



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

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Date: December 14, 2023
Our Ref: 30063655
Subject: Fourth Quarter 2023 Groundwater Monitoring Report
Chevron - #1252 (Chevron-Branded Service Station #91252)
11836 Old Glenn Highway, Eagle River, Alaska
ADEC File No.: 2107.26.003
ADEC Hazard ID: 23705

Dear Ms. Reams,

On behalf of Chevron Environmental Management Company (CEMC), Arcadis U.S., Inc. (Arcadis), has prepared this report to document the fourth quarter 2023 groundwater monitoring activities for the Chevron #1252 (Chevron-Branded Service Station #91252), located at 11836 Old Glenn Highway in Eagle River, Alaska (site). This work was conducted under the direction of a "Qualified Environmental Professional" (QEP) by a "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*)
Mark Engelke, Cook Inlet Marketing Group, Inc. (*electronic copy*)

FOURTH QUARTER 2023 GROUNDWATER MONITORING REPORT

December 14, 2023

Work Conducted This Period [Fourth Quarter 2023]:

1. Conducted quarterly groundwater monitoring activities on October 18, 2023.
2. Prepared the *Fourth Quarter 2023 Groundwater Monitoring Report*.

Work Proposed Next Period [First Quarter 2024]:

1. Conduct the first quarter 2024 groundwater monitoring activities.
2. Prepare *Site Closure Request*.
3. Prepare the *First Quarter 2024 Groundwater Monitoring Report*.

Site Description

The site is located in south-central Alaska, east of Cook Inlet and Eagle River. Glacial deposits consisting of sands, gravels, and cobbles were observed in prior site investigations. Static groundwater depths historically range between 16.00 and 33.56 feet below top of casing. Groundwater flow has been observed primarily towards the north-northwest. The site operated as a Chevron-branded gasoline station with three underground storage tanks (USTs; two 15,000-gallon gasoline and one 15,000-gallon diesel), four fuel dispenser islands, associated product piping, and a convenience store. Historically, USTs at the sites contained leaded and unleaded gasoline. Petroleum impacts were observed in soil and ground water during facility upgrades in 1995, and source of contamination is presumed to be USTs, associated dispensers, and product piping.

On March 3, 2023, the Alaska Department of Environmental Conservation (ADEC) approved a *Groundwater Sampling Analyte Reduction Request – Groundwater Sampling Work Plan Addendum* which included monitoring and sampling of monitoring wells MW-2 through MW-6, MW-8 and MW-9 on a quarterly basis, and quarterly gauging of monitoring well MW-1R. The surrounding properties are primarily commercial, and the site is bordered by businesses to the north, south, east, and west. 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:

Quarterly

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)	15.83 (MW-8) to 16.10 (MW-9) – Perched wells 29.73 (MW-1R) to 32.55 (MW-3) – Aquifer wells
Approximate groundwater elevation: (feet relative to NAVD88)	290.51 (MW-8) to 291.54 (MW-9) – Perched wells 274.09 (MW-3) to 278.20 (MW-1R) – Aquifer wells
Groundwater flow direction	North-Northwest
Groundwater gradient (feet per foot)	0.029
Current remediation techniques:	None
Summary of unusual activity:	Monitoring wells MW-8 and MW-9 contained insufficient groundwater to sample.
Agency directive requirements:	None

Groundwater Gauging and Sampling Methods

On October 18, 2023, the fourth quarter 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 2022a) and *Arcadis Standards for Groundwater Sampling and Monitoring Wells (Arcadis 2022a)*. 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 0.3 feet. 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:

- ± 3% for temperature (minimum of ± 0.2°C),
- ± 0.1 for pH,
- ± 3% for conductivity,
- ± 10 mV for redox potential,
- ± 10% for dissolved oxygen, and
- ± 10% for turbidity.

Following well stabilization, the flow rate was set to approximately 200 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-8 and MW-9 contained insufficient groundwater to be sampled. The groundwater elevation contour map and a rose diagram of historical groundwater flow directions are illustrated on **Figure 3**.

In a letter dated March 3, 2023, ADEC approved a reduction of analytes for the site. Groundwater samples collected were analyzed by Pace Analytical National Center for Testing & Innovation (Pace) in Mt. Juliet, Tennessee for the following constituents:

- Select volatile organic compounds including benzene, toluene, ethylbenzene, total xylenes, 1,2-dibromoethane, and 1,2-dichloroethane by United States Environmental Protection Agency (USEPA) Method 8260D.
- Total petroleum hydrocarbons as diesel range organics (DRO) by Alaska Method AK102.
- Total lead by USEPA Method 6010D.
- EDB by USEPA Method 8011.
- Polycyclic aromatic hydrocarbons (PAHs) by USEPA Method 8270E-SIM.

A groundwater duplicate sample (BD-1) was collected from monitoring well MW-5 and submitted blind with the samples set to Pace. Additionally, an equipment blank (EQB-1) sample was collected, and trip blank (Trip Blank) 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) were reported at concentrations that are less than 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**. Groundwater analytical data collected in 2023 are summarized in **Tables 4** and **5**. The laboratory report is included as **Attachment B**. Historical analytical results (pre-2023) are presented in **Attachment C**.

Laboratory Data Review

As required by the ADEC Guidelines for Data Reporting (ADEC 2022b), 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:

- Precision:
 - Matrix Spike and Matrix Spike Duplicate (MS/MSD) Relative Percent Difference (RPD) exceedance for DRO for Alaska Method AK 102. The analytical result in the associated sample for MW-2 was qualified as estimated.
 - Blind duplicate RPD exceedance for fluorene and phenanthrene for USEPA 8270E-SIM. The analytical results in the associated samples for MW-5 and BD-1 were qualified as estimated.

- Comparability:
 - DRO was detected below the reporting limit in the method blank for Alaska Method AK 102. Based on blank evaluation, the results for DRO in samples MW-3, MW-4, MW-5, and MW-6 were 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 results for fluoranthene in samples MW-2, MW-3, MW-4, MW-5, BD-1, and MW-6 were qualified as non-detect.
 - Phenanthrene was detected below the reporting limit in the equipment blank for USEPA Method 8270E-SIM. Based on blank evaluation, the results for phenanthrene in samples MW-3, MW-4, MW-5, and MW-6 were qualified as non-detect.
 - 1-methylnaphthalene was detected below the reporting limit in the equipment blank for USEPA Method 8270E-SIM. Based on blank evaluation, the result for 1-methylnaphthalene in sample MW-5 was qualified as non-detect.
- Sensitivity:
 - The laboratory reported detection limit for DRO exceeded the ADEC GCL; however, the laboratory method detection limit is below the ADEC GCL. Therefore, 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 GCL for compounds with above exceptions.

Investigation Derived Waste

Purge and decontamination water was collected and is currently stored in U.S. Department of Transportation-approved 55-gallon steel drums onsite. Each drum was labeled with the contents, generator, date generated, and generator contact information. Following waste characterization and ADEC approval, the investigation derived waste will be transported offsite for treatment and/or disposal.

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 quarterly schedule. The first quarter sampling event will be conducted in spring of 2024.

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

References

- ADEC. 2022a. Field Sampling Guidance. ADEC, Division of Spill Prevention and Response Contaminated Sites Program. August.
- ADEC. 2022b. Technical Memorandum 22-001; Guidelines for Data Reporting. ADEC, Division of Spill Prevention and Response Contaminated Sites Program. August 15.
- ADEC. 2023. 18-AAC-75 Oil and Other Hazardous Substances Pollution Control. ADEC. Amended October 18.
- Arcadis. 2022a. Standard Groundwater Sampling for Monitoring Well. April
- Arcadis. 2022b. Summary of Procedures for Investigation Derived Waste Treatment Utilizing Granular Activated Carbon. September.

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

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

Sincerely,

Arcadis U.S., Inc.



Nate Polen
Associate Project Manager



Gerald A. Robinson
Project Manager

Enclosures:

- Figure 1. Site Location Map
- Figure 2. Site Plan
- Figure 3. Groundwater Elevation Contour Map
- Table 1. Groundwater Monitoring Schedule
- Table 2. Current Groundwater Gauging and Analytical Results
- Table 3. Current Groundwater Analytical Results – Polycyclic Aromatic Hydrocarbons
- Table 4. Historical Groundwater Gauging and Analytical Results
- Table 5. Historical Groundwater Analytical Results – Polycyclic Aromatic Hydrocarbons
- Attachment A. Field Notes
- Attachment B. Laboratory Analytical Results
- Attachment C. Historical Groundwater Analytical Results- Second Quarter 2020 to 2022
- Attachment D. ADEC Data Review

Figures

Tables

Attachment A

Field Notes

Attachment B

Laboratory Analytical Results

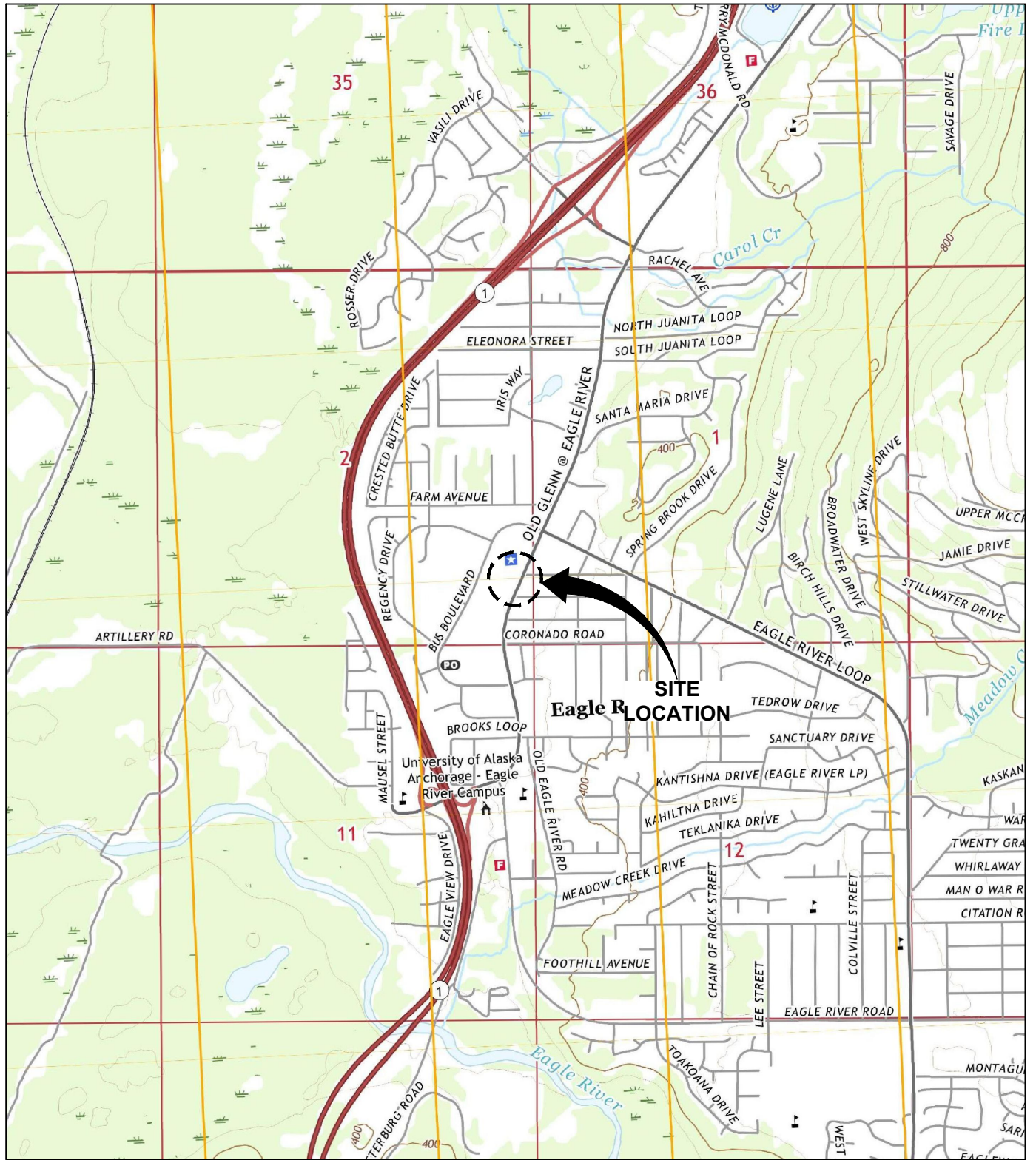
Attachment C

Historical Groundwater Analytical Results – Second Quarter 2020 to 2022

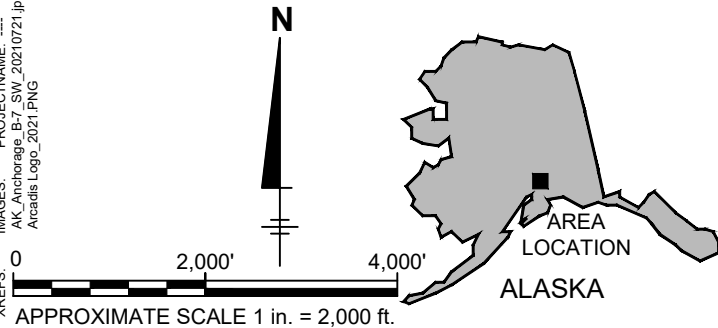
Attachment D

ADEC Data Review Checklist

Figures



SOURCE : BASE MAP USGS US TOPO; ANCHORAGE B-7 SW, AK, 2021.



