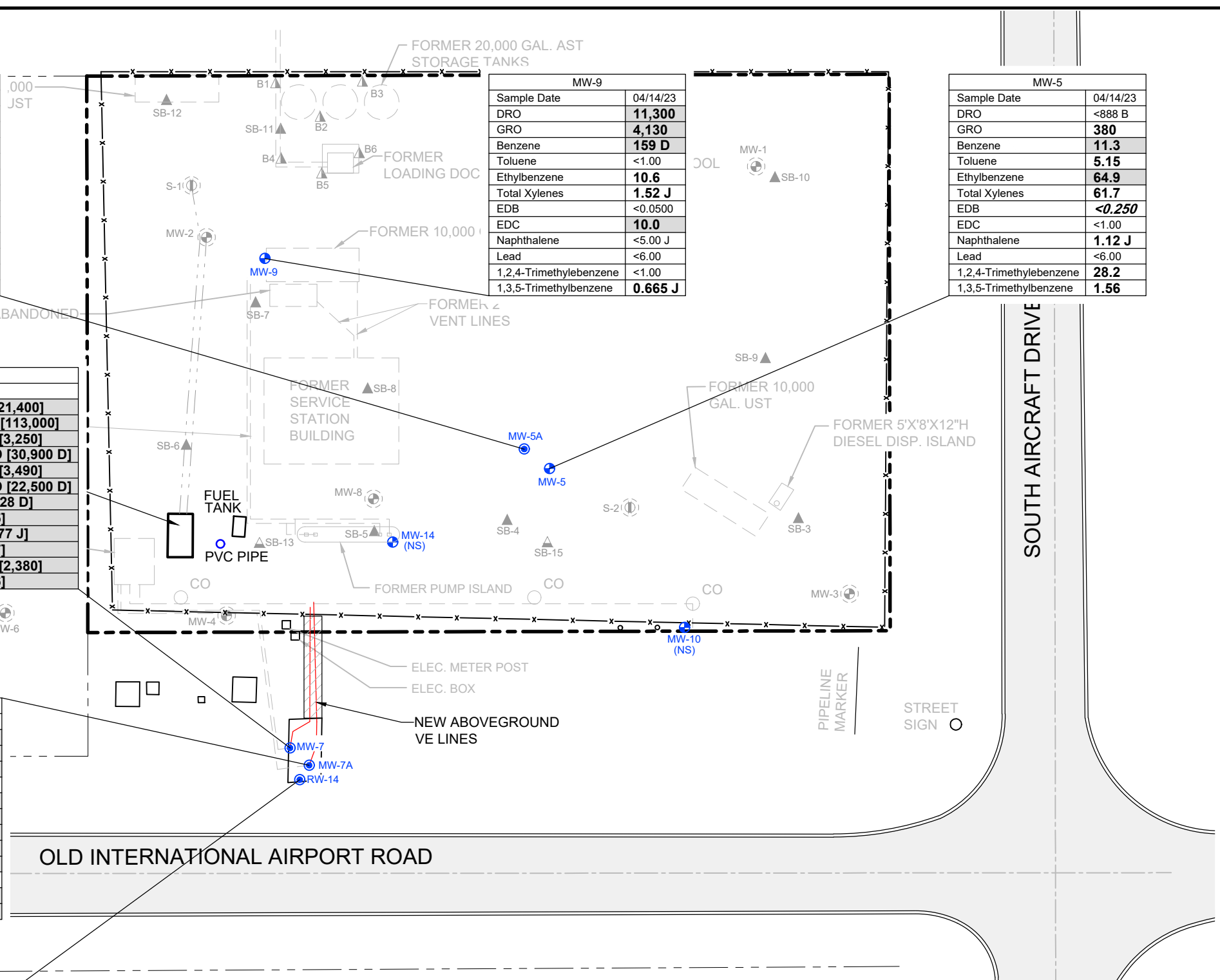
- PROPERTY LINE
- CHAIN LINK FENCE (TYPICAL)
- GROUNDWATER MONITORING WELL
- SOIL VAPOR EXTRACTION (SVE) WELL
- ABANDONED OR DESTROYED WELL
- ABANDONED AIR SPARGE (AS) WELL
- VES LINE CLEANOUT
- ▲ SOIL BORING (1996)
- ▲ SOIL BORING (2007)
- ▲ SOIL BORING (2008)
- AST ABOVE GROUND STORAGE TANK
- UST UNDERGROUND STORAGE TANK
- µg/L MICROGRAMS PER LITER
- GRO TOTAL PETROLEUM HYDROCARBONS GASOLINE RANGE ORGANICS
- DRO TOTAL PETROLEUM HYDROCARBONS DIESEL RANGE ORGANICS
- EDB 1,2-DIBROMOETHANE
- EDC 1,2-DICHLOROETHANE
- <1.00 NOT DETECTED AT OR ABOVE THE REPORTED DETECTION LIMIT (RDL)
- BOLD** VALUE EXCEEDS LABORATORY METHOD DETECTION LIMIT (MDL)
- BOLD** VALUE EXCEEDS ADEC GROUNDWATER CLEANUP LEVEL
- J THE ASSOCIATED NUMERICAL VALUE IS AN ESTIMATED CONCENTRATION ONLY
- B THE SAME ANALYTE IS FOUND IN THE ASSOCIATED BLANK
- D CONCENTRATION IS BASED ON A DILUTED SAMPLE ANALYSIS
- <20.0] DUPLICATE RESULTS
- (NS) NOT SAMPLED



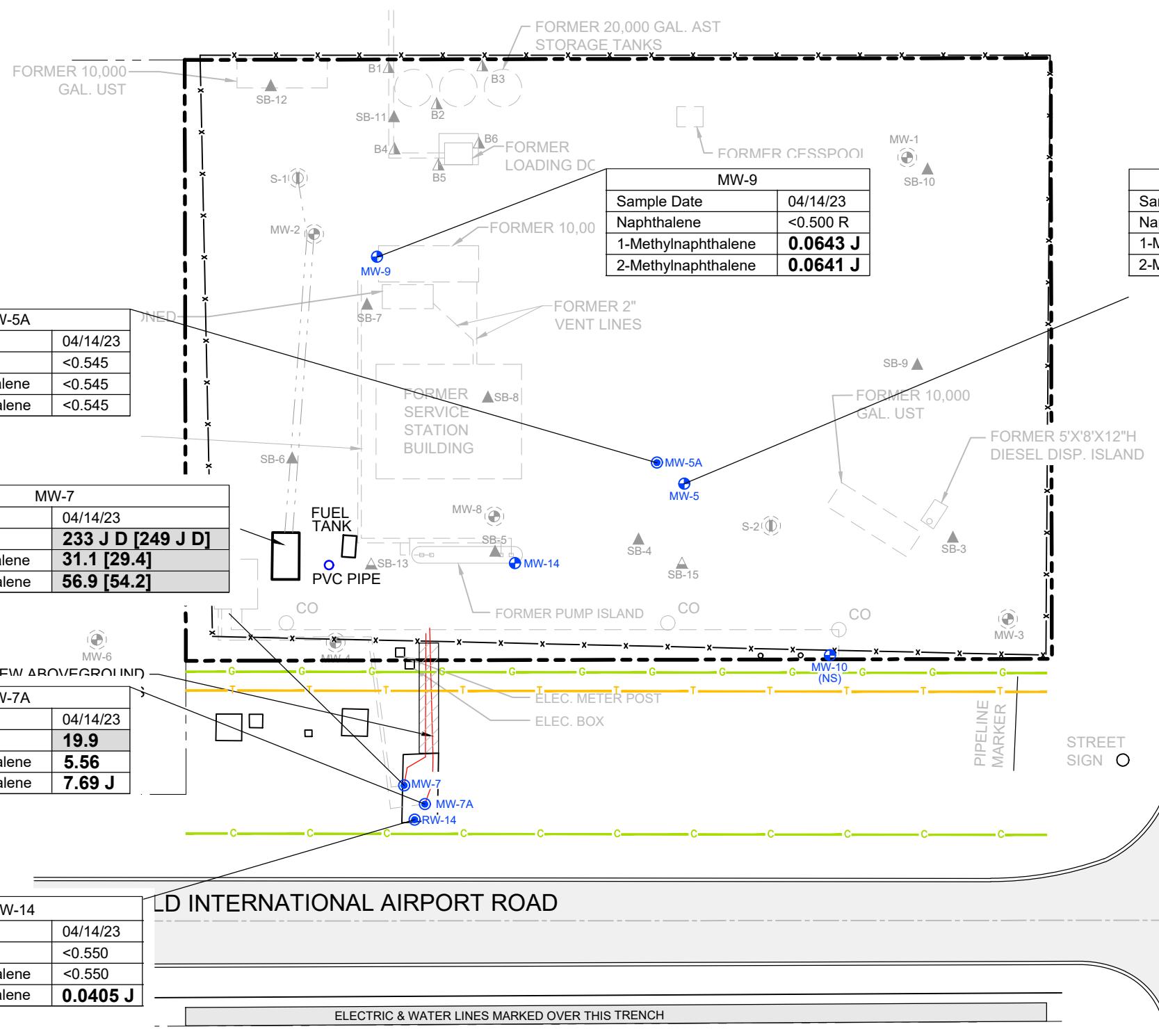
UNOCAL - #5057 FORMER (306450)
 4351 OLD INTERNATIONAL AIRPORT RD, ANCHORAGE, AK
FIRST SEMI-ANNUAL 2023
GROUNDWATER MONITORING REPORT

GROUNDWATER ANALYTICAL RESULTS MAP
 APRIL 14, 2023

ARCADIS | FIGURE 4



CITY:\(Rect) DIV\GROUP\IP\Rect) DB\Rect) LD\Opt) PIC\Opt) PM\Rect) TM\Opt) LVR\Opt) ON*OFF+REF+
 C:\Users\shankar\OneDrive\Work\Projects\4351-ANCHORAGE Alaska\Project Files\202301-1n Progress\01-DWG\GWM-2023SA1-F06-PAHs-GROUNDWATER ANALYTICAL MAP.dwg LAYOUT: 5. SAVED: 6/12/2023 11:13 AM ACADVER: 24.1.5 (LMS TECH) PAGESETUP: ---
 PLOT STYLE TABLE: PLTFULL.CTB PLOTTED: 6/12/2023 11:14 AM BY: SHANKARAPPA, VASANTH KUMAR
 XREFS: IMAGES: PROJECTNAME: GEN-X-BASEMAP



MW-5A	
Sample Date	04/14/23
Naphthalene	<0.545
1-Methylnaphthalene	<0.545
2-Methylnaphthalene	<0.545

MW-7	
Sample Date	04/14/23
Naphthalene	233 J D [249 J D]
1-Methylnaphthalene	31.1 [29.4]
2-Methylnaphthalene	56.9 [54.2]

MW-7A	
Sample Date	04/14/23
Naphthalene	19.9
1-Methylnaphthalene	5.56
2-Methylnaphthalene	7.69 J

RW-14	
Sample Date	04/14/23
Naphthalene	<0.550
1-Methylnaphthalene	<0.550
2-Methylnaphthalene	0.0405 J

MW-9	
Sample Date	04/14/23
Naphthalene	<0.500 R
1-Methylnaphthalene	0.0643 J
2-Methylnaphthalene	0.0641 J

MW-5	
Sample Date	04/14/23
Naphthalene	1.43
1-Methylnaphthalene	0.0517 J
2-Methylnaphthalene	0.0457 J

LEGEND

- PROPERTY LINE
- x-x- CHAIN LINK FENCE (TYPICAL)
- GROUNDWATER MONITORING WELL
- SOIL VAPOR EXTRACTION (SVE) WELL
- ⊖ ABANDONED OR DESTROYED WELL
- ⊕ ABANDONED AIR SPARGE (AS) WELL
- VES LINE CLEANOUT
- ▲ SOIL BORING (1996)
- ▲ SOIL BORING (2007)
- ▲ SOIL BORING (2008)

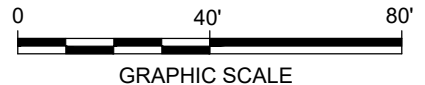
AST ABOVE GROUND STORAGE TANK
 UST UNDERGROUND STORAGE TANK
 µg/L MICROGRAMS PER LITER
 <0.550 NOT DETECTED AT OR ABOVE THE REPORTED DETECTION LIMIT (RDL)

BOLD VALUE EXCEEDS LABORATORY METHOD DETECTION LIMIT (MDL)
BOLD VALUE EXCEEDS ADEC GROUNDWATER CLEANUP LEVEL

J THE ASSOCIATED NUMERICAL VALUE IS AN ESTIMATED CONCENTRATION ONLY
 D CONCENTRATION IS BASED ON A DILUTED SAMPLE ANALYSIS
 R THE SAMPLE RESULTS ARE REJECTED
 [] DUPLICATE RESULTS
 (NS) NOT SAMPLED

Analyte	ADEC Groundwater Cleanup level
Naphthalene	1.7
1-Methylnaphthalene	11
2-Methylnaphthalene	36

CONCENTRATION IN µg/L



EXISTING BUILDING
 (4510 OLD INTERNATIONAL AIRPORT RD)

- NOTES:**
- HORIZONTAL DATUM: NAD83 ASP ZONE 4, VERTICAL DATUM: NAVD88. SURVEY DATA SOURCE: OPUS EPC 2003.
 - BASE MAP SURVEYED BY "KARABELNIKOFF SURVEYING", (907) 337-3434. MAP DATE 10/21/07, DRAWN FULL SCALE.
 - BASE MAP FEATURES RESURVEYED AUGUST 2008 B "MCLANE CONSULTING, INC."

UNOCAL - #5057 FORMER (306450)
 4351 OLD INTERNATIONAL AIRPORT RD, ANCHORAGE, AK
**FIRST SEMI-ANNUAL 2023
 GROUNDWATER MONITORING REPORT**

**GROUNDWATER ANALYTICAL
 RESULTS MAP-PAHs
 APRIL 14, 2023**

ARCADIS | **FIGURE 5**

Tables

Table 1
Groundwater Monitoring Schedule
First Semi-Annual 2023
Unocal #5057 Former (306450)
4351 Old International Airport Road,
Anchorage, Alaska

Well ID	Sample Schedule	Gauge	Sample	Comment
MW-5	Semi Annual	Y	Y	
MW-5A	Semi Annual	Y	Y	
MW-7	Semi Annual	Y	Y	
MW-7A	Semi Annual	Y	Y	
MW-9	Semi Annual	Y	Y	
MW-10	Semi Annual	Y	N	Annually during the third quarter
MW-11	Semi Annual	Y	N	
MW-12	Semi Annual	Y	N	
MW-13	Semi Annual	Y	N	
MW-14	Semi Annual	Y	Y	
RW-14	Semi Annual	Y	Y	
BD	Semi Annual	N	Y	
TB	Semi Annual	N	Y	VOCs Full Suite only
EQB	Semi Annual	N	Y	
MS/MSD	Semi Annual	N	Y	

Note:

Wells are sampled for volatile organic compounds by United States Environmental Protection Agency (USEPA) Method 8260D and 123-TCP/EDB Low level 524/8260D, for semi-volatile organic compounds by USEPA Method 8270E-SIM, Total lead by USEPA Method 6010D, gasoline range organics by Alaska Method AK101, and diesel range organics by Alaska Method AK102.

Table 2
 Current Groundwater Gauging and Analytical Results
 First Semi-Annual 2023
 Unocal #5057 Former (306450)
 4351 Old International Airport Road,
 Anchorage, Alaska



Well ID	Sample Date	TOC (ft bTOC)	DTW (feet bTOC)	GW Elev. (feet)	DRO	GRO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	EDB	EDC	Naphthalene	Acetone	Acrolein	Acrylonitrile
ADEC Groundwater Cleanup Levels					1,500	2,200	4.6	1,100	15	190	140	0.075	1.7	1.7	14,000	--	--
MW-5	04/14/23	83.11	44.45	38.66	<888 B	380	11.3	5.15	64.9	61.7 J	<1.00	<0.250	<1.00	1.12 J	<50.0	<50.0 J	<10.0
MW-5A	04/14/23	83.09	32.77	50.32	<800 B	572	<1.00	<1.00	0.204 J	1.31 J	<1.00	<0.00500	<1.00	<5.00 J	<50.0	<50.0 J	<10.0
MW-7	04/14/23	85.68	53.25	32.43	21,700 [21,400]	108,000 [113,000]	3,310 D [3,250]	32,900 D [30,900 D]	3,650 D [3,490]	24,000 D [22,500 D]	<10.0 [<20.0]	228 D [228 D]	104 [105]	267 J [277 J]	<500 [<1,000]	<500 J [<1,000 J]	<100 [<200]
MW-7A	04/14/23	86.82	54.36	32.46	1,520	4,680	22.6	59.8	32.7	2,170 D	<1.00	7.25 D	8.62 J	23.6 J	<50.0	<50.0 J	<10.0
MW-9	04/14/23	83.20	34.60	48.60	11,300	4,130	159 D	<1.00	10.6	1.52 J	<1.00	<0.0500	10.0	<5.00 J	<50.0	<50.0 J	<10.0
MW-10	04/14/23	82.52	36.90	45.62	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-11	04/14/23	83.95	50.79	33.16	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-12	04/14/23	84.04	52.16	31.88	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-13	04/14/23	84.89	53.00	31.89	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-14	04/14/23	83.66	DRY	--	--	--	--	--	--	--	--	--	--	--	--	--	--
RW-14	04/14/23	83.89	51.39	32.50	<800	<100	0.831 J	<1.00	0.266 J	<3.00 J	<1.00	<0.00500	3.13	<5.00 J	<50.0	<50.0 J	<10.0

Table 2
 Current Groundwater Gauging and Analytical Results
 First Semi-Annual 2023
 Unocal #5057 Former (306450)
 4351 Old International Airport Road,
 Anchorage, Alaska



Well ID	Sample Date	Bromobenzene	Bromochloromethane	Bromodichloromethane	Bromoform	Bromomethane	n-Butylbenzene	sec-Butylbenzene	tert-Butylbenzene	Carbon Disulfide	Carbon Tetrachloride
ADEC Groundwater C		62	--	1.3	33	7.5	1,000	2,000	690	810	4.6
MW-5	04/14/23	<1.00	<1.00	<1.00	<1.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00
MW-5A	04/14/23	<1.00	<1.00	<1.00	<1.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00
MW-7	04/14/23	<10.0 [<i><20.0</i>]	<10.0 [<i><20.0</i>]	<10.0 [<i><20.0</i>]	<10.0 [<i><20.0</i>]	<50.0 [<i><100</i>]	21.7 [18.9 J]	14 [11.8 J]	<10.0 [<i><20.0</i>]	<10.0 [<i><20.0</i>]	<10.0 [<i><20.0</i>]
MW-7A	04/14/23	<1.00	<1.00	<1.00	<1.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00
MW-9	04/14/23	<1.00	<1.00	<1.00	<1.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00
MW-10	04/14/23	--	--	--	--	--	--	--	--	--	--
MW-11	04/14/23	--	--	--	--	--	--	--	--	--	--
MW-12	04/14/23	--	--	--	--	--	--	--	--	--	--
MW-13	04/14/23	--	--	--	--	--	--	--	--	--	--
MW-14	04/14/23	--	--	--	--	--	--	--	--	--	--
RW-14	04/14/23	<1.00	<1.00	<1.00	<1.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00

Table 2
 Current Groundwater Gauging and Analytical Results
 First Semi-Annual 2023
 Unocal #5057 Former (306450)
 4351 Old International Airport Road,
 Anchorage, Alaska



Well ID	Sample Date	Chlorobenzene	Chlorodibromo- methane (Dibromochloro- methane)	Chloroethane (Ethyl Chloride)	Chloroform	Chloromethane	2-Chlorotoluene (o-Chlorotoluene)	4-Chlorotoluene (p-Chlorotoluene)	1,2-Dibromo-3- chloropropane	Dibromomethane (Methylene bromide)	1,2-Dichlorobenzene
ADEC Groundwater C		78	8.7	21,000	2.2	190	--	--	--	8.3	300
MW-5	04/14/23	<1.00	<1.00	<5.00	<5.00	<2.50	<1.00	<1.00	<5.00	<1.00	<1.00
MW-5A	04/14/23	<1.00	<1.00	<5.00	<5.00	<2.50	<1.00	<1.00	<5.00	<1.00	<1.00
MW-7	04/14/23	<10.0 [<20.0]	<10.0 [<20.0]	<50.0 [<100]	<50.0 [<100]	<25.0 [<50.0]	<10.0 [<20.0]	<10.0 [<20.0]	<50.0 [<100]	<10.0 [<20.0]	<10.0 [<20.0]
MW-7A	04/14/23	<1.00	<1.00	<5.00	<5.00	<2.50	<1.00	<1.00	<5.00	<1.00	<1.00
MW-9	04/14/23	<1.00	<1.00	<5.00	<5.00	<2.50	<1.00	<1.00	<5.00	<1.00	<1.00
MW-10	04/14/23	--	--	--	--	--	--	--	--	--	--
MW-11	04/14/23	--	--	--	--	--	--	--	--	--	--
MW-12	04/14/23	--	--	--	--	--	--	--	--	--	--
MW-13	04/14/23	--	--	--	--	--	--	--	--	--	--
MW-14	04/14/23	--	--	--	--	--	--	--	--	--	--
RW-14	04/14/23	<1.00	<1.00	<5.00	<5.00	<2.50	<1.00	<1.00	<5.00	<1.00	<1.00

Table 2
 Current Groundwater Gauging and Analytical Results
 First Semi-Annual 2023
 Unocal #5057 Former (306450)
 4351 Old International Airport Road,
 Anchorage, Alaska



Well ID	Sample Date	1,3-Dichlorobenzene	1,4-Dichlorobenzene	Dichlorodifluoromethane (Freon 12)	1,1-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene (cis-1,2-Dichloroethylene)	trans-1,2-Dichloroethene (trans-1,2-Dichloroethylene)	1,2-Dichloropropane	1,3-Dichloropropane	2,2-Dichloropropane
ADEC Groundwater C		300	4.8	200	28	280	36	360	8.2	--	--
MW-5	04/14/23	<1.00	<1.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
MW-5A	04/14/23	<1.00	<1.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
MW-7	04/14/23	<10.0 [<i><20.0</i>]	<10.0 [<i><20.0</i>]	<50.0 [<i><100</i>]	<10.0 [<i><20.0</i>]	<10.0 [<i><20.0</i>]	<10.0 [<i><20.0</i>]	<10.0 [<i><20.0</i>]	<10.0 [<i><20.0</i>]	<10.0 [<i><20.0</i>]	<10.0 [<i><20.0</i>]
MW-7A	04/14/23	<1.00	<1.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
MW-9	04/14/23	<1.00	<1.00	<5.00	<1.00	<1.00	<1.00	<1.00	0.912 J	<1.00	<1.00
MW-10	04/14/23	--	--	--	--	--	--	--	--	--	--
MW-11	04/14/23	--	--	--	--	--	--	--	--	--	--
MW-12	04/14/23	--	--	--	--	--	--	--	--	--	--
MW-13	04/14/23	--	--	--	--	--	--	--	--	--	--
MW-14	04/14/23	--	--	--	--	--	--	--	--	--	--
RW-14	04/14/23	<1.00	<1.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00

Table 2
 Current Groundwater Gauging and Analytical Results
 First Semi-Annual 2023
 Unocal #5057 Former (306450)
 4351 Old International Airport Road,
 Anchorage, Alaska



Well ID	Sample Date	1,1-Dichloropropene	cis-1,3-Dichloropropene	trans-1,3-Dichloropropene	Di-isopropyl ether	Hexachloro-1,3-butadiene (Hexachlorobutadiene)	Isopropylbenzene (Cumene)	p-Isopropyltoluene	2-Butanone (Methyl ethyl ketone)	4-Methyl-2-pentanone (Methyl Isobutyl Ketone)	Methylene chloride
ADEC Groundwater		--	--	--	--	1.4	450	--	5,600	6,300	110
MW-5	04/14/23	<1.00	<1.00	<1.00	<1.00	<1.00	2.25 J	<1.00	<10.0	<10.0	<5.00
MW-5A	04/14/23	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00 J	<1.00	<10.0	<10.0	<5.00
MW-7	04/14/23	<10.0 [<i><20.0</i>]	<10.0 [<i><20.0</i>]	<10.0 [<i><20.0</i>]	<10.0 [<i><20.0</i>]	<10.0 [<i><20.0</i>]	95.6 J [89.6 J]	<10.0 [<i><20.0</i>]	<100 [<i><200</i>]	<100 [<i><200</i>]	<50.0 [<i><100</i>]
MW-7A	04/14/23	<1.00	<1.00	<1.00	<1.00	<1.00	6.96 J	<1.00	<10.0	<10.0	<5.00
MW-9	04/14/23	<1.00	<1.00	<1.00	<1.00	<1.00	1.60 J	<1.00	<10.0	1.68 J	<5.00
MW-10	04/14/23	--	--	--	--	--	--	--	--	--	--
MW-11	04/14/23	--	--	--	--	--	--	--	--	--	--
MW-12	04/14/23	--	--	--	--	--	--	--	--	--	--
MW-13	04/14/23	--	--	--	--	--	--	--	--	--	--
MW-14	04/14/23	--	--	--	--	--	--	--	--	--	--
RW-14	04/14/23	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00 J	<1.00	<10.0	<10.0	<5.00

Table 2
 Current Groundwater Gauging and Analytical Results
 First Semi-Annual 2023
 Unocal #5057 Former (306450)
 4351 Old International Airport Road,
 Anchorage, Alaska



Well ID	Sample Date	n-Propylbenzene (Propylbenzene)	Styrene	1,1,1,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	Tetrachloroethene (Tetrachloroethylene)	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,1,1-Trichloroethane	1,1,2-Trichloroethane	Trichloroethene (Trichloroethylene)
ADEC Groundwater C		660	1,200	5.7	0.76	41	7.0	4.0	8,000	0.41	2.8
MW-5	04/14/23	3.64	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
MW-5A	04/14/23	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
MW-7	04/14/23	248 [242]	<10.0 [<20.0]	<10.0 [<20.0]	<10.0 [<20.0]	<10.0 [<20.0]	<10.0 [<20.0]	<10.0 [<20.0]	<10.0 [<20.0]	<10.0 [<20.0]	<10.0 [<20.0]
MW-7A	04/14/23	9.87 J	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
MW-9	04/14/23	1.81	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	0.361 J
MW-10	04/14/23	--	--	--	--	--	--	--	--	--	--
MW-11	04/14/23	--	--	--	--	--	--	--	--	--	--
MW-12	04/14/23	--	--	--	--	--	--	--	--	--	--
MW-13	04/14/23	--	--	--	--	--	--	--	--	--	--
MW-14	04/14/23	--	--	--	--	--	--	--	--	--	--
RW-14	04/14/23	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00

Table 2
 Current Groundwater Gauging and Analytical Results
 First Semi-Annual 2023
 Unocal #5057 Former (306450)
 4351 Old International Airport Road,
 Anchorage, Alaska



Well ID	Sample Date	Trichlorofluoromethane (Freon 11)	1,2,3-Trichloropropane	1,1,2-Trichlorotrifluoroethane (1,1,2-Trichloro-1,2,2-trifluoroethane) (Freon 113)	1,2,3-Trimethylbenzene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Vinyl Chloride	Lead	Comments
ADEC Groundwater C		5,200	0.0075	10,000	--	56	60	0.19	15	
MW-5	04/14/23	<5.00	<0.250	<1.00	2.93	28.2	1.56	<1.00	<6.00	
MW-5A	04/14/23	<5.00	<0.00500	<1.00	1.98	<1.00	0.201 J	<1.00	<6.00	
MW-7	04/14/23	<50.0 [<i><100</i>]	<10.0 [<i><10.0</i>]	<10.0 [<i><20.0</i>]	570 [570]	2,030 D [2,380]	565 [566]	<10.0 [<i><20.0</i>]	252 [257]	
MW-7A	04/14/23	<5.00	<1.25	<1.00	187	581 D	192	<1.00	<6.00	
MW-9	04/14/23	<5.00	<0.0500	<1.00	<1.00	<1.00	0.665 J	<1.00	<6.00	
MW-10	04/14/23	--	--	--	--	--	--	--	--	
MW-11	04/14/23	--	--	--	--	--	--	--	--	
MW-12	04/14/23	--	--	--	--	--	--	--	--	
MW-13	04/14/23	--	--	--	--	--	--	--	--	
MW-14	04/14/23	--	--	--	--	--	--	--	--	Dry, No water to sample
RW-14	04/14/23	<5.00	<0.00500	<1.00	<1.00	<1.00	<1.00	<1.00	<6.00	

Table 2
Current Groundwater Gauging and Analytical Results
First Semi-Annual 2023
Unocal #5057 Former (306450)
4351 Old International Airport Road,
Anchorage, Alaska

Notes:

1. GRO analyzed by Alaska Method AK101, DRO analyzed by Alaska Method AK102
2. Lead analyzed by United States Environmental Protection Agency (USEPA) Method 6010D.
3. Remaining constituents of concern analyzed by USEPA Method 8260D except where noted above.
4. All results reported in micrograms per liter.

