

September 4Q 2022 GWM
Event Report for
Tesoro Northstore (TNS) #112

November 17, 2022

Prepared For



AUTHORIZATION TO SUBMIT REPORT

Stantec has been authorized by the client, 7-Eleven (representative Paula Sime, PG, Manager – Environmental Services) to submit the enclosed report to the Alaska Department of Environmental Conservation. If you have any questions or need additional information concerning this groundwater monitoring report, please contact me at (907) 227-9883 or via email at bob.gilfilian@stantec.com.

Regards,

STANTEC CONSULTING SERVICES, INC.

A handwritten signature in cursive script that reads "Robert Gilfilian".

Robert (Bob) Gilfilian, P.E.

Project Technical Lead

Principal Senior Civil Engineer

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ACRONYMS AND ABBREVIATIONS

AAC	Alaska Administrative Code
ADEC	Alaska Department of Environmental Conservation
AK	Alaska Test Method
amsl	above mean sea level
B	the analyte was also detected in the associated method blank
BTEX	benzene, toluene, ethylbenzene, and xylenes
Chemox	chemical oxidation
DO	dissolved oxygen
DRO	diesel range organics
DUP	duplicate sample
EPA	U.S. Environmental Protection Agency
GCL	groundwater cleanup level
GRO	gasoline range organics
J	The identification of the analyte is acceptable; the reported value is an estimate.
Klozur [®] One	Trademarked chemical oxidizer developed by PeroxyChem
mg/L	milligrams per liter
MW	monitoring well
NA	not applicable
PAH	polycyclic aromatic hydrocarbon
ORP	oxidation-reduction potential
QA/ QC	quality assurance/ quality control
SC	specific conductance
SIM	selective ion monitoring
Speedway	Speedway, LLC
Stantec	Stantec Consulting Services, Inc.
Tesoro	Tesoro Refining and Marketing Company
TMB	trimethylbenzene
U	undetected above practical quantification limits shown in parentheses
UST	underground storage tank
VOC	volatile organic compounds

1.0 INTRODUCTION

This 4th quarter 2022 (semi-annual) Groundwater Monitoring and Remediation Event Report was prepared by Stantec Consulting Services, Inc. (Stantec) on behalf of 7-Eleven for Tesoro Northstore, LLC, store #112, located at 3392 Badger Road, North Pole, Alaska (**Figure 1**). Although the monitoring event occurred at the very end of the 3rd quarter, for reporting purposes this report is being referred to as the 4th Quarter September 2022. Sampling at this site has historically been difficult in the first and fourth quarters due to ice and snow onsite.

The methods that were used for this monitoring event were conducted in accordance with the Alaska Department of Environmental Conservation (ADEC) approved 2022 Corrective Action Work Plan for this site (see **Appendix B**). The groundwater monitoring event on September 26, 2022, was conducted by Stantec personnel Engineer-In-Training Geoff Moorhead and Engineer-in-Training Leslie Petre.

2.0 SITE BACKGROUND

Background information is summarized in **Appendix A**.

3.0 FIELD ACTIVITIES

The following field activities were conducted during this monitoring event:

- Measured depth to groundwater in Monitoring Wells MW-01, MW-02, MW-03, MW-04, MW-06, MW-10, MW-17-2, and MW-17-5.
- Collected field measurements of the following intrinsic water quality parameters: temperature, pH, dissolved oxygen (DO), oxidation-reduction potential (ORP), and specific conductance (SC).
- Collected groundwater samples from Monitoring Wells MW-01, MW-02, MW-03, MW-04, MW-06, MW-10, MW-17-2, and MW-17-5, and submitted them for laboratory analysis for the following tests: U.S. Environmental Protection Agency Test Method (EPA) 8260C for Volatile Organic Compounds (VOC) including benzene, toluene, ethylbenzene, and xylenes (BTEX), as well as 1,24-trimethylbenzene (TMB) and 1,3,5-TMB; EPA 8270D-SIM for polycyclic aromatic hydrocarbons (PAHs) including naphthalene; Alaska Test Method (AK)101 for GRO; AK102 for DRO; and EPA 200.8 metals for sodium.

Field methods and procedures are provided in **Appendix B** and field measurements and notes are provided in **Appendix C**.

4.0 GROUNDWATER MONITORING RESULTS

Groundwater Levels. **Table 1** presents groundwater elevations in the monitoring wells that were based on the depths to static groundwater levels measured during this monitoring event. The groundwater direction of flow was found to be 40° to the northeast with a gradient of 0.094 feet per foot. This is generally consistent with previous monitoring events. Well casing elevations were re-surveyed July 5, 2022. A plot of groundwater elevations with flow contours is included in **Figure 3**.

Table 1 Groundwater Elevations
Measurements taken on September 26, 2022

Monitoring Well Identification	Top of Casing Elevation (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)
MW-1	390.06	8.63	381.43
MW-2	398.76 ¹	8.97	389.79
MW-3	398.80 ¹	9.19	389.61
MW-4	389.98	8.67	381.31
MW-6	389.18	12.40	376.78
MW-10	387.78	12.91	374.87
MW-17-2	390.01	8.55	381.46
MW-17-5	398.60 ¹	8.88	389.72

Key:

- ¹ Based on an older vertical control survey of July 21, 2021, based on an arbitrary datum of 400 feet established at a local benchmark in 2003.

Field Parameters. The results of intrinsic water quality parameters (temperature, pH, dissolved oxygen (DO), oxidation-reduction potential (ORP), and specific conductance (SC)) measured during this monitoring event are presented in **Table 2**. The high SC level and low pH level measured in MW-17-2 may be an indication of impact from the chemox treatment process.

Table 2 Field Measured Intrinsic Water Quality Parameters
Measurements taken on September 26, 2022

Monitoring Well Identification	Purged Volume (gallons)	Temperature (°C)	pH	DO (mg/L)	ORP (mV)	SC (µs/cm°C)
MW-01	7.5	5.8	6.28	2.39	97.2	620
MW-02	2.5	6.2	6.52	1.33	100	731
MW-03	10	5.9	6.43	2.98	83.8	873
MW-04	11.5	6.1	6.12	1.98	86.3	780
MW-06	2	6.4	6.75	1.07	95.5	410
MW-10	3	5.5	6.83	1.37	97.7	465
MW-17-2	3	7.0	5.9	1.02	76.6	1554
MW-17-5	3	6.3	6.19	1.45	83.7	559

Key:
 °C degrees Celsius
 µs/cm°C microSiemens per centimeter degrees Celsius
 mg/L milligrams per liter
 mV millivolts
 DO Dissolved Oxygen
 NM Not measured
 ORP oxidation-reduction potential
 pH log [H⁺]
 SC specific conductance corrected to 25 °C

Water Sample Analytical Results. Laboratory analytical results for BTEX, naphthalene, GRO, DRO, 1,2,4-TMB, 1,3,5-TMB, and sodium in the groundwater samples collected during this monitoring event are summarized in **Table 3**. The laboratory analytical report is provided in **Appendix E**. Historical monitoring data for this site are tabulated in **Appendix D**.

Sodium concentrations in wells MW-3 and MW-17-2 are relatively high compared to the other wells and probably are an indication of the chemox treatments with Klozur[®] One. Benzene was detected in MW-10 during the last (2nd Q) monitoring event but was not detected during this September event. MW-03 and the duplicate sample had analytes detected in excess of groundwater cleanup levels (GCLs), including benzene, ethylbenzene, total xylenes, GRO, 1,2,4-TMB, 1,3,5-TMB, and naphthalene. MW-04 was the only well in which DRO was detected above GCLs. MW-17-2 had ethylbenzene and 1,2,4-TMB in excess of GCLs. In MW-17-5, benzene, toluene, ethylbenzene, total xylenes, GRO, 1,2,4- and 1,3,5-TMB, and naphthalene were detected in excess of GCLs.

Table 3 Groundwater Analytical Results for BTEX, GRO, DRO, TMBs, Naphthalene and Sodium

Samples collected on September 26, 2022

ID	BENZENE	TOLUENE	ETHYL-BENZENE	XYLENES (TOTAL)	GRO	DRO	1,2,4-TMB	1,3,5-TMB	NAPH-THALENE ¹	SODIUM
UNITS	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MW-01	0.000190 J (0.00100)	0.184	0.00251	0.0405	0.318	1.32	0.00844	0.00194	0.000112 J (0.000250)	26.8
MW-02	0.000558 J (0.00100)	0.000511 J (0.00100)	0.00460	0.00856	0.174	0.772 J (0.832)	0.0125	0.00627	0.000397	15.4
MW-03	0.0168	0.273	0.335	2.51	4.39	1.30	0.473	0.161	0.0148	45.4
DUP1	0.0160	0.330	0.354	2.77	4.78	1.03	0.459	0.166	0.0126	44.2
MW-04	U (0.00100)	U (0.00100)	U (0.00100)	0.000534 J (0.00300)	0.0332 J (0.100)	2.68	0.000362 J (0.00100)	U (0.00100)	U (0.000250)	13.1
MW-06	U (0.00100)	U (0.00100)	U (0.00100)	U (0.00300)	0.0465 J (0.100)	U (0.832)	U (0.00100)	U (0.00100)	U (0.000250)	10.1
MW-10	U (0.00100)	U (0.00100)	U (0.00100)	U (0.00300)	0.0294 J (0.100)	U (0.872)	U (0.00100)	U (0.00100)	U (0.000250)	7.56
MW-17-2	0.000713 J (0.00100)	0.00195	0.0176	0.0418	0.557	1.35	0.192	0.0251	0.00127	207
MW-17-5	0.151	1.18	0.336	1.37	4.16	0.400 J (0.872)	0.330	0.181	0.00264	23.8
GCLS	0.0046	1.1	0.015	0.19	2.2	1.5	0.056	0.06	0.0017	NA

Key:

- 1 Results from VOC Method 8260 D
- B Analyte also detected in associated blank
- Bold** indicates the concentration exceeds the GCL or the estimated quantitation limit exceeds the GCL
- J The identification of the analyte is acceptable; the reported value is an estimate.
- DUP Duplicate sample of the preceding sample.
- DRO Diesel range organics analyzed by AK102.

GCLS Groundwater cleanup levels, 18 AAC 75.345, Table C, (9/18/2019)

GRO Gasoline range organics analyzed by AK101.
mg/L milligrams per liter
NA Not Applicable

U () Undetected above practical quantitation limits shown in parentheses.

Quality Assurance (QA)/Quality Control (QC) Review. PACE Analytical met all laboratory QA/QC criteria during the analysis of groundwater samples for this sampling event. **Table 4** provides a summary of the laboratory QC objectives and outcomes for this monitoring event. Laboratory QC data and the ADEC Laboratory Data Review Checklist are included with the laboratory report in **Appendix E**.

Sample DUP1 is a quality control duplicate of Sample MW-03. The duplicate sample set was collected to determine the precision of the field collection and laboratory analyses for this sampling event. Data presented in **Table 4** show that the precision for the duplicate sample set was inside laboratory QC guidelines for all analytes. The holding times were within established criteria.

Table 4 Laboratory Quality Control Objectives

Quality Control Designation	Tolerance	Results for this Event
Holding Times		
DRO/Water/to analyze	40 days	16 days
DRO/Water/to extract	14 days	14 days
GRO/Water/to analyze	14 days	9 days
VOCs/Water/to analyze	14 days	5 days
PAHs/Water/to analyze	40 days	8 days ¹
PAHs/Water/to extract	7 days	7 days
Field Duplicates – Precision		
Benzene	± 30%	4.9%
Toluene	± 30%	19%
Ethylbenzene	± 30%	5.5%
Xylenes	± 30%	9.8%
GRO	± 30%	8.5%
DRO	± 30%	23%
Naphthalene	± 30%	16%
1,2,4-TMB	± 30%	3.0%
1,3,5-TMB	± 30%	3.1%
Sodium	± 30%	2.7%

Key:

% Absolute value percentage of variance
 ± Absolute Value
 DRO diesel range organics
 GRO gasoline range organics
 TMB trimethylbenzene

PAH Polycyclic Aromatic Hydrocarbon
 VOC Volatile organic compound
BOLD Exceeds precision tolerance
 1 Maximum value; some samples analyzed/extracted earlier

5.0 IN-SITU CHEMOX REMEDIATION

Injections of Klozur[®] One product (chemox) used for in-situ remediation of petroleum contaminations in groundwater were scheduled to begin in the first quarter of 2022 but did not due to frozen well conditions at the site. Injections occurred monthly between June and October of 2022. Chemox injections took place on June 30, July 26, August 17, September 28, and October 12. A typical chemox event at the site includes the injection of eight 55-pound bags of product mixed with a total of 1100 gallons of potable water from the store hose spigot into the four onsite injection wells. Typically the product is mixed at a ratio of one pound per gallon of water (approximately 120 g/L) but staff onsite chose to mix the chemical in a half ratio (60 g/L) due to concerns about undissolved chemical clogging injection wells. This is within the manufacturer's suggested range of mixed ratios (50 to 200 g/L). Extra water is used to hydraulically push the chemical into formation.

On October 6, 2022, Stantec staff installed four new 4-inch diameter injection wells to replace the following 2-inch diameter injection wells: RW 17-1, RW 17-3, RW 17-4 and RW 17-6. The new 4" diameter injection wells were used for the chemox injection on October 12. The field staff noted the efficiency of injecting the chemox solution was significantly improved compared to the past injections with the 2" diameter wells.

6.0 CONCLUSIONS AND RECOMMENDATIONS

The following summarizes laboratory test results that exceeded the GCLs for the May 2022 semi-annual groundwater monitoring event:

- MW-03: Benzene, ethylbenzene, total xylenes, GRO, 1,2,4-TMB, 1,3,5-TMB, and naphthalene.
- MW-04: DRO.
- MW-17-2: Ethylbenzene and 1,2,4-TMB.
- MW-17-5: Benzene, toluene, ethylbenzene, total xylenes, GRO, 1,2,4-TMB, 1,3,5-TMB, and naphthalene.

The groundwater levels were measured in all monitoring wells. The groundwater direction of flow was found to be 40° to the northeast with a gradient of 0.094 feet per foot. This is generally consistent with previous monitoring events. Well casing elevations were re-surveyed July 5, 2022.

Injections of Klozur[®] One product (chemox) used for in-situ remediation of petroleum contaminations in groundwater were scheduled to begin in the first quarter of 2022 but did not due to frozen conditions at the site. Injections occurred monthly between June and October of 2022.

No anomalies were found during the September 2022 semi-annual monitoring event that would require additional corrective action or changes to the approved year 2022 Corrective Action Work Plan for this site.

7.0 LIMITATIONS

Stantec conducted this monitoring event in accordance with the 2022 Corrective Action Work Plan approved by ADEC, and in a manner consistent with the level of skill ordinarily exercised by members of

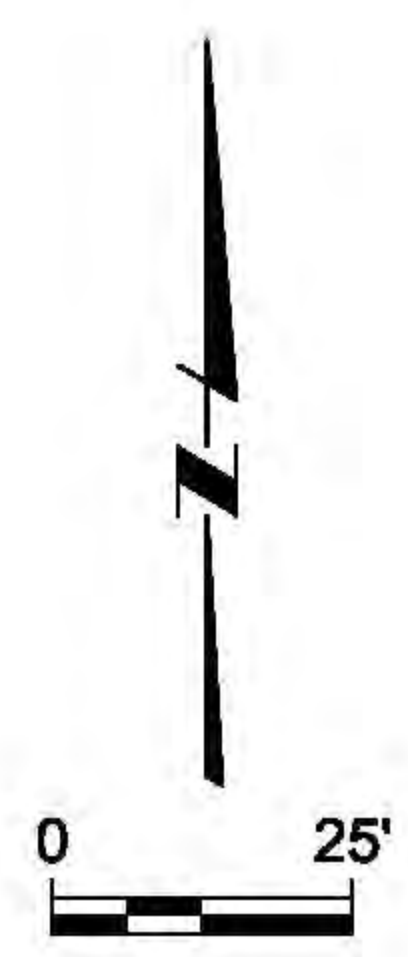
the profession currently practicing under similar conditions. All sampling activities were completed in accordance with the ADEC *Underground Storage Tanks Procedures Manual – Standard Sampling Procedures* (March 22, 2017). The conclusions in this report are Stantec’s professional opinion, as of the time of the report, and concerning the scope described in the report. The opinions in the document are based on conditions and information existing at the time the scope of work was conducted and do not take into account any subsequent changes. This report relates solely to the specific project for which Stantec was retained and the stated purpose for which the report was prepared. The report is not to be used or relied on for any variation or extension of the project, or for any other project or purpose, and any unauthorized use or reliance is at the recipient’s own risk.

This report is intended solely for use by the client in accordance with Stantec’s contract with the client. While the report may be provided to applicable authorities having jurisdiction and others for whom the client is responsible, Stantec does not warrant the services to any third party. The report may not be relied upon by any other party without the express written consent of Stantec, which may be withheld at Stantec’s discretion.

FIGURES

Figure 1	Location and Vicinity Map
Figure 2	Site Plan with Analytical Results
Figure 3	Groundwater Elevation Contours





**COLONIAL PLAZA MALL
DRINKING WELL,
MORNING STAR SUB. TRACT D
APPROXIMATELY 180'
NORTH OF THIS POINT**

MW-4	9/26/22
124-TMB	0.000362
135-TMB	U(0.00100)
BENZENE	U(0.00100)
DRO	2.68
ETHYLBENZENE	U(0.00100)
GRO	0.0332
NAPHTHALENE	U(0.000250)
SODIUM	13.1
TOLUENE	U(0.00100)
XYLENES	0.000534

MW-3	9/26/22
124-TMB	0.473
135-TMB	0.166
BENZENE	0.0168
DRO	1.3
ETHYLBENZENE	0.354
GRO	4.78
NAPHTHALENE	0.0148
SODIUM	45.4
TOLUENE	0.33
XYLENES	2.77

MW17-2	9/26/22
124-TMB	0.192
135-TMB	0.0251
BENZENE	0.000713
DRO	1.35
ETHYLBENZENE	0.0176
GRO	0.557
NAPHTHALENE	0.00127
SODIUM	207
TOLUENE	0.00195
XYLENES	0.0418

MW-1	9/26/22
124-TMB	0.00844
135-TMB	0.00194
BENZENE	0.00019
DRO	1.32
ETHYLBENZENE	0.00251
GRO	0.318
NAPHTHALENE	0.000112
SODIUM	26.8
TOLUENE	0.184
XYLENES	0.0405

MW-10	9/26/22
124-TMB	U(0.00100)
135-TMB	U(0.00100)
BENZENE	U(0.00100)
DRO	U(0.872)
ETHYLBENZENE	U(0.00100)
GRO	0.0294
NAPHTHALENE	U(0.000250)
SODIUM	7.56
TOLUENE	U(0.00100)
XYLENES	U(0.00300)

MW-6	9/26/22
124-TMB	U(0.00100)
135-TMB	U(0.00100)
BENZENE	U(0.00100)
DRO	U(0.832)
ETHYLBENZENE	U(0.00100)
GRO	0.0465
NAPHTHALENE	U(0.000250)
SODIUM	10.1
TOLUENE	U(0.00100)
XYLENES	U(0.00300)

MW17-5	9/26/22
124-TMB	0.33
135-TMB	0.181
BENZENE	0.151
DRO	0.4
ETHYLBENZENE	0.336
GRO	4.16
NAPHTHALENE	0.00264
SODIUM	23.8
TOLUENE	1.18
XYLENES	1.37

MW-2	9/26/22
124-TMB	0.0125
135-TMB	0.00627
BENZENE	0.000558
DRO	0.772
ETHYLBENZENE	0.0046
GRO	0.174
NAPHTHALENE	0.000397
SODIUM	15.4
TOLUENE	0.000511
XYLENES	0.00856

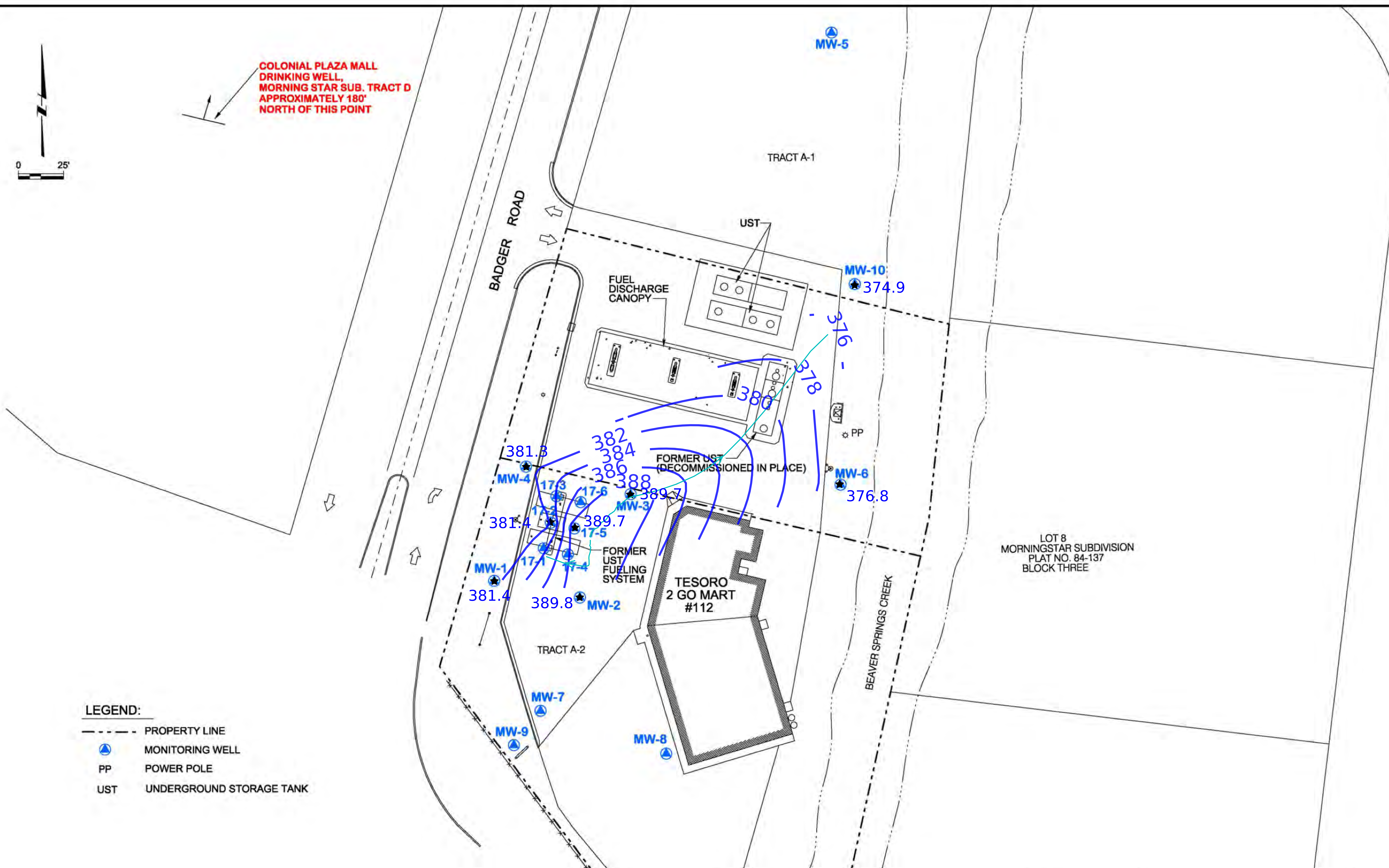
LEGEND:

- PROPERTY LINE
- MONITORING WELL
- POWER POLE
- UNDERGROUND STORAGE TANK

SITE DATA COMPARED TO ADEC Groundwater Cleanup Levels (GCLs)	ND	NOT DETECTED	124-TMB	0.056 mg/L
	--	NOT SAMPLED	135-TMB	0.06 mg/L
	50	SAMPLED & UNDER GCL	BENZENE	0.0046 mg/L
	100	SAMPLED & OVER GCL	DRO	
	FP	FREE PRODUCT	ETHYLBENZENE	0.015 mg/L
	DISPLAYED IN mg/L		GRO	2.2 mg/L
			NAPHTHALENE	0.0017 mg/L
			SODIUM	
			TOLUENE	1.1 mg/L
			XYLENES	0.19 mg/L



COLONIAL PLAZA MALL
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LEGEND:

- PROPERTY LINE
- ▲ MONITORING WELL
- PP POWER POLE
- UST UNDERGROUND STORAGE TANK



SPPEEDWAY 5310
(Former Tesoro TGMart #112)

Groundwater Elevation Contours
4Q 2022 September GWM Event

FIGURE

3

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APPENDIX A

Site Background

APPENDIX A – SITE BACKGROUND

Speedway Store 5310 (former Tesoro 2 Go Mart #112) 3392 Badger Road, North Pole, Alaska)
ADEC Facility ID #1116; ADEC File #100.26.159

Tesoro 2 Go Mart #112 is a retail fuel service/convenience store located northeast of the Richardson Highway overpass on Badger Road in North Pole, Alaska. The property is approximately 1.9 acres in size and the legal description is Tract A-2, Morningstar Subdivision. The store is in the north end of a small strip mall. Beaver Springs Creek flows to the north immediately behind the strip mall. Three underground storage tanks (USTs) were initially installed to serve the original convenience store in December 1984.

