

Supplemental Report  
for October 2022 GWM Event at  
former Tesoro Northstore (TNS) #111  
ADEC Fac. ID 1112, ADEC File 100.26.026  
November 28, 2022

Prepared For



## AUTHORIZATION TO SUBMIT REPORT

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

Regards,

STANTEC CONSULTING SERVICES, INC.

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

Robert (Bob) Gilfilian, P.E.

Project Technical Lead

Principal Senior Civil Engineer

## TABLE OF CONTENTS

---

ACRONYMS AND ABBREVIATIONS .....	II
1.0 INTRODUCTION .....	1
2.0 SITE BACKGROUND .....	1
3.0 FIELD ACTIVITIES .....	1
4.0 GROUNDWATER MONITORING RESULTS .....	2
4.1 FIELD PARAMETERS.....	2
4.2 WATER SAMPLE ANALYTICAL RESULTS .....	3
4.3 QUALITY ASSURANCE (QA)/QUALITY CONTROL (QC) REVIEW .....	4
5.0 CONCLUSIONS AND RECOMMENDATIONS .....	5
5.1 PROPOSED REMEDIATION ACTIVITIES .....	5
6.0 LIMITATIONS.....	5

## LIST OF TABLES

---

Table 1 Field Measured Intrinsic Water Quality Parameters.....	2
Table 2 Groundwater Analytical Results.....	3
Table 3 Laboratory Quality Control Objectives .....	4

## LIST OF FIGURES

---

Figure 1	Location and Vicinity Map
Figure 2	Site Map with Analytical Data

## LIST OF APPENDICES

---

Appendix A	Site Background
Appendix B	Field Methods and Procedures
Appendix C	Field Measurements and Notes
Appendix D	Tables of Historical Monitoring Data
Appendix E	Laboratory Analytical Report and ADEC Laboratory Data Review Checklist

## ACRONYMS AND ABBREVIATIONS

---

AAC	Alaska Administrative Code
ADEC	Alaska Department of Environmental Conservation
AK	Alaska Test Method
amsl	above mean sea level
B	analyte detected in associated blank
BTEX