Acronyms and Abbreviations:

-- = Not Available or Not Analyzed

[] = Blind Duplicate Sample Result

<1.00 = Not detected at or above the reported detection limit (RDL)

µg/L = Micrograms per liter

ADEC = Alaska Department of Environmental Conservation

Bold = Detected above laboratory method detection limit (MDL)

Bold and Italicized = Constituent considered non-detect, however Laboratory RDL is greater than the ADEC Groundwater Cleanup Level

Bold and Shaded = Value exceeds ADEC Groundwater Cleanup Level

DTW = Depth to groundwater

feet = Relative to NAVD88

bTOC = Below top of casing

GW Elev. = Groundwater elevation

ID = Identification

MW = Groundwater monitoring well

TOC = Top of casing

GRO = Total petroleum hydrocarbons, gasoline range organics

DRO = Total petroleum hydrocarbons, diesel range organics

MTBE = Methyl tert-butyl ether

EDB = 1,2-Dibromoethane

EDC = 1,2-Dichloroethane

J = The associated numerical value is an estimated concentration only

B = The same analyte is found in the associated blank

D = Concentration is based on a diluted sample analysis.

Reference:

18 AAC 75. Department of Environmental Conservation, State of Alaska, Oil and Other Hazardous Substances Pollution Control, Table C. Groundwater Cleanup Levels, as amended through February 5, 2023.

Table 3
Current Groundwater Poly Aromatic Hydrocarbons (PAH) Analytical Results
First Semi-Annual 2023
Unocal #5057 Former (306450)
4351 Old International Airport Road,
Anchorage, Alaska

Well ID	Sample Date	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	2-Chloro-naphthalene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	1-Methyl-naphthalene	2-Methyl-naphthalene	Naphthalene	Phenanthrene	Pyrene
ADEC Groundwater Cleanup		530	260	43	0.3	0.25	2.5	0.26	0.8	750	2.0	0.25	260	290	0.19	11	36	1.7	170	120
MW-5	04/14/23	<0.0540	<0.0540	<0.0540	<0.0540	<0.0540	<0.0540	<0.0540	<0.270	<0.540	<0.0540	<0.0540	<0.0540 B	<0.0540	<0.0540	0.0517 J	0.0457 J	1.43	0.0253 J	<0.0540
MW-5A	04/14/23	<0.0545	<0.0545	<0.0545	<0.0545	<0.0545	<0.0545	<0.0545	<0.273	<0.545	<0.0545	<0.0545	<0.0545 B	<0.0545	<0.0545	<0.545	<0.545	<0.545	<0.0545	<0.0545
MW-7	04/14/23	<0.0500 [<0.0520]	<0.0500 [<0.0520]	<0.0500 [<0.0520]	<0.0500 [<0.0520]	<0.0500 [<0.0520]	<0.0500 B [<0.0520]	<0.0500 B [<0.0520]	<0.250 [<0.260]	<0.500 [<0.520]	<0.0500 [<0.0520]	0.0194 J [<0.0520]	<0.0500 B [<0.0520 B]	<0.0500 [<0.0520]	<0.0500 B [<0.0520]	31.1 [29.4]	56.9 [54.2]	233 J D [249 J D]	<0.0500 [<0.0520]	0.0356 J [0.0304 J]
MW-7A	04/14/23	0.0877	<0.0500	<0.0500	<0.0500 B	<0.0500	<0.0500 B	<0.0500	<0.250	0.0608 J	<0.0500 B	<0.0500	<0.0500 B	0.0621	<0.0500	5.56	7.69 J	19.9	0.0808	0.0587
MW-9	04/14/23	<0.0500 R	<0.0500 R	<0.0500 R	<0.0500 R	<0.0500 R	<0.0500 R	<0.0500 R	<0.250 R	0.0256 J	<0.0500 R	<0.0500 R	0.0160 R	<0.0500 R	<0.0500 R	0.0643 J	0.0641 J	<0.500 R	<0.0500 R	<0.0500 R
MW-10	04/14/23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-11	04/14/23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-12	04/14/23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-13	04/14/23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-14	04/14/23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
RW-14	04/14/23	<0.0550	<0.0550	<0.0550	<0.0550	<0.0550	<0.0550 B	<0.0550	<0.275	<0.550	<0.0550	<0.0550	<0.0550 B	<0.0550	<0.0550	<0.550	0.0405 J	<0.550	0.0353 J	0.0231 J

Notes:
1. Constituents of concern analyzed by USEPA Method 8270E-SIM.
2. All results reported in micrograms per liter.

Acronyms and Abbreviations:

- = Not Available or Not Analyzed
- [] = Blind Duplicate Sample Result
- <0.0500 = Not detected at or above the reported detection limit (RDL)
- Micrograms
- µg/L = per liter
- ADEC = Alaska Department of Environmental Conservation
- Bold = Detected above laboratory method detection limit (MDL)
- Bold and Italicized** = Constituent considered non-detect, however Laboratory RDL is greater than the ADEC Groundwater Cleanup Level
- Bold and Shaded** = Value exceeds ADEC Groundwater Cleanup Level
- DTW = Depth to groundwater
- feet = Relative to NAVD88
- bTOC = Below top of casing
- GW Elev = Groundwater elevation
- ID = Identification
- MW = Groundwater monitoring well
- TOC = Top of casing
- J = The associated numerical value is an estimated concentration only
- B = The same analyte is found in the associated blank
- D = Concentration is based on a diluted sample analysis.
- R = The sample results are rejected.

Reference:

18 AAC 75. Department of Environmental Conservation, State of Alaska, Oil and Other Hazardous Substances Pollution Control, Table C. Groundwater Cleanup Levels, as amended through February 5, 2023.

Attachment A

Field Notes

Project Number : 30064225

Prepared By: Evan Wujcik

Site ID: 306450

Site Name: Old Airport

City: Anchorage

State: Alaska

Project Manager: Robinson, Gerald

Portfolio: COP 5.0

Subportfolio: West

Inside Chevron Operational Control? Yes No

Staff on Site

Evan Wujcik

Weather(°F)	PPE	Equipment
Clear		Water Quality Meter (i.e. YSI), Water Level Meter (WLM), Bladder Pump, Photoionization Detector (PID)

Date	Time	Description of Activities
04/14/2023	06:00	Arrive on site Locate Wells
04/14/2023	07:00	Sample MW9 Decon equipment See COC for analysis
04/14/2023	08:00	Sample MW5A Decon equipment See COC for analysis
04/14/2023	09:00	Sample RW14 Decon equipment See COC for analysis
04/14/2023	10:00	Sample MW5 Decon equipment See COC for analysis
04/14/2023	11:00	Sample MW7A MS/MSD samples collected at this location Decon equipment See COC for analysis
04/14/2023	12:00	Sample MW7 BD samples collected at this location Decon equipment See COC for analysis
04/14/2023	12:30	MW14 dry. No sample collected. Load vehicle Mobilize offsite

Equipment and Calibration Information:

Supplier: Pine Model:
 Rental Number: Calibrated:
 Bump Calibration yes
 Checked: Passed:

Water Quality Meter SN:

Date	Time	Calibrated Fluid and Value	Lot #	Expiration Date	Initial Reading	Final Reading
04/14/2023	15:14:00					

Equipment and Calibration Information:

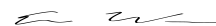
Supplier: Pine Model:
 Rental Number: Calibrated:
 Bump Calibration yes
 Checked: Passed:

PIDSN:

Date	Time	Calibrated Fluid and Value	Lot #	Expiration Date	Initial Reading	Final Reading
04/14/2023	15:14					

End of Day Questions	Yes	No	Comments			
Was waste generated?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Approximate volume of waste	8		
			Container type	55 gallon drum		
			Confirm container is not leaking	Yes	<input checked="" type="checkbox"/>	No
Have you performed work in accordance with the applicable QP/TGI?	<input checked="" type="checkbox"/>	<input type="checkbox"/>				
Change in plans (project delays)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
Discovery of significant new site characteristics?	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
Upcoming regulatory, community, or other stakeholder views change?	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
Incident at the site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
Is there a potential dispute?	<input type="checkbox"/>	<input type="checkbox"/>				
Identification of strategic opportunity?	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
New application, renewal, or permit modification?	<input type="checkbox"/>	<input checked="" type="checkbox"/>				

Signature





Groundwater Gauging Log

Project Number		30064225						
Client:		Chevron						
Site ID:		306450						
Site Location:		Anchorage, Alaska						
Measuring Point:		Top of Casing						
Date(s):		04/14/2023						
Sampler(s):		Evan Wujcik						
Gauging Equipment:		Water Level Meter						
Well ID	Date	Gauging Time	Static Water Level (ft bmp)	Depth to Product (ft bmp)	Total Depth (ft bmp)	PID Reading (ppm)	LNAPL Removed (gal)	Comments
MW-5	04/14/2023	06:25	44.45	ND	55.50	0	--	--
MW-5A	04/14/2023	06:53	32.77	ND	44.00	0	--	--
MW-7A	04/14/2023	06:44	54.36	ND	65.00	0	--	--
MW-7	04/14/2023	06:45	53.25	ND	57.10	0	--	--
MW-9	04/14/2023	06:28	34.6	ND	39.80	0	--	--
MW-10	04/14/2023	06:37	36.9	ND	48.00	0	--	--
MW-11	04/14/2023	06:23	50.79	ND	58.00	0	--	--
MW-12	04/14/2023	06:06	52.16	ND	58.00	0	--	--
MW-13	04/14/2023	06:09	53	ND	62.00	0	--	--
MW-14	04/14/2023	06:16	Dry	ND	23.30	0	--	No water to sample
RW-14	04/14/2023	06:09	51.39	ND	53.00	0	--	--

ft-bmp = feet below measuring point

ND = Not Detected

PID = Photoionization Detector Reading

ppm = parts per million

-- = Not Recorded

Project Number	30064225	Well ID	MW-5A	Date	4/14/2023	
Site Location	Anchorage, Alaska	Site ID	306450	Weather (°F)	Clear	Sampled by Evan Wujcik
Measuring Point Description	Top of Casing	Screen Depth Interval (ft-bmp)	-- to --	Casing Diameter (in.)	2	Well Casing Material PVC
Static Water Level (ft-bmp)	32.77	Total Depth (ft-bmp)	44	Water Column (ft)	11.23	Gallons in Well 1.82
Water Quality Meter Make/Model	Horiba U-52	Purge Method	Low-Flow	Sample Method	Grab	
Sample Time	08:00	Well Volumes Purged	0.35	Sample ID	MW-5A-W-20230414	Evacuation Equipment Bladder
Purge Start	07:30	Gallons Purged	0.63	Duplicate ID	--	
Purge End	07:50	Total Purge Time (h:m)	0:20			

Time	Rate (ml/min)	Depth to Water (ft)	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
									Color	Odor
07:33	200	32.80	5.80	0.276	80.7	5.38	3.22	127	--	--
07:36	200	32.83	5.72	0.273	73.7	5.40	3.35	134	--	--
07:39	200	32.87	5.58	0.271	44.2	5.32	3.61	140	--	--
07:42	200	32.90	5.54	0.274	19.8	5.00	3.76	144	--	--

Comments: None

Well Casing Volume Conversion

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

Sample Information

Sample ID: MW-5A-W-20230414 Sample Time: 08:00 Sample Depth (ft-bmp): 34
Analytes and Methods: See Chain-of-Custody.

ft-bmp = feet below measuring point
in. = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
PVC = Polyvinyl Chloride

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius
-- = Not Recorded

Project Number	30064225	Well ID	MW-5	Date	4/14/2023	
Site Location	Anchorage, Alaska	Site ID	306450	Weather (°F)	Clear	Sampled by Evan Wujcik
Measuring Point Description	Top of Casing	Screen Depth Interval (ft-bmp)	-- to --	Casing Diameter (in.)	2	Well Casing Material PVC
Static Water Level (ft-bmp)	44.45	Total Depth (ft-bmp)	55.5	Water Column (ft)	11.05	Gallons in Well 1.8
Water Quality Meter Make/Model	Horiba U-52	Purge Method	Low-Flow	Sample Method	Grab	
Sample Time	10:00	Well Volumes Purged	0.35	Sample ID	MW-5-W-20230414	Evacuation Equipment Bladder
Purge Start	09:30	Gallons Purged	0.63	Duplicate ID	--	
Purge End	09:50	Total Purge Time (h:m)	0:20			

Time	Rate (ml/min)	Depth to Water (ft)	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
									Color	Odor
09:33	200	44.48	6.30	0.230	25.7	2.03	2.21	17	--	--
09:36	200	44.50	6.31	0.230	22.9	1.94	2.62	-3	--	--
09:39	200	44.55	6.31	0.233	18.9	2.15	2.71	-9	--	--
09:42	200	44.58	6.30	0.236	19.8	2.30	2.77	-12	--	--

Comments: None

Well Casing Volume Conversion

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

Sample Information

Sample ID: MW-5-W-20230414 Sample Time: 10:00 Sample Depth (ft-bmp): 47
Analytes and Methods: See Chain-of-Custody.

ft-bmp = feet below measuring point
in. = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
PVC = Polyvinyl Chloride

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius
-- = Not Recorded

Project Number	30064225	Well ID	MW-7A	Date	4/14/2023	
Site Location	Anchorage, Alaska	Site ID	306450	Weather (°F)	Clear	Sampled by Evan Wujcik
Measuring Point Description	Top of Casing	Screen Depth Interval (ft-bmp)	-- to --	Casing Diameter (in.)	2	Well Casing Material PVC
Static Water Level (ft-bmp)	54.36	Total Depth (ft-bmp)	65	Water Column (ft)	10.64	Gallons in Well 1.73
Water Quality Meter Make/Model	Horiba U-52	Purge Method	Low-Flow	Sample Method	Grab	
Sample Time	11:00	Well Volumes Purged	0.37	Sample ID	MW-7A-W-20230414	Evacuation Equipment Bladder
Purge Start	10:30	Gallons Purged	0.63	Duplicate ID	MS/MSD	
Purge End	10:50	Total Purge Time (h:m)	0:20			

Time	Rate (ml/min)	Depth to Water (ft)	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
									Color	Odor
10:33	200	54.38	6.52	0.601	7.4	1.77	3.72	18	--	--
10:36	200	54.39	6.51	0.605	4.0	1.62	4.10	6	--	--
10:39	200	54.43	6.51	0.605	2.2	1.63	4.26	-1	--	--
10:42	200	54.45	6.52	0.605	2.2	1.69	4.30	-7	--	--

Comments: None

Well Casing Volume Conversion

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

Sample Information

Sample ID: MW-7A-W-20230414 Sample Time: 11:00 Sample Depth (ft-bmp): 57.5
Analytes and Methods: See Chain-of-Custody.

ft-bmp = feet below measuring point
in. = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
PVC = Polyvinyl Chloride

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius
-- = Not Recorded

Project Number	30064225	Well ID	MW-7	Date	4/14/2023	
Site Location	Anchorage, Alaska	Site ID	306450	Weather (°F)	Clear	Sampled by Evan Wujcik
Measuring Point Description	Top of Casing	Screen Depth Interval (ft-bmp)	-- to --	Casing Diameter (in.)	2	Well Casing Material PVC
Static Water Level (ft-bmp)	53.25	Total Depth (ft-bmp)	57.1	Water Column (ft)	3.85	Gallons in Well 0.63
Water Quality Meter Make/Model	Horiba U-52	Purge Method	Low-Flow	Sample Method	Grab	
Sample Time	12:00	Well Volumes Purged	1.01	Sample ID	MW-7-W-20230414	Evacuation Equipment Bladder
Purge Start	11:30	Gallons Purged	0.63	Duplicate ID	BD	
Purge End	11:50	Total Purge Time (h:m)	0:20			

Time	Rate (ml/min)	Depth to Water (ft)	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
									Color	Odor
11:33	200	52.28	6.42	0.551	41.1	2.40	3.95	-15	--	--
11:36	200	53.28	6.36	0.532	57.9	2.76	4.20	-10	--	--
11:39	200	52.31	6.33	0.526	47.5	0.98	4.29	-6	--	--
11:42	200	53.35	6.31	0.524	44.7	1.01	4.30	-2	--	--

Comments: None

Well Casing Volume Conversion

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

Sample Information

Sample ID: MW-7-W-20230414 Sample Time: 12:00 Sample Depth (ft-bmp): 56

Analytes and Methods: See Chain-of-Custody.

ft-bmp = feet below measuring point
in. = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
PVC = Polyvinyl Chloride

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius
-- = Not Recorded

Project Number	30064225	Well ID	MW-9	Date	4/14/2023	
Site Location	Anchorage, Alaska	Site ID	306450	Weather (°F)	Clear	Sampled by Evan Wujcik
Measuring Point Description	Top of Casing	Screen Depth Interval (ft-bmp)	-- to --	Casing Diameter (in.)	2	Well Casing Material PVC
Static Water Level (ft-bmp)	34.6	Total Depth (ft-bmp)	39.8	Water Column (ft)	5.20	Gallons in Well 0.84
Water Quality Meter Make/Model	Horiba U-52	Purge Method	Low-Flow	Sample Method	Grab	
Sample Time	07:00	Well Volumes Purged	0.94	Sample ID	MW-9-W-20230414	Evacuation Equipment Bladder
Purge Start	06:30	Gallons Purged	0.79	Duplicate ID	--	
Purge End	06:50	Total Purge Time (h:m)	0:20			

Time	Rate (ml/min)	Depth to Water (ft)	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
									Color	Odor
06:33	200	34.64	6.42	0.453	430	2.10	2.03	193	--	--
06:36	200	34.66	6.32	0.442	256	1.65	2.26	178	--	--
06:39	200	34.68	6.29	0.436	205	1.47	2.34	171	--	--
06:42	200	34.70	6.25	0.432	155	1.35	2.39	165	--	--
06:45	200	34.70	6.23	0.427	127	1.26	2.47	161	--	--

Comments: None

Well Casing Volume Conversion

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

Sample Information

Sample ID: MW-9-W-20230414 Sample Time: 07:00 Sample Depth (ft-bmp): 36
Analytes and Methods: See Chain-of-Custody.

ft-bmp = feet below measuring point
in. = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
PVC = Polyvinyl Chloride

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius
-- = Not Recorded

Project Number	30064225	Well ID	RW-14	Date	4/14/2023	
Site Location	Anchorage, Alaska	Site ID	306450	Weather (°F)	Clear	Sampled by Evan Wujcik
Measuring Point Description	Top of Casing	Screen Depth Interval (ft-bmp)	-- to --	Casing Diameter (in.)	6	Well Casing Material PVC
Static Water Level (ft-bmp)	51.39	Total Depth (ft-bmp)	53	Water Column (ft)	1.61	Gallons in Well 2.35
Water Quality Meter Make/Model	Horiba U-52	Purge Method	Low-Flow	Sample Method	Grab	
Sample Time	09:00	Well Volumes Purged	0.27	Sample ID	RW-14-W-20230414	Evacuation Equipment Bladder
Purge Start	08:30	Gallons Purged	0.63	Duplicate ID	--	
Purge End	08:50	Total Purge Time (h:m)	0:20			

Time	Rate (ml/min)	Depth to Water (ft)	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
									Color	Odor
08:33	200	51.40	6.45	0.446	21.6	1.83	2.98	13	--	--
08:36	200	51.42	6.40	0.447	19.4	1.23	3.32	20	--	--
08:39	200	51.43	6.39	0.446	18.3	1.00	3.53	22	--	--
08:42	200	51.45	6.38	0.448	18.0	0.90	3.55	25	--	--

Comments: None

Well Casing Volume Conversion

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

Sample Information

Sample ID: RW-14-W-20230414 Sample Time: 09:00 Sample Depth (ft-bmp): 53

Analytes and Methods: See Chain-of-Custody.

ft-bmp = feet below measuring point
in. = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
PVC = Polyvinyl Chloride

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius
-- = Not Recorded

Attachment B

Laboratory Analytical Results

Arcadis - Chevron - AK

Sample Delivery Group: L1605824
Samples Received: 04/15/2023
Project Number: 30064225.19.45
Description: 306450
Site: 4351 W. ITNL AIRPORT RD
Report To: Skip Robinson
880 H St.
Anchorage, AK 99501

Entire Report Reviewed By:

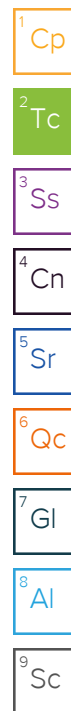
[Preliminary Report]Brian Ford
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

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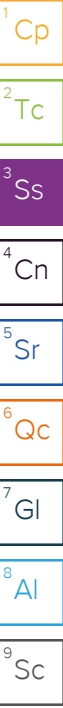


SAMPLE SUMMARY

MW-9-W-20230417 L1605824-01 GW

Collected by E. Wujcik Collected date/time 04/14/23 07:00 Received date/time 04/15/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG2043054	1	04/23/23 09:20	04/23/23 14:12	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG2042702	1	04/19/23 20:26	04/19/23 20:26	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2043126	10	04/17/23 15:45	04/17/23 15:45	BRA	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2043904	1	04/18/23 14:13	04/18/23 14:13	JCP	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2045669	10	04/20/23 23:04	04/20/23 23:04	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG2042243	1	04/17/23 14:03	04/18/23 19:27	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG2042811	1	04/17/23 10:57	04/18/23 02:21	AED	Mt. Juliet, TN



MW-5A-W-20230417 L1605824-02 GW

Collected by E. Wujcik Collected date/time 04/14/23 08:00 Received date/time 04/15/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG2043054	1	04/23/23 09:20	04/23/23 14:14	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG2042702	1	04/19/23 20:52	04/19/23 20:52	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2043126	1	04/17/23 13:46	04/17/23 13:46	BRA	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2043904	1	04/18/23 14:35	04/18/23 14:35	JCP	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG2042243	1	04/17/23 14:03	04/19/23 02:42	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG2042811	1.09	04/17/23 10:57	04/18/23 02:41	AED	Mt. Juliet, TN

RW-14-W-20230417 L1605824-03 GW

Collected by E. Wujcik Collected date/time 04/14/23 09:00 Received date/time 04/15/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG2043054	1	04/23/23 09:20	04/23/23 14:17	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG2042702	1	04/19/23 21:19	04/19/23 21:19	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2043126	1	04/17/23 12:59	04/17/23 12:59	BRA	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2043904	1	04/18/23 14:57	04/18/23 14:57	JCP	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG2042243	1	04/17/23 14:03	04/18/23 20:08	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG2042811	1.1	04/17/23 10:57	04/18/23 03:00	AED	Mt. Juliet, TN

MW-5-W-20230417 L1605824-04 GW

Collected by E. Wujcik Collected date/time 04/14/23 10:00 Received date/time 04/15/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG2043054	1	04/23/23 09:20	04/23/23 14:20	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG2042702	1	04/19/23 22:08	04/19/23 22:08	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2043126	50	04/17/23 14:10	04/17/23 14:10	BRA	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2043904	1	04/18/23 15:18	04/18/23 15:18	JCP	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG2045356	1.11	04/20/23 16:47	04/21/23 05:14	MWS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG2042811	1.08	04/17/23 10:57	04/18/23 03:20	AED	Mt. Juliet, TN

MW-7A-W-20230417 L1605824-05 GW

Collected by E. Wujcik Collected date/time 04/14/23 11:00 Received date/time 04/15/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG2043056	1	04/18/23 17:57	04/21/23 11:15	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG2045887	1	04/23/23 22:35	04/23/23 22:35	NCC	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2043741	250	04/18/23 19:00	04/18/23 19:00	BRA	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2043904	1	04/18/23 15:40	04/18/23 15:40	JCP	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2045669	20	04/20/23 23:24	04/20/23 23:24	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG2045356	1.11	04/20/23 16:47	04/21/23 04:04	MWS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG2042811	1	04/17/23 10:57	04/18/23 04:19	AED	Mt. Juliet, TN

SAMPLE SUMMARY

MW-7-W-20230417 L1605824-06 GW

Collected by E. Wujcik Collected date/time 04/14/23 12:00 Received date/time 04/15/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG2043056	1	04/18/23 17:57	04/21/23 11:55	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG2045887	100	04/24/23 13:02	04/24/23 13:02	NCC	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2043126	2000	04/17/23 14:58	04/17/23 14:58	BRA	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2043904	10	04/18/23 18:11	04/18/23 18:11	JCP	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2045669	200	04/20/23 23:45	04/20/23 23:45	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG2045356	1.11	04/20/23 16:47	04/21/23 05:37	MWS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG2042811	1	04/17/23 10:57	04/18/23 05:18	AED	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG2042811	10	04/17/23 10:57	04/19/23 21:02	KLZ	Mt. Juliet, TN



BD-1-W-20230417 L1605824-07 GW

Collected by E. Wujcik Collected date/time 04/14/23 00:00 Received date/time 04/15/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG2043056	1	04/18/23 17:57	04/21/23 11:58	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG2045887	200	04/24/23 13:41	04/24/23 13:41	NCC	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2043126	2000	04/17/23 15:21	04/17/23 15:21	BRA	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2043904	20	04/18/23 18:33	04/18/23 18:33	JCP	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2045669	500	04/21/23 00:05	04/21/23 00:05	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG2045356	1	04/20/23 16:47	04/21/23 06:00	MWS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG2042811	1.04	04/17/23 10:57	04/18/23 05:38	AED	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG2042811	10.4	04/17/23 10:57	04/19/23 21:19	KLZ	Mt. Juliet, TN

EQB-1-W-20230417 L1605824-08 GW

Collected by E. Wujcik Collected date/time 04/14/23 13:00 Received date/time 04/15/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG2043056	1	04/18/23 17:57	04/21/23 12:01	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG2042702	1	04/19/23 18:42	04/19/23 18:42	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2043126	1	04/17/23 13:23	04/17/23 13:23	BRA	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2043904	1	04/18/23 12:48	04/18/23 12:48	JCP	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG2045356	1.05	04/20/23 16:47	04/21/23 06:24	MWS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG2042811	1	04/17/23 10:57	04/18/23 03:40	AED	Mt. Juliet, TN

TRIP BLANK 1_20230414 L1605824-09 GW

Collected by E. Wujcik Collected date/time 04/14/23 00:00 Received date/time 04/15/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method AK101	WG2042702	1	04/19/23 16:48	04/19/23 16:48	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2043126	1	04/17/23 10:13	04/17/23 10:13	BRA	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2043904	1	04/18/23 12:05	04/18/23 12:05	JCP	Mt. Juliet, TN

TRIP BLANK 2_20230414 L1605824-10 GW

Collected by E. Wujcik Collected date/time 04/14/23 00:00 Received date/time 04/15/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method AK101	WG2042702	1	04/19/23 17:14	04/19/23 17:14	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2043126	1	04/17/23 10:36	04/17/23 10:36	BRA	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2043904	1	04/18/23 12:26	04/18/23 12:26	JCP	Mt. Juliet, TN

CASE NARRATIVE

Unless qualified or notated within the narrative below, all sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

[Preliminary Report]

Brian Ford
Project Manager

Volatile Organic Compounds (GC) by Method AK101

The sample matrix interfered with the ability to make any accurate determination; spike value is high.

Batch	Lab Sample ID	Analytes
WG2042702	(MS) R3916588-3, (MSD) R3916588-4	TPHGAK C6 to C10

Volatile Organic Compounds (GC/MS) by Method 8260D

The reported concentration is an estimate. The continuing calibration standard associated with this data responded low. Method sensitivity check is acceptable.

Batch	Lab Sample ID	Analytes
WG2043904	L1605824-01	Acrolein, Naphthalene and o-Xylene
WG2043904	L1605824-02	Acrolein, Naphthalene and o-Xylene
WG2043904	L1605824-03	Acrolein, Naphthalene and o-Xylene
WG2043904	L1605824-04	Acrolein, Naphthalene and o-Xylene
WG2043904	L1605824-05	Acrolein and Naphthalene
WG2043904	L1605824-06	Acrolein and Naphthalene
WG2043904	L1605824-07	Acrolein and Naphthalene
WG2043904	L1605824-08	Acrolein, Naphthalene and o-Xylene
WG2043904	L1605824-09	Acrolein, Naphthalene and o-Xylene
WG2043904	L1605824-10	Acrolein, Naphthalene and o-Xylene

The associated batch QC was below the established quality control range for accuracy.

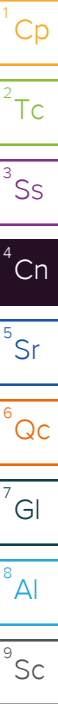
Batch	Lab Sample ID	Analytes
WG2043904	(LCS) R3915346-1, (LCSD) R3915346-2, L1605824-01, 02, 03, 04, 05, 06, 07, 08, 09, 10	Isopropylbenzene and o-Xylene

The associated batch QC was above the established quality control range for accuracy.

Batch	Lab Sample ID	Analytes
WG2043904	(LCS) R3915346-1, L1605824-01, 02, 03, 04, 05, 06, 07, 08, 09, 10	Vinyl chloride

The sample concentration is too high to evaluate accurate spike recoveries.

Batch	Lab Sample ID	Analytes
WG2043904	(MS) R3915346-4, (MSD) R3915346-5, L1605824-05	1,2,3-Trimethylbenzene, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, Benzene, Ethylbenzene, m&p-Xylenes, Naphthalene, o-Xylene, Toluene and Xylenes, Total



CASE NARRATIVE

Volatile Organic Compounds (GC/MS) by Method 8260D

The sample matrix interfered with the ability to make any accurate determination; spike value is high.

