



**Tesoro North Store 112**  
**2Q June 2023 GWM Event Report**



## AUTHORIZATION TO SUBMIT REPORT

Stantec has been authorized by the client 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](mailto:bob.gilfilian@stantec.com).

Regards,

STANTEC CONSULTING SERVICES, INC.

*Robert Gilfilian*

Robert (Bob) Gilfilian, P.E.

Project Technical Lead

Principal Senior Civil Engineer

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## ACRONYMS AND ABBREVIATIONS

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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 <sup>®</sup> 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
SPC	specific conductance
SIM	selective ion monitoring
Speedway	Speedway, LLC
Stantec	Stantec Consulting Services, Inc.
TNS	Tesoro North Store
TMB	trimethylbenzene
U	undetected above practical quantification limits shown in parentheses
UST	underground storage tank
VOC	volatile organic compounds

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## 1.0 INTRODUCTION

This second quarter 2023 quarterly Groundwater Monitoring and Remediation Event Report was prepared by Stantec Consulting Services, Inc. (Stantec) for Tesoro Northstore, LLC, TNS #112, located at 3392 Badger Road, North Pole, Alaska (**Figure 1**). The methods used for this monitoring event were conducted in accordance with the 2023 Alaska Department of Environmental Conservation (ADEC) approved Work Plans for this site (**Appendix B**). The groundwater monitoring event on June 7, 2023, was conducted by Stantec personnel Professional Engineer Geoff Moorhead and Engineer-in-Training Leslie Petre.

Second Monitoring event for the second quarter 2023 occurred on June 7, 2023, for the analytical sampling of Monitoring Wells MW-6, MW17-2, and MW17-5. This event was to complete the second quarter sampling event that was unable to be completed in April. The first event for the quarter took place on April 27, 2023. Groundwater levels were measured for the above mentioned wells and analytical samples were taken and sent to the laboratory for analysis.

## 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-6, MW17-2, and MW17-5.
- 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-6, MW17-2, and MW17-5 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 1,2,4-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

**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 50° to the northeast with a gradient of 0.24 feet per foot. This is generally consistent with previous monitoring events. Well casing elevations were re-surveyed July 5, 2022.

**Table 1 Groundwater Elevations**  
Measurements taken on June 7, 2023

Monitoring Well Identification	Top of Casing Elevation (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)
MW-6	389.18	12.23	376.95
MW17-2	390.01	8.36	381.65
MW17-5	398.60 <sup>1</sup>	8.70	389.90

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.

The results of intrinsic water quality parameters (temperature, pH, dissolved oxygen (DO), oxidation-reduction potential (ORP), and specific conductance (SPC)) measured during this monitoring event are presented in **Table 2**. Well MW-6 shows high DO levels. This measurement is questionable and could be due to equipment malfunction.

**Table 2 Field Measured Intrinsic Water Quality Parameters**  
Measurements taken on June 7, 2023

Monitoring Well Identification	Purged Volume (gallons)	Temperature (°C)	pH	DO (mg/L)	ORP (mV)	SPC (µs/cm°C)
MW-6	2	4.27	6.07	14.5	91	233
MW17-2	3	3.78	4.69	1.55	253.3	5.611
MW17-5	2.5	3.96	6.19	1.9	-2.0	948

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<sup>+</sup>]  
 SPC specific conductance corrected to 25°C

Laboratory analytical results for benzene, toluene, ethylbenzene, total xylenes, 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**.

1,2,4-TMB concentrations in both wells MW17-2 and MW17-5 are high compared to the other wells at this site. Benzene was only detected in well MW17-5. Well MW17-2 and the duplicate sample had high levels of naphthalene detected in excess of groundwater cleanup levels (GCLs). Wells MW17-2 and MW17-5 were the only wells in which Ethylbenzene was detected above GCLs. The duplicate sample was the only one to show the level of DRO equaled the GCL.

**Table 3 Groundwater Analytical Results**  
Samples collected on June 7, 2023

ID	BENZENE	TOLUENE	ETHYL-BENZENE	XYLENES (TOTAL)	GRO	DRO	1,2,4-TMB	1,3,5-TMB	NAPH-THALENE <sup>1</sup>	SODIUM
UNITS	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MW-6	U(0.00100)	U(0.00100)	U(0.00100)	U(0.00300)	U(0.100)	U(0.800)	U(0.00100)	U(0.00100)	U(0.000250)	7.78
MW17-2	0.00105	0.000829 J	<b>0.0169</b>	0.0384	0.425 B J	0.995	<b>0.0937</b>	0.0187	<b>0.00349</b>	1280
DUP	0.000881 J	0.000753 J	0.0138	0.0316	0.328	<b>1.50</b>	<b>0.0803</b>	0.0128	<b>0.00306</b>	1030
MW17-5	<b>0.0244</b>	0.234	<b>0.0516</b>	0.182	1.43	0.311	<b>0.0644</b>	0.0232	0.00130	245
GCLS	<b>0.0046</b>	<b>1.1</b>	<b>0.015</b>	<b>0.19</b>	<b>2.2</b>	<b>1.5</b>	<b>0.056</b>	<b>0.06</b>	<b>0.0017</b>	NA

Key:

- |             |   |      |  |
|-------------|---|------|--|
| I           | Results from VOC Method 8260 D  | GCLs | Groundwater cleanup levels, 18 AAC 75.345, Table C, (9/18/2019)      |
| B           | Analyte also detected in associated blank   | GRO  | Gasoline range organics analyzed by AK101.                           |
| <b>Bold</b> | indicates the concentration exceeds the GCL or the estimated quantitation limit exceeds the GCL | mg/L | milligrams per liter   |
| J           | The identification of the analyte is acceptable; the reported value is an estimate.             | NA   | Not Applicable   |
| DUP         | Duplicate sample of the preceding sample.   | U( ) | Undetected above practical quantitation limits shown in parentheses. |
| DRO         | Diesel range organics analyzed by AK102.  |      |  |

**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 duplicate (DUP) is a quality control duplicate of Sample MW17-2. 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 exceeded the established QA criteria tolerance for total xylenes. The holding times were within established criteria.

**Table 4 Laboratory Quality Control Objectives**

Quality Control Designation	Tolerance	Results for this Event
<b>Holding Times</b>		
DRO/Water/to analyze	40 days	8-14 days
DRO/Water/to extract	14 days	7-13 days
GRO/Water/to analyze	14 days	4 days
VOCs/Water/to analyze	14 days	5 days
PAHs/Water/to analyze	40 days	6 days
PAHs/Water/to extract	7 days	5 days
<b>Field Duplicates – Precision</b>		
Benzene	± 30%	8.8%
Toluene	± 30%	10.0%
Ethylbenzene	± 30%	20.2%
Xylenes	± 30%	19.4%
GRO	± 30%	25.8%
DRO	± 30%	<b>40.5%</b>
Naphthalene	± 30%	13.1%
1,2,4-TMB	± 30%	15.4%
1,3,5-TMB	± 30%	<b>37.5%</b>
Sodium	± 30%	21.6%

Key:

%	Absolute value percentage of variance	PAH	Polycyclic Aromatic Hydrocarbon
±	Absolute Value	VOC	Volatile organic compound
DRO	diesel range organics	<b>BOLD</b>	Exceeds precision tolerance
GRO	gasoline range organics	1	Maximum value: some samples analyzed/extracted earlier
TMB	Trimethylbenzene		
NC	Not computed due to non-detectable levels in original and/or duplicate samples		

## 5.0 IN-SITU CHEMOX REMEDIATION

Groundwater contamination is treated in-situ through monthly injections of the chemical oxidation (chemox) product Klozur® One. Chemox monthly events resumed May 23, 2023, after winter break-up so solution could be mixed without flash freezing prior to injection. The May monthly chemox event on this site involve the injection of eight 55-pound bags of Klozur® One into the formation. Due to the cold temperatures of the ground water at this site, one bag of the chemical is mixed at a ratio of 1 pound per 2 gallons of water (60 g/L). This is within the manufacturer’s suggested range of mixing ratios (50-200 g/L). Total chemox treatment for this site involved 440 pounds of Klozur® diluted with more than 900 gallons of water and then pushed into formation with an additional 440 gallons of water. The site has four 4” injection wells that were each dosed with 220 gallons of chemox solution followed by 110 gallons of water without issue.



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## 6.0 CONCLUSIONS AND RECOMMENDATIONS

The following summarizes laboratory test results that exceeded the GCLs for the June 2023 semi-annual groundwater monitoring event:

- MW17-2: Ethylbenzene, 1,2,4-TMB, and naphthalene.
- MW17-5: Benzene, ethylbenzene, and 1,2,4-TMB.

The groundwater levels were measured in all monitoring wells. The groundwater direction of flow was found to be 50° to the northeast with a gradient of 0.24 feet per foot. This is generally consistent with previous monitoring events. Well casing elevations were re-surveyed July 5, 2022.

No anomalies were found during the June 2023 semi-annual monitoring event that would require additional corrective action or changes to the approved year 2023 Corrective Action Work Plan for this site.

## 7.0 LIMITATIONS

Stantec conducted this monitoring event in accordance with the 2023 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.

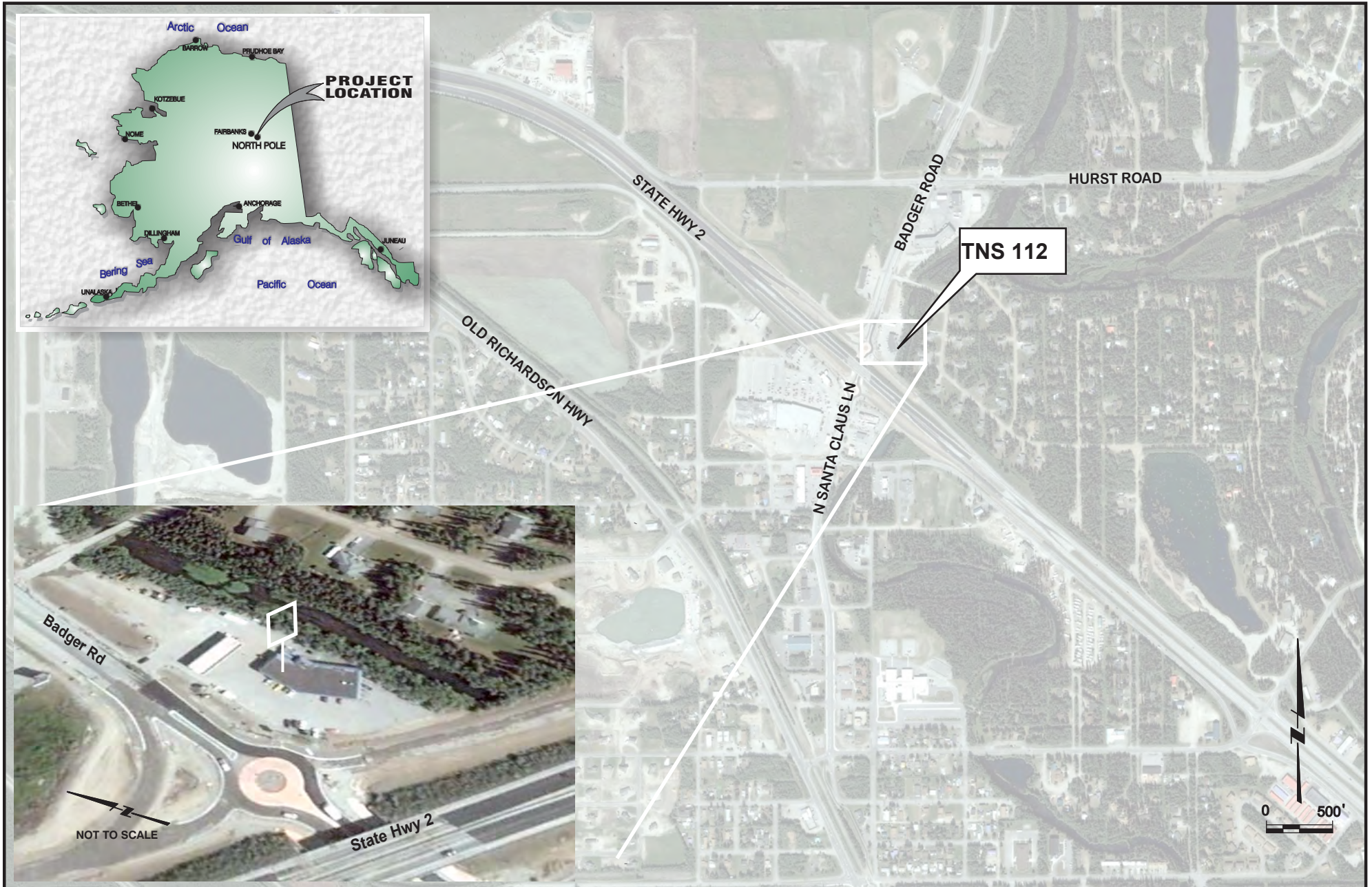
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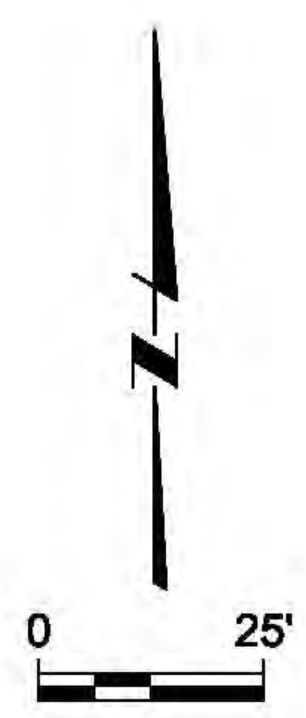
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## **FIGURES**