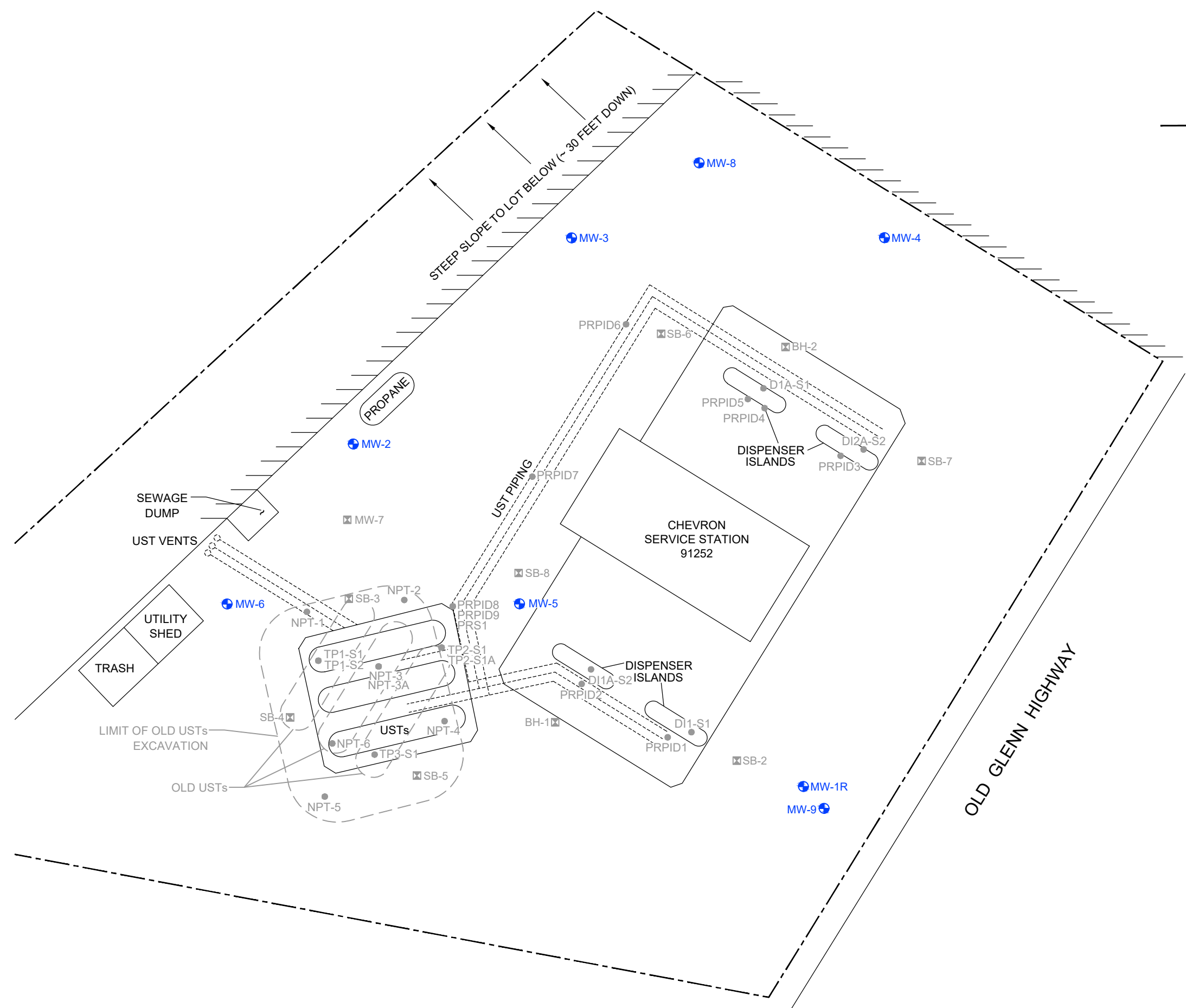
CHEVRON #1252 (CHEVRON-BRANDED SERVICE STATION #91252) 11836 OLD GLENN HIGHWAY EAGLE RIVER, ALASKA	
SITE LOCATION MAP	
	FIGURE 1

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 BY: SHANKARAPPA, VASANTH KUMAR
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LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- MW-4 ● GROUNDWATER MONITORING WELL
- SB-7 ☒ SOIL BORING LOCATION
- DI1-S1 ● SOIL SAMPLE LOCATION
- USTs UNDERGROUND STORAGE TANKS



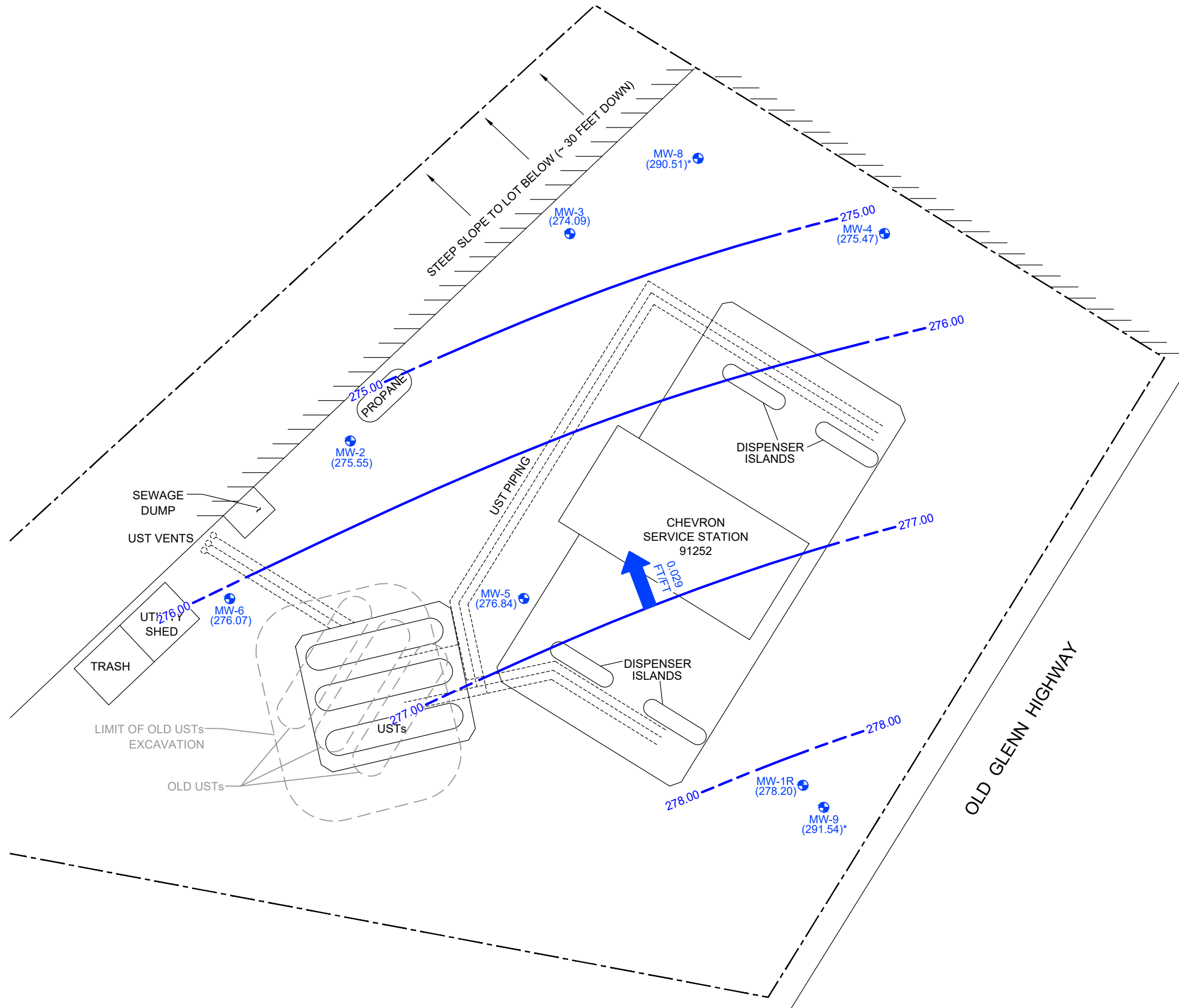
NOTES:

1. BASE MAP PROVIDED BY GHD., AT A SCALE OF 1=30'.
2. ALL SITE FEATURES AND LOCATIONS ARE APPROXIMATE.
3. MW-7 WAS NOT COMPLETED AS A MONITORING WELL BECAUSE OF UTILITY CONFLICTS

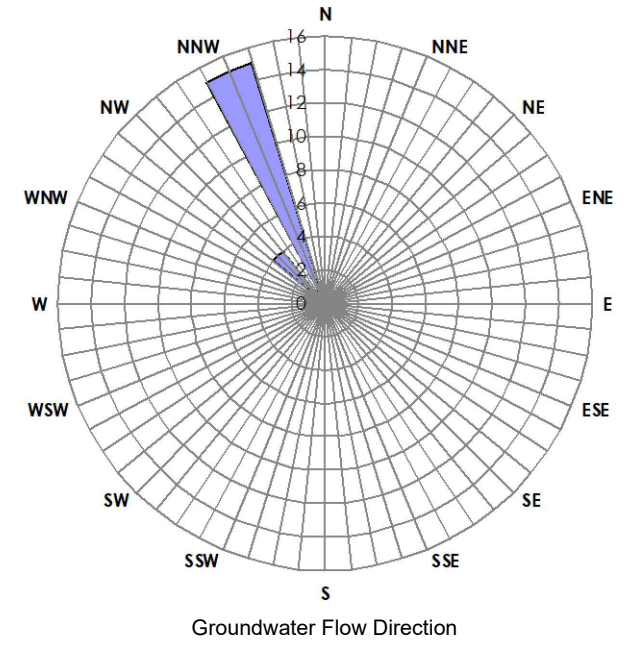


CHEVRON #1252 (CHEVRON-BRANDED SERVICE STATION #91252) 11836 OLD GLENN HIGHWAY EAGLE RIVER, ALASKA	
SITE PLAN	
	FIGURE 2

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- LEGEND**
- APPROXIMATE PROPERTY BOUNDARY
 - MW-4 GROUNDWATER MONITORING WELL
 - SB-7 SOIL BORING LOCATION
 - USTs UNDERGROUND STORAGE TANKS
 - (278.20) GROUNDWATER ELEVATION IN FEET RELATIVE TO NAVD88
 - 278.00 GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
 - APPROXIMATE GROUNDWATER FLOW DIRECTION
 - 0.029 FT/FT APPROXIMATE HYDRAULIC GRADIENT (FEET/FOOT)
 - NAVD88 NORTH AMERICAN VERTICAL DATUM OF 1988
 - * WELL NOT USED FOR CONTOURING



0 25' 50'
 APPROXIMATE SCALE: 1 in. = 25 ft.

CHEVRON #1252
 (CHEVRON-BRANDED SERVICE STATION #91252)
 11836 OLD GLENN HIGHWAY
 EAGLE RIVER, ALASKA

GROUNDWATER ELEVATION CONTOUR MAP
 OCTOBER 18, 2023

ARCADIS

FIGURE **3**

Table 1
Groundwater Monitoring Schedule
Fourth Quarter 2023
Chevron #1252
(Chevron-Branded Service Station #91252)
11836 Old Glenn Highway
Eagle River, Alaska

Well ID	Sample Schedule	Gauge	Sample	Comment
MW-1R	Quarterly	Y	N	
MW-2	Quarterly	Y	Y	
MW-3	Quarterly	Y	Y	
MW-4	Quarterly	Y	Y	
MW-5	Quarterly	Y	Y	
MW-6	Quarterly	Y	Y	
MW-8	Quarterly	Y	Y	
MW-9	Quarterly	Y	Y	
BD	Quarterly	N	Y	
TB	Quarterly	N	Y	VOCs only
EQB	Quarterly	N	Y	
MS/MSD	Quarterly	N	Y	

Note:

Wells sampled for select volatile organic compounds including benzene, toluene, ethylbenzene, total xylenes, 1,2-dichloroethane and 1,2-dibromoethane by United States Environmental Protection Agency (USEPA) Method 8260D, polycyclic aromatic hydrocarbons by USEPA Method 8270E-SIM, Total Lead by USEPA Method 6010D and total petroleum hydrocarbons diesel range organics by Alaska Method AK102.

Well ID	Sample Date	TOC (feet)	DTW (feet bTOC)	GW Elev. (feet)	DRO	Benzene	Toluene	Ethylbenzene	Total Xylenes	EDB	EDC	Lead	Comments
ADEC Groundwater Cleanup Levels					1,500	4.6	1,100	15	190	0.075	1.7	15	
MW-1R	10/18/23	307.93	29.73	278.20	--	--	--	--	--	--	--	--	Gauge only
MW-2	10/18/23	307.03	31.48	275.55	<800 J	<1.00	<1.00	<1.00	<3.00	<0.0226	0.113 J	<6.00	
MW-3	10/18/23	306.64	32.55	274.09	<1,520 B	<1.00	<1.00	<1.00	<3.00	<0.0206	0.105 J	4.64 J	
MW-4	10/18/23	307.66	32.19	275.47	<888 B	<1.00	<1.00	<1.00	<3.00	<0.0224	<1.00	<6.00	
MW-5	10/18/23	308.00	31.16	276.84	<1,950 B [570 J]	0.722 J [0.733 J]	<1.00 [<1.00]	<1.00 [<1.00]	<3.00 [<3.00]	<0.0214 [<0.0220]	0.751 J [0.827 J]	3.75 J [<6.00]	
MW-6	10/18/23	306.87	30.80	276.07	<888 B	<1.00	<1.00	<1.00	<3.00	<0.0216	<1.00	<6.00	
MW-8	10/18/23	306.34	15.83	290.51	--	--	--	--	--	--	--	--	Not enough water to sample
MW-9	10/18/23	307.64	16.10	291.54	--	--	--	--	--	--	--	--	Not enough water to sample

Notes:

1. DRO analyzed by Alaska Method AK102.
2. Lead analyzed by United States Environmental Protection Agency (USEPA) Method 6010D.
3. EDB analyzed by USEPA Method 8011
4. Constituents of concern analyzed by USEPA Method 8260D except where noted above.
5. 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
- B = The same analyte is found in the associated blank
- 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

- bTOC = Below top of casing
- DRO = Total petroleum hydrocarbons, diesel range organics
- DTW = Depth to groundwater
- EDB = 1,2-Dibromoethane
- EDC = 1,2-Dichloroethane
- feet = Relative to NAVD88
- GW Elev. = Groundwater elevation
- ID = Identification
- J = The associated numerical value is an estimated concentration only
- MW = Groundwater monitoring well
- TOC = Top of casing

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 October 18, 2023.

Table 3
 Current Groundwater Analytical Results - Polycyclic Aromatic Hydrocarbons
 Fourth Quarter 2023
 Chevron #1252
 (Chevron-Branded Service Station #91252)
 11836 Old Glenn Highway
 Eagle River, Alaska

Well ID	Sample Date	Ace-naphthene	Ace-naphthylene	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 Levels		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-1R	10/18/23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	10/18/23	<0.0555	<0.0555	<0.0555	<0.0555	<0.0555	<0.0555	<0.0555	<0.278	<0.555	<0.0555	<0.0555	<0.0555 B	<0.0555	<0.0555	<0.555	<0.555	<0.555	<0.0555 B	<0.0555
MW-3	10/18/23	<0.0555	<0.0555	<0.0555	<0.0555	<0.0555	0.0461 J	0.0819	<0.278	<0.555	0.0327 J	<0.0555	<0.0721 B	<0.0555	0.0298 J	<0.555	<0.555	<0.555	<0.0555 B	0.118
MW-4	10/18/23	<0.0525	<0.0525	<0.0525	<0.0525	<0.0525	<0.0525	<0.0525	<0.263	<0.525	<0.0525	<0.0525	<0.0525 B	<0.0525	<0.0525	<0.525	<0.525	<0.525	<0.0525 B	0.0277 J
MW-5	10/18/23	0.107 [0.068]	<0.0525 [<0.0500]	0.0786 [0.0368 J]	<0.0525 [<0.0500]	<0.0525 [<0.0500]	<0.0525 [<0.0500]	<0.0525 [<0.0500]	<0.263 [<0.250]	<0.525 [0.0337 J]	<0.0525 [<0.0500]	<0.0525 [<0.0500]	<0.0525 B [<0.0500 B]	0.656 J [0.398 J]	<0.0525 [<0.0500]	<0.525 B [<0.500]	<0.525 [<0.500]	0.196 J [0.128 J]	<0.707 B J [0.316 J]	0.0248 J [<0.0500]
MW-6	10/18/23	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.250	<0.500	<0.0500	<0.0500	<0.0500 B	<0.0500	<0.0500	<0.500	<0.500	<0.500	<0.0500 B	0.0174 J
MW-8	10/18/23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	10/18/23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

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)
- µg/L = Micrograms per liter
- ADEC = Alaska Department of Environmental Conservation
- B = The same analyte is found in the associated blank
- Bold** = Detected above laboratory method detection limit (MDL)
- bTOC = Below top of casing
- DTW = Depth to groundwater
- feet = Relative to NAVD88
- GW Elev = Groundwater elevation
- ID = Identification
- J = The associated numerical value is an estimated concentration only
- MW = Groundwater monitoring well
- TOC = Top of casing

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 October 18, 2023.