November 1996. During field installation of a cathodic protection system on the USTs, a petroleum hydrocarbon release was discovered in several subsurface boreholes drilled around the perimeter of the USTs.

May 1997. Gilfilian Engineering and Environmental Testing, Inc. (GE²T) completed a Phase 1 Release Investigation (RI) at the site and installed four groundwater monitoring wells. In addition, representative water samples were collected from the mall drinking water system (served by an on-site water well) and from Beaver Springs Creek. Petroleum contaminants were detected above Alaska Department of Environmental Conservation (ADEC) cleanup levels in samples collected from all four soil borings/monitoring wells. Petroleum contaminants were detected at very low concentrations in the creek water samples, and none in the drinking water sample.

September 1997. Free phase petroleum was discovered in two of the four groundwater monitoring wells at the site, and dissolved petroleum contaminants was detected above ADEC groundwater cleanup levels (GCLs) in the other two monitoring wells.

March 1998. A well search was conducted within a ¼-mile radius of the site. The findings of the well search noted there were approximately 24 domestic water supply wells within the search radius.

August/September 1998. GE²T conducted a UST Closure Site Assessment (SA) at the site. Three USTs and associated piping and dispensers were removed from the site and a new UST system was installed on an adjacent downgradient lot (to the north) of the site on Tract A-1 Morning Star Subdivision. Petroleum hydrocarbon contamination was found in the monitoring wells constructed in the area of the former and new UST systems. Seven soil vapor extraction (SVE) wells and sixteen air sparge (AS) wells systems were installed at the site for remediation of contamination found in the vadose soil zone and groundwater table beneath the site. Additional AS and SVE wells were installed at a later date

September 1999. An SA was completed for the removal of the new UST that were installed in September 1998 and replace with a new UST. Soil contamination was discovered in the area of

the replacement UST system. Contaminated soil was removed and transported off-site for thermal treatment.

June 2000. GE²T conducted a RI for installation of an additional monitoring well (MW-6) at the site. No contaminants were detected in soil samples from the boring.

March 2001. A Falco 300 Cat-Ox unit was installed as part of the remediation system to treat vapors captured in the SVE system.

September/October 2003. MWH Americas, Inc. (MWH) completed a RI that included the installation of additional AS and groundwater monitoring wells. The RI involved drilling five soil borings, of which four were completed as AS wells (AS-20, AS-21, AS-22, and AS-23) and one monitoring well (MW-7). Contaminants were detected in soil from borings MW-7, AS-20, and AS-21 and the water sample from MW-7.

March 2004. MWH completed a RI that involved the drilling two soil borings. These borings were completed as 2-inch diameter monitoring wells (MW-8 and MW-9). Laboratory results indicate that no contaminants were detected in the soil or groundwater samples collected.

September 2004. MWH completed a RI that involved the drilling of one soil boring. The boring that was completed as 2-inch diameter monitoring well (MW-10). Laboratory results indicate that no contaminants were detected in the soil samples collected. Benzene was detected above the GCL water sample collected from MW-10.

May 2005. Benzene, toluene, ethylbenzene, GRO, and DRO were detected above the ADEC GCLs in Monitoring Well MW-3. Benzene, GRO, and DRO were also detected above the GCLs in Monitoring Well MW-2. No analytes of concern were detected above the GCLs in any of the other tested wells. The AS and SVE systems remained in operation.

September 2005. Benzene, GRO, and DRO were detected above the ADEC GCLs in Monitoring Wells MW-2 and MW-3. Toluene was also detected above the GCL in Monitoring Well MW-3. No analytes of concern were detected above the GCLs in Monitoring Well MW-10. The AS and SVE systems remained in operation. The SVE exhaust vapor concentrations had decreased to a relatively low level that no longer necessitated the use of the catalytic oxidizer unit. Therefore, the catalytic oxidizer was disconnected from the SVE system in summer 2005.

May 2006. Benzene, toluene, ethylbenzene, xylenes, GRO, and DRO were detected above the ADEC GCLs in Monitoring Well MW-3. GRO and DRO were also detected above the GCLs in Monitoring Well MW-2. No analytes of concern were detected above the GCLs in Monitoring Wells MW-4, MW-5, MW-6, MW-7, MW-8, MW-9, and MW-10. The AS and SVE system were shut down until system maintenance could be performed.

November 2006. Benzene, toluene, ethylbenzene, and gasoline range organics were detected above the ADEC GCLs in Monitoring Wells MW-2 and MW-3. Xylenes and diesel range organics

were also detected above the GCLs in Monitoring Well MW-3. No analytes of concern were detected above the GCLs in Monitoring Well MW-10. AS and SVE system were brought back online after system repair was performed.

May 2007. GRO and DRO were detected above the ADEC GCLs in Monitoring Wells MW-2 and MW-3. Benzene, toluene, ethylbenzene, and xylenes were detected above the practical quantitation limits (PQLs) in Monitoring Wells MW-2 and MW-3, but only benzene was above the GCL. DRO was detected above the PQL, but below the GCL, in Monitoring Wells MW-4 and MW-5. No analytes of concern were detected above the PQLs in Monitoring Wells MW-1, MW-6, MW-8, MW-9, and MW-10. AS and SVE system remain in operation.

April 2008. DRO was detected above the ADEC GCLs in Monitoring Wells MW-2, MW-3, and MW-4. GRO were detected above the ADEC GCLs in Monitoring Wells MW-3 and MW-4. Benzene was also detected above the GCLs in Monitoring Well MW-3. DRO in Monitoring Well MW-1; ethylbenzene, xylenes, and GRO in MW-2; toluene, ethylbenzene, and xylenes in Monitoring Well MW-3; and benzene, toluene, ethylbenzene, and xylenes in Monitoring Well MW-4 were detected above the PQLs, but below the GCLs. No analytes were detected above the PQLs in Monitoring Wells MW-5 through MW-10. AS and SVE system remain in operation.

October 2008. DRO were detected above the ADEC GCL in Monitoring Well MW-3. GRO were detected above the GCL in Monitoring Wells MW-2 and MW-3. All other analytes were detected above the PQLs, but below the GCLs, in Monitoring Wells MW-2 and MW-3. No analytes were detected above the PQLs in Monitoring Well MW-10. AS and SVE system remain in operation.

May 2009. Diesel range organics were detected above the ADEC GCLs in Monitoring Wells MW-1, MW-2, and MW-3. GRO were detected above the GCL in Monitoring Wells MW-2 and MW-3. Benzene was detected above the GCL in Monitoring Well MW-3. All other analytes were detected above the PQLs, but below the GCLs, in Monitoring Wells MW-2 and MW-3. Toluene in Monitoring Wells MW-1 through MW-4, and MW-8; ethylbenzene in Monitoring Wells MW-1 through MW-3, MW-7, and MW-8; xylenes in Monitoring Wells MW-1 through MW-4 and MW-7 through MW-9; and GRO in Monitoring Well MW-7 were detected above PQLs but below GCLs. All other analytes in the above wells sampled were not detected above the PQLs. No analytes were detected above the PQLs in Monitoring Wells MW-5, MW-6, and MW-10. AS and SVE system remain in operation.

October 2009. All analytes tested were detected above the ADEC GCLs in Monitoring Well MW-3. Ethylbenzene and gasoline range organics were detected above the GCLs in Monitoring Well MW-2. Benzene, toluene, xylenes, and diesel range organics were detected above the practical quantitation limits, but below the GCLs, in Monitoring Well MW-2. No analytes of concern were detected above the practical quantitation limits in Monitoring Well MW-10. AS and SVE system remain in operation.

June 2010. Benzene, GRO, and DRO were detected above the ADEC groundwater cleanup levels GCLs in Monitoring Well MW-3. Toluene, ethylbenzene, and xylenes were detected above the

PQLs, but below the GCLs, in Monitoring Well MW-3. Benzene, toluene, ethylbenzene, xylenes, and GRO were detected above the PQLs, but below the GCLs, in Monitoring Wells MW-1 and MW-2. DRO was also detected above the PQL, but below the GCL, in Monitoring Well MW-2. No analytes of concern were detected above the PQLs in Monitoring Wells MW-4, MW-6, or MW-10. AS and SVE system remain in operation. Measurements of the SVE exhaust with a PID indicated low amounts of volatile petroleum hydrocarbons are being removed from the vadose soil zone.

October 2010. Benzene, toluene, ethylbenzene, xylenes, GRO, and DRO were detected above the ADEC GCLs in Monitoring Well MW-3. GRO was detected above the GCL in Monitoring Well MW-2. Benzene, toluene, ethylbenzene, xylenes, and DRO were detected above the PQLs, but below the GCLs, in Monitoring Well MW-2. No analytes of concern were detected above the PQLs in Monitoring Well MW-10. AS and SVE system remain in operation.

May 2011. Benzene, toluene, ethylbenzene, xylenes, GRO, and DRO were detected above the ADEC GCLs in Monitoring Well MW-3. GRO and DRO were detected above the GCL in Monitoring Well MW-2. Benzene, toluene, ethylbenzene, and xylenes were detected above the PQLs, but below the GCLs, in Monitoring Well MW-2. Toluene, ethylbenzene, xylenes, GRO, and DRO were also detected above the PQLs, but below the GCLs, in Monitoring Well MW-1. Benzene was not detected above the PQL in Monitoring Well MW-1. No analytes of concern were detected above the PQLs in Monitoring Wells M-4, MW-6, and MW-10. AS and SVE system remain in operation.

October 2011. Benzene, toluene, ethylbenzene, xylenes, GRO, and DRO were detected above the ADEC GCLs in Monitoring Well MW-3. GRO was detected above the GCL in Monitoring Well MW-2. Ethylbenzene, xylenes, and DRO were detected above the PQLs, but below the GCLs, in Monitoring Well MW-2. Benzene and toluene were not detected above the PQLs in MW-2; however, the PQL for benzene is above the GCL and the result might exceed the GCL. No analytes of concern were detected above the PQLs in Monitoring Wells MW-6 and MW-10. The AS and SVE systems remain in operation on a full-time basis.

May 2012. Benzene, toluene, ethylbenzene, xylenes, GRO, and DRO were detected above GCLs in Monitoring Well MW-3. Benzene and GRO were detected above GCLs in Monitoring Well MW-2. Benzene, toluene, ethylbenzene, xylenes, and GRO were detected above PQLs and below GCLs in Monitoring Well MW-1. Toluene, ethylbenzene, and xylenes were detected above PQLs and below GCLs in Monitoring Well MW-2. No other analytes were detected above the PQLs in any of the samples collected during this monitoring event. The AS and SVE systems remained in operation on a full-time basis.

October 2012. Benzene and GRO were detected above GCLs in Monitoring Well MW-3. Benzene, toluene, ethylbenzene, xylenes, GRO, and DRO were detected above PQLs and below GCLs in Monitoring Well MW-2. Toluene, ethylbenzene, xylenes, and DRO were detected above PQLs and below GCLs in Monitoring Well MW-3. The AS and SVE systems were taken offline pending repairs and improvements. A total of 130 gallons of Klozur CR[®] was applied at the site

over two events. Approximately 10 gallons of Klozur CR was poured into SVE-7, and approximately 55 gallons into SVE-9 on August 29, 2012. Additionally, 65 gallons of Klozur CR were injected into Well SVE-9 on October 9, 2012.

May 2013. Benzene, toluene, ethylbenzene, xylenes, GRO, and DRO were detected above GCLs in Monitoring Well MW-3. Benzene, ethylbenzene, xylenes, GRO, and DRO were detected above PQLs but below GCLs in Monitoring Well MW-1. Benzene, toluene, ethylbenzene, xylenes, and GRO were detected above PQLs but below GCLs in Monitoring Well MW-2. The AS and SVE systems remain offline pending repairs and improvements.

September 2013. Benzene, toluene, ethylbenzene, xylenes, GRO, and DRO were detected above GCLs in Monitoring Well MW-3. GRO was detected above GCL in Monitoring Well MW-2. Benzene, toluene, ethylbenzene, xylenes, and DRO were detected above PQLs but below GCLs in Monitoring Well MW-2. The AS and SVE systems remain offline pending repairs and improvements.

May 2014. Benzene, GRO, and DRO were detected above GCLs in Monitoring Well MW-3. Ethylbenzene, xylenes, and DRO were detected above PQL and below GCLs in Monitoring Well MW-1. Benzene, ethylbenzene, xylenes, GRO, and DRO were detected above PQLs but below GCLs in Monitoring Well MW-2. Toluene, ethylbenzene, and xylenes were detected above PQLs and below GCLs in Monitoring Well MW-3. Xylenes were detected above PQLs but below GCLs in Monitoring Well MW-10. The AS and SVE systems remain offline pending repairs and improvements.

September 2014. Benzene, toluene, ethylbenzene, xylenes, GRO, and DRO were detected above GCLs in Monitoring Well MW-3. Benzene, toluene, ethylbenzene, xylenes, and GRO were detected above PQLs and below GCLs in Monitoring Well MW-2. The AS and SVE systems remain offline pending repairs and improvements.

May 2015. Benzene, toluene, ethylbenzene, xylenes, GRO, and DRO were detected above GCLs in Monitoring Well MW-3. DRO was detected above GCL in Monitoring Wells MW-1 and MW-2. Toluene, ethylbenzene, xylenes, and GRO were detected above PQLs but below GCLs in Monitoring Well MW-1. Benzene, ethylbenzene, xylenes, and GRO were detected above PQLs but below GCLs in Monitoring Well MW-2. DRO was detected above PQL but below GCL in Monitoring Well MW-4. The AS and SVE systems remain offline pending repairs and improvements.

October 2015. Benzene and GRO were detected above GCLs in Monitoring Well MW-2. Benzene, toluene, ethylbenzene, total xylenes, GRO, and DRO were detected above GCLs in Monitoring Well MW-3. One or more analytes were detected above the PQLs, but below the GCLs, in Monitoring Wells MW-2 (all analytes), MW-6 (DRO), and MW-10 (DRO). The AS and SVE systems remain offline pending repairs and improvements. Chemical oxidation of the groundwater at the site was conducted on October 6, 2015, with the injection of Klozur CR[®] into

Injection Well SVE-6 and well clusters SVE-7 and SVE-9 located at the footprint of the former underground storage tanks (USTs – Figure 3). Follow-up intrinsic measurements indicated negligible influence of the injection on groundwater at Monitoring Well MW-3.

May 2017. Results of analytical sampling showed concentrations exceeding the GCLs for:

- Monitoring Well MW-1: ethylbenzene, xylenes, 1,2,4-trimethylbenzene, and DRO.
- Monitoring Well MW-2: ethylbenzene, xylenes, 1,2,4-trimethylbenzene, naphthalene, and GRO.
- Monitoring Well MW-3: benzene, ethylbenzene, xylenes, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, naphthalene, GRO, and DRO.

One or more analytes were detected above the PQLs, but below the GCLs, in Monitoring Wells MW-1, MW-2, MW-3, MW-4, and MW-10.

September 2017: Results of the semi-annual groundwater monitoring event conducted in September 2017 showed concentrations exceeding the GCLs for ethylbenzene in Monitoring Well MW-2; and benzene, ethylbenzene, xylenes, GRO, and DRO in MW-3. Monitoring Wells MW-6 and MW-10 were found to be absent of contaminants of concern. These findings are similar to results found in previous monitoring events

June 2018. Results of analytical sampling showed concentrations exceeding the GCLs for:

- Monitoring Well MW-1: 1,2,4-trimethylbenzene.
- Monitoring Well MW-2: ethylbenzene, 1,2,4-trimethylbenzene, benzopyrene, and indenopyrene.
- Monitoring Well MW-3: benzene, ethylbenzene, xylenes, GRO, DRO, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, and naphthalene.
- Monitoring Well MW 17-5: benzene, ethylbenzene, xylenes, and 1,2,4-trimethylbenzene.

One or more analytes were detected above the PQLs, but below the GCLs, in Monitoring Wells MW-1, MW-2, MW-3, MW-4, and MW-17-5.

October 2018. The following summarizes results exceeding the GCLs for the October 2018 semi-annual groundwater monitoring event:

- Monitoring Well MW-2: ethylbenzene and DRO.
- Monitoring Well MW-3: benzene, ethylbenzene, xylenes, GRO, DRO, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, and naphthalene.
- Monitoring Well MW 17-2: ethylbenzene, xylenes, GRO, DRO and 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, and naphthalene.
- Monitoring Well MW 17-5: benzene, ethylbenzene, xylenes, GRO, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, and naphthalene

One or more analytes were detected above the PQLs, but below the GCLs, in Monitoring Wells MW-2, MW-3, MW-6, and MW-17-5.

In addition, several volatile organic compounds (VOCs) were reported by the laboratory as undetected but had laboratory reporting limits that equaled or exceeded their corresponding GCLs.

The chemical oxidation (chemox) treatment process was delayed until the third quarter of 2018 due to replacement of the chemical oxidant. In September 2018, Stantec completed an injection of the replacement chemox product, Klozur One[®], into the four remediation wells. Klozur One[®] is a granular product manufactured by PeroxyChem that consists primarily of sodium persulfate and patented activator reagents. A total of 220 pounds of Klozur One[®] product was mixed with clean water and then manually injected as a solution into the contaminated source area via Remediation Wells RM17-1, RM17-3, RM17-4, and RM17-6. Each of the four remediation wells received 55 pounds of Klozur One[®] that was prepared as a solution with 50 gallons of clean water. Following the injection of the chemox solution, a combined total of 550 gallons of clean water was injected in all the wells. It was noted that each of the remediation wells had different acceptance rates for delivery of the clean water that ranged from 55 to 210 gallons each.

May 2019. This May 2019 semi-annual groundwater monitoring event included measuring the depth to groundwater, measuring water quality parameters, and collecting and analyzing groundwater samples from Monitoring Wells MW-1, MW-2, MW-3, MW-4, MW-6, MW-10, MW 17-2, and MW 17-5. The methods that were used for this monitoring event were conducted in accordance with the Alaska Department of Environmental Conservation (ADEC) approved 2019 Corrective Action Work Plan for this site.

Results from the groundwater depth measurements indicate the average hydraulic gradient was approximately 0.003 feet per foot with flow tending toward the northeast at 55 degrees. The flow direction and gradient for this monitoring event were consistent with the historical values for this site.

Results of the analytical sampling showed concentrations exceeding the ADEC groundwater cleanup levels (GCLs) for the following monitoring wells:

- Monitoring Well MW-2: ethylbenzene.
- Monitoring Well MW-3: benzene, ethylbenzene, xylenes, gasoline range organics (GRO), and naphthalene.
- Monitoring Well MW 17-5: ethylbenzene.

October 2019. This October 2019 semi-annual groundwater monitoring event included measuring the depth to groundwater, measuring water quality parameters, and collecting and analyzing groundwater samples from Monitoring Wells MW-1, MW-2, MW-3, MW-4, MW-6, MW-10, MW 17-2, and MW 17-5. The methods that were used for this monitoring event were conducted in accordance with the ADEC approved 2020 Corrective Action Work Plan for this site.

Results from the groundwater depth measurements indicate the average hydraulic gradient was approximately 0.005 feet per foot with flow tending toward the northeast at 64 degrees. The flow direction and gradient for this monitoring event were consistent with the historical values for this site.

Results of the analytical sampling showed concentrations exceeding the ADEC GCLs for the following monitoring wells:

- Monitoring Well MW-2: ethylbenzene.
- Monitoring Well MW-3: benzene, ethylbenzene, xylenes, GRO, and DRO.
- Monitoring Well MW 17-2: ethylbenzene, xylenes, and GRO.
- Monitoring Well MW 17-5: benzene, ethylbenzene, xylenes, and GRO.

Stantec completed an injection of 220 pounds of the chemox product, Klozur One[®], into the four remediation wells (RW17-1, RW17-3, RW17-4, and RW17-6).

August 2020. The semi-annual groundwater monitoring event included measuring the depth to groundwater, measuring water quality parameters, and collecting and analyzing groundwater samples from Monitoring Wells MW-2, MW-3, MW-6, MW-10, MW17-2, and MW17-5. The methods that were used for this monitoring event were conducted in accordance with the Alaska Department of Environmental Conservation (ADEC) approved 2020 Corrective Action Work Plan for this site.

Results from the groundwater depth measurements indicate the average hydraulic gradient was approximately 0.005 feet per foot with flow tending toward the northeast at 67 degrees. The flow direction and gradient for this monitoring event were consistent with the historical values for this site.

The following summarizes laboratory test results that exceeded the GCLs for the August 2020 semi-annual groundwater monitoring event:

- Monitoring Well MW-3: Benzene, Ethylbenzene, Total Xylenes, 1-2-4 Trimethylbenzene, 1-3-5 Trimethylbenzene, Naphthalene, GRO, and DRO.
- Monitoring Well MW 17-2: Ethylbenzene, Total Xylenes, 1-2-4 Trimethylbenzene, 1-3-5 Trimethylbenzene, Naphthalene, and DRO.
- Monitoring Well MW 17-5: Benzene, Ethylbenzene, Total Xylenes, 1-2-4 Trimethylbenzene, 1-3-5 Trimethylbenzene, Naphthalene, and GRO.