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- Figure 1      Location and Vicinity Map  
Figure 2      Site Map with Analytical Data
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**COLONIAL PLAZA MALL  
DRINKING WELL,  
MORNING STAR SUB. TRACT D  
APPROXIMATELY 180'  
NORTH OF THIS POINT**

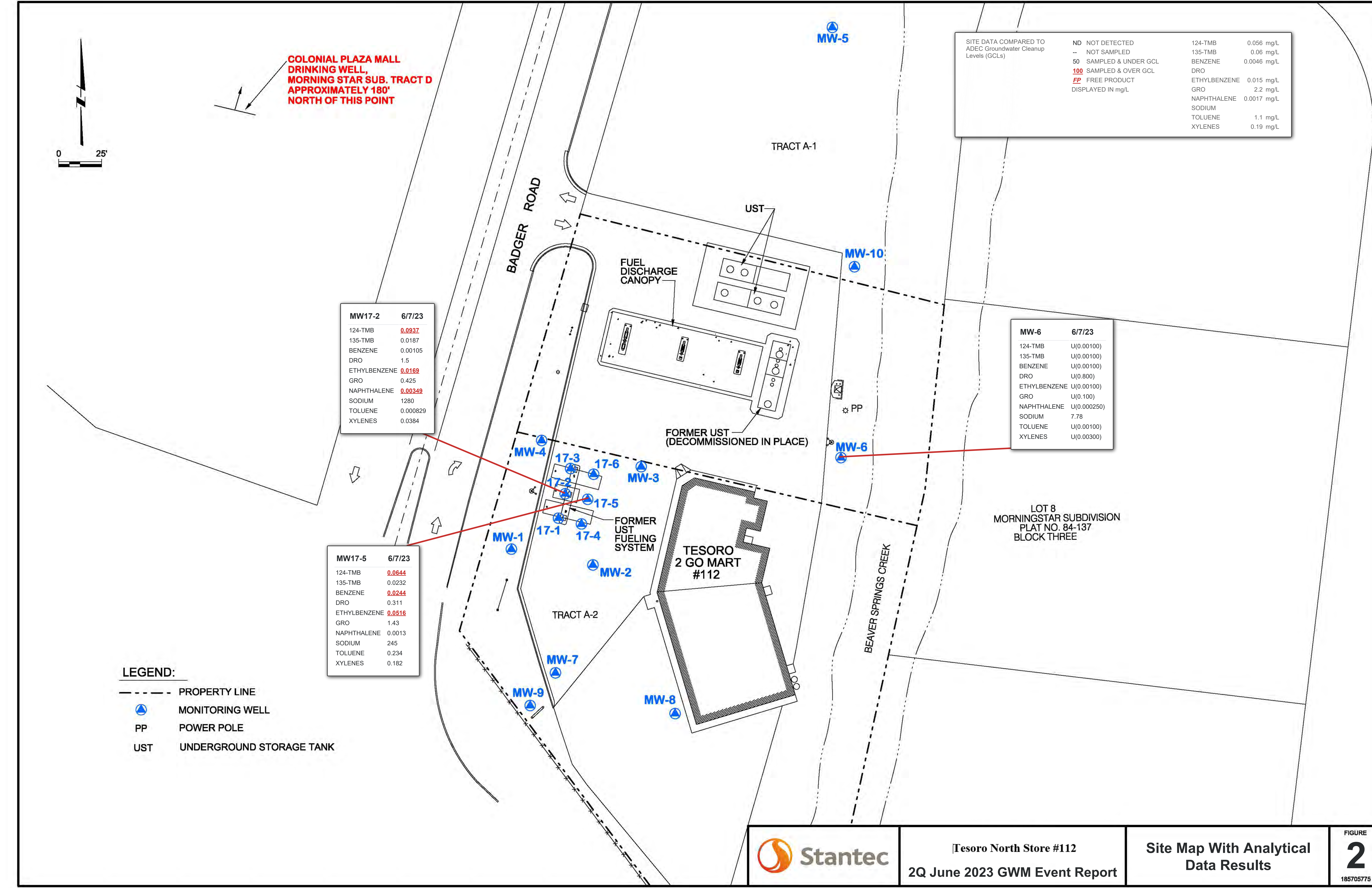
SITE DATA COMPARED TO ADEC Groundwater Cleanup Levels (GCLs)		SITE DATA COMPARED TO ADEC Groundwater Cleanup Levels (GCLs)	
ND	NOT DETECTED	124-TMB	0.056 mg/L
--	NOT SAMPLED	135-TMB	0.06 mg/L
50	SAMPLED & UNDER GCL	BENZENE	0.0046 mg/L
100	SAMPLED & OVER GCL	DRO	
FP	FREE PRODUCT	ETHYLBENZENE	0.015 mg/L
	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

MW17-2	6/7/23
124-TMB	0.0937
135-TMB	0.0187
BENZENE	0.00105
DRO	1.5
ETHYLBENZENE	0.0169
GRO	0.425
NAPHTHALENE	0.00349
SODIUM	1280
TOLUENE	0.000829
XYLENES	0.0384

MW-6	6/7/23
124-TMB	U(0.00100)
135-TMB	U(0.00100)
BENZENE	U(0.00100)
DRO	U(0.800)
ETHYLBENZENE	U(0.00100)
GRO	U(0.100)
NAPHTHALENE	U(0.000250)
SODIUM	7.78
TOLUENE	U(0.00100)
XYLENES	U(0.00300)

MW17-5	6/7/23
124-TMB	0.0644
135-TMB	0.0232
BENZENE	0.0244
DRO	0.311
ETHYLBENZENE	0.0516
GRO	1.43
NAPHTHALENE	0.0013
SODIUM	245
TOLUENE	0.234
XYLENES	0.182

- LEGEND:**
- PROPERTY LINE
  - ⊕ MONITORING WELL
  - PP POWER POLE
  - UST UNDERGROUND STORAGE TANK



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## **APPENDIX A**

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### *Site Background*

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## APPENDIX A – SITE BACKGROUND

**Tesoro Northstore 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. (GE<sup>2</sup>T) 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.** GE<sup>2</sup>T 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

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

**June 2000.** GE<sup>2</sup>T 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

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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



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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<sup>®</sup> 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.

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**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<sup>®</sup> 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:

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- 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.

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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<sup>®</sup>, into the four remediation wells. Klozur One<sup>®</sup> 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<sup>®</sup> 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<sup>®</sup> 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:

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- 
- 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<sup>®</sup>, 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<sup>®</sup>, 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<sup>®</sup>, 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<sup>®</sup> 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<sup>®</sup> 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<sup>®</sup> 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<sup>®</sup> 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:

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- 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<sup>®</sup> One product (chemox) was not completed during the 1<sup>st</sup> quarter due to the severe winter conditions but is planned for the 2<sup>nd</sup> 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<sup>®</sup> 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.

**April 2023:** The following summarizes laboratory test results that exceeded the GCLs for the April 2023 semi-annual groundwater monitoring event:

- MW-3: Benzene, ethylbenzene, total xylenes, GRO, DRO 1,2,4-TMB, and naphthalene.
- MW17-5: Ethylbenzene.

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The groundwater levels were measured in all monitoring wells. The groundwater direction of flow was found to be 50° to the northeast with a gradient of 0.24 feet per foot. This is generally consistent with previous monitoring events. Well casing elevations were re-surveyed July 5, 2022.

No anomalies were found during the April 2023 semi-annual monitoring event that would require additional corrective action or changes to the approved year 2023 Corrective Action Work Plan for this site.

Chemox monthly events resumed May 23, 2023, after winter break-up so solution could be mixed without flash freezing prior to injection. The May monthly chemox event on this site involve the injection of eight 55-pound bags of Klozur<sup>®</sup> One into the formation. Due to the cold temperatures of the ground water at this site, one bag of the chemical is mixed at a ratio of 1 pound per 2 gallons of water (60 g/L). This is within the manufacturer's suggested range of mixing ratios (50-200 g/L). Total chemox treatment for this site involved 440 pounds of Klozur<sup>®</sup> diluted with more than 900 gallons of water and then pushed into formation with an additional 440 gallons of water. The site has four 4" injection wells that were each dosed with 220 gallons of chemox solution followed by 110 gallons of water without issue.

**June 2023:** The following summarizes laboratory test results that exceeded the GCLs for the June 2023 semi-annual groundwater monitoring event:

- MW17-2: Ethylbenzene, 1,2,4-TMB, and naphthalene.
- MW17-5: Benzene, ethylbenzene, and 1,2,4-TMB.

The groundwater levels were measured in all monitoring wells. The groundwater direction of flow was found to be 50° to the northeast with a gradient of 0.24 feet per foot. This is generally consistent with previous monitoring events. Well casing elevations were re-surveyed July 5, 2022.

No anomalies were found during the June 2023 semi-annual monitoring event that would require additional corrective action or changes to the approved year 2023 Corrective Action Work Plan for this site.



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**APPENDIX B**

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*Field Methods and Procedures*

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## ADEC Approved Work Plan Tasks for 2023

The following table summarizes the proposed tasks and implementation schedule for the 2023 CAP:

Work Plan Task 2023		1 <sup>st</sup> Quarter	2 <sup>nd</sup> Quarter	3 <sup>rd</sup> Quarter	4 <sup>th</sup> Quarter
Task 1	Monitoring Wells: MW-2, MW-3, MW-6, MW-10, MW17-2 and MW17-5.		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, MW17-2 and MW17-5	V, G, D, P, I & S		V, G, D, P, I & S	
Task 2	Chemical Oxidation Treatment	✓	✓	✓	✓

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 including 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 1 – Groundwater Monitoring

Monitoring of the on-site groundwater monitoring wells will be conducted on a variable frequency as outlined in 2023 Work Plan Schedule shown above. Sampling schedules, well locations and analyses are referenced in the 2023 Work Plan Schedule.

- 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 4-inch diameter injection wells: IW-2022A, IW-2022B, IW-2022C, and IW-2022D. Subject to suitable (non-freezing) weather conditions, Stantec will attempt to inject chemox monthly throughout the year.

Approximately 100 gallons of a prepared solution of potable water and 110 pounds of

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Klozur One® will be manually injected via gravity. Following the injection of the chemox solution, a minimum of 100 gallons of potable water will be injected into each injection well to provide a means of “hydraulically pushing” the chemox solution into the subsurface formation.

The on-site monitoring wells will be sampled as described in Task 1 to assess treatment impact on the groundwater table. Also, the wells will be analyzed for sodium to check on the distribution/migration of the oxidant.

The Corrective Action Work Plan for the year 2023 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 2023 Work Plan Schedule shown above.

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## **APPENDIX C**

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### *Field Measurements and Notes*

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Site Name: TNS #112

Date: 06/07/2023, 11:15 AM

Name(s): Leslie Petre

Well ID	Free Product (ft)	Water (ft)	Bottom (ft)	Analytical Parameters	Bottles to be filled	<p style="color: red; margin: 0;">QA/QC: Duplicate #1</p>
MW17-2	N/A	8.36	14.71	BTEX + MTBE	3 X 40 mL VOAs ✓	
TOC	Well Dia. (in)	Screen Length (ft)	Well Material	cPAHs, including Naphthalene	2 X 40 mL Amber VOAs ✓	
390.01	2.0		PVC	Lead - Total	1 X 250 mL Poly ✓	
Latitude (decimal)		Longitude (decimal)	Weather	DRO	2 X 100 mL Amber ✓	
64.7592725		-147.350184	sunny 63°F	GRO	3 X 40 mL Amber VOAs ✓	
Type/Model Meter Used: _____						
Calibrated: (date) _____ (time) _____						
Cell Vol: _____						
Type/Model Pump Used: _____						
Pump Intake? _____ ft						
Above / Below      Bottom / TOC						

Time	Depth to Water (ft)	Flow Rate (ml/Min)	pH		Conductivity (ms/cm)		Turbidity (NTU)		Dissolved O2 (mg/l)		Temp. (Celsius)		Oxygen Reduction Potential (ORP) mv	
			Reading	Change* (±0.1)	Reading	Change* (±3%)	Reading	Change* (±10% or <5)	Reading	Change* (±10% or <0.5)	Reading	Change* (±3%)	Reading	Change* (±10mv)
10:08	8.36	<del> </del>	4.69	<del> </del>	5.61	<del> </del>	--	<del> </del>	1.55	<del> </del>	3.78	<del> </del>	253.3	<del> </del>

Sample Collected? Yes      Time 11:15      Total Pumped from Well? 3.13 Gal

**NOTES / COMMENTS:**

- Ice 5.25

\*Minimum pumping time 15 Mins. - Collect data every 3 mins once flow through cell is full or once every volume of the flow through cell based on flow rate, which ever is longest. Indicator Parameters Have Stabilized When 3 Consecutive Readings Are Within: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for ORP; and ± 10% for Turbidity (when Turbidity is above 5 NTUs) or 3 readings less than 5.0 NTUs; ± 10% mg/l Dissolved Oxygen (when Dissolved Oxygen is above 0.5mg/l) or 3 readings less than 0.5 mg/l.