Table 4
Historical Groundwater Analytical Results
First Quarter 2023 to Fourth Quarter 2023
Chevron #1252
(Chevron-Branded Service Station #91252)
11836 Old Glenn Highway
Eagle River, Alaska



Well ID	Sample Date	TOC (feet)	DTW (feet bTOC)	GW Elev. (feet)	DRO	Benzene	Toluene	Ethylbenzene	Total Xylenes	EDB	EDC	Lead	Comments
ADEC Groundwater Cleanup Levels					1,500	4.6	1,100	15	190	0.075	1.7	15	
MW-1R	03/23/23	307.58	30.40	277.18	--	--	--	--	--	--	--	--	Gauge only
MW-1R	05/04/23	307.58	29.23	278.35	--	--	--	--	--	--	--	--	Gauge only
MW-1R	08/09/23	307.58	30.09	277.49	--	--	--	--	--	--	--	--	Gauge only
MW-1R	10/18/23	307.93	29.73	278.20	--	--	--	--	--	--	--	--	Gauge only
MW-2	03/23/23	306.78	32.20	274.58	<800 B	<1.00	<1.00	<1.00	<3.00	<0.00500	<1.00	<6.00	
MW-2	05/04/23	306.78	30.96	275.82	<800 B	<1.00	<1.00	<1.00	<3.00	0.0100	<1.00	4.46 J	
MW-2	08/09/23	306.78	31.73	275.05	170 J	<1.00	<1.00	<1.00	<3.00	<0.00500 J	<1.00	<6.00	
MW-2	10/18/23	307.03	31.48	275.55	<800 J	<1.00	<1.00	<1.00	<3.00	<0.0226	0.113 J	<6.00	
MW-3	03/23/23	306.56	33.75	272.81	<800 B	<1.00	<1.00	<1.00	<3.00	<0.00500	<1.00	3.98 J	
MW-3	05/04/23	306.56	31.24	275.32	<8,000 B J	<1.00	<1.00	<1.00	<3.00	<0.00500	<1.00	11.7	PVC casing cut down
MW-3	08/09/23	306.56	32.84	273.72	528 J	<1.00	<1.00	<1.00	<3.00	<0.00500	<1.00	<6.00	
MW-3	10/18/23	306.64	32.55	274.09	<1,520 B	<1.00	<1.00	<1.00	<3.00	<0.0206	0.105 J	4.64 J	
MW-4	03/23/23	307.41	31.63	275.78	<800 B	<1.00	<1.00	<1.00	<3.00	<0.00500	<1.00	<6.00	
MW-4	05/04/23	307.41	30.80	276.61	<800 B	<1.00	<1.00	<1.00	<3.00	<0.00500	<1.00	<6.00	
MW-4	08/09/23	307.41	31.45	275.96	222 J	0.111 J	<1.00	<1.00	<3.00	<0.00500	<1.00	<6.00	
MW-4	10/18/23	307.66	32.19	275.47	<888 B	<1.00	<1.00	<1.00	<3.00	<0.0224	<1.00	<6.00	
MW-5	03/23/23	307.78	31.68	276.10	<800 B [<800 B]	0.301 J [0.234 J]	<1.00 J [<1.00]	<1.00 J [0.381 J]	<3.00 J [1.47 J]	<0.00500 [<0.00500]	0.484 J [<1.00]	<6.00 [<6.00]	
MW-5	05/04/23	307.78	30.94	276.84	1,310 [1,300]	0.305 J [0.273 J]	<1.00 [<1.00]	<1.00 [<1.00]	<3.00 [<3.00]	<0.00500 J [<0.00500]	0.707 J [0.733 J]	<6.00 [5.17 J]	
MW-5	08/09/23	307.78	31.36	276.42	1,280 [1,040]	0.558 J [0.553 J]	<1.00 [<1.00]	<1.00 [<1.00]	<3.00 [<3.00]	<0.00500 [<0.00500]	0.636 J [0.607 J]	<6.00 [<6.00]	
MW-5	10/18/23	308.00	31.16	276.84	<1,950 B [570 J]	0.722 J [0.733 J]	<1.00 [<1.00]	<1.00 [<1.00]	<3.00 [<3.00]	<0.0214 [<0.0220]	0.751 J [0.827 J]	3.75 J [<6.00]	
MW-6	03/23/23	306.64	31.51	275.13	<800 B	<1.00	<1.00	<1.00	<3.00	<0.00500	<1.00	<6.00	
MW-6	05/04/23	306.64	30.44	276.20	<800 B	<1.00	<1.00	<1.00	<3.00	<0.00500	<1.00	<6.00	
MW-6	08/09/23	306.64	--	--	--	--	--	--	--	--	--	--	Not gauged nor sampled, vault flooded
MW-6	10/18/23	306.87	30.80	276.07	<888 B	<1.00	<1.00	<1.00	<3.00	<0.0216	<1.00	<6.00	
MW-8	03/23/23	--	16.28	--	--	--	--	--	--	--	--	--	Not enough water to sample
MW-8	05/04/23	--	14.90	--	<800 B	<1.00	<1.00	<1.00	<3.00	<0.00500	<1.00	69.7	
MW-8	08/09/23	--	15.83	--	--	--	--	--	--	--	--	--	Not enough water to sample
MW-8	10/18/23	306.34	15.83	290.51	--	--	--	--	--	--	--	--	Not enough water to sample
MW-9	03/23/23	--	16.22	--	--	--	--	--	--	--	--	--	Not enough water to sample
MW-9	05/04/23	--	16.25	--	--	--	--	--	--	--	--	--	Not enough water to sample
MW-9	08/09/23	--	16.12	--	--	--	--	--	--	--	--	--	Not enough water to sample
MW-9	10/18/23	307.64	16.10	291.54	--	--	--	--	--	--	--	--	Not enough water to sample

Table 4
Historical Groundwater Analytical Results
First Quarter 2023 to Fourth Quarter 2023
Chevron #1252
(Chevron-Branded Service Station #91252)
11836 Old Glenn Highway
Eagle River, Alaska

Notes:

1. DRO analyzed by Alaska Method AK102.
2. Lead analyzed by United States Environmental Protection Agency (USEPA) Method 6010D.
3. EDB analyzed by USEPA Method 8011
4. Constituents of concern analyzed by USEPA Method 8260D except where noted above.
5. 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
- B = The same analyte is found in the associated blank
- 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
- bTOC = Below top of casing
- DRO = Total petroleum hydrocarbons, diesel range organics
- DTW = Depth to groundwater
- EDB = 1,2-Dibromoethane
- EDC = 1,2-Dichloroethane
- feet = Relative to NAVD88
- GW Elev. = Groundwater elevation
- ID = Identification
- J = The associated numerical value is an estimated concentration only
- MW = Groundwater monitoring well
- TOC = Top of casing

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 October 18, 2023.

Table 5
Historical Groundwater Analytical Results - Polycyclic Aromatic Hydrocarbons
First Quarter 2023 to Fourth Quarter 2023
Chevron #1252
(Chevron-Branded Service Station #91252)
11836 Old Glenn Highway
Eagle River, Alaska

Well ID	Sample Date	Ace-naphthene	Ace-naphthylene	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 Levels		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-1R	03/23/23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-1R	05/04/23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-1R	08/09/23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-1R	10/18/23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	03/23/23	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.250	<0.500	<0.0500	<0.0500	0.0140 J	<0.0500	<0.0500	<0.500	<0.500	<0.500	<0.0500	<0.0500
MW-2	05/04/23	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.250	<0.500	<0.0500	<0.0500	<0.0500 B	<0.0500	<0.0500	<0.500	<0.500	<0.500	<0.0500	<0.0500
MW-2	08/09/23	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.250	<0.500	<0.0500	<0.0500	<0.0500 B	<0.0500	<0.0500	<0.500	<0.500	<0.500	0.0230 J	<0.0500
MW-2	10/18/23	<0.0555	<0.0555	<0.0555	<0.0555	<0.0555	<0.0555	<0.0555	<0.278	<0.555	<0.0555	<0.0555	<0.0555 B	<0.0555	<0.0555	<0.555	<0.555	<0.555	<0.0555	<0.0555
MW-3	03/23/23	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	0.0218 J	0.0375 J	<0.250	<0.500	<0.0500	<0.0500	0.0195 J	<0.0500	<0.0500	<0.500	<0.500	<0.500	<0.0500	0.0389 J
MW-3	05/04/23	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	0.0203 J	0.0367 J	<0.250	<0.500	<0.0500	<0.0500	<0.0500 B	<0.0500	<0.0500	<0.500	<0.500	<0.500	<0.0500	0.0406 J
MW-3	08/09/23	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.250	<0.500	<0.0500	<0.0500	<0.0935 B	<0.0500	<0.0500	<0.500	<0.500	<0.500	0.0672	0.163
MW-3	10/18/23	<0.0555	<0.0555	<0.0555	<0.0555	<0.0555	0.0461 J	0.0819	<0.278	<0.555	0.0327 J	<0.0555	<0.721 B	<0.0555	0.0298 J	<0.555	<0.555	<0.555	<0.0555 B	0.118
MW-4	03/23/23	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.250	<0.500	<0.0500	<0.0500	0.0152 J	<0.0500	<0.0500	<0.500	<0.500	<0.500	<0.0500	0.0196 J
MW-4	05/04/23	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.250	<0.500	<0.0500	<0.0500	<0.0500 B	<0.0500	<0.0500	<0.500	<0.500	<0.500	<0.0500	<0.0500
MW-4	08/09/23	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.250	<0.500	<0.0500	<0.0500	<0.0500 B	<0.0500	<0.0500	0.0255 J	0.0412 J	<0.500	0.0184 J	<0.0500
MW-4	10/18/23	<0.0525	<0.0525	<0.0525	<0.0525	<0.0525	<0.0525	<0.0525	<0.263	<0.525	<0.0525	<0.0525	<0.0525 B	<0.0525	<0.0525	<0.525	<0.525	<0.525	<0.0525 B	0.0277 J
MW-5	03/23/23	0.0387 J [<0.0500]	0.0386 J [0.0332 J]	0.0306 J [0.0293 J]	<0.0500 J [<0.0500]	<0.0500 J [<0.0500]	<0.0500 J [<0.0500]	<0.0500 J [<0.0500]	<0.250 J [<0.250]	0.0434 J [0.0354 J]	<0.0500 [<0.0500]	<0.0500 J [<0.0500]	<0.0500 J [0.0110 J]	0.309 J [0.387]	<0.0500 J [<0.0500]	0.0256 J [<0.500]	<0.500 J [<0.500]	<0.500 J [<0.500]	0.317 J [0.414]	<0.0500 J [<0.0500]
MW-5	05/04/23	0.0676 [0.0708]	<0.0500 [<0.0500]	0.0371 J [0.0348 J]	<0.0500 J [<0.0500]	<0.0500 J [<0.0500]	<0.0500 J [<0.0500]	<0.0500 J [<0.0500]	<0.250 J [<0.250]	0.0596 J [0.0551 J]	<0.0500 J [<0.0500]	<0.0500 J [<0.0500]	<0.0500 B [<0.0500 B]	0.668 [0.652]	<0.0500 J [<0.0500]	<0.500 [<0.500]	<0.500 [<0.500]	<0.500 [<0.500]	0.532 [0.516]	0.0199 J [0.0202 J]
MW-5	08/09/23	0.0675 [0.0663]	<0.0500 [<0.0500]	<0.0500 [<0.0500]	<0.0500 [<0.0500]	<0.0500 [<0.0500]	<0.0500 [<0.0500]	0.0206 J [<0.0500]	<0.250 [<0.250]	<0.500 [<0.500]	<0.0500 [<0.0500]	<0.0500 [<0.0500]	<0.0500 B [<0.0500 B]	0.432 [0.446]	0.0208 J [<0.0500]	<0.500 [<0.500]	<0.500 [<0.500]	0.191 J [0.187 J]	0.309 [0.344]	<0.0500 [<0.0500]
MW-5	10/18/23	0.107 [0.068]	<0.0525 [<0.0500]	0.0786 [0.0368 J]	<0.0525 [<0.0500]	<0.0525 [<0.0500]	<0.0525 [<0.0500]	<0.0525 [<0.0500]	<0.263 [<0.250]	<0.525 [0.0337 J]	<0.0525 [<0.0500]	<0.0525 [<0.0500]	<0.0525 B [<0.0500 B]	0.656 J [0.398 J]	<0.0525 [<0.0500]	<0.525 B [<0.500]	<0.525 [<0.500]	0.196 J [0.128 J]	<0.707 B J [0.316 J]	0.0248 J [<0.0500]
MW-6	03/23/23	<0.0500	0.0258 J	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.250	<0.500	<0.0500	<0.0500	0.0194 J	<0.0500	<0.0500	<0.500	<0.500	<0.500	0.0454 J	0.0329 J
MW-6	05/04/23	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	0.0318 J	<0.250	<0.500	<0.0500	<0.0500	<0.0500 B	<0.0500	0.0209 J	<0.500	<0.500	<0.500	<0.0500	0.0244 J
MW-6	08/09/23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	10/18/23	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.250	<0.500	<0.0500	<0.0500	<0.0500 B	<0.0500	<0.0500	<0.500	<0.500	<0.500	<0.0500 B	0.0174 J
MW-8	03/23/23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	05/04/23	<0.0555	<0.0555	<0.0555	<0.0555	<0.0555	<0.0555	<0.0555	<0.278	<0.555	<0.0555	<0.0555	<0.0555 B	<0.0555	<0.0555	<0.555	<0.555	<0.555	<0.0555	<0.0555
MW-8	08/09/23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	10/18/23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	03/23/23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	05/04/23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	08/09/23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	10/18/23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

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)
µg/L = Micrograms per liter
ADEC = Alaska Department of Environmental Conservation
B = The same analyte is found in the associated blank
Bold = Detected above laboratory method detection limit (MDL)
bTOC = Below top of casing

DTW = Depth to groundwater
feet = Relative to NAVD88
GW Elev = Groundwater elevation
ID = Identification
J = The associated numerical value is an estimated concentration only
MW = Groundwater monitoring well
TOC = Top of casing

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 October 18, 2023.