Stantec completed an injection of 440 pounds of the chemox product, Klozur One[®], into the four remediation wells (RW17-1, RW17-3, RW17-4, and RW17-6).

October 2020. This October 2020 semi-annual groundwater monitoring event included measuring the depth to groundwater, measuring water quality parameters, and collecting and analyzing groundwater samples from Monitoring Wells MW-2, MW-3, MW-6, MW-10, MW 17-2, and MW 17-5. The methods that were used for this monitoring event were conducted in accordance with the ADEC approved 2020 Corrective Action Work Plan for this site.

Analytes in exceedance included: benzene, ethylbenzene, and xylenes (BTEX); gasoline range organics (GRO); diesel range organics (DRO), and naphthalene.

- MW-3: Benzene, Ethylbenzene, Total Xylenes, Naphthalene, GRO, and DRO.
- MW 17-2: Ethylbenzene, Total Xylenes, DRO, and Naphthalene.
- MW 17-5: Benzene, Ethylbenzene, Total Xylenes, and Naphthalene.

Results from the groundwater depth measurements indicate the average hydraulic gradient was approximately 0.0045 feet per foot with flow tending toward the northeast at 57 degrees. The flow direction and gradient for this monitoring event were consistent with the historical values for this site.

Stantec completed an injection of 440 pounds of the chemox product, Klozur One[®], into the four remediation wells (RW17-1, RW17-3, RW17-4, and RW17-6).

October 2021. This October 2021 semi-annual groundwater monitoring event included measuring the depth to groundwater, measuring water quality parameters, and collecting and analyzing groundwater samples from Monitoring Wells MW-01, MW-02, MW-03, MW-04, MW-06, MW-10, MW-17-2, and MW-17-5. The methods that were used for this monitoring event were conducted in accordance with the ADEC approved 2021 Corrective Action Work Plan for this site.

The following summarizes laboratory test results that exceeded the GCLs for the October 2021 semi-annual groundwater monitoring event:

- MW-02: Naphthalene
- MW-03: Benzene, ethylbenzene, total xylenes, GRO, DRO, 1,2,4-trimethylbenzene (1,2,4-TMB), 1,3,5-trimethylbenzene (1,3,5-TMB), and naphthalene.
- MW-04: DRO
- MW-17-2: Ethylbenzene, total xylenes, DRO, 1,2,4-TMB, 1,3,5-TMB, and naphthalene.
- MW-17-5: Benzene, ethylbenzene, total xylenes, 1,2,4-TMB, 1,3,5-TMB and naphthalene.

Based on the Surfer[®] software program, the average groundwater hydraulic gradient across the site was approximately 0.0055 feet per foot with flow tending toward the northeast at 50 degrees. The flow direction and gradient for this monitoring event were consistent with the historical values for this site.

The remediation event on October 15, 2021, consisted of a chemical oxidation (chemox) injection of Klozur[®] One product combined with potable water from the convenience store into four remediation wells (RW-17-1, RW-17-3, RW-17-4 and RW-17-6). Klozur[®] One is a granular product manufactured by PeroxyChem that consists primarily of sodium persulfate and patented activator reagents. The solution was hydraulically “pushed” into the subsurface formation with the injection of additional potable water into each well. In summary, a total of 385 pounds of Klozur[®] One product mixed with 1,070 gallons of water was injected into the subsurface via the remediation wells during the chemox injection process.

May 2022. The May 2022 semi-annual groundwater monitoring event was conducted by Stantec Staff on May 17, 2022. Monitoring wells and the respective analytes in exceedance of ADEC GCLs included:

- MW-03: Benzene, ethylbenzene, total xylenes, GRO, 1,2,4-TMB, 1,3,5-TMB, and naphthalene.
- MW-17-2: Ethylbenzene and 1,2,4-TMB.
- MW-17-5: Benzene, toluene, ethylbenzene, total xylenes, GRO, 1,2,4-TMB, and 1,3,5-TMB.
- MW-10: Benzene.

The benzene detected in MW-10 will be further evaluated during the next monitoring event to determine the source of contamination, if possible.

The groundwater levels were measured in all of the above monitoring wells. The well casings in monitoring wells MW-6 and MW-10 were noted to be frost-jacked; consequently the groundwater elevations for this monitoring event were not computed to determine the groundwater flow direction and gradient across the site. Stantec plans to resurvey all of the monitoring wells later this summer to recompute the groundwater flow characteristics.

An injection of Klozur[®] One product (chemox) was not completed during the 1st quarter due to the severe winter conditions but is planned for the 2nd quarter in the month of June 2022.

September 2022: The groundwater monitoring event on September 26, 2022 was conducted by Stantec personnel Engineer-In-Training Geoff Moorhead and Engineer-in-Training Leslie Petre. The following summarizes laboratory test results that exceeded the GCLs for the May 2022 semi-annual groundwater monitoring event:

- MW-03: Benzene, ethylbenzene, total xylenes, GRO, 1,2,4-TMB, 1,3,5-TMB, and naphthalene.
- MW-04: DRO.
- MW-17-2: Ethylbenzene and 1,2,4-TMB.
- MW-17-5: Benzene, toluene, ethylbenzene, total xylenes, GRO, 1,2,4-TMB, 1,3,5-TMB, and naphthalene.

The groundwater levels were measured in all monitoring wells. The groundwater direction of flow was found to be 40° to the northeast with a gradient of 0.094 feet per foot. This is generally consistent with previous monitoring events. Well casing elevations were re-surveyed July 5, 2022.

Injections of Klozur® One product (chemox) used for in-situ remediation of petroleum contaminations in groundwater were scheduled to begin in the first quarter of 2022 but did not due to frozen conditions at the site. Injections occurred monthly between June and October of 2022.

APPENDIX B

Field Methods and Procedures

ADEC Approved Work Plan Tasks for 2022

- Task 1 –Groundwater Monitoring

Quarterly monitoring of the groundwater wells and annual monitoring of several existing drinking water wells will be conducted. Sampling locations and analyses for the monitoring and drinking water wells are listed on the 2022 Work Plan Schedule below.

Work Plan Task		1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter
Task 1	Monitoring Wells: MW-2, MW-3, MW-6, MW-10, MW-17-2 and MW-17-5.		V, G, D, P, I & S		V, G, D, P, I, & S
	Monitoring Wells MW-1 and MW-4				V, G, D, P, I, & S
	Monitoring Wells MW-3, MW 17-2 and MW 17-5	V, G, D, P, I & S		V, G, D, P, I & S	
Task 2	Chemical Oxidation Treatment	✓	✓	✓	✓
Task 3	Decommission Former Remediation System (23 AS Wells, 9 SVE Wells and Remediation Shed) and 3 MWs		✓	✓	

Key:

AK – Alaska Test Method

D – Diesel range organics by AK102.

E – Drinking water parameters by EPA Method 524.1.

G – Gasoline range organics by AK101.

I – Intrinsic indicators include: dissolved oxygen, specific conductance, oxygen-reduction potential, pH, and temperature.

O&M – Operation and Maintenance

V – Volatile organic compounds by EPA Test Method 8260C.

S – Sodium analyzed by Metals (ICP) Method 6010C.

P – Polynuclear aromatic hydrocarbons (PAHs), i.e., semi-volatile organic compounds associated with petroleum fuel, by EPA Test Method 8270D Selective Ion Monitoring (SIM).

- Task 2 – Chemical Oxidation Treatment

Stantec proposes to provide chemical oxidation treatment of the petroleum contaminated soil and groundwater located in the source area of the former underground storage tank (UST) system. The chemox injection will occur in all four quarters of the year into the following injection wells: RM17-1, RM17-3, RM17-4, and RM17-6. Approximately 100 gallons of a prepared solution of clean water and 110 pounds of Klozur One® will be

manually injected via gravity and/or a low pressure booster pump into each of the four remediation wells. Following the injection of the chemox solution, a minimum of 100 gallons of clear water will be injected into each injection well to provide a means of “hydraulically pushing” the chemox solution into the subsurface formation. In addition, the groundwater monitoring wells will be sampled for sodium to check on the distribution/migration of the oxidant.

- Task 3 – Decommission Former Remediation System (23 AS Wells, 9 SVE Wells and Remediation Shed) and 3 MWs

The purpose of this task is to decommission the former on-site remediation system that consisted of air sparge (AS) wells and soil vapor extraction (SVE) wells. The layout of the former on-site AS/SVE remediation system is shown on Figure 3. The proposed scope of work for this task will include the removal/decommissioning of 23 AS wells and 9 SVE wells. The underground piping system that was used for the injection of air into the AS wells and extraction of soil vapor from the SVE wells will be filled with grout.

In addition, the equipment used for the former remediation system located in the remediation shed will also be decommissioned, i. e., equipment will be removed and salvaged and/or disposed of as appropriate.

Also, 3 existing groundwater monitoring wells show on Figure 2 will be decommissioned as part of this scope of work. The wells proposed for decommissioning includes the following: MW-7, MW-8 and MW-9. These wells are no longer used for the assessment of treatment/cleanup of this site.

A detailed work plan for the implementation of the above tasks will be prepared by Stantec during the first quarter of 2022. The work plan will be submitted to the ADEC for approval prior to the execution of work on this task.

The Corrective Action Work Plan for the year 2022 will be implemented by Stantec on behalf of 7-Eleven. Groundwater monitoring will be conducted to track migration and trends of contaminants that are present at the site. All sampling activities will be completed in accordance with ADEC’s *Underground Storage Tanks Procedures Manual– Standard Sampling Procedures* (March 22, 2017). The methods that will be used for conducting a monitoring event, unless otherwise noted in the monitoring report, will include:

- The static water levels in the monitoring wells will be measured with respect to the top of each well casing. The elevation of the static water level will be based on an arbitrary datum established on-site during a vertical control survey that will be completed by Stantec on an annual basis. The survey will be performed during the summer after the seasonal frost layer thaws.
- The monitoring wells will be purged of a minimum of three well bore volumes prior to collecting the water samples. A new, disposable, Teflon® bailer will be used to sample each well. The first bail of water removed from each well will be examined for petroleum odor, sheen, and any other unique physical features.
- Water samples will be collected in laboratory-supplied sample containers. The samples will be delivered to an ADEC-approved laboratory in accordance with standard chain-of-custody procedures.

- Additional water samples will be collected from the monitoring wells after the well has been purged, as described above, and tested in the field for chemical and physical intrinsic parameters listed in the 2022 Work Plan Schedule shown above.

APPENDIX C

Field Measurements and Notes

Speedway5310/
Date: 09/26/2022, 3:24 PM
Name(s): Remi Malenfant
Site Name: TNS112

Location ID	GPS Latitude (decimal)	GPS Longitude (decimal)
MW17-2	64.7592772	-147.3502246
Field Data		
Sampler Names: Geoff Moorhead		Sheen/Odor?: N/n
pH: 5.9		Specific Conductance: 1.554
DO: 102		Temperature (C): 7
ORP: 76.6		Purge Volume (gal): 3.06
Notes:		

Speedway5310/
Date: 09/26/2022, 2:57 PM
Name(s): Remi Malenfant
Site Name: TNS112

Location ID	GPS Latitude (decimal)	GPS Longitude (decimal)
MW17-5	64.7592988	-147.3501863
Field Data		
Sampler Names: Geoff Moorhead		Sheen/Odor?: Y/n
pH: 6.19		Specific Conductance: 0.559
DO: 1.45		Temperature (C): 6.3
ORP: 83.7		Purge Volume (gal): 2.58
Notes:		

Speedway5310/
Date: 09/26/2022, 1:19 PM
Name(s): Remi Malenfant
Site Name: TNS112

Location ID	GPS Latitude (decimal)	GPS Longitude (decimal)
MW-1	64.7591877	-147.3504354
Field Data		
Sampler Names: Geoff Moorhead		Sheen/Odor?: N/n
pH: 6.28		Specific Conductance: 0.62
DO: 2.39		Temperature (C): 5.8
ORP: 97.2		Purge Volume (gal): 7.5
Notes:		

Speedway5310/
Date: 09/26/2022, 12:39 PM
Name(s): Remi Malenfant
Site Name: TNS112

Location ID	GPS Latitude (decimal)	GPS Longitude (decimal)
MW-2	64.7591664	-147.3501213
Field Data		
Sampler Names: Geoff Moorhead		Sheen/Odor?:
pH: 6.52		Specific Conductance: 0.731
DO: 1.33		Temperature (C): 6.2
ORP: 100		Purge Volume (gal): 2.4
Notes: Dark grey, high sediment around outside of 4" well		

Speedway5310/

 Date: 09/26/2022, 5:07 PM

 Name(s): Remi Malenfant

 Site Name: TNS112

Location ID	GPS Latitude (decimal)	GPS Longitude (decimal)
MW-3	64.7593249	-147.3500197
Field Data		
Sampler Names: Geoff Moorhead		Sheen/Odor?: N/y
pH: 6.43		Specific Conductance: 0.873
DO: 2.98		Temperature (C): 5.9
ORP: 83.8		Purge Volume (gal): 9.84
Notes: Greenish grey hue.		

Speedway5310/
 Site Name: TNS112

Date: 09/26/2022, 2:36 PM

Name(s): Remi Malenfant

Location ID	GPS Latitude (decimal)	GPS Longitude (decimal)
MW-4	64.759376	-147.3503513
Field Data		
Sampler Names: Geoff Moorhead		Sheen/Odor?: N/n
pH: 6.12		Specific Conductance: 0.78
DO: 1.98		Temperature (C): 6.1
ORP: 86.3		Purge Volume (gal): 11.58
Notes:		

Speedway5310/
Date: 09/26/2022, 5:59 PM
Name(s): Remi Malenfant
Site Name: TNS112

Location ID	GPS Latitude (decimal)	GPS Longitude (decimal)
MW-6	64.7592998	-147.3491405
Field Data		
Sampler Names: Geoff Moorhead		Sheen/Odor?: N/n
pH: 6.75		Specific Conductance: 0.41
DO: 1.07		Temperature (C): 6.4
ORP: 95.5		Purge Volume (gal): 2.22
Notes:		

Speedway5310/
Date: 09/26/2022, 11:49 AM
Name(s): Remi Malenfant
Site Name: TNS112

Location ID	GPS Latitude (decimal)	GPS Longitude (decimal)
MW-10	64.7596294	-147.3491825
Field Data		
Sampler Names: Geoff Moorhead		Sheen/Odor?: N/n
pH: 6.83		Specific Conductance: 0.465
DO: 1.37		Temperature (C): 5.5
ORP: 97.7		Purge Volume (gal): 3.03
Notes:		

APPENDIX D

Tables of Historical Groundwater Monitoring Data

Analytical Data Results Table

Speedway 5310/TNS112
 7-Eleven - Paula Sime
 3392 Badger Rd
 North Pole, Alaska 99705

	Well Screen Interval	Ground Water Elevation	124-TMB	135-TMB	Benzene	DRO	Ethylbenzene	GRO	Naphthalene	Sodium	Toluene	Xylenes
Unit	ft	ft	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
GW Human Health Cleanup			<u>0.056</u>	<u>0.06</u>	<u>0.0046</u>		<u>0.015</u>	<u>2.2</u>	<u>0.0017</u>		<u>1.1</u>	<u>0.19</u>
MW17-2												
07/19/2017	--	--	NT	NT	—	—	—	—	U(0.039)	—	—	—
10/30/2018	--	--	—	—	U (0.003)	2.5	<u>0.18</u>	<u>3.9</u>	—	—	U (0.002)	<u>0.9</u>
05/10/2019	--	--	NT	NT	U (0.003)	0.91	0.0051	U (0.25)	U(0.00011)	—	U (0.002)	0.012
10/22/2019	--	--	—	—	U (0.003)	1.4 H	<u>0.21</u>	<u>3.5</u>	—	—	U (0.002)	<u>0.79</u>
08/18/2020	--	381.54	<u>0.457</u>	<u>0.088</u>	0.0017 J	1.96	<u>0.0837</u>	1.76	<u>0.00805</u>	—	0.00186 J	<u>0.32</u>
10/06/2020	--	381.12	NT	NT	0.00132 J	2.43	<u>0.113</u>	2.08	<u>0.00614</u>	—	U (0.001)	<u>0.591</u>
06/24/2021	--	381.59	<u>0.389</u>	0.0569	0.00163 J	1.58	<u>0.0727</u>	1.36	0.0164 B,J	—	U (0.01)	0.173
10/13/2021	--	--	<u>0.315</u>	<u>0.0692</u>	0.00125 J	1.77	<u>0.0506</u>	1.51	<u>0.00493</u>	—	0.00253 J	<u>0.197</u>
05/16/2022	--	382.45	<u>0.247</u>	0.0374	0.000632	1.15	<u>0.0333</u>	0.573	0.000423	37.5	0.00165	0.0968
09/26/2022	--	381.46	<u>0.192</u>	0.0251	0.000713	1.35	<u>0.0176</u>	0.557	0.00127	207	0.00195	0.0418
MW17-5												
07/19/2017	--	--	<u>0.86</u>	NT	—	—	—	—	<u>0.027</u>	—	—	—
06/14/2018	--	--	0.044	<u>0.063</u>	<u>0.025</u>	0.17	<u>0.064</u>	1.7	0.0011	—	0.52	<u>0.548</u>
10/30/2018	--	--	—	—	<u>0.055</u>	0.26	<u>0.15</u>	<u>3.7</u>	—	—	0.21	<u>0.505</u>
05/09/2019	--	--	—	—	0.0032	0.92	<u>0.016</u>	0.31	—	—	0.0026	0.048
05/10/2019	--	--	NT	NT	—	—	—	—	0.00014	—	—	—
10/22/2019	--	--	—	—	<u>0.022</u>	0.47 H	<u>0.23</u>	<u>3.7</u>	—	—	0.36	<u>0.721</u>
08/18/2020	--	389.82	<u>0.19</u>	<u>0.117</u>	<u>0.0308</u>	0.825	<u>0.151</u>	<u>2.68</u>	<u>0.00729</u>	—	0.386	<u>0.896</u>
10/06/2020	--	389.43	NT	NT	<u>0.0314</u>	J 0.569	<u>0.158</u>	1.68	<u>0.00475</u>	—	0.144	<u>0.401</u>
10/13/2021	--	--	<u>0.186</u>	<u>0.0964</u>	<u>0.0387</u>	0.800 J	<u>0.14</u>	2.18	<u>0.0021</u>	—	0.265	<u>0.469</u>
05/16/2022	--	390.7	<u>0.38</u>	<u>0.114</u>	<u>0.196</u>	1.13	<u>0.276</u>	<u>4.07</u>	U(0.000250)	15.4	<u>1.45</u>	<u>1.13</u>
09/26/2022	--	389.74	<u>0.33</u>	<u>0.181</u>	<u>0.151</u>	0.4	<u>0.336</u>	<u>4.16</u>	<u>0.00264</u>	23.8	<u>1.18</u>	<u>1.37</u>
MW-1												
05/30/1997	--	380.52	—	—	<u>0.31</u>	8.5	<u>2.3</u>	<u>42</u>	—	—	<u>9</u>	<u>10</u>
09/11/1997	--	380.9	—	—	<u>0.571</u>	6.05	<u>2</u>	<u>55</u>	—	—	<u>12.6</u>	<u>9.37</u>
03/12/1998	--	380.56	—	—	<u>0.22</u>	5.1	<u>1.3</u>	<u>37</u>	—	—	<u>4.9</u>	<u>6</u>
07/21/1998	--	381.15	—	—	<u>0.143</u>	7.59	<u>0.84</u>	<u>22</u>	—	—	<u>4.29</u>	<u>3.92</u>
10/12/1998	--	379.42	—	—	<u>0.277</u>	5.98	<u>0.458</u>	<u>16</u>	—	—	<u>4.36</u>	<u>1.929</u>
01/21/1999	--	380.44	—	—	<u>0.036</u>	2.46	<u>0.24</u>	<u>6.8</u>	—	—	1.08	<u>1.208</u>
03/31/1999	--	379.92	—	—	<u>0.015</u>	0.686	<u>0.151</u>	<u>3.3</u>	—	—	0.297	<u>0.703</u>
07/28/1999	--	380.78	—	—	<u>0.087</u>	3.89	<u>1.96</u>	<u>46</u>	—	—	<u>10.8</u>	<u>9.38</u>
10/15/1999	--	380.55	—	—	<u>0.174</u>	3.74	<u>0.503</u>	<u>15</u>	—	—	<u>2.97</u>	<u>2.334</u>
03/10/2000	--	380.16	—	—	<u>0.0216</u>	0.81	<u>0.161</u>	<u>4.7</u>	—	—	0.718	<u>0.783</u>
06/21/2000	--	380.96	—	—	<u>0.022</u>	1.03	<u>0.284</u>	<u>7.6</u>	—	—	0.931	<u>1.321</u>
09/21/2000	--	380.9	—	—	<u>0.0329</u>	1.61	<u>0.16</u>	<u>5</u>	—	—	0.471	<u>0.736</u>
01/25/2001	--	380.54	—	—	<u>0.017</u>	0.644	<u>0.11</u>	<u>3.69</u>	—	—	0.322	<u>0.523</u>
04/19/2001	--	380.51	—	—	<u>0.0123</u>	0.92	<u>0.046</u>	1.48	—	—	0.097	<u>0.221</u>
07/24/2001	--	380.89	—	—	<u>0.0119</u>	0.628	<u>0.104</u>	2.07	—	—	0.209	<u>0.409</u>
01/28/2002	--	380.8	—	—	<u>0.12</u>	0.778	<u>0.604</u>	<u>10.8</u>	—	—	<u>2.07</u>	<u>2.841</u>

Analytical Data Results Table

Speedway 5310/TNS112
 7-Eleven - Paula Sime
 3392 Badger Rd
 North Pole, Alaska 99705