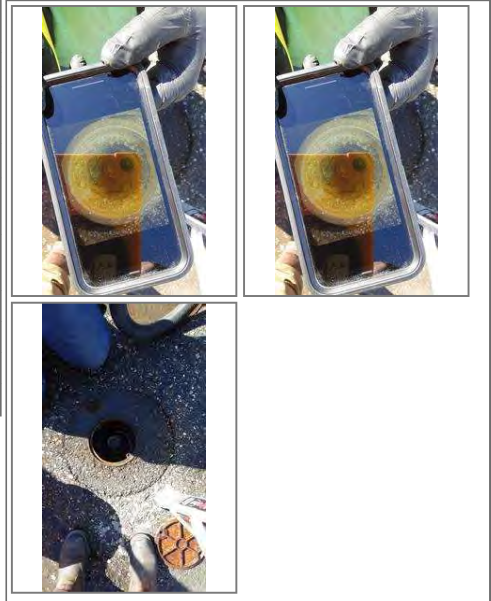
Site Name: TNS #112

Date: 06/07/2023, 11:16 AM

Name(s): Leslie Petre

Well ID	Free Product (ft)	Water (ft)	Bottom (ft)
MW17-5	N/A	8.7	14.15
TOC	Well Dia. (in)	Screen Length (ft)	Well Material
398.62	2.0		
Latitude (decimal)		Longitude (decimal)	Weather
64.7592736		-147.3501815	sunny 63°F

Analytical Parameters	Bottles to be filled
BTEX + MTBE	3 X 40 mL VOAs ✓
GRO	3 X 40 mL Amber VOAs ✓
Lead - Total	1 X 250 mL Poly ✓
DRO	2 X 100 mL Amber ✓
cPAHs, including Naphthalene	2 X 40 mL Amber VOAs ✓



Type/Model Meter Used: \_\_\_\_\_  
 Calibrated: (date) \_\_\_\_\_ (time) \_\_\_\_\_  
 Cell Vol: \_\_\_\_\_  
 Type/Model Pump Used: \_\_\_\_\_  
 Pump Intake? \_\_\_\_\_ ft  
 Above / Below Bottom / TOC

**QA/QC: Duplicate #2**

Time	Depth to Water (ft)	Flow Rate (ml/Min)	pH		Conductivity (ms/cm)		Turbidity (NTU)		Dissolved O2 (mg/l)		Temp. (Celsius)		Oxygen Reduction Potential (ORP) mv	
			Reading	Change* (±0.1)	Reading	Change* (±3%)	Reading	Change* (±10% or <5)	Reading	Change* (±10% or <0.5)	Reading	Change* (±3%)	Reading	Change* (±10mv)
10:06	8.7	X												
16:00	--	--	6.19	X	948.00	X	--	X	1.90	X	3.96	X	-2.0	X

Sample Collected? Yes Time 11:16 Total Pumped from Well? 2.67 Gal

**NOTES / COMMENTS:**

\*Minimum pumping time 15 Mins. - Collect data every 3 mins once flow through cell is full or once every volume of the flow through cell based on flow rate, which ever is longest. Indicator Parameters Have Stabilized When 3 Consecutive Readings Are Within: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for ORP; and ± 10% for Turbidity (when Turbidity is above 5 NTUs) or 3 readings less than 5.0 NTUs; ± 10% mg/l Dissolved Oxygen (when Dissolved Oxygen is above 0.5mg/l) or 3 readings less than 0.5 mg/l.

Site Name: TNS #112

Date: 06/07/2023, 9:46 AM

Name(s): Leslie Petre

Well ID	Free Product (ft)	Water (ft)	Bottom (ft)
MW-6	N/A	12.23	16.86
TOC	Well Dia. (in)	Screen Length (ft)	Well Material
389.18	2.0		pvc
Latitude (decimal)		Longitude (decimal)	Weather
64.7592998		-147.3491405	sunny 63°F

Analytical Parameters	Bottles to be filled
GRO	3 X 40 mL Amber VOAs ✓
cPAHs, including Naphthalene	2 X 40 mL Amber VOAs ✓
DRO	2 X 100 mL Amber ✓
Lead - Total	1 X 250 mL Poly ✓
BTEX + MTBE	3 X 40 mL VOAs ✓

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Type/Model Meter Used: YSI 556  
 Calibrated: (date) \_\_\_\_\_ (time) \_\_\_\_\_  
 Cell Vol: None  
 Type/Model Pump Used: Bailer  
 Pump Intake? None ft  
 Above / ✓ Below Bottom / ✓ TOC

Time	Depth to Water (ft)	Flow Rate (ml/Min)	pH		Conductivity (ms/cm)		Turbidity (NTU)		Dissolved O2 (mg/l)		Temp. (Celsius)		Oxygen Reduction Potential (ORP) mv	
			Reading	Change* (±0.1)	Reading	Change* (±3%)	Reading	Change* (±10% or <5)	Reading	Change* (±10% or <0.5)	Reading	Change* (±3%)	Reading	Change* (±10mv)
09:36	12.23	X												
16:00	--	--	6.07	X	233.00	X	--	X	14.50	X	4.27	X	91.0	X

Sample Collected? Yes Time 09:46 Total Pumped from Well? 2.28 Gal

NOTES / COMMENTS:

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\*Minimum pumping time 15 Mins. - Collect data every 3 mins once flow through cell is full or once every volume of the flow through cell based on flow rate, which ever is longest. Indicator Parameters Have Stabilized When 3 Consecutive Readings Are Within: ± 0.1 for pH; ± 3% for Specific Conductivity and Temperature; ± 10 mv for ORP; and ± 10% for Turbidity (when Turbidity is above 5 NTUs) or 3 readings less than 5.0 NTUs; ± 10% mg/l Dissolved Oxygen (when Dissolved Oxygen is above 0.5mg/l) or 3 readings less than 0.5 mg/l.



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## **APPENDIX D**

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### *Tables of Historical Groundwater Monitoring Data*

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	Well Screen Interval	Ground Water Elevation	124-TMB	135-TMB	Benzene	DRO	EDB	Ethylbenzene	GRO	Lead	Naphthalene	Sodium	Toluene	Xylenes
Unit	ft	ft	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
<b>GW Human Health Cleanup</b>			<u>0.056</u>	<u>0.06</u>	<u>0.0046</u>	<b>1.5</b>		<u>0.015</u>	<u>2.2</u>		<u>0.0017</u>		<u>1.1</u>	<u>0.19</u>
<b>MW17-2</b>														
07/19/2017	--	--	NT	NT	—	—	—	—	—	—	U(0.039)	—	—	—
10/30/2018	--	--	—	—	U (0.003)	2.50	—	<u>0.18</u>	<u>3.90</u>	—	—	—	U (0.002)	<u>0.90</u>
05/10/2019	--	--	NT	NT	U (0.003)	0.91	—	0.005100	U (0.25)	—	U(0.00011)	—	U (0.002)	0.0120
10/22/2019	--	--	—	—	U (0.003)	1.4 H	—	<u>0.21</u>	<u>3.50</u>	—	—	—	U (0.002)	<u>0.79</u>
08/18/2020	--	381.54	<u>0.457</u>	<u>0.0880</u>	0.0017 J	1.96	—	<u>0.08370</u>	1.76	—	<u>0.0080500</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>0.0061400</u>	—	U (0.001)	<u>0.591</u>
06/24/2021	--	381.59	<u>0.389</u>	0.05690	0.00163 J	1.58	—	<u>0.07270</u>	1.36	—	0.0164 B,J	—	U (0.01)	0.173
10/13/2021	--	--	<u>0.315</u>	<u>0.06920</u>	0.00125 J	1.77	—	<u>0.05060</u>	1.51	—	<u>0.0049300</u>	—	0.00253 J	<u>0.197</u>
05/16/2022	--	382.45	<u>0.247</u>	0.03740	0.000632000	1.15	—	<u>0.03330</u>	0.573	—	0.000423000	37.5	0.0016500	0.09680
09/26/2022	--	381.46	<u>0.192</u>	0.02510	0.000713000	1.35	—	<u>0.01760</u>	0.557	—	0.0012700	207	0.0019500	0.04180
10/26/2022	--	381.04	—	—	0.00053000	1.23	U(0.0000200)	0.0012700	0.118	0.0940	0.000327000	1230	U(0.00100)	0.000377000
06/07/2023	--	381.65	<u>0.09370</u>	0.01870	0.0010500	<b>1.50</b>	—	<u>0.01690</u>	0.425	—	<u>0.0034900</u>	1280	0.000829000	0.03840
<b>MW17-5</b>														
07/19/2017	--	--	<u>0.86</u>	NT	—	—	—	—	—	—	<u>0.0270</u>	—	—	—
06/14/2018	--	--	0.0440	<u>0.0630</u>	<u>0.0250</u>	0.17	—	<u>0.0640</u>	1.70	—	0.001100	—	0.52	<u>0.548</u>
10/30/2018	--	--	—	—	<u>0.0550</u>	0.26	—	<u>0.15</u>	<u>3.70</u>	—	—	—	0.21	<u>0.505</u>
05/09/2019	--	--	—	—	0.003200	0.92	—	<u>0.0160</u>	0.31	—	—	—	0.002600	0.0480
05/10/2019	--	--	NT	NT	—	—	—	—	—	—	0.00014000	—	—	—
10/22/2019	--	--	—	—	<u>0.0220</u>	0.47 H	—	<u>0.23</u>	<u>3.70</u>	—	—	—	0.36	<u>0.721</u>
08/18/2020	--	389.82	<u>0.19</u>	<u>0.117</u>	<u>0.03080</u>	0.825	—	<u>0.151</u>	<u>2.68</u>	—	<u>0.0072900</u>	—	0.386	<u>0.896</u>
10/06/2020	--	389.43	NT	NT	<u>0.03140</u>	J 0.569	—	<u>0.158</u>	1.68	—	<u>0.0047500</u>	—	0.144	<u>0.401</u>
10/13/2021	--	--	<u>0.186</u>	<u>0.09640</u>	<u>0.03870</u>	0.800 J	—	<u>0.14</u>	2.18	—	<u>0.002100</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>	0.40	—	<u>0.336</u>	<u>4.16</u>	—	<u>0.0026400</u>	23.8	<u>1.18</u>	<u>1.37</u>
10/26/2022	--	389.32	—	—	<u>0.02670</u>	0.319	U(0.0000204)	<u>0.09680</u>	1.15	0.0045600	<u>0.0039900</u>	270	0.08140	<u>0.276</u>
04/27/2023	--	389.21	0.0088300	0.01630	0.0041400	0.23	—	<u>0.02310</u>	0.306	—	0.000484000	9.11	U(0.00100)	0.05030
06/07/2023	--	389.92	<u>0.06440</u>	0.02320	<u>0.02440</u>	0.311	—	<u>0.05160</u>	1.43	—	0.001300	245	0.234	0.182
<b>MW-1</b>														
05/30/1997	--	380.52	—	—	<u>0.31</u>	8.50	—	<u>2.30</u>	<u>42.0</u>	—	—	—	<u>9.00</u>	<u>10.0</u>
09/11/1997	--	380.9	—	—	<u>0.571</u>	6.05	—	<u>2.00</u>	<u>55.0</u>	—	—	—	<u>12.6</u>	<u>9.37</u>
03/12/1998	--	380.56	—	—	<u>0.22</u>	5.10	—	<u>1.30</u>	<u>37.0</u>	—	—	—	<u>4.90</u>	<u>6.00</u>
07/21/1998	--	381.15	—	—	<u>0.143</u>	7.59	—	<u>0.84</u>	<u>22.0</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>16.0</u>	—	—	—	<u>4.36</u>	<u>1.929</u>
01/21/1999	--	380.44	—	—	<u>0.0360</u>	2.46	—	<u>0.24</u>	<u>6.80</u>	—	—	—	1.08	<u>1.208</u>
03/31/1999	--	379.92	—	—	<u>0.0150</u>	0.686	—	<u>0.151</u>	<u>3.30</u>	—	—	—	0.297	<u>0.703</u>
07/28/1999	--	380.78	—	—	<u>0.0870</u>	3.89	—	<u>1.96</u>	<u>46.0</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>15.0</u>	—	—	—	<u>2.97</u>	<u>2.334</u>
03/10/2000	--	380.16	—	—	<u>0.02160</u>	0.81	—	<u>0.161</u>	<u>4.70</u>	—	—	—	0.718	<u>0.783</u>
06/21/2000	--	380.96	—	—	<u>0.0220</u>	1.03	—	<u>0.284</u>	<u>7.60</u>	—	—	—	0.931	<u>1.321</u>