Tables

Attachment A

Field Notes

Project Number : 30063655

Prepared By: Evan Wujcik

Site ID: 91252

Site Name: Chevron - 91252

City: Eagle River

State: Alaska

Project Manager: Gerald Robinson

Portfolio: COP 3.0

Subportfolio: West

Inside Chevron Operational Control? Yes No

Staff on Site

Evan Wujcik

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

Date	Time	Description of Activities
10/18/2023	6:00	Arrive on site Locate wells MW8 and 9 not enough water to sample
10/18/2023	7:00	Sample MW4 Decon equipment See COC for analysis
10/18/2023	8:00	Sample MW6 Decon equipment See COC for analysis
10/18/2023	9:00	Sample MW2 MS/MSD samples collected from this location Decon equipment See COC for analysis
10/18/2023	10:00	Sample MW3 Decon equipment See COC for analysis
10/18/2023	11:00	Sample MW5 BD samples collected from this location Decon equipment See COC for analysis
10/18/2023	11:30	Load vehicle Mobilize offsite

Signature





Groundwater Gauging Log

Project Number		30063655						
Client:		Chevron						
Site ID:		91252						
Site Location:		Eagle River, Alaska						
Measuring Point:		Top of Casing						
Date(s):		10/18/2023						
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-1R	10/18/2023	06:09	29.73	ND	38.20	0	--	--
MW-2	10/18/2023	06:59	31.48	ND	38.40	0	--	--
MW-3	10/18/2023	06:33	32.55	ND	37.00	0	--	--
MW-4	10/18/2023	06:11	32.19	ND	44.00	0	--	--
MW-5	10/18/2023	06:53	31.16	ND	42.50	0	--	--
MW-6	10/18/2023	06:29	30.80	ND	40.50	0	--	--
MW-8	10/18/2023	06:05	15.83	ND	16.30	0	--	Not enough water to sample
MW-9	10/18/2023	06:08	16.10	ND	16.27	0	--	Not enough water to sample

ft-bmp = feet below measuring point

ND = Not Detected

PID = Photoionization Detector Reading

ppm = parts per million

-- = Not Recorded

Project Number	30063655	Well ID	MW-3	Date	10/18/2023				
Site Location	Eagle River, Alaska	Site ID	91252	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)	32.55	Total Depth (ft-bmp)	37	Water Column (ft)	4.45	Gallons in Well	0.72		
Water Quality Meter Make/Model	Horiba U-52	Purge Method	Low-Flow	Collection Type	Grab				
Sample Time	10:00	Well Volumes Purged	1.10	Sample ID	MW-3-W-20231018	Purge Equipment	Bladder		
Purge Start	09:30	Gallons Purged	0.79	Duplicate ID	--	Sample Equipment	Bladder		
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)	Color
09:33	200	32.57	7.08	3.47	1000	0.20	4.66	14	--
09:36	200	32.6	7.07	3.48	1000	0.00	4.76	4	--
09:39	200	32.63	7.06	3.48	1000	0.00	4.80	-1	--
09:42	200	32.66	7.05	3.45	1000	0.00	4.93	-4	--

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-3-W-20231018 Sample Time: 10:00 Sample Depth (ft-bmp) (e.g. pump intake): 33
 Analytes and Methods: See Chain-of-Custody. Depth to Water at Time of Sampling 32.66

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	30063655	Well ID	MW-6	Date	10/18/2023	
Site Location	Eagle River, Alaska	Site ID	91252	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)	30.8	Total Depth (ft-bmp)	40.5	Water Column (ft)	9.7	Gallons in Well 1.58
Water Quality Meter Make/Model	Horiba U-52	Purge Method	Low-Flow	Collection Type	Grab	
Sample Time	08:00	Well Volumes Purged	0.40	Sample ID	MW-6-W-20231018	Purge Equipment Bladder
Purge Start	07:30	Gallons Purged	0.63	Duplicate ID	--	Sample Equipment Bladder
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)	Color
07:33	200	30.82	6.82	1.41	16.7	1.99	5.02	177	--
07:36	200	30.84	6.74	1.91	8.3	1.47	5.69	178	--
07:39	200	30.85	6.73	2.14	8.0	1.45	5.94	178	--
07:42	200	30.86	6.73	2.21	7.9	1.42	6.01	177	--

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-6-W-20231018 Sample Time: 08:00 Sample Depth (ft-bmp) (e.g. pump intake): 31.5
Analytes and Methods: See Chain-of-Custody. Depth to Water at Time of Sampling: 30.86

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	30063655	Well ID	MW-4	Date	10/18/2023				
Site Location	Eagle River, Alaska	Site ID	91252	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)	32.19	Total Depth (ft-bmp)	44	Water Column (ft)	11.81	Gallons in Well	1.92		
Water Quality Meter Make/Model	Horiba U-52	Purge Method	Low-Flow	Collection Type	Grab				
Sample Time	07:00	Well Volumes Purged	0.33	Sample ID	MW-4-W-20231018	Purge Equipment	Bladder		
Purge Start	06:30	Gallons Purged	0.63	Duplicate ID	--	Sample Equipment	Bladder		
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)	Color
06:33	200	32.2	7.90	0.762	439	13.32	4.17	143	--
06:36	200	32.22	7.86	0.757	219	8.44	4.75	142	--
06:39	200	32.23	7.85	0.755	148	7.66	4.89	142	--
06:42	200	32.24	7.85	0.753	106	7.32	5.02	141	--

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-4-W-20231018 Sample Time: 07:00 Sample Depth (ft-bmp) (e.g. pump intake): 33
Analytes and Methods: See Chain-of-Custody. Depth to Water at Time of Sampling: 32.24

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	30063655	Well ID	MW-5	Date	10/18/2023				
Site Location	Eagle River, Alaska	Site ID	91252	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)	31.16	Total Depth (ft-bmp)	42.5	Water Column (ft)	11.34	Gallons in Well	1.84		
Water Quality Meter Make/Model	Horiba U-52	Purge Method	Low-Flow	Collection Type	Grab				
Sample Time	11:00	Well Volumes Purged	0.34	Sample ID	MW-5-W-20231018	Purge Equipment	Bladder		
Purge Start	10:30	Gallons Purged	0.63	Duplicate ID	BD	Sample Equipment	Bladder		
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)	Color
10:33	200	31.18	6.88	12.4	202	10.94	5.40	-6	--
10:36	200	31.2	6.87	13.1	138	10.71	5.69	-6	--
10:39	200	31.22	6.87	13.5	103	10.76	5.85	-7	--
10:42	200	31.24	6.87	13.6	82.9	10.65	5.91	-8	--

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-20231018 Sample Time: 11:00 Sample Depth (ft-bmp) (e.g. pump intake): 32
Analytes and Methods: See Chain-of-Custody. Depth to Water at Time of Sampling: 31.24

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	30063655	Well ID	MW-2	Date	10/18/2023				
Site Location	Eagle River, Alaska	Site ID	91252	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)	31.48	Total Depth (ft-bmp)	38.4	Water Column (ft)	6.92	Gallons in Well	1.12		
Water Quality Meter Make/Model	Horiba U-52	Purge Method	Low-Flow	Collection Type	Grab				
Sample Time	09:00	Well Volumes Purged	0.57	Sample ID	MW-2-W-20231018	Purge Equipment	Bladder		
Purge Start	08:30	Gallons Purged	0.63	Duplicate ID	MS/MSD	Sample Equipment	Bladder		
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)	Color
08:33	200	31.5	6.78	3.88	472	3.44	5.31	181	--
08:36	200	31.51	6.77	3.96	1000	2.89	5.66	183	--
08:39	200	31.52	6.80	3.80	1000	2.81	5.79	182	--
08:42	200	31.53	6.82	3.67	827	2.85	5.85	181	--

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-2-W-20231018 Sample Time: 09:00 Sample Depth (ft-bmp) (e.g. pump intake): 32
Analytes and Methods: See Chain-of-Custody. Depth to Water at Time of Sampling: 31.53

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

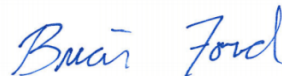
Attachment B

Laboratory Analytical Results

Arcadis - Chevron - AK

Sample Delivery Group: L1668029
Samples Received: 10/19/2023
Project Number: 30063655.19.45
Description: 91252
Site: 11836 OLD GLENN HWY EAGLE RIV
Report To: Gerald Robinson
880 H St.
Anchorage, AK 99501

Entire Report Reviewed By:



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.

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SAMPLE SUMMARY

MW-2-W-20231018 L1668029-01 GW

Collected by EW Collected date/time 10/18/23 09:00 Received date/time 10/19/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG2156064	1	10/23/23 16:52	10/25/23 21:45	JTM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2156075	1	10/23/23 03:25	10/23/23 03:25	JCP	Mt. Juliet, TN
EDB / DBCP by Method 8011	WG2157508	1.13	10/25/23 12:46	10/26/23 03:03	LJD	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG2156721	1	10/27/23 13:47	10/28/23 17:44	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG2155780	1.11	10/23/23 06:21	10/23/23 18:08	JCH	Mt. Juliet, TN



MW-3-W-20231018 L1668029-02 GW

Collected by EW Collected date/time 10/18/23 10:00 Received date/time 10/19/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG2156064	1	10/23/23 16:52	10/25/23 21:56	JTM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2156075	1	10/23/23 03:46	10/23/23 03:46	JCP	Mt. Juliet, TN
EDB / DBCP by Method 8011	WG2157508	1.03	10/25/23 12:46	10/26/23 03:37	LJD	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG2160960	1.11	10/31/23 07:45	11/01/23 04:08	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG2155780	1.11	10/23/23 06:21	10/23/23 19:37	JCH	Mt. Juliet, TN



MW-4-W-20231018 L1668029-03 GW

Collected by EW Collected date/time 10/18/23 07:00 Received date/time 10/19/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG2156064	1	10/23/23 16:52	10/25/23 21:59	JTM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2156075	1	10/23/23 04:07	10/23/23 04:07	JCP	Mt. Juliet, TN
EDB / DBCP by Method 8011	WG2157508	1.12	10/25/23 12:46	10/26/23 03:53	LJD	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG2160960	1.11	10/31/23 07:45	11/01/23 04:28	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG2155780	1.05	10/23/23 06:21	10/23/23 19:19	JCH	Mt. Juliet, TN



MW-5-W-20231018 L1668029-04 GW

Collected by EW Collected date/time 10/18/23 11:00 Received date/time 10/19/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG2156064	1	10/23/23 16:52	10/25/23 22:02	JTM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2156075	1	10/23/23 04:28	10/23/23 04:28	JCP	Mt. Juliet, TN
EDB / DBCP by Method 8011	WG2157508	1.07	10/25/23 12:46	10/26/23 04:10	LJD	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG2160960	1.11	10/31/23 07:45	11/01/23 04:48	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG2155780	1.05	10/23/23 06:21	10/23/23 19:02	JCH	Mt. Juliet, TN

MW-6-W-20231018 L1668029-05 GW

Collected by EW Collected date/time 10/18/23 08:00 Received date/time 10/19/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG2156064	1	10/23/23 16:52	10/25/23 22:05	JTM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2156075	1	10/23/23 04:49	10/23/23 04:49	JCP	Mt. Juliet, TN
EDB / DBCP by Method 8011	WG2157508	1.08	10/25/23 12:46	10/26/23 04:27	LJD	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG2160960	1.11	10/31/23 07:45	11/01/23 05:08	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG2155780	1	10/23/23 06:21	10/23/23 17:51	JCH	Mt. Juliet, TN

SAMPLE SUMMARY

BD-1-W-20231018 L1668029-06 GW

Collected by EW Collected date/time 10/18/23 00:00 Received date/time 10/19/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG2156064	1	10/23/23 16:52	10/25/23 22:14	JTM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2156075	1	10/23/23 05:10	10/23/23 05:10	JCP	Mt. Juliet, TN
EDB / DBCP by Method 8011	WG2157508	1.1	10/25/23 12:46	10/26/23 04:43	LJD	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG2156721	1	10/27/23 13:47	10/28/23 19:36	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG2155469	1	10/21/23 05:53	10/21/23 16:22	AMM	Mt. Juliet, TN

1 Cp

2 Tc

3 Ss

4 Cn

EQB-1-W-20231018 L1668029-07 GW

Collected by EW Collected date/time 10/18/23 11:30 Received date/time 10/19/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG2156064	1	10/23/23 16:52	10/25/23 22:17	JTM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2155873	1	10/22/23 11:37	10/22/23 11:37	DYW	Mt. Juliet, TN
EDB / DBCP by Method 8011	WG2157508	1.06	10/25/23 12:46	10/26/23 05:00	LJD	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG2156721	1	10/27/23 13:47	10/28/23 19:56	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG2155469	1	10/21/23 05:53	10/21/23 16:39	AMM	Mt. Juliet, TN

5 Sr

6 Qc

7 Gl

8 Al

TRIP BLANK-20231018 L1668029-08 GW

Collected by EW Collected date/time 10/18/23 00:00 Received date/time 10/19/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2155873	1	10/22/23 11:59	10/22/23 11:59	DYW	Mt. Juliet, TN
EDB / DBCP by Method 8011	WG2157508	1.04	10/25/23 12:46	10/26/23 05:17	LJD	Mt. Juliet, TN

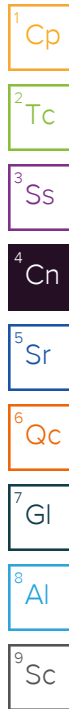
9 Sc

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.



Brian Ford
Project Manager



Semi-Volatile Organic Compounds (GC) by Method AK102

The same analyte is found in the associated blank.

Batch	Analyte	Lab Sample ID
WG2160960	AK102 DRO C10-C25	L1668029-02, 03, 04, 05

The associated batch QC was outside the established quality control range for precision.

Batch	Lab Sample ID	Analytes
WG2156721	(MSD) R3992985-5, L1668029-01	AK102 DRO C10-C25

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

The associated batch QC was outside the established quality control range for precision.

Batch	Lab Sample ID	Analytes
WG2155780	(MSD) R3991250-8, (MSD) R3991250-6	16 analytes

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	10/25/2023 21:45	WG2156064

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	U		0.0941	1.00	1	10/23/2023 03:25	WG2156075
Toluene	U		0.278	1.00	1	10/23/2023 03:25	WG2156075
Ethylbenzene	U		0.137	1.00	1	10/23/2023 03:25	WG2156075
Total Xylenes	U		0.174	3.00	1	10/23/2023 03:25	WG2156075
1,2-Dichloroethane	0.113	J	0.0819	1.00	1	10/23/2023 03:25	WG2156075
(S) Toluene-d8	108			80.0-120		10/23/2023 03:25	WG2156075
(S) 4-Bromofluorobenzene	113			77.0-126		10/23/2023 03:25	WG2156075
(S) 1,2-Dichloroethane-d4	119			70.0-130		10/23/2023 03:25	WG2156075

EDB / DBCP by Method 8011

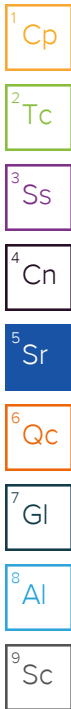
Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Ethylene Dibromide	U		0.00606	0.0226	1.13	10/26/2023 03:03	WG2157508

Semi-Volatile Organic Compounds (GC) by Method AK102

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
AK102 DRO C10-C25	U	J3	170	800	1	10/28/2023 17:44	WG2156721
(S) o-Terphenyl	77.0			50.0-150		10/28/2023 17:44	WG2156721