Batch	Lab Sample ID	Analytes
WG2043904	(MS) R3915346-4, (MSD) R3915346-5, L1605824-05	1,2-Dichloroethane, 2-Chlorotoluene, n-Butylbenzene, n-Propylbenzene, p-Isopropyltoluene, sec-Butylbenzene and Styrene

Semi-Volatile Organic Compounds (GC) by Method AK102

The same analyte is found in the associated blank.

Batch	Analyte	Lab Sample ID
WG2042243	AK102 DRO C10-C25	L1605824-02
WG2045356	AK102 DRO C10-C25	L1605824-04, 05, 08

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Surrogate recovery limits have been exceeded; values are outside upper control limits.

Batch	Analyte	Lab Sample ID
WG2042811	Nitrobenzene-d5	L1605824-06, 07

Surrogate recovery limits have been exceeded; values are outside lower control limits.

Batch	Analyte	Lab Sample ID
WG2042811	Nitrobenzene-d5	L1605824-01, 06, 07

The sample matrix interfered with the ability to make any accurate determination; spike value is high.

Batch	Lab Sample ID	Analytes
WG2042811	(MS) R3914539-3, L1605824-05	2-Methylnaphthalene

The sample concentration is too high to evaluate accurate spike recoveries.

Batch	Lab Sample ID	Analytes
WG2042811	(MS) R3914539-3, (MSD) R3914539-4, L1605824-05	Naphthalene

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Metals (ICP) by Method 6010D

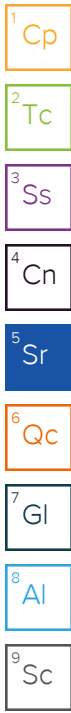
Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Lead	U		2.99	6.00	1	04/23/2023 14:12	WG2043054

Volatile Organic Compounds (GC) by Method AK101

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TPHGAK C6 to C10	4130		28.7	100	1	04/19/2023 20:26	WG2042702
(S) a,a,a-Trifluorotoluene(FID)	93.5			50.0-150		04/19/2023 20:26	WG2042702

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		11.3	50.0	1	04/18/2023 14:13	WG2043904
1,2,3-Trichloropropane	U		0.0200	0.0500	10	04/17/2023 15:45	WG2043126
Acrolein	U	<u>C3</u>	2.54	50.0	1	04/18/2023 14:13	WG2043904
1,2-Dibromoethane	U		0.0410	0.0500	10	04/17/2023 15:45	WG2043126
Acrylonitrile	U		0.671	10.0	1	04/18/2023 14:13	WG2043904
Benzene	159		0.941	10.0	10	04/20/2023 23:04	WG2045669
Bromobenzene	U		0.118	1.00	1	04/18/2023 14:13	WG2043904
Bromochloromethane	U		0.128	1.00	1	04/18/2023 14:13	WG2043904
Bromodichloromethane	U		0.136	1.00	1	04/18/2023 14:13	WG2043904
Bromoform	U		0.129	1.00	1	04/18/2023 14:13	WG2043904
Bromomethane	U		0.605	5.00	1	04/18/2023 14:13	WG2043904
n-Butylbenzene	U		0.157	1.00	1	04/18/2023 14:13	WG2043904
sec-Butylbenzene	U		0.125	1.00	1	04/18/2023 14:13	WG2043904
tert-Butylbenzene	U		0.127	1.00	1	04/18/2023 14:13	WG2043904
Carbon disulfide	U		0.0962	1.00	1	04/18/2023 14:13	WG2043904
Carbon tetrachloride	U		0.128	1.00	1	04/18/2023 14:13	WG2043904
Chlorobenzene	U		0.116	1.00	1	04/18/2023 14:13	WG2043904
Chlorodibromomethane	U		0.140	1.00	1	04/18/2023 14:13	WG2043904
Chloroethane	U		0.192	5.00	1	04/18/2023 14:13	WG2043904
Chloroform	U		0.111	5.00	1	04/18/2023 14:13	WG2043904
Chloromethane	U		0.960	2.50	1	04/18/2023 14:13	WG2043904
2-Chlorotoluene	U		0.106	1.00	1	04/18/2023 14:13	WG2043904
4-Chlorotoluene	U		0.114	1.00	1	04/18/2023 14:13	WG2043904
1,2-Dibromo-3-Chloropropane	U		0.276	5.00	1	04/18/2023 14:13	WG2043904
Dibromomethane	U		0.122	1.00	1	04/18/2023 14:13	WG2043904
1,2-Dichlorobenzene	U		0.107	1.00	1	04/18/2023 14:13	WG2043904
1,3-Dichlorobenzene	U		0.110	1.00	1	04/18/2023 14:13	WG2043904
1,4-Dichlorobenzene	U		0.120	1.00	1	04/18/2023 14:13	WG2043904
Dichlorodifluoromethane	U		0.374	5.00	1	04/18/2023 14:13	WG2043904
1,1-Dichloroethane	U		0.100	1.00	1	04/18/2023 14:13	WG2043904
1,2-Dichloroethane	10.0		0.0819	1.00	1	04/18/2023 14:13	WG2043904
1,1-Dichloroethene	U		0.188	1.00	1	04/18/2023 14:13	WG2043904
cis-1,2-Dichloroethene	U		0.126	1.00	1	04/18/2023 14:13	WG2043904
trans-1,2-Dichloroethene	U		0.149	1.00	1	04/18/2023 14:13	WG2043904
1,2-Dichloropropane	0.912	<u>J</u>	0.149	1.00	1	04/18/2023 14:13	WG2043904
1,1-Dichloropropene	U		0.142	1.00	1	04/18/2023 14:13	WG2043904
1,3-Dichloropropane	U		0.110	1.00	1	04/18/2023 14:13	WG2043904
cis-1,3-Dichloropropene	U		0.111	1.00	1	04/18/2023 14:13	WG2043904
trans-1,3-Dichloropropene	U		0.118	1.00	1	04/18/2023 14:13	WG2043904
2,2-Dichloropropane	U		0.161	1.00	1	04/18/2023 14:13	WG2043904
Di-isopropyl ether	U		0.105	1.00	1	04/18/2023 14:13	WG2043904
Ethylbenzene	10.6		0.137	1.00	1	04/18/2023 14:13	WG2043904
Hexachloro-1,3-butadiene	U		0.337	1.00	1	04/18/2023 14:13	WG2043904



Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Isopropylbenzene	1.60	J4	0.105	1.00	1	04/18/2023 14:13	WG2043904
p-Isopropyltoluene	U		0.120	1.00	1	04/18/2023 14:13	WG2043904
2-Butanone (MEK)	U		1.19	10.0	1	04/18/2023 14:13	WG2043904
Methylene Chloride	U		0.430	5.00	1	04/18/2023 14:13	WG2043904
4-Methyl-2-pentanone (MIBK)	1.68	J	0.478	10.0	1	04/18/2023 14:13	WG2043904
Methyl tert-butyl ether	U		0.101	1.00	1	04/18/2023 14:13	WG2043904
Naphthalene	U	C3	1.00	5.00	1	04/18/2023 14:13	WG2043904
n-Propylbenzene	1.81		0.0993	1.00	1	04/18/2023 14:13	WG2043904
Styrene	U		0.118	1.00	1	04/18/2023 14:13	WG2043904
1,1,1,2-Tetrachloroethane	U		0.147	1.00	1	04/18/2023 14:13	WG2043904
1,1,2,2-Tetrachloroethane	U		0.133	1.00	1	04/18/2023 14:13	WG2043904
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00	1	04/18/2023 14:13	WG2043904
Tetrachloroethene	U		0.300	1.00	1	04/18/2023 14:13	WG2043904
Toluene	U		0.278	1.00	1	04/18/2023 14:13	WG2043904
1,2,3-Trichlorobenzene	U		0.230	1.00	1	04/18/2023 14:13	WG2043904
1,2,4-Trichlorobenzene	U		0.481	1.00	1	04/18/2023 14:13	WG2043904
1,1,1-Trichloroethane	U		0.149	1.00	1	04/18/2023 14:13	WG2043904
1,1,2-Trichloroethane	U		0.158	1.00	1	04/18/2023 14:13	WG2043904
Trichloroethene	0.361	J	0.190	1.00	1	04/18/2023 14:13	WG2043904
Trichlorofluoromethane	U		0.160	5.00	1	04/18/2023 14:13	WG2043904
1,2,4-Trimethylbenzene	U		0.322	1.00	1	04/18/2023 14:13	WG2043904
1,2,3-Trimethylbenzene	U		0.104	1.00	1	04/18/2023 14:13	WG2043904
1,3,5-Trimethylbenzene	0.665	J	0.104	1.00	1	04/18/2023 14:13	WG2043904
Vinyl chloride	U	J4	0.234	1.00	1	04/18/2023 14:13	WG2043904
Xylenes, Total	1.52	J	0.174	3.00	1	04/18/2023 14:13	WG2043904
o-Xylene	U	C3 J4	0.174	1.00	1	04/18/2023 14:13	WG2043904
m&p-Xylene	1.52	J	0.430	2.00	1	04/18/2023 14:13	WG2043904
(S) Toluene-d8	99.2			80.0-120		04/18/2023 14:13	WG2043904
(S) Toluene-d8	106			80.0-120		04/20/2023 23:04	WG2045669
(S) 4-Bromofluorobenzene	89.9			77.0-126		04/18/2023 14:13	WG2043904
(S) 4-Bromofluorobenzene	99.4			77.0-126		04/20/2023 23:04	WG2045669
(S) 1,2-Dichloroethane-d4	106			70.0-130		04/18/2023 14:13	WG2043904
(S) 1,2-Dichloroethane-d4	108			70.0-130		04/20/2023 23:04	WG2045669

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Sample Narrative:

L1605824-01 WG2043126: Non-target compounds too high to run at a lower dilution.

Semi-Volatile Organic Compounds (GC) by Method AK102

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
AK102 DRO C10-C25	11300		170	800	1	04/18/2023 19:27	WG2042243
(S) o-Terphenyl	88.5			50.0-150		04/18/2023 19:27	WG2042243

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Anthracene	U		0.0190	0.0500	1	04/18/2023 02:21	WG2042811
Acenaphthene	U		0.0190	0.0500	1	04/18/2023 02:21	WG2042811
Acenaphthylene	U		0.0170	0.0500	1	04/18/2023 02:21	WG2042811
Benzo(a)anthracene	U		0.0200	0.0500	1	04/18/2023 02:21	WG2042811
Benzo(a)pyrene	U		0.0180	0.0500	1	04/18/2023 02:21	WG2042811
Benzo(b)fluoranthene	U		0.0170	0.0500	1	04/18/2023 02:21	WG2042811
Benzo(g,h,i)perylene	U		0.0180	0.0500	1	04/18/2023 02:21	WG2042811
Benzo(k)fluoranthene	U		0.0200	0.250	1	04/18/2023 02:21	WG2042811
Chrysene	U		0.0180	0.0500	1	04/18/2023 02:21	WG2042811

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dibenz(a,h)anthracene	U		0.0180	0.0500	1	04/18/2023 02:21	WG2042811
Fluoranthene	0.0160	U	0.0110	0.0500	1	04/18/2023 02:21	WG2042811
Fluorene	U		0.0170	0.0500	1	04/18/2023 02:21	WG2042811
Indeno(1,2,3-cd)pyrene	U		0.0180	0.0500	1	04/18/2023 02:21	WG2042811
Naphthalene	U		0.128	0.500	1	04/18/2023 02:21	WG2042811
Phenanthrene	U		0.0180	0.0500	1	04/18/2023 02:21	WG2042811
Pyrene	U		0.0170	0.0500	1	04/18/2023 02:21	WG2042811
1-Methylnaphthalene	0.0643	U	0.0200	0.500	1	04/18/2023 02:21	WG2042811
2-Methylnaphthalene	0.0641	U	0.0280	0.500	1	04/18/2023 02:21	WG2042811
2-Chloronaphthalene	0.0256	U	0.0120	0.500	1	04/18/2023 02:21	WG2042811
(S) Nitrobenzene-d5	0.000	U2		11.0-135		04/18/2023 02:21	WG2042811
(S) 2-Fluorobiphenyl	69.5			32.0-120		04/18/2023 02:21	WG2042811
(S) p-Terphenyl-d14	69.0			23.0-122		04/18/2023 02:21	WG2042811

Sample Narrative:

L1605824-01 WG2042811: Surrogate failure due to matrix interference

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Lead	U		2.99	6.00	1	04/23/2023 14:14	WG2043054

Volatile Organic Compounds (GC) by Method AK101

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TPHGAK C6 to C10	572		28.7	100	1	04/19/2023 20:52	WG2042702
(S) a,a,a-Trifluorotoluene(FID)	80.8			50.0-150		04/19/2023 20:52	WG2042702

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		11.3	50.0	1	04/18/2023 14:35	WG2043904
1,2,3-Trichloropropane	U		0.00200	0.00500	1	04/17/2023 13:46	WG2043126
Acrolein	U	C3	2.54	50.0	1	04/18/2023 14:35	WG2043904
1,2-Dibromoethane	U		0.00410	0.00500	1	04/17/2023 13:46	WG2043126
Acrylonitrile	U		0.671	10.0	1	04/18/2023 14:35	WG2043904
Benzene	U		0.0941	1.00	1	04/18/2023 14:35	WG2043904
Bromobenzene	U		0.118	1.00	1	04/18/2023 14:35	WG2043904
Bromochloromethane	U		0.128	1.00	1	04/18/2023 14:35	WG2043904
Bromodichloromethane	U		0.136	1.00	1	04/18/2023 14:35	WG2043904
Bromoform	U		0.129	1.00	1	04/18/2023 14:35	WG2043904
Bromomethane	U		0.605	5.00	1	04/18/2023 14:35	WG2043904
n-Butylbenzene	U		0.157	1.00	1	04/18/2023 14:35	WG2043904
sec-Butylbenzene	U		0.125	1.00	1	04/18/2023 14:35	WG2043904
tert-Butylbenzene	U		0.127	1.00	1	04/18/2023 14:35	WG2043904
Carbon disulfide	U		0.0962	1.00	1	04/18/2023 14:35	WG2043904
Carbon tetrachloride	U		0.128	1.00	1	04/18/2023 14:35	WG2043904
Chlorobenzene	U		0.116	1.00	1	04/18/2023 14:35	WG2043904
Chlorodibromomethane	U		0.140	1.00	1	04/18/2023 14:35	WG2043904
Chloroethane	U		0.192	5.00	1	04/18/2023 14:35	WG2043904
Chloroform	U		0.111	5.00	1	04/18/2023 14:35	WG2043904
Chloromethane	U		0.960	2.50	1	04/18/2023 14:35	WG2043904
2-Chlorotoluene	U		0.106	1.00	1	04/18/2023 14:35	WG2043904
4-Chlorotoluene	U		0.114	1.00	1	04/18/2023 14:35	WG2043904
1,2-Dibromo-3-Chloropropane	U		0.276	5.00	1	04/18/2023 14:35	WG2043904
Dibromomethane	U		0.122	1.00	1	04/18/2023 14:35	WG2043904
1,2-Dichlorobenzene	U		0.107	1.00	1	04/18/2023 14:35	WG2043904
1,3-Dichlorobenzene	U		0.110	1.00	1	04/18/2023 14:35	WG2043904
1,4-Dichlorobenzene	U		0.120	1.00	1	04/18/2023 14:35	WG2043904
Dichlorodifluoromethane	U		0.374	5.00	1	04/18/2023 14:35	WG2043904
1,1-Dichloroethane	U		0.100	1.00	1	04/18/2023 14:35	WG2043904
1,2-Dichloroethane	U		0.0819	1.00	1	04/18/2023 14:35	WG2043904
1,1-Dichloroethene	U		0.188	1.00	1	04/18/2023 14:35	WG2043904
cis-1,2-Dichloroethene	U		0.126	1.00	1	04/18/2023 14:35	WG2043904
trans-1,2-Dichloroethene	U		0.149	1.00	1	04/18/2023 14:35	WG2043904
1,2-Dichloropropane	U		0.149	1.00	1	04/18/2023 14:35	WG2043904
1,1-Dichloropropene	U		0.142	1.00	1	04/18/2023 14:35	WG2043904
1,3-Dichloropropane	U		0.110	1.00	1	04/18/2023 14:35	WG2043904
cis-1,3-Dichloropropene	U		0.111	1.00	1	04/18/2023 14:35	WG2043904
trans-1,3-Dichloropropene	U		0.118	1.00	1	04/18/2023 14:35	WG2043904
2,2-Dichloropropane	U		0.161	1.00	1	04/18/2023 14:35	WG2043904
Di-isopropyl ether	U		0.105	1.00	1	04/18/2023 14:35	WG2043904
Ethylbenzene	0.204	J	0.137	1.00	1	04/18/2023 14:35	WG2043904
Hexachloro-1,3-butadiene	U		0.337	1.00	1	04/18/2023 14:35	WG2043904

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

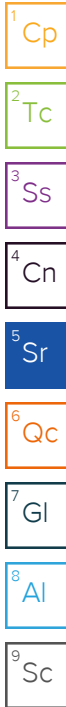
7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Isopropylbenzene	U	J4	0.105	1.00	1	04/18/2023 14:35	WG2043904
p-Isopropyltoluene	U		0.120	1.00	1	04/18/2023 14:35	WG2043904
2-Butanone (MEK)	U		1.19	10.0	1	04/18/2023 14:35	WG2043904
Methylene Chloride	U		0.430	5.00	1	04/18/2023 14:35	WG2043904
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0	1	04/18/2023 14:35	WG2043904
Methyl tert-butyl ether	U		0.101	1.00	1	04/18/2023 14:35	WG2043904
Naphthalene	U	C3	1.00	5.00	1	04/18/2023 14:35	WG2043904
n-Propylbenzene	U		0.0993	1.00	1	04/18/2023 14:35	WG2043904
Styrene	U		0.118	1.00	1	04/18/2023 14:35	WG2043904
1,1,1,2-Tetrachloroethane	U		0.147	1.00	1	04/18/2023 14:35	WG2043904
1,1,2,2-Tetrachloroethane	U		0.133	1.00	1	04/18/2023 14:35	WG2043904
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00	1	04/18/2023 14:35	WG2043904
Tetrachloroethene	U		0.300	1.00	1	04/18/2023 14:35	WG2043904
Toluene	U		0.278	1.00	1	04/18/2023 14:35	WG2043904
1,2,3-Trichlorobenzene	U		0.230	1.00	1	04/18/2023 14:35	WG2043904
1,2,4-Trichlorobenzene	U		0.481	1.00	1	04/18/2023 14:35	WG2043904
1,1,1-Trichloroethane	U		0.149	1.00	1	04/18/2023 14:35	WG2043904
1,1,2-Trichloroethane	U		0.158	1.00	1	04/18/2023 14:35	WG2043904
Trichloroethene	U		0.190	1.00	1	04/18/2023 14:35	WG2043904
Trichlorofluoromethane	U		0.160	5.00	1	04/18/2023 14:35	WG2043904
1,2,4-Trimethylbenzene	U		0.322	1.00	1	04/18/2023 14:35	WG2043904
1,2,3-Trimethylbenzene	1.98		0.104	1.00	1	04/18/2023 14:35	WG2043904
1,3,5-Trimethylbenzene	0.201	J	0.104	1.00	1	04/18/2023 14:35	WG2043904
Vinyl chloride	U	J4	0.234	1.00	1	04/18/2023 14:35	WG2043904
Xylenes, Total	1.31	J	0.174	3.00	1	04/18/2023 14:35	WG2043904
o-Xylene	1.31	C3 J4	0.174	1.00	1	04/18/2023 14:35	WG2043904
m&p-Xylene	U		0.430	2.00	1	04/18/2023 14:35	WG2043904
(S) Toluene-d8	101			80.0-120		04/18/2023 14:35	WG2043904
(S) 4-Bromofluorobenzene	86.4			77.0-126		04/18/2023 14:35	WG2043904
(S) 1,2-Dichloroethane-d4	108			70.0-130		04/18/2023 14:35	WG2043904



Semi-Volatile Organic Compounds (GC) by Method AK102

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
AK102 DRO C10-C25	599	B J	170	800	1	04/19/2023 02:42	WG2042243
(S) o-Terphenyl	88.5			50.0-150		04/19/2023 02:42	WG2042243

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Anthracene	U		0.0207	0.0545	1.09	04/18/2023 02:41	WG2042811
Acenaphthene	U		0.0207	0.0545	1.09	04/18/2023 02:41	WG2042811
Acenaphthylene	U		0.0185	0.0545	1.09	04/18/2023 02:41	WG2042811
Benzo(a)anthracene	U		0.0218	0.0545	1.09	04/18/2023 02:41	WG2042811
Benzo(a)pyrene	U		0.0196	0.0545	1.09	04/18/2023 02:41	WG2042811
Benzo(b)fluoranthene	U		0.0185	0.0545	1.09	04/18/2023 02:41	WG2042811
Benzo(g,h,i)perylene	U		0.0196	0.0545	1.09	04/18/2023 02:41	WG2042811
Benzo(k)fluoranthene	U		0.0218	0.273	1.09	04/18/2023 02:41	WG2042811
Chrysene	U		0.0196	0.0545	1.09	04/18/2023 02:41	WG2042811
Dibenz(a,h)anthracene	U		0.0196	0.0545	1.09	04/18/2023 02:41	WG2042811
Fluoranthene	0.0123	J	0.0120	0.0545	1.09	04/18/2023 02:41	WG2042811
Fluorene	U		0.0185	0.0545	1.09	04/18/2023 02:41	WG2042811
Indeno(1,2,3-cd)pyrene	U		0.0196	0.0545	1.09	04/18/2023 02:41	WG2042811
Naphthalene	U		0.140	0.545	1.09	04/18/2023 02:41	WG2042811
Phenanthrene	U		0.0196	0.0545	1.09	04/18/2023 02:41	WG2042811

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Pyrene	U		0.0185	0.0545	1.09	04/18/2023 02:41	WG2042811
1-Methylnaphthalene	U		0.0218	0.545	1.09	04/18/2023 02:41	WG2042811
2-Methylnaphthalene	U		0.0305	0.545	1.09	04/18/2023 02:41	WG2042811
2-Chloronaphthalene	U		0.0131	0.545	1.09	04/18/2023 02:41	WG2042811
<i>(S)</i> Nitrobenzene-d5	68.7			11.0-135		04/18/2023 02:41	WG2042811
<i>(S)</i> 2-Fluorobiphenyl	65.9			32.0-120		04/18/2023 02:41	WG2042811
<i>(S)</i> p-Terphenyl-d14	79.7			23.0-122		04/18/2023 02:41	WG2042811

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Lead	U		2.99	6.00	1	04/23/2023 14:17	WG2043054

Volatile Organic Compounds (GC) by Method AK101

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TPHGAK C6 to C10	U		28.7	100	1	04/19/2023 21:19	WG2042702
(S) a,a,a-Trifluorotoluene(FID)	89.2			50.0-150		04/19/2023 21:19	WG2042702

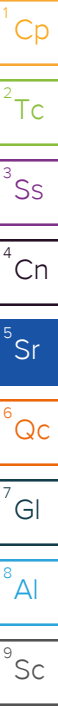
Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		11.3	50.0	1	04/18/2023 14:57	WG2043904
1,2,3-Trichloropropane	U		0.00200	0.00500	1	04/17/2023 12:59	WG2043126
Acrolein	U	C3	2.54	50.0	1	04/18/2023 14:57	WG2043904
1,2-Dibromoethane	U		0.00410	0.00500	1	04/17/2023 12:59	WG2043126
Acrylonitrile	U		0.671	10.0	1	04/18/2023 14:57	WG2043904
Benzene	0.831	J	0.0941	1.00	1	04/18/2023 14:57	WG2043904
Bromobenzene	U		0.118	1.00	1	04/18/2023 14:57	WG2043904
Bromochloromethane	U		0.128	1.00	1	04/18/2023 14:57	WG2043904
Bromodichloromethane	U		0.136	1.00	1	04/18/2023 14:57	WG2043904
Bromoform	U		0.129	1.00	1	04/18/2023 14:57	WG2043904
Bromomethane	U		0.605	5.00	1	04/18/2023 14:57	WG2043904
n-Butylbenzene	U		0.157	1.00	1	04/18/2023 14:57	WG2043904
sec-Butylbenzene	U		0.125	1.00	1	04/18/2023 14:57	WG2043904
tert-Butylbenzene	U		0.127	1.00	1	04/18/2023 14:57	WG2043904
Carbon disulfide	U		0.0962	1.00	1	04/18/2023 14:57	WG2043904
Carbon tetrachloride	U		0.128	1.00	1	04/18/2023 14:57	WG2043904
Chlorobenzene	U		0.116	1.00	1	04/18/2023 14:57	WG2043904
Chlorodibromomethane	U		0.140	1.00	1	04/18/2023 14:57	WG2043904
Chloroethane	U		0.192	5.00	1	04/18/2023 14:57	WG2043904
Chloroform	U		0.111	5.00	1	04/18/2023 14:57	WG2043904
Chloromethane	U		0.960	2.50	1	04/18/2023 14:57	WG2043904
2-Chlorotoluene	U		0.106	1.00	1	04/18/2023 14:57	WG2043904
4-Chlorotoluene	U		0.114	1.00	1	04/18/2023 14:57	WG2043904
1,2-Dibromo-3-Chloropropane	U		0.276	5.00	1	04/18/2023 14:57	WG2043904
Dibromomethane	U		0.122	1.00	1	04/18/2023 14:57	WG2043904
1,2-Dichlorobenzene	U		0.107	1.00	1	04/18/2023 14:57	WG2043904
1,3-Dichlorobenzene	U		0.110	1.00	1	04/18/2023 14:57	WG2043904
1,4-Dichlorobenzene	U		0.120	1.00	1	04/18/2023 14:57	WG2043904
Dichlorodifluoromethane	U		0.374	5.00	1	04/18/2023 14:57	WG2043904
1,1-Dichloroethane	U		0.100	1.00	1	04/18/2023 14:57	WG2043904
1,2-Dichloroethane	3.13		0.0819	1.00	1	04/18/2023 14:57	WG2043904
1,1-Dichloroethene	U		0.188	1.00	1	04/18/2023 14:57	WG2043904
cis-1,2-Dichloroethene	U		0.126	1.00	1	04/18/2023 14:57	WG2043904
trans-1,2-Dichloroethene	U		0.149	1.00	1	04/18/2023 14:57	WG2043904
1,2-Dichloropropane	U		0.149	1.00	1	04/18/2023 14:57	WG2043904
1,1-Dichloropropene	U		0.142	1.00	1	04/18/2023 14:57	WG2043904
1,3-Dichloropropane	U		0.110	1.00	1	04/18/2023 14:57	WG2043904
cis-1,3-Dichloropropene	U		0.111	1.00	1	04/18/2023 14:57	WG2043904
trans-1,3-Dichloropropene	U		0.118	1.00	1	04/18/2023 14:57	WG2043904
2,2-Dichloropropane	U		0.161	1.00	1	04/18/2023 14:57	WG2043904
Di-isopropyl ether	U		0.105	1.00	1	04/18/2023 14:57	WG2043904
Ethylbenzene	0.266	J	0.137	1.00	1	04/18/2023 14:57	WG2043904
Hexachloro-1,3-butadiene	U		0.337	1.00	1	04/18/2023 14:57	WG2043904

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Isopropylbenzene	U	J4	0.105	1.00	1	04/18/2023 14:57	WG2043904
p-Isopropyltoluene	U		0.120	1.00	1	04/18/2023 14:57	WG2043904
2-Butanone (MEK)	U		1.19	10.0	1	04/18/2023 14:57	WG2043904
Methylene Chloride	U		0.430	5.00	1	04/18/2023 14:57	WG2043904
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0	1	04/18/2023 14:57	WG2043904
Methyl tert-butyl ether	U		0.101	1.00	1	04/18/2023 14:57	WG2043904
Naphthalene	U	C3	1.00	5.00	1	04/18/2023 14:57	WG2043904
n-Propylbenzene	U		0.0993	1.00	1	04/18/2023 14:57	WG2043904
Styrene	U		0.118	1.00	1	04/18/2023 14:57	WG2043904
1,1,1,2-Tetrachloroethane	U		0.147	1.00	1	04/18/2023 14:57	WG2043904
1,1,2,2-Tetrachloroethane	U		0.133	1.00	1	04/18/2023 14:57	WG2043904
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00	1	04/18/2023 14:57	WG2043904
Tetrachloroethene	U		0.300	1.00	1	04/18/2023 14:57	WG2043904
Toluene	U		0.278	1.00	1	04/18/2023 14:57	WG2043904
1,2,3-Trichlorobenzene	U		0.230	1.00	1	04/18/2023 14:57	WG2043904
1,2,4-Trichlorobenzene	U		0.481	1.00	1	04/18/2023 14:57	WG2043904
1,1,1-Trichloroethane	U		0.149	1.00	1	04/18/2023 14:57	WG2043904
1,1,2-Trichloroethane	U		0.158	1.00	1	04/18/2023 14:57	WG2043904
Trichloroethene	U		0.190	1.00	1	04/18/2023 14:57	WG2043904
Trichlorofluoromethane	U		0.160	5.00	1	04/18/2023 14:57	WG2043904
1,2,4-Trimethylbenzene	U		0.322	1.00	1	04/18/2023 14:57	WG2043904
1,2,3-Trimethylbenzene	U		0.104	1.00	1	04/18/2023 14:57	WG2043904
1,3,5-Trimethylbenzene	U		0.104	1.00	1	04/18/2023 14:57	WG2043904
Vinyl chloride	U	J4	0.234	1.00	1	04/18/2023 14:57	WG2043904
Xylenes, Total	U		0.174	3.00	1	04/18/2023 14:57	WG2043904
o-Xylene	U	C3 J4	0.174	1.00	1	04/18/2023 14:57	WG2043904
m&p-Xylene	U		0.430	2.00	1	04/18/2023 14:57	WG2043904
(S) Toluene-d8	101			80.0-120		04/18/2023 14:57	WG2043904
(S) 4-Bromofluorobenzene	84.8			77.0-126		04/18/2023 14:57	WG2043904
(S) 1,2-Dichloroethane-d4	108			70.0-130		04/18/2023 14:57	WG2043904