	Well Screen Interval	Ground Water Elevation	124-TMB	135-TMB	Benzene	DRO	EDB	Ethylbenzene	GRO	Lead	Naphthalene	Sodium	Toluene	Xylenes
Unit	ft	ft	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
<b>GW Human Health Cleanup</b>			<u>0.056</u>	<u>0.06</u>	<u>0.0046</u>	<b>1.5</b>		<u>0.015</u>	<u>2.2</u>		<u>0.0017</u>		<u>1.1</u>	<u>0.19</u>
09/21/2000	--	380.9			<u>0.03290</u>	1.61		<u>0.16</u>	<u>5.00</u>				0.471	<u>0.736</u>
01/25/2001	--	380.54			<u>0.0170</u>	0.644		<u>0.11</u>	<u>3.69</u>				0.322	<u>0.523</u>
04/19/2001	--	380.51			<u>0.01230</u>	0.92		<u>0.0460</u>	1.48				0.0970	<u>0.221</u>
07/24/2001	--	380.89			<u>0.01190</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>				0.207	<u>2.841</u>
04/30/2002	--	381.29			<u>5.02</u>	2.10		<u>0.284</u>	<u>32.2</u>				0.209	<u>3.47</u>
09/30/2002	--	381.36			<u>0.659</u>	1.11		<u>0.05510</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>				0.209	<u>20.42</u>
10/09/2003	--	380.72			0.0043700	U (0.32)		0.0018900	0.697				0.0057100	0.09980
04/21/2004	--	380.39			U (0.0005)	U (0.5)		U (0.0005)	U (0.05)				0.000709000	0.0098400
10/21/2004	--	379.96			<u>0.0054400</u>	2.41		0.0058500	<u>3.52</u>				0.0028400	<u>1.46</u>
05/19/2005	--	380.9			0.000943000	0.48		0.0027200	0.07090				0.0024800	0.02110
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)				0.00088000	U (0.0015)
05/12/2009	--	380.84			U (0.0005)	1.77		0.00077000	U (0.05)				0.0042700	0.0058600
06/15/2010	--	380.64			0.0013400	U (0.420)		<u>0.03570</u>	0.849				0.02970	<u>0.249</u>
05/24/2011	--	380.75			U (0.0005)	0.652		0.0047900	0.08570				0.00056000	0.03770
05/22/2012	--	380.53			0.000701000	U (0.410)		<u>0.07650</u>	1.41				0.0028400	<u>0.407</u>
05/21/2013	--	380.84			0.000845000	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		0.002100	U (0.05)				U (0.0005)	0.0110
05/26/2015	--	381.36			U (0.001)	2.30		0.004500	0.21				0.004400	0.0310
05/11/2016	--	380.82			0.00055000	U (0.40)		0.005300	U (0.1)				0.002600	0.0290
05/08/2017	--	381.1			U (0.002)	1.50		<u>0.0340</u>	U (10)				U (0.002)	<u>0.285</u>
06/14/2018	--	381.2			U (0.003)	0.43		0.008600	0.0280				0.002100	0.0710
05/09/2019	--	380.58			U (0.003)	0.42		U (0.003)	U (0.25)				U (0.002)	0.003400
10/06/2020	--	381.1			0.000373 J	1.27		0.0041900	0.153				0.04280	0.03740
10/13/2021	--	--			0.000246 J	1.33		0.003100	0.315				0.08830	0.03320
09/26/2022	--	381.43	0.0084400	0.0019400	0.00019000	1.32		0.0025100	0.318		0.000112000	26.8	0.184	0.04050
<b>MW-2</b>														
05/30/1997	--	388.86			<u>92.0</u>	8.20		<u>7.10</u>	<u>170</u>				<u>64.0</u>	<u>33.0</u>
03/12/1998	--	388.9			<u>2.80</u>	21.0		<u>13.0</u>	<u>420</u>				<u>44.0</u>	<u>62.0</u>
04/19/2001	--	388.85			<u>2.93</u>	27.4		<u>9.90</u>	<u>216</u>				<u>52.9</u>	<u>44.5</u>
07/24/2001	--	389.24			<u>1.95</u>	18.5		<u>5.30</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>	6.90		<u>2.60</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)	7.00		<u>0.114</u>	<u>5.42</u>				0.116	<u>1.21</u>
10/21/2004	--	388.03			<u>0.0051800</u>	1.74		<u>0.109</u>	<u>3.20</u>				0.08240	<u>0.699</u>

	<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>EDB</i>	<i>Ethylbenzene</i>	<i>GRO</i>	<i>Lead</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	ppm
<b>GW Human Health Cleanup</b>			<u>0.056</u>	<u>0.06</u>	<u>0.0046</u>	<b>1.5</b>		<u>0.015</u>	<u>2.2</u>		<u>0.0017</u>		<u>1.1</u>	<u>0.19</u>
05/19/2005	--	389.21			<u>0.0068100</u>	5.49		<u>0.376</u>	<u>7.88</u>				0.513	<u>1.61</u>
09/26/2005	--	388.93			<u>0.01250</u>	3.15		<u>0.422</u>	<u>9.60</u>				0.58	<u>1.78</u>
05/15/2006	--	388.8			0.00058000	1.87		<u>0.05330</u>	1.50				0.02730	<u>0.223</u>
11/07/2006	--	388.64			<u>0.01020</u>	1.35		<u>0.906</u>	<u>17.0</u>				<u>1.11</u>	<u>3.24</u>
05/15/2007	--	388.15			0.0027900	1.90		<u>0.03560</u>	1.99				0.01990	0.173
10/16/2007	--	388.15			0.003200	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		0.004300	0.453				U (0.0005)	0.01310
10/01/2008	--	389.24			0.0011400	1.38		<u>0.228</u>	<u>3.12</u>				0.01940	<u>0.739</u>
05/12/2009	--	389.14			0.0038500	8.79		<u>0.308</u>	<u>4.00</u>				0.01140	<u>0.537</u>
10/26/2009	--	388.76			0.0013800	0.738		<u>0.717</u>	<u>4.25</u>				0.01080	<u>1.48</u>
06/15/2010	--	388.99			0.0014300	0.51		<u>0.02050</u>	1.32				0.0013500	0.07290
10/14/2010	--	388.66			0.0019200	1.49		<u>0.127</u>	<u>4.45</u>				0.01360	<u>0.70</u>
05/24/2011	--	388.96			0.0023200	3.04		<u>0.798</u>	<u>6.24</u>				0.03130	<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>0.0056600</u>	NR		<u>0.179</u>	<u>5.17</u>				0.0027500	<u>0.503</u>
10/11/2012	--	389.13			0.00075000	0.655		0.0070700	0.687				0.01970	0.06140
05/21/2013	--	389.2			0.0017300	U (0.397)		<u>0.0190</u>	0.388				0.000638000	0.03250
09/25/2013	--	389.27			0.001300	0.573		<u>0.269</u>	<u>2.61</u>				0.0010400	<u>0.481</u>
05/06/2014	--	389.28			0.003800	0.67		<u>0.15</u>	1.80				U (0.0005)	<u>0.21</u>
09/17/2014	--	388.88			0.00072000	U (0.38)		<u>0.0960</u>	1.30				0.00068000	0.15
05/26/2015	--	389.53			0.001800	2.50		<u>0.0920</u>	1.60				U (0.003)	<u>0.21</u>
10/06/2015	--	389.86			<u>0.0360</u>	0.76		<u>0.29</u>	<u>4.70</u>				0.003900	<u>0.64</u>
05/11/2016	--	389.13			0.002300	0.73		<u>0.10</u>	1.20				U (0.001)	0.14
10/05/2016	--	389.51			U (0.020)	1.40		<u>0.15</u>	1.70				U (0.020)	<u>0.22</u>
05/08/2017	--	389.42			U (0.002)	0.68		<u>0.23</u>	<u>2.80</u>				U (0.002)	<u>0.639</u>
09/05/2017	--	389.34			0.001400	0.90		<u>0.0410</u>	1.00				U (0.001)	0.0810
06/14/2018	--	389.52			U (0.003)	0.30		<u>0.0770</u>	1.10				U (0.002)	0.1128
10/30/2018	--	389.22			U (0.003)	2.40		<u>0.0420</u>	0.69				U (0.002)	0.0620
05/09/2019	--	388.88			U (0.003)	0.26		<u>0.0230</u>	0.41				U (0.002)	0.0510
10/22/2019	--	389.44			U (0.003)	0.72		<u>0.0170</u>	0.36				U (0.002)	0.0290
08/18/2020	--	389.8			0.00074000	0.632		0.0072800	0.203				0.000886 J	0.01560
10/06/2020	--	389.4			0.0012100	0.38 J		0.01040	0.277				0.000531 J	0.02450
06/24/2021	--	389.94			0.00062 J	0.95		0.0067300	0.85				0.000453 J	0.01210
10/13/2021	--	--			0.000702 J	1.49		0.0076800	0.21				U (0.001)	0.0130
05/16/2022	--	390.75	0.01140	0.0046100	0.000328000	0.38		0.0046800	0.126		U(0.000250)	11.5	U(0.00100)	0.0076800
09/26/2022	--	389.76	0.01250	0.0062700	0.000558000	0.772		0.004600	0.174		0.000397000	15.4	0.000511000	0.0085600
04/27/2023	--	389.22	0.0064400	0.007100	0.000564000	0.719		0.007400	0.16		0.000145000	12.3	U(0.00100)	0.01220
<b>MW-3</b>														
05/30/1997	--	388.79			<b>23.0</b>	54.0		<b>12.0</b>	<b>380</b>				<b>69.0</b>	<b>54.0</b>
09/30/2002	--	389.15			<b>36.6</b>	7.38		<b>3.87</b>	<b>337</b>				<b>75.3</b>	<b>40.3</b>

	Well Screen Interval	Ground Water Elevation	124-TMB	135-TMB	Benzene	DRO	EDB	Ethylbenzene	GRO	Lead	Naphthalene	Sodium	Toluene	Xylenes
Unit	ft	ft	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
<b>GW Human Health Cleanup</b>			<u>0.056</u>	<u>0.06</u>	<u>0.0046</u>	<b>1.5</b>		<u>0.015</u>	<u>2.2</u>		<u>0.0017</u>		<u>1.1</u>	<u>0.19</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>	1.90		<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>8.90</u>
09/26/2005	--	389.12			<u>0.04960</u>	3.15		<u>0.261</u>	<u>14.6</u>				<u>1.27</u>	<u>4.24</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>0.01240</u>	2.49		<u>0.09420</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>2.30</u>	<u>17.5</u>
04/29/2008	--	388.74			<u>0.006300</u>	4.71		<u>0.01970</u>	1.44				0.143	<u>0.321</u>
10/01/2008	--	389.36			0.0030500	3.20		<u>0.05720</u>	<u>2.40</u>				0.02380	<u>0.913</u>
05/12/2009	--	389.26			<u>0.0560</u>	5.95		<u>0.624</u>	<u>17.2</u>				0.833	<u>5.70</u>
10/26/2009	--	388.7			<u>0.09030</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>0.04280</u>	2.86		<u>0.449</u>	<u>12.8</u>				0.377	<u>4.20</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>	12.0		<u>1.39</u>	<u>47.0</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>0.01020</u>	1.35		<u>0.271</u>	<u>23.2</u>				0.373	<u>3.83</u>
05/21/2013	--	389.13			<u>1.50</u>	20.3		<u>2.39</u>	<u>70.0</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>0.0370</u>	4.70		<u>0.42</u>	<u>12.0</u>				0.47	<u>3.80</u>
09/17/2014	--	388.75			<u>0.0470</u>	2.70		<u>1.20</u>	<u>26.0</u>				<u>1.50</u>	<u>14.0</u>
05/26/2015	--	389.5			<u>0.0570</u>	4.60		<u>1.60</u>	<u>79.0</u>				<u>2.00</u>	<u>13.0</u>
10/06/2015	--	389.77			<u>0.10</u>	2.20		<u>1.50</u>	<u>57.0</u>				<u>2.10</u>	<u>16.0</u>
05/11/2016	--	389.07			0.00093000	1.60		<u>0.0340</u>	1.10				0.0240	<u>0.34</u>
10/05/2016	--	389.44			<u>0.0540</u>	2.50		<u>0.92</u>	<u>21.0</u>				0.61	<u>7.90</u>
05/08/2017	--	389.37			<u>0.0210</u>	4.40		<u>0.63</u>	<u>19.0</u>				0.32	<u>6.60</u>
09/05/2017	--	389.25			<u>0.0400</u>	2.00		<u>1.00</u>	<u>30.0</u>				0.75	<u>12.0</u>
06/14/2018	--	389.44			<u>0.0270</u>	2.80		<u>1.10</u>	U (25)				0.67	<u>11.6</u>
10/30/2018	--	389.14			<u>0.0360</u>	5.70		<u>1.20</u>	<u>39.0</u>				0.37	<u>12.0</u>
05/10/2019	--	388.84			<u>0.0290</u>	0.66		<u>0.38</u>	<u>10.0</u>				0.20	<u>4.02</u>
10/22/2019	--	389.42			<u>0.0280</u>	3.7 H		<u>0.75</u>	<u>17.0</u>				0.15	<u>5.50</u>
08/18/2020	--	389.75			<u>0.02440</u>	2.84		<u>0.637</u>	<u>12.6</u>				0.194	<u>6.86</u>
10/06/2020	--	389.35			<u>0.04460</u>	3.64		<u>0.473</u>	<u>10.7</u>				0.187	<u>4.59</u>
06/24/2021	--	389.8			<u>0.02920</u>	2.03		<u>0.598</u>	<u>16.0</u>				0.278	<u>6.45</u>
10/13/2021	--	--			0.0186 J	2.16		<u>0.248</u>	<u>7.35</u>				0.08560	<u>1.80</u>
05/16/2022	--	390.69	<u>0.322</u>	<u>0.134</u>	<u>0.01320</u>	1.49		<u>0.187</u>	<u>2.38</u>		<u>0.0035400</u>	42.0	0.131	<u>1.71</u>
09/26/2022	--	389.68	<u>0.473</u>	<u>0.166</u>	<u>0.01680</u>	1.30		<u>0.354</u>	<u>4.78</u>		<u>0.01480</u>	45.4	0.33	<u>2.77</u>
10/26/2022	--	389.26			<u>0.009900</u>	1.18	U(0.000216)	<u>0.383</u>	<u>6.65</u>	0.0067300	<u>0.01580</u>	51.7	0.22	<u>3.25</u>