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Anthracene	U		0.0211	0.0555	1.11	10/23/2023 18:08	WG2155780
Acenaphthene	U		0.0211	0.0555	1.11	10/23/2023 18:08	WG2155780
Acenaphthylene	U		0.0189	0.0555	1.11	10/23/2023 18:08	WG2155780
Benzo(a)anthracene	U		0.0222	0.0555	1.11	10/23/2023 18:08	WG2155780
Benzo(a)pyrene	U		0.0200	0.0555	1.11	10/23/2023 18:08	WG2155780
Benzo(b)fluoranthene	U		0.0189	0.0555	1.11	10/23/2023 18:08	WG2155780
Benzo(g,h,i)perylene	U		0.0200	0.0555	1.11	10/23/2023 18:08	WG2155780
Benzo(k)fluoranthene	U		0.0222	0.278	1.11	10/23/2023 18:08	WG2155780
Chrysene	U		0.0200	0.0555	1.11	10/23/2023 18:08	WG2155780
Dibenz(a,h)anthracene	U		0.0200	0.0555	1.11	10/23/2023 18:08	WG2155780
Fluoranthene	0.0159	J	0.0122	0.0555	1.11	10/23/2023 18:08	WG2155780
Fluorene	U		0.0189	0.0555	1.11	10/23/2023 18:08	WG2155780
Indeno(1,2,3-cd)pyrene	U		0.0200	0.0555	1.11	10/23/2023 18:08	WG2155780
Naphthalene	U		0.142	0.555	1.11	10/23/2023 18:08	WG2155780
Phenanthrene	U		0.0200	0.0555	1.11	10/23/2023 18:08	WG2155780
Pyrene	U		0.0189	0.0555	1.11	10/23/2023 18:08	WG2155780
1-Methylnaphthalene	U		0.0222	0.555	1.11	10/23/2023 18:08	WG2155780
2-Methylnaphthalene	U		0.0311	0.555	1.11	10/23/2023 18:08	WG2155780
2-Chloronaphthalene	U		0.0133	0.555	1.11	10/23/2023 18:08	WG2155780
(S) Nitrobenzene-d5	76.1			11.0-135		10/23/2023 18:08	WG2155780
(S) 2-Fluorobiphenyl	77.5			32.0-120		10/23/2023 18:08	WG2155780
(S) p-Terphenyl-d14	82.0			23.0-122		10/23/2023 18:08	WG2155780



Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Lead	4.64	J	2.99	6.00	1	10/25/2023 21:56	WG2156064

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	U		0.0941	1.00	1	10/23/2023 03:46	WG2156075
Toluene	U		0.278	1.00	1	10/23/2023 03:46	WG2156075
Ethylbenzene	U		0.137	1.00	1	10/23/2023 03:46	WG2156075
Total Xylenes	U		0.174	3.00	1	10/23/2023 03:46	WG2156075
1,2-Dichloroethane	0.105	J	0.0819	1.00	1	10/23/2023 03:46	WG2156075
(S) Toluene-d8	105			80.0-120		10/23/2023 03:46	WG2156075
(S) 4-Bromofluorobenzene	110			77.0-126		10/23/2023 03:46	WG2156075
(S) 1,2-Dichloroethane-d4	119			70.0-130		10/23/2023 03:46	WG2156075

EDB / DBCP by Method 8011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Ethylene Dibromide	U		0.00552	0.0206	1.03	10/26/2023 03:37	WG2157508

Semi-Volatile Organic Compounds (GC) by Method AK102

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
AK102 DRO C10-C25	1520	B	189	888	1.11	11/01/2023 04:08	WG2160960
(S) o-Terphenyl	80.2			50.0-150		11/01/2023 04:08	WG2160960

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Anthracene	U		0.0211	0.0555	1.11	10/23/2023 19:37	WG2155780
Acenaphthene	U		0.0211	0.0555	1.11	10/23/2023 19:37	WG2155780
Acenaphthylene	U		0.0189	0.0555	1.11	10/23/2023 19:37	WG2155780
Benzo(a)anthracene	U		0.0222	0.0555	1.11	10/23/2023 19:37	WG2155780
Benzo(a)pyrene	U		0.0200	0.0555	1.11	10/23/2023 19:37	WG2155780
Benzo(b)fluoranthene	0.0461	J	0.0189	0.0555	1.11	10/23/2023 19:37	WG2155780
Benzo(g,h,i)perylene	0.0819		0.0200	0.0555	1.11	10/23/2023 19:37	WG2155780
Benzo(k)fluoranthene	U		0.0222	0.278	1.11	10/23/2023 19:37	WG2155780
Chrysene	0.0327	J	0.0200	0.0555	1.11	10/23/2023 19:37	WG2155780
Dibenz(a,h)anthracene	U		0.0200	0.0555	1.11	10/23/2023 19:37	WG2155780
Fluoranthene	0.0721		0.0122	0.0555	1.11	10/23/2023 19:37	WG2155780
Fluorene	U		0.0189	0.0555	1.11	10/23/2023 19:37	WG2155780
Indeno(1,2,3-cd)pyrene	0.0298	J	0.0200	0.0555	1.11	10/23/2023 19:37	WG2155780
Naphthalene	U		0.142	0.555	1.11	10/23/2023 19:37	WG2155780
Phenanthrene	0.0501	J	0.0200	0.0555	1.11	10/23/2023 19:37	WG2155780
Pyrene	0.118		0.0189	0.0555	1.11	10/23/2023 19:37	WG2155780
1-Methylnaphthalene	U		0.0222	0.555	1.11	10/23/2023 19:37	WG2155780
2-Methylnaphthalene	U		0.0311	0.555	1.11	10/23/2023 19:37	WG2155780
2-Chloronaphthalene	U		0.0133	0.555	1.11	10/23/2023 19:37	WG2155780
(S) Nitrobenzene-d5	48.2			11.0-135		10/23/2023 19:37	WG2155780
(S) 2-Fluorobiphenyl	51.8			32.0-120		10/23/2023 19:37	WG2155780
(S) p-Terphenyl-d14	56.3			23.0-122		10/23/2023 19:37	WG2155780

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	10/25/2023 21:59	WG2156064

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	U		0.0941	1.00	1	10/23/2023 04:07	WG2156075
Toluene	U		0.278	1.00	1	10/23/2023 04:07	WG2156075
Ethylbenzene	U		0.137	1.00	1	10/23/2023 04:07	WG2156075
Total Xylenes	U		0.174	3.00	1	10/23/2023 04:07	WG2156075
1,2-Dichloroethane	U		0.0819	1.00	1	10/23/2023 04:07	WG2156075
(S) Toluene-d8	106			80.0-120		10/23/2023 04:07	WG2156075
(S) 4-Bromofluorobenzene	112			77.0-126		10/23/2023 04:07	WG2156075
(S) 1,2-Dichloroethane-d4	119			70.0-130		10/23/2023 04:07	WG2156075

EDB / DBCP by Method 8011

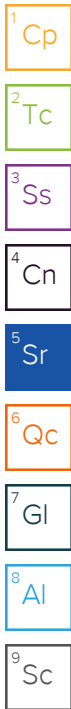
Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Ethylene Dibromide	U		0.00600	0.0224	1.12	10/26/2023 03:53	WG2157508

Semi-Volatile Organic Compounds (GC) by Method AK102

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
AK102 DRO C10-C25	626	<u>B J</u>	189	888	1.11	11/01/2023 04:28	WG2160960
(S) o-Terphenyl	88.4			50.0-150		11/01/2023 04:28	WG2160960

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Anthracene	U		0.0199	0.0525	1.05	10/23/2023 19:19	WG2155780
Acenaphthene	U		0.0199	0.0525	1.05	10/23/2023 19:19	WG2155780
Acenaphthylene	U		0.0179	0.0525	1.05	10/23/2023 19:19	WG2155780
Benzo(a)anthracene	U		0.0210	0.0525	1.05	10/23/2023 19:19	WG2155780
Benzo(a)pyrene	U		0.0189	0.0525	1.05	10/23/2023 19:19	WG2155780
Benzo(b)fluoranthene	U		0.0179	0.0525	1.05	10/23/2023 19:19	WG2155780
Benzo(g,h,i)perylene	U		0.0189	0.0525	1.05	10/23/2023 19:19	WG2155780
Benzo(k)fluoranthene	U		0.0210	0.263	1.05	10/23/2023 19:19	WG2155780
Chrysene	U		0.0189	0.0525	1.05	10/23/2023 19:19	WG2155780
Dibenz(a,h)anthracene	U		0.0189	0.0525	1.05	10/23/2023 19:19	WG2155780
Fluoranthene	0.0247	<u>J</u>	0.0115	0.0525	1.05	10/23/2023 19:19	WG2155780
Fluorene	U		0.0179	0.0525	1.05	10/23/2023 19:19	WG2155780
Indeno(1,2,3-cd)pyrene	U		0.0189	0.0525	1.05	10/23/2023 19:19	WG2155780
Naphthalene	U		0.134	0.525	1.05	10/23/2023 19:19	WG2155780
Phenanthrene	0.0284	<u>J</u>	0.0189	0.0525	1.05	10/23/2023 19:19	WG2155780
Pyrene	0.0277	<u>J</u>	0.0179	0.0525	1.05	10/23/2023 19:19	WG2155780
1-Methylnaphthalene	U		0.0210	0.525	1.05	10/23/2023 19:19	WG2155780
2-Methylnaphthalene	U		0.0294	0.525	1.05	10/23/2023 19:19	WG2155780
2-Chloronaphthalene	U		0.0126	0.525	1.05	10/23/2023 19:19	WG2155780
(S) Nitrobenzene-d5	83.3			11.0-135		10/23/2023 19:19	WG2155780
(S) 2-Fluorobiphenyl	80.5			32.0-120		10/23/2023 19:19	WG2155780
(S) p-Terphenyl-d14	83.8			23.0-122		10/23/2023 19:19	WG2155780



Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Lead	3.75	J	2.99	6.00	1	10/25/2023 22:02	WG2156064

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	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	0.722	J	0.0941	1.00	1	10/23/2023 04:28	WG2156075
Toluene	U		0.278	1.00	1	10/23/2023 04:28	WG2156075
Ethylbenzene	U		0.137	1.00	1	10/23/2023 04:28	WG2156075
Total Xylenes	U		0.174	3.00	1	10/23/2023 04:28	WG2156075
1,2-Dichloroethane	0.751	J	0.0819	1.00	1	10/23/2023 04:28	WG2156075
(S) Toluene-d8	106			80.0-120		10/23/2023 04:28	WG2156075
(S) 4-Bromofluorobenzene	108			77.0-126		10/23/2023 04:28	WG2156075
(S) 1,2-Dichloroethane-d4	116			70.0-130		10/23/2023 04:28	WG2156075

EDB / DBCP by Method 8011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Ethylene Dibromide	U		0.00574	0.0214	1.07	10/26/2023 04:10	WG2157508

Semi-Volatile Organic Compounds (GC) by Method AK102

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
AK102 DRO C10-C25	1950	B	189	888	1.11	11/01/2023 04:48	WG2160960
(S) o-Terphenyl	95.4			50.0-150		11/01/2023 04:48	WG2160960

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Anthracene	0.0786		0.0199	0.0525	1.05	10/23/2023 19:02	WG2155780
Acenaphthene	0.107		0.0199	0.0525	1.05	10/23/2023 19:02	WG2155780
Acenaphthylene	U		0.0179	0.0525	1.05	10/23/2023 19:02	WG2155780
Benzo(a)anthracene	U		0.0210	0.0525	1.05	10/23/2023 19:02	WG2155780
Benzo(a)pyrene	U		0.0189	0.0525	1.05	10/23/2023 19:02	WG2155780
Benzo(b)fluoranthene	U		0.0179	0.0525	1.05	10/23/2023 19:02	WG2155780
Benzo(g,h,i)perylene	U		0.0189	0.0525	1.05	10/23/2023 19:02	WG2155780
Benzo(k)fluoranthene	U		0.0210	0.263	1.05	10/23/2023 19:02	WG2155780
Chrysene	U		0.0189	0.0525	1.05	10/23/2023 19:02	WG2155780
Dibenz(a,h)anthracene	U		0.0189	0.0525	1.05	10/23/2023 19:02	WG2155780
Fluoranthene	0.0172	J	0.0115	0.0525	1.05	10/23/2023 19:02	WG2155780
Fluorene	0.656		0.0179	0.0525	1.05	10/23/2023 19:02	WG2155780
Indeno(1,2,3-cd)pyrene	U		0.0189	0.0525	1.05	10/23/2023 19:02	WG2155780
Naphthalene	0.196	J	0.134	0.525	1.05	10/23/2023 19:02	WG2155780
Phenanthrene	0.707		0.0189	0.0525	1.05	10/23/2023 19:02	WG2155780
Pyrene	0.0248	J	0.0179	0.0525	1.05	10/23/2023 19:02	WG2155780
1-Methylnaphthalene	0.0532	J	0.0210	0.525	1.05	10/23/2023 19:02	WG2155780
2-Methylnaphthalene	U		0.0294	0.525	1.05	10/23/2023 19:02	WG2155780
2-Chloronaphthalene	U		0.0126	0.525	1.05	10/23/2023 19:02	WG2155780
(S) Nitrobenzene-d5	49.5			11.0-135		10/23/2023 19:02	WG2155780
(S) 2-Fluorobiphenyl	49.5			32.0-120		10/23/2023 19:02	WG2155780
(S) p-Terphenyl-d14	51.9			23.0-122		10/23/2023 19:02	WG2155780

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	10/25/2023 22:05	WG2156064

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	U		0.0941	1.00	1	10/23/2023 04:49	WG2156075
Toluene	U		0.278	1.00	1	10/23/2023 04:49	WG2156075
Ethylbenzene	U		0.137	1.00	1	10/23/2023 04:49	WG2156075
Total Xylenes	U		0.174	3.00	1	10/23/2023 04:49	WG2156075
1,2-Dichloroethane	U		0.0819	1.00	1	10/23/2023 04:49	WG2156075
(S) Toluene-d8	108			80.0-120		10/23/2023 04:49	WG2156075
(S) 4-Bromofluorobenzene	114			77.0-126		10/23/2023 04:49	WG2156075
(S) 1,2-Dichloroethane-d4	116			70.0-130		10/23/2023 04:49	WG2156075

EDB / DBCP by Method 8011

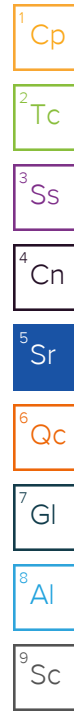
Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Ethylene Dibromide	U		0.00579	0.0216	1.08	10/26/2023 04:27	WG2157508

Semi-Volatile Organic Compounds (GC) by Method AK102

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
AK102 DRO C10-C25	712	<u>B J</u>	189	888	1.11	11/01/2023 05:08	WG2160960
(S) o-Terphenyl	87.1			50.0-150		11/01/2023 05:08	WG2160960

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Anthracene	U		0.0190	0.0500	1	10/23/2023 17:51	WG2155780
Acenaphthene	U		0.0190	0.0500	1	10/23/2023 17:51	WG2155780
Acenaphthylene	U		0.0170	0.0500	1	10/23/2023 17:51	WG2155780
Benzo(a)anthracene	U		0.0200	0.0500	1	10/23/2023 17:51	WG2155780
Benzo(a)pyrene	U		0.0180	0.0500	1	10/23/2023 17:51	WG2155780
Benzo(b)fluoranthene	U		0.0170	0.0500	1	10/23/2023 17:51	WG2155780
Benzo(g,h,i)perylene	U		0.0180	0.0500	1	10/23/2023 17:51	WG2155780
Benzo(k)fluoranthene	U		0.0200	0.250	1	10/23/2023 17:51	WG2155780
Chrysene	U		0.0180	0.0500	1	10/23/2023 17:51	WG2155780
Dibenz(a,h)anthracene	U		0.0180	0.0500	1	10/23/2023 17:51	WG2155780
Fluoranthene	0.0157	<u>J</u>	0.0110	0.0500	1	10/23/2023 17:51	WG2155780
Fluorene	U		0.0170	0.0500	1	10/23/2023 17:51	WG2155780
Indeno(1,2,3-cd)pyrene	U		0.0180	0.0500	1	10/23/2023 17:51	WG2155780
Naphthalene	U		0.128	0.500	1	10/23/2023 17:51	WG2155780
Phenanthrene	0.0197	<u>J</u>	0.0180	0.0500	1	10/23/2023 17:51	WG2155780
Pyrene	0.0174	<u>J</u>	0.0170	0.0500	1	10/23/2023 17:51	WG2155780
1-Methylnaphthalene	U		0.0200	0.500	1	10/23/2023 17:51	WG2155780
2-Methylnaphthalene	U		0.0280	0.500	1	10/23/2023 17:51	WG2155780
2-Chloronaphthalene	U		0.0120	0.500	1	10/23/2023 17:51	WG2155780
(S) Nitrobenzene-d5	81.0			11.0-135		10/23/2023 17:51	WG2155780
(S) 2-Fluorobiphenyl	85.0			32.0-120		10/23/2023 17:51	WG2155780
(S) p-Terphenyl-d14	86.5			23.0-122		10/23/2023 17:51	WG2155780