		<i>Well Screen Interval</i>	<i>Ground Water Elevation</i>	<i>124-TMB</i>	<i>135-TMB</i>	<i>Benzene</i>	<i>DRO</i>	<i>Ethylbenzene</i>	<i>GRO</i>	<i>Naphthalene</i>	<i>Sodium</i>	<i>Toluene</i>	<i>Xylenes</i>
Unit	ft	ft	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
GW Human Health Cleanup			<u>0.056</u>	<u>0.06</u>	<u>0.0046</u>		<u>0.015</u>	<u>2.2</u>	<u>0.0017</u>			<u>1.1</u>	<u>0.19</u>
04/30/2002	--	381.29	—	—	<u>5.02</u>	2.1	<u>0.284</u>	<u>32.2</u>	—	—	—	<u>9.48</u>	<u>3.47</u>
09/30/2002	--	381.36	—	—	<u>0.659</u>	1.11	<u>0.0551</u>	<u>3.87</u>	—	—	0.209	—	<u>0.736</u>
05/12/2003	--	381.34	—	—	<u>0.538</u>	4.84	<u>0.814</u>	<u>44.5</u>	—	—	—	<u>3.14</u>	<u>20.42</u>
10/09/2003	--	380.72	—	—	0.00437	U (0.32)	0.00189	0.697	—	—	0.00571	—	0.0998
04/21/2004	--	380.39	—	—	U (0.0005)	U (0.5)	U (0.0005)	U (0.05)	—	—	0.000709	—	0.00984
10/21/2004	--	379.96	—	—	<u>0.00544</u>	2.41	0.00585	<u>3.52</u>	—	—	0.00284	—	<u>1.46</u>
05/19/2005	--	380.9	—	—	0.000943	0.48	0.00272	0.0709	—	—	0.00248	—	0.0211
05/15/2007	--	380.09	—	—	U (0.0005)	U (0.413)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)	—
04/29/2008	--	380.16	—	—	U (0.0005)	0.862	U (0.0005)	U (0.05)	—	—	0.00088	U (0.0015)	—
05/12/2009	--	380.84	—	—	U (0.0005)	1.77	0.00077	U (0.05)	—	—	0.00427	—	0.00586
06/15/2010	--	380.64	—	—	0.00134	U (0.420)	<u>0.0357</u>	0.849	—	—	0.0297	—	<u>0.249</u>
05/24/2011	--	380.75	—	—	U (0.0005)	0.652	0.00479	0.0857	—	—	0.00056	—	0.0377
05/22/2012	--	380.53	—	—	0.000701	U (0.410)	<u>0.0765</u>	1.41	—	—	0.00284	—	<u>0.407</u>
05/21/2013	--	380.84	—	—	0.000845	0.587	<u>0.125</u>	1.21	—	—	U (0.0005)	—	<u>0.455</u>
05/06/2014	--	380.98	—	—	U (0.0005)	0.64	0.0021	U (0.05)	—	—	U (0.0005)	—	0.011
05/26/2015	--	381.36	—	—	U (0.001)	2.3	0.0045	0.21	—	—	0.0044	—	0.031
05/11/2016	--	380.82	—	—	0.00055	U (0.40)	0.0053	U (0.1)	—	—	0.0026	—	0.029
05/08/2017	--	381.1	—	—	U (0.002)	1.5	<u>0.034</u>	U (10)	—	—	U (0.002)	—	<u>0.285</u>
06/14/2018	--	381.2	—	—	U (0.003)	0.43	0.0086	0.028	—	—	0.0021	—	0.071
05/09/2019	--	380.58	—	—	U (0.003)	0.42	U (0.003)	U (0.25)	—	—	U (0.002)	—	0.0034
10/06/2020	--	381.1	—	—	0.000373 J	1.27	0.00419	0.153	—	—	0.0428	—	0.0374
10/13/2021	--	--	—	—	0.000246 J	1.33	0.0031	0.315	—	—	0.0883	—	0.0332
09/26/2022	--	381.43	0.00844	0.00194	0.00019	1.32	0.00251	0.318	0.000112	26.8	0.184	—	0.0405
MW-2													
05/30/1997	--	388.86	—	—	<u>92</u>	8.2	<u>7.1</u>	<u>170</u>	—	—	—	<u>64</u>	<u>33</u>
03/12/1998	--	388.9	—	—	<u>2.8</u>	21	<u>13</u>	<u>420</u>	—	—	—	<u>44</u>	<u>62</u>
04/19/2001	--	388.85	—	—	<u>2.93</u>	27.4	<u>9.9</u>	<u>216</u>	—	—	—	<u>52.9</u>	<u>44.5</u>
07/24/2001	--	389.24	—	—	<u>1.95</u>	18.5	<u>5.3</u>	<u>136</u>	—	—	—	<u>30.5</u>	<u>33.9</u>
01/28/2002	--	389.14	—	—	<u>1.23</u>	10.5	<u>7.38</u>	<u>156</u>	—	—	—	<u>33.4</u>	<u>39.8</u>
04/30/2002	--	389.66	—	—	<u>0.116</u>	6.9	<u>2.6</u>	<u>51.4</u>	—	—	—	<u>10.2</u>	<u>17.43</u>
09/30/2002	--	389.29	—	—	<u>0.656</u>	6.93	<u>2.92</u>	<u>118</u>	—	—	—	<u>17.9</u>	<u>26.61</u>
05/12/2003	--	389.74	—	—	<u>0.569</u>	5.68	<u>4.15</u>	<u>90.8</u>	—	—	—	<u>19.7</u>	<u>25.43</u>
10/09/2003	--	389.0	—	—	<u>0.25</u>	U (0.32)	<u>2.88</u>	<u>64.9</u>	—	—	—	<u>6.21</u>	<u>14.2</u>
04/21/2004	--	388.73	—	—	U (0.005)	7	<u>0.114</u>	<u>5.42</u>	—	—	0.116	—	<u>1.21</u>
10/21/2004	--	388.03	—	—	<u>0.00518</u>	1.74	<u>0.109</u>	<u>3.2</u>	—	—	0.0824	—	<u>0.699</u>
05/19/2005	--	389.21	—	—	<u>0.00681</u>	5.49	<u>0.376</u>	<u>7.88</u>	—	—	0.513	—	<u>1.61</u>
09/26/2005	--	388.93	—	—	<u>0.0125</u>	3.15	<u>0.422</u>	<u>9.6</u>	—	—	0.58	—	<u>1.78</u>
05/15/2006	--	388.8	—	—	0.00058	1.87	<u>0.0533</u>	1.5	—	—	0.0273	—	<u>0.223</u>
11/07/2006	--	388.64	—	—	<u>0.0102</u>	1.35	<u>0.906</u>	<u>17</u>	—	—	—	—	<u>3.24</u>
05/15/2007	--	388.15	—	—	0.00279	1.9	<u>0.0356</u>	1.99	—	—	0.0199	—	0.173

Analytical Data Results Table

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		<i>Well Screen Interval</i>	<i>Ground Water Elevation</i>	<i>124-TMB</i>	<i>135-TMB</i>	<i>Benzene</i>	<i>DRO</i>	<i>Ethylbenzene</i>	<i>GRO</i>	<i>Naphthalene</i>	<i>Sodium</i>	<i>Toluene</i>	<i>Xylenes</i>
Unit	ft	ft	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
GW Human Health Cleanup			<u>0.056</u>	<u>0.06</u>	<u>0.0046</u>			<u>0.015</u>	<u>2.2</u>	<u>0.0017</u>		<u>1.1</u>	<u>0.19</u>
10/16/2007	--	388.15	—	—	0.0032	1.55	<u>0.412</u>	<u>7.61</u>	—	—	0.173	—	<u>1.03</u>
04/29/2008	--	388.82	—	—	U (0.0005)	2.09	0.0043	0.453	—	—	U (0.0005)	—	0.0131
10/01/2008	--	389.24	—	—	0.00114	1.38	<u>0.228</u>	<u>3.12</u>	—	—	0.0194	—	<u>0.739</u>
05/12/2009	--	389.14	—	—	0.00385	8.79	<u>0.308</u>	<u>4</u>	—	—	0.0114	—	<u>0.537</u>
10/26/2009	--	388.76	—	—	0.00138	0.738	<u>0.717</u>	<u>4.25</u>	—	—	0.0108	—	<u>1.48</u>
06/15/2010	--	388.99	—	—	0.00143	0.51	<u>0.0205</u>	<u>1.32</u>	—	—	0.00135	—	0.0729
10/14/2010	--	388.66	—	—	0.00192	1.49	<u>0.127</u>	<u>4.45</u>	—	—	0.0136	—	<u>0.7</u>
05/24/2011	--	388.96	—	—	0.00232	3.04	<u>0.798</u>	<u>6.24</u>	—	—	0.0313	—	<u>1.32</u>
10/26/2011	--	388.59	—	—	U (0.010)	0.744	<u>0.345</u>	<u>6.53</u>	—	—	U (0.010)	—	<u>1.11</u>
05/22/2012	--	388.88	—	—	<u>0.00566</u>	NR	<u>0.179</u>	<u>5.17</u>	—	—	0.00275	—	<u>0.503</u>
10/11/2012	--	389.13	—	—	0.00075	0.655	0.00707	0.687	—	—	0.0197	—	0.0614
05/21/2013	--	389.2	—	—	0.00173	U (0.397)	<u>0.019</u>	0.388	—	—	0.000638	—	0.0325
09/25/2013	--	389.27	—	—	0.0013	0.573	<u>0.269</u>	<u>2.61</u>	—	—	0.00104	—	<u>0.481</u>
05/06/2014	--	389.28	—	—	0.0038	0.67	<u>0.15</u>	<u>1.8</u>	—	—	U (0.0005)	—	<u>0.21</u>
09/17/2014	--	388.88	—	—	0.00072	U (0.38)	<u>0.096</u>	<u>1.3</u>	—	—	0.00068	—	0.15
05/26/2015	--	389.53	—	—	0.0018	2.5	<u>0.092</u>	<u>1.6</u>	—	—	U (0.003)	—	<u>0.21</u>
10/06/2015	--	389.86	—	—	<u>0.036</u>	0.76	<u>0.29</u>	<u>4.7</u>	—	—	0.0039	—	<u>0.64</u>
05/11/2016	--	389.13	—	—	0.0023	0.73	<u>0.1</u>	<u>1.2</u>	—	—	U (0.001)	—	0.14
10/05/2016	--	389.51	—	—	U (0.020)	1.4	<u>0.15</u>	<u>1.7</u>	—	—	U (0.020)	—	<u>0.22</u>
05/08/2017	--	389.42	—	—	U (0.002)	0.68	<u>0.23</u>	<u>2.8</u>	—	—	U (0.002)	—	<u>0.639</u>
09/05/2017	--	389.34	—	—	0.0014	0.9	<u>0.041</u>	<u>1</u>	—	—	U (0.001)	—	0.081
06/14/2018	--	389.52	—	—	U (0.003)	0.3	<u>0.077</u>	<u>1.1</u>	—	—	U (0.002)	—	0.1128
10/30/2018	--	389.22	—	—	U (0.003)	2.4	<u>0.042</u>	<u>0.69</u>	—	—	U (0.002)	—	0.062
05/09/2019	--	388.88	—	—	U (0.003)	0.26	<u>0.023</u>	<u>0.41</u>	—	—	U (0.002)	—	0.051
10/22/2019	--	389.44	—	—	U (0.003)	0.72	<u>0.017</u>	<u>0.36</u>	—	—	U (0.002)	—	0.029
08/18/2020	--	389.8	—	—	0.00074	0.632	0.00728	0.203	—	—	0.000886 J	—	0.0156
10/06/2020	--	389.4	—	—	0.00121	0.38 J	0.0104	0.277	—	—	0.000531 J	—	0.0245
06/24/2021	--	389.94	—	—	0.00062 J	0.95	0.00673	0.85	—	—	0.000453 J	—	0.0121
10/13/2021	--	--	—	—	0.000702 J	1.49	0.00768	0.21	—	—	U (0.001)	—	0.013
05/16/2022	--	390.75	0.0114	0.00461	0.000328	0.38	0.00468	0.126	U(0.000250)	11.5	U(0.00100)	—	0.00768
09/26/2022	--	389.76	0.0125	0.00627	0.000558	0.772	0.0046	0.174	0.000397	15.4	0.000511	—	0.00856
MW-3													
05/30/1997	--	388.79	—	—	<u>23</u>	54	<u>12</u>	<u>380</u>	—	—	<u>69</u>	—	<u>54</u>
09/30/2002	--	389.15	—	—	<u>36.6</u>	7.38	<u>3.87</u>	<u>337</u>	—	—	<u>75.3</u>	—	<u>40.3</u>
05/12/2003	--	389.68	—	—	<u>5.41</u>	2.37	<u>1.44</u>	<u>36.6</u>	—	—	<u>6.45</u>	—	<u>7.86</u>
10/09/2003	--	388.92	—	—	<u>13.6</u>	U (0.32)	<u>5.31</u>	<u>392</u>	—	—	<u>52.3</u>	—	<u>49.9</u>
04/21/2004	--	389.34	—	—	<u>0.617</u>	1.9	<u>0.722</u>	<u>20.2</u>	—	—	<u>1.47</u>	—	<u>5.69</u>
10/21/2004	--	388.26	—	—	<u>9.38</u>	4.96	<u>3.68</u>	<u>157</u>	—	—	<u>29.5</u>	—	<u>24.3</u>
05/19/2005	--	389.41	—	—	<u>0.846</u>	2.03	<u>1.04</u>	<u>37.3</u>	—	—	<u>5.38</u>	—	<u>8.9</u>
09/26/2005	--	389.12	—	—	<u>0.0496</u>	3.15	<u>0.261</u>	<u>14.6</u>	—	—	<u>1.27</u>	—	<u>4.24</u>

Analytical Data Results Table

Speedway 5310/TNS112
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		Well Screen Interval	Ground Water Elevation	124-TMB	135-TMB	Benzene	DRO	Ethylbenzene	GRO	Naphthalene	Sodium	Toluene	Xylenes
Unit	ft	ft	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
GW Human Health Cleanup			<u>0.056</u>	<u>0.06</u>	<u>0.0046</u>		<u>0.015</u>	<u>2.2</u>	<u>0.0017</u>			<u>1.1</u>	<u>0.19</u>
05/15/2006	--	388.9	—	—	<u>0.833</u>	4.44	<u>1.63</u>	<u>44.3</u>	—	—	—	<u>5.05</u>	<u>12.5</u>
11/07/2006	--	388.87	—	—	<u>1.74</u>	4.68	<u>3.74</u>	<u>174</u>	—	—	—	<u>26.4</u>	<u>31.4</u>
05/15/2007	--	388.37	—	—	<u>0.0124</u>	2.49	<u>0.0942</u>	<u>3.93</u>	—	—	0.136	<u>0.948</u>	
10/16/2007	--	387.31	—	—	<u>0.126</u>	7.82	<u>0.272</u>	<u>55.3</u>	—	—	—	<u>2.3</u>	<u>17.5</u>
04/29/2008	--	388.74	—	—	<u>0.0063</u>	4.71	<u>0.0197</u>	<u>1.44</u>	—	—	0.143	<u>0.321</u>	
10/01/2008	--	389.36	—	—	0.00305	3.2	<u>0.0572</u>	<u>2.4</u>	—	—	0.0238	<u>0.913</u>	
05/12/2009	--	389.26	—	—	<u>0.056</u>	5.95	<u>0.624</u>	<u>17.2</u>	—	—	0.833	<u>5.7</u>	
10/26/2009	--	388.7	—	—	<u>0.0903</u>	3.41	<u>0.935</u>	<u>51.5</u>	—	—	—	<u>2.25</u>	<u>13.6</u>
06/15/2010	--	388.9	—	—	<u>0.0428</u>	2.86	<u>0.449</u>	<u>12.8</u>	—	—	—	<u>0.377</u>	<u>4.2</u>
10/14/2010	--	388.28	—	—	<u>0.113</u>	7.56	<u>2.48</u>	<u>137</u>	—	—	—	<u>9.24</u>	<u>25.6</u>
05/24/2011	--	388.85	—	—	<u>0.205</u>	7.72	<u>1.31</u>	<u>62.4</u>	—	—	—	<u>2.53</u>	<u>20.9</u>
10/26/2011	--	388.56	—	—	<u>0.104</u>	12	<u>1.39</u>	<u>47</u>	—	—	—	<u>2.09</u>	<u>20.7</u>
05/22/2012	--	388.82	—	—	<u>0.131</u>	5.22	<u>0.751</u>	<u>41.3</u>	—	—	—	<u>1.99</u>	<u>12.9</u>
10/11/2012	--	389.05	—	—	<u>0.0102</u>	1.35	<u>0.271</u>	<u>23.2</u>	—	—	0.373	<u>3.83</u>	
05/21/2013	--	389.13	—	—	<u>1.5</u>	20.3	<u>2.39</u>	<u>70</u>	—	—	—	<u>11.2</u>	<u>15.9</u>
09/25/2013	--	389.18	—	—	<u>0.102</u>	7.15	<u>1.93</u>	<u>47.9</u>	—	—	—	<u>4.01</u>	<u>23.9</u>
05/06/2014	--	389.1	—	—	<u>0.037</u>	4.7	<u>0.42</u>	<u>12</u>	—	—	0.47	<u>3.8</u>	
09/17/2014	--	388.75	—	—	<u>0.047</u>	2.7	<u>1.2</u>	<u>26</u>	—	—	—	<u>1.5</u>	<u>14</u>
05/26/2015	--	389.5	—	—	<u>0.057</u>	4.6	<u>1.6</u>	<u>79</u>	—	—	—	<u>2</u>	<u>13</u>
10/06/2015	--	389.77	—	—	<u>0.1</u>	2.2	<u>1.5</u>	<u>57</u>	—	—	—	<u>2.1</u>	<u>16</u>
05/11/2016	--	389.07	—	—	0.00093	1.6	<u>0.034</u>	<u>1.1</u>	—	—	0.024	<u>0.34</u>	
10/05/2016	--	389.44	—	—	<u>0.054</u>	2.5	<u>0.92</u>	<u>21</u>	—	—	0.61	<u>7.9</u>	
05/08/2017	--	389.37	—	—	<u>0.021</u>	4.4	<u>0.63</u>	<u>19</u>	—	—	0.32	<u>6.6</u>	
09/05/2017	--	389.25	—	—	<u>0.04</u>	2	<u>1</u>	<u>30</u>	—	—	0.75	<u>12</u>	
06/14/2018	--	389.44	—	—	<u>0.027</u>	2.8	<u>1.1</u>	<u>30</u>	U (25)	—	0.67	<u>11.6</u>	
10/30/2018	--	389.14	—	—	<u>0.036</u>	5.7	<u>1.2</u>	<u>39</u>	—	—	0.37	<u>12</u>	
05/10/2019	--	388.84	—	—	<u>0.029</u>	0.66	<u>0.38</u>	<u>10</u>	—	—	0.2	<u>4.02</u>	
10/22/2019	--	389.42	—	—	<u>0.028</u>	3.7 H	<u>0.75</u>	<u>17</u>	—	—	0.15	<u>5.5</u>	
08/18/2020	--	389.75	—	—	<u>0.0244</u>	2.84	<u>0.637</u>	<u>12.6</u>	—	—	0.194	<u>6.86</u>	
10/06/2020	--	389.35	—	—	<u>0.0446</u>	3.64	<u>0.473</u>	<u>10.7</u>	—	—	0.187	<u>4.59</u>	
06/24/2021	--	389.8	—	—	<u>0.0292</u>	2.03	<u>0.598</u>	<u>16</u>	—	—	0.278	<u>6.45</u>	
10/13/2021	--	--	—	—	0.0186 J	2.16	<u>0.248</u>	<u>7.35</u>	—	—	0.0856	<u>1.8</u>	
05/16/2022	--	390.69	<u>0.322</u>	<u>0.134</u>	<u>0.0132</u>	1.49	<u>0.187</u>	<u>2.38</u>	<u>0.00354</u>	42	0.131	<u>1.71</u>	
09/26/2022	--	389.68	<u>0.473</u>	<u>0.166</u>	<u>0.0168</u>	1.3	<u>0.354</u>	<u>4.78</u>	<u>0.0148</u>	45.4	0.33	<u>2.77</u>	
MW-4													
05/30/1997	--	380.39	—	—	<u>0.85</u>	0.55	<u>0.16</u>	<u>3.8</u>	—	—	0.71	<u>0.64</u>	
09/11/1997	--	380.8	—	—	<u>8.41</u>	1.71	<u>1.15</u>	<u>64</u>	—	—	—	<u>14.5</u>	<u>5.57</u>
03/12/1998	--	380.44	—	—	<u>2.3</u>	0.68	<u>0.42</u>	<u>15</u>	—	—	—	<u>3.3</u>	<u>1.8</u>
07/21/1998	--	381.01	—	—	<u>3.71</u>	0.7	<u>0.485</u>	<u>21</u>	—	—	—	<u>3.69</u>	<u>2.09</u>
10/12/1998	--	380.33	—	—	<u>1.95</u>	1.29	<u>0.36</u>	<u>12</u>	—	—	—	<u>1.99</u>	<u>1.58</u>

Analytical Data Results Table

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	Well Screen Interval	Ground Water Elevation	124-TMB	135-TMB	Benzene	DRO	Ethylbenzene	GRO	Naphthalene	Sodium	Toluene	Xylenes
Unit	ft	ft	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
GW Human Health Cleanup			<u>0.056</u>	<u>0.06</u>	<u>0.0046</u>		<u>0.015</u>	<u>2.2</u>	<u>0.0017</u>		<u>1.1</u>	<u>0.19</u>
01/21/1999	--	380.35	—	—	<u>0.94</u>	0.7	<u>0.127</u>	<u>4.3</u>	—	0.483	<u>0.579</u>	
07/28/1999	--	380.63	—	—	<u>3.48</u>	2.65	<u>0.39</u>	<u>21</u>	—	<u>5.6</u>	<u>1.86</u>	
10/15/1999	--	380.41	—	—	<u>3.3</u>	3.84	<u>0.422</u>	<u>26</u>	—	<u>5.4</u>	<u>1.962</u>	
03/10/2000	--	380.05	—	—	<u>1.88</u>	1.91	<u>0.466</u>	<u>14</u>	—	<u>2.52</u>	<u>2.03</u>	
06/21/2000	--	380.84	—	—	<u>1.44</u>	0.66	<u>0.201</u>	<u>10</u>	—	<u>1.78</u>	<u>0.923</u>	
09/21/2000	--	380.78	—	—	U (0.0005)	0.838	U (0.002)	U (0.09)	—	U (0.002)	U (0.002)	
01/25/2001	--	380.42	—	—	<u>0.533</u>	1.71	<u>0.397</u>	<u>7.27</u>	—	0.602	<u>1.464</u>	
04/19/2001	--	380.38	—	—	U (0.0005)	U (0.8)	0.011	0.225	—	0.015	0.066	
07/24/2001	--	380.77	—	—	0.001	0.869	U (0.002)	U (0.09)	—	U (0.002)	U (0.002)	
01/28/2002	--	380.66	—	—	<u>0.271</u>	0.708	<u>0.631</u>	<u>9.58</u>	—	0.802	<u>2.646</u>	
04/30/2002	--	381.26	—	—	<u>0.0644</u>	U (0.495)	<u>0.509</u>	0.623	—	U (0.002)	0.128	
09/30/2002	--	380.82	—	—	<u>0.0157</u>	U (0.5)	0.00523	0.0943	—	U (0.002)	0.0114	
05/12/2003	--	381.29	—	—	<u>0.0138</u>	U (0.3)	0.00595	0.167	—	0.00268	0.05252	
10/09/2003	--	380.52	—	—	<u>0.0311</u>	2.95	0.00555	0.266	—	U (0.0005)	0.0657	
04/21/2004	--	380.25	—	—	0.00295	U (0.5)	0.00506	0.311	—	U (0.0005)	0.113	
10/21/2004	--	379.42	—	—	<u>0.0121</u>	0.455	U (0.0005)	0.0646	—	U (0.0005)	0.00791	
05/19/2005	--	380.76	—	—	0.00295	U (0.391)	U (0.0005)	0.067	—	U (0.0005)	0.0167	
05/15/2006	--	380.23	—	—	0.000635	U (0.403)	U (0.0005)	0.051	—	U (0.0005)	0.00919	
05/15/2007	--	379.57	—	—	U (0.0005)	0.782	U (0.0005)	U (0.05)	—	U (0.0005)	U (0.0015)	
04/29/2008	--	380.48	—	—	0.00175	3.78	0.00097	1.75	—	0.00338	<u>1.2</u>	
05/12/2009	--	380.58	—	—	U (0.0005)	U (0.427)	U (0.0005)	U (0.05)	—	0.00121	0.00189	
06/15/2010	--	380.53	—	—	U (0.0005)	U (0.410)	U (0.0005)	U (0.05)	—	U (0.0005)	U (0.00976)	
05/24/2011	--	380.47	—	—	U (0.0005)	U (0.403)	U (0.0005)	U (0.05)	—	U (0.0005)	U (0.0015)	
05/22/2012	--	380.42	—	—	U (0.0005)	U (0.417)	U (0.0005)	U (0.05)	—	U (0.0005)	U (0.0015)	
05/06/2013	--	380.83	—	—	U (0.0005)	U (0.403)	U (0.0005)	U (0.05)	—	U (0.0005)	U (0.0015)	
05/21/2013	--	380.73	—	—	U (0.0005)	U (0.41)	U (0.0005)	U (0.05)	—	U (0.0005)	U (0.0015)	
05/26/2015	--	381.1	—	—	U (0.001)	0.23	U (0.001)	U (0.05)	—	U (0.001)	U (0.001)	
05/11/2016	--	380.69	—	—	U (0.0020)	U (0.40)	U (0.001)	U (0.1)	—	U (0.001)	U (0.003)	
05/08/2017	--	381.01	—	—	U (0.002)	0.14	U (0.003)	U (1)	—	U (0.002)	U (0.002)	
06/14/2018	--	381.09	—	—	U (0.003)	U (0.25)	U (0.003)	U (0.000054)	—	U (0.002)	U (0.002)	
05/09/2019	--	385.47	—	—	U (0.003)	0.51	U (0.003)	U (0.25)	—	U (0.002)	U (0.003)	
10/06/2020	--	380.98	—	—	U (0.001)	0.574	U (0.001)	0.0144	—	U (0.001)	U (0.003)	
10/13/2021	--	--	—	—	U (0.001)	2.84	U (0.001)	U (0.100)	—	U (0.001)	0.000454 J	
09/26/2022	--	381.31	0.000362	U(0.00100)	U(0.00100)	2.68	U(0.00100)	0.0332	U(0.000250)	13.1	U(0.00100)	0.000534
MW-5												
10/12/1998	--	--	—	—	<u>0.019</u>	0.11	U	0.045	—	U	0.002	
01/21/1999	--	--	—	—	<u>0.051</u>	0.127	U	0.11	—	U	U	
03/31/1999	--	--	—	—	<u>0.023</u>	U (0.297)	U (0.001)	U (0.09)	—	U (0.001)	0.0013	
07/28/1999	--	--	—	—	<u>0.008</u>	U (0.300)	U (0.002)	U (0.09)	—	U (0.002)	U (0.002)	
10/15/1999	--	--	—	—	<u>0.04</u>	U (0.297)	U (0.002)	0.11	—	U (0.002)	U (0.002)	