Semi-Volatile Organic Compounds (GC) by Method AK102

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
AK102 DRO C10-C25	U		170	800	1	04/18/2023 20:08	WG2042243
(S) o-Terphenyl	94.6			50.0-150		04/18/2023 20:08	WG2042243

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Anthracene	U		0.0209	0.0550	1.1	04/18/2023 03:00	WG2042811
Acenaphthene	U		0.0209	0.0550	1.1	04/18/2023 03:00	WG2042811
Acenaphthylene	U		0.0187	0.0550	1.1	04/18/2023 03:00	WG2042811
Benzo(a)anthracene	U		0.0220	0.0550	1.1	04/18/2023 03:00	WG2042811
Benzo(a)pyrene	U		0.0198	0.0550	1.1	04/18/2023 03:00	WG2042811
Benzo(b)fluoranthene	0.0189	J	0.0187	0.0550	1.1	04/18/2023 03:00	WG2042811
Benzo(g,h,i)perylene	U		0.0198	0.0550	1.1	04/18/2023 03:00	WG2042811
Benzo(k)fluoranthene	U		0.0220	0.275	1.1	04/18/2023 03:00	WG2042811
Chrysene	U		0.0198	0.0550	1.1	04/18/2023 03:00	WG2042811
Dibenz(a,h)anthracene	U		0.0198	0.0550	1.1	04/18/2023 03:00	WG2042811
Fluoranthene	0.0299	J	0.0121	0.0550	1.1	04/18/2023 03:00	WG2042811
Fluorene	U		0.0187	0.0550	1.1	04/18/2023 03:00	WG2042811
Indeno(1,2,3-cd)pyrene	U		0.0198	0.0550	1.1	04/18/2023 03:00	WG2042811
Naphthalene	U		0.141	0.550	1.1	04/18/2023 03:00	WG2042811
Phenanthrene	0.0353	J	0.0198	0.0550	1.1	04/18/2023 03:00	WG2042811

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Pyrene	0.0231	J	0.0187	0.0550	1.1	04/18/2023 03:00	WG2042811
1-Methylnaphthalene	U		0.0220	0.550	1.1	04/18/2023 03:00	WG2042811
2-Methylnaphthalene	0.0405	J	0.0308	0.550	1.1	04/18/2023 03:00	WG2042811
2-Chloronaphthalene	U		0.0132	0.550	1.1	04/18/2023 03:00	WG2042811
(S) Nitrobenzene-d5	70.5			11.0-135		04/18/2023 03:00	WG2042811
(S) 2-Fluorobiphenyl	75.0			32.0-120		04/18/2023 03:00	WG2042811
(S) p-Terphenyl-d14	81.8			23.0-122		04/18/2023 03:00	WG2042811

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Lead	U		2.99	6.00	1	04/23/2023 14:20	WG2043054

Volatile Organic Compounds (GC) by Method AK101

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TPHGAK C6 to C10	380		28.7	100	1	04/19/2023 22:08	WG2042702
(S) a,a,a-Trifluorotoluene(FID)	89.1			50.0-150		04/19/2023 22:08	WG2042702

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		11.3	50.0	1	04/18/2023 15:18	WG2043904
1,2,3-Trichloropropane	U		0.100	0.250	50	04/17/2023 14:10	WG2043126
Acrolein	U	<u>C3</u>	2.54	50.0	1	04/18/2023 15:18	WG2043904
1,2-Dibromoethane	U		0.205	0.250	50	04/17/2023 14:10	WG2043126
Acrylonitrile	U		0.671	10.0	1	04/18/2023 15:18	WG2043904
Benzene	11.3		0.0941	1.00	1	04/18/2023 15:18	WG2043904
Bromobenzene	U		0.118	1.00	1	04/18/2023 15:18	WG2043904
Bromochloromethane	U		0.128	1.00	1	04/18/2023 15:18	WG2043904
Bromodichloromethane	U		0.136	1.00	1	04/18/2023 15:18	WG2043904
Bromoform	U		0.129	1.00	1	04/18/2023 15:18	WG2043904
Bromomethane	U		0.605	5.00	1	04/18/2023 15:18	WG2043904
n-Butylbenzene	U		0.157	1.00	1	04/18/2023 15:18	WG2043904
sec-Butylbenzene	U		0.125	1.00	1	04/18/2023 15:18	WG2043904
tert-Butylbenzene	U		0.127	1.00	1	04/18/2023 15:18	WG2043904
Carbon disulfide	U		0.0962	1.00	1	04/18/2023 15:18	WG2043904
Carbon tetrachloride	U		0.128	1.00	1	04/18/2023 15:18	WG2043904
Chlorobenzene	U		0.116	1.00	1	04/18/2023 15:18	WG2043904
Chlorodibromomethane	U		0.140	1.00	1	04/18/2023 15:18	WG2043904
Chloroethane	U		0.192	5.00	1	04/18/2023 15:18	WG2043904
Chloroform	U		0.111	5.00	1	04/18/2023 15:18	WG2043904
Chloromethane	U		0.960	2.50	1	04/18/2023 15:18	WG2043904
2-Chlorotoluene	U		0.106	1.00	1	04/18/2023 15:18	WG2043904
4-Chlorotoluene	U		0.114	1.00	1	04/18/2023 15:18	WG2043904
1,2-Dibromo-3-Chloropropane	U		0.276	5.00	1	04/18/2023 15:18	WG2043904
Dibromomethane	U		0.122	1.00	1	04/18/2023 15:18	WG2043904
1,2-Dichlorobenzene	U		0.107	1.00	1	04/18/2023 15:18	WG2043904
1,3-Dichlorobenzene	U		0.110	1.00	1	04/18/2023 15:18	WG2043904
1,4-Dichlorobenzene	U		0.120	1.00	1	04/18/2023 15:18	WG2043904
Dichlorodifluoromethane	U		0.374	5.00	1	04/18/2023 15:18	WG2043904
1,1-Dichloroethane	U		0.100	1.00	1	04/18/2023 15:18	WG2043904
1,2-Dichloroethane	U		0.0819	1.00	1	04/18/2023 15:18	WG2043904
1,1-Dichloroethene	U		0.188	1.00	1	04/18/2023 15:18	WG2043904
cis-1,2-Dichloroethene	U		0.126	1.00	1	04/18/2023 15:18	WG2043904
trans-1,2-Dichloroethene	U		0.149	1.00	1	04/18/2023 15:18	WG2043904
1,2-Dichloropropane	U		0.149	1.00	1	04/18/2023 15:18	WG2043904
1,1-Dichloropropene	U		0.142	1.00	1	04/18/2023 15:18	WG2043904
1,3-Dichloropropane	U		0.110	1.00	1	04/18/2023 15:18	WG2043904
cis-1,3-Dichloropropene	U		0.111	1.00	1	04/18/2023 15:18	WG2043904
trans-1,3-Dichloropropene	U		0.118	1.00	1	04/18/2023 15:18	WG2043904
2,2-Dichloropropane	U		0.161	1.00	1	04/18/2023 15:18	WG2043904
Di-isopropyl ether	U		0.105	1.00	1	04/18/2023 15:18	WG2043904
Ethylbenzene	64.9		0.137	1.00	1	04/18/2023 15:18	WG2043904
Hexachloro-1,3-butadiene	U		0.337	1.00	1	04/18/2023 15:18	WG2043904

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Isopropylbenzene	2.25	J4	0.105	1.00	1	04/18/2023 15:18	WG2043904
p-Isopropyltoluene	U		0.120	1.00	1	04/18/2023 15:18	WG2043904
2-Butanone (MEK)	U		1.19	10.0	1	04/18/2023 15:18	WG2043904
Methylene Chloride	U		0.430	5.00	1	04/18/2023 15:18	WG2043904
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0	1	04/18/2023 15:18	WG2043904
Methyl tert-butyl ether	U		0.101	1.00	1	04/18/2023 15:18	WG2043904
Naphthalene	1.12	C3 J	1.00	5.00	1	04/18/2023 15:18	WG2043904
n-Propylbenzene	3.64		0.0993	1.00	1	04/18/2023 15:18	WG2043904
Styrene	U		0.118	1.00	1	04/18/2023 15:18	WG2043904
1,1,1,2-Tetrachloroethane	U		0.147	1.00	1	04/18/2023 15:18	WG2043904
1,1,2,2-Tetrachloroethane	U		0.133	1.00	1	04/18/2023 15:18	WG2043904
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00	1	04/18/2023 15:18	WG2043904
Tetrachloroethene	U		0.300	1.00	1	04/18/2023 15:18	WG2043904
Toluene	5.15		0.278	1.00	1	04/18/2023 15:18	WG2043904
1,2,3-Trichlorobenzene	U		0.230	1.00	1	04/18/2023 15:18	WG2043904
1,2,4-Trichlorobenzene	U		0.481	1.00	1	04/18/2023 15:18	WG2043904
1,1,1-Trichloroethane	U		0.149	1.00	1	04/18/2023 15:18	WG2043904
1,1,2-Trichloroethane	U		0.158	1.00	1	04/18/2023 15:18	WG2043904
Trichloroethene	U		0.190	1.00	1	04/18/2023 15:18	WG2043904
Trichlorofluoromethane	U		0.160	5.00	1	04/18/2023 15:18	WG2043904
1,2,4-Trimethylbenzene	28.2		0.322	1.00	1	04/18/2023 15:18	WG2043904
1,2,3-Trimethylbenzene	2.93		0.104	1.00	1	04/18/2023 15:18	WG2043904
1,3,5-Trimethylbenzene	1.56		0.104	1.00	1	04/18/2023 15:18	WG2043904
Vinyl chloride	U	J4	0.234	1.00	1	04/18/2023 15:18	WG2043904
Xylenes, Total	61.7		0.174	3.00	1	04/18/2023 15:18	WG2043904
o-Xylene	2.16	C3 J4	0.174	1.00	1	04/18/2023 15:18	WG2043904
m&p-Xylene	59.5		0.430	2.00	1	04/18/2023 15:18	WG2043904
(S) Toluene-d8	99.0			80.0-120		04/18/2023 15:18	WG2043904
(S) 4-Bromofluorobenzene	89.0			77.0-126		04/18/2023 15:18	WG2043904
(S) 1,2-Dichloroethane-d4	105			70.0-130		04/18/2023 15:18	WG2043904

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Sample Narrative:

L1605824-04 WG2043126: Non-target compounds too high to run at a lower dilution.

Semi-Volatile Organic Compounds (GC) by Method AK102

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
AK102 DRO C10-C25	547	B J	189	888	1.11	04/21/2023 05:14	WG2045356
(S) o-Terphenyl	64.6			50.0-150		04/21/2023 05:14	WG2045356

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Anthracene	U		0.0205	0.0540	1.08	04/18/2023 03:20	WG2042811
Acenaphthene	U		0.0205	0.0540	1.08	04/18/2023 03:20	WG2042811
Acenaphthylene	U		0.0184	0.0540	1.08	04/18/2023 03:20	WG2042811
Benzo(a)anthracene	U		0.0216	0.0540	1.08	04/18/2023 03:20	WG2042811
Benzo(a)pyrene	U		0.0194	0.0540	1.08	04/18/2023 03:20	WG2042811
Benzo(b)fluoranthene	U		0.0184	0.0540	1.08	04/18/2023 03:20	WG2042811
Benzo(g,h,i)perylene	U		0.0194	0.0540	1.08	04/18/2023 03:20	WG2042811
Benzo(k)fluoranthene	U		0.0216	0.270	1.08	04/18/2023 03:20	WG2042811
Chrysene	U		0.0194	0.0540	1.08	04/18/2023 03:20	WG2042811
Dibenz(a,h)anthracene	U		0.0194	0.0540	1.08	04/18/2023 03:20	WG2042811
Fluoranthene	0.0136	J	0.0119	0.0540	1.08	04/18/2023 03:20	WG2042811
Fluorene	U		0.0184	0.0540	1.08	04/18/2023 03:20	WG2042811

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Indeno(1,2,3-cd)pyrene	U		0.0194	0.0540	1.08	04/18/2023 03:20	WG2042811
Naphthalene	1.43		0.138	0.540	1.08	04/18/2023 03:20	WG2042811
Phenanthrene	0.0253	U	0.0194	0.0540	1.08	04/18/2023 03:20	WG2042811
Pyrene	U		0.0184	0.0540	1.08	04/18/2023 03:20	WG2042811
1-Methylnaphthalene	0.0517	U	0.0216	0.540	1.08	04/18/2023 03:20	WG2042811
2-Methylnaphthalene	0.0457	U	0.0302	0.540	1.08	04/18/2023 03:20	WG2042811
2-Chloronaphthalene	U		0.0130	0.540	1.08	04/18/2023 03:20	WG2042811
(S) Nitrobenzene-d5	80.0			11.0-135		04/18/2023 03:20	WG2042811
(S) 2-Fluorobiphenyl	81.4			32.0-120		04/18/2023 03:20	WG2042811
(S) p-Terphenyl-d14	77.2			23.0-122		04/18/2023 03:20	WG2042811

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Lead	U		2.99	6.00	1	04/21/2023 11:15	WG2043056

Volatile Organic Compounds (GC) by Method AK101

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TPHGAK C6 to C10	4680		28.7	100	1	04/23/2023 22:35	WG2045887
(S) a,a,a-Trifluorotoluene(FID)	89.7			50.0-150		04/23/2023 22:35	WG2045887

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		11.3	50.0	1	04/18/2023 15:40	WG2043904
1,2,3-Trichloropropane	U		0.500	1.25	250	04/18/2023 19:00	WG2043741
Acrolein	U	C3	2.54	50.0	1	04/18/2023 15:40	WG2043904
1,2-Dibromoethane	7.25		1.03	1.25	250	04/18/2023 19:00	WG2043741
Acrylonitrile	U		0.671	10.0	1	04/18/2023 15:40	WG2043904
Benzene	22.6	V	0.0941	1.00	1	04/18/2023 15:40	WG2043904
Bromobenzene	U		0.118	1.00	1	04/18/2023 15:40	WG2043904
Bromochloromethane	U		0.128	1.00	1	04/18/2023 15:40	WG2043904
Bromodichloromethane	U		0.136	1.00	1	04/18/2023 15:40	WG2043904
Bromoform	U		0.129	1.00	1	04/18/2023 15:40	WG2043904
Bromomethane	U		0.605	5.00	1	04/18/2023 15:40	WG2043904
n-Butylbenzene	U	J5	0.157	1.00	1	04/18/2023 15:40	WG2043904
sec-Butylbenzene	U	J5	0.125	1.00	1	04/18/2023 15:40	WG2043904
tert-Butylbenzene	U		0.127	1.00	1	04/18/2023 15:40	WG2043904
Carbon disulfide	U		0.0962	1.00	1	04/18/2023 15:40	WG2043904
Carbon tetrachloride	U		0.128	1.00	1	04/18/2023 15:40	WG2043904
Chlorobenzene	U		0.116	1.00	1	04/18/2023 15:40	WG2043904
Chlorodibromomethane	U		0.140	1.00	1	04/18/2023 15:40	WG2043904
Chloroethane	U		0.192	5.00	1	04/18/2023 15:40	WG2043904
Chloroform	U		0.111	5.00	1	04/18/2023 15:40	WG2043904
Chloromethane	U		0.960	2.50	1	04/18/2023 15:40	WG2043904
2-Chlorotoluene	U	J5	0.106	1.00	1	04/18/2023 15:40	WG2043904
4-Chlorotoluene	U		0.114	1.00	1	04/18/2023 15:40	WG2043904
1,2-Dibromo-3-Chloropropane	U		0.276	5.00	1	04/18/2023 15:40	WG2043904
Dibromomethane	U		0.122	1.00	1	04/18/2023 15:40	WG2043904
1,2-Dichlorobenzene	U		0.107	1.00	1	04/18/2023 15:40	WG2043904
1,3-Dichlorobenzene	U		0.110	1.00	1	04/18/2023 15:40	WG2043904
1,4-Dichlorobenzene	U		0.120	1.00	1	04/18/2023 15:40	WG2043904
Dichlorodifluoromethane	U		0.374	5.00	1	04/18/2023 15:40	WG2043904
1,1-Dichloroethane	U		0.100	1.00	1	04/18/2023 15:40	WG2043904
1,2-Dichloroethane	8.62	J5	0.0819	1.00	1	04/18/2023 15:40	WG2043904
1,1-Dichloroethene	U		0.188	1.00	1	04/18/2023 15:40	WG2043904
cis-1,2-Dichloroethene	U		0.126	1.00	1	04/18/2023 15:40	WG2043904
trans-1,2-Dichloroethene	U		0.149	1.00	1	04/18/2023 15:40	WG2043904
1,2-Dichloropropane	U		0.149	1.00	1	04/18/2023 15:40	WG2043904
1,1-Dichloropropene	U		0.142	1.00	1	04/18/2023 15:40	WG2043904
1,3-Dichloropropane	U		0.110	1.00	1	04/18/2023 15:40	WG2043904
cis-1,3-Dichloropropene	U		0.111	1.00	1	04/18/2023 15:40	WG2043904
trans-1,3-Dichloropropene	U		0.118	1.00	1	04/18/2023 15:40	WG2043904
2,2-Dichloropropane	U		0.161	1.00	1	04/18/2023 15:40	WG2043904
Di-isopropyl ether	U		0.105	1.00	1	04/18/2023 15:40	WG2043904
Ethylbenzene	32.7	V	0.137	1.00	1	04/18/2023 15:40	WG2043904
Hexachloro-1,3-butadiene	U		0.337	1.00	1	04/18/2023 15:40	WG2043904

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Isopropylbenzene	6.96	J4	0.105	1.00	1	04/18/2023 15:40	WG2043904
p-Isopropyltoluene	U	J5	0.120	1.00	1	04/18/2023 15:40	WG2043904
2-Butanone (MEK)	U		1.19	10.0	1	04/18/2023 15:40	WG2043904
Methylene Chloride	U		0.430	5.00	1	04/18/2023 15:40	WG2043904
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0	1	04/18/2023 15:40	WG2043904
Methyl tert-butyl ether	U		0.101	1.00	1	04/18/2023 15:40	WG2043904
Naphthalene	23.6	C3 V	1.00	5.00	1	04/18/2023 15:40	WG2043904
n-Propylbenzene	9.87	J5	0.0993	1.00	1	04/18/2023 15:40	WG2043904
Styrene	U	J5	0.118	1.00	1	04/18/2023 15:40	WG2043904
1,1,1,2-Tetrachloroethane	U		0.147	1.00	1	04/18/2023 15:40	WG2043904
1,1,2,2-Tetrachloroethane	U		0.133	1.00	1	04/18/2023 15:40	WG2043904
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00	1	04/18/2023 15:40	WG2043904
Tetrachloroethene	U		0.300	1.00	1	04/18/2023 15:40	WG2043904
Toluene	59.8	V	0.278	1.00	1	04/18/2023 15:40	WG2043904
1,2,3-Trichlorobenzene	U		0.230	1.00	1	04/18/2023 15:40	WG2043904
1,2,4-Trichlorobenzene	U		0.481	1.00	1	04/18/2023 15:40	WG2043904
1,1,1-Trichloroethane	U		0.149	1.00	1	04/18/2023 15:40	WG2043904
1,1,2-Trichloroethane	U		0.158	1.00	1	04/18/2023 15:40	WG2043904
Trichloroethene	U		0.190	1.00	1	04/18/2023 15:40	WG2043904
Trichlorofluoromethane	U		0.160	5.00	1	04/18/2023 15:40	WG2043904
1,2,4-Trimethylbenzene	581		6.44	20.0	20	04/20/2023 23:24	WG2045669
1,2,3-Trimethylbenzene	187	V	0.104	1.00	1	04/18/2023 15:40	WG2043904
1,3,5-Trimethylbenzene	192	V	0.104	1.00	1	04/18/2023 15:40	WG2043904
Vinyl chloride	U	J4	0.234	1.00	1	04/18/2023 15:40	WG2043904
Xylenes, Total	2170		3.48	60.0	20	04/20/2023 23:24	WG2045669
o-Xylene	695		3.48	20.0	20	04/20/2023 23:24	WG2045669
m&p-Xylene	1470		8.60	40.0	20	04/20/2023 23:24	WG2045669
(S) Toluene-d8	98.2			80.0-120		04/18/2023 15:40	WG2043904
(S) Toluene-d8	106			80.0-120		04/20/2023 23:24	WG2045669
(S) 4-Bromofluorobenzene	95.3			77.0-126		04/18/2023 15:40	WG2043904
(S) 4-Bromofluorobenzene	101			77.0-126		04/20/2023 23:24	WG2045669
(S) 1,2-Dichloroethane-d4	106			70.0-130		04/18/2023 15:40	WG2043904
(S) 1,2-Dichloroethane-d4	104			70.0-130		04/20/2023 23:24	WG2045669

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Sample Narrative:

L1605824-05 WG2043741: Non-target compounds too high to run at a lower dilution.

Semi-Volatile Organic Compounds (GC) by Method AK102

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
AK102 DRO C10-C25	1520	B	189	888	1.11	04/21/2023 04:04	WG2045356
(S) o-Terphenyl	63.3			50.0-150		04/21/2023 04:04	WG2045356

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Anthracene	U		0.0190	0.0500	1	04/18/2023 04:19	WG2042811
Acenaphthene	0.0877		0.0190	0.0500	1	04/18/2023 04:19	WG2042811
Acenaphthylene	U		0.0170	0.0500	1	04/18/2023 04:19	WG2042811
Benzo(a)anthracene	0.0250	J	0.0200	0.0500	1	04/18/2023 04:19	WG2042811
Benzo(a)pyrene	U		0.0180	0.0500	1	04/18/2023 04:19	WG2042811
Benzo(b)fluoranthene	0.0240	J	0.0170	0.0500	1	04/18/2023 04:19	WG2042811
Benzo(g,h,i)perylene	U		0.0180	0.0500	1	04/18/2023 04:19	WG2042811
Benzo(k)fluoranthene	U		0.0200	0.250	1	04/18/2023 04:19	WG2042811
Chrysene	0.0273	J	0.0180	0.0500	1	04/18/2023 04:19	WG2042811

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dibenz(a,h)anthracene	U		0.0180	0.0500	1	04/18/2023 04:19	WG2042811
Fluoranthene	0.0435	<u>J</u>	0.0110	0.0500	1	04/18/2023 04:19	WG2042811
Fluorene	0.0621		0.0170	0.0500	1	04/18/2023 04:19	WG2042811
Indeno(1,2,3-cd)pyrene	U		0.0180	0.0500	1	04/18/2023 04:19	WG2042811
Naphthalene	19.9	<u>V</u>	0.128	0.500	1	04/18/2023 04:19	WG2042811
Phenanthrene	0.0808		0.0180	0.0500	1	04/18/2023 04:19	WG2042811
Pyrene	0.0587		0.0170	0.0500	1	04/18/2023 04:19	WG2042811
1-Methylnaphthalene	5.56		0.0200	0.500	1	04/18/2023 04:19	WG2042811
2-Methylnaphthalene	7.69	<u>J5</u>	0.0280	0.500	1	04/18/2023 04:19	WG2042811
2-Chloronaphthalene	0.0608	<u>J</u>	0.0120	0.500	1	04/18/2023 04:19	WG2042811
(S) Nitrobenzene-d5	72.5			11.0-135		04/18/2023 04:19	WG2042811
(S) 2-Fluorobiphenyl	75.5			32.0-120		04/18/2023 04:19	WG2042811
(S) p-Terphenyl-d14	82.5			23.0-122		04/18/2023 04:19	WG2042811

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Lead	252		2.99	6.00	1	04/21/2023 11:55	WG2043056

Volatile Organic Compounds (GC) by Method AK101

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TPHGAK C6 to C10	108000		2870	10000	100	04/24/2023 13:02	WG2045887
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	91.3			50.0-150		04/24/2023 13:02	WG2045887

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		113	500	10	04/18/2023 18:11	WG2043904
1,2,3-Trichloropropane	U		4.00	10.0	2000	04/17/2023 14:58	WG2043126
Acrolein	U	<u>C3</u>	25.4	500	10	04/18/2023 18:11	WG2043904
1,2-Dibromoethane	228		8.20	10.0	2000	04/17/2023 14:58	WG2043126
Acrylonitrile	U		6.71	100	10	04/18/2023 18:11	WG2043904
Benzene	3310		18.8	200	200	04/20/2023 23:45	WG2045669
Bromobenzene	U		1.18	10.0	10	04/18/2023 18:11	WG2043904
Bromochloromethane	U		1.28	10.0	10	04/18/2023 18:11	WG2043904
Bromodichloromethane	U		1.36	10.0	10	04/18/2023 18:11	WG2043904
Bromoform	U		1.29	10.0	10	04/18/2023 18:11	WG2043904
Bromomethane	U		6.05	50.0	10	04/18/2023 18:11	WG2043904
n-Butylbenzene	21.7		1.57	10.0	10	04/18/2023 18:11	WG2043904
sec-Butylbenzene	14.0		1.25	10.0	10	04/18/2023 18:11	WG2043904
tert-Butylbenzene	U		1.27	10.0	10	04/18/2023 18:11	WG2043904
Carbon disulfide	U		0.962	10.0	10	04/18/2023 18:11	WG2043904
Carbon tetrachloride	U		1.28	10.0	10	04/18/2023 18:11	WG2043904
Chlorobenzene	U		1.16	10.0	10	04/18/2023 18:11	WG2043904
Chlorodibromomethane	U		1.40	10.0	10	04/18/2023 18:11	WG2043904
Chloroethane	U		1.92	50.0	10	04/18/2023 18:11	WG2043904
Chloroform	U		1.11	50.0	10	04/18/2023 18:11	WG2043904
Chloromethane	U		9.60	25.0	10	04/18/2023 18:11	WG2043904
2-Chlorotoluene	U		1.06	10.0	10	04/18/2023 18:11	WG2043904
4-Chlorotoluene	U		1.14	10.0	10	04/18/2023 18:11	WG2043904
1,2-Dibromo-3-Chloropropane	U		2.76	50.0	10	04/18/2023 18:11	WG2043904
Dibromomethane	U		1.22	10.0	10	04/18/2023 18:11	WG2043904
1,2-Dichlorobenzene	U		1.07	10.0	10	04/18/2023 18:11	WG2043904
1,3-Dichlorobenzene	U		1.10	10.0	10	04/18/2023 18:11	WG2043904
1,4-Dichlorobenzene	U		1.20	10.0	10	04/18/2023 18:11	WG2043904
Dichlorodifluoromethane	U		3.74	50.0	10	04/18/2023 18:11	WG2043904
1,1-Dichloroethane	U		1.00	10.0	10	04/18/2023 18:11	WG2043904
1,2-Dichloroethane	104		0.819	10.0	10	04/18/2023 18:11	WG2043904
1,1-Dichloroethene	U		1.88	10.0	10	04/18/2023 18:11	WG2043904
cis-1,2-Dichloroethene	U		1.26	10.0	10	04/18/2023 18:11	WG2043904
trans-1,2-Dichloroethene	U		1.49	10.0	10	04/18/2023 18:11	WG2043904
1,2-Dichloropropane	U		1.49	10.0	10	04/18/2023 18:11	WG2043904
1,1-Dichloropropene	U		1.42	10.0	10	04/18/2023 18:11	WG2043904
1,3-Dichloropropane	U		1.10	10.0	10	04/18/2023 18:11	WG2043904
cis-1,3-Dichloropropene	U		1.11	10.0	10	04/18/2023 18:11	WG2043904
trans-1,3-Dichloropropene	U		1.18	10.0	10	04/18/2023 18:11	WG2043904
2,2-Dichloropropane	U		1.61	10.0	10	04/18/2023 18:11	WG2043904
Di-isopropyl ether	U		1.05	10.0	10	04/18/2023 18:11	WG2043904
Ethylbenzene	3650		27.4	200	200	04/20/2023 23:45	WG2045669
Hexachloro-1,3-butadiene	U		3.37	10.0	10	04/18/2023 18:11	WG2043904