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	10/25/2023 22:14	WG2156064

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	0.733	J	0.0941	1.00	1	10/23/2023 05:10	WG2156075
Toluene	U		0.278	1.00	1	10/23/2023 05:10	WG2156075
Ethylbenzene	U		0.137	1.00	1	10/23/2023 05:10	WG2156075
Total Xylenes	U		0.174	3.00	1	10/23/2023 05:10	WG2156075
1,2-Dichloroethane	0.827	J	0.0819	1.00	1	10/23/2023 05:10	WG2156075
(S) Toluene-d8	105			80.0-120		10/23/2023 05:10	WG2156075
(S) 4-Bromofluorobenzene	113			77.0-126		10/23/2023 05:10	WG2156075
(S) 1,2-Dichloroethane-d4	120			70.0-130		10/23/2023 05:10	WG2156075

EDB / DBCP by Method 8011

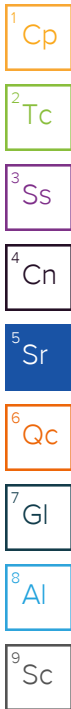
Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Ethylene Dibromide	U		0.00590	0.0220	1.1	10/26/2023 04:43	WG2157508

Semi-Volatile Organic Compounds (GC) by Method AK102

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
AK102 DRO C10-C25	570	J	170	800	1	10/28/2023 19:36	WG2156721
(S) o-Terphenyl	72.4			50.0-150		10/28/2023 19:36	WG2156721

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Anthracene	0.0368	J	0.0190	0.0500	1	10/21/2023 16:22	WG2155469
Acenaphthene	0.0680		0.0190	0.0500	1	10/21/2023 16:22	WG2155469
Acenaphthylene	U		0.0170	0.0500	1	10/21/2023 16:22	WG2155469
Benzo(a)anthracene	U		0.0200	0.0500	1	10/21/2023 16:22	WG2155469
Benzo(a)pyrene	U		0.0180	0.0500	1	10/21/2023 16:22	WG2155469
Benzo(b)fluoranthene	U		0.0170	0.0500	1	10/21/2023 16:22	WG2155469
Benzo(g,h,i)perylene	U		0.0180	0.0500	1	10/21/2023 16:22	WG2155469
Benzo(k)fluoranthene	U		0.0200	0.250	1	10/21/2023 16:22	WG2155469
Chrysene	U		0.0180	0.0500	1	10/21/2023 16:22	WG2155469
Dibenz(a,h)anthracene	U		0.0180	0.0500	1	10/21/2023 16:22	WG2155469
Fluoranthene	0.0123	J	0.0110	0.0500	1	10/21/2023 16:22	WG2155469
Fluorene	0.398		0.0170	0.0500	1	10/21/2023 16:22	WG2155469
Indeno(1,2,3-cd)pyrene	U		0.0180	0.0500	1	10/21/2023 16:22	WG2155469
Naphthalene	0.128	J	0.128	0.500	1	10/21/2023 16:22	WG2155469
Phenanthrene	0.316		0.0180	0.0500	1	10/21/2023 16:22	WG2155469
Pyrene	U		0.0170	0.0500	1	10/21/2023 16:22	WG2155469
1-Methylnaphthalene	U		0.0200	0.500	1	10/21/2023 16:22	WG2155469
2-Methylnaphthalene	U		0.0280	0.500	1	10/21/2023 16:22	WG2155469
2-Chloronaphthalene	0.0337	J	0.0120	0.500	1	10/21/2023 16:22	WG2155469
(S) Nitrobenzene-d5	41.4			11.0-135		10/21/2023 16:22	WG2155469
(S) 2-Fluorobiphenyl	35.7			32.0-120		10/21/2023 16:22	WG2155469
(S) p-Terphenyl-d14	26.5			23.0-122		10/21/2023 16:22	WG2155469



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	10/25/2023 22:17	WG2156064

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	0.103	J	0.0941	1.00	1	10/22/2023 11:37	WG2155873
Toluene	U		0.278	1.00	1	10/22/2023 11:37	WG2155873
Ethylbenzene	U		0.137	1.00	1	10/22/2023 11:37	WG2155873
Total Xylenes	U		0.174	3.00	1	10/22/2023 11:37	WG2155873
1,2-Dichloroethane	U		0.0819	1.00	1	10/22/2023 11:37	WG2155873
(S) Toluene-d8	113			80.0-120		10/22/2023 11:37	WG2155873
(S) 4-Bromofluorobenzene	84.8			77.0-126		10/22/2023 11:37	WG2155873
(S) 1,2-Dichloroethane-d4	108			70.0-130		10/22/2023 11:37	WG2155873

EDB / DBCP by Method 8011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Ethylene Dibromide	U		0.00568	0.0212	1.06	10/26/2023 05:00	WG2157508

Semi-Volatile Organic Compounds (GC) by Method AK102

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
AK102 DRO C10-C25	U		170	800	1	10/28/2023 19:56	WG2156721
(S) o-Terphenyl	61.9			50.0-150		10/28/2023 19:56	WG2156721

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Anthracene	U		0.0190	0.0500	1	10/21/2023 16:39	WG2155469
Acenaphthene	U		0.0190	0.0500	1	10/21/2023 16:39	WG2155469
Acenaphthylene	U		0.0170	0.0500	1	10/21/2023 16:39	WG2155469
Benzo(a)anthracene	U		0.0200	0.0500	1	10/21/2023 16:39	WG2155469
Benzo(a)pyrene	U		0.0180	0.0500	1	10/21/2023 16:39	WG2155469
Benzo(b)fluoranthene	U		0.0170	0.0500	1	10/21/2023 16:39	WG2155469
Benzo(g,h,i)perylene	U		0.0180	0.0500	1	10/21/2023 16:39	WG2155469
Benzo(k)fluoranthene	U		0.0200	0.250	1	10/21/2023 16:39	WG2155469
Chrysene	U		0.0180	0.0500	1	10/21/2023 16:39	WG2155469
Dibenz(a,h)anthracene	U		0.0180	0.0500	1	10/21/2023 16:39	WG2155469
Fluoranthene	0.0149	J	0.0110	0.0500	1	10/21/2023 16:39	WG2155469
Fluorene	U		0.0170	0.0500	1	10/21/2023 16:39	WG2155469
Indeno(1,2,3-cd)pyrene	U		0.0180	0.0500	1	10/21/2023 16:39	WG2155469
Naphthalene	U		0.128	0.500	1	10/21/2023 16:39	WG2155469
Phenanthrene	0.0185	J	0.0180	0.0500	1	10/21/2023 16:39	WG2155469
Pyrene	U		0.0170	0.0500	1	10/21/2023 16:39	WG2155469
1-Methylnaphthalene	0.0246	J	0.0200	0.500	1	10/21/2023 16:39	WG2155469
2-Methylnaphthalene	0.0290	J	0.0280	0.500	1	10/21/2023 16:39	WG2155469
2-Chloronaphthalene	U		0.0120	0.500	1	10/21/2023 16:39	WG2155469
(S) Nitrobenzene-d5	65.5			11.0-135		10/21/2023 16:39	WG2155469
(S) 2-Fluorobiphenyl	76.5			32.0-120		10/21/2023 16:39	WG2155469
(S) p-Terphenyl-d14	91.5			23.0-122		10/21/2023 16:39	WG2155469

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	10/22/2023 11:59	WG2155873
Toluene	U		0.278	1.00	1	10/22/2023 11:59	WG2155873
Ethylbenzene	U		0.137	1.00	1	10/22/2023 11:59	WG2155873
Total Xylenes	U		0.174	3.00	1	10/22/2023 11:59	WG2155873
1,2-Dichloroethane	U		0.0819	1.00	1	10/22/2023 11:59	WG2155873
<i>(S) Toluene-d8</i>	113			80.0-120		10/22/2023 11:59	WG2155873
<i>(S) 4-Bromofluorobenzene</i>	93.3			77.0-126		10/22/2023 11:59	WG2155873
<i>(S) 1,2-Dichloroethane-d4</i>	114			70.0-130		10/22/2023 11:59	WG2155873

EDB / DBCP by Method 8011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Ethylene Dibromide	U		0.00557	0.0208	1.04	10/26/2023 05:17	WG2157508

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3991397-1 10/25/23 21:39

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) R3991397-2 10/25/23 21:42

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Lead	1000	960	96.0	80.0-120	

4 Cn

5 Sr

L1668029-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1668029-01 10/25/23 21:45 • (MS) R3991397-4 10/25/23 21:50 • (MSD) R3991397-5 10/25/23 21:53

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	1020	1010	102	101	1	75.0-125			0.670	20

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3991127-2 10/22/23 09:25

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Benzene	U		0.0941	1.00
Toluene	U		0.278	1.00
Ethylbenzene	U		0.137	1.00
Total Xylenes	U		0.174	3.00
1,2-Dichloroethane	U		0.0819	1.00
(S) Toluene-d8	113			80.0-120
(S) 4-Bromofluorobenzene	94.0			77.0-126
(S) 1,2-Dichloroethane-d4	116			70.0-130

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

Laboratory Control Sample (LCS)

(LCS) R3991127-1 10/22/23 08:41

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Benzene	5.00	4.43	88.6	70.0-123	
Toluene	5.00	4.69	93.8	79.0-120	
Ethylbenzene	5.00	4.39	87.8	79.0-123	
Total Xylenes	15.0	13.2	88.0	79.0-123	
1,2-Dichloroethane	5.00	5.61	112	70.0-128	
(S) Toluene-d8			108	80.0-120	
(S) 4-Bromofluorobenzene			90.4	77.0-126	
(S) 1,2-Dichloroethane-d4			110	70.0-130	

7 Gl

8 Al

9 Sc

L1668173-17 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1668173-17 10/22/23 17:28 • (MS) R3991127-3 10/22/23 18:55 • (MSD) R3991127-4 10/22/23 19:17

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	%	%		%			%	%
Benzene	5.00	U	4.66	4.43	93.2	88.6	1	17.0-158			5.06	27
Toluene	5.00	U	5.05	4.73	101	94.6	1	26.0-154			6.54	28
Ethylbenzene	5.00	U	5.03	4.51	101	90.2	1	30.0-155			10.9	27
Total Xylenes	15.0	U	13.9	13.9	92.7	92.7	1	29.0-154			0.000	28
1,2-Dichloroethane	5.00	U	5.88	5.44	118	109	1	29.0-151			7.77	27
(S) Toluene-d8					109	107		80.0-120				
(S) 4-Bromofluorobenzene					93.9	91.3		77.0-126				
(S) 1,2-Dichloroethane-d4					108	112		70.0-130				

Method Blank (MB)

(MB) R3989779-2 10/22/23 23:28

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Benzene	U		0.0941	1.00
Toluene	U		0.278	1.00
Ethylbenzene	U		0.137	1.00
Total Xylenes	U		0.174	3.00
1,2-Dichloroethane	U		0.0819	1.00
(S) Toluene-d8	108			80.0-120
(S) 4-Bromofluorobenzene	109			77.0-126
(S) 1,2-Dichloroethane-d4	118			70.0-130

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

Laboratory Control Sample (LCS)

(LCS) R3989779-1 10/22/23 22:30

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Benzene	5.00	5.18	104	70.0-123	
Toluene	5.00	4.76	95.2	79.0-120	
Ethylbenzene	5.00	4.67	93.4	79.0-123	
Total Xylenes	15.0	14.0	93.3	79.0-123	
1,2-Dichloroethane	5.00	5.77	115	70.0-128	
(S) Toluene-d8			104	80.0-120	
(S) 4-Bromofluorobenzene			107	77.0-126	
(S) 1,2-Dichloroethane-d4			118	70.0-130	

7 Gl

8 Al

9 Sc

L1668029-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1668029-01 10/23/23 03:25 • (MS) R3989779-3 10/23/23 07:15 • (MSD) R3989779-4 10/23/23 07:35

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	%	%		%			%	%
Benzene	5.00	U	6.06	6.05	121	121	1	17.0-158			0.165	27
Toluene	5.00	U	5.94	5.77	119	115	1	26.0-154			2.90	28
Ethylbenzene	5.00	U	5.90	5.61	118	112	1	30.0-155			5.04	27
Total Xylenes	15.0	U	17.7	16.4	118	109	1	29.0-154			7.62	28
1,2-Dichloroethane	5.00	0.113	6.93	7.03	136	138	1	29.0-151			1.43	27
(S) Toluene-d8					103	102		80.0-120				
(S) 4-Bromofluorobenzene					108	109		77.0-126				
(S) 1,2-Dichloroethane-d4					121	121		70.0-130				

Method Blank (MB)

(MB) R3991509-1 10/26/23 02:30

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Ethylene Dibromide	U		0.00536	0.0200

L1668029-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1668029-02 10/26/23 03:37 • (DUP) R3991509-3 10/26/23 03:20

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Ethylene Dibromide	U	U	1.03	0.000		20

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

(LCS) R3991509-4 10/26/23 06:08 • (LCSD) R3991509-5 10/26/23 09:32

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Ethylene Dibromide	0.250	0.228	0.236	91.2	94.4	60.0-140			3.45	20

L1668029-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1668029-01 10/26/23 03:03 • (MS) R3991509-2 10/26/23 02:47

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Ethylene Dibromide	0.105	U	0.119	113	1.05	64.0-159	

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3992985-1 10/28/23 02:58

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
AK102 DRO C10-C25	U		170	800
(S) o-Terphenyl	61.8			60.0-120

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

(LCS) R3992985-2 10/28/23 03:18 • (LCSD) R3992985-3 10/28/23 03:38

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	5870	94.8	97.8	75.0-125			3.11	20
(S) o-Terphenyl				95.4	83.1	60.0-120				

L1668029-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1668029-01 10/28/23 17:44 • (MS) R3992985-4 10/28/23 18:35 • (MSD) R3992985-5 10/28/23 19:16

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	6000	U	5430	7130	90.5	95.1	1	75.0-125		J3	27.1	20
(S) o-Terphenyl					94.5	94.8		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) R3993743-1 10/31/23 15:01

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
AK102 DRO C10-C25	558	↓	170	800
(S) o-Terphenyl	96.1			60.0-120

1 Cp

2 Tc

3 Ss

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

(LCS) R3993743-2 10/31/23 15:21 • (LCSD) R3993743-3 10/31/23 15:42

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	6060	6090	101	102	75.0-125			0.494	20
(S) o-Terphenyl				79.4	83.4	60.0-120				