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Unit	ft	ft	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
GW Human Health Cleanup			<u>0.056</u>	<u>0.06</u>	<u>0.0046</u>		<u>0.015</u>	<u>2.2</u>	<u>0.0017</u>		<u>1.1</u>	<u>0.19</u>
03/10/2000	--	--	—	—	<u>0.104</u>	U (0.297)	U (0.002)	0.22	—	—	0.003	0.005
06/21/2000	--	--	—	—	<u>0.025</u>	U (0.297)	U (0.002)	U (0.09)	—	—	U (0.002)	U (0.002)
09/21/2000	--	--	—	—	<u>0.025</u>	U (0.303)	U (0.002)	U (0.09)	—	—	U (0.002)	U (0.002)
01/25/2001	--	--	—	—	<u>0.066</u>	U (0.300)	0.002	0.19	—	—	0.003	0.007
04/19/2001	--	--	—	—	U(0.0005)	U(0.816)	0.003	U (0.09)	—	—	0.002	0.003
07/24/2001	--	--	—	—	U(0.0005)	U(0.495)	U (0.002)	U (0.09)	—	—	U (0.002)	U (0.002)
01/28/2002	--	--	—	—	0.0029	U (0.521)	U (0.002)	U (0.09)	—	—	U (0.002)	0.002
04/30/2002	--	--	—	—	U(0.0005)	U (0.500)	U (0.002)	U (0.09)	—	—	U (0.002)	U (0.002)
09/30/2002	--	--	—	—	U (0.0005)	U (0.5)	U (0.002)	U (0.09)	—	—	U (0.002)	U (0.002)
05/12/2003	--	--	—	—	U (0.0005)	U (0.3)	U (0.002)	U (0.09)	—	—	U (0.002)	U (0.002)
10/09/2003	--	--	—	—	U (0.0005)	U (0.32)	U (0.0005)	U (0.08)	—	—	U (0.0005)	U (0.001)
04/21/2004	--	--	—	—	U (0.0005)	U (0.5)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)
10/21/2004	--	--	—	—	U (0.0002)	U (0.4)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.001)
05/19/2005	--	--	—	—	U (0.0005)	U (0.391)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)
05/15/2006	--	--	—	—	U (0.0005)	U (0.391)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)
05/15/2007	--	--	—	—	U (0.0005)	0.522	U (0.0005)	U (0.05)	—	—	U (0.0005)	0.00154
04/29/2008	--	--	—	—	U (0.0005)	U (0.435)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)
05/12/2009	--	--	—	—	U (0.0005)	U (0.450)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)
MW-6												
06/21/2000	--	376.32	—	—	0.0012	U (0.3)	U (0.002)	U (0.09)	—	—	U (0.002)	U (0.002)
09/21/2000	--	376.28	—	—	U (0.0005)	U (0.297)	U (0.002)	U (0.09)	—	—	U (0.002)	U (0.002)
01/25/2001	--	376.03	—	—	0.00051	U (0.3)	U (0.002)	U (0.09)	—	—	0.0026	0.003
04/19/2001	--	375.98	—	—	U (0.0005)	U(0.808)	U (0.002)	U (0.09)	—	—	U (0.002)	0.003
07/24/2001	--	376.29	—	—	U (0.0005)	U (0.495)	U (0.002)	U (0.09)	—	—	U (0.002)	U (0.002)
01/28/2002	--	376.24	—	—	U (0.0005)	U (0.500)	U (0.002)	U (0.09)	—	—	U (0.002)	U (0.002)
04/30/2002	--	376.58	—	—	0.000565	U (0.500)	0.00203	U (0.09)	—	—	0.00411	0.01081
09/30/2002	--	376.21	—	—	U (0.0005)	U (0.495)	U (0.002)	U (0.09)	—	—	U (0.002)	U (0.002)
05/12/2003	--	375.94	—	—	U (0.0005)	U (0.3)	U (0.002)	U (0.09)	—	—	U (0.002)	U (0.002)
10/09/2003	--	376.11	—	—	U (0.0005)	U (0.32)	U (0.0005)	U (0.08)	—	—	U (0.0005)	U (0.001)
04/21/2004	--	375.8	—	—	U (0.0005)	U (0.5)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)
10/21/2004	--	375.02	—	—	U (0.0002)	U (0.4)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.001)
05/19/2005	--	376.05	—	—	U (0.0005)	U (0.391)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)
05/15/2006	--	375.77	—	—	U (0.0005)	U (0.397)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)
05/15/2007	--	375.25	—	—	U (0.0005)	U (0.417)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)
04/29/2008	--	376.04	—	—	U (0.0005)	U (0.481)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)
05/12/2009	--	376.33	—	—	U (0.0005)	U (0.400)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)
06/15/2010	--	--	—	—	U (0.0005)	U (0.431)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.00976)
05/24/2011	--	376.07	—	—	U (0.0005)	U (0.385)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)
10/26/2011	--	375.93	—	—	U (0.0005)	U (0.403)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)
05/22/2012	--	376.07	—	—	U (0.0005)	U (0.417)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)

Analytical Data Results Table

Speedway 5310/TNS112
 7-Eleven - Paula Sime
 3392 Badger Rd
 North Pole, Alaska 99705

		<i>Well Screen Interval</i>	<i>Ground Water Elevation</i>	<i>124-TMB</i>	<i>135-TMB</i>	<i>Benzene</i>	<i>DRO</i>	<i>Ethylbenzene</i>	<i>GRO</i>	<i>Naphthalene</i>	<i>Sodium</i>	<i>Toluene</i>	<i>Xylenes</i>
Unit	ft	ft	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
GW Human Health Cleanup			<u>0.056</u>	<u>0.06</u>	<u>0.0046</u>		<u>0.015</u>	<u>2.2</u>	<u>0.0017</u>			<u>1.1</u>	<u>0.19</u>
10/11/2012	--	376.25	—	—	U (0.0005)	U (0.403)	U (0.001)	U (0.05)	—	—	U (0.001)	U (0.003)	
05/21/2013	--	376.29	—	—	U (0.0005)	U (0.417)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)	
09/25/2013	--	376.44	—	—	U (0.0005)	U (0.385)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)	
05/06/2014	--	376.4	—	—	U (0.0005)	U (0.42)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)	
09/17/2014	--	377.27	—	—	U (0.0005)	U (0.39)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0005)	
05/26/2015	--	377.01	—	—	U (0.001)	U (0.21)	U (0.001)	U (0.05)	—	—	U (0.001)	U (0.001)	
10/06/2015	--	376.8	—	—	U (0.001)	0.84	U (0.001)	U (0.01)	—	—	U (0.001)	U (0.003)	
05/11/2016	--	376.22	—	—	U (0.0020)	U (0.0020)	U (0.0020)	U (0.0020)	—	—	U (0.0020)	U (0.0020)	
10/05/2016	--	376.51	—	—	U (0.0020)	U (0.12)	U (0.0030)	U (0.05)	—	—	U (0.0020)	U (0.0020)	
05/08/2017	--	376.51	—	—	U (0.002)	U (0.11)	U (0.003)	U (1)	—	—	U (0.002)	U (0.002)	
09/05/2017	--	376.45	—	—	U (0.004)	U (0.290)	U (0.001)	U (0.150)	—	—	U (0.001)	U (0.003)	
06/14/2018	--	376.58	—	—	U (0.003)	U (0.12)	U (0.003)	U (0.25)	—	—	U (0.002)	U (0.002)	
10/30/2018	--	376.34	—	—	U (0.003)	U (0.12)	U (0.003)	U (0.25)	—	—	U (0.002)	0.0084	
05/09/2019	--	376.11	—	—	U (0.003)	U (0.12)	U (0.003)	U (0.25)	—	—	U (0.002)	U (0.003)	
10/22/2019	--	376.53	—	—	U (0.003)	U (0.12)	U (0.003)	U (0.25)	—	—	U (0.002)	U (0.003)	
08/18/2020	--	376.86	—	—	U (0.200)	J (0.210)	U (0.500)	U (0.0500)	—	—	U (0.500)	U (1.500)	
10/06/2020	--	376.5	—	—	U (0.001)	U (0.800)	U (0.001)	U (0.0100)	—	—	U (0.001)	U (0.003)	
06/24/2021	--	376.77	—	—	U (0.001)	U (0.800)	U (0.001)	J 0.0384	—	—	U (0.001)	U (0.003)	
10/13/2021	--	--	—	—	U (0.001)	0.376 J	U (0.001)	U (0.1)	—	—	U (0.001)	0.00221	
05/16/2022	--	377.55	U(0.00100)	0.000565	U(0.00100)	U(0.840)	0.000372	0.085	U(0.000250)	8.98	U(0.00100)	U(0.00300)	
09/26/2022	--	376.78	U(0.00100)	U(0.00100)	U(0.00100)	U(0.832)	U(0.00100)	0.0465	U(0.000250)	10.1	U(0.00100)	U(0.00300)	
MW-7													
10/09/2003	--	--	—	—	<u>0.0237</u>	U (0.32)	0.014	<u>2.36</u>	—	—	0.00185	0.0877	
04/21/2004	--	--	—	—	U (0.0005)	U (0.5)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)	
10/21/2004	--	--	—	—	0.00325	0.508	0.000934	0.298	—	—	U (0.0005)	0.00498	
05/19/2005	--	--	—	—	0.000909	U (0.391)	0.000527	0.275	—	—	U (0.0005)	U (0.0015)	
05/15/2006	--	--	—	—	U (0.0005)	0.412	U (0.0005)	0.109	—	—	U (0.0005)	U (0.0015)	
04/29/2008	--	--	—	—	U (0.0005)	U (0.413)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)	
05/12/2009	--	--	—	—	U (0.0005)	U (0.442)	0.00063	1.16	—	—	U (0.0005)	0.00231	
MW-8													
03/16/2004	--	--	—	—	U (0.0005)	U (0.37)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.001)	
04/21/2004	--	--	—	—	U (0.0005)	U (0.5)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)	
10/21/2004	--	--	—	—	0.000298	U (0.4)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.001)	
05/19/2005	--	--	—	—	U (0.0005)	U (0.417)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)	
05/15/2006	--	--	—	—	U (0.0005)	U (0.41)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)	
05/15/2007	--	--	—	—	U (0.0005)	U (0.394)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)	
04/29/2008	--	--	—	—	U (0.0005)	U (0.417)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)	
05/12/2009	--	--	—	—	U (0.0005)	U (0.413)	0.00067	U (0.05)	—	—	0.00062	0.00199	
MW-9													
03/16/2004	--	--	—	—	U (0.0005)	U (0.37)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.001)	

Analytical Data Results Table

Speedway 5310/TNS112
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 North Pole, Alaska 99705

	<i>Well Screen Interval</i>	<i>Ground Water Elevation</i>	<i>124-TMB</i>	<i>135-TMB</i>	<i>Benzene</i>	<i>DRO</i>	<i>Ethylbenzene</i>	<i>GRO</i>	<i>Naphthalene</i>	<i>Sodium</i>	<i>Toluene</i>	<i>Xylenes</i>
Unit	ft	ft	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
GW Human Health Cleanup			<u>0.056</u>	<u>0.06</u>	<u>0.0046</u>		<u>0.015</u>	<u>2.2</u>	<u>0.0017</u>		<u>1.1</u>	<u>0.19</u>
04/21/2004	--	--	—	—	U (0.0005)	U (0.5)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)
10/21/2004	--	--	—	—	U (0.0002)	U (0.4)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.001)
05/19/2005	--	--	—	—	U (0.0005)	U (0.391)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)
05/15/2006	--	--	—	—	U (0.0005)	U (0.391)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)
05/15/2007	--	--	—	—	U (0.0005)	U (0.41)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)
04/29/2008	--	--	—	—	U (0.0005)	U (0.417)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)
05/12/2009	--	--	—	—	U (0.0005)	U (0.400)	U (0.0005)	U (0.05)	—	—	U (0.0005)	0.00182
MW-10												
09/17/2004	--	--	—	—	<u>0.0103</u>	U (0.385)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)
10/21/2004	--	373.28	—	—	U (0.0002)	2.19	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.001)
05/19/2005	--	374.19	—	—	U (0.0005)	U (0.391)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)
09/26/2005	--	374.14	—	—	U (0.0005)	U (0.397)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)
05/15/2006	--	373.96	—	—	U (0.0005)	U (0.391)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)
11/07/2006	--	373.99	—	—	U (0.0005)	U (0.442)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)
05/15/2007	--	373.58	—	—	U (0.0005)	U (0.41)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)
10/16/2007	--	373.58	—	—	U (0.0005)	U (0.427)	U (0.0005)	U (0.05)	—	—	0.000745	0.00843
04/29/2008	--	374.06	—	—	U (0.0005)	U (0.424)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)
10/01/2008	--	374.39	—	—	U (0.0005)	U (0.49)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)
05/12/2009	--	374.31	—	—	U (0.0005)	U (0.403)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)
10/26/2009	--	374.04	—	—	U (0.0005)	U (0.417)	U (0.001)	U (0.05)	—	—	U (0.001)	U (0.003)
06/15/2010	--	374.22	—	—	U (0.0005)	U (0.417)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.00976)
10/14/2010	--	374.09	—	—	U (0.0005)	U (0.397)	U (0.001)	U (0.05)	—	—	U (0.001)	U (0.003)
05/24/2011	--	374.19	—	—	U (0.0005)	U (0.410)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)
10/26/2011	--	374.06	—	—	U (0.0005)	U (0.410)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)
05/22/2012	--	374.14	—	—	U (0.0005)	U (0.410)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)
10/11/2012	--	374.3	—	—	U (0.0005)	U (0.413)	U (0.001)	U (0.05)	—	—	U (0.001)	U (0.003)
05/21/2013	--	374.36	—	—	U (0.0005)	U (0.410)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)
09/25/2013	--	374.48	—	—	U (0.0005)	U (0.403)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)
05/06/2014	--	374.46	—	—	U (0.0005)	U (0.41)	U (0.0005)	U (0.05)	—	—	U (0.0005)	0.0027
09/17/2014	--	375.48	—	—	U (0.0005)	U (0.41)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)
05/26/2015	--	375.22	—	—	U (0.001)	U (0.22)	U (0.001)	U (0.05)	—	—	U (0.001)	U (0.001)
10/06/2015	--	374.86	—	—	U (0.001)	0.41	U (0.001)	U (0.1)	—	—	U (0.001)	U (0.003)
05/11/2016	--	374.34	—	—	U (0.0020)	U (0.42)	U (0.001)	U (0.1)	—	—	U (0.001)	U (0.003)
10/05/2016	--	374.69	—	—	U (0.0020)	2.6	U (0.003)	U (0.05)	—	—	U (0.002)	U (0.002)
05/08/2017	--	374.59	—	—	U (0.002)	U (0.11)	U (0.003)	U (1)	—	—	U (0.002)	0.0056
09/05/2017	--	374.55	—	—	U (.0004)	U (0.280)	U (0.001)	U (0.150)	—	—	U (0.001)	U (0.003)
06/14/2018	--	374.64	—	—	U (0.003)	U (0.12)	U (0.003)	U (0.25)	—	—	U (0.002)	U (0.002)
10/30/2018	--	374.46	—	—	U (0.003)	U (0.12)	U (0.003)	U (0.25)	—	—	U (0.002)	U (0.003)
05/09/2019	--	374.28	—	—	U (0.003)	U (0.12)	U (0.003)	U (0.25)	—	—	U (0.002)	U (0.003)
10/22/2019	--	374.64	—	—	U (0.003)	U (0.12)	U (0.003)	U (0.25)	—	—	U (0.002)	U (0.003)

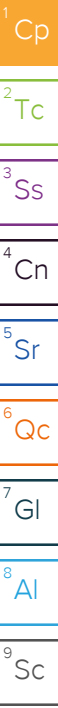
Analytical Data Results Table

Speedway 5310/TNS112
 7-Eleven - Paula Sime
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 North Pole, Alaska 99705

		<i>Well Screen Interval</i>	<i>Ground Water Elevation</i>	<i>124-TMB</i>	<i>135-TMB</i>	<i>Benzene</i>	<i>DRO</i>	<i>Ethylbenzene</i>	<i>GRO</i>	<i>Naphthalene</i>	<i>Sodium</i>	<i>Toluene</i>	<i>Xylenes</i>
Unit	ft	ft	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
GW Human Health Cleanup			0.056	0.06	0.0046		0.015	2.2	0.0017			1.1	0.19
08/18/2020	--	374.92	—	—	U (0.0002)	J (0.283)	U (0.0005)	U (0.050)	—	—	U (0.0005)	U (0.0015)	U (0.0015)
10/06/2020	--	374.59	—	—	U (0.001)	U (0.800)	U (0.001)	U (0.0100)	—	—	U (0.001)	U (0.003)	U (0.003)
06/24/2021	--	374.81	—	—	U (0.001)	U (0.800)	U (0.001)	U (0.0100)	—	—	U (0.001)	U (0.003)	U (0.003)
10/13/2021	--	--	—	—	0.00247	0.403 J	U (0.001)	U (0.1)	—	—	U (0.001)	U (0.003)	U (0.003)
05/16/2022	--	387.58	U(0.00100)	U(0.00100)	0.00974	U(0.800)	U(0.00100)	0.033	U(0.000250)	6.53	0.00387	0.000289	0.000289
09/26/2022	--	374.87	U(0.00100)	U(0.00100)	U(0.00100)	U(0.872)	U(0.00100)	0.0294	U(0.000250)	7.56	U(0.00100)	U(0.00300)	U(0.00300)

APPENDIX E

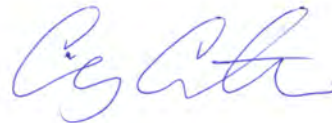
*Laboratory Analytical Report and ADEC
Laboratory Data Review Checklist*



Stantec - Anchorage, AK

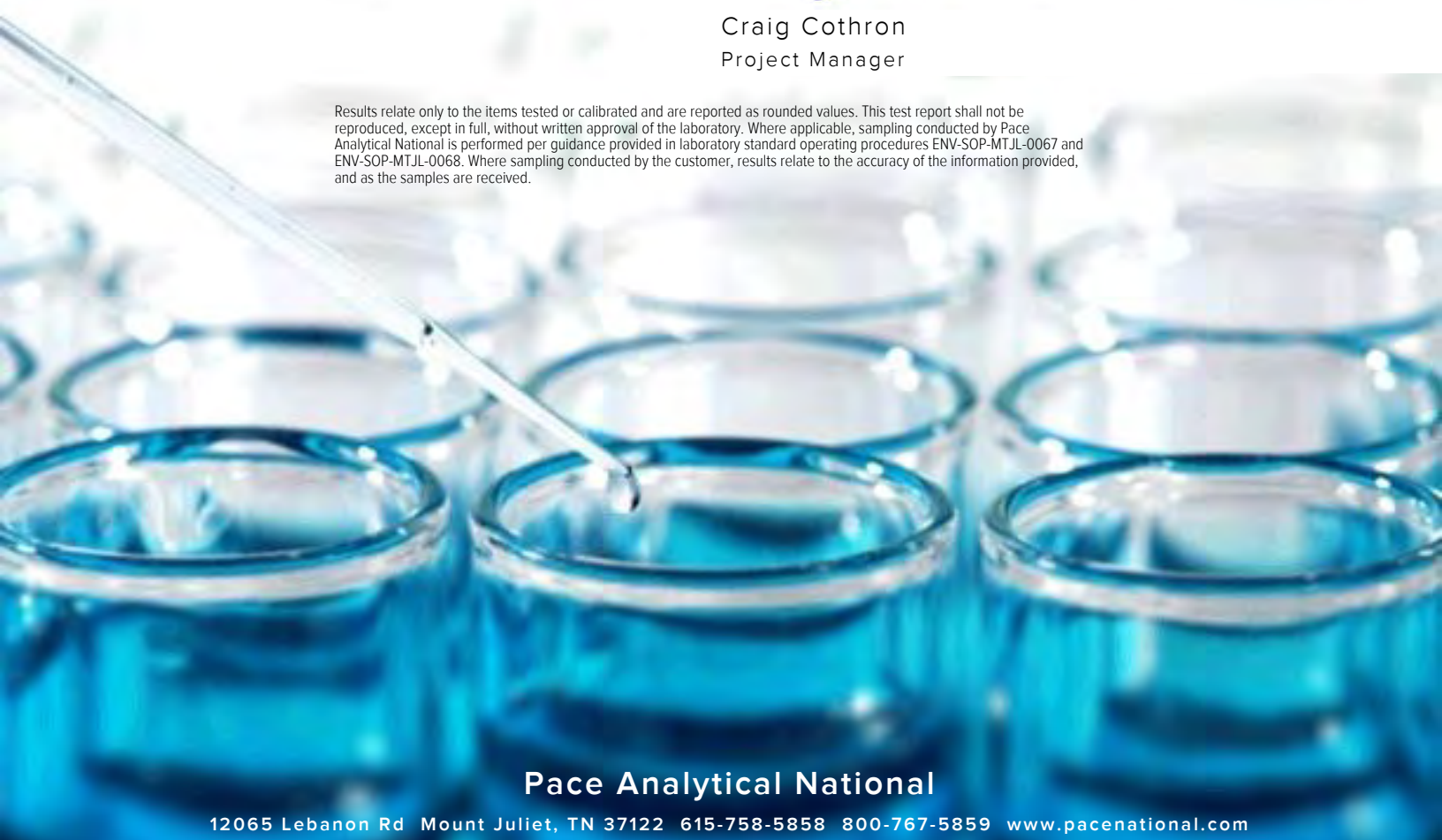
Sample Delivery Group: L1540631
Samples Received: 09/28/2022
Project Number:
Description: Speedway 5310 TNS 112
Site: 0005310
Report To: Ms. Leslie Petre
725 E Fireweed Lane
Suite 200
Anchorage, AK 99503