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Isopropylbenzene	95.6	J4	1.05	10.0	10	04/18/2023 18:11	WG2043904
p-Isopropyltoluene	U		1.20	10.0	10	04/18/2023 18:11	WG2043904
2-Butanone (MEK)	U		11.9	100	10	04/18/2023 18:11	WG2043904
Methylene Chloride	U		4.30	50.0	10	04/18/2023 18:11	WG2043904
4-Methyl-2-pentanone (MIBK)	U		4.78	100	10	04/18/2023 18:11	WG2043904
Methyl tert-butyl ether	U		1.01	10.0	10	04/18/2023 18:11	WG2043904
Naphthalene	267	C3	10.0	50.0	10	04/18/2023 18:11	WG2043904
n-Propylbenzene	248		0.993	10.0	10	04/18/2023 18:11	WG2043904
Styrene	U		1.18	10.0	10	04/18/2023 18:11	WG2043904
1,1,1,2-Tetrachloroethane	U		1.47	10.0	10	04/18/2023 18:11	WG2043904
1,1,2,2-Tetrachloroethane	U		1.33	10.0	10	04/18/2023 18:11	WG2043904
1,1,2-Trichlorotrifluoroethane	U		1.80	10.0	10	04/18/2023 18:11	WG2043904
Tetrachloroethene	U		3.00	10.0	10	04/18/2023 18:11	WG2043904
Toluene	32900		55.6	200	200	04/20/2023 23:45	WG2045669
1,2,3-Trichlorobenzene	U		2.30	10.0	10	04/18/2023 18:11	WG2043904
1,2,4-Trichlorobenzene	U		4.81	10.0	10	04/18/2023 18:11	WG2043904
1,1,1-Trichloroethane	U		1.49	10.0	10	04/18/2023 18:11	WG2043904
1,1,2-Trichloroethane	U		1.58	10.0	10	04/18/2023 18:11	WG2043904
Trichloroethene	U		1.90	10.0	10	04/18/2023 18:11	WG2043904
Trichlorofluoromethane	U		1.60	50.0	10	04/18/2023 18:11	WG2043904
1,2,4-Trimethylbenzene	2030		64.4	200	200	04/20/2023 23:45	WG2045669
1,2,3-Trimethylbenzene	570		1.04	10.0	10	04/18/2023 18:11	WG2043904
1,3,5-Trimethylbenzene	565		1.04	10.0	10	04/18/2023 18:11	WG2043904
Vinyl chloride	U	J4	2.34	10.0	10	04/18/2023 18:11	WG2043904
Xylenes, Total	24000		34.8	600	200	04/20/2023 23:45	WG2045669
o-Xylene	7330		34.8	200	200	04/20/2023 23:45	WG2045669
m&p-Xylene	16700		86.0	400	200	04/20/2023 23:45	WG2045669
(S) Toluene-d8	86.1			80.0-120		04/18/2023 18:11	WG2043904
(S) Toluene-d8	102			80.0-120		04/20/2023 23:45	WG2045669
(S) 4-Bromofluorobenzene	91.9			77.0-126		04/18/2023 18:11	WG2043904
(S) 4-Bromofluorobenzene	98.4			77.0-126		04/20/2023 23:45	WG2045669
(S) 1,2-Dichloroethane-d4	115			70.0-130		04/18/2023 18:11	WG2043904
(S) 1,2-Dichloroethane-d4	104			70.0-130		04/20/2023 23:45	WG2045669

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Semi-Volatile Organic Compounds (GC) by Method AK102

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
AK102 DRO C10-C25	21700		189	888	1.11	04/21/2023 05:37	WG2045356
(S) o-Terphenyl	79.0			50.0-150		04/21/2023 05:37	WG2045356

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

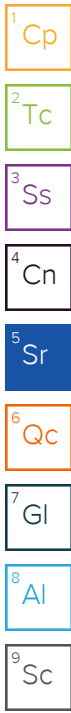
Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Anthracene	U		0.0190	0.0500	1	04/18/2023 05:18	WG2042811
Acenaphthene	U		0.0190	0.0500	1	04/18/2023 05:18	WG2042811
Acenaphthylene	U		0.0170	0.0500	1	04/18/2023 05:18	WG2042811
Benzo(a)anthracene	U		0.0200	0.0500	1	04/18/2023 05:18	WG2042811
Benzo(a)pyrene	U		0.0180	0.0500	1	04/18/2023 05:18	WG2042811
Benzo(b)fluoranthene	0.0187	U	0.0170	0.0500	1	04/18/2023 05:18	WG2042811
Benzo(g,h,i)perylene	0.0262	U	0.0180	0.0500	1	04/18/2023 05:18	WG2042811
Benzo(k)fluoranthene	U		0.0200	0.250	1	04/18/2023 05:18	WG2042811
Chrysene	U		0.0180	0.0500	1	04/18/2023 05:18	WG2042811
Dibenz(a,h)anthracene	0.0194	U	0.0180	0.0500	1	04/18/2023 05:18	WG2042811
Fluoranthene	0.0251	U	0.0110	0.0500	1	04/18/2023 05:18	WG2042811
Fluorene	U		0.0170	0.0500	1	04/18/2023 05:18	WG2042811

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Indeno(1,2,3-cd)pyrene	0.0195	<u>J</u>	0.0180	0.0500	1	04/18/2023 05:18	WG2042811
Naphthalene	233		1.28	5.00	10	04/19/2023 21:02	WG2042811
Phenanthrene	U		0.0180	0.0500	1	04/18/2023 05:18	WG2042811
Pyrene	0.0356	<u>J</u>	0.0170	0.0500	1	04/18/2023 05:18	WG2042811
1-Methylnaphthalene	31.1		0.0200	0.500	1	04/18/2023 05:18	WG2042811
2-Methylnaphthalene	56.9		0.0280	0.500	1	04/18/2023 05:18	WG2042811
2-Chloronaphthalene	U		0.0120	0.500	1	04/18/2023 05:18	WG2042811
(S) Nitrobenzene-d5	0.000	<u>J2</u>		11.0-135		04/19/2023 21:02	WG2042811
(S) Nitrobenzene-d5	162	<u>J1</u>		11.0-135		04/18/2023 05:18	WG2042811
(S) 2-Fluorobiphenyl	46.4			32.0-120		04/18/2023 05:18	WG2042811
(S) 2-Fluorobiphenyl	73.0			32.0-120		04/19/2023 21:02	WG2042811
(S) p-Terphenyl-d14	59.5			23.0-122		04/19/2023 21:02	WG2042811
(S) p-Terphenyl-d14	58.0			23.0-122		04/18/2023 05:18	WG2042811

Sample Narrative:

L1605824-06 WG2042811: Surrogate failure due to matrix interference



Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Lead	257		2.99	6.00	1	04/21/2023 11:58	WG2043056

Volatile Organic Compounds (GC) by Method AK101

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TPHGAK C6 to C10	113000		5740	20000	200	04/24/2023 13:41	WG2045887
(S) <i>a,a,a-Trifluorotoluene(FID)</i>	88.9			50.0-150		04/24/2023 13:41	WG2045887

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		226	1000	20	04/18/2023 18:33	WG2043904
1,2,3-Trichloropropane	U		4.00	10.0	2000	04/17/2023 15:21	WG2043126
Acrolein	U	C3	50.8	1000	20	04/18/2023 18:33	WG2043904
1,2-Dibromoethane	228		8.20	10.0	2000	04/17/2023 15:21	WG2043126
Acrylonitrile	U		13.4	200	20	04/18/2023 18:33	WG2043904
Benzene	3250		1.88	20.0	20	04/18/2023 18:33	WG2043904
Bromobenzene	U		2.36	20.0	20	04/18/2023 18:33	WG2043904
Bromochloromethane	U		2.56	20.0	20	04/18/2023 18:33	WG2043904
Bromodichloromethane	U		2.72	20.0	20	04/18/2023 18:33	WG2043904
Bromoform	U		2.58	20.0	20	04/18/2023 18:33	WG2043904
Bromomethane	U		12.1	100	20	04/18/2023 18:33	WG2043904
n-Butylbenzene	18.9	U	3.14	20.0	20	04/18/2023 18:33	WG2043904
sec-Butylbenzene	11.8	U	2.50	20.0	20	04/18/2023 18:33	WG2043904
tert-Butylbenzene	U		2.54	20.0	20	04/18/2023 18:33	WG2043904
Carbon disulfide	U		1.92	20.0	20	04/18/2023 18:33	WG2043904
Carbon tetrachloride	U		2.56	20.0	20	04/18/2023 18:33	WG2043904
Chlorobenzene	U		2.32	20.0	20	04/18/2023 18:33	WG2043904
Chlorodibromomethane	U		2.80	20.0	20	04/18/2023 18:33	WG2043904
Chloroethane	U		3.84	100	20	04/18/2023 18:33	WG2043904
Chloroform	U		2.22	100	20	04/18/2023 18:33	WG2043904
Chloromethane	U		19.2	50.0	20	04/18/2023 18:33	WG2043904
2-Chlorotoluene	U		2.12	20.0	20	04/18/2023 18:33	WG2043904
4-Chlorotoluene	U		2.28	20.0	20	04/18/2023 18:33	WG2043904
1,2-Dibromo-3-Chloropropane	U		5.52	100	20	04/18/2023 18:33	WG2043904
Dibromomethane	U		2.44	20.0	20	04/18/2023 18:33	WG2043904
1,2-Dichlorobenzene	U		2.14	20.0	20	04/18/2023 18:33	WG2043904
1,3-Dichlorobenzene	U		2.20	20.0	20	04/18/2023 18:33	WG2043904
1,4-Dichlorobenzene	U		2.40	20.0	20	04/18/2023 18:33	WG2043904
Dichlorodifluoromethane	U		7.48	100	20	04/18/2023 18:33	WG2043904
1,1-Dichloroethane	U		2.00	20.0	20	04/18/2023 18:33	WG2043904
1,2-Dichloroethane	105		1.64	20.0	20	04/18/2023 18:33	WG2043904
1,1-Dichloroethene	U		3.76	20.0	20	04/18/2023 18:33	WG2043904
cis-1,2-Dichloroethene	U		2.52	20.0	20	04/18/2023 18:33	WG2043904
trans-1,2-Dichloroethene	U		2.98	20.0	20	04/18/2023 18:33	WG2043904
1,2-Dichloropropane	U		2.98	20.0	20	04/18/2023 18:33	WG2043904
1,1-Dichloropropene	U		2.84	20.0	20	04/18/2023 18:33	WG2043904
1,3-Dichloropropane	U		2.20	20.0	20	04/18/2023 18:33	WG2043904
cis-1,3-Dichloropropene	U		2.22	20.0	20	04/18/2023 18:33	WG2043904
trans-1,3-Dichloropropene	U		2.36	20.0	20	04/18/2023 18:33	WG2043904
2,2-Dichloropropane	U		3.22	20.0	20	04/18/2023 18:33	WG2043904
Di-isopropyl ether	U		2.10	20.0	20	04/18/2023 18:33	WG2043904
Ethylbenzene	3490		2.74	20.0	20	04/18/2023 18:33	WG2043904
Hexachloro-1,3-butadiene	U		6.74	20.0	20	04/18/2023 18:33	WG2043904

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

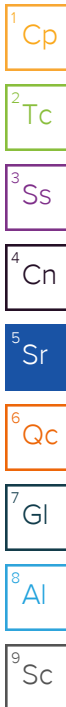
7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Isopropylbenzene	89.6	J4	2.10	20.0	20	04/18/2023 18:33	WG2043904
p-Isopropyltoluene	U		2.40	20.0	20	04/18/2023 18:33	WG2043904
2-Butanone (MEK)	U		23.8	200	20	04/18/2023 18:33	WG2043904
Methylene Chloride	U		8.60	100	20	04/18/2023 18:33	WG2043904
4-Methyl-2-pentanone (MIBK)	U		9.56	200	20	04/18/2023 18:33	WG2043904
Methyl tert-butyl ether	U		2.02	20.0	20	04/18/2023 18:33	WG2043904
Naphthalene	277	C3	20.0	100	20	04/18/2023 18:33	WG2043904
n-Propylbenzene	242		1.99	20.0	20	04/18/2023 18:33	WG2043904
Styrene	U		2.36	20.0	20	04/18/2023 18:33	WG2043904
1,1,1,2-Tetrachloroethane	U		2.94	20.0	20	04/18/2023 18:33	WG2043904
1,1,2,2-Tetrachloroethane	U		2.66	20.0	20	04/18/2023 18:33	WG2043904
1,1,2-Trichlorotrifluoroethane	U		3.60	20.0	20	04/18/2023 18:33	WG2043904
Tetrachloroethene	U		6.00	20.0	20	04/18/2023 18:33	WG2043904
Toluene	30900		139	500	500	04/21/2023 00:05	WG2045669
1,2,3-Trichlorobenzene	U		4.60	20.0	20	04/18/2023 18:33	WG2043904
1,2,4-Trichlorobenzene	U		9.62	20.0	20	04/18/2023 18:33	WG2043904
1,1,1-Trichloroethane	U		2.98	20.0	20	04/18/2023 18:33	WG2043904
1,1,2-Trichloroethane	U		3.16	20.0	20	04/18/2023 18:33	WG2043904
Trichloroethene	U		3.80	20.0	20	04/18/2023 18:33	WG2043904
Trichlorofluoromethane	U		3.20	100	20	04/18/2023 18:33	WG2043904
1,2,4-Trimethylbenzene	2380		6.44	20.0	20	04/18/2023 18:33	WG2043904
1,2,3-Trimethylbenzene	570		2.08	20.0	20	04/18/2023 18:33	WG2043904
1,3,5-Trimethylbenzene	566		2.08	20.0	20	04/18/2023 18:33	WG2043904
Vinyl chloride	U	J4	4.68	20.0	20	04/18/2023 18:33	WG2043904
Xylenes, Total	22500		87.0	1500	500	04/21/2023 00:05	WG2045669
o-Xylene	6940		87.0	500	500	04/21/2023 00:05	WG2045669
m&p-Xylene	15600		215	1000	500	04/21/2023 00:05	WG2045669
(S) Toluene-d8	86.3			80.0-120		04/18/2023 18:33	WG2043904
(S) Toluene-d8	99.7			80.0-120		04/21/2023 00:05	WG2045669
(S) 4-Bromofluorobenzene	91.6			77.0-126		04/18/2023 18:33	WG2043904
(S) 4-Bromofluorobenzene	96.0			77.0-126		04/21/2023 00:05	WG2045669
(S) 1,2-Dichloroethane-d4	111			70.0-130		04/18/2023 18:33	WG2043904
(S) 1,2-Dichloroethane-d4	105			70.0-130		04/21/2023 00:05	WG2045669



Semi-Volatile Organic Compounds (GC) by Method AK102

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
AK102 DRO C10-C25	21400		170	800	1	04/21/2023 06:00	WG2045356
(S) o-Terphenyl	90.9			50.0-150		04/21/2023 06:00	WG2045356

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Anthracene	U		0.0198	0.0520	1.04	04/18/2023 05:38	WG2042811
Acenaphthene	U		0.0198	0.0520	1.04	04/18/2023 05:38	WG2042811
Acenaphthylene	U		0.0177	0.0520	1.04	04/18/2023 05:38	WG2042811
Benzo(a)anthracene	U		0.0208	0.0520	1.04	04/18/2023 05:38	WG2042811
Benzo(a)pyrene	U		0.0187	0.0520	1.04	04/18/2023 05:38	WG2042811
Benzo(b)fluoranthene	U		0.0177	0.0520	1.04	04/18/2023 05:38	WG2042811
Benzo(g,h,i)perylene	U		0.0187	0.0520	1.04	04/18/2023 05:38	WG2042811
Benzo(k)fluoranthene	U		0.0208	0.260	1.04	04/18/2023 05:38	WG2042811
Chrysene	U		0.0187	0.0520	1.04	04/18/2023 05:38	WG2042811
Dibenz(a,h)anthracene	U		0.0187	0.0520	1.04	04/18/2023 05:38	WG2042811
Fluoranthene	0.0209	J	0.0114	0.0520	1.04	04/18/2023 05:38	WG2042811
Fluorene	0.116		0.0177	0.0520	1.04	04/18/2023 05:38	WG2042811

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Indeno(1,2,3-cd)pyrene	U		0.0187	0.0520	1.04	04/18/2023 05:38	WG2042811
Naphthalene	249		1.33	5.20	10.4	04/19/2023 21:19	WG2042811
Phenanthrene	U		0.0187	0.0520	1.04	04/18/2023 05:38	WG2042811
Pyrene	0.0304	<u>J</u>	0.0177	0.0520	1.04	04/18/2023 05:38	WG2042811
1-Methylnaphthalene	29.4		0.0208	0.520	1.04	04/18/2023 05:38	WG2042811
2-Methylnaphthalene	54.2		0.0291	0.520	1.04	04/18/2023 05:38	WG2042811
2-Chloronaphthalene	U		0.0125	0.520	1.04	04/18/2023 05:38	WG2042811
<i>(S)</i> Nitrobenzene-d5	157	<u>J1</u>		11.0-135		04/18/2023 05:38	WG2042811
<i>(S)</i> Nitrobenzene-d5	0.000	<u>J2</u>		11.0-135		04/19/2023 21:19	WG2042811
<i>(S)</i> 2-Fluorobiphenyl	68.8			32.0-120		04/19/2023 21:19	WG2042811
<i>(S)</i> 2-Fluorobiphenyl	41.6			32.0-120		04/18/2023 05:38	WG2042811
<i>(S)</i> p-Terphenyl-d14	46.7			23.0-122		04/18/2023 05:38	WG2042811
<i>(S)</i> p-Terphenyl-d14	51.4			23.0-122		04/19/2023 21:19	WG2042811

Sample Narrative:

L1605824-07 WG2042811: Surrogate failure due to matrix interference

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Lead	U		2.99	6.00	1	04/21/2023 12:01	WG2043056

Volatile Organic Compounds (GC) by Method AK101

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TPHGAK C6 to C10	U		28.7	100	1	04/19/2023 18:42	WG2042702
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	89.4			50.0-150		04/19/2023 18:42	WG2042702

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		11.3	50.0	1	04/18/2023 12:48	WG2043904
1,2,3-Trichloropropane	U		0.00200	0.00500	1	04/17/2023 13:23	WG2043126
Acrolein	U	<u>C3</u>	2.54	50.0	1	04/18/2023 12:48	WG2043904
1,2-Dibromoethane	U		0.00410	0.00500	1	04/17/2023 13:23	WG2043126
Acrylonitrile	U		0.671	10.0	1	04/18/2023 12:48	WG2043904
Benzene	U		0.0941	1.00	1	04/18/2023 12:48	WG2043904
Bromobenzene	U		0.118	1.00	1	04/18/2023 12:48	WG2043904
Bromochloromethane	U		0.128	1.00	1	04/18/2023 12:48	WG2043904
Bromodichloromethane	U		0.136	1.00	1	04/18/2023 12:48	WG2043904
Bromoform	U		0.129	1.00	1	04/18/2023 12:48	WG2043904
Bromomethane	U		0.605	5.00	1	04/18/2023 12:48	WG2043904
n-Butylbenzene	U		0.157	1.00	1	04/18/2023 12:48	WG2043904
sec-Butylbenzene	U		0.125	1.00	1	04/18/2023 12:48	WG2043904
tert-Butylbenzene	U		0.127	1.00	1	04/18/2023 12:48	WG2043904
Carbon disulfide	U		0.0962	1.00	1	04/18/2023 12:48	WG2043904
Carbon tetrachloride	U		0.128	1.00	1	04/18/2023 12:48	WG2043904
Chlorobenzene	U		0.116	1.00	1	04/18/2023 12:48	WG2043904
Chlorodibromomethane	U		0.140	1.00	1	04/18/2023 12:48	WG2043904
Chloroethane	U		0.192	5.00	1	04/18/2023 12:48	WG2043904
Chloroform	0.324	<u>U</u>	0.111	5.00	1	04/18/2023 12:48	WG2043904
Chloromethane	U		0.960	2.50	1	04/18/2023 12:48	WG2043904
2-Chlorotoluene	U		0.106	1.00	1	04/18/2023 12:48	WG2043904
4-Chlorotoluene	U		0.114	1.00	1	04/18/2023 12:48	WG2043904
1,2-Dibromo-3-Chloropropane	U		0.276	5.00	1	04/18/2023 12:48	WG2043904
Dibromomethane	U		0.122	1.00	1	04/18/2023 12:48	WG2043904
1,2-Dichlorobenzene	U		0.107	1.00	1	04/18/2023 12:48	WG2043904
1,3-Dichlorobenzene	U		0.110	1.00	1	04/18/2023 12:48	WG2043904
1,4-Dichlorobenzene	U		0.120	1.00	1	04/18/2023 12:48	WG2043904
Dichlorodifluoromethane	U		0.374	5.00	1	04/18/2023 12:48	WG2043904
1,1-Dichloroethane	U		0.100	1.00	1	04/18/2023 12:48	WG2043904
1,2-Dichloroethane	U		0.0819	1.00	1	04/18/2023 12:48	WG2043904
1,1-Dichloroethene	U		0.188	1.00	1	04/18/2023 12:48	WG2043904
cis-1,2-Dichloroethene	U		0.126	1.00	1	04/18/2023 12:48	WG2043904
trans-1,2-Dichloroethene	U		0.149	1.00	1	04/18/2023 12:48	WG2043904
1,2-Dichloropropane	U		0.149	1.00	1	04/18/2023 12:48	WG2043904
1,1-Dichloropropene	U		0.142	1.00	1	04/18/2023 12:48	WG2043904
1,3-Dichloropropane	U		0.110	1.00	1	04/18/2023 12:48	WG2043904
cis-1,3-Dichloropropene	U		0.111	1.00	1	04/18/2023 12:48	WG2043904
trans-1,3-Dichloropropene	U		0.118	1.00	1	04/18/2023 12:48	WG2043904
2,2-Dichloropropane	U		0.161	1.00	1	04/18/2023 12:48	WG2043904
Di-isopropyl ether	U		0.105	1.00	1	04/18/2023 12:48	WG2043904
Ethylbenzene	U		0.137	1.00	1	04/18/2023 12:48	WG2043904
Hexachloro-1,3-butadiene	U		0.337	1.00	1	04/18/2023 12:48	WG2043904

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Isopropylbenzene	U	J4	0.105	1.00	1	04/18/2023 12:48	WG2043904
p-Isopropyltoluene	U		0.120	1.00	1	04/18/2023 12:48	WG2043904
2-Butanone (MEK)	U		1.19	10.0	1	04/18/2023 12:48	WG2043904
Methylene Chloride	U		0.430	5.00	1	04/18/2023 12:48	WG2043904
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0	1	04/18/2023 12:48	WG2043904
Methyl tert-butyl ether	U		0.101	1.00	1	04/18/2023 12:48	WG2043904
Naphthalene	U	C3	1.00	5.00	1	04/18/2023 12:48	WG2043904
n-Propylbenzene	U		0.0993	1.00	1	04/18/2023 12:48	WG2043904
Styrene	U		0.118	1.00	1	04/18/2023 12:48	WG2043904
1,1,1,2-Tetrachloroethane	U		0.147	1.00	1	04/18/2023 12:48	WG2043904
1,1,2,2-Tetrachloroethane	U		0.133	1.00	1	04/18/2023 12:48	WG2043904
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00	1	04/18/2023 12:48	WG2043904
Tetrachloroethene	U		0.300	1.00	1	04/18/2023 12:48	WG2043904
Toluene	U		0.278	1.00	1	04/18/2023 12:48	WG2043904
1,2,3-Trichlorobenzene	U		0.230	1.00	1	04/18/2023 12:48	WG2043904
1,2,4-Trichlorobenzene	U		0.481	1.00	1	04/18/2023 12:48	WG2043904
1,1,1-Trichloroethane	U		0.149	1.00	1	04/18/2023 12:48	WG2043904
1,1,2-Trichloroethane	U		0.158	1.00	1	04/18/2023 12:48	WG2043904
Trichloroethene	U		0.190	1.00	1	04/18/2023 12:48	WG2043904
Trichlorofluoromethane	U		0.160	5.00	1	04/18/2023 12:48	WG2043904
1,2,4-Trimethylbenzene	U		0.322	1.00	1	04/18/2023 12:48	WG2043904
1,2,3-Trimethylbenzene	U		0.104	1.00	1	04/18/2023 12:48	WG2043904
1,3,5-Trimethylbenzene	U		0.104	1.00	1	04/18/2023 12:48	WG2043904
Vinyl chloride	U	J4	0.234	1.00	1	04/18/2023 12:48	WG2043904
Xylenes, Total	U		0.174	3.00	1	04/18/2023 12:48	WG2043904
o-Xylene	U	C3 J4	0.174	1.00	1	04/18/2023 12:48	WG2043904
m&p-Xylene	U		0.430	2.00	1	04/18/2023 12:48	WG2043904
(S) Toluene-d8	101			80.0-120		04/18/2023 12:48	WG2043904
(S) 4-Bromofluorobenzene	86.6			77.0-126		04/18/2023 12:48	WG2043904
(S) 1,2-Dichloroethane-d4	105			70.0-130		04/18/2023 12:48	WG2043904

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Semi-Volatile Organic Compounds (GC) by Method AK102

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
AK102 DRO C10-C25	408	B J	179	840	1.05	04/21/2023 06:24	WG2045356
(S) o-Terphenyl	83.5			50.0-150		04/21/2023 06:24	WG2045356

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Anthracene	U		0.0190	0.0500	1	04/18/2023 03:40	WG2042811
Acenaphthene	U		0.0190	0.0500	1	04/18/2023 03:40	WG2042811
Acenaphthylene	U		0.0170	0.0500	1	04/18/2023 03:40	WG2042811
Benzo(a)anthracene	0.0670		0.0200	0.0500	1	04/18/2023 03:40	WG2042811
Benzo(a)pyrene	0.0450	J	0.0180	0.0500	1	04/18/2023 03:40	WG2042811
Benzo(b)fluoranthene	0.0755		0.0170	0.0500	1	04/18/2023 03:40	WG2042811
Benzo(g,h,i)perylene	0.155		0.0180	0.0500	1	04/18/2023 03:40	WG2042811
Benzo(k)fluoranthene	0.141	J	0.0200	0.250	1	04/18/2023 03:40	WG2042811
Chrysene	0.198		0.0180	0.0500	1	04/18/2023 03:40	WG2042811
Dibenz(a,h)anthracene	0.259		0.0180	0.0500	1	04/18/2023 03:40	WG2042811
Fluoranthene	0.0174	J	0.0110	0.0500	1	04/18/2023 03:40	WG2042811
Fluorene	U		0.0170	0.0500	1	04/18/2023 03:40	WG2042811
Indeno(1,2,3-cd)pyrene	0.140		0.0180	0.0500	1	04/18/2023 03:40	WG2042811
Naphthalene	U		0.128	0.500	1	04/18/2023 03:40	WG2042811
Phenanthrene	U		0.0180	0.0500	1	04/18/2023 03:40	WG2042811

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Pyrene	U		0.0170	0.0500	1	04/18/2023 03:40	WG2042811
1-Methylnaphthalene	U		0.0200	0.500	1	04/18/2023 03:40	WG2042811
2-Methylnaphthalene	U		0.0280	0.500	1	04/18/2023 03:40	WG2042811
2-Chloronaphthalene	U		0.0120	0.500	1	04/18/2023 03:40	WG2042811
(S) Nitrobenzene-d5	75.8			11.0-135		04/18/2023 03:40	WG2042811
(S) 2-Fluorobiphenyl	75.8			32.0-120		04/18/2023 03:40	WG2042811
(S) p-Terphenyl-d14	91.6			23.0-122		04/18/2023 03:40	WG2042811

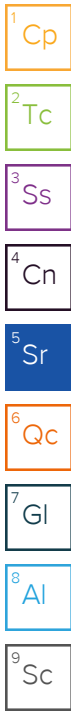
- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Volatile Organic Compounds (GC) by Method AK101

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TPHGAK C6 to C10	U		28.7	100	1	04/19/2023 16:48	WG2042702
(S) a,a,a-Trifluorotoluene(FID)	86.2			50.0-150		04/19/2023 16:48	WG2042702