4 Cn

5 Sr

6 Qc

L1667832-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1667832-03 10/31/23 18:57 • (MS) R3993743-4 10/31/23 19:18 • (MSD) R3993743-5 10/31/23 19:38

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	970	6070	6410	85.0	90.7	1	75.0-125			5.45	20
(S) o-Terphenyl					77.8	85.1		50.0-150				

7 Gl

8 Al

9 Sc

Sample Narrative:

OS: Duplicate Analysis performed due to QC failure. Results don't confirm; both analyses reported

Method Blank (MB)

(MB) R3989716-2 10/21/23 16:04

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	50.0			11.0-135
(S) 2-Fluorobiphenyl	54.5			32.0-120
(S) p-Terphenyl-d14	80.0			23.0-122

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3989716-1 10/21/23 15:46

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	2.00	1.54	77.0	43.0-127	
Acenaphthene	2.00	1.40	70.0	42.0-120	
Acenaphthylene	2.00	1.27	63.5	43.0-120	
Benzo(a)anthracene	2.00	1.90	95.0	46.0-120	
Benzo(a)pyrene	2.00	1.61	80.5	44.0-122	
Benzo(b)fluoranthene	2.00	1.63	81.5	43.0-122	
Benzo(g,h,i)perylene	2.00	1.32	66.0	25.0-137	
Benzo(k)fluoranthene	2.00	1.59	79.5	39.0-128	
Chrysene	2.00	1.82	91.0	42.0-129	
Dibenz(a,h)anthracene	2.00	1.29	64.5	25.0-139	
Fluoranthene	2.00	1.80	90.0	48.0-131	

Laboratory Control Sample (LCS)

(LCS) R3989716-1 10/21/23 15:46

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	2.00	1.58	79.0	42.0-120	
Indeno(1,2,3-cd)pyrene	2.00	1.58	79.0	37.0-133	
Naphthalene	2.00	1.14	57.0	30.0-120	
Phenanthrene	2.00	1.68	84.0	42.0-120	
Pyrene	2.00	1.74	87.0	38.0-124	
1-Methylnaphthalene	2.00	1.38	69.0	43.0-120	
2-Methylnaphthalene	2.00	1.39	69.5	40.0-120	
2-Chloronaphthalene	2.00	1.24	62.0	39.0-120	
(S) Nitrobenzene-d5			58.5	11.0-135	
(S) 2-Fluorobiphenyl			68.0	32.0-120	
(S) p-Terphenyl-d14			87.5	23.0-122	

L1668251-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1668251-01 10/21/23 18:44 • (MS) R3989716-3 10/21/23 19:02 • (MSD) R3989716-4 10/21/23 19:19

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	1.90	U	1.12	1.09	58.9	57.4	1	28.0-120			2.71	25
Acenaphthene	1.90	U	1.03	1.02	54.2	53.7	1	16.0-120			0.976	25
Acenaphthylene	1.90	U	1.02	0.978	53.7	51.5	1	16.0-121			4.20	26
Benzo(a)anthracene	1.90	U	1.28	1.33	67.4	70.0	1	19.0-125			3.83	26
Benzo(a)pyrene	1.90	U	0.792	0.796	41.7	41.9	1	10.0-126			0.504	32
Benzo(b)fluoranthene	1.90	U	0.809	0.836	42.6	44.0	1	10.0-125			3.28	36
Benzo(g,h,i)perylene	1.90	U	0.226	0.233	11.9	12.3	1	10.0-128			3.05	37
Benzo(k)fluoranthene	1.90	U	0.755	0.843	39.7	44.4	1	10.0-124			11.0	32
Chrysene	1.90	U	1.34	1.39	70.5	73.2	1	18.0-127			3.66	26
Dibenz(a,h)anthracene	1.90	U	0.220	0.228	11.6	12.0	1	10.0-132			3.57	43
Fluoranthene	1.90	U	1.39	1.41	73.2	74.2	1	37.0-122			1.43	23
Fluorene	1.90	U	1.14	1.16	60.0	61.1	1	20.0-120			1.74	26
Indeno(1,2,3-cd)pyrene	1.90	U	0.264	0.280	13.9	14.7	1	10.0-130			5.88	38
Naphthalene	1.90	U	0.979	0.932	51.5	49.1	1	14.0-120			4.92	20
Phenanthrene	1.90	U	1.24	1.29	65.3	67.9	1	26.0-120			3.95	24
Pyrene	1.90	U	1.42	1.46	74.7	76.8	1	29.0-120			2.78	24
1-Methylnaphthalene	1.90	U	1.05	1.01	55.3	53.2	1	10.0-145			3.88	24
2-Methylnaphthalene	1.90	U	1.04	0.995	54.7	52.4	1	10.0-143			4.42	24
2-Chloronaphthalene	1.90	U	0.959	0.931	50.5	49.0	1	16.0-120			2.96	25
(S) Nitrobenzene-d5					50.1	49.6		11.0-135				
(S) 2-Fluorobiphenyl					53.2	52.6		32.0-120				
(S) p-Terphenyl-d14					68.9	70.5		23.0-122				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1668251-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1668251-01 10/21/23 18:44 • (MS) R3989716-3 10/21/23 19:02 • (MSD) R3989716-4 10/21/23 19:19

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
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Sample Narrative:

OS: Surrogate recovery within historical limits.

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Method Blank (MB)

(MB) R3991250-2 10/23/23 13:42

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	87.5			11.0-135
(S) 2-Fluorobiphenyl	83.5			32.0-120
(S) p-Terphenyl-d14	102			23.0-122

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3991250-1 10/23/23 13:25

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	2.00	1.67	83.5	43.0-127	
Acenaphthene	2.00	1.69	84.5	42.0-120	
Acenaphthylene	2.00	1.71	85.5	43.0-120	
Benzo(a)anthracene	2.00	1.97	98.5	46.0-120	
Benzo(a)pyrene	2.00	1.87	93.5	44.0-122	
Benzo(b)fluoranthene	2.00	1.96	98.0	43.0-122	
Benzo(g,h,i)perylene	2.00	1.87	93.5	25.0-137	
Benzo(k)fluoranthene	2.00	1.84	92.0	39.0-128	
Chrysene	2.00	2.04	102	42.0-129	
Dibenz(a,h)anthracene	2.00	1.91	95.5	25.0-139	
Fluoranthene	2.00	1.90	95.0	48.0-131	

Laboratory Control Sample (LCS)

(LCS) R3991250-1 10/23/23 13:25

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	2.00	1.74	87.0	42.0-120	
Indeno(1,2,3-cd)pyrene	2.00	1.98	99.0	37.0-133	
Naphthalene	2.00	1.69	84.5	30.0-120	
Phenanthrene	2.00	1.86	93.0	42.0-120	
Pyrene	2.00	2.06	103	38.0-124	
1-Methylnaphthalene	2.00	1.73	86.5	43.0-120	
2-Methylnaphthalene	2.00	1.73	86.5	40.0-120	
2-Chloronaphthalene	2.00	1.60	80.0	39.0-120	
(S) Nitrobenzene-d5			84.5	11.0-135	
(S) 2-Fluorobiphenyl			81.0	32.0-120	
(S) p-Terphenyl-d14			96.0	23.0-122	

L1668029-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1668029-01 10/23/23 18:08 • (MS) R3991250-3 10/23/23 18:26 • (MSD) R3991250-4 10/23/23 18:44

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	2.10	U	1.64	1.68	78.1	80.0	1.05	28.0-120			2.41	25
Acenaphthene	2.10	U	1.62	1.65	77.1	78.6	1.05	16.0-120			1.83	25
Acenaphthylene	2.10	U	1.62	1.65	77.1	78.6	1.05	16.0-121			1.83	26
Benzo(a)anthracene	2.10	U	1.83	1.90	87.1	90.5	1.05	19.0-125			3.75	26
Benzo(a)pyrene	2.10	U	1.10	1.05	52.4	50.0	1.05	10.0-126			4.65	32
Benzo(b)fluoranthene	2.10	U	1.10	1.04	52.4	49.5	1.05	10.0-125			5.61	36
Benzo(g,h,i)perylene	2.10	U	0.334	0.293	15.9	14.0	1.05	10.0-128			13.1	37
Benzo(k)fluoranthene	2.10	U	1.04	1.01	49.5	48.1	1.05	10.0-124			2.93	32
Chrysene	2.10	U	1.90	1.95	90.5	92.9	1.05	18.0-127			2.60	26
Dibenz(a,h)anthracene	2.10	U	0.308	0.270	14.7	12.9	1.05	10.0-132			13.1	43
Fluoranthene	2.10	0.0159	1.85	1.93	87.3	91.1	1.05	37.0-122			4.23	23
Fluorene	2.10	U	1.70	1.72	81.0	81.9	1.05	20.0-120			1.17	26
Indeno(1,2,3-cd)pyrene	2.10	U	0.366	0.317	17.4	15.1	1.05	10.0-130			14.3	38
Naphthalene	2.10	U	1.66	1.65	79.0	78.6	1.05	14.0-120			0.604	20
Phenanthrene	2.10	U	1.85	1.87	88.1	89.0	1.05	26.0-120			1.08	24
Pyrene	2.10	U	2.02	2.03	96.2	96.7	1.05	29.0-120			0.494	24
1-Methylnaphthalene	2.10	U	1.75	1.69	83.3	80.5	1.05	10.0-145			3.49	24
2-Methylnaphthalene	2.10	U	1.77	1.71	84.3	81.4	1.05	10.0-143			3.45	24
2-Chloronaphthalene	2.10	U	1.58	1.59	75.2	75.7	1.05	16.0-120			0.631	25
(S) Nitrobenzene-d5					77.6	78.1		11.0-135				
(S) 2-Fluorobiphenyl					77.1	77.6		32.0-120				
(S) p-Terphenyl-d14					82.4	83.8		23.0-122				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1668253-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1668253-02 10/23/23 20:48 • (MS) R3991250-5 10/23/23 21:06 • (MSD) R3991250-6 10/23/23 21:24

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	1.90	U	1.54	1.63	81.1	85.8	1	28.0-120			5.68	25
Acenaphthene	1.90	0.125	1.62	1.71	78.7	83.4	1	16.0-120			5.41	25
Acenaphthylene	1.90	U	1.54	1.64	81.1	86.3	1	16.0-121			6.29	26
Benzo(a)anthracene	1.90	U	1.61	1.69	84.7	88.9	1	19.0-125			4.85	26
Benzo(a)pyrene	1.90	U	1.27	1.12	66.8	58.9	1	10.0-126			12.6	32
Benzo(b)fluoranthene	1.90	U	1.25	1.11	65.8	58.4	1	10.0-125			11.9	36
Benzo(g,h,i)perylene	1.90	U	0.641	0.397	33.7	20.9	1	10.0-128		J3	47.0	37
Benzo(k)fluoranthene	1.90	U	1.20	1.06	63.2	55.8	1	10.0-124			12.4	32
Chrysene	1.90	U	1.67	1.74	87.9	91.6	1	18.0-127			4.11	26
Dibenz(a,h)anthracene	1.90	U	0.654	0.380	34.4	20.0	1	10.0-132		J3	53.0	43
Fluoranthene	1.90	0.0304	1.76	1.81	91.0	93.7	1	37.0-122			2.80	23
Fluorene	1.90	0.178	1.80	1.87	85.4	89.1	1	20.0-120			3.81	26
Indeno(1,2,3-cd)pyrene	1.90	U	0.759	0.470	39.9	24.7	1	10.0-130		J3	47.0	38
Naphthalene	1.90	U	1.70	1.86	89.5	97.9	1	14.0-120			8.99	20
Phenanthrene	1.90	0.0546	1.75	1.81	89.2	92.4	1	26.0-120			3.37	24
Pyrene	1.90	0.0304	1.90	1.98	98.4	103	1	29.0-120			4.12	24
1-Methylnaphthalene	1.90	0.197	1.74	1.88	81.2	88.6	1	10.0-145			7.73	24
2-Methylnaphthalene	1.90	U	1.62	1.67	85.3	87.9	1	10.0-143			3.04	24
2-Chloronaphthalene	1.90	U	1.47	1.55	77.4	81.6	1	16.0-120			5.30	25
(S) Nitrobenzene-d5					73.7	82.1		11.0-135				
(S) 2-Fluorobiphenyl					76.8	82.1		32.0-120				
(S) p-Terphenyl-d14					87.4	92.1		23.0-122				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1668285-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1668285-04 10/23/23 21:41 • (MS) R3991250-7 10/23/23 21:59 • (MSD) R3991250-8 10/23/23 22:17

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	1.57	0.881	78.5	39.7	1	28.0-120		J3	56.2	25
Acenaphthene	2.00	U	1.63	0.855	81.5	38.5	1	16.0-120		J3	62.4	25
Acenaphthylene	2.00	0.0403	1.61	0.852	78.5	36.6	1	16.0-121		J3	61.6	26
Benzo(a)anthracene	2.00	U	1.87	1.15	93.5	51.8	1	19.0-125		J3	47.7	26
Benzo(a)pyrene	2.00	U	1.74	1.32	87.0	59.5	1	10.0-126			27.5	32
Benzo(b)fluoranthene	2.00	U	1.78	1.31	89.0	59.0	1	10.0-125			30.4	36
Benzo(g,h,i)perylene	2.00	U	1.04	1.10	52.0	49.5	1	10.0-128			5.61	37
Benzo(k)fluoranthene	2.00	U	1.68	1.26	84.0	56.8	1	10.0-124			28.6	32
Chrysene	2.00	U	1.95	1.21	97.5	54.5	1	18.0-127		J3	46.8	26
Dibenz(a,h)anthracene	2.00	U	1.02	1.05	51.0	47.3	1	10.0-132			2.90	43
Fluoranthene	2.00	0.0131	1.85	1.08	91.8	48.1	1	37.0-122		J3	52.6	23

L1668285-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1668285-04 10/23/23 21:41 • (MS) R3991250-7 10/23/23 21:59 • (MSD) R3991250-8 10/23/23 22:17

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 %
Fluorene	2.00	U	1.69	0.927	84.5	41.8	1	20.0-120		J3	58.3	26
Indeno(1,2,3-cd)pyrene	2.00	U	1.15	1.17	57.5	52.7	1	10.0-130			1.72	38
Naphthalene	2.00	U	1.72	0.878	86.0	39.5	1	14.0-120		J3	64.8	20
Phenanthrene	2.00	U	1.78	1.01	89.0	45.5	1	26.0-120		J3	55.2	24
Pyrene	2.00	U	1.99	1.19	99.5	53.6	1	29.0-120		J3	50.3	24
1-Methylnaphthalene	2.00	U	1.71	0.880	85.5	39.6	1	10.0-145		J3	64.1	24
2-Methylnaphthalene	2.00	U	1.69	0.845	84.5	38.1	1	10.0-143		J3	66.7	24
2-Chloronaphthalene	2.00	U	1.52	0.796	76.0	35.9	1	16.0-120		J3	62.5	25
(S) Nitrobenzene-d5					77.5	38.0		11.0-135				
(S) 2-Fluorobiphenyl					77.0	36.6		32.0-120				
(S) p-Terphenyl-d14					90.0	49.5		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.