	Well Screen Interval	Ground Water Elevation	124-TMB	135-TMB	Benzene	DRO	EDB	Ethylbenzene	GRO	Lead	Naphthalene	Sodium	Toluene	Xylenes
Unit	ft	ft	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
<b>GW Human Health Cleanup</b>			<u>0.056</u>	<u>0.06</u>	<u>0.0046</u>	<b>1.5</b>		<u>0.015</u>	<u>2.2</u>		<u>0.0017</u>		<u>1.1</u>	<u>0.19</u>
04/27/2023	--	389.17	<u>0.137</u>	0.05110	<u>0.0130</u>	1.72	--	<u>0.219</u>	<u>4.97</u>	--	<u>0.0091700</u>	42.1	0.232	<u>1.63</u>
<b>MW-4</b>														
05/30/1997	--	380.39	--	--	<u>0.85</u>	0.55	--	<u>0.16</u>	<u>3.80</u>	--	--	--	0.71	<u>0.64</u>
09/11/1997	--	380.8	--	--	<u>8.41</u>	1.71	--	<u>1.15</u>	<u>64.0</u>	--	--	--	<u>14.5</u>	<u>5.57</u>
03/12/1998	--	380.44	--	--	<u>2.30</u>	0.68	--	<u>0.42</u>	<u>15.0</u>	--	--	--	<u>3.30</u>	<u>1.80</u>
07/21/1998	--	381.01	--	--	<u>3.71</u>	0.70	--	<u>0.485</u>	<u>21.0</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>12.0</u>	--	--	--	<u>1.99</u>	<u>1.58</u>
01/21/1999	--	380.35	--	--	<u>0.94</u>	0.70	--	<u>0.127</u>	<u>4.30</u>	--	--	--	0.483	<u>0.579</u>
07/28/1999	--	380.63	--	--	<u>3.48</u>	2.65	--	<u>0.39</u>	<u>21.0</u>	--	--	--	<u>5.60</u>	<u>1.86</u>
10/15/1999	--	380.41	--	--	<u>3.30</u>	3.84	--	<u>0.422</u>	<u>26.0</u>	--	--	--	<u>5.40</u>	<u>1.962</u>
03/10/2000	--	380.05	--	--	<u>1.88</u>	1.91	--	<u>0.466</u>	<u>14.0</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>10.0</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)	--	0.0110	0.225	--	--	--	0.0150	0.0660
07/24/2001	--	380.77	--	--	0.00100	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>0.06440</u>	U (0.495)	--	<u>0.509</u>	0.623	--	--	U (0.002)		0.128
09/30/2002	--	380.82	--	--	<u>0.01570</u>	U (0.5)	--	0.0052300	0.09430	--	--	U (0.002)		0.01140
05/12/2003	--	381.29	--	--	<u>0.01380</u>	U (0.3)	--	0.0059500	0.167	--	--	0.0026800		0.052520
10/09/2003	--	380.52	--	--	<u>0.03110</u>	2.95	--	0.0055500	0.266	--	--	U (0.0005)		0.06570
04/21/2004	--	380.25	--	--	0.0029500	U (0.5)	--	0.0050600	0.311	--	--	U (0.0005)		0.113
10/21/2004	--	379.42	--	--	<u>0.01210</u>	0.455	--	U (0.0005)	0.06460	--	--	U (0.0005)		0.0079100
05/19/2005	--	380.76	--	--	0.0029500	U (0.391)	--	U (0.0005)	0.0670	--	--	U (0.0005)		0.01670
05/15/2006	--	380.23	--	--	0.000635000	U (0.403)	--	U (0.0005)	0.0510	--	--	U (0.0005)		0.0091900
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	--	--	0.0017500	3.78	--	0.0009700	1.75	--	--	0.0033800		<u>1.20</u>
05/12/2009	--	380.58	--	--	U (0.0005)	U (0.427)	--	U (0.0005)	U (0.05)	--	--	0.0012100		0.0018900
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)	0.01440	--	--	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

	Well Screen Interval	Ground Water Elevation	124-TMB	135-TMB	Benzene	DRO	EDB	Ethylbenzene	GRO	Lead	Naphthalene	Sodium	Toluene	Xylenes
Unit	ft	ft	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
<b>GW Human Health Cleanup</b>			<u>0.056</u>	<u>0.06</u>	<u>0.0046</u>	<b>1.5</b>		<u>0.015</u>	<u>2.2</u>		<u>0.0017</u>		<u>1.1</u>	<u>0.19</u>
09/26/2022	--	381.31	0.000362000	U(0.00100)	U(0.00100)	2.68	--	U(0.00100)	0.03320	--	U(0.000250)	13.1	U(0.00100)	0.000534000
<b>MW-5</b>														
10/12/1998	--	--	--	--	<u>0.0190</u>	0.11	--	U	0.0450	--	--	--	U	0.00200
01/21/1999	--	--	--	--	<u>0.0510</u>	0.127	--	U	0.11	--	--	--	U	U
03/31/1999	--	--	--	--	<u>0.0230</u>	U (0.297)	--	U (0.001)	U (0.09)	--	--	--	U (0.001)	0.001300
07/28/1999	--	--	--	--	<u>0.00800</u>	U (0.300)	--	U (0.002)	U (0.09)	--	--	--	U (0.002)	U (0.002)
10/15/1999	--	--	--	--	<u>0.0400</u>	U (0.297)	--	U (0.002)	0.11	--	--	--	U (0.002)	U (0.002)
03/10/2000	--	--	--	--	<u>0.104</u>	U (0.297)	--	U (0.002)	0.22	--	--	--	0.00300	0.00500
06/21/2000	--	--	--	--	<u>0.0250</u>	U (0.297)	--	U (0.002)	U (0.09)	--	--	--	U (0.002)	U (0.002)
09/21/2000	--	--	--	--	<u>0.0250</u>	U (0.303)	--	U (0.002)	U (0.09)	--	--	--	U (0.002)	U (0.002)
01/25/2001	--	--	--	--	<u>0.0660</u>	U (0.300)	--	0.00200	0.19	--	--	--	0.00300	0.00700
04/19/2001	--	--	--	--	U(0.0005)	U(0.816)	--	0.00300	U (0.09)	--	--	--	0.00200	0.00300
07/24/2001	--	--	--	--	U(0.0005)	U (0.495)	--	U (0.002)	U (0.09)	--	--	--	U (0.002)	U (0.002)
01/28/2002	--	--	--	--	0.002900	U (0.521)	--	U (0.002)	U (0.09)	--	--	--	U (0.002)	0.00200
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)	0.0015400
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)
<b>MW-6</b>														
06/21/2000	--	376.32	--	--	0.001200	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	--	--	0.00051000	U (0.3)	--	U (0.002)	U (0.09)	--	--	--	0.002600	0.00300
04/19/2001	--	375.98	--	--	U (0.0005)	U(0.808)	--	U (0.002)	U (0.09)	--	--	--	U (0.002)	0.00300
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	--	--	0.000565000	U (0.500)	--	0.0020300	U (0.09)	--	--	--	0.0041100	0.010810
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)

	Well Screen Interval	Ground Water Elevation	124-TMB	135-TMB	Benzene	DRO	EDB	Ethylbenzene	GRO	Lead	Naphthalene	Sodium	Toluene	Xylenes
Unit	ft	ft	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
<b>GW Human Health Cleanup</b>			<u>0.056</u>	<u>0.06</u>	<u>0.0046</u>	<u>1.5</u>		<u>0.015</u>	<u>2.2</u>		<u>0.0017</u>		<u>1.1</u>	<u>0.19</u>
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)
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)	0.008400
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)	0.000221000
05/16/2022	--	377.55	U(0.00100)	0.000565000	U(0.00100)	U(0.840)		0.000372000	0.0850		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)	0.04650		U(0.000250)	10.1	U(0.00100)	U(0.00300)
06/07/2023	--	376.95	U(0.00100)	U(0.00100)	U(0.00100)	U(0.800)		U(0.00100)	U(0.100)		U(0.000250)	7.78	U(0.00100)	U(0.00300)
<b>MW-7</b>														
10/09/2003	--	--			<u>0.02370</u>	U (0.32)		0.0140	<u>2.36</u>				0.0018500	0.08770
04/21/2004	--	--			U (0.0005)	U (0.5)		U (0.0005)	U (0.05)				U (0.0005)	U (0.0015)
10/21/2004	--	--			0.0032500	0.508		0.000934000	0.298				U (0.0005)	0.0049800
05/19/2005	--	--			0.000909000	U (0.391)		0.000527000	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)		0.00063000	1.16				U (0.0005)	0.0023100
<b>MW-8</b>														
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)



	<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>EDB</i>	<i>Ethylbenzene</i>	<i>GRO</i>	<i>Lead</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	ppm
<b>GW Human Health Cleanup</b>			<u>0.056</u>	<u>0.06</u>	<u>0.0046</u>	<b>1.5</b>		<u>0.015</u>	<u>2.2</u>		<u>0.0017</u>		<u>1.1</u>	<u>0.19</u>
10/21/2004	--	--			0.000298000	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)		0.00067000	U (0.05)				0.00062000	0.0019900
<b>MW-9</b>														
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	--	--			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)	0.0018200
<b>MW-10</b>														
09/17/2004	--	--			<u>0.01030</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)				0.000745000	0.0084300
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)	0.002700
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)

	<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>EDB</i>	<i>Ethylbenzene</i>	<i>GRO</i>	<i>Lead</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	ppm
<b>GW Human Health Cleanup</b>			<u>0.056</u>	<u>0.06</u>	<u>0.0046</u>	<b>1.5</b>		<u>0.015</u>	<u>2.2</u>		<u>0.0017</u>		<u>1.1</u>	<u>0.19</u>
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)	2.60	—	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)	0.005600
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)
08/18/2020	--	374.92	—	—	U (0.0002)	J (0.283)	—	U (0.0005)	U (0.050)	—	—	—	U (0.0005)	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)
06/24/2021	--	374.81	—	—	U (0.001)	U (0.800)	—	U (0.001)	U (0.0100)	—	—	—	U (0.001)	U (0.003)
10/13/2021	--	--	—	—	0.0024700	0.403 J	—	U (0.001)	U (0.1)	—	—	—	U (0.001)	U (0.003)
05/16/2022	--	387.58	U(0.00100)	U(0.00100)	<b>0.0097400</b>	U(0.800)	—	U(0.00100)	0.0330	—	U(0.000250)	6.53	0.0038700	0.000289000
09/26/2022	--	374.87	U(0.00100)	U(0.00100)	U(0.00100)	U(0.872)	—	U(0.00100)	0.02940	—	U(0.000250)	7.56	U(0.00100)	U(0.00300)
04/27/2023	--	374.56	U(0.00100)	U(0.00100)	U(0.00100)	0.203	—	U(0.00100)	0.04930	—	U(0.000250)	9.10	U(0.00100)	U(0.00300)

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## **APPENDIX E**

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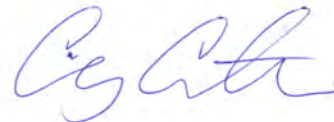
*Laboratory Analytical Report and ADEC  
Laboratory Data Review Checklist*

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## Stantec - Anchorage, AK

Sample Delivery Group: L1624130  
Samples Received: 06/08/2023  
Project Number: 203723076  
Description: Speedway 5310 - North Pole, AK  
Site: SPEEDWAY 5310  
Report To: Ms. Leslie Petre  
725 E Fireweed Lane  
Suite 200  
Anchorage, AK 99503

Entire Report Reviewed By:



Craig Cothron  
Project Manager

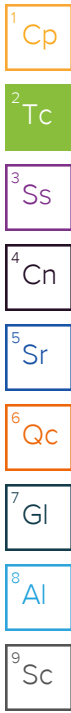
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Pace Analytical National

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

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# SAMPLE SUMMARY

## MW-6 L1624130-01 GW

Collected by Geoff Moorhead    Collected date/time 06/07/23 09:46    Received date/time 06/08/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG2074344	1	06/09/23 13:38	06/16/23 14:13	SPL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG2074800	1	06/10/23 07:14	06/10/23 07:14	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG2075829	1	06/12/23 12:01	06/12/23 12:01	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG2074406	1	06/13/23 19:39	06/14/23 22:53	MWS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG2075713	1	06/12/23 16:58	06/12/23 23:01	MBE	Mt. Juliet, TN

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

## MW-17-2 L1624130-02 GW

Collected by Geoff Moorhead    Collected date/time 06/07/23 10:39    Received date/time 06/08/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG2074344	5	06/09/23 13:38	06/16/23 14:16	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG2075430	5	06/11/23 13:34	06/11/23 13:34	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG2075829	1	06/12/23 12:23	06/12/23 12:23	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG2081759	1	06/21/23 21:27	06/22/23 13:55	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG2075713	1	06/12/23 16:58	06/13/23 03:29	MBE	Mt. Juliet, TN

## MW 17-5 L1624130-03 GW

Collected by Geoff Moorhead    Collected date/time 06/07/23 10:26    Received date/time 06/08/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG2074344	1	06/09/23 13:38	06/16/23 14:19	SPL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG2075430	1	06/11/23 13:07	06/11/23 13:07	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG2075829	1	06/12/23 12:45	06/12/23 12:45	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG2076600	10	06/13/23 18:51	06/13/23 18:51	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG2074406	1	06/13/23 19:39	06/14/23 23:40	MWS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG2075713	1	06/12/23 16:58	06/13/23 03:47	MBE	Mt. Juliet, TN

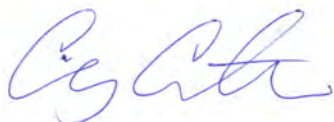
## DUPLICATE L1624130-04 GW

Collected by Geoff Moorhead    Collected date/time 06/07/23 00:00    Received date/time 06/08/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG2074344	5	06/09/23 13:38	06/16/23 14:22	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG2075430	5	06/11/23 14:00	06/11/23 14:00	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG2075829	1	06/12/23 13:50	06/12/23 13:50	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG2078826	1.05	06/16/23 05:28	06/17/23 18:05	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG2075713	1	06/12/23 16:58	06/13/23 04:05	MBE	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

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Sodium	7.78		0.504	3.00	1	06/16/2023 14:13	<a href="#">WG2074344</a>

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	U		0.0287	0.100	1	06/10/2023 07:14	<a href="#">WG2074800</a>
(S) a,a,a-Trifluorotoluene(FID)	80.3			50.0-150		06/10/2023 07:14	<a href="#">WG2074800</a>
(S) a,a,a-Trifluorotoluene(PID)	102			79.0-125		06/10/2023 07:14	<a href="#">WG2074800</a>