Entire Report Reviewed By:



Craig Cothron
Project Manager

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

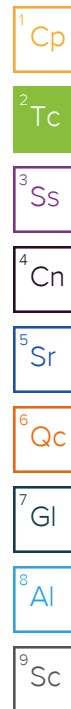


Pace Analytical National

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SAMPLE SUMMARY

MW-2 L1540631-01 GW

Collected by Geoff Moorhead Collected date/time 09/26/22 12:19 Received date/time 09/28/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1938484	1	10/12/22 12:12	10/12/22 16:19	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG1935756	1	10/05/22 09:07	10/05/22 09:07	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1935787	1	10/01/22 19:26	10/01/22 19:26	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG1939726	1.04	10/10/22 04:33	10/12/22 01:19	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1935900	1	10/03/22 09:38	10/03/22 18:33	JRM	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

MW-3 L1540631-02 GW

Collected by Geoff Moorhead Collected date/time 09/26/22 16:49 Received date/time 09/28/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1938484	1	10/12/22 12:12	10/12/22 16:22	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG1935756	1	10/05/22 09:29	10/05/22 09:29	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1935787	1	10/01/22 19:47	10/01/22 19:47	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1937750	20	10/06/22 01:06	10/06/22 01:06	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG1939726	1.04	10/10/22 04:33	10/12/22 01:40	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1935900	1	10/03/22 09:38	10/03/22 18:50	JRM	Mt. Juliet, TN

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

MW-6 L1540631-03 GW

Collected by Geoff Moorhead Collected date/time 09/26/22 11:02 Received date/time 09/28/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1938484	1	10/12/22 12:12	10/12/22 16:31	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG1935756	1	10/05/22 09:50	10/05/22 09:50	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1935787	1	10/01/22 20:07	10/01/22 20:07	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1937750	1	10/05/22 22:41	10/05/22 22:41	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG1939726	1.04	10/10/22 04:33	10/12/22 02:00	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1935900	1	10/03/22 09:38	10/03/22 15:22	JRM	Mt. Juliet, TN

MW-10 L1540631-04 GW

Collected by Geoff Moorhead Collected date/time 09/26/22 11:06 Received date/time 09/28/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1938484	1	10/12/22 12:12	10/12/22 16:34	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG1935756	1	10/05/22 10:12	10/05/22 10:12	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1935787	1	10/01/22 20:28	10/01/22 20:28	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1937750	1	10/05/22 23:02	10/05/22 23:02	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG1939726	1.09	10/10/22 04:33	10/12/22 08:49	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1935900	1	10/03/22 09:38	10/03/22 15:40	JRM	Mt. Juliet, TN

MW17-2 L1540631-05 GW

Collected by Geoff Moorhead Collected date/time 09/26/22 15:10 Received date/time 09/28/22 09:00

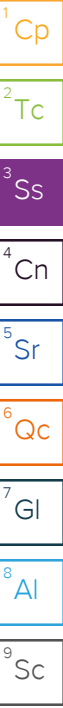
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1938484	1	10/12/22 12:12	10/12/22 16:37	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG1935756	1	10/05/22 10:34	10/05/22 10:34	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1935787	1	10/01/22 20:49	10/01/22 20:49	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG1939726	1.09	10/10/22 04:33	10/12/22 09:10	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1935900	1	10/03/22 09:38	10/03/22 19:07	JRM	Mt. Juliet, TN

SAMPLE SUMMARY

MW17-5 L1540631-06 GW

Collected by Geoff Moorhead Collected date/time 09/26/22 14:39 Received date/time 09/28/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1938484	1	10/12/22 12:12	10/12/22 16:39	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG1935756	1	10/05/22 10:55	10/05/22 10:55	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1935787	1	10/01/22 21:10	10/01/22 21:10	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1937750	20	10/06/22 01:27	10/06/22 01:27	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG1939726	1.09	10/10/22 04:33	10/12/22 09:30	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1935940	1	10/03/22 13:55	10/03/22 23:10	AO	Mt. Juliet, TN



DUPLICATE L1540631-07 GW

Collected by Geoff Moorhead Collected date/time 09/26/22 16:49 Received date/time 09/28/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1938484	1	10/12/22 12:12	10/12/22 16:42	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG1935756	1	10/05/22 11:17	10/05/22 11:17	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1935787	1	10/01/22 21:30	10/01/22 21:30	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1937750	20	10/06/22 01:48	10/06/22 01:48	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG1939726	1.09	10/10/22 04:33	10/12/22 09:50	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1935940	1	10/03/22 13:55	10/03/22 23:28	AO	Mt. Juliet, TN

MW-1 L1540631-08 GW

Collected by Geoff Moorhead Collected date/time 09/26/22 12:58 Received date/time 09/28/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1938484	1	10/12/22 12:12	10/12/22 16:45	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG1935756	1	10/05/22 11:39	10/05/22 11:39	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1935787	1	10/01/22 21:51	10/01/22 21:51	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG1939726	1.09	10/10/22 04:33	10/12/22 10:10	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1935940	1	10/03/22 13:55	10/03/22 23:46	AO	Mt. Juliet, TN

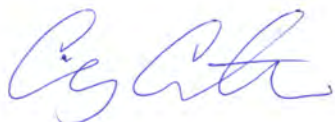
MW-4 L1540631-09 GW

Collected by Geoff Moorhead Collected date/time 09/26/22 13:35 Received date/time 09/28/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1938484	1	10/12/22 12:12	10/12/22 16:48	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG1935756	1	10/05/22 12:01	10/05/22 12:01	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1935787	1	10/01/22 22:11	10/01/22 22:11	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG1939726	1.04	10/10/22 04:33	10/12/22 10:31	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1935940	1	10/03/22 13:55	10/04/22 00:04	AO	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. 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.



Craig Cothron
Project Manager

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
	mg/l		mg/l	mg/l		date / time	
Sodium	15.4		0.504	3.00	1	10/12/2022 16:19	WG1938484

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

Volatile Organic Compounds (GC) by Method AK101

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
TPHGAK C6 to C10	0.174		0.0287	0.100	1	10/05/2022 09:07	WG1935756
(S) a,a,a-Trifluorotoluene(FID)	80.8			50.0-150		10/05/2022 09:07	WG1935756
(S) a,a,a-Trifluorotoluene(PID)	93.6			79.0-125		10/05/2022 09:07	WG1935756

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Benzene	0.000558	J	0.0000941	0.00100	1	10/01/2022 19:26	WG1935787
n-Butylbenzene	U		0.000157	0.00100	1	10/01/2022 19:26	WG1935787
sec-Butylbenzene	0.00105		0.000125	0.00100	1	10/01/2022 19:26	WG1935787
tert-Butylbenzene	U		0.000127	0.00100	1	10/01/2022 19:26	WG1935787
Ethylbenzene	0.00460		0.000137	0.00100	1	10/01/2022 19:26	WG1935787
Isopropylbenzene	0.00276		0.000105	0.00100	1	10/01/2022 19:26	WG1935787
Naphthalene	U	C3	0.00100	0.00500	1	10/01/2022 19:26	WG1935787
Toluene	0.000511	J	0.000278	0.00100	1	10/01/2022 19:26	WG1935787
1,2,4-Trimethylbenzene	0.0125		0.000322	0.00100	1	10/01/2022 19:26	WG1935787
1,3,5-Trimethylbenzene	0.00627		0.000104	0.00100	1	10/01/2022 19:26	WG1935787
Total Xylenes	0.00856		0.000174	0.00300	1	10/01/2022 19:26	WG1935787
(S) Toluene-d8	131	J1		80.0-120		10/01/2022 19:26	WG1935787
(S) 4-Bromofluorobenzene	116			77.0-126		10/01/2022 19:26	WG1935787
(S) 1,2-Dichloroethane-d4	109			70.0-130		10/01/2022 19:26	WG1935787

Semi-Volatile Organic Compounds (GC) by Method AK102

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
AK102 DRO C10-C25	0.772	J	0.177	0.832	1.04	10/12/2022 01:19	WG1939726
(S) o-Terphenyl	67.8			50.0-150		10/12/2022 01:19	WG1939726

Sample Narrative:

L1540631-01 WG1939726: Dilution due to sample volume.

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Anthracene	U		0.0000190	0.0000500	1	10/03/2022 18:33	WG1935900
Acenaphthene	U		0.0000190	0.0000500	1	10/03/2022 18:33	WG1935900
Acenaphthylene	U		0.0000171	0.0000500	1	10/03/2022 18:33	WG1935900
Benzo(a)anthracene	U		0.0000203	0.0000500	1	10/03/2022 18:33	WG1935900
Benzo(a)pyrene	0.0000315	J	0.0000184	0.0000500	1	10/03/2022 18:33	WG1935900
Benzo(b)fluoranthene	0.0000389	J	0.0000168	0.0000500	1	10/03/2022 18:33	WG1935900
Benzo(g,h,i)perylene	0.000161		0.0000184	0.0000500	1	10/03/2022 18:33	WG1935900
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	10/03/2022 18:33	WG1935900
Chrysene	U		0.0000179	0.0000500	1	10/03/2022 18:33	WG1935900
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	10/03/2022 18:33	WG1935900
Fluoranthene	0.0000275	J	0.0000270	0.000100	1	10/03/2022 18:33	WG1935900
Fluorene	0.0000341	J	0.0000169	0.0000500	1	10/03/2022 18:33	WG1935900
Indeno(1,2,3-cd)pyrene	0.000125		0.0000158	0.0000500	1	10/03/2022 18:33	WG1935900
Naphthalene	0.000397		0.0000917	0.000250	1	10/03/2022 18:33	WG1935900

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phenanthrene	0.0000408	U	0.0000180	0.0000500	1	10/03/2022 18:33	WG1935900
Pyrene	0.0000404	U	0.0000169	0.0000500	1	10/03/2022 18:33	WG1935900
1-Methylnaphthalene	0.000143	U	0.0000687	0.000250	1	10/03/2022 18:33	WG1935900
2-Methylnaphthalene	0.000182	U	0.0000674	0.000250	1	10/03/2022 18:33	WG1935900
(S) Nitrobenzene-d5	117			31.0-160		10/03/2022 18:33	WG1935900
(S) 2-Fluorobiphenyl	115			48.0-148		10/03/2022 18:33	WG1935900
(S) p-Terphenyl-d14	90.5			37.0-146		10/03/2022 18:33	WG1935900

- 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
	mg/l		mg/l	mg/l		date / time	
Sodium	45.4		0.504	3.00	1	10/12/2022 16:22	WG1938484

Volatile Organic Compounds (GC) by Method AK101

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
TPHGAK C6 to C10	4.39		0.0287	0.100	1	10/05/2022 09:29	WG1935756
(S) a,a,a-Trifluorotoluene(FID)	79.8			50.0-150		10/05/2022 09:29	WG1935756
(S) a,a,a-Trifluorotoluene(PID)	93.3			79.0-125		10/05/2022 09:29	WG1935756

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

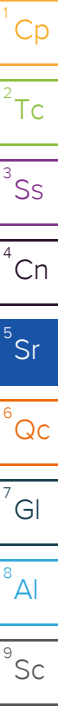
Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Benzene	0.0168		0.0000941	0.00100	1	10/01/2022 19:47	WG1935787
n-Butylbenzene	U		0.000157	0.00100	1	10/01/2022 19:47	WG1935787
sec-Butylbenzene	0.00453		0.000125	0.00100	1	10/01/2022 19:47	WG1935787
tert-Butylbenzene	U		0.000127	0.00100	1	10/01/2022 19:47	WG1935787
Ethylbenzene	0.335		0.00274	0.0200	20	10/06/2022 01:06	WG1937750
Isopropylbenzene	0.0271		0.000105	0.00100	1	10/01/2022 19:47	WG1935787
Naphthalene	0.0118	<u>C3</u>	0.00100	0.00500	1	10/01/2022 19:47	WG1935787
Toluene	0.273		0.00556	0.0200	20	10/06/2022 01:06	WG1937750
1,2,4-Trimethylbenzene	0.437		0.00644	0.0200	20	10/06/2022 01:06	WG1937750
1,3,5-Trimethylbenzene	0.161		0.000104	0.00100	1	10/01/2022 19:47	WG1935787
Total Xylenes	2.51		0.00348	0.0600	20	10/06/2022 01:06	WG1937750
(S) Toluene-d8	82.8			80.0-120		10/01/2022 19:47	WG1935787
(S) Toluene-d8	100			80.0-120		10/06/2022 01:06	WG1937750
(S) 4-Bromofluorobenzene	84.5			77.0-126		10/01/2022 19:47	WG1935787
(S) 4-Bromofluorobenzene	100			77.0-126		10/06/2022 01:06	WG1937750
(S) 1,2-Dichloroethane-d4	102			70.0-130		10/01/2022 19:47	WG1935787
(S) 1,2-Dichloroethane-d4	86.8			70.0-130		10/06/2022 01:06	WG1937750

Semi-Volatile Organic Compounds (GC) by Method AK102

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
AK102 DRO C10-C25	1.30		0.177	0.832	1.04	10/12/2022 01:40	WG1939726
(S) o-Terphenyl	88.2			50.0-150		10/12/2022 01:40	WG1939726

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Anthracene	U		0.0000190	0.0000500	1	10/03/2022 18:50	WG1935900
Acenaphthene	U		0.0000190	0.0000500	1	10/03/2022 18:50	WG1935900
Acenaphthylene	U		0.0000171	0.0000500	1	10/03/2022 18:50	WG1935900
Benzo(a)anthracene	U		0.0000203	0.0000500	1	10/03/2022 18:50	WG1935900
Benzo(a)pyrene	U		0.0000184	0.0000500	1	10/03/2022 18:50	WG1935900
Benzo(b)fluoranthene	U		0.0000168	0.0000500	1	10/03/2022 18:50	WG1935900
Benzo(g,h,i)perylene	U		0.0000184	0.0000500	1	10/03/2022 18:50	WG1935900
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	10/03/2022 18:50	WG1935900
Chrysene	U		0.0000179	0.0000500	1	10/03/2022 18:50	WG1935900
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	10/03/2022 18:50	WG1935900
Fluoranthene	0.0000280	<u>J</u>	0.0000270	0.000100	1	10/03/2022 18:50	WG1935900
Fluorene	0.000315		0.0000169	0.0000500	1	10/03/2022 18:50	WG1935900
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	10/03/2022 18:50	WG1935900
Naphthalene	0.0148		0.0000917	0.000250	1	10/03/2022 18:50	WG1935900



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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phenanthrene	0.0000999		0.0000180	0.0000500	1	10/03/2022 18:50	WG1935900
Pyrene	0.0000319	J	0.0000169	0.0000500	1	10/03/2022 18:50	WG1935900
1-Methylnaphthalene	0.00253		0.0000687	0.000250	1	10/03/2022 18:50	WG1935900
2-Methylnaphthalene	0.00329		0.0000674	0.000250	1	10/03/2022 18:50	WG1935900
(S) Nitrobenzene-d5	121			31.0-160		10/03/2022 18:50	WG1935900
(S) 2-Fluorobiphenyl	111			48.0-148		10/03/2022 18:50	WG1935900
(S) p-Terphenyl-d14	95.8			37.0-146		10/03/2022 18:50	WG1935900

- 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
	mg/l		mg/l	mg/l		date / time	
Sodium	10.1		0.504	3.00	1	10/12/2022 16:31	WG1938484

Volatile Organic Compounds (GC) by Method AK101

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
TPHGAK C6 to C10	0.0465	J	0.0287	0.100	1	10/05/2022 09:50	WG1935756
(S) a,a,a-Trifluorotoluene(FID)	81.8			50.0-150		10/05/2022 09:50	WG1935756
(S) a,a,a-Trifluorotoluene(PID)	95.8			79.0-125		10/05/2022 09:50	WG1935756

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Benzene	U		0.0000941	0.00100	1	10/01/2022 20:07	WG1935787
n-Butylbenzene	U		0.000157	0.00100	1	10/01/2022 20:07	WG1935787
sec-Butylbenzene	U		0.000125	0.00100	1	10/01/2022 20:07	WG1935787
tert-Butylbenzene	U		0.000127	0.00100	1	10/01/2022 20:07	WG1935787
Ethylbenzene	U		0.000137	0.00100	1	10/05/2022 22:41	WG1937750
Isopropylbenzene	U		0.000105	0.00100	1	10/01/2022 20:07	WG1935787
Naphthalene	U	C3	0.00100	0.00500	1	10/01/2022 20:07	WG1935787
Toluene	U		0.000278	0.00100	1	10/01/2022 20:07	WG1935787
1,2,4-Trimethylbenzene	U		0.000322	0.00100	1	10/05/2022 22:41	WG1937750
1,3,5-Trimethylbenzene	U		0.000104	0.00100	1	10/05/2022 22:41	WG1937750
Total Xylenes	U		0.000174	0.00300	1	10/05/2022 22:41	WG1937750
(S) Toluene-d8	109			80.0-120		10/01/2022 20:07	WG1935787
(S) Toluene-d8	104			80.0-120		10/05/2022 22:41	WG1937750
(S) 4-Bromofluorobenzene	124			77.0-126		10/01/2022 20:07	WG1935787
(S) 4-Bromofluorobenzene	107			77.0-126		10/05/2022 22:41	WG1937750
(S) 1,2-Dichloroethane-d4	111			70.0-130		10/01/2022 20:07	WG1935787
(S) 1,2-Dichloroethane-d4	83.6			70.0-130		10/05/2022 22:41	WG1937750

Semi-Volatile Organic Compounds (GC) by Method AK102

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
AK102 DRO C10-C25	U		0.177	0.832	1.04	10/12/2022 02:00	WG1939726
(S) o-Terphenyl	77.9			50.0-150		10/12/2022 02:00	WG1939726

Sample Narrative:

L1540631-03 WG1939726: Dilution due to sample volume.

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Anthracene	U		0.0000190	0.0000500	1	10/03/2022 15:22	WG1935900
Acenaphthene	U		0.0000190	0.0000500	1	10/03/2022 15:22	WG1935900
Acenaphthylene	U		0.0000171	0.0000500	1	10/03/2022 15:22	WG1935900
Benzo(a)anthracene	U		0.0000203	0.0000500	1	10/03/2022 15:22	WG1935900
Benzo(a)pyrene	U		0.0000184	0.0000500	1	10/03/2022 15:22	WG1935900
Benzo(b)fluoranthene	U		0.0000168	0.0000500	1	10/03/2022 15:22	WG1935900
Benzo(g,h,i)perylene	U		0.0000184	0.0000500	1	10/03/2022 15:22	WG1935900
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	10/03/2022 15:22	WG1935900
Chrysene	U		0.0000179	0.0000500	1	10/03/2022 15:22	WG1935900
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	10/03/2022 15:22	WG1935900
Fluoranthene	U		0.0000270	0.000100	1	10/03/2022 15:22	WG1935900

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Fluorene	U		0.0000169	0.0000500	1	10/03/2022 15:22	WG1935900
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	10/03/2022 15:22	WG1935900
Naphthalene	U		0.0000917	0.000250	1	10/03/2022 15:22	WG1935900
Phenanthrene	U		0.0000180	0.0000500	1	10/03/2022 15:22	WG1935900
Pyrene	U		0.0000169	0.0000500	1	10/03/2022 15:22	WG1935900
1-Methylnaphthalene	U		0.0000687	0.000250	1	10/03/2022 15:22	WG1935900
2-Methylnaphthalene	U		0.0000674	0.000250	1	10/03/2022 15:22	WG1935900
<i>(S)</i> Nitrobenzene-d5	115			31.0-160		10/03/2022 15:22	WG1935900
<i>(S)</i> 2-Fluorobiphenyl	113			48.0-148		10/03/2022 15:22	WG1935900
<i>(S)</i> p-Terphenyl-d14	103			37.0-146		10/03/2022 15:22	WG1935900

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
	mg/l		mg/l	mg/l		date / time	
Sodium	7.56		0.504	3.00	1	10/12/2022 16:34	WG1938484

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC) by Method AK101

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
TPHGAK C6 to C10	0.0294	J	0.0287	0.100	1	10/05/2022 10:12	WG1935756
(S) a,a,a-Trifluorotoluene(FID)	79.0			50.0-150		10/05/2022 10:12	WG1935756
(S) a,a,a-Trifluorotoluene(PID)	100			79.0-125		10/05/2022 10:12	WG1935756

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Benzene	U		0.0000941	0.00100	1	10/01/2022 20:28	WG1935787
n-Butylbenzene	U		0.000157	0.00100	1	10/01/2022 20:28	WG1935787
sec-Butylbenzene	U		0.000125	0.00100	1	10/01/2022 20:28	WG1935787
tert-Butylbenzene	U		0.000127	0.00100	1	10/01/2022 20:28	WG1935787
Ethylbenzene	U		0.000137	0.00100	1	10/01/2022 20:28	WG1935787
Isopropylbenzene	U		0.000105	0.00100	1	10/01/2022 20:28	WG1935787
Naphthalene	U	C3	0.00100	0.00500	1	10/01/2022 20:28	WG1935787
Toluene	U		0.000278	0.00100	1	10/01/2022 20:28	WG1935787
1,2,4-Trimethylbenzene	U		0.000322	0.00100	1	10/01/2022 20:28	WG1935787
1,3,5-Trimethylbenzene	U		0.000104	0.00100	1	10/01/2022 20:28	WG1935787
Total Xylenes	U		0.000174	0.00300	1	10/05/2022 23:02	WG1937750
(S) Toluene-d8	115			80.0-120		10/01/2022 20:28	WG1935787
(S) Toluene-d8	104			80.0-120		10/05/2022 23:02	WG1937750
(S) 4-Bromofluorobenzene	104			77.0-126		10/01/2022 20:28	WG1935787
(S) 4-Bromofluorobenzene	103			77.0-126		10/05/2022 23:02	WG1937750
(S) 1,2-Dichloroethane-d4	110			70.0-130		10/01/2022 20:28	WG1935787
(S) 1,2-Dichloroethane-d4	84.1			70.0-130		10/05/2022 23:02	WG1937750

Semi-Volatile Organic Compounds (GC) by Method AK102

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
AK102 DRO C10-C25	U		0.185	0.872	1.09	10/12/2022 08:49	WG1939726
(S) o-Terphenyl	71.3			50.0-150		10/12/2022 08:49	WG1939726

Sample Narrative:

L1540631-04 WG1939726: Dilution due to sample volume.