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		11.3	50.0	1	04/18/2023 12:05	WG2043904
1,2,3-Trichloropropane	U		0.00200	0.00500	1	04/17/2023 10:13	WG2043126
Acrolein	U	C3	2.54	50.0	1	04/18/2023 12:05	WG2043904
1,2-Dibromoethane	U		0.00410	0.00500	1	04/17/2023 10:13	WG2043126
Acrylonitrile	U		0.671	10.0	1	04/18/2023 12:05	WG2043904
Benzene	U		0.0941	1.00	1	04/18/2023 12:05	WG2043904
Bromobenzene	U		0.118	1.00	1	04/18/2023 12:05	WG2043904
Bromochloromethane	U		0.128	1.00	1	04/18/2023 12:05	WG2043904
Bromodichloromethane	U		0.136	1.00	1	04/18/2023 12:05	WG2043904
Bromoform	U		0.129	1.00	1	04/18/2023 12:05	WG2043904
Bromomethane	U		0.605	5.00	1	04/18/2023 12:05	WG2043904
n-Butylbenzene	U		0.157	1.00	1	04/18/2023 12:05	WG2043904
sec-Butylbenzene	U		0.125	1.00	1	04/18/2023 12:05	WG2043904
tert-Butylbenzene	U		0.127	1.00	1	04/18/2023 12:05	WG2043904
Carbon disulfide	U		0.0962	1.00	1	04/18/2023 12:05	WG2043904
Carbon tetrachloride	U		0.128	1.00	1	04/18/2023 12:05	WG2043904
Chlorobenzene	U		0.116	1.00	1	04/18/2023 12:05	WG2043904
Chlorodibromomethane	U		0.140	1.00	1	04/18/2023 12:05	WG2043904
Chloroethane	U		0.192	5.00	1	04/18/2023 12:05	WG2043904
Chloroform	U		0.111	5.00	1	04/18/2023 12:05	WG2043904
Chloromethane	U		0.960	2.50	1	04/18/2023 12:05	WG2043904
2-Chlorotoluene	U		0.106	1.00	1	04/18/2023 12:05	WG2043904
4-Chlorotoluene	U		0.114	1.00	1	04/18/2023 12:05	WG2043904
1,2-Dibromo-3-Chloropropane	U		0.276	5.00	1	04/18/2023 12:05	WG2043904
Dibromomethane	U		0.122	1.00	1	04/18/2023 12:05	WG2043904
1,2-Dichlorobenzene	U		0.107	1.00	1	04/18/2023 12:05	WG2043904
1,3-Dichlorobenzene	U		0.110	1.00	1	04/18/2023 12:05	WG2043904
1,4-Dichlorobenzene	U		0.120	1.00	1	04/18/2023 12:05	WG2043904
Dichlorodifluoromethane	U		0.374	5.00	1	04/18/2023 12:05	WG2043904
1,1-Dichloroethane	U		0.100	1.00	1	04/18/2023 12:05	WG2043904
1,2-Dichloroethane	U		0.0819	1.00	1	04/18/2023 12:05	WG2043904
1,1-Dichloroethene	U		0.188	1.00	1	04/18/2023 12:05	WG2043904
cis-1,2-Dichloroethene	U		0.126	1.00	1	04/18/2023 12:05	WG2043904
trans-1,2-Dichloroethene	U		0.149	1.00	1	04/18/2023 12:05	WG2043904
1,2-Dichloropropane	U		0.149	1.00	1	04/18/2023 12:05	WG2043904
1,1-Dichloropropene	U		0.142	1.00	1	04/18/2023 12:05	WG2043904
1,3-Dichloropropane	U		0.110	1.00	1	04/18/2023 12:05	WG2043904
cis-1,3-Dichloropropene	U		0.111	1.00	1	04/18/2023 12:05	WG2043904
trans-1,3-Dichloropropene	U		0.118	1.00	1	04/18/2023 12:05	WG2043904
2,2-Dichloropropane	U		0.161	1.00	1	04/18/2023 12:05	WG2043904
Di-isopropyl ether	U		0.105	1.00	1	04/18/2023 12:05	WG2043904
Ethylbenzene	U		0.137	1.00	1	04/18/2023 12:05	WG2043904
Hexachloro-1,3-butadiene	U		0.337	1.00	1	04/18/2023 12:05	WG2043904
Isopropylbenzene	U	J4	0.105	1.00	1	04/18/2023 12:05	WG2043904
p-Isopropyltoluene	U		0.120	1.00	1	04/18/2023 12:05	WG2043904
2-Butanone (MEK)	U		1.19	10.0	1	04/18/2023 12:05	WG2043904
Methylene Chloride	U		0.430	5.00	1	04/18/2023 12:05	WG2043904
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0	1	04/18/2023 12:05	WG2043904
Methyl tert-butyl ether	U		0.101	1.00	1	04/18/2023 12:05	WG2043904



Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Naphthalene	U	<u>C3</u>	1.00	5.00	1	04/18/2023 12:05	WG2043904
n-Propylbenzene	U		0.0993	1.00	1	04/18/2023 12:05	WG2043904
Styrene	U		0.118	1.00	1	04/18/2023 12:05	WG2043904
1,1,1,2-Tetrachloroethane	U		0.147	1.00	1	04/18/2023 12:05	WG2043904
1,1,2,2-Tetrachloroethane	U		0.133	1.00	1	04/18/2023 12:05	WG2043904
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00	1	04/18/2023 12:05	WG2043904
Tetrachloroethene	U		0.300	1.00	1	04/18/2023 12:05	WG2043904
Toluene	U		0.278	1.00	1	04/18/2023 12:05	WG2043904
1,2,3-Trichlorobenzene	U		0.230	1.00	1	04/18/2023 12:05	WG2043904
1,2,4-Trichlorobenzene	U		0.481	1.00	1	04/18/2023 12:05	WG2043904
1,1,1-Trichloroethane	U		0.149	1.00	1	04/18/2023 12:05	WG2043904
1,1,2-Trichloroethane	U		0.158	1.00	1	04/18/2023 12:05	WG2043904
Trichloroethene	U		0.190	1.00	1	04/18/2023 12:05	WG2043904
Trichlorofluoromethane	U		0.160	5.00	1	04/18/2023 12:05	WG2043904
1,2,4-Trimethylbenzene	U		0.322	1.00	1	04/18/2023 12:05	WG2043904
1,2,3-Trimethylbenzene	U		0.104	1.00	1	04/18/2023 12:05	WG2043904
1,3,5-Trimethylbenzene	U		0.104	1.00	1	04/18/2023 12:05	WG2043904
Vinyl chloride	U	<u>J4</u>	0.234	1.00	1	04/18/2023 12:05	WG2043904
Xylenes, Total	U		0.174	3.00	1	04/18/2023 12:05	WG2043904
o-Xylene	U	<u>C3 J4</u>	0.174	1.00	1	04/18/2023 12:05	WG2043904
m&p-Xylene	U		0.430	2.00	1	04/18/2023 12:05	WG2043904
(S) Toluene-d8	105			80.0-120		04/18/2023 12:05	WG2043904
(S) 4-Bromofluorobenzene	89.9			77.0-126		04/18/2023 12:05	WG2043904
(S) 1,2-Dichloroethane-d4	107			70.0-130		04/18/2023 12:05	WG2043904

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Volatile Organic Compounds (GC) by Method AK101

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
TPHGAK C6 to C10	U		28.7	100	1	04/19/2023 17:14	WG2042702
(S) a,a,a-Trifluorotoluene(FID)	90.1			50.0-150		04/19/2023 17:14	WG2042702

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		11.3	50.0	1	04/18/2023 12:26	WG2043904
1,2,3-Trichloropropane	U		0.00200	0.00500	1	04/17/2023 10:36	WG2043126
Acrolein	U	<u>C3</u>	2.54	50.0	1	04/18/2023 12:26	WG2043904
1,2-Dibromoethane	U		0.00410	0.00500	1	04/17/2023 10:36	WG2043126
Acrylonitrile	U		0.671	10.0	1	04/18/2023 12:26	WG2043904
Benzene	U		0.0941	1.00	1	04/18/2023 12:26	WG2043904
Bromobenzene	U		0.118	1.00	1	04/18/2023 12:26	WG2043904
Bromochloromethane	U		0.128	1.00	1	04/18/2023 12:26	WG2043904
Bromodichloromethane	U		0.136	1.00	1	04/18/2023 12:26	WG2043904
Bromoform	U		0.129	1.00	1	04/18/2023 12:26	WG2043904
Bromomethane	U		0.605	5.00	1	04/18/2023 12:26	WG2043904
n-Butylbenzene	U		0.157	1.00	1	04/18/2023 12:26	WG2043904
sec-Butylbenzene	U		0.125	1.00	1	04/18/2023 12:26	WG2043904
tert-Butylbenzene	U		0.127	1.00	1	04/18/2023 12:26	WG2043904
Carbon disulfide	U		0.0962	1.00	1	04/18/2023 12:26	WG2043904
Carbon tetrachloride	U		0.128	1.00	1	04/18/2023 12:26	WG2043904
Chlorobenzene	U		0.116	1.00	1	04/18/2023 12:26	WG2043904
Chlorodibromomethane	U		0.140	1.00	1	04/18/2023 12:26	WG2043904
Chloroethane	U		0.192	5.00	1	04/18/2023 12:26	WG2043904
Chloroform	U		0.111	5.00	1	04/18/2023 12:26	WG2043904
Chloromethane	U		0.960	2.50	1	04/18/2023 12:26	WG2043904
2-Chlorotoluene	U		0.106	1.00	1	04/18/2023 12:26	WG2043904
4-Chlorotoluene	U		0.114	1.00	1	04/18/2023 12:26	WG2043904
1,2-Dibromo-3-Chloropropane	U		0.276	5.00	1	04/18/2023 12:26	WG2043904
Dibromomethane	U		0.122	1.00	1	04/18/2023 12:26	WG2043904
1,2-Dichlorobenzene	U		0.107	1.00	1	04/18/2023 12:26	WG2043904
1,3-Dichlorobenzene	U		0.110	1.00	1	04/18/2023 12:26	WG2043904
1,4-Dichlorobenzene	U		0.120	1.00	1	04/18/2023 12:26	WG2043904
Dichlorodifluoromethane	U		0.374	5.00	1	04/18/2023 12:26	WG2043904
1,1-Dichloroethane	U		0.100	1.00	1	04/18/2023 12:26	WG2043904
1,2-Dichloroethane	U		0.0819	1.00	1	04/18/2023 12:26	WG2043904
1,1-Dichloroethene	U		0.188	1.00	1	04/18/2023 12:26	WG2043904
cis-1,2-Dichloroethene	U		0.126	1.00	1	04/18/2023 12:26	WG2043904
trans-1,2-Dichloroethene	U		0.149	1.00	1	04/18/2023 12:26	WG2043904
1,2-Dichloropropane	U		0.149	1.00	1	04/18/2023 12:26	WG2043904
1,1-Dichloropropene	U		0.142	1.00	1	04/18/2023 12:26	WG2043904
1,3-Dichloropropane	U		0.110	1.00	1	04/18/2023 12:26	WG2043904
cis-1,3-Dichloropropene	U		0.111	1.00	1	04/18/2023 12:26	WG2043904
trans-1,3-Dichloropropene	U		0.118	1.00	1	04/18/2023 12:26	WG2043904
2,2-Dichloropropane	U		0.161	1.00	1	04/18/2023 12:26	WG2043904
Di-isopropyl ether	U		0.105	1.00	1	04/18/2023 12:26	WG2043904
Ethylbenzene	U		0.137	1.00	1	04/18/2023 12:26	WG2043904
Hexachloro-1,3-butadiene	U		0.337	1.00	1	04/18/2023 12:26	WG2043904
Isopropylbenzene	U	<u>J4</u>	0.105	1.00	1	04/18/2023 12:26	WG2043904
p-Isopropyltoluene	U		0.120	1.00	1	04/18/2023 12:26	WG2043904
2-Butanone (MEK)	U		1.19	10.0	1	04/18/2023 12:26	WG2043904
Methylene Chloride	U		0.430	5.00	1	04/18/2023 12:26	WG2043904
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0	1	04/18/2023 12:26	WG2043904
Methyl tert-butyl ether	U		0.101	1.00	1	04/18/2023 12:26	WG2043904

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Naphthalene	U	<u>C3</u>	1.00	5.00	1	04/18/2023 12:26	WG2043904
n-Propylbenzene	U		0.0993	1.00	1	04/18/2023 12:26	WG2043904
Styrene	U		0.118	1.00	1	04/18/2023 12:26	WG2043904
1,1,1,2-Tetrachloroethane	U		0.147	1.00	1	04/18/2023 12:26	WG2043904
1,1,2,2-Tetrachloroethane	U		0.133	1.00	1	04/18/2023 12:26	WG2043904
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00	1	04/18/2023 12:26	WG2043904
Tetrachloroethene	U		0.300	1.00	1	04/18/2023 12:26	WG2043904
Toluene	U		0.278	1.00	1	04/18/2023 12:26	WG2043904
1,2,3-Trichlorobenzene	U		0.230	1.00	1	04/18/2023 12:26	WG2043904
1,2,4-Trichlorobenzene	U		0.481	1.00	1	04/18/2023 12:26	WG2043904
1,1,1-Trichloroethane	U		0.149	1.00	1	04/18/2023 12:26	WG2043904
1,1,2-Trichloroethane	U		0.158	1.00	1	04/18/2023 12:26	WG2043904
Trichloroethene	U		0.190	1.00	1	04/18/2023 12:26	WG2043904
Trichlorofluoromethane	U		0.160	5.00	1	04/18/2023 12:26	WG2043904
1,2,4-Trimethylbenzene	U		0.322	1.00	1	04/18/2023 12:26	WG2043904
1,2,3-Trimethylbenzene	U		0.104	1.00	1	04/18/2023 12:26	WG2043904
1,3,5-Trimethylbenzene	U		0.104	1.00	1	04/18/2023 12:26	WG2043904
Vinyl chloride	U	<u>J4</u>	0.234	1.00	1	04/18/2023 12:26	WG2043904
Xylenes, Total	U		0.174	3.00	1	04/18/2023 12:26	WG2043904
o-Xylene	U	<u>C3 J4</u>	0.174	1.00	1	04/18/2023 12:26	WG2043904
m&p-Xylene	U		0.430	2.00	1	04/18/2023 12:26	WG2043904
(S) Toluene-d8	97.4			80.0-120		04/18/2023 12:26	WG2043904
(S) 4-Bromofluorobenzene	84.3			77.0-126		04/18/2023 12:26	WG2043904
(S) 1,2-Dichloroethane-d4	106			70.0-130		04/18/2023 12:26	WG2043904

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Method Blank (MB)

(MB) R3916364-1 04/23/23 13:55

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Lead	U		2.99	6.00

1 Cp

2 Tc

3 Ss

Laboratory Control Sample (LCS)

(LCS) R3916364-2 04/23/23 13:58

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Lead	1000	911	91.1	80.0-120	

4 Cn

5 Sr

6 Qc

L1605902-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1605902-04 04/23/23 14:01 • (MS) R3916364-4 04/23/23 14:06 • (MSD) R3916364-5 04/23/23 14:09

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Lead	1000	U	921	938	92.1	93.8	1	75.0-125			1.89	20

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3915954-1 04/21/23 11:09

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Lead	U		2.99	6.00

¹Cp

²Tc

³Ss

Laboratory Control Sample (LCS)

(LCS) R3915954-2 04/21/23 11:12

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Lead	1000	1020	102	80.0-120	

⁴Cn

⁵Sr

L1605824-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1605824-05 04/21/23 11:15 • (MS) R3915954-4 04/21/23 11:20 • (MSD) R3915954-5 04/21/23 11:23

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Lead	1000	U	983	992	98.3	99.2	1	75.0-125			0.829	20

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3916588-2 04/19/23 13:42

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
TPHGAK C6 to C10	U		28.7	100
^(S) a,a,a-Trifluorotoluene(FID)	91.5			60.0-120

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3916588-1 04/19/23 12:06 • (LCSD) R3916588-5 04/20/23 13:02

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
TPHGAK C6 to C10	5000	4550	4180	91.0	83.6	60.0-120			8.48	20
^(S) a,a,a-Trifluorotoluene(FID)				111	101	60.0-120				

L1605205-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1605205-02 04/19/23 19:59 • (MS) R3916588-3 04/20/23 11:42 • (MSD) R3916588-4 04/20/23 12:09

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TPHGAK C6 to C10	5000	U	7620	6770	152	135	1	70.0-130	J5	J5	11.8	20
^(S) a,a,a-Trifluorotoluene(FID)					95.5	96.6		50.0-150				

Method Blank (MB)

(MB) R3916856-3 04/23/23 21:28

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
TPHGAK C6 to C10	U		28.7	100
(S) a,a,a-Trifluorotoluene(FID)	89.2			60.0-120

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3916856-1 04/23/23 19:24 • (LCSD) R3916856-2 04/23/23 19:50

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
TPHGAK C6 to C10	5000	3820	3780	76.4	75.6	60.0-120			1.05	20
(S) a,a,a-Trifluorotoluene(FID)				100	100	60.0-120				

L1605824-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1605824-05 04/23/23 22:35 • (MS) R3916856-4 04/24/23 14:47 • (MSD) R3916856-5 04/24/23 15:13

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
TPHGAK C6 to C10	5000	4680	8510	8550	76.6	77.4	1	70.0-130			0.469	20
(S) a,a,a-Trifluorotoluene(FID)					97.4	95.7		50.0-150				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3914226-2 04/17/23 09:43

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
1,2,3-Trichloropropane	U		0.00200	0.00500
1,2-Dibromoethane	U		0.00410	0.00500

Laboratory Control Sample (LCS)

(LCS) R3914226-1 04/17/23 09:19

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
1,2,3-Trichloropropane	0.0500	0.0440	88.0	70.0-130	
1,2-Dibromoethane	0.0500	0.0410	82.0	70.0-130	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3914707-2 04/18/23 13:02

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
1,2,3-Trichloropropane	U		0.00200	0.00500
1,2-Dibromoethane	U		0.00410	0.00500

Laboratory Control Sample (LCS)

(LCS) R3914707-1 04/18/23 12:38

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
1,2,3-Trichloropropane	0.0500	0.0500	100	70.0-130	
1,2-Dibromoethane	0.0500	0.0460	92.0	70.0-130	

L1605824-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1605824-05 04/18/23 19:00 • (MS) R3914707-3 04/18/23 19:24 • (MSD) R3914707-4 04/18/23 19:47

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
1,2,3-Trichloropropane	12.5	U	12.0	13.0	96.0	104	250	70.0-130			8.00	20
1,2-Dibromoethane	12.5	7.25	18.3	17.5	88.4	82.0	250	70.0-130			4.47	20

Sample Narrative:

OS: Non-target compounds too high to run at a lower dilution.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3915346-3 04/18/23 09:29

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		11.3	50.0
Acrolein	U		2.54	50.0
Acrylonitrile	U		0.671	10.0
Benzene	U		0.0941	1.00
Bromobenzene	U		0.118	1.00
Bromochloromethane	U		0.128	1.00
Bromodichloromethane	U		0.136	1.00
Bromoform	U		0.129	1.00
Bromomethane	U		0.605	5.00
n-Butylbenzene	U		0.157	1.00
sec-Butylbenzene	U		0.125	1.00
tert-Butylbenzene	U		0.127	1.00
Carbon disulfide	U		0.0962	1.00
Carbon tetrachloride	U		0.128	1.00
Chlorobenzene	U		0.116	1.00
Chlorodibromomethane	U		0.140	1.00
Chloroethane	U		0.192	5.00
Chloroform	U		0.111	5.00
Chloromethane	U		0.960	2.50
2-Chlorotoluene	U		0.106	1.00
4-Chlorotoluene	U		0.114	1.00
1,2-Dibromo-3-Chloropropane	U		0.276	5.00
Dibromomethane	U		0.122	1.00
1,2-Dichlorobenzene	U		0.107	1.00
1,3-Dichlorobenzene	U		0.110	1.00
1,4-Dichlorobenzene	U		0.120	1.00
Dichlorodifluoromethane	U		0.374	5.00
1,1-Dichloroethane	U		0.100	1.00
1,2-Dichloroethane	U		0.0819	1.00
1,1-Dichloroethene	U		0.188	1.00
cis-1,2-Dichloroethene	U		0.126	1.00
trans-1,2-Dichloroethene	U		0.149	1.00
1,2-Dichloropropane	U		0.149	1.00
1,1-Dichloropropene	U		0.142	1.00
1,3-Dichloropropane	U		0.110	1.00
cis-1,3-Dichloropropene	U		0.111	1.00
trans-1,3-Dichloropropene	U		0.118	1.00
2,2-Dichloropropane	U		0.161	1.00
Di-isopropyl ether	U		0.105	1.00
Ethylbenzene	U		0.137	1.00

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3915346-3 04/18/23 09:29

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Hexachloro-1,3-butadiene	U		0.337	1.00
Isopropylbenzene	U		0.105	1.00
p-Isopropyltoluene	U		0.120	1.00
2-Butanone (MEK)	U		1.19	10.0
Methylene Chloride	U		0.430	5.00
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0
Methyl tert-butyl ether	U		0.101	1.00
Naphthalene	U		1.00	5.00
n-Propylbenzene	U		0.0993	1.00
Styrene	U		0.118	1.00
1,1,1,2-Tetrachloroethane	U		0.147	1.00
1,1,2,2-Tetrachloroethane	U		0.133	1.00
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00
Tetrachloroethene	U		0.300	1.00
Toluene	U		0.278	1.00
1,2,3-Trichlorobenzene	U		0.230	1.00
1,2,4-Trichlorobenzene	U		0.481	1.00
1,1,1-Trichloroethane	U		0.149	1.00
1,1,2-Trichloroethane	U		0.158	1.00
Trichloroethene	U		0.190	1.00
Trichlorofluoromethane	U		0.160	5.00
1,2,4-Trimethylbenzene	U		0.322	1.00
1,2,3-Trimethylbenzene	U		0.104	1.00
1,3,5-Trimethylbenzene	U		0.104	1.00
Vinyl chloride	U		0.234	1.00
Xylenes, Total	U		0.174	3.00
o-Xylene	U		0.174	1.00
m&p-Xylenes	U		0.430	2.00
(S) Toluene-d8	101			80.0-120
(S) 4-Bromofluorobenzene	90.3			77.0-126
(S) 1,2-Dichloroethane-d4	103			70.0-130

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3915346-1 04/18/23 08:25 • (LCSD) R3915346-2 04/18/23 08:46

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acetone	25.0	25.8	25.8	103	103	19.0-160			0.000	27
Acrolein	25.0	17.6	14.6	70.4	58.4	10.0-160			18.6	26

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3915346-1 04/18/23 08:25 • (LCSD) R3915346-2 04/18/23 08:46

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
Acrylonitrile	25.0	27.4	24.1	110	96.4	55.0-149			12.8	20
Benzene	5.00	4.93	4.76	98.6	95.2	70.0-123			3.51	20
Bromobenzene	5.00	4.87	4.59	97.4	91.8	73.0-121			5.92	20
Bromochloromethane	5.00	5.10	4.39	102	87.8	76.0-122			15.0	20
Bromodichloromethane	5.00	4.99	4.91	99.8	98.2	75.0-120			1.62	20
Bromoform	5.00	4.68	4.20	93.6	84.0	68.0-132			10.8	20
Bromomethane	5.00	6.98	7.02	140	140	10.0-160			0.571	25
n-Butylbenzene	5.00	4.43	4.06	88.6	81.2	73.0-125			8.72	20
sec-Butylbenzene	5.00	4.52	4.31	90.4	86.2	75.0-125			4.76	20
tert-Butylbenzene	5.00	4.54	4.28	90.8	85.6	76.0-124			5.90	20
Carbon disulfide	5.00	4.45	4.07	89.0	81.4	61.0-128			8.92	20
Carbon tetrachloride	5.00	5.25	4.42	105	88.4	68.0-126			17.2	20
Chlorobenzene	5.00	4.79	4.59	95.8	91.8	80.0-121			4.26	20
Chlorodibromomethane	5.00	4.52	4.79	90.4	95.8	77.0-125			5.80	20
Chloroethane	5.00	6.80	6.11	136	122	47.0-150			10.7	20
Chloroform	5.00	5.10	5.14	102	103	73.0-120			0.781	20
Chloromethane	5.00	5.34	5.52	107	110	41.0-142			3.31	20
2-Chlorotoluene	5.00	4.84	4.51	96.8	90.2	76.0-123			7.06	20
4-Chlorotoluene	5.00	4.84	4.69	96.8	93.8	75.0-122			3.15	20
1,2-Dibromo-3-Chloropropane	5.00	4.02	3.80	80.4	76.0	58.0-134			5.63	20
Dibromomethane	5.00	5.37	5.17	107	103	80.0-120			3.80	20
1,2-Dichlorobenzene	5.00	4.57	4.28	91.4	85.6	79.0-121			6.55	20
1,3-Dichlorobenzene	5.00	4.95	4.92	99.0	98.4	79.0-120			0.608	20
1,4-Dichlorobenzene	5.00	4.85	4.75	97.0	95.0	79.0-120			2.08	20
Dichlorodifluoromethane	5.00	5.96	5.19	119	104	51.0-149			13.8	20
1,1-Dichloroethane	5.00	4.84	4.67	96.8	93.4	70.0-126			3.58	20
1,2-Dichloroethane	5.00	5.41	5.23	108	105	70.0-128			3.38	20
1,1-Dichloroethene	5.00	4.23	4.21	84.6	84.2	71.0-124			0.474	20
cis-1,2-Dichloroethene	5.00	4.57	4.33	91.4	86.6	73.0-120			5.39	20
trans-1,2-Dichloroethene	5.00	4.76	4.26	95.2	85.2	73.0-120			11.1	20
1,2-Dichloropropane	5.00	5.11	4.94	102	98.8	77.0-125			3.38	20
1,1-Dichloropropene	5.00	4.98	4.81	99.6	96.2	74.0-126			3.47	20
1,3-Dichloropropane	5.00	4.95	4.60	99.0	92.0	80.0-120			7.33	20
cis-1,3-Dichloropropene	5.00	5.12	5.02	102	100	80.0-123			1.97	20
trans-1,3-Dichloropropene	5.00	5.01	4.94	100	98.8	78.0-124			1.41	20
2,2-Dichloropropane	5.00	4.63	4.20	92.6	84.0	58.0-130			9.74	20
Di-isopropyl ether	5.00	4.81	4.61	96.2	92.2	58.0-138			4.25	20
Ethylbenzene	5.00	4.51	4.03	90.2	80.6	79.0-123			11.2	20
Hexachloro-1,3-butadiene	5.00	5.12	4.47	102	89.4	54.0-138			13.6	20
Isopropylbenzene	5.00	4.07	3.72	81.4	74.4	76.0-127		J4	8.99	20

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3915346-1 04/18/23 08:25 • (LCSD) R3915346-2 04/18/23 08:46

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
p-Isopropyltoluene	5.00	4.56	4.24	91.2	84.8	76.0-125			7.27	20
2-Butanone (MEK)	25.0	27.8	27.5	111	110	44.0-160			1.08	20
Methylene Chloride	5.00	4.54	4.55	90.8	91.0	67.0-120			0.220	20
4-Methyl-2-pentanone (MIBK)	25.0	25.0	22.4	100	89.6	68.0-142			11.0	20
Methyl tert-butyl ether	5.00	4.46	3.92	89.2	78.4	68.0-125			12.9	20
Naphthalene	5.00	3.78	3.13	75.6	62.6	54.0-135			18.8	20
n-Propylbenzene	5.00	4.62	4.47	92.4	89.4	77.0-124			3.30	20
Styrene	5.00	4.47	3.96	89.4	79.2	73.0-130			12.1	20
1,1,1,2-Tetrachloroethane	5.00	4.44	3.85	88.8	77.0	75.0-125			14.2	20
1,1,2,2-Tetrachloroethane	5.00	5.05	4.97	101	99.4	65.0-130			1.60	20
1,1,2-Trichlorotrifluoroethane	5.00	4.84	4.32	96.8	86.4	69.0-132			11.4	20
Tetrachloroethene	5.00	5.00	4.45	100	89.0	72.0-132			11.6	20
Toluene	5.00	4.72	4.35	94.4	87.0	79.0-120			8.16	20
1,2,3-Trichlorobenzene	5.00	4.27	3.63	85.4	72.6	50.0-138			16.2	20
1,2,4-Trichlorobenzene	5.00	4.00	4.07	80.0	81.4	57.0-137			1.73	20
1,1,1-Trichloroethane	5.00	4.99	4.78	99.8	95.6	73.0-124			4.30	20
1,1,2-Trichloroethane	5.00	4.81	4.70	96.2	94.0	80.0-120			2.31	20
Trichloroethene	5.00	4.96	4.99	99.2	99.8	78.0-124			0.603	20
Trichlorofluoromethane	5.00	5.23	5.06	105	101	59.0-147			3.30	20
1,2,4-Trimethylbenzene	5.00	4.37	4.03	87.4	80.6	76.0-121			8.10	20
1,2,3-Trimethylbenzene	5.00	4.20	4.06	84.0	81.2	77.0-120			3.39	20
1,3,5-Trimethylbenzene	5.00	4.45	4.37	89.0	87.4	76.0-122			1.81	20
Vinyl chloride	5.00	6.63	6.50	133	130	67.0-131	J4		1.98	20
Xylenes, Total	15.0	13.0	12.5	86.7	83.3	79.0-123			3.92	20
o-Xylene	5.00	3.94	3.61	78.8	72.2	80.0-122	J4	J4	8.74	20
m&p-Xylenes	10.0	9.03	8.84	90.3	88.4	80.0-122			2.13	20
(S) Toluene-d8				95.8	95.7	80.0-120				
(S) 4-Bromofluorobenzene				89.8	87.0	77.0-126				
(S) 1,2-Dichloroethane-d4				102	106	70.0-130				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1605824-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1605824-05 04/18/23 15:40 • (MS) R3915346-4 04/18/23 18:55 • (MSD) R3915346-5 04/18/23 19:16

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Acetone	25.0	U	38.4	37.8	154	151	1	10.0-160			1.57	35
Acrolein	25.0	U	33.7	37.0	135	148	1	10.0-160			9.34	39
Acrylonitrile	25.0	U	30.9	32.7	124	131	1	21.0-160			5.66	32
Benzene	5.00	22.6	33.6	33.7	220	222	1	17.0-158	V	V	0.297	27

L1605824-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1605824-05 04/18/23 15:40 • (MS) R3915346-4 04/18/23 18:55 • (MSD) R3915346-5 04/18/23 19:16