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

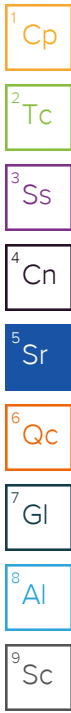
Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Benzene	U		0.0000941	0.00100	1	06/12/2023 12:01	<a href="#">WG2075829</a>
n-Butylbenzene	U		0.000157	0.00100	1	06/12/2023 12:01	<a href="#">WG2075829</a>
sec-Butylbenzene	U		0.000125	0.00100	1	06/12/2023 12:01	<a href="#">WG2075829</a>
tert-Butylbenzene	U		0.000127	0.00100	1	06/12/2023 12:01	<a href="#">WG2075829</a>
Ethylbenzene	U		0.000137	0.00100	1	06/12/2023 12:01	<a href="#">WG2075829</a>
Isopropylbenzene	U		0.000105	0.00100	1	06/12/2023 12:01	<a href="#">WG2075829</a>
Naphthalene	U		0.00100	0.00500	1	06/12/2023 12:01	<a href="#">WG2075829</a>
Toluene	U		0.000278	0.00100	1	06/12/2023 12:01	<a href="#">WG2075829</a>
1,2,4-Trimethylbenzene	U		0.000322	0.00100	1	06/12/2023 12:01	<a href="#">WG2075829</a>
1,3,5-Trimethylbenzene	U		0.000104	0.00100	1	06/12/2023 12:01	<a href="#">WG2075829</a>
Total Xylenes	U		0.000174	0.00300	1	06/12/2023 12:01	<a href="#">WG2075829</a>
(S) Toluene-d8	104			80.0-120		06/12/2023 12:01	<a href="#">WG2075829</a>
(S) 4-Bromofluorobenzene	90.9			77.0-126		06/12/2023 12:01	<a href="#">WG2075829</a>
(S) 1,2-Dichloroethane-d4	82.6			70.0-130		06/12/2023 12:01	<a href="#">WG2075829</a>

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		0.170	0.800	1	06/14/2023 22:53	<a href="#">WG2074406</a>
(S) o-Terphenyl	71.0			50.0-150		06/14/2023 22:53	<a href="#">WG2074406</a>

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	06/12/2023 23:01	<a href="#">WG2075713</a>
Acenaphthene	U		0.0000190	0.0000500	1	06/12/2023 23:01	<a href="#">WG2075713</a>
Acenaphthylene	U		0.0000171	0.0000500	1	06/12/2023 23:01	<a href="#">WG2075713</a>
Benzo(a)anthracene	U		0.0000203	0.0000500	1	06/12/2023 23:01	<a href="#">WG2075713</a>
Benzo(a)pyrene	U		0.0000184	0.0000500	1	06/12/2023 23:01	<a href="#">WG2075713</a>
Benzo(b)fluoranthene	U		0.0000168	0.0000500	1	06/12/2023 23:01	<a href="#">WG2075713</a>
Benzo(g,h,i)perylene	U		0.0000184	0.0000500	1	06/12/2023 23:01	<a href="#">WG2075713</a>
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	06/12/2023 23:01	<a href="#">WG2075713</a>
Chrysene	U		0.0000179	0.0000500	1	06/12/2023 23:01	<a href="#">WG2075713</a>
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	06/12/2023 23:01	<a href="#">WG2075713</a>
Fluoranthene	U		0.0000270	0.000100	1	06/12/2023 23:01	<a href="#">WG2075713</a>
Fluorene	U		0.0000169	0.0000500	1	06/12/2023 23:01	<a href="#">WG2075713</a>
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	06/12/2023 23:01	<a href="#">WG2075713</a>
Naphthalene	U		0.0000917	0.000250	1	06/12/2023 23:01	<a href="#">WG2075713</a>
Phenanthrene	U		0.0000180	0.0000500	1	06/12/2023 23:01	<a href="#">WG2075713</a>
Pyrene	U		0.0000169	0.0000500	1	06/12/2023 23:01	<a href="#">WG2075713</a>
1-Methylnaphthalene	U		0.0000687	0.000250	1	06/12/2023 23:01	<a href="#">WG2075713</a>





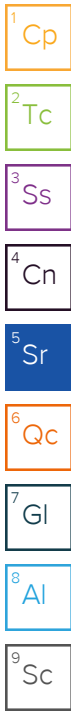
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
2-Methylnaphthalene	U		0.0000674	0.000250	1	06/12/2023 23:01	<a href="#">WG2075713</a>
(S) Nitrobenzene-d5	125			31.0-160		06/12/2023 23:01	<a href="#">WG2075713</a>
(S) 2-Fluorobiphenyl	104			48.0-148		06/12/2023 23:01	<a href="#">WG2075713</a>
(S) p-Terphenyl-d14	104			37.0-146		06/12/2023 23:01	<a href="#">WG2075713</a>

- 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	1280		2.52	15.0	5	06/16/2023 14:16	<a href="#">WG2074344</a>



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	0.425	<u>B</u> <u>J</u>	0.143	0.500	5	06/11/2023 13:34	<a href="#">WG2075430</a>
(S) a,a,a-Trifluorotoluene(FID)	82.7			50.0-150		06/11/2023 13:34	<a href="#">WG2075430</a>
(S) a,a,a-Trifluorotoluene(PID)	101			79.0-125		06/11/2023 13:34	<a href="#">WG2075430</a>

Sample Narrative:

L1624130-02 WG2075430: Lowest possible dilution due to sample foaming.

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	0.00105		0.0000941	0.00100	1	06/12/2023 12:23	<a href="#">WG2075829</a>
n-Butylbenzene	U		0.000157	0.00100	1	06/12/2023 12:23	<a href="#">WG2075829</a>
sec-Butylbenzene	0.00120		0.000125	0.00100	1	06/12/2023 12:23	<a href="#">WG2075829</a>
tert-Butylbenzene	U		0.000127	0.00100	1	06/12/2023 12:23	<a href="#">WG2075829</a>
Ethylbenzene	0.0169		0.000137	0.00100	1	06/12/2023 12:23	<a href="#">WG2075829</a>
Isopropylbenzene	0.00428		0.000105	0.00100	1	06/12/2023 12:23	<a href="#">WG2075829</a>
Naphthalene	0.00299	<u>J</u>	0.00100	0.00500	1	06/12/2023 12:23	<a href="#">WG2075829</a>
Toluene	0.000829	<u>J</u>	0.000278	0.00100	1	06/12/2023 12:23	<a href="#">WG2075829</a>
1,2,4-Trimethylbenzene	0.0937		0.000322	0.00100	1	06/12/2023 12:23	<a href="#">WG2075829</a>
1,3,5-Trimethylbenzene	0.0187		0.000104	0.00100	1	06/12/2023 12:23	<a href="#">WG2075829</a>
Total Xylenes	0.0384		0.000174	0.00300	1	06/12/2023 12:23	<a href="#">WG2075829</a>
(S) Toluene-d8	103			80.0-120		06/12/2023 12:23	<a href="#">WG2075829</a>
(S) 4-Bromofluorobenzene	92.0			77.0-126		06/12/2023 12:23	<a href="#">WG2075829</a>
(S) 1,2-Dichloroethane-d4	84.2			70.0-130		06/12/2023 12:23	<a href="#">WG2075829</a>

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	0.995		0.170	0.800	1	06/22/2023 13:55	<a href="#">WG2081759</a>
(S) o-Terphenyl	50.2			50.0-150		06/22/2023 13:55	<a href="#">WG2081759</a>

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	06/13/2023 03:29	<a href="#">WG2075713</a>
Acenaphthene	0.000108		0.0000190	0.0000500	1	06/13/2023 03:29	<a href="#">WG2075713</a>
Acenaphthylene	U		0.0000171	0.0000500	1	06/13/2023 03:29	<a href="#">WG2075713</a>
Benzo(a)anthracene	U		0.0000203	0.0000500	1	06/13/2023 03:29	<a href="#">WG2075713</a>
Benzo(a)pyrene	U		0.0000184	0.0000500	1	06/13/2023 03:29	<a href="#">WG2075713</a>
Benzo(b)fluoranthene	U		0.0000168	0.0000500	1	06/13/2023 03:29	<a href="#">WG2075713</a>
Benzo(g,h,i)perylene	U		0.0000184	0.0000500	1	06/13/2023 03:29	<a href="#">WG2075713</a>
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	06/13/2023 03:29	<a href="#">WG2075713</a>
Chrysene	U		0.0000179	0.0000500	1	06/13/2023 03:29	<a href="#">WG2075713</a>
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	06/13/2023 03:29	<a href="#">WG2075713</a>
Fluoranthene	U		0.0000270	0.000100	1	06/13/2023 03:29	<a href="#">WG2075713</a>
Fluorene	0.000120		0.0000169	0.0000500	1	06/13/2023 03:29	<a href="#">WG2075713</a>
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	06/13/2023 03:29	<a href="#">WG2075713</a>
Naphthalene	0.00349		0.0000917	0.000250	1	06/13/2023 03:29	<a href="#">WG2075713</a>

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	0.0000571		0.0000180	0.0000500	1	06/13/2023 03:29	<a href="#">WG2075713</a>
Pyrene	0.0000447	J	0.0000169	0.0000500	1	06/13/2023 03:29	<a href="#">WG2075713</a>
1-Methylnaphthalene	0.00338		0.0000687	0.000250	1	06/13/2023 03:29	<a href="#">WG2075713</a>
2-Methylnaphthalene	0.00306		0.0000674	0.000250	1	06/13/2023 03:29	<a href="#">WG2075713</a>
(S) Nitrobenzene-d5	143			31.0-160		06/13/2023 03:29	<a href="#">WG2075713</a>
(S) 2-Fluorobiphenyl	97.4			48.0-148		06/13/2023 03:29	<a href="#">WG2075713</a>
(S) p-Terphenyl-d14	88.4			37.0-146		06/13/2023 03:29	<a href="#">WG2075713</a>

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	245		0.504	3.00	1	06/16/2023 14:19	<a href="#">WG2074344</a>

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	1.43		0.0287	0.100	1	06/11/2023 13:07	<a href="#">WG2075430</a>
(S) a,a,a-Trifluorotoluene(FID)	82.2			50.0-150		06/11/2023 13:07	<a href="#">WG2075430</a>
(S) a,a,a-Trifluorotoluene(PID)	99.9			79.0-125		06/11/2023 13:07	<a href="#">WG2075430</a>

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	0.0244		0.0000941	0.00100	1	06/12/2023 12:45	<a href="#">WG2075829</a>
n-Butylbenzene	U		0.000157	0.00100	1	06/12/2023 12:45	<a href="#">WG2075829</a>
sec-Butylbenzene	0.00129		0.000125	0.00100	1	06/12/2023 12:45	<a href="#">WG2075829</a>
tert-Butylbenzene	0.00981		0.000127	0.00100	1	06/12/2023 12:45	<a href="#">WG2075829</a>
Ethylbenzene	0.0516		0.000137	0.00100	1	06/12/2023 12:45	<a href="#">WG2075829</a>
Isopropylbenzene	0.00653		0.000105	0.00100	1	06/12/2023 12:45	<a href="#">WG2075829</a>
Naphthalene	0.00162	J	0.00100	0.00500	1	06/12/2023 12:45	<a href="#">WG2075829</a>
Toluene	0.234		0.00278	0.0100	10	06/13/2023 18:51	<a href="#">WG2076600</a>
1,2,4-Trimethylbenzene	0.0644		0.000322	0.00100	1	06/12/2023 12:45	<a href="#">WG2075829</a>
1,3,5-Trimethylbenzene	0.0232		0.000104	0.00100	1	06/12/2023 12:45	<a href="#">WG2075829</a>
Total Xylenes	0.182		0.000174	0.00300	1	06/12/2023 12:45	<a href="#">WG2075829</a>
(S) Toluene-d8	98.3			80.0-120		06/12/2023 12:45	<a href="#">WG2075829</a>
(S) Toluene-d8	108			80.0-120		06/13/2023 18:51	<a href="#">WG2076600</a>
(S) 4-Bromofluorobenzene	90.4			77.0-126		06/12/2023 12:45	<a href="#">WG2075829</a>
(S) 4-Bromofluorobenzene	110			77.0-126		06/13/2023 18:51	<a href="#">WG2076600</a>
(S) 1,2-Dichloroethane-d4	86.1			70.0-130		06/12/2023 12:45	<a href="#">WG2075829</a>
(S) 1,2-Dichloroethane-d4	108			70.0-130		06/13/2023 18:51	<a href="#">WG2076600</a>

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	0.311	J	0.170	0.800	1	06/14/2023 23:40	<a href="#">WG2074406</a>
(S) o-Terphenyl	63.7			50.0-150		06/14/2023 23:40	<a href="#">WG2074406</a>

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	06/13/2023 03:47	<a href="#">WG2075713</a>
Acenaphthene	0.0000320	J	0.0000190	0.0000500	1	06/13/2023 03:47	<a href="#">WG2075713</a>
Acenaphthylene	U		0.0000171	0.0000500	1	06/13/2023 03:47	<a href="#">WG2075713</a>
Benzo(a)anthracene	U		0.0000203	0.0000500	1	06/13/2023 03:47	<a href="#">WG2075713</a>
Benzo(a)pyrene	U		0.0000184	0.0000500	1	06/13/2023 03:47	<a href="#">WG2075713</a>
Benzo(b)fluoranthene	U		0.0000168	0.0000500	1	06/13/2023 03:47	<a href="#">WG2075713</a>
Benzo(g,h,i)perylene	U		0.0000184	0.0000500	1	06/13/2023 03:47	<a href="#">WG2075713</a>
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	06/13/2023 03:47	<a href="#">WG2075713</a>
Chrysene	U		0.0000179	0.0000500	1	06/13/2023 03:47	<a href="#">WG2075713</a>
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	06/13/2023 03:47	<a href="#">WG2075713</a>
Fluoranthene	U		0.0000270	0.000100	1	06/13/2023 03:47	<a href="#">WG2075713</a>
Fluorene	0.0000368	J	0.0000169	0.0000500	1	06/13/2023 03:47	<a href="#">WG2075713</a>
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	06/13/2023 03:47	<a href="#">WG2075713</a>
Naphthalene	0.00130		0.0000917	0.000250	1	06/13/2023 03:47	<a href="#">WG2075713</a>

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	U		0.0000180	0.0000500	1	06/13/2023 03:47	<a href="#">WG2075713</a>
Pyrene	U		0.0000169	0.0000500	1	06/13/2023 03:47	<a href="#">WG2075713</a>
1-Methylnaphthalene	0.000461		0.0000687	0.000250	1	06/13/2023 03:47	<a href="#">WG2075713</a>
2-Methylnaphthalene	0.000573		0.0000674	0.000250	1	06/13/2023 03:47	<a href="#">WG2075713</a>
<i>(S)</i> Nitrobenzene-d5	119			31.0-160		06/13/2023 03:47	<a href="#">WG2075713</a>
<i>(S)</i> 2-Fluorobiphenyl	103			48.0-148		06/13/2023 03:47	<a href="#">WG2075713</a>
<i>(S)</i> p-Terphenyl-d14	108			37.0-146		06/13/2023 03:47	<a href="#">WG2075713</a>

- 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	1030		2.52	15.0	5	06/16/2023 14:22	<a href="#">WG2074344</a>

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	0.328	<u>B</u> <u>J</u>	0.143	0.500	5	06/11/2023 14:00	<a href="#">WG2075430</a>
(S) a,a,a-Trifluorotoluene(FID)	82.3			50.0-150		06/11/2023 14:00	<a href="#">WG2075430</a>
(S) a,a,a-Trifluorotoluene(PID)	101			79.0-125		06/11/2023 14:00	<a href="#">WG2075430</a>

Sample Narrative:

L1624130-04 WG2075430: Lowest possible dilution due to sample foaming.