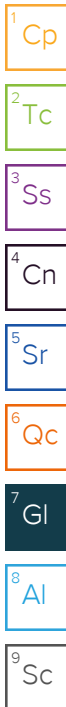
Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. 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.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.



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

**880 H St.
Anchorage, AK 99501**

Email To: environmentDM-India@arcadis.com;erika.midkiff@arcadis.com;

Report to: Gerald Robinson

Project Description: 91252 City/State Collected: *Eagle River, AK* Please Circle: PT MT CT ET

Phone: 907-276-8095

Client Project # 30063655.19.45 Lab Project # **CHEVARCAK-91252**

Collected by (print): E. Wujcik

Site/Facility ID # 11836 OLD GLENN HWY EAGLE P.O. #

Collected by (signature): [Signature]

Quote #

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	AK102 100ml Amb HCl	BTEX,EDC 8260 40mlAmb-HCl	EDB-524tt 40mlAmb-HCl EPB 8011	PAHs 8270SIM 100ml Amb-NoPres	Total Lead 6010 250mlHDPE-HNO3									
MW-2 -W- 20231018	Grab	GW	-	10.18.23	0740	33	X	X	X	X	X								
MW-3 -W- 20231018		GW	-		1000	11	X	X	X	X	X								
MW-4 -W- 20231018		GW	-		0740	11	X	X	X	X	X								
MW-5 -W- 20231018		GW	-		1100	11	X	X	X	X	X								
MW-6 -W- 20231018		GW	-		0740	11	X	X	X	X	X								
MW-8		GW	-																
MW-9		GW	-																
BD-1 -W- 20231018		GW	-			11	X	X	X	X	X								
EQB-1 -W- 20231018		GW	-		1130	11	X	X	X	X	X								
Trip Blank		GW	-				X	X											

Pace
PEOPLE ADVANCING SCIENCE

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/hubfs/pas-standard-terms.pdf>

SDG # *U663029*
A102

Acctnum: **CHEVARCAK**
Template: **T238437**
Prelogin: **P1026079**
PM: **110 - Brian Ford**
PB: *NG 1012123*

Shipped Via: _____
Remarks | Sample # (lab only)

* 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	<input checked="" type="checkbox"/> Y	<input type="checkbox"/> N
COC Signed/Accurate:		<input type="checkbox"/> Y	<input type="checkbox"/> N
Bottles arrive intact:		<input type="checkbox"/> Y	<input type="checkbox"/> N
Correct bottles used:		<input type="checkbox"/> Y	<input type="checkbox"/> N
Sufficient volume sent:		<input type="checkbox"/> Y	<input type="checkbox"/> N
If Applicable			
VOA Zero Headspace:		<input type="checkbox"/> Y	<input type="checkbox"/> N
Preservation Correct/Checked:		<input type="checkbox"/> Y	<input type="checkbox"/> N
RAD Screen <0.5 mR/hr:		<input type="checkbox"/> Y	<input type="checkbox"/> N

Relinquished by: (Signature) <i>[Signature]</i>	Date: <i>10.18.23</i>	Time: <i>1230</i>	Received by: (Signature) _____	Trip Blank Received: <i>6</i> Yes/No <input checked="" type="checkbox"/> HCL/MeOH TBR
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: <i>99</i> °C Bottles Received: _____
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) <i>[Signature]</i>	Date: <i>10/19/23</i> Time: <i>9:00</i> Hold: _____ Condition: <i>NCF 10/19</i>

PH-10BDH4321 TRC-2352362
CR6-20221V
PH-10BDH4321 TRC-2352362
CR6-20221V

<u>Tracking Numbers</u>	<u>Temperature</u>
7019 5682 9313	3.2±0=3.2 °C
6841 8349 1758	4.0±0=4.0 °C

Name

Date

Attachment C

Historical Groundwater Analytical Results – Second Quarter 2020 to 2022

Table 1. Historical Groundwater Gauging and Analytical Results
Third Quarter 2003 through 2022
Chevron-Branded Service Station 91252
11836 Old Glenn Highway
Eagle River, Alaska

Well ID	Sample Date	TOC (ft amsl)	DTW (ft bTOC)	GW Elev (ft amsl)	DRO (mg/L)	GRO (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	MTBE (mg/L)	EDB (mg/L)	EDC (mg/L)	Naphthalene (mg/L)	Comments
ADEC Groundwater Cleanup Levels^a					1.5	2.2	0.0046	1.1	0.015	0.19	0.14	0.000075	0.0017	0.0017	
QA (EB)	4/1/2020	--	--	--	0.929	--	<0.00100	<0.00100	<0.00100	<0.00300	<0.00100	<0.00000500	<0.00100	<0.00500	
QA (EB)	10/2/2020	--	--	--	<0.800	--	<0.00100	<0.00100	<0.00100	<0.00300	<0.00100	<0.00000500	<0.00100	<0.00500	
QA (EB)	4/6/2021	--	--	--	<0.840	--	<0.00100	<0.00100	<0.00100	<0.00300	<0.00100	<0.00000500	<0.00100	<0.00500	
QA (EB)	8/25/2021	--	--	--	0.600 J	--	<0.00100	<0.00100	<0.00100	<0.00300	<0.00100	<0.00000500	<0.00100	<0.00500	
QA (EB)	3/30/2022	--	--	--	<1.00	--	<0.00100	<0.00100	<0.00100	<0.00300	<0.00100	<0.00000500	<0.00100	<0.00500 J	
QA (EB)	4/28/2022	--	--	--	<0.840	--	<0.00100	<0.00100	<0.00100	<0.00300	<0.00100	<0.00000500	<0.00100	<0.00500 J	
QA (EB)	7/7/2022	--	--	--	<0.800	--	<0.00100	<0.00100	<0.00100	<0.00300	<0.00100	<0.00000500	<0.00100	<0.00500 J	
QA (EB)	10/6/2022	--	--	--	<0.800	--	<0.00100	<0.00100	<0.00100	<0.00300	<0.00100	<0.00000500	<0.00100	<0.00500J	

Notes:

ID = Identification
MW = 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
mg/L = Milligrams per liter
<0.00100 = Not detected at or above the reported detection limit (RDL)
Bold = Value detected above Method detection limit (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 associated numerical value is an estimated concentration only
B = The same analyte is found in the associated blank.
-- = Not sampled/not measured/not available
[] = Blind Duplicate Sample Result
QA (EB) = Quality Assurance (Equipment Blank)
NAVD88 = North American Vertical Datum of 1988

DRO = Total petroleum hydrocarbons, diesel range by LUFT GC/MS according to State of Alaska Method AK102.
GRO = Total petroleum hydrocarbons, gasoline range according to State of Alaska Method AK101.
Samples analytes by USEPA Method 8260D:
Benzene, Toluene, Ethylbenzene and Total xylenes (collectively BTEX)
MTBE = Methyl tert-butyl ether
EDB = 1,2-Dibromoethane

EDC = 1,2-Dichloroethane
Naphthalene
LUFT = Leaking Underground Fuel Tank
GC/MS = Gas chromatography/Mass Spectrometry
^a = Levels established in ADEC Table C Groundwater Cleanup Levels (18 AAC 75.345)
LNAPL = Light non-aqueous phase liquid
ADEC = Alaska Department of Environmental Conservation
The laboratory for this site was changed from Eurofins Calscience to Pace Analytical prior to the first quarter 2020 groundwater monitoring event. Prior to this date, Eurofins Calscience was using the carbon ranges as follows: GRO as C6-C10 and DRO as C13-C22. Pace Analytical reports the following carbon ranges: GRO as C5-C12 and DRO as C12-C22.

Table 3. Historical Groundwater Polycyclic Aromatic Hydrocarbons (PAHs) Analytical Data

Chevron-Branded Service Station 91252
 11836 Old Glenn Highway
 Eagle River, Alaska

Well ID	Sample Date	Acenaphthene (mg/L)	Acenaphthylene (mg/L)	Anthracene (mg/L)	Benzo(a) anthracene (mg/L)	Benzo(a) pyrene (mg/L)	Benzo(b) fluoranthene (mg/L)	Benzo(g,h,i) perylene (mg/L)	Benzo(k) fluoranthene (mg/L)	Chrysene (mg/L)	Dibenz(a,h) anthracene (mg/L)	Ethene (mg/L)	Fluoranthene (mg/L)	Fluorene (mg/L)	Indeno(1,2,3-cd) pyrene (mg/L)	Naphthalene (mg/L)	Phenanthrene (mg/L)	Pyrene (mg/L)
ADEC Groundwater Cleanup Levels^a		0.53	0.26	0.043	0.0003	0.00025	0.0025	0.00026	0.0008	0.002	0.00025	NC	0.26	0.29	0.00019	0.0017	0.17	0.12
MW-1R	05/22/2017	<0.000097	<0.000097	<0.000097	<0.000097	<0.000097	<0.000097	0.00012 J	<0.000097	<0.000097	<0.000097	<0.000097	<0.000097	<0.000097	<0.000097	<0.00029	<0.00029	0.00015 J
MW-2	05/22/2017	<0.000096	<0.000096	<0.000096	<0.000096	<0.000096	<0.000096	<0.000096	<0.000096	<0.000096	<0.000096	<0.000096	<0.000096	<0.000096	<0.000096	<0.00029	<0.00029	<0.000096
MW-3	05/22/2017	<0.000095	<0.000095	<0.000095	<0.000095	<0.000095	<0.000095	<0.000095	<0.000095	<0.000095	<0.000095	<0.000095	<0.000095	<0.000095	<0.000095	<0.00029	<0.00029	<0.000095
MW-4	05/22/2017	<0.000096	<0.000096	<0.000096	<0.000096	<0.000096	<0.000096	<0.000096	<0.000096	<0.000096	<0.000096	<0.000096	<0.000096	<0.000096	<0.000096	<0.00029	<0.00029	<0.000096
MW-5	05/22/2017	0.00024 [0.00026]	0.000083 [0.000091]	0.00013 [0.00014]	0.000011 J [0.000010 J]	0.000010 J [<0.0000098]	0.000027 J [0.000027 J]	0.000025 J [0.000023 J]	<0.000097 [<0.000098]	0.000040 J [0.000039 J]	<0.000097 [<0.000098]	0.000041 J [0.000040 J]	0.000041 J [0.000040 J]	0.0018 [0.0020]	0.000010 J [<0.000098]	0.0014 [0.00082]	0.0012 [0.0013]	0.000068 [0.000065]
MW-6	05/22/2017	<0.000097	<0.000097	<0.000097	<0.000097	<0.000097	<0.000097	<0.000097	<0.000097	<0.000097	<0.000097	<0.000097	<0.000097	<0.000097	<0.000097	0.00059	<0.00029	<0.000097

Notes:

PAHs = Poly aromatic hydrocarbons by Method SW8270
 ID = Identification
 MW = Groundwater monitoring well
 ADEC = Alaska Department of Environmental Conservation
^a = Levels established in ADEC Table C Groundwater Cleanup Levels (18 AAC 75.345)
¹ = Level set at solubility concentration, followed by human health risk-based cleanup level in parentheses
Bold = At or above the method detection limit (MDL)
 mg/L = milligrams per liter
 J = The associated numerical value is an estimated concentration only
 - = Not measured / not analyzed
 <0.000097= Constituent not detected above method detection limit (MDL)
 [] = Blind Duplicate Sample Result

Attachment D

ADEC Data Review Checklist

Laboratory Data Review Checklist

Completed By:

Dilip Kumar H S

Title:

Project Chemist

Date:

November 15, 2023

Consultant Firm:

ARCADIS U.S., Inc

Laboratory Name:

Pace Analytical

Laboratory Report Number:

L1668029

Laboratory Report Date:

10/19/2023

CS Site Name:

Semi Annual 2023 Groundwater Monitoring Report

ADEC File Number:

2107.26.003

Hazard Identification Number:

23705

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. no discrepancies.

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 or 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 or 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:

No.

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

Comments:

Sample Locations	Method	Compound	Sample Result	Qualification
MW-4-W-20231018	AK102	AK102 DRO C10-C25	Detected sample results <RL and <BAL	“UB” at RL
MW-6-W-20231018				
MW-3-W-20231018			Detected sample results >RL and <BAL	“UB” at detected sample concentration
MW-5-W-20231018				

Note:

RL Reporting limit

BAL Blank action level

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:

Data quality or usability was not affected.

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:

Yes.

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:

None of the samples were affected.

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

Yes No N/A Comments:

Not applicable.

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

Comments:

Data quality or usability was not affected.

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-2-W-20231018.

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-2-W-20231018.

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:

Yes.

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:

Sample locations associated with MS/MSD recoveries exhibiting an RPD greater than of the control limit presented in the following table.

Sample Locations	Compounds
MW-2-W-20231018	AK102 DRO C10-C25

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

Control Limit	Sample Result	Qualification
> UL	Non-detect	UJ
	Detect	J

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

Comments:

RPD:
Method AK102: MS/MSD RPD for AK102 DRO C10-C25 was greater than the control limit in sample MW-2-W-20231018. Target compound result in associated sample was qualified as estimated (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:

MS/MSD RPD 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:

Yes.

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:

Not applicable.

iv. Is the data quality or usability affected?

Comments:

Data quality or usability was not affected.

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-20231018.

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)

$$\text{RPD (\%)} = \text{Absolute value of: } \frac{(R_1 - R_2)}{((R_1 + R_2)/2)} \times 100$$

Where R_1 = Sample Concentration
 R_2 = 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-5-W-20231018/BD-1-W-20231018	6010 D	Lead	3.75 J	6.0 U	AC
	8260D	Benzene	0.722 J	0.733 J	AC
		1,2-Dibromoethane	0.751 J	0.827 J	AC
	AK 102	AK102 DRO C10-C25	1950	570 J	AC
	8270E-SIM	Acenaphthene	0.0786	0.0368 J	AC
		Acenaphthene	0.107	0.0680	AC
		Fluoranthene	0.0172 J	0.0123 J	AC
		Fluorene	0.656	0.398	49.0%
		Naphthalene	0.196 J	0.128 J	AC
		Phenanthrene	0.707	0.316	76.4%
		Pyrene	0.0248 J	0.050 U	AC
		1-Methylnaphthalene	0.0532 J	0.50 U	AC
		2-Chloronaphthalene	0.525 U	0.0337 J	AC

Notes:

AC Acceptable

NC – Noncompliance

Method SW846 8270E-SIM: The compounds fluorene and phenanthrene associated with sample locations MW-5 and BD-1 exhibited a RPD greater than the control limit. The associated sample results from sample locations for the listed analyte were qualified as estimated (J).

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

Comments:

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

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-20231018.

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-2-W-20231018 MW-4-W-20231018 MW-5-W-20231018 MW-6-W-20231018 BD-1-W-20231018	8270 E SIM	Fluoranthene	Detected sample results <RL and <BAL	“UB” at RL
MW-3-W-20231018			Detected sample results >RL and <BAL	“UB” at detected sample concentration
MW-3-W-20231018 MW-4-W-20231018 MW-6-W-20231018		Phenanthrene	Detected sample results <RL and <BAL	“UB” at RL
MW-5-W-20231018			Detected sample results >RL and <BAL	“UB” at detected sample concentration
MW-5-W-20231018		1-Methylnaphthalene	Detected sample results <RL and <BAL	“UB” at RL

Note:

RL Reporting limit

BAL Blank action level

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:

Not applicable.