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Bromobenzene	5.00	U	6.54	6.52	131	130	1	30.0-149			0.306	28
Bromochloromethane	5.00	U	4.92	5.01	98.4	100	1	38.0-142			1.81	26
Bromodichloromethane	5.00	U	5.89	6.09	118	122	1	31.0-150			3.34	27
Bromoform	5.00	U	6.28	6.38	126	128	1	29.0-150			1.58	29
Bromomethane	5.00	U	6.50	6.11	130	122	1	10.0-160			6.19	38
n-Butylbenzene	5.00	U	10.6	10.7	212	214	1	31.0-150	J5	J5	0.939	30
sec-Butylbenzene	5.00	U	9.32	9.77	186	195	1	33.0-155	J5	J5	4.71	29
tert-Butylbenzene	5.00	U	5.43	5.68	109	114	1	34.0-153			4.50	28
Carbon disulfide	5.00	U	4.51	4.49	90.2	89.8	1	10.0-156			0.444	28
Carbon tetrachloride	5.00	U	5.52	5.96	110	119	1	23.0-159			7.67	28
Chlorobenzene	5.00	U	5.08	5.67	102	113	1	33.0-152			11.0	27
Chlorodibromomethane	5.00	U	4.88	5.44	97.6	109	1	37.0-149			10.9	27
Chloroethane	5.00	U	6.03	5.73	121	115	1	10.0-160			5.10	30
Chloroform	5.00	U	5.62	5.73	112	115	1	29.0-154			1.94	28
Chloromethane	5.00	U	7.01	7.15	140	143	1	10.0-160			1.98	29
2-Chlorotoluene	5.00	U	28.8	29.0	576	580	1	32.0-153	J5	J5	0.692	28
4-Chlorotoluene	5.00	U	5.37	5.94	107	119	1	32.0-150			10.1	28
1,2-Dibromo-3-Chloropropane	5.00	U	4.62	4.71	92.4	94.2	1	22.0-151			1.93	34
Dibromomethane	5.00	U	5.49	6.15	110	123	1	30.0-151			11.3	27
1,2-Dichlorobenzene	5.00	U	5.19	5.48	104	110	1	34.0-149			5.44	28
1,3-Dichlorobenzene	5.00	U	5.41	5.59	108	112	1	36.0-146			3.27	27
1,4-Dichlorobenzene	5.00	U	5.44	5.88	109	118	1	35.0-142			7.77	27
Dichlorodifluoromethane	5.00	U	5.79	6.51	116	130	1	10.0-160			11.7	29
1,1-Dichloroethane	5.00	U	5.43	5.76	109	115	1	25.0-158			5.90	27
1,2-Dichloroethane	5.00	8.62	15.6	16.8	140	164	1	29.0-151		J5	7.41	27
1,1-Dichloroethene	5.00	U	4.67	4.81	93.4	96.2	1	11.0-160			2.95	29
cis-1,2-Dichloroethene	5.00	U	4.85	4.97	97.0	99.4	1	10.0-160			2.44	27
trans-1,2-Dichloroethene	5.00	U	4.76	5.00	95.2	100	1	17.0-153			4.92	27
1,2-Dichloropropane	5.00	U	5.47	6.51	109	130	1	30.0-156			17.4	27
1,1-Dichloropropene	5.00	U	5.80	5.70	116	114	1	25.0-158			1.74	27
1,3-Dichloropropane	5.00	U	5.32	5.66	106	113	1	38.0-147			6.19	27
cis-1,3-Dichloropropene	5.00	U	5.76	6.13	115	123	1	34.0-149			6.22	28
trans-1,3-Dichloropropene	5.00	U	5.40	5.87	108	117	1	32.0-149			8.34	28
2,2-Dichloropropane	5.00	U	4.77	5.39	95.4	108	1	24.0-152			12.2	29
Di-isopropyl ether	5.00	U	5.24	5.87	105	117	1	21.0-160			11.3	28
Ethylbenzene	5.00	32.7	46.0	46.6	266	278	1	30.0-155	V	V	1.30	27
Hexachloro-1,3-butadiene	5.00	U	4.75	4.99	95.0	99.8	1	20.0-154			4.93	34
Isopropylbenzene	5.00	6.96	14.3	14.7	147	155	1	28.0-157			2.76	27
p-Isopropyltoluene	5.00	U	25.3	25.5	506	510	1	30.0-154	J5	J5	0.787	29
2-Butanone (MEK)	25.0	U	32.5	34.9	130	140	1	10.0-160			7.12	32

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1605824-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1605824-05 04/18/23 15:40 • (MS) R3915346-4 04/18/23 18:55 • (MSD) R3915346-5 04/18/23 19:16

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Methylene Chloride	5.00	U	4.93	4.82	98.6	96.4	1	23.0-144			2.26	28
4-Methyl-2-pentanone (MIBK)	25.0	U	26.8	29.6	107	118	1	29.0-160			9.93	29
Methyl tert-butyl ether	5.00	U	4.78	5.28	95.6	106	1	28.0-150			9.94	29
Naphthalene	5.00	23.6	32.7	32.0	182	168	1	12.0-156	<u>V</u>	<u>V</u>	2.16	35
n-Propylbenzene	5.00	9.87	18.0	18.3	163	169	1	31.0-154	<u>J5</u>	<u>J5</u>	1.65	28
Styrene	5.00	U	37.7	36.8	754	736	1	33.0-155	<u>J5</u>	<u>J5</u>	2.42	28
1,1,1,2-Tetrachloroethane	5.00	U	4.30	4.96	86.0	99.2	1	36.0-151			14.3	29
1,1,2,2-Tetrachloroethane	5.00	U	5.24	5.80	105	116	1	33.0-150			10.1	28
1,1,2-Trichlorotrifluoroethane	5.00	U	4.86	5.09	97.2	102	1	23.0-160			4.62	30
Tetrachloroethene	5.00	U	4.97	5.69	99.4	114	1	10.0-160			13.5	27
Toluene	5.00	59.8	81.1	79.6	426	396	1	26.0-154	<u>V</u>	<u>V</u>	1.87	28
1,2,3-Trichlorobenzene	5.00	U	3.86	4.41	77.2	88.2	1	17.0-150			13.3	36
1,2,4-Trichlorobenzene	5.00	U	4.41	4.67	88.2	93.4	1	24.0-150			5.73	33
1,1,1-Trichloroethane	5.00	U	5.27	6.11	105	122	1	23.0-160			14.8	28
1,1,2-Trichloroethane	5.00	U	5.33	5.84	107	117	1	35.0-147			9.13	27
Trichloroethene	5.00	U	5.54	6.12	111	122	1	10.0-160			9.95	25
Trichlorofluoromethane	5.00	U	5.45	6.02	109	120	1	17.0-160			9.94	31
1,2,4-Trimethylbenzene	5.00	581	546	528	0.000	0.000	1	26.0-154	<u>EV</u>	<u>EV</u>	3.35	27
1,2,3-Trimethylbenzene	5.00	187	232	226	900	780	1	32.0-149	<u>EV</u>	<u>EV</u>	2.62	28
1,3,5-Trimethylbenzene	5.00	192	238	232	920	800	1	28.0-153	<u>EV</u>	<u>EV</u>	2.55	27
Vinyl chloride	5.00	U	6.55	6.57	131	131	1	10.0-160			0.305	27
Xylenes, Total	15.0	2280	2250	2150	0.000	0.000	1	29.0-154	<u>V</u>	<u>V</u>	4.55	28
o-Xylene	5.00	814	918	877	2080	1260	1	45.0-144	<u>EV</u>	<u>EV</u>	4.57	26
m&p-Xylenes	10.0	1470	1330	1270	0.000	0.000	1	43.0-146	<u>EV</u>	<u>EV</u>	4.62	26
(S) Toluene-d8					91.6	94.1		80.0-120				
(S) 4-Bromofluorobenzene					101	98.5		77.0-126				
(S) 1,2-Dichloroethane-d4					109	114		70.0-130				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3915934-3 04/20/23 21:11

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Benzene	U		0.0941	1.00
Ethylbenzene	U		0.137	1.00
Toluene	U		0.278	1.00
1,2,4-Trimethylbenzene	U		0.322	1.00
Xylenes, Total	U		0.174	3.00
o-Xylene	U		0.174	1.00
m&p-Xylenes	U		0.430	2.00
(S) Toluene-d8	105			80.0-120
(S) 4-Bromofluorobenzene	92.2			77.0-126
(S) 1,2-Dichloroethane-d4	106			70.0-130

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3915934-1 04/20/23 20:09 • (LCSD) R3915934-2 04/20/23 20:30

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Benzene	5.00	5.01	5.07	100	101	70.0-123			1.19	20
Ethylbenzene	5.00	5.04	4.86	101	97.2	79.0-123			3.64	20
Toluene	5.00	5.23	5.14	105	103	79.0-120			1.74	20
1,2,4-Trimethylbenzene	5.00	4.35	4.53	87.0	90.6	76.0-121			4.05	20
Xylenes, Total	15.0	14.8	14.2	98.7	94.7	79.0-123			4.14	20
o-Xylene	5.00	4.67	4.50	93.4	90.0	80.0-122			3.71	20
m&p-Xylenes	10.0	10.1	9.70	101	97.0	80.0-122			4.04	20
(S) Toluene-d8				104	100	80.0-120				
(S) 4-Bromofluorobenzene				99.4	97.3	77.0-126				
(S) 1,2-Dichloroethane-d4				104	105	70.0-130				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3914670-1 04/18/23 12:13

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
AK102 DRO C10-C25	274	↓	170	800
(S) o-Terphenyl	88.9			60.0-120

1 Cp

2 Tc

3 Ss

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3914670-7 04/18/23 22:08 • (LCSD) R3914670-2 04/18/23 13:03

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
AK102 DRO C10-C25	6000	4610	5530	76.8	92.2	75.0-125			18.1	20
(S) o-Terphenyl				64.9	83.0	60.0-120				

4 Cn

5 Sr

6 Qc

L1605037-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1605037-05 04/18/23 15:25 • (MS) R3914670-5 04/18/23 15:45 • (MSD) R3914670-6 04/18/23 16:05

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
AK102 DRO C10-C25	6000	849	5790	6340	82.3	91.5	1	75.0-125			9.07	20
(S) o-Terphenyl					75.8	84.1		50.0-150				

7 Gl

8 Al

9 Sc

L1605205-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1605205-02 04/18/23 18:07 • (MS) R3914670-3 04/18/23 14:04 • (MSD) R3914670-4 04/18/23 14:24

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
AK102 DRO C10-C25	6000	716	5940	6030	87.1	88.6	1	75.0-125			1.50	20
(S) o-Terphenyl					84.0	80.3		50.0-150				

Method Blank (MB)

(MB) R3915698-1 04/21/23 02:54

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
AK102 DRO C10-C25	256	↓	170	800
(S) o-Terphenyl	74.7			60.0-120

1 Cp

2 Tc

3 Ss

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3915698-2 04/21/23 03:17 • (LCSD) R3915698-3 04/21/23 03:41

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
AK102 DRO C10-C25	6000	5690	6050	94.8	101	75.0-125			6.13	20

4 Cn

5 Sr

6 Qc

L1605824-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1605824-05 04/21/23 04:04 • (MS) R3915698-4 04/21/23 04:27 • (MSD) R3915698-5 04/21/23 04:50

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
AK102 DRO C10-C25	7060	1520	7820	8840	89.2	104	1.18	75.0-125			12.2	20
(S) o-Terphenyl					94.3	104		50.0-150				

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3914539-2 04/18/23 01:42

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Anthracene	U		0.0190	0.0500
Acenaphthene	U		0.0190	0.0500
Acenaphthylene	U		0.0170	0.0500
Benzo(a)anthracene	U		0.0200	0.0500
Benzo(a)pyrene	U		0.0180	0.0500
Benzo(b)fluoranthene	U		0.0170	0.0500
Benzo(g,h,i)perylene	U		0.0180	0.0500
Benzo(k)fluoranthene	U		0.0200	0.250
Chrysene	U		0.0180	0.0500
Dibenz(a,h)anthracene	U		0.0180	0.0500
Fluoranthene	U		0.0110	0.0500
Fluorene	U		0.0170	0.0500
Indeno(1,2,3-cd)pyrene	U		0.0180	0.0500
Naphthalene	U		0.128	0.500
Phenanthrene	U		0.0180	0.0500
Pyrene	U		0.0170	0.0500
1-Methylnaphthalene	U		0.0200	0.500
2-Methylnaphthalene	U		0.0280	0.500
2-Chloronaphthalene	U		0.0120	0.500
(S) Nitrobenzene-d5	75.5			11.0-135
(S) 2-Fluorobiphenyl	72.5			32.0-120
(S) p-Terphenyl-d14	92.0			23.0-122

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3914539-1 04/18/23 01:22

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	2.00	1.34	67.0	43.0-127	
Acenaphthene	2.00	1.63	81.5	42.0-120	
Acenaphthylene	2.00	1.48	74.0	43.0-120	
Benzo(a)anthracene	2.00	1.62	81.0	46.0-120	
Benzo(a)pyrene	2.00	1.62	81.0	44.0-122	
Benzo(b)fluoranthene	2.00	1.83	91.5	43.0-122	
Benzo(g,h,i)perylene	2.00	1.83	91.5	25.0-137	
Benzo(k)fluoranthene	2.00	1.74	87.0	39.0-128	
Chrysene	2.00	1.91	95.5	42.0-129	
Dibenz(a,h)anthracene	2.00	1.83	91.5	25.0-139	
Fluoranthene	2.00	1.90	95.0	48.0-131	

Laboratory Control Sample (LCS)

(LCS) R3914539-1 04/18/23 01:22

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	2.00	1.71	85.5	42.0-120	
Indeno(1,2,3-cd)pyrene	2.00	1.77	88.5	37.0-133	
Naphthalene	2.00	1.43	71.5	30.0-120	
Phenanthrene	2.00	1.77	88.5	42.0-120	
Pyrene	2.00	1.93	96.5	38.0-124	
1-Methylnaphthalene	2.00	1.50	75.0	43.0-120	
2-Methylnaphthalene	2.00	1.54	77.0	40.0-120	
2-Chloronaphthalene	2.00	1.48	74.0	39.0-120	
(S) Nitrobenzene-d5			80.5	11.0-135	
(S) 2-Fluorobiphenyl			80.0	32.0-120	
(S) p-Terphenyl-d14			92.0	23.0-122	

L1605824-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1605824-05 04/18/23 04:19 • (MS) R3914539-3 04/18/23 04:39 • (MSD) R3914539-4 04/18/23 04:58

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Anthracene	2.00	U	1.34	1.53	67.0	71.8	1	28.0-120			13.2	25
Acenaphthene	2.00	0.0877	1.75	1.79	83.1	79.9	1	16.0-120			2.26	25
Acenaphthylene	2.00	U	1.58	1.62	79.0	76.1	1	16.0-121			2.50	26
Benzo(a)anthracene	2.00	0.0250	1.51	1.59	74.2	73.5	1	19.0-125			5.16	26
Benzo(a)pyrene	2.00	U	1.36	1.48	68.0	69.5	1	10.0-126			8.45	32
Benzo(b)fluoranthene	2.00	0.0240	1.58	1.59	77.8	73.5	1	10.0-125			0.631	36
Benzo(g,h,i)perylene	2.00	U	1.27	1.38	63.5	64.8	1	10.0-128			8.30	37
Benzo(k)fluoranthene	2.00	U	1.52	1.54	76.0	72.3	1	10.0-124			1.31	32
Chrysene	2.00	0.0273	1.82	1.88	89.6	87.0	1	18.0-127			3.24	26
Dibenz(a,h)anthracene	2.00	U	1.07	1.24	53.5	58.2	1	10.0-132			14.7	43
Fluoranthene	2.00	0.0435	1.83	1.92	89.3	88.1	1	37.0-122			4.80	23
Fluorene	2.00	0.0621	1.79	1.86	86.4	84.4	1	20.0-120			3.84	26
Indeno(1,2,3-cd)pyrene	2.00	U	1.26	1.30	63.0	61.0	1	10.0-130			3.12	38
Naphthalene	2.00	19.9	25.5	24.9	280	235	1	14.0-120	V	V	2.38	20
Phenanthrene	2.00	0.0808	1.77	1.90	84.5	85.4	1	26.0-120			7.08	24
Pyrene	2.00	0.0587	1.99	2.14	96.6	97.7	1	29.0-120			7.26	24
1-Methylnaphthalene	2.00	5.56	8.35	8.12	139	120	1	10.0-145			2.79	24
2-Methylnaphthalene	2.00	7.69	11.0	10.6	166	137	1	10.0-143	J5		3.70	24
2-Chloronaphthalene	2.00	0.0608	1.60	1.63	77.0	73.7	1	16.0-120			1.86	25
(S) Nitrobenzene-d5					77.5	74.6		11.0-135				
(S) 2-Fluorobiphenyl					79.5	75.6		32.0-120				
(S) p-Terphenyl-d14					87.5	86.9		23.0-122				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1605502-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1605502-01 04/18/23 05:57 • (MS) R3914539-5 04/18/23 06:17 • (MSD) R3914539-6 04/18/23 06:37

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Anthracene	2.00	U	1.41	1.65	70.5	78.6	1	28.0-120			15.7	25
Acenaphthene	2.00	U	1.58	1.74	79.0	82.9	1	16.0-120			9.64	25
Acenaphthylene	2.00	U	1.52	1.61	76.0	76.7	1	16.0-121			5.75	26
Benzo(a)anthracene	2.00	0.0396	1.21	1.47	58.5	68.1	1	19.0-125			19.4	26
Benzo(a)pyrene	2.00	0.0631	1.02	1.20	47.8	54.1	1	10.0-126			16.2	32
Benzo(b)fluoranthene	2.00	0.106	1.08	1.27	48.7	55.4	1	10.0-125			16.2	36
Benzo(g,h,i)perylene	2.00	0.0759	0.802	1.01	36.3	44.5	1	10.0-128			23.0	37
Benzo(k)fluoranthene	2.00	0.0582	0.923	1.10	43.2	49.6	1	10.0-124			17.5	32
Chrysene	2.00	0.0717	1.38	1.58	65.4	71.8	1	18.0-127			13.5	26
Dibenz(a,h)anthracene	2.00	U	0.674	0.881	33.7	42.0	1	10.0-132			26.6	43
Fluoranthene	2.00	0.0923	1.60	1.86	75.4	84.2	1	37.0-122			15.0	23
Fluorene	2.00	U	1.59	1.82	79.5	86.7	1	20.0-120			13.5	26
Indeno(1,2,3-cd)pyrene	2.00	0.0881	0.861	1.04	38.6	45.3	1	10.0-130			18.8	38
Naphthalene	2.00	0.128	1.50	1.53	75.0	72.9	1	14.0-120			1.98	20
Phenanthrene	2.00	0.0485	1.53	1.79	74.1	82.9	1	26.0-120			15.7	24
Pyrene	2.00	0.101	1.59	1.86	74.4	83.8	1	29.0-120			15.7	24
1-Methylnaphthalene	2.00	0.128	1.65	1.72	76.1	75.8	1	10.0-145			4.15	24
2-Methylnaphthalene	2.00	0.219	1.77	1.85	77.5	77.7	1	10.0-143			4.42	24
2-Chloronaphthalene	2.00	U	1.43	1.54	71.5	73.3	1	16.0-120			7.41	25
(S) Nitrobenzene-d5					77.0	76.7		11.0-135				
(S) 2-Fluorobiphenyl					69.5	72.4		32.0-120				
(S) p-Terphenyl-d14					54.5	63.8		23.0-122				

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

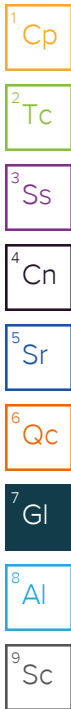
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
B	The same analyte is found in the associated blank.
C3	The reported concentration is an estimate. The continuing calibration standard associated with this data responded low. Method sensitivity check is acceptable.
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits.
J4	The associated batch QC was outside the established quality control range for accuracy.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
V	The sample concentration is too high to evaluate accurate spike recoveries.



ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Company Name/Address:

Arcadis - Chevron - AK

880 H St.
Anchorage, AK 99501

Billing Information:

Attn: Accounts Payable
630 Plaza Dr Ste 600
Highlands Ranch, CO 80129

Pres
Chk

Analysis / Container / Preservative

Chain of Custody Page 1 of 1



MT JULIET, TN

12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: <https://info.pacelabs.com/hubs/pas-standard-terms.pdf>

SDG # **1605824**

J003

Acctnum: CHEVARCAK

Template: T227106

Prelogin: P988809

PM: 110 - Brian Ford

PB:

Shipped Via:

Remarks Sample # (lab only)

Report to: **Skip Robinson**
Email To: **Sydney.Clark@arcadis.com;erika.midkiff@arcad**

Project Description: **306450** City/State Collected: **Anchorage, AK** Please Circle: **PT MT CT ET**

Phone: **907-276-8095** Client Project # **30064225.19.45** Lab Project # **CHEVARCAK-306450**

Collected by (print): **E. Wyjak** Site/Facility ID # **4351 W. ITNL AIRPORT RD** P.O. #

Collected by (signature): *[Signature]* **Rush?** (Lab MUST Be Notified)
 Same Day Five Day
 Next Day 5 Day (Rad Only)
 Two Day 10 Day (Rad Only)
 Three Day
 Immediately Packed on Ice N Y Date Results Needed No. of Cntrs

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	AK101 40mlAmb HCl	AK102 100ml Amb HCl	EDB/123TCP 524LL 40mlAmb-HCl	PAHs 8270SIM 100ml Amb-NoPres	Total Lead 6010 250mlHDPE-HNO3	VOCs 8260 40mlAmb-HCl						
MW-1-W-20230417	Crub	GW	-	4.14.23	0700	14	X	X	X	X	X	X						
MW-5A-W-20230417		GW	-		0800	14	X	X	X	X	X	X						
RW-14-W-20230417		GW	-		0900	14	X	X	X	X	X	X						
MW-5-W-20230417		GW	-		1000	14	X	X	X	X	X	X						
MW-7A-U-20230417		GW	-		1100	42	X	X	X	X	X	X						
MW-7-W-20230417		GW	-		1200	14	X	X	X	X	X	X						
BD-1-W-20230417		GW	-			14	X	X	X	X	X	X						
EQB-1-W-20230417		GW	-		1300	14	X	X	X	X	X	X						
Trip Blank 1		GW	-			4	X		X			X						
Trip Blank 2		GW	-			4	X		X			X						

Coder 1 -01
-02
-03
-04
ms/MSD Coder 2 -05
-06
-07
Coder 1 \$ EW -08
Coder 1 -09
Coder 2 -10

- * Matrix:
- SS - Soil AIR - Air F - Filter
- GW - Groundwater B - Bioassay
- WW - WasteWater
- DW - Drinking Water
- OT - Other

Remarks:
 pH _____ Temp _____
 Flow _____ Other _____
 Samples returned via: UPS FedEx Courier
 Tracking # _____

Sample Receipt Checklist

COC Seal Present/Intact:	NP	Y	N
COC Signed/Accurate:		Y	N
Bottles arrive intact:		Y	N
Correct bottles used:		Y	N
Sufficient volume sent:		Y	N
If Applicable			
VOA Zero Headspace:		Y	N
Preservation Correct/Checked:		Y	N
RAD Screen <0.5 mR/hr:		Y	N

Relinquished by: (Signature) <i>[Signature]</i>	Date: 4.14.23	Time: 1300	Received by: (Signature)	Trip Blank Received: Yes/No HCl / MeOH TBR
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: <i>1.00</i> Bottles Received: <i>168</i>
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) <i>[Signature]</i>	Date: <i>04/15/23</i> Time: <i>0900</i> Hold: Condition: NCF / OK

L1605824

<u>Tracking Numbers</u>	<u>Temperature</u>
5300 4296 5038	GBW1 1.4
" " 5049	GBW1 0.3

Attachment C

**Historical Groundwater Analytical Results – Third Quarter 2001
through 2022**

Table 1. Historical Groundwater Gauging and Analytical Results
Third Quarter 2001 to Current
Chevron Facility 306450
4351 Old International Airport Road
Anchorage, Alaska

Well ID	Sample Date	Screen Interval (ft bTOC)	TOC (ft amsl)	DTW (ft bTOC)	LNAPL Thickness (feet)	GW Elev (ft)	TPH-g (µg/L)	TPH-d (µg/L)	TPH-d w/si (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Naphthalene (µg/L)	Comments
ADEC Groundwater Cleanup Levels							2,200	1,500	1,500	4.6	1,100	15	190	140	1.7	
MW-5	3/4/2001	--	76.74	44.42	--	32.32	4,660 / 4,900	--	--	104 / 100	394 / 376	360 / 338	1,540 / 1,430	--	--	
MW-5	4/21/2001	--	76.74	44.50	--	32.24	--	--	--	--	--	--	--	--	--	
MW-5	5/30/2001	--	76.74	44.79	--	31.95	--	--	--	--	--	--	--	--	--	
MW-5	6/27/2001	--	76.74	45.75	--	30.99	5,220	--	--	112	371	355	1,450	--	--	
MW-5	9/26/2001	--	76.74	45.07	--	31.67	2,420	--	--	89.5	20	174	520	--	--	
MW-5	12/9/2001	--	76.74	44.96	--	31.78	2,980	--	--	65.4	209	280	1,170	--	--	
MW-5	3/18/2002	--	76.74	45.46	--	31.28	5,040	--	--	74.3	243	402	1,560	--	--	
MW-5	6/24/2002	--	76.74	45.49	--	31.25	4,240	--	--	87.3	226	361	1,500	--	--	
MW-5	3/27/2003	--	76.74	--	--	--	5,200	--	--	63	300	143	1,200	--	--	
MW-5	6/10/2003	--	76.74	--	--	--	4,000	--	--	75	353	195	1,420	--	--	
MW-5	9/6/2003	--	76.74	--	--	--	5,600	--	--	97	419	171	1,520	--	--	
MW-5	11/29/2003	--	76.74	46.40	--	30.34	870	--	--	65	48	30	150	--	--	
MW-5	3/22/2004	--	76.74	46.40	--	30.34	--	--	--	--	--	--	--	--	--	
MW-5	6/29/2004	--	76.74	45.86	--	30.88	--	--	--	8.0	4.4	34	110	--	--	
MW-5	12/28/2004	--	76.74	45.21	--	31.53	1,100	--	--	30	16	77	206	--	--	
MW-5	6/30/2005	--	76.74	46.05	--	30.69	790	--	--	42	6.3	82	139	--	--	
MW-5	12/27/2005	--	76.74	45.79	--	30.95	--	--	--	--	--	--	--	--	--	
MW-5	6/30/2006	--	76.74	46.36	--	30.38	1,240	--	--	44.2	9.34	147	215	--	--	
MW-5	4/30/2007	--	76.74	43.92	--	32.82	--	--	--	--	--	--	--	--	--	
MW-5	8/31/2007	--	76.74	46.03	--	30.71	3,900 ¹	--	--	200	100	200	700	<50 ^{1,2}	--	
MW-5	8/20/2008	--	83.03	45.40	--	37.63	2,200	140	--	200	400	90	200	--	--	
MW-5	12/9/2008	--	83.03	44.19	--	38.84	--	--	--	--	--	--	--	--	--	
MW-5	3/18/2009	--	83.03	44.46	--	38.57	2,400/2,400	320/830	--	250/250	260/260	110/110	260/260	<10/<10	--	
MW-5	6/4/2009	--	83.03	44.83	--	38.20	--	--	--	--	--	--	--	--	--	
MW-5	9/2/2009	--	83.03	45.85	--	37.18	3,900/3,700	--	--	350/330	840/790	120/110	400/370	--	--	
MW-5	12/8/2009	--	83.03	45.55	--	37.48	--	--	--	--	--	--	--	--	--	
MW-5	5/17/2010	--	83.03	43.60	--	39.43	3,600/3,300	78/63	--	340/340	580/670	99/90	270/240	--	--	
MW-5	8/24/2010	--	83.03	45.80	--	37.23	3,300	180	--	290	390	110	340	--	--	
MW-5	4/26/2011	--	83.03	45.44	--	37.59	2,500	150	--	250	170	150	360	--	--	
MW-5	9/20/2011	--	83.03	45.29	--	37.74	3,200	--	--	330	630	110	310	--	--	
MW-5	9/20/2011	--	83.03	45.29	--	37.74	3,100	--	--	320	620	100	290	--	--	Duplicate
MW-5	5/18/2012	--	83.03	45.27	--	37.76	4,400	190	<49	280	760	150	440	--	--	
MW-5	5/18/2012	--	83.03	45.27	--	37.76	4,400	--	--	280	740	150	430	--	--	Duplicate
MW-5	9/17/2012	--	83.03	45.30	--	37.73	2,500	330	95	210	370	140	230	--	--	
MW-5	4/29/2013	--	83.03	44.64	--	38.39	<100	1,000	<620	<1.0	<1.0	1.4	<3.0	--	--	
MW-5	9/17/2013	--	83.03	44.59	--	38.44	251	<410	--	19.3	27.1	10.7	38.4	--	--	
MW-5	4/28/2014	--	83.03	43.42	--	39.61	7,070	<260	--	247	1,450	193	703	--	--	
MW-5	9/4/2014	--	83.03	45.15	--	37.88	14,700	<400	--	345	2,560	195	737	--	--	
MW-5	9/4/2014	--	83.03	45.15	--	37.88	15,500	<400	--	347	2,400	226	682	--	--	Duplicate
MW-5	4/14/2015	--	83.03	44.59	--	38.44	<100	1,100	--	<1.0	<1.0	<1.0	<3.0	--	--	
MW-5	4/14/2015	--	83.03	44.59	--	38.44	<100	1,000	--	<1.0	<1.0	<1.0	<3.0	--	--	Duplicate
MW-5	9/2/2015	--	83.03	47.25	--	35.78	2,560	<400	--	155	206	122	259	--	--	
MW-5	4/12/2016	--	83.03	45.65	--	37.38	180	600	--	1.0	13	13	34	--	--	
MW-5	9/15/2016	--	83.03	46.36	--	36.67	2,600	240	--	130	290	130	330	--	--	
MW-5	5/10/2017	--	83.03	46.20	--	36.83	130	900	--	<0.5	<0.5	0.6	0.9	--	--	
MW-5	9/11/2017	--	83.03	46.71	--	36.32	1,000	130	--	35	4.0	150	29	--	--	
MW-5	4/6/2018	--	83.03	45.43	--	37.60	1,300 J	<150	--	15	11 J	110 J	110 J	--	--	
MW-5	4/6/2018	--	83.03	45.43	--	37.60	900 J	130 J	--	12	8 J	69 J	64 J	--	--	Duplicate
MW-5	10/24/2018	--	83.03	46.07	--	36.96	210 J	660	--	2 J	2 J	13 J	14 J	--	--	
MW-5	4/19/2019	--	83.11	46.67	--	36.44	3,500 [2,800]	<290 BJ [<260 B]	--	13 J [20 J]	10 J [15 J]	110 J [170 J]	170 J [260 J]	170 J	--	
MW-5	9/18/2019	--	83.11	47.44	--	35.67	2,900	390	--	51	30	340 D	609 D	--	--	
MW-5	4/9/2020	--	83.11	46.38	0.00	36.73	877	328 J	--	16.8	6.28	39.9	97.4	<1.00	1.16 J	
MW-5	10/7/2020	--	83.11	46.86	0.00	36.25	1,700	318 J	--	32.1	15.7	188	325	<1.00	3.63 J	
MW-5	9/7/2021	--	83.11	47.46	0.00	35.65	2,180 [2,180]	<895 B [<834 B]	43.2 [45.8]	18.5 [20.4]	302 J [140 J]	493 J [220 J]	<1.00 [<1.00]	5.19 [6.51]	1.00519 [0.00651]	
MW-5	4/12/2022	--	83.11	39.52	0.00	43.59	2,190 [2,360]	561 J [545 J]	--	49.2 [51.8]	16.5 [19]	226 [265]	249 [310]	<5.00 [<10.0]	5.26 J [<50.0]	