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	0.000881	<u>J</u>	0.0000941	0.00100	1	06/12/2023 13:50	<a href="#">WG2075829</a>
n-Butylbenzene	U		0.000157	0.00100	1	06/12/2023 13:50	<a href="#">WG2075829</a>
sec-Butylbenzene	0.000941	<u>J</u>	0.000125	0.00100	1	06/12/2023 13:50	<a href="#">WG2075829</a>
tert-Butylbenzene	0.0122		0.000127	0.00100	1	06/12/2023 13:50	<a href="#">WG2075829</a>
Ethylbenzene	0.0138		0.000137	0.00100	1	06/12/2023 13:50	<a href="#">WG2075829</a>
Isopropylbenzene	0.00349		0.000105	0.00100	1	06/12/2023 13:50	<a href="#">WG2075829</a>
Naphthalene	0.00259	<u>J</u>	0.00100	0.00500	1	06/12/2023 13:50	<a href="#">WG2075829</a>
Toluene	0.000753	<u>J</u>	0.000278	0.00100	1	06/12/2023 13:50	<a href="#">WG2075829</a>
1,2,4-Trimethylbenzene	0.0803		0.000322	0.00100	1	06/12/2023 13:50	<a href="#">WG2075829</a>
1,3,5-Trimethylbenzene	0.0128		0.000104	0.00100	1	06/12/2023 13:50	<a href="#">WG2075829</a>
Total Xylenes	0.0316		0.000174	0.00300	1	06/12/2023 13:50	<a href="#">WG2075829</a>
(S) Toluene-d8	101			80.0-120		06/12/2023 13:50	<a href="#">WG2075829</a>
(S) 4-Bromofluorobenzene	87.9			77.0-126		06/12/2023 13:50	<a href="#">WG2075829</a>
(S) 1,2-Dichloroethane-d4	83.8			70.0-130		06/12/2023 13:50	<a href="#">WG2075829</a>

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	1.50	<u>B</u>	0.179	0.840	1.05	06/17/2023 18:05	<a href="#">WG2078826</a>
(S) o-Terphenyl	43.1	<u>J2</u>		50.0-150		06/17/2023 18:05	<a href="#">WG2078826</a>

Sample Narrative:

L1624130-04 WG2078826: Duplicate Analysis performed due to surrogate failure. Reporting most compliant data.

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	06/13/2023 04:05	<a href="#">WG2075713</a>
Acenaphthene	0.0000874		0.0000190	0.0000500	1	06/13/2023 04:05	<a href="#">WG2075713</a>
Acenaphthylene	0.0000261	<u>J</u>	0.0000171	0.0000500	1	06/13/2023 04:05	<a href="#">WG2075713</a>
Benzo(a)anthracene	U		0.0000203	0.0000500	1	06/13/2023 04:05	<a href="#">WG2075713</a>
Benzo(a)pyrene	U		0.0000184	0.0000500	1	06/13/2023 04:05	<a href="#">WG2075713</a>
Benzo(b)fluoranthene	0.0000213	<u>J</u>	0.0000168	0.0000500	1	06/13/2023 04:05	<a href="#">WG2075713</a>
Benzo(g,h,i)perylene	0.0000211	<u>J</u>	0.0000184	0.0000500	1	06/13/2023 04:05	<a href="#">WG2075713</a>
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	06/13/2023 04:05	<a href="#">WG2075713</a>
Chrysene	U		0.0000179	0.0000500	1	06/13/2023 04:05	<a href="#">WG2075713</a>
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	06/13/2023 04:05	<a href="#">WG2075713</a>
Fluoranthene	0.0000298	<u>J</u>	0.0000270	0.000100	1	06/13/2023 04:05	<a href="#">WG2075713</a>

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	0.0000972		0.0000169	0.0000500	1	06/13/2023 04:05	<a href="#">WG2075713</a>
Indeno(1,2,3-cd)pyrene	0.0000167	↓	0.0000158	0.0000500	1	06/13/2023 04:05	<a href="#">WG2075713</a>
Naphthalene	0.00306		0.0000917	0.000250	1	06/13/2023 04:05	<a href="#">WG2075713</a>
Phenanthrene	0.0000540		0.0000180	0.0000500	1	06/13/2023 04:05	<a href="#">WG2075713</a>
Pyrene	0.0000566		0.0000169	0.0000500	1	06/13/2023 04:05	<a href="#">WG2075713</a>
1-Methylnaphthalene	0.00264		0.0000687	0.000250	1	06/13/2023 04:05	<a href="#">WG2075713</a>
2-Methylnaphthalene	0.00238		0.0000674	0.000250	1	06/13/2023 04:05	<a href="#">WG2075713</a>
(S) Nitrobenzene-d5	145			31.0-160		06/13/2023 04:05	<a href="#">WG2075713</a>
(S) 2-Fluorobiphenyl	93.7			48.0-148		06/13/2023 04:05	<a href="#">WG2075713</a>
(S) p-Terphenyl-d14	83.2			37.0-146		06/13/2023 04:05	<a href="#">WG2075713</a>

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

Method Blank (MB)

(MB) R3937725-1 06/16/23 13:25

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

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

Laboratory Control Sample (LCS)

(LCS) R3937725-2 06/16/23 13:28

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Sodium	10.0	9.71	97.1	80.0-120	

<sup>4</sup>Cn

<sup>5</sup>Sr

L1624053-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1624053-01 06/16/23 13:31 • (MS) R3937725-4 06/16/23 13:36 • (MSD) R3937725-5 06/16/23 13:39

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	396	400	404	36.7	79.2	1	75.0-125	<u>V</u>		1.06	20

<sup>6</sup>Qc

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>Sc



Method Blank (MB)

(MB) R3935507-4 06/09/23 16:32

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)	82.7			60.0-120
(S) a,a,a-Trifluorotoluene(PID)	101			79.0-125

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

(LCS) R3935507-1 06/09/23 14:17 • (LCSD) R3935507-3 06/09/23 15:39

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	4.11	4.40	82.2	88.0	60.0-120			6.82	20
(S) a,a,a-Trifluorotoluene(FID)				93.9	95.2	60.0-120				
(S) a,a,a-Trifluorotoluene(PID)				115	115	79.0-125				

L1624055-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1624055-01 06/10/23 02:32 • (MS) R3935507-5 06/10/23 09:27 • (MSD) R3935507-6 06/10/23 09:54

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPHGAK C6 to C10	5.00	0.645	5.33	3.70	93.7	61.1	1	70.0-130		J3 J6	36.1	20
(S) a,a,a-Trifluorotoluene(FID)					95.1	90.0		50.0-150				
(S) a,a,a-Trifluorotoluene(PID)					113	109		79.0-125				

L1623253-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1623253-01 06/09/23 22:07 • (MS) R3935507-7 06/10/23 10:20 • (MSD) R3935507-8 06/10/23 12:06

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPHGAK C6 to C10	5.00	U	4.26	4.48	85.2	89.6	1	70.0-130			5.03	20
(S) a,a,a-Trifluorotoluene(FID)					93.9	98.5		50.0-150				
(S) a,a,a-Trifluorotoluene(PID)					114	113		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) R3936773-3 06/11/23 12:40

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
TPHGAK C6 to C10	0.0332	↓	0.0287	0.100
(S) a,a,a-Trifluorotoluene(FID)	84.6			60.0-120
(S) a,a,a-Trifluorotoluene(PID)	102			79.0-125

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

(LCS) R3936773-1 06/11/23 11:12 • (LCSD) R3936773-2 06/11/23 11:39

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	4.49	5.10	89.8	102	60.0-120			12.7	20
(S) a,a,a-Trifluorotoluene(FID)				91.5	91.7	60.0-120				
(S) a,a,a-Trifluorotoluene(PID)				115	118	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) R3936006-3 06/12/23 08:58

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
Total Xylenes	U		0.000174	0.00300
(S) Toluene-d8	103			80.0-120
(S) 4-Bromofluorobenzene	90.6			77.0-126
(S) 1,2-Dichloroethane-d4	87.6			70.0-130

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

<sup>4</sup>Cn

<sup>5</sup>Sr

<sup>6</sup>Qc

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>Sc

Laboratory Control Sample (LCS)

(LCS) R3936006-1 06/12/23 07:32

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.00500	0.00499	99.8	70.0-123	
n-Butylbenzene	0.00500	0.00486	97.2	73.0-125	
sec-Butylbenzene	0.00500	0.00504	101	75.0-125	
tert-Butylbenzene	0.00500	0.00492	98.4	76.0-124	
Ethylbenzene	0.00500	0.00517	103	79.0-123	
Isopropylbenzene	0.00500	0.00506	101	76.0-127	
Naphthalene	0.00500	0.00514	103	54.0-135	
Toluene	0.00500	0.00519	104	79.0-120	
1,2,4-Trimethylbenzene	0.00500	0.00506	101	76.0-121	
1,3,5-Trimethylbenzene	0.00500	0.00506	101	76.0-122	
Total Xylenes	0.0150	0.0154	103	79.0-123	
(S) Toluene-d8			102	80.0-120	
(S) 4-Bromofluorobenzene			93.7	77.0-126	
(S) 1,2-Dichloroethane-d4			86.8	70.0-130	

Method Blank (MB)

(MB) R3936571-4 06/13/23 12:03

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Toluene	U		0.000278	0.00100
(S) Toluene-d8	111			80.0-120
(S) 4-Bromofluorobenzene	110			77.0-126
(S) 1,2-Dichloroethane-d4	117			70.0-130

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

(LCS) R3936571-1 06/13/23 10:38 • (LCSD) R3936571-2 06/13/23 10:59

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 %
Toluene	0.00500	0.00481	0.00468	96.2	93.6	79.0-120			2.74	20
(S) Toluene-d8				107	107	80.0-120				
(S) 4-Bromofluorobenzene				106	106	77.0-126				
(S) 1,2-Dichloroethane-d4				113	114	70.0-130				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3936990-1 06/14/23 22:07

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
AK102 DRO C10-C25	U		0.170	0.800
<i>(S) o-Terphenyl</i>	72.5			60.0-120

Laboratory Control Sample (LCS)

(LCS) R3936990-2 06/14/23 22:30

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	mg/l	mg/l	%	%	
AK102 DRO C10-C25	6.00	5.48	91.3	75.0-125	
<i>(S) o-Terphenyl</i>			82.6	60.0-120	

L1624055-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1624055-01 06/15/23 03:01 • (MS) R3936990-3 06/15/23 03:24 • (MSD) R3936990-4 06/15/23 03:47

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	1.10	6.07	6.29	82.8	86.5	1	75.0-125			3.56	20
<i>(S) o-Terphenyl</i>					76.4	77.8		50.0-150				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3938738-1 06/17/23 16:10

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
AK102 DRO C10-C25	0.189	<span style="color: red;">J</span>	0.170	0.800
<i>(S) o-Terphenyl</i>	75.4			60.0-120

1 Cp

2 Tc

3 Ss

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

(LCS) R3938738-2 06/17/23 16:33 • (LCSD) R3938738-3 06/17/23 16:56

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
AK102 DRO C10-C25	6.00	6.10	5.77	102	96.2	75.0-125			5.56	20
<i>(S) o-Terphenyl</i>				92.8	86.1	60.0-120				

4 Cn

5 Sr

6 Qc

L1625149-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1625149-01 06/17/23 21:32 • (MS) R3938738-6 06/17/23 21:55 • (MSD) R3938738-7 06/17/23 22:18

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
AK102 DRO C10-C25	6.32	0.181	4.41	5.13	66.9	78.3	1.05	75.0-125	<span style="color: red;">J6</span>		15.1	20
<i>(S) o-Terphenyl</i>					76.8	81.3		50.0-150				