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Anthracene	U		0.0000190	0.0000500	1	10/03/2022 15:40	WG1935900
Acenaphthene	U		0.0000190	0.0000500	1	10/03/2022 15:40	WG1935900
Acenaphthylene	U		0.0000171	0.0000500	1	10/03/2022 15:40	WG1935900
Benzo(a)anthracene	U		0.0000203	0.0000500	1	10/03/2022 15:40	WG1935900
Benzo(a)pyrene	U		0.0000184	0.0000500	1	10/03/2022 15:40	WG1935900
Benzo(b)fluoranthene	U		0.0000168	0.0000500	1	10/03/2022 15:40	WG1935900
Benzo(g,h,i)perylene	U		0.0000184	0.0000500	1	10/03/2022 15:40	WG1935900
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	10/03/2022 15:40	WG1935900
Chrysene	U		0.0000179	0.0000500	1	10/03/2022 15:40	WG1935900
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	10/03/2022 15:40	WG1935900
Fluoranthene	U		0.0000270	0.000100	1	10/03/2022 15:40	WG1935900

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Fluorene	U		0.0000169	0.0000500	1	10/03/2022 15:40	WG1935900
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	10/03/2022 15:40	WG1935900
Naphthalene	U		0.0000917	0.000250	1	10/03/2022 15:40	WG1935900
Phenanthrene	U		0.0000180	0.0000500	1	10/03/2022 15:40	WG1935900
Pyrene	U		0.0000169	0.0000500	1	10/03/2022 15:40	WG1935900
1-Methylnaphthalene	U		0.0000687	0.000250	1	10/03/2022 15:40	WG1935900
2-Methylnaphthalene	U		0.0000674	0.000250	1	10/03/2022 15:40	WG1935900
<i>(S)</i> Nitrobenzene-d5	114			31.0-160		10/03/2022 15:40	WG1935900
<i>(S)</i> 2-Fluorobiphenyl	112			48.0-148		10/03/2022 15:40	WG1935900
<i>(S)</i> p-Terphenyl-d14	98.4			37.0-146		10/03/2022 15:40	WG1935900

- 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
	mg/l		mg/l	mg/l		date / time	
Sodium	207		0.504	3.00	1	10/12/2022 16:37	WG1938484

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

Volatile Organic Compounds (GC) by Method AK101

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
TPHGAK C6 to C10	0.557		0.0287	0.100	1	10/05/2022 10:34	WG1935756
(S) a,a,a-Trifluorotoluene(FID)	81.4			50.0-150		10/05/2022 10:34	WG1935756
(S) a,a,a-Trifluorotoluene(PID)	99.2			79.0-125		10/05/2022 10:34	WG1935756

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Benzene	0.000713	J	0.0000941	0.00100	1	10/01/2022 20:49	WG1935787
n-Butylbenzene	U		0.000157	0.00100	1	10/01/2022 20:49	WG1935787
sec-Butylbenzene	0.00205		0.000125	0.00100	1	10/01/2022 20:49	WG1935787
tert-Butylbenzene	U		0.000127	0.00100	1	10/01/2022 20:49	WG1935787
Ethylbenzene	0.0176		0.000137	0.00100	1	10/01/2022 20:49	WG1935787
Isopropylbenzene	0.00691		0.000105	0.00100	1	10/01/2022 20:49	WG1935787
Naphthalene	0.00351	C3 J	0.00100	0.00500	1	10/01/2022 20:49	WG1935787
Toluene	0.00195		0.000278	0.00100	1	10/01/2022 20:49	WG1935787
1,2,4-Trimethylbenzene	0.192		0.000322	0.00100	1	10/01/2022 20:49	WG1935787
1,3,5-Trimethylbenzene	0.0251		0.000104	0.00100	1	10/01/2022 20:49	WG1935787
Total Xylenes	0.0418		0.000174	0.00300	1	10/01/2022 20:49	WG1935787
(S) Toluene-d8	124	J1		80.0-120		10/01/2022 20:49	WG1935787
(S) 4-Bromofluorobenzene	108			77.0-126		10/01/2022 20:49	WG1935787
(S) 1,2-Dichloroethane-d4	107			70.0-130		10/01/2022 20:49	WG1935787

Semi-Volatile Organic Compounds (GC) by Method AK102

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
AK102 DRO C10-C25	1.35		0.185	0.872	1.09	10/12/2022 09:10	WG1939726
(S) o-Terphenyl	87.1			50.0-150		10/12/2022 09:10	WG1939726

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Anthracene	U		0.0000190	0.0000500	1	10/03/2022 19:07	WG1935900
Acenaphthene	0.0000757		0.0000190	0.0000500	1	10/03/2022 19:07	WG1935900
Acenaphthylene	U		0.0000171	0.0000500	1	10/03/2022 19:07	WG1935900
Benzo(a)anthracene	U		0.0000203	0.0000500	1	10/03/2022 19:07	WG1935900
Benzo(a)pyrene	U		0.0000184	0.0000500	1	10/03/2022 19:07	WG1935900
Benzo(b)fluoranthene	U		0.0000168	0.0000500	1	10/03/2022 19:07	WG1935900
Benzo(g,h,i)perylene	U		0.0000184	0.0000500	1	10/03/2022 19:07	WG1935900
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	10/03/2022 19:07	WG1935900
Chrysene	U		0.0000179	0.0000500	1	10/03/2022 19:07	WG1935900
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	10/03/2022 19:07	WG1935900
Fluoranthene	U		0.0000270	0.000100	1	10/03/2022 19:07	WG1935900
Fluorene	0.000110		0.0000169	0.0000500	1	10/03/2022 19:07	WG1935900
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	10/03/2022 19:07	WG1935900
Naphthalene	0.00127		0.0000917	0.000250	1	10/03/2022 19:07	WG1935900
Phenanthrene	0.0000317	J	0.0000180	0.0000500	1	10/03/2022 19:07	WG1935900
Pyrene	0.0000346	J	0.0000169	0.0000500	1	10/03/2022 19:07	WG1935900
1-Methylnaphthalene	0.00102		0.0000687	0.000250	1	10/03/2022 19:07	WG1935900

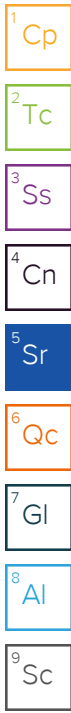
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
2-Methylnaphthalene	0.00102		0.0000674	0.000250	1	10/03/2022 19:07	WG1935900
(S) Nitrobenzene-d5	131			31.0-160		10/03/2022 19:07	WG1935900
(S) 2-Fluorobiphenyl	111			48.0-148		10/03/2022 19:07	WG1935900
(S) p-Terphenyl-d14	100			37.0-146		10/03/2022 19:07	WG1935900

- 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
	mg/l		mg/l	mg/l		date / time	
Sodium	23.8		0.504	3.00	1	10/12/2022 16:39	WG1938484



Volatile Organic Compounds (GC) by Method AK101

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
TPHGAK C6 to C10	4.16		0.0287	0.100	1	10/05/2022 10:55	WG1935756
(S) a,a,a-Trifluorotoluene(FID)	80.8			50.0-150		10/05/2022 10:55	WG1935756
(S) a,a,a-Trifluorotoluene(PID)	99.8			79.0-125		10/05/2022 10:55	WG1935756

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Benzene	0.151		0.0000941	0.00100	1	10/01/2022 21:10	WG1935787
n-Butylbenzene	U		0.000157	0.00100	1	10/01/2022 21:10	WG1935787
sec-Butylbenzene	U		0.000125	0.00100	1	10/01/2022 21:10	WG1935787
tert-Butylbenzene	U		0.000127	0.00100	1	10/01/2022 21:10	WG1935787
Ethylbenzene	0.336		0.00274	0.0200	20	10/06/2022 01:27	WG1937750
Isopropylbenzene	0.0280		0.000105	0.00100	1	10/01/2022 21:10	WG1935787
Naphthalene	0.0102	<u>C3</u>	0.00100	0.00500	1	10/01/2022 21:10	WG1935787
Toluene	1.18		0.00556	0.0200	20	10/06/2022 01:27	WG1937750
1,2,4-Trimethylbenzene	0.330		0.00644	0.0200	20	10/06/2022 01:27	WG1937750
1,3,5-Trimethylbenzene	0.181		0.000104	0.00100	1	10/01/2022 21:10	WG1935787
Total Xylenes	1.37		0.00348	0.0600	20	10/06/2022 01:27	WG1937750
(S) Toluene-d8	73.5	<u>J2</u>		80.0-120		10/01/2022 21:10	WG1935787
(S) Toluene-d8	103			80.0-120		10/06/2022 01:27	WG1937750
(S) 4-Bromofluorobenzene	95.3			77.0-126		10/01/2022 21:10	WG1935787
(S) 4-Bromofluorobenzene	106			77.0-126		10/06/2022 01:27	WG1937750
(S) 1,2-Dichloroethane-d4	106			70.0-130		10/01/2022 21:10	WG1935787
(S) 1,2-Dichloroethane-d4	83.0			70.0-130		10/06/2022 01:27	WG1937750

Semi-Volatile Organic Compounds (GC) by Method AK102

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
AK102 DRO C10-C25	0.400	<u>J</u>	0.185	0.872	1.09	10/12/2022 09:30	WG1939726
(S) o-Terphenyl	84.9			50.0-150		10/12/2022 09:30	WG1939726

Sample Narrative:

L1540631-06 WG1939726: Dilution due to sample volume.

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Anthracene	U		0.0000190	0.0000500	1	10/03/2022 23:10	WG1935940
Acenaphthene	0.0000588		0.0000190	0.0000500	1	10/03/2022 23:10	WG1935940
Acenaphthylene	U		0.0000171	0.0000500	1	10/03/2022 23:10	WG1935940
Benzo(a)anthracene	U		0.0000203	0.0000500	1	10/03/2022 23:10	WG1935940
Benzo(a)pyrene	U		0.0000184	0.0000500	1	10/03/2022 23:10	WG1935940
Benzo(b)fluoranthene	U		0.0000168	0.0000500	1	10/03/2022 23:10	WG1935940
Benzo(g,h,i)perylene	U		0.0000184	0.0000500	1	10/03/2022 23:10	WG1935940
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	10/03/2022 23:10	WG1935940
Chrysene	U		0.0000179	0.0000500	1	10/03/2022 23:10	WG1935940
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	10/03/2022 23:10	WG1935940
Fluoranthene	U		0.0000270	0.000100	1	10/03/2022 23:10	WG1935940

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Fluorene	0.0000615		0.0000169	0.0000500	1	10/03/2022 23:10	WG1935940
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	10/03/2022 23:10	WG1935940
Naphthalene	0.00264		0.0000917	0.000250	1	10/03/2022 23:10	WG1935940
Phenanthrene	0.0000241	U	0.0000180	0.0000500	1	10/03/2022 23:10	WG1935940
Pyrene	U		0.0000169	0.0000500	1	10/03/2022 23:10	WG1935940
1-Methylnaphthalene	0.000930		0.0000687	0.000250	1	10/03/2022 23:10	WG1935940
2-Methylnaphthalene	0.000958		0.0000674	0.000250	1	10/03/2022 23:10	WG1935940
(S) Nitrobenzene-d5	116			31.0-160		10/03/2022 23:10	WG1935940
(S) 2-Fluorobiphenyl	113			48.0-148		10/03/2022 23:10	WG1935940
(S) p-Terphenyl-d14	107			37.0-146		10/03/2022 23:10	WG1935940

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

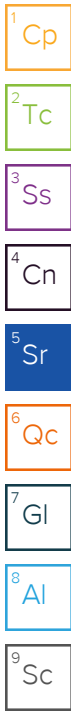
7 Gl

8 Al

9 Sc

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Sodium	44.2		0.504	3.00	1	10/12/2022 16:42	WG1938484



Volatile Organic Compounds (GC) by Method AK101

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
TPHGAK C6 to C10	4.78		0.0287	0.100	1	10/05/2022 11:17	WG1935756
(S) a,a,a-Trifluorotoluene(FID)	78.3			50.0-150		10/05/2022 11:17	WG1935756
(S) a,a,a-Trifluorotoluene(PID)	101			79.0-125		10/05/2022 11:17	WG1935756

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Benzene	0.0160		0.0000941	0.00100	1	10/01/2022 21:30	WG1935787
n-Butylbenzene	U		0.000157	0.00100	1	10/01/2022 21:30	WG1935787
sec-Butylbenzene	0.00571		0.000125	0.00100	1	10/01/2022 21:30	WG1935787
tert-Butylbenzene	U		0.000127	0.00100	1	10/01/2022 21:30	WG1935787
Ethylbenzene	0.354		0.00274	0.0200	20	10/06/2022 01:48	WG1937750
Isopropylbenzene	0.0348		0.000105	0.00100	1	10/01/2022 21:30	WG1935787
Naphthalene	0.0121	C3	0.00100	0.00500	1	10/01/2022 21:30	WG1935787
Toluene	0.330		0.00556	0.0200	20	10/06/2022 01:48	WG1937750
1,2,4-Trimethylbenzene	0.459		0.00644	0.0200	20	10/06/2022 01:48	WG1937750
1,3,5-Trimethylbenzene	0.166		0.000104	0.00100	1	10/01/2022 21:30	WG1935787
Total Xylenes	2.77		0.00348	0.0600	20	10/06/2022 01:48	WG1937750
(S) Toluene-d8	111			80.0-120		10/01/2022 21:30	WG1935787
(S) Toluene-d8	102			80.0-120		10/06/2022 01:48	WG1937750
(S) 4-Bromofluorobenzene	106			77.0-126		10/01/2022 21:30	WG1935787
(S) 4-Bromofluorobenzene	103			77.0-126		10/06/2022 01:48	WG1937750
(S) 1,2-Dichloroethane-d4	111			70.0-130		10/01/2022 21:30	WG1935787
(S) 1,2-Dichloroethane-d4	86.6			70.0-130		10/06/2022 01:48	WG1937750

Semi-Volatile Organic Compounds (GC) by Method AK102

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
AK102 DRO C10-C25	1.03		0.185	0.872	1.09	10/12/2022 09:50	WG1939726
(S) o-Terphenyl	77.8			50.0-150		10/12/2022 09:50	WG1939726

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Anthracene	U		0.0000190	0.0000500	1	10/03/2022 23:28	WG1935940
Acenaphthene	0.000119		0.0000190	0.0000500	1	10/03/2022 23:28	WG1935940
Acenaphthylene	U		0.0000171	0.0000500	1	10/03/2022 23:28	WG1935940
Benzo(a)anthracene	U		0.0000203	0.0000500	1	10/03/2022 23:28	WG1935940
Benzo(a)pyrene	U		0.0000184	0.0000500	1	10/03/2022 23:28	WG1935940
Benzo(b)fluoranthene	U		0.0000168	0.0000500	1	10/03/2022 23:28	WG1935940
Benzo(g,h,i)perylene	0.0000267	J	0.0000184	0.0000500	1	10/03/2022 23:28	WG1935940
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	10/03/2022 23:28	WG1935940
Chrysene	U		0.0000179	0.0000500	1	10/03/2022 23:28	WG1935940
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	10/03/2022 23:28	WG1935940
Fluoranthene	U		0.0000270	0.000100	1	10/03/2022 23:28	WG1935940
Fluorene	0.000247		0.0000169	0.0000500	1	10/03/2022 23:28	WG1935940
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	10/03/2022 23:28	WG1935940
Naphthalene	0.0126		0.0000917	0.000250	1	10/03/2022 23:28	WG1935940

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Phenanthrene	0.0000853		0.0000180	0.0000500	1	10/03/2022 23:28	WG1935940
Pyrene	0.0000321	J	0.0000169	0.0000500	1	10/03/2022 23:28	WG1935940
1-Methylnaphthalene	0.00219		0.0000687	0.000250	1	10/03/2022 23:28	WG1935940
2-Methylnaphthalene	0.00264		0.0000674	0.000250	1	10/03/2022 23:28	WG1935940
(S) Nitrobenzene-d5	115			31.0-160		10/03/2022 23:28	WG1935940
(S) 2-Fluorobiphenyl	109			48.0-148		10/03/2022 23:28	WG1935940
(S) p-Terphenyl-d14	100			37.0-146		10/03/2022 23:28	WG1935940

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
	mg/l		mg/l	mg/l		date / time	
Sodium	26.8		0.504	3.00	1	10/12/2022 16:45	WG1938484

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC) by Method AK101

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
TPHGAK C6 to C10	0.318		0.0287	0.100	1	10/05/2022 11:39	WG1935756
(S) a,a,a-Trifluorotoluene(FID)	85.3			50.0-150		10/05/2022 11:39	WG1935756
(S) a,a,a-Trifluorotoluene(PID)	101			79.0-125		10/05/2022 11:39	WG1935756

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Benzene	0.000190	J	0.0000941	0.00100	1	10/01/2022 21:51	WG1935787
n-Butylbenzene	U		0.000157	0.00100	1	10/01/2022 21:51	WG1935787
sec-Butylbenzene	U		0.000125	0.00100	1	10/01/2022 21:51	WG1935787
tert-Butylbenzene	U		0.000127	0.00100	1	10/01/2022 21:51	WG1935787
Ethylbenzene	0.00251		0.000137	0.00100	1	10/01/2022 21:51	WG1935787
Isopropylbenzene	0.000507	J	0.000105	0.00100	1	10/01/2022 21:51	WG1935787
Naphthalene	U	C3	0.00100	0.00500	1	10/01/2022 21:51	WG1935787
Toluene	0.184		0.000278	0.00100	1	10/01/2022 21:51	WG1935787
1,2,4-Trimethylbenzene	0.00844		0.000322	0.00100	1	10/01/2022 21:51	WG1935787
1,3,5-Trimethylbenzene	0.00194		0.000104	0.00100	1	10/01/2022 21:51	WG1935787
Total Xylenes	0.0405		0.000174	0.00300	1	10/01/2022 21:51	WG1935787
(S) Toluene-d8	141	J1		80.0-120		10/01/2022 21:51	WG1935787
(S) 4-Bromofluorobenzene	104			77.0-126		10/01/2022 21:51	WG1935787
(S) 1,2-Dichloroethane-d4	119			70.0-130		10/01/2022 21:51	WG1935787

Semi-Volatile Organic Compounds (GC) by Method AK102

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
AK102 DRO C10-C25	1.32		0.185	0.872	1.09	10/12/2022 10:10	WG1939726
(S) o-Terphenyl	57.9			50.0-150		10/12/2022 10:10	WG1939726

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Anthracene	U		0.0000190	0.0000500	1	10/03/2022 23:46	WG1935940
Acenaphthene	U		0.0000190	0.0000500	1	10/03/2022 23:46	WG1935940
Acenaphthylene	U		0.0000171	0.0000500	1	10/03/2022 23:46	WG1935940
Benzo(a)anthracene	U		0.0000203	0.0000500	1	10/03/2022 23:46	WG1935940
Benzo(a)pyrene	U		0.0000184	0.0000500	1	10/03/2022 23:46	WG1935940
Benzo(b)fluoranthene	0.0000272	J	0.0000168	0.0000500	1	10/03/2022 23:46	WG1935940
Benzo(g,h,i)perylene	0.0000273	J	0.0000184	0.0000500	1	10/03/2022 23:46	WG1935940
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	10/03/2022 23:46	WG1935940
Chrysene	U		0.0000179	0.0000500	1	10/03/2022 23:46	WG1935940
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	10/03/2022 23:46	WG1935940
Fluoranthene	U		0.0000270	0.000100	1	10/03/2022 23:46	WG1935940
Fluorene	U		0.0000169	0.0000500	1	10/03/2022 23:46	WG1935940
Indeno(1,2,3-cd)pyrene	0.0000177	J	0.0000158	0.0000500	1	10/03/2022 23:46	WG1935940
Naphthalene	0.000112	J	0.0000917	0.000250	1	10/03/2022 23:46	WG1935940
Phenanthrene	U		0.0000180	0.0000500	1	10/03/2022 23:46	WG1935940
Pyrene	0.0000366	J	0.0000169	0.0000500	1	10/03/2022 23:46	WG1935940
1-Methylnaphthalene	U		0.0000687	0.000250	1	10/03/2022 23:46	WG1935940

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
2-Methylnaphthalene	U		0.0000674	0.000250	1	10/03/2022 23:46	WG1935940
(S) Nitrobenzene-d5	113			31.0-160		10/03/2022 23:46	WG1935940
(S) 2-Fluorobiphenyl	112			48.0-148		10/03/2022 23:46	WG1935940
(S) p-Terphenyl-d14	95.8			37.0-146		10/03/2022 23:46	WG1935940

- 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
	mg/l		mg/l	mg/l		date / time	
Sodium	13.1		0.504	3.00	1	10/12/2022 16:48	WG1938484

Volatile Organic Compounds (GC) by Method AK101

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
TPHGAK C6 to C10	0.0332	J	0.0287	0.100	1	10/05/2022 12:01	WG1935756
(S) a,a,a-Trifluorotoluene(FID)	87.1			50.0-150		10/05/2022 12:01	WG1935756
(S) a,a,a-Trifluorotoluene(PID)	101			79.0-125		10/05/2022 12:01	WG1935756

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

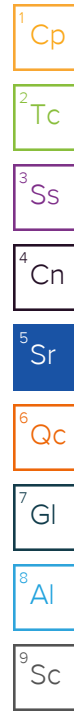
Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Benzene	U		0.0000941	0.00100	1	10/01/2022 22:11	WG1935787
n-Butylbenzene	U		0.000157	0.00100	1	10/01/2022 22:11	WG1935787
sec-Butylbenzene	U		0.000125	0.00100	1	10/01/2022 22:11	WG1935787
tert-Butylbenzene	U		0.000127	0.00100	1	10/01/2022 22:11	WG1935787
Ethylbenzene	U		0.000137	0.00100	1	10/01/2022 22:11	WG1935787
Isopropylbenzene	0.000389	J	0.000105	0.00100	1	10/01/2022 22:11	WG1935787
Naphthalene	U	C3	0.00100	0.00500	1	10/01/2022 22:11	WG1935787
Toluene	U		0.000278	0.00100	1	10/01/2022 22:11	WG1935787
1,2,4-Trimethylbenzene	0.000362	J	0.000322	0.00100	1	10/01/2022 22:11	WG1935787
1,3,5-Trimethylbenzene	U		0.000104	0.00100	1	10/01/2022 22:11	WG1935787
Total Xylenes	0.000543	J	0.000174	0.00300	1	10/01/2022 22:11	WG1935787
(S) Toluene-d8	81.8			80.0-120		10/01/2022 22:11	WG1935787
(S) 4-Bromofluorobenzene	81.6			77.0-126		10/01/2022 22:11	WG1935787
(S) 1,2-Dichloroethane-d4	109			70.0-130		10/01/2022 22:11	WG1935787