Table 1. Historical Groundwater Gauging and Analytical Results

Third Quarter 2001 to Current

Chevron Facility 306450

4351 Old International Airport Road

Anchorage, Alaska

Well ID	Sample Date	Screen Interval (ft bTOC)	TOC (ft amsl)	DTW (ft bTOC)	LNAPL Thickness (feet)	GW Elev (ft)	TPH-g (µg/L)	TPH-d (µg/L)	TPH-d w/si (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Naphthalene (µg/L)	Comments
ADEC Groundwater Cleanup Levels							2,200	1,500	1,500	4.6	1,100	15	190	140	1.7	

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**Table 1. Historical Groundwater Gauging and Analytical Results
Third Quarter 2001 to Current**
Chevron Facility 306450
4351 Old International Airport Road
Anchorage, Alaska

Well ID	Sample Date	Screen Interval (ft bTOC)	TOC (ft amsl)	DTW (ft bTOC)	LNAPL Thickness (feet)	GW Elev (ft)	TPH-g (µg/L)	TPH-d (µg/L)	TPH-d w/si (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Naphthalene (µg/L)	Comments
ADEC Groundwater Cleanup Levels							2,200	1,500	1,500	4.6	1,100	15	190	140	1.7	
QA-TB	4/9/2020	--	--	--	--	--	<100	--	--	<1.00	<1.00	<1.00	<3.00	<1.00	<5.00	
QA-TB	10/8/2020	--	--	--	--	--	<100	--	--	<1.00	<1.00	<1.00	<3.00	<1.00	<5.00	
QA-TB	4/14/2021	--	--	--	--	--	11.1 J	--	--	<1.00	<1.00	<1.00	<3.00	<1.00	<5.00	
QA-TB	9/7/2021	--	--	--	--	--	32.7 J	--	<1.00	<1.00	<1.00	<3.00	<1.00	<5.00 J	<0.00500 J	
QA-TB	4/12/2022	--	--	--	--	--	<100	--	--	<1.00	<1.00	<1.00	<3.00	<1.00	<5.00	
QA-EB	4/8/2020	--	--	--	--	--	<100	<840	--	<1.00	<1.00	<1.00	<3.00	<1.00	<5.00	
QA-EB	10/7/2020	--	--	--	--	--	<100	<800	--	<1.00	<1.00	<1.00	<3.00	<1.00	<5.00	
QA-EB	4/14/2021	--	--	--	--	--	11.4 J	<840	--	<1.00	<1.00	<1.00	<3.00	<1.00	<5.00	
QA-EB	9/7/2021	--	--	--	--	--	<100	520 J	<1.00	<1.00	<1.00	<3.00	<1.00	<5.00	<0.00500	
QA-EB	4/12/2022	--	--	--	--	--	<100	<888	--	<1.00	<1.00	<1.00	<3.00	<1.00	<5.00	

Notes:

ID = Identification
 MW, RW = Groundwater monitoring well
 TOC = Top of casing
 DTW = Depth to groundwater
 ft bTOC = Feet below top of casing
 ft = Feet relative to NAVD88
 GW Elev = Groundwater elevation
 µg/L = Micrograms per liter
 Additional analysis for diesel range organics will be included on the laboratory report for April 2015 event.
 UB (or B): Compound considered non-detect at the listed value due to associated blank contamination.
Bold = Value exceeds laboratory method detection limit (MDL)
Bold and shaded = Value exceeds ADEC Groundwater Cleanup Level
 Laboratory RDL is greater than the ADEC Groundwater Cleanup Level
 <100 = Not detected at or above the reported detection limit (RDL)
 J - The compound was positively identified; however, the associated numerical value is an estimated concentration only.

TPH-g = Total petroleum hydrocarbons, gasoline range by LUFT GC/MS according to State of Alaska Method AK101.
 TPH-d = Total petroleum hydrocarbons, diesel range by LUFT GC/MS according to State of Alaska Method AK102.
 Samples analytes by USEPA Method 8260D:
 Benzene, Toluene, Ethylbenzene and Total xylenes (collectively BTEX)
 MTBE = Methyl-t-butyl ether
 Naphthalene
 QA-EB = Quality Assurance, Equipment Blank
 QA-TB = Quality Assurance, Trip Blank
 LUFT = Leaking Underground Fuel Tank
 GC/MS = Gas chromatography/Mass Spectrometry
 [] -Blind Duplicate Sample Results
 NAVD 88 = North American Vertical Datum of 1988
 ADEC GCL = Alaska Department of Environmental Conservation groundwater cleanup level
 ND = Not detected
 LNAPL = Light non-aqueous phase liquid
 -- = Not sampled/not measured
 D = The result reported from diluted analysis

RW-14	4/26/2011	--	--	<0.010	0.01	<0.010	<0.010	<0.010	--	--	--	--	--
RW-14	9/20/2011	--	--	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	--	--	--	--	--
RW-14	9/18/2019	--	--	--	--	--	--	--	--	--	--	--	--
EQB	4/8/2020	<0.555	<0.555	<0.0555	<0.0555	<0.0555	<0.0555	<0.0555	<0.0555	<0.0555	<0.278	<0.0555	<0.0555
EQB	10/7/2020	<0.525	<0.525	<0.0525	<0.0525	<0.0525	<0.0525	<0.0525	<0.0525	<0.0525	<0.263	<0.0525	<0.0525
EQB	04/14/2021	0.0229 J	<0.500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.250	<0.0500	<0.0500
EQB	9/7/2021	<0.500	<0.500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	0.0196 J	<0.0500	<0.250	<0.0500	<0.0500
EQB	4/12/2022	<0.500	<0.500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.250	<0.0500	<0.0500

Notes:

ADEC GCL = Alaska Department of Environmental Conservation groundwater cleanup level

(µg/L) = micrograms per liter

LNAPL = Light Non-aqueous Phase Liquids

-- = Not sampled or not analyzed

<0.0525 = Not detected at or above the reported detection limit (RDL)

Bold = Detections above the MDL

Bold and Shaded = Value exceeds ADEC Groundwater Cleanup Level

Bold and Italicized : Constituent considered non-detect, however Laboratory RDL is greater than the ADEC Groundwater Cleanup Level

J = The compound was positively identified; however, the associated numerical value is an estimated concentration only.

B = Compound considered non-detect at the listed value due to associated blank contamination

Constituents analyzed by United States Environmental Protection Agency Method EPA 8270E-SIM

Data QA/QC by: SS 05.20.2020

**Table 3. Historical Groundwater
Second Quarter 2010 to
Chevron Facility 306450
4351 Old International Airfield
Anchorage, Alaska**

Well	Sample Date	Indeno(1,2,3-cd)					Pyrene	Comments
		Fluoranthene	Fluorene	pyrene	Naphthalene	Phenanthrene		
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	
ADEC Groundwater Cleanup Levels		260	290	0.19	1.7	170	120	
MW-5	5/17/2010	<0.0094	<0.0094	<0.0094	1.2	<0.0094	<0.0094	
MW-5	4/26/2011	<0.0098	<0.0098	4.00	<0.0098	<0.0098	<0.0098	
MW-5	9/20/2011	<0.0095	<0.0095	<0.0095	3.9	<0.028	<0.0095	
MW-5	5/18/2012	<0.010	<0.010	<0.010	4	<0.031	<0.010	
MW-5	9/17/2012	<0.0095	<0.0095	<0.0095	3.2	<0.029	<0.0095	
MW-5	4/30/2013	<0.044	<0.044	<0.044	2	0.17	0.12	Analytes collected using low-flow sampling methods
MW-5	4/30/2013	<0.043	<0.043	<0.043	<0.043	<0.053	<0.043	
MW-5	9/17/2013	<0.041	<0.041	<0.041	<0.041	<0.041	<0.041	
MW-5	4/29/2014	<0.043	<0.043	<0.043	1.0	<0.043	<0.043	
MW-5	9/4/2014	<0.042	<0.042	<0.042	4.0	<0.042	<0.042	
MW-5	5/1/2015	<0.042	<0.042	<0.042	0.7	<0.042	<0.042	PAH was not collected from MW-5 originally, ARCADIS returned to collect this sample.
MW-5	9/3/2015	<0.041	<0.041	<0.041	3.1	<0.041	<0.041	
MW-5	4/13/2016	<0.11	<0.11	<0.11	0.12	<0.32	<0.011	
MW-5	9/16/2016	<0.0099	<0.0099	<0.0099	3.0	<0.030	<0.0099	
MW-5	5/11/2017	<0.0098	<0.0098	<0.0098	<0.029	<0.029	<0.0098	
MW-5	9/11/2017	<0.010	<0.010	<0.010	1.3	<0.030	<0.010	
MW-5	4/6/2018	<0.01	<0.01	<0.01	0.08	<0.03	<0.01	
MW-5	10/24/2018	<0.1	<0.1	<0.1	1 J	<0.1	<0.1	
MW-5	4/19/2019	<0.1	<0.1	<0.1	4.0	<0.1	<0.1	
MW-5	9/18/2019	--	--	--	--	--	--	
MW-5	4/9/2020	<0.0555	<0.0555	<0.0555	0.674	<0.0555	<0.0555	
MW-5	10/7/2020	<0.0525 B	<0.0525	<0.0525	4.35	0.0321 J	0.0325 J	
MW-5	9/7/2021	<0.0500 B [<0.0500]	<0.0500 [<0.0500]	<0.0500 [<0.0500]	7.2 [6.64]	<0.0500 [<0.0500]	<0.0500 [<0.0500]	
MW-5	4/12/2022	<0.0500 B [<0.0500 B]	<0.0500 [<0.0500]	<0.0500 [<0.0500]	6.39 J [4.58 J]	0.0219 J [0.0195 J]	<0.0500 B [<0.0500 B]	
MW-7	5/17/2010	0.37	0.68	<0.10	660	1.60	0.50	
MW-7	5/18/2012	<0.096	0.19	<0.096	320	<0.29	<0.096	
MW-7	9/17/2012	0.13	0.28	<0.0095	320	0.35	0.16	
MW-7	5/1/2013	<0.044	0.22	<0.044	236	0.053	<0.044	Analytes collected using low-flow sampling methods
MW-7	5/1/2013	<0.044	0.25	<0.044	261	0.065	<0.044	
MW-7	9/17/2013	<0.045	0.28	<0.045	<0.045	0.091	<0.045	
MW-7	4/29/2014	<0.043	<0.043	<0.043	230	0.060	<0.043	
MW-7	9/4/2014							
MW-7	4/15/2015	<0.21	<0.21	<0.21	279	<0.21	<0.21	
MW-7	9/3/2015	<0.042	0.26	<0.042	317	0.13	0.055	
MW-7	4/13/2016	<0.10	<0.10	<0.10	400	0.44	<0.10	
MW-7	9/16/2016							
MW-7	5/11/2017	<0.096	0.21	<0.096	340	<0.29	<0.096	
MW-7	9/11/2017	<0.0095	0.1	<0.0095	340	<0.29	<0.096	
MW-7	4/6/2018	0.07	<0.01	0.01 J	290	0.2	0.1	
MW-7	10/24/2018	0.1 J	0.2 J	<0.1	420 J	0.6	0.2 J	
MW-7	4/19/2019	0.2 J	0.4 J	<0.1 U	31	0.6	0.3 J	
MW-7	9/18/2019	--	--	--	--	--	--	
MW-7	4/9/2020	0.0223 J	0.229	<0.0555	308	0.157	0.0396 J	
MW-7	10/8/2020	<0.0631 B	0.188	<0.0500	381	<0.0500	0.0606	
MW-7	04/14/2021	<0.0525 B [<0.0500 B]	0.136 [0.145]	<0.0525 [<0.0500]	199 [293]	<0.0525 [<0.0500]	<0.0525 B [<0.0607 B]	
MW-7	9/7/2021	<0.0595	0.133	<0.0595	242	<0.0595	<0.0595	
MW-7	4/12/2022	<0.0500 B	<0.500	<0.0500	278	0.157	<0.0573 B	

RW-14	4/26/2011	0.02	0.02	<0.010	1.00	0.01	0.03
RW-14	9/20/2011	0.02	0.04	<0.0098	7.4	0.04	0.03
RW-14	9/18/2019	--	--	--	--	--	--
EQB	4/8/2020	<0.0555	<0.0555	<0.0555	<0.555	<0.0555	<0.0555
EQB	10/7/2020	0.0128 J	<0.0525	<0.0525	<0.525	<0.0525	<0.0525
EQB	04/14/2021	0.0160 J	<0.0500	<0.0500	<0.500	<0.0500	0.0293 J
EQB	9/7/2021	0.0233 J	<0.0500	<0.0500	<0.500	0.0192 J	0.0207 J
EQB	4/12/2022	0.0150 J	<0.0500	<0.0500	<0.500	<0.0500	0.0249 J

Notes:

ADEC GCL = Alaska Depa

(µg/L) = micrograms per liter

LNAPL = Light Non-aqueous

-- = Not sampled or not analyzed

<0.0525 = Not detected at

Bold = Detections above the

Bold and Shaded = Value

Bold and Italicized : Constituent

J = The compound was present

B = Compound considered

Attachment D

ADEC Data Review Checklist

Laboratory Data Review Checklist

Completed By:

Bhagyashree A Fulzele

Title:

Project Chemist

Date:

May 05, 2023

Consultant Firm:

ARCADIS U.S., Inc

Laboratory Name:

Pace Analytical

Laboratory Report Number:

L1605824

Laboratory Report Date:

04/25/2023

CS Site Name:

First Semi Annual 2023 Groundwater Monitoring Report

ADEC File Number:

2100.26.115

Hazard Identification Number:

23369

Note: Any N/A or No box checked must have an explanation in the comments box.

1. Laboratory

- a. Did an ADEC Contaminated Sites Laboratory Approval Program (CS-LAP) approved laboratory receive and perform all of the submitted sample analyses?

Yes No N/A Comments:

Yes.

- b. If the samples were transferred to another “network” laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS-LAP approved?

Yes No N/A Comments:

Not applicable.

2. Chain of Custody (CoC)

- a. Is the CoC information completed, signed, and dated (including released/received by)?

Yes No N/A Comments:

Yes.

- b. Were the correct analyses requested?

Yes No N/A Comments:

Yes.

3. Laboratory Sample Receipt Documentation

- a. Is the sample/cooler temperature documented and within range at receipt (0° to 6° C)?

Yes No N/A Comments:

Yes.

- b. Is the sample preservation acceptable – acidified waters, methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

Yes No N/A Comments:

Yes.

- c. Is the sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials); canister vacuum/pressure checked and no open valves etc?

Yes No N/A Comments:

Yes.

- d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, canister not holding a vacuum, etc.?

Yes No N/A Comments:

Yes, no discrepancies.

e. Is the data quality or usability affected?

Comments:

Data quality or usability was not affected.

4. Case Narrative

a. Is the case narrative present and understandable?

Yes No N/A Comments:

Yes.

b. Are there discrepancies, errors, or QC failures identified by the lab?

Yes No N/A Comments:

Yes.

c. Were all corrective actions documented?

Yes No N/A Comments:

Yes.

d. What is the effect on data quality/usability according to the case narrative?

Comments:

Data quality/usability was not affected.

5. Samples Results

a. Are the correct analyses performed/reported as requested on COC?

Yes No N/A Comments:

Yes.

b. Are all applicable holding times met?

Yes No N/A Comments:

Yes.

c. Are all soils reported on a dry weight basis?

Yes No N/A Comments:

No soil samples were submitted for analysis.

d. Are the reported limit of quantitation (LOQs) or limits of detection (LOD), or reporting limits (RL) less than the Cleanup Level for the project?

Yes No N/A Comments:

Yes.

e. Is the data quality or usability affected?

Data quality/usability was not affected.

6. QC Samples

a. Method Blank

i. Was one method blank reported per matrix, analysis and 20 samples?

Yes No N/A Comments:

Yes.

ii. Are all method blank results less than limit of quantitation LOQ (or RL)?

Yes No N/A Comments:

iii. If above LOQ or RL, what samples are affected?

Comments:

Sample Locations	Method	Compounds	Sample Result	Qualification
MW-5A-W-20230417 MW-5-W-20230417	AK102	AK102 DRO C10-C25	Detected sample results <RL and <BAL	“UB” at the RL

Note:

RL Reporting limit

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes No N/A Comments:

Yes.

v. Data quality or usability affected?

Comments:

The method blank contamination is considered minor and would result in the non-detect of the associated data. The reported data should still consider as usable.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – Are one LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

Yes No N/A Comments:

Yes.

ii. Metals/Inorganics – Are one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

Yes No N/A Comments:

Yes.

iii. Accuracy – Are all percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

Yes No N/A Comments:

No.

Sample locations associated with the LCS/LCSD exhibiting recoveries outside of the control limits are presented in the following table.

Sample Locations	Method	Compounds	LCS Recovery	LCSD Recovery
MW-9-W-20230417	8260D	Isopropylbenzene	AC	<LL but >10%
MW-5A-W-20230417				
RW-14-W-20230417				
MW-5-W-20230417		Vinyl chloride	>UL	AC
MW-7A-W-20230417				
MW-7-W-20230417				
BD-1-W-20230417		o-Xylene	<LL but >10%	<LL but >10%
EQB-1-W-20230417				
TRIP BLANK 1_20230414				
TRIP BLANK 2_20230414				

Note:

AC Acceptable

The criteria used to evaluate the LCS/LCSD recoveries are presented in the following table. In the case of an LCS/LCSD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J

iv. Precision –Are all relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? Was the RPD reported from LCS/LCSD, and or sample/sample duplicate? (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

Yes No N/A Comments:

Yes.

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

Accuracy:

Method 8260D: Compounds isopropylbenzene and o-xylene result in sample IDs MW-9-W-20230417, MW-5A-W-20230417, RW-14-W-20230417, MW-5-W-20230417, MW-7A-W-20230417, MW-7-W-20230417, BD-1-W-20230417, EQB-1-W-20230417, TRIP BLANK 1_20230414 and TRIP BLANK 2_20230414 was qualified as estimated (J/UJ).

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes No N/A Comments:

Yes.

vii. Is the data quality or usability affected? (Use comment box to explain.)

Comments:

The LCS/LCSD recovery exceedances are considered minor and would result in the estimation of associated data. The reported data should still consider as usable.

c. Matrix Spike/Matrix Spike Duplicate (MS/MSD)

Note: Leave blank if not required for project

i. Organics – Are one MS/MSD reported per matrix, analysis and 20 samples?

Yes No N/A Comments:

The MS/MSD analysis was performed on sample ID MW-7A-W-20230417.

ii. Metals/Inorganics – Are one MS/MSD reported per matrix, analysis and 20 samples?

Yes No N/A Comments:

The MS/MSD analysis was performed on sample ID MW-7A-W-20230417.

iii. Accuracy – Are all percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

Yes No N/A Comments:

No.

Sample locations associated with the MS/MSD exhibiting recoveries outside of the control limits are presented in the following table.

Sample Locations	Method	Compounds	MS Recovery	MSD Recovery
MW-7A-W-20230417	8260D	n-Butylbenzene	>UL	>UL
		sec-Butylbenzene	>UL	>UL
		2-Chlorotoluene	>UL	>UL
		1,2-Dichloroethane	AC	>UL
		p-Isopropyltoluene	AC	>UL
		n-Propylbenzene	>UL	>UL
	Styrene	>UL	>UL	
	8270D	2-Methylnaphthalene	>UL	AC

Note:

AC Acceptable

The criteria used to evaluate the MS/MSD recoveries are presented in the following table. In the case of an MS/MSD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
Parent sample concentration > four times the MS/MSD spiking solution concentration.	Detect	No Action
	Non-detect	

iv. Precision – Are all relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

Yes No N/A Comments:

Yes.

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

Accuracy:

Method 8260D: Compounds 1,2-dichloroethane, n-propylbenzene and 2-methylnaphthalene result in sample ID MW-7A-W-20230417 were qualified as estimated (J).

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes No N/A Comments:

Yes.

vii. Is the data quality or usability affected? (Use comment box to explain.)

Comments:

MS/MSD recovery exceedance are considered minor and would result in the estimation of the associated data. The reported data should still consider as usable.

d. Surrogates – Organics Only or Isotope Dilution Analytes (IDA) – Isotope Dilution Methods Only

i. Are surrogate/IDA recoveries reported for organic analyses – field, QC and laboratory samples?

Yes No N/A Comments:

Yes.

ii. Accuracy – Are all percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods 50-150 %R for field samples 60-120% R for QC samples ; all other analyses see the laboratory report pages)

Yes No N/A Comments:

No.

Sample locations associated with surrogates exhibiting recoveries outside of the control limits presented in the following table.

Sample Locations	Surrogate	Recovery
MW-9-W-20230417	Nitrobenzene-d5	< 10%
MW-7-W-20230417		
BD-1-W-20230417		

The criteria used to evaluate the surrogate recoveries are presented in the following table. In the case of a surrogate deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL	Non-detect	No Action
	Detect	J
< LL but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
Surrogates diluted below the calibration curve due to the high concentration of a target compounds	Non-detect	UJ
	Detect	J

iii. Do the sample results with failed surrogate/IDA recoveries have data flags? If so, are the data flags clearly defined?

Yes No N/A Comments:

Yes.

iv. Is the data quality or usability affected?

Comments:

Surrogate recovery exceedance are considered minor and would result in the estimation of the associated data. The reported data should still consider as usable.

e. Trip Blanks

i. Is one trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.)

Yes No N/A Comments:

Trip blank samples were collected as TRIP BLANK 1_20230414 and TRIP BLANK 2_20230414.

ii. Are all results less than LOQ or RL?

Yes No N/A Comments:

Yes.

iii. If above LOQ or RL, what samples are affected?

Comments:

None of the samples were affected.

iv. Is data quality or usability affected?

Comments:

Data quality or usability was not affected.

f. Field Duplicate

i. Are one field duplicate submitted per matrix, analysis and 10 project samples?

Yes No N/A Comments:

Yes.

ii. Was the duplicate submitted blind to lab?

Yes No N/A Comments:

Yes.

iii. Precision – All relative percent differences (RPD) less than specified project objectives?
(Recommended: 30% water, 50% soil)

$$\text{RPD (\%)} = \text{Absolute value of: } \frac{(R1-R2)}{((R1+R2)/2)} \times 100$$

Where R1 = Sample Concentration
R2 = Field Duplicate Concentration

Yes No N/A Comments:

Results for duplicate samples are summarized in the following table.

Sample ID / Duplicate ID	Method	Compounds / Analytes	Sample Result	Duplicate Result	RPD
MW-7-W-20230417 / BD-1-W-20230417	6010D	Lead	252	257	2%
	AK101	TPHGAK C6 to C10	108000	113000	5%
	8260D	1,2-Dibromoethane	228	228	0%
		Benzene	3310	3250	2%
		n-Butylbenzene	21.7	18.9	AC
		sec-Butylbenzene	14	11.8	AC
		1,2-Dichloroethane	104	105	1%
		Ethylbenzene	3650	3490	4%
		Isopropylbenzene	95.6	89.6	AC
		Naphthalene	267	277	AC
		n-Propylbenzene	248	242	2%
		Toluene	32900	30900	6%
		1,2,4-Trimethylbenzene	2030	2380	16%
		1,2,3-Trimethylbenzene	570	570	0%
		1,3,5-Trimethylbenzene	565	566	0%
		Xylenes, Total	24000	22500	6%
		o-Xylene	7330	6940	5%
		m&p-Xylene	16700	15600	7%
		AK102	AK102 DRO C10-C25	21700	21400
	8270	Naphthalene	233	249	7%

Sample ID / Duplicate ID	Method	Compounds / Analytes	Sample Result	Duplicate Result	RPD
		Pyrene	0.0356	0.0304	AC
		1-Methylnaphthalene	31.1	29.4	6%
		2-Methylnaphthalene	56.9	54.2	5%

Notes:

AC Acceptable

The calculated RPDs between the parent sample and field duplicate were acceptable.

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

Data quality or usability was not affected.

g. Decontamination or Equipment Blank

i. Were decontamination or equipment blanks collected?

Yes No N/A Comments:

Equipment blank sample was collected as EQB-1-W-20230417.

ii. Are all results less than LOQ or RL?

Yes No N/A Comments:

No.

iii. If above LOQ or RL, specify what samples are affected?

Comments:

Sample Locations	Method	Compound	Sample Result	Qualification
MW-5A-W-20230417 MW-5-W-20230417	AK102	AK102 DRO C10-C25	Detected sample results >RL and >BAL	"UB" at RL
MW-7A-W-20230417	8270	Benzo(a)anthracene		
RW-14-W-20230417 MW-7A-W-20230417 MW-7-W-20230417		Benzo(b)fluoranthene		
MW-7-W-20230417		Benzo(g,h,i)perylene		
MW-7A-W-20230417		Chrysene		
MW-9-W-20230417 MW-5A-W-20230417 RW-14-W-20230417 MW-5-W-20230417 MW-7A-W-20230417 MW-7-W-20230417 BD-1-W-20230417		Fluoranthene		
MW-7-W-20230417		Indeno(1,2,3-cd)pyrene		

Note:

RL Reporting limit

iv. Are data quality or usability affected?

Comments:

The equipment blank contamination is considered minor and would result in the non-detect of the associated data. The reported data should still consider as usable.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Are they defined and appropriate?

Yes No N/A Comments:

Yes.

All compounds associated with the calibrations were within the specified control limits, with the exception of the compounds presented in the following table.

Sample Locations	Initial/Continuing	Compounds	Recovery
MW-9-W-20230417	CCV %D	Acrolein	Low
MW-5A-W-20230417		Naphthalene	
RW-14-W-20230417		o-Xylene	

Sample Locations	Initial/Continuing	Compounds	Recovery
MW-5-W-20230417 EQB-1-W-20230417 TRIP BLANK 1_20230414 TRIP BLANK 2_20230414			
MW-7A-W-20230417 MW-7-W-20230417 BD-1-W-20230417		Acrolein Naphthalene	Low

Results associated with calibrations outside of the recovery limits are qualified as estimated (UJ/J).

Compounds analyzed at a dilution for sample results that were greater than the calibration. The diluted results were reported and qualified as being reported at a dilution (D).

Sample ID	Method	Compound	Original Analysis	Diluted Analysis	Reported Analysis
MW-9-W-20230417	8260D	Benzene	--	159	159 D
MW-7A-W-20230417	8260D	1,2-Dibromoethane	--	7.25	7.25 D
		1,2,4-Trimethylbenzene	--	581	581 D
		Xylenes, Total	--	2170	2170 D
		o-Xylene	--	695	695 D
		m&p-Xylene	--	1470	1470 D
MW-7-W-20230417	8260D	1,2-Dibromoethane	--	228	228 D
		Benzene	--	3310	3310 D
		Ethylbenzene	--	3650	3650 D
		Toluene	--	32900	32900 D
		1,2,4-Trimethylbenzene	--	2030	2030 D
		Xylenes, Total	--	24000	24000 D
		o-Xylene	--	7330	7330 D
	m&p-Xylene	--	16700	16700 D	
	8270E	Naphthalene	--	233	233 D
BD-1-W-20230417	8260D	1,2-Dibromoethane	--	228	228 D
		Toluene	--	30900	30900 D
		Xylenes, Total	--	22500	22500 D
		o-Xylene	--	6940	6940 D

Sample ID	Method	Compound	Original Analysis	Diluted Analysis	Reported Analysis
		m&p-Xylene	--	15600	15600 D
	8270E	Naphthalene	--	249	249 D