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3939972-3 06/22/23 07:31

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
AK102 DRO C10-C25	U		0.170	0.800
<i>(S) o-Terphenyl</i>	93.8			60.0-120

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

(LCS) R3939972-1 06/22/23 06:51 • (LCSD) R3939972-2 06/22/23 07:11

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 %
AK102 DRO C10-C25	6.00	5.70	5.68	95.0	94.7	75.0-125			0.351	20
<i>(S) o-Terphenyl</i>				90.9	87.9	60.0-120				

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

Method Blank (MB)

(MB) R3936189-3 06/12/23 22:43

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
<i>(S) Nitrobenzene-d5</i>	131			31.0-160
<i>(S) 2-Fluorobiphenyl</i>	106			48.0-148
<i>(S) p-Terphenyl-d14</i>	104			37.0-146

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

<sup>4</sup>Cn

<sup>5</sup>Sr

<sup>6</sup>Qc

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>Sc

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

(LCS) R3936189-1 06/12/23 22:08 • (LCSD) R3936189-2 06/12/23 22:25

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	0.00230	0.00222	115	111	67.0-150			3.54	20
Acenaphthene	0.00200	0.00220	0.00215	110	107	65.0-138			2.30	20
Acenaphthylene	0.00200	0.00242	0.00236	121	118	66.0-140			2.51	20
Benzo(a)anthracene	0.00200	0.00224	0.00219	112	109	61.0-140			2.26	20
Benzo(a)pyrene	0.00200	0.00205	0.00205	103	103	60.0-143			0.000	20
Benzo(b)fluoranthene	0.00200	0.00202	0.00204	101	102	58.0-141			0.985	20
Benzo(g,h,i)perylene	0.00200	0.00200	0.00205	100	103	52.0-153			2.47	20
Benzo(k)fluoranthene	0.00200	0.00185	0.00186	92.5	93.0	58.0-148			0.539	20
Chrysene	0.00200	0.00219	0.00212	109	106	64.0-144			3.25	20
Dibenz(a,h)anthracene	0.00200	0.00194	0.00193	97.0	96.5	52.0-155			0.517	20
Fluoranthene	0.00200	0.00252	0.00250	126	125	69.0-153			0.797	20
Fluorene	0.00200	0.00249	0.00244	124	122	64.0-136			2.03	20



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

(LCS) R3936189-1 06/12/23 22:08 • (LCSD) R3936189-2 06/12/23 22:25

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	0.00229	0.00228	115	114	54.0-153			0.438	20
Naphthalene	0.00200	0.00232	0.00227	116	114	61.0-137			2.18	20
Phenanthrene	0.00200	0.00233	0.00232	117	116	62.0-137			0.430	20
Pyrene	0.00200	0.00249	0.00251	124	126	60.0-142			0.800	20
1-Methylnaphthalene	0.00200	0.00245	0.00241	122	120	66.0-142			1.65	20
2-Methylnaphthalene	0.00200	0.00239	0.00235	119	117	62.0-136			1.69	20
<i>(S) Nitrobenzene-d5</i>				132	128	31.0-160				
<i>(S) 2-Fluorobiphenyl</i>				108	106	48.0-148				
<i>(S) p-Terphenyl-d14</i>				101	101	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.

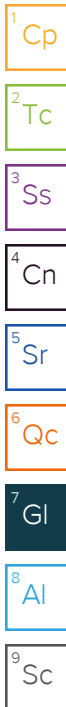
Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location.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

B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits.
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
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 <sup>1</sup>	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina <sup>1</sup>	DW21704
Georgia	NELAP	North Carolina <sup>3</sup>	41
Georgia <sup>1</sup>	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 <sup>1,6</sup>	KY90010	South Carolina	84004002
Kentucky <sup>2</sup>	16	South Dakota	n/a
Louisiana	AI30792	Tennessee <sup>1,4</sup>	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas <sup>5</sup>	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 <sup>5</sup>	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>6</sup> 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.

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl


<sup>8</sup> Al

<sup>9</sup> Sc

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

Billing Information:  
*Accounts Payable*  
 Attn: 5030 ETS Group  
 PO Box 7601  
 Springfield, OH 45501

Analysis / Container / Preservative  
 Pres Chk  
 <2  
 PAHSIMLVID 40ml Amb-NoPres-WT  
 NATCP 250 HDPE-HN03  
 V 82.60C 40ml/Amb-HCI

Chain of Custody Page 1 of 1  
  
 PEOPLE ADVANCING SCIENCE

Report to:  
 Ms. Leslie Petre

Email T  
 craig.cothron@pacelabs.com

Project Description:  
 Speedway 5310 - North Pole, AK  
 City/State Collected: North Pole, AK AK  
 Please Circle: PT MT CT ET

Phone  
 907-343-5108

Client Project #  
 203723076

Lab Project #  
 STAAAKSSA-5310

Collected by (print):  
 Geoff Moorhead

Site/Facility ID #  
 SPEEDWAY 5310

P.O. #

Collected by (signature):

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

Quote #

Immediately Packed on Ice N \_\_\_ Y \_\_\_

Date Results Needed

AK101 40ml/Amb HCl  
 AK102 100ml Amb HCl  
 PAHSIMLVID 40ml/Amb-NoPres-WT  
 NATCP 250 HDPE-HN03  
 V 82.60C 40ml/Amb-HCI

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 # 1624130  
 Job # J066  
 Acctnum: STAAAKSSA-5310  
 Template: T216964  
 Prelogin: PDS2841  
 PM: 034 - Craig Cothron  
 PB: 6

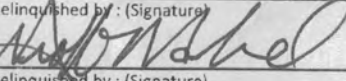
Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	AK101 40ml/Amb HCl	AK102 100ml Amb HCl	PAHSIMLVID 40ml/Amb-NoPres-WT	NATCP 250 HDPE-HN03	V 82.60C 40ml/Amb-HCI	Remarks	Sample # (lab only)
MW-6	Grab	GW		6/7/23	9:46a	1	X	X	X	X	X		-01
MW-17-2	Grab	GW		6/7/23	10:39a	1	X	X	X	X	X		-02
MW 17-5	Grab	GW		6/7/23	10:26a	1	X	X	X	X	X		-03
Duplicate	Grab	GW		6/7/23		1	X	X	X	X	X		-04

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

Remarks:  
 pH \_\_\_\_\_ Temp \_\_\_\_\_  
 Flow \_\_\_\_\_ Other \_\_\_\_\_

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

Samples returned via:  
 \_\_\_ UPS \_\_\_ FedEx \_\_\_ Courier  
 Tracking # 6053 3812 9057

Relinquished by: (Signature)  


Date: 6/7/23  
 Time: 11:21am

Received by: (Signature)

Trip Blank Received:  Yes / No  
 HCl / MeOH  
 TBR

If preservation required by Login: Date/Time

Relinquished by: (Signature)

Date: \_\_\_\_\_  
 Time: \_\_\_\_\_

Received by: (Signature)

Temp: *mskf*  
 5.1 to = 5.1 44

PH-10BDH4321 TRC-2144141  
 CR6-20221V  
 Condition: NCF /  OK

Relinquished by: (Signature)

Date: \_\_\_\_\_  
 Time: \_\_\_\_\_

Received for lab by: (Signature)  
 Caleb Tracy

Date: 6/8/23  
 Time: 09:00

Update →



# ADEC Contaminated Sites Program Laboratory Data Review Checklist

<b>Completed By:</b>	Sydney Souza	<b>CS Site Name:</b>	Tesoro North Store #112	<b>Lab Name:</b>	Pace Analytical
<b>Title:</b>	Environmental Scientist	<b>ADEC File No.:</b>	100.26.159	<b>Lab Report No.:</b>	L1624130
<b>Consulting Firm:</b>	Stantec Consulting Services Inc.	<b>Hazard ID No.:</b>	24476	<b>Lab Report Date:</b>	June 23, 2023

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

## 1. Laboratory

- a. Did an ADEC Contaminated Sites Laboratory Approval Program (CS-LAP) approved laboratory receive and perform all of the submitted sample analyses?  
Yes  No  N/A   
Comments: Click or tap here to enter text.
- b. If the samples were transferred to another “network” laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses CS-LAP approved?  
Yes  No  N/A   
Comments: Samples were not transferred

## 2. Chain of Custody (CoC)

- a. Is the CoC information completed, signed, and dated (including released/received by)?  
Yes  No  N/A   
Comments: Click or tap here to enter text.
- b. Were the correct analyses requested?  
Yes  No  N/A   
Analyses requested: Click or tap here to enter text.  
Comments: Click or tap here to enter text.

## 3. Laboratory Sample Receipt Documentation

- a. Is the sample/cooler temperature documented and within range at receipt (0° to 6° C)?  
Yes  No  N/A   
Cooler temperature(s): 5.1° C  
Comments: Click or tap here to enter text.

**CS Site Name:** Tesoro North Store #112

**Lab Report No.:** L1624130

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

Yes  No  N/A

Comments: Click or tap here to enter text.

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

Yes  No  N/A

Comments: Sample condition documented as OK

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

Yes  No  N/A

Comments: No discrepancies documented

- e. Is the data quality or usability affected?

Yes  No  N/A

Comments: No discrepancies documented

#### **4. Case Narrative**

- a. Is the case narrative present and understandable?

Yes  No  N/A

Comments: Click or tap here to enter text.

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

Yes  No  N/A

Comments: Case narrative documents no errors or discrepancies “unless qualified or notated within report”

- c. Were all the 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

#### **5. Sample Results**

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

Yes  No  N/A

Comments: Click or tap here to enter text.

- b. Are all applicable holding times met?

Yes  No  N/A

**CS Site Name:** Tesoro North Store #112

**Lab Report No.:** L1624130

Comments: Click or tap here to enter text.

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

Yes  No  N/A

Comments: No soil samples submitted to the lab

- d. Are the reported limits of quantitation (LoQ) or limits of detections (LOD), or reporting limits (RL) less than the Cleanup Level or the action level for the project?

Yes  No  N/A

Comments: Click or tap here to enter text.

- e. Is the data quality or usability affected?

Yes  No  N/A

Comments: Click or tap here to enter text.

## 6. QC Samples

- a. Method Blank

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

Yes  No  N/A

Comments: Click or tap here to enter text.

- ii. Are all method blank results less than LOQ (or RL)?

Yes  No

Comments: Click or tap here to enter text.

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

Comments: Click or tap here to enter text.

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

Yes  No  N/A

Comments: Click or tap here to enter text.

- v. Data quality or usability affected?

Yes  No  N/A

Comments: Click or tap here to enter text.

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

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

Yes  No  N/A

**CS Site Name:** Tesoro North Store #112

**Lab Report No.:** L1624130

Comments: Click or tap here to enter text.

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

Yes  No  N/A

Comments: Click or tap here to enter text.

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

Yes  No  N/A

Comments: Click or tap here to enter text.

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

Yes  No  N/A

Comments: Click or tap here to enter text.

- 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: Click or tap here to enter text.

- vii. Is the data quality or usability affected?

Yes  No  N/A

Comments: Click or tap here to enter text.

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

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

Yes  No  N/A

Comments: Click or tap here to enter text.

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

Yes  No  N/A

Comments: Click or tap here to enter text.



**CS Site Name:** Tesoro North Store #112

**Lab Report No.:** L1624130

- iii. Accuracy – Are all percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable?  
Yes  No  N/A   
Comments: Click or tap here to enter text.
- iv. Precision – Are all relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from MS/MSD, and or sample/sample duplicate.  
Yes  No  N/A   
Comments: Click or tap here to enter text.
- v. If %R or RPD is outside of acceptable limits, what samples are affected?  
Comments: Click or tap here to enter text.
- vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?  
Yes  No  N/A   
Comments: Click or tap here to enter text.
- vii. Is the data quality or usability affected?  
Yes  No  N/A   
Comments: Click or tap here to enter text.
- 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: Click or tap here to enter text.
- ii. Accuracy – Are all percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods 50-150 %R for field samples and 60-120 %R for QC samples; all other analyses see the laboratory report pages)  
Yes  No  N/A   
Comments: Click or tap here to enter text.
- 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: Click or tap here to enter text.
- iv. Is the data quality or usability affected?  
Yes  No  N/A

Comments: Click or tap here to enter text.

e. Trip Blanks

- i. Is one trip blank reported per matrix, analysis, and for each cooler containing volatile samples? Yes  No  N/A

Comments: Click or tap here to enter text.

- ii. Are all results less than LoQ or RL?

Yes  No  N/A

Comments: Click or tap here to enter text.

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

Comments: None.

- iv. Is the data quality or usability affected?

Yes  No  N/A

Comments: No affected samples.

f. Field Duplicate

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

Yes  No  N/A

Comments: Click or tap here to enter text.

- ii. Was the duplicate submitted blind to lab?

Yes  No  N/A

Comments: Click or tap here to enter text.

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

$$RPD (\%) = \left| \frac{R_1 - R_2}{\left(\frac{R_1 + R_2}{2}\right)} \right| \times 100$$

Where  $R_1$  = Sample Concentration

$R_2$  = Field Duplicate Concentration

Is the data quality or usability affected? (Explain)

Yes  No  N/A

Comments: Click or tap here to enter text.

- iv. Is the data quality or usability affected? (Explain)

Yes  No  N/A

Comments: Click or tap here to enter text.

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g. Decontamination or Equipment Blanks

i. Were decontamination or equipment blanks collected?

Yes  No  N/A

Comments: Used disposable equipment

ii. Are all results less than LoQ or RL?

Yes  No  N/A

Comments: Used disposable equipment

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

Comments: Click or tap here to enter text.

iv. Are data quality or usability affected?

Yes  No  N/A

Comments: Click or tap here to enter text.

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

a. Are they defined and appropriate?

Yes  No  N/A

Comments: Click or tap here to enter text.