Semi-Volatile Organic Compounds (GC) by Method AK102

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
AK102 DRO C10-C25	2.68		0.177	0.832	1.04	10/12/2022 10:31	WG1939726
(S) o-Terphenyl	68.8			50.0-150		10/12/2022 10:31	WG1939726

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Anthracene	U		0.0000190	0.0000500	1	10/04/2022 00:04	WG1935940
Acenaphthene	U		0.0000190	0.0000500	1	10/04/2022 00:04	WG1935940
Acenaphthylene	U		0.0000171	0.0000500	1	10/04/2022 00:04	WG1935940
Benzo(a)anthracene	U		0.0000203	0.0000500	1	10/04/2022 00:04	WG1935940
Benzo(a)pyrene	U		0.0000184	0.0000500	1	10/04/2022 00:04	WG1935940
Benzo(b)fluoranthene	U		0.0000168	0.0000500	1	10/04/2022 00:04	WG1935940
Benzo(g,h,i)perylene	U		0.0000184	0.0000500	1	10/04/2022 00:04	WG1935940
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	10/04/2022 00:04	WG1935940
Chrysene	U		0.0000179	0.0000500	1	10/04/2022 00:04	WG1935940
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	10/04/2022 00:04	WG1935940
Fluoranthene	U		0.0000270	0.000100	1	10/04/2022 00:04	WG1935940
Fluorene	U		0.0000169	0.0000500	1	10/04/2022 00:04	WG1935940
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	10/04/2022 00:04	WG1935940
Naphthalene	U		0.0000917	0.000250	1	10/04/2022 00:04	WG1935940
Phenanthrene	U		0.0000180	0.0000500	1	10/04/2022 00:04	WG1935940
Pyrene	U		0.0000169	0.0000500	1	10/04/2022 00:04	WG1935940
1-Methylnaphthalene	U		0.0000687	0.000250	1	10/04/2022 00:04	WG1935940



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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
2-Methylnaphthalene	U		0.0000674	0.000250	1	10/04/2022 00:04	WG1935940
(S) Nitrobenzene-d5	106			31.0-160		10/04/2022 00:04	WG1935940
(S) 2-Fluorobiphenyl	111			48.0-148		10/04/2022 00:04	WG1935940
(S) p-Terphenyl-d14	101			37.0-146		10/04/2022 00:04	WG1935940

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

Method Blank (MB)

(MB) R3847850-1 10/12/22 15:56

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Sodium	U		0.504	3.00

¹Cp

²Tc

³Ss

Laboratory Control Sample (LCS)

(LCS) R3847850-2 10/12/22 15:59

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Sodium	10.0	9.99	99.9	80.0-120	

⁴Cn

⁵Sr

L1540559-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1540559-02 10/12/22 16:02 • (MS) R3847850-4 10/12/22 16:08 • (MSD) R3847850-5 10/12/22 16:11

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Sodium	10.0	5000	4990	4870	0.000	0.000	1	75.0-125	<u>EV</u>	<u>EV</u>	2.45	20

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3845490-3 10/05/22 03:38

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
TPHGAK C6 to C10	U		0.0287	0.100
(S) a,a,a-Trifluorotoluene(FID)	87.8			60.0-120
(S) a,a,a-Trifluorotoluene(PID)	102			79.0-125

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

(LCS) R3845490-1 10/05/22 02:33 • (LCSD) R3845490-2 10/05/22 02:55

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPHGAK C6 to C10	5.00	5.02	4.11	100	82.2	60.0-120			19.9	20
(S) a,a,a-Trifluorotoluene(FID)				97.8	100	60.0-120				
(S) a,a,a-Trifluorotoluene(PID)				114	116	79.0-125				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3844967-2 10/01/22 17:36

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.0000941	0.00100
n-Butylbenzene	U		0.000157	0.00100
sec-Butylbenzene	U		0.000125	0.00100
tert-Butylbenzene	U		0.000127	0.00100
Ethylbenzene	U		0.000137	0.00100
Isopropylbenzene	U		0.000105	0.00100
Naphthalene	U		0.00100	0.00500
Toluene	U		0.000278	0.00100
1,2,4-Trimethylbenzene	U		0.000322	0.00100
1,3,5-Trimethylbenzene	U		0.000104	0.00100
Xylenes, Total	U		0.000174	0.00300
(S) Toluene-d8	100			80.0-120
(S) 4-Bromofluorobenzene	90.3			77.0-126
(S) 1,2-Dichloroethane-d4	112			70.0-130

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Laboratory Control Sample (LCS)

(LCS) R3844967-1 10/01/22 16:55

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.00500	0.00495	99.0	70.0-123	
n-Butylbenzene	0.00500	0.00504	101	73.0-125	
sec-Butylbenzene	0.00500	0.00472	94.4	75.0-125	
tert-Butylbenzene	0.00500	0.00477	95.4	76.0-124	
Ethylbenzene	0.00500	0.00428	85.6	79.0-123	
Isopropylbenzene	0.00500	0.00536	107	76.0-127	
Naphthalene	0.00500	0.00397	79.4	54.0-135	
Toluene	0.00500	0.00423	84.6	79.0-120	
1,2,4-Trimethylbenzene	0.00500	0.00465	93.0	76.0-121	
1,3,5-Trimethylbenzene	0.00500	0.00414	82.8	76.0-122	
Xylenes, Total	0.0150	0.0139	92.7	79.0-123	
(S) Toluene-d8			93.2	80.0-120	
(S) 4-Bromofluorobenzene			94.4	77.0-126	
(S) 1,2-Dichloroethane-d4			122	70.0-130	

Method Blank (MB)

(MB) R3845756-3 10/05/22 21:16

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Ethylbenzene	U		0.000137	0.00100
Toluene	U		0.000278	0.00100
1,2,4-Trimethylbenzene	U		0.000322	0.00100
1,3,5-Trimethylbenzene	U		0.000104	0.00100
Xylenes, Total	U		0.000174	0.00300
(S) Toluene-d8	103			80.0-120
(S) 4-Bromofluorobenzene	105			77.0-126
(S) 1,2-Dichloroethane-d4	84.4			70.0-130

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

(LCS) R3845756-1 10/05/22 19:53 • (LCSD) R3845756-2 10/05/22 20:56

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Ethylbenzene	0.00500	0.00534	0.00495	107	99.0	79.0-123			7.58	20
Toluene	0.00500	0.00489	0.00456	97.8	91.2	79.0-120			6.98	20
1,2,4-Trimethylbenzene	0.00500	0.00433	0.00408	86.6	81.6	76.0-121			5.95	20
1,3,5-Trimethylbenzene	0.00500	0.00475	0.00436	95.0	87.2	76.0-122			8.56	20
Xylenes, Total	0.0150	0.0162	0.0152	108	101	79.0-123			6.37	20
(S) Toluene-d8				103	103	80.0-120				
(S) 4-Bromofluorobenzene				103	104	77.0-126				
(S) 1,2-Dichloroethane-d4				83.4	85.1	70.0-130				

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Method Blank (MB)

(MB) R3846895-1 10/10/22 12:58

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
AK102 DRO C10-C25	U		0.170	0.800
(S) o-Terphenyl	87.3			60.0-120

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

(LCS) R3846895-2 10/10/22 13:18 • (LCSD) R3846895-3 10/10/22 13:38

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	%	%	%			%	%
AK102 DRO C10-C25	6.00	6.02	6.07	100	101	75.0-125			0.827	20
(S) o-Terphenyl				93.4	98.1	60.0-120				

L1542483-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1542483-02 10/12/22 12:12 • (MS) R3847362-1 10/12/22 12:32 • (MSD) R3847362-2 10/12/22 12:52

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
AK102 DRO C10-C25	6.00	13.5	22.4	20.6	148	118	1	75.0-125	J5		8.37	20
(S) o-Terphenyl					90.6	87.3		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) R3844278-3 10/03/22 14:48

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Anthracene	U		0.0000190	0.0000500
Acenaphthene	U		0.0000190	0.0000500
Acenaphthylene	U		0.0000171	0.0000500
Benzo(a)anthracene	U		0.0000203	0.0000500
Benzo(a)pyrene	U		0.0000184	0.0000500
Benzo(b)fluoranthene	U		0.0000168	0.0000500
Benzo(g,h,i)perylene	U		0.0000184	0.0000500
Benzo(k)fluoranthene	U		0.0000202	0.0000500
Chrysene	U		0.0000179	0.0000500
Dibenz(a,h)anthracene	U		0.0000160	0.0000500
Fluoranthene	U		0.0000270	0.000100
Fluorene	U		0.0000169	0.0000500
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500
Naphthalene	U		0.0000917	0.000250
Phenanthrene	U		0.0000180	0.0000500
Pyrene	U		0.0000169	0.0000500
1-Methylnaphthalene	U		0.0000687	0.000250
2-Methylnaphthalene	U		0.0000674	0.000250
(S) Nitrobenzene-d5	115			31.0-160
(S) 2-Fluorobiphenyl	115			48.0-148
(S) p-Terphenyl-d14	106			37.0-146

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

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

(LCS) R3844278-1 10/03/22 14:11 • (LCSD) R3844278-2 10/03/22 14:30

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Anthracene	0.00200	0.00245	0.00229	122	115	67.0-150			6.75	20
Acenaphthene	0.00200	0.00246	0.00230	123	115	65.0-138			6.72	20
Acenaphthylene	0.00200	0.00237	0.00222	118	111	66.0-140			6.54	20
Benzo(a)anthracene	0.00200	0.00248	0.00231	124	115	61.0-140			7.10	20
Benzo(a)pyrene	0.00200	0.00254	0.00232	127	116	60.0-143			9.05	20
Benzo(b)fluoranthene	0.00200	0.00230	0.00210	115	105	58.0-141			9.09	20
Benzo(g,h,i)perylene	0.00200	0.00226	0.00211	113	105	52.0-153			6.86	20
Benzo(k)fluoranthene	0.00200	0.00228	0.00211	114	105	58.0-148			7.74	20
Chrysene	0.00200	0.00248	0.00230	124	115	64.0-144			7.53	20
Dibenz(a,h)anthracene	0.00200	0.00230	0.00212	115	106	52.0-155			8.14	20
Fluoranthene	0.00200	0.00259	0.00240	130	120	69.0-153			7.62	20
Fluorene	0.00200	0.00253	0.00238	126	119	64.0-136			6.11	20

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

(LCS) R3844278-1 10/03/22 14:11 • (LCSD) R3844278-2 10/03/22 14:30

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
Indeno(1,2,3-cd)pyrene	0.00200	0.00246	0.00227	123	114	54.0-153			8.03	20
Naphthalene	0.00200	0.00230	0.00215	115	107	61.0-137			6.74	20
Phenanthrene	0.00200	0.00239	0.00223	119	111	62.0-137			6.93	20
Pyrene	0.00200	0.00230	0.00216	115	108	60.0-142			6.28	20
1-Methylnaphthalene	0.00200	0.00232	0.00217	116	108	66.0-142			6.68	20
2-Methylnaphthalene	0.00200	0.00242	0.00228	121	114	62.0-136			5.96	20
<i>(S) Nitrobenzene-d5</i>				127	118	31.0-160				
<i>(S) 2-Fluorobiphenyl</i>				124	117	48.0-148				
<i>(S) p-Terphenyl-d14</i>				116	109	37.0-146				

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

Method Blank (MB)

(MB) R3844453-3 10/03/22 21:05

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Anthracene	U		0.0000190	0.0000500
Acenaphthene	U		0.0000190	0.0000500
Acenaphthylene	U		0.0000171	0.0000500
Benzo(a)anthracene	U		0.0000203	0.0000500
Benzo(a)pyrene	U		0.0000184	0.0000500
Benzo(b)fluoranthene	U		0.0000168	0.0000500
Benzo(g,h,i)perylene	U		0.0000184	0.0000500
Benzo(k)fluoranthene	U		0.0000202	0.0000500
Chrysene	U		0.0000179	0.0000500
Dibenz(a,h)anthracene	U		0.0000160	0.0000500
Fluoranthene	U		0.0000270	0.000100
Fluorene	U		0.0000169	0.0000500
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500
Naphthalene	U		0.0000917	0.000250
Phenanthrene	U		0.0000180	0.0000500
Pyrene	U		0.0000169	0.0000500
1-Methylnaphthalene	U		0.0000687	0.000250
2-Methylnaphthalene	U		0.0000674	0.000250
(S) Nitrobenzene-d5	110			31.0-160
(S) 2-Fluorobiphenyl	116			48.0-148
(S) p-Terphenyl-d14	112			37.0-146

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

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

(LCS) R3844453-1 10/03/22 20:29 • (LCSD) R3844453-2 10/03/22 20:47

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Anthracene	0.00200	0.00217	0.00204	108	102	67.0-150			6.18	20
Acenaphthene	0.00200	0.00237	0.00214	118	107	65.0-138			10.2	20
Acenaphthylene	0.00200	0.00238	0.00218	119	109	66.0-140			8.77	20
Benzo(a)anthracene	0.00200	0.00234	0.00217	117	108	61.0-140			7.54	20
Benzo(a)pyrene	0.00200	0.00254	0.00234	127	117	60.0-143			8.20	20
Benzo(b)fluoranthene	0.00200	0.00237	0.00221	118	111	58.0-141			6.99	20
Benzo(g,h,i)perylene	0.00200	0.00231	0.00214	115	107	52.0-153			7.64	20
Benzo(k)fluoranthene	0.00200	0.00236	0.00217	118	108	58.0-148			8.39	20
Chrysene	0.00200	0.00244	0.00227	122	114	64.0-144			7.22	20
Dibenz(a,h)anthracene	0.00200	0.00219	0.00203	109	102	52.0-155			7.58	20
Fluoranthene	0.00200	0.00249	0.00230	124	115	69.0-153			7.93	20
Fluorene	0.00200	0.00230	0.00208	115	104	64.0-136			10.0	20

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

(LCS) R3844453-1 10/03/22 20:29 • (LCSD) R3844453-2 10/03/22 20:47

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
Indeno(1,2,3-cd)pyrene	0.00200	0.00243	0.00223	122	111	54.0-153			8.58	20
Naphthalene	0.00200	0.00229	0.00208	115	104	61.0-137			9.61	20
Phenanthrene	0.00200	0.00222	0.00209	111	104	62.0-137			6.03	20
Pyrene	0.00200	0.00249	0.00229	124	115	60.0-142			8.37	20
1-Methylnaphthalene	0.00200	0.00231	0.00208	115	104	66.0-142			10.5	20
2-Methylnaphthalene	0.00200	0.00230	0.00209	115	104	62.0-136			9.57	20
<i>(S) Nitrobenzene-d5</i>				121	110	31.0-160				
<i>(S) 2-Fluorobiphenyl</i>				125	116	48.0-148				
<i>(S) p-Terphenyl-d14</i>				117	109	37.0-146				

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

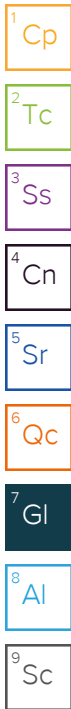
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

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



ACCREDITATIONS & LOCATIONS

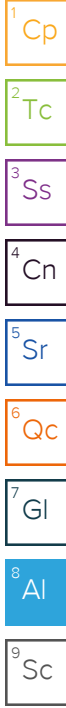
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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

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

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

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



Company Name/Address:
Stantec - Anchorage, AK
 725 E Fireweed Lane
 Suite 200
 Anchorage, AK 99503

Billing Information:
 Accounts Payable
 725 E Fireweed Lane
 Suite 200
 Anchorage, AK 99503

Pres
 Chk

Analysis / Container / Preservative

Chain of Custody Page ___ of ___

Report to:
Ms. Leslie Petre

Email To: **craig.cothron@pacelabs.com**

Project Description:
Speedway 5315 TNS 112

City/State Collected: **North Pole AK**
 Please Circle: **AK** PT MT CT ET

Phone: **907-266-1108**
907-

Client Project #

Lab Project #
STAAAKSSA-5315
5310

Collected by (print):
Geoff Moorhead

Site/Facility ID #
0005315 000 5310

P.O. #

Collected by (signature):
Geoff Moorhead

Rush? (Lab MUST Be Notified)
 ___ Same Day ___ Five Day
 ___ Next Day ___ 5 Day (Rad Only)
 ___ Two Day ___ 10 Day (Rad Only)
 ___ Three Day

Quote #
 Date Results Needed

Immediately Packed on Ice N ___ Y **X**

Sample ID	Comp	Grab	Matrix *	Depth	Date	Time	No. of Cntrs
MW-2			GW		9/26/22	12:19	11
MW-3			GW		9/26/22	16:49	11
MW-6			GW		9/26/22	11:02	11
MW-10			GW		9/26/22	11:06	11
MW17-2			GW		9/26/22	15:10	11
MW17-5			GW		9/26/22	14:39	11
DUPLICATE			GW		9/26/22	16:49	11
DUPLICATE MW-1			GW		9/26/22	12:58	11
MW-4			GW		9/26/22	13:35	11

AK101 40mlAmb HCl	AK102 100ml Amb HCl	NAICP 250mlHDPE-HNO3	PAHSIMLVID 40mlAmb-NoPres-WT	V8260C 40mlAmb-HCl
X	X	X	X	X
X	X	X	X	X
X	X	X	X	X
X	X	X	X	X
X	X	X	X	X
X	X	X	X	X
X	X	X	X	X
X	X	X	X	X
X	X	X	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/hubs/pas-standard-terms.pdf>

SDG # **1540631**
B031

Acctnum: **STAAAKSSA**
 Template: **T175452**
 Prelogin: **P949572**
 PM: **034 - Craig Cothron**
 PB: **BF 9/17/22**
 Shipped Via: **FedEX 2nd Day**

* 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 # **6053 3806 5409**

Sample Receipt Checklist

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

Relinquished by: (Signature)
Geoff Moorhead

Date: **9/27/22**
 Time: **11:25**

Received by: (Signature)

Trip Blank Received: Yes/No
 Yes
 No
 HC / MeOH
 TBR

Relinquished by: (Signature)

Date:

Received by: (Signature)

Temp: **4.4 to 24.4** °C
 Bottles Received: **99**

If preservation required by Login: Date/Time

Relinquished by: (Signature)

Date:

Received by: (Signature)
Geoff Moorhead

Date: **9/29/22**
 Time: **0900**

Hold:

Condition: **NCF / OK**

Laboratory Data Review Checklist

Completed By:

Jeremiah Malenfant

Title:

Geologist in Training

Date:

11/2/2022

Consultant Firm:

Stantec Consulting Services, Inc.

Laboratory Name:

Pace Analytical

Laboratory Report Number:

L1540631

Laboratory Report Date:

09/28/2022

CS Site Name:

Speedway Store #5310 (Former TNS 112)

ADEC File Number:

100.26.159

Hazard Identification Number:

24476

L1540631

Laboratory Report Date:

09/28/2022

CS Site Name:

Speedway Store #5310 (Former TNS 112)

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

1. Laboratory

a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

Yes No N/A Comments:

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 approved?

Yes No N/A Comments:

Samples not transferred.

2. Chain of Custody (CoC)

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

Yes No N/A Comments:

b. Correct analyses requested?

Yes No N/A Comments:

3. Laboratory Sample Receipt Documentation

a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

Yes No N/A Comments:

4.4 °C

b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

Yes No N/A Comments:

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c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

Yes No N/A Comments:

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, etc.?

Yes No N/A Comments:

e. Data quality or usability affected?

Comments:

No.

4. Case Narrative

a. Present and understandable?

Yes No N/A Comments:

b. Discrepancies, errors, or QC failures identified by the lab?

Yes No N/A Comments:

No discrepancies, errors or QC failures identified by lab.

c. Were all corrective actions documented?

Yes No N/A Comments:

No corrective actions taken.

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

Comments:

No effect on data quality/usability.

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5. Samples Results

a. Correct analyses performed/reported as requested on COC?

Yes No N/A Comments:

b. All applicable holding times met?

Yes No N/A Comments:

c. All soils reported on a dry weight basis?

Yes No N/A Comments:

No soil samples submitted to lab.

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

Yes No N/A Comments:

e. Data quality or usability affected?

No.

6. QC Samples

a. Method Blank

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

Yes No N/A Comments:

ii. All method blank results less than limit of quantitation (LOQ) or project specified objectives?

Yes No N/A Comments:

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iii. If above LOQ or project specified objectives, what samples are affected?

Comments:

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

Yes No N/A Comments:

No affected samples.

v. Data quality or usability affected?

Comments:

No.

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

i. Organics – 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:

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

Yes No N/A Comments:

iii. Accuracy – 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:

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? 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:

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

Comments:

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

Yes No N/A Comments:

No affected samples.

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

No.

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

Note: Leave blank if not required for project

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

Yes No N/A Comments:

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

Yes No N/A Comments:

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable?

Yes No N/A Comments:

Matrix interference in the MS for DRO in MW-3, and concentration of sodium is too high for recovery.

iv. Precision – 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.

Yes No N/A Comments:

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

Comments:

MW-3 for DRO and sodium in all samples.

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

Yes No N/A Comments:

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

No; DRO below GCL in MW-3 and the duplicate (RPD good) and sodium used only to track the effectiveness of chemox treatment in the soil.

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:

Not included.

ii. Accuracy – 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 and 60-120 %R for QC samples; all other analyses see the laboratory report pages)

Yes No N/A Comments:

Not included.

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 included.

iv. Data quality or usability affected?

Comments:

No.

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e. Trip Blanks

i. 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 not submitted to lab.

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

Yes No N/A Comments:

Trip blank not submitted to lab.

iii. All results less than LOQ and project specified objectives?

Yes No N/A Comments:

Trip blank not submitted to lab.

iv. If above LOQ or project specified objectives, what samples are affected?

Comments:

No affected samples.

v. Data quality or usability affected?

Comments:

No.

f. Field Duplicate

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

Yes No N/A Comments:

ii. Submitted blind to lab?

Yes No N/A Comments:

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

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

Where R_1 = Sample Concentration
 R_2 = Field Duplicate Concentration

Yes No N/A Comments:

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

Comments:

No.

g. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below)?

Yes No N/A Comments:

No reusable equipment used during sampling.

i. All results less than LOQ and project specified objectives?

Yes No N/A Comments:

No decontamination or equipment blank analyzed.

ii. If above LOQ or project specified objectives, what samples are affected?

Comments:

No affected samples.

iii. Data quality or usability affected?

Comments:

No.

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

a. Defined and appropriate?

Yes No N/A

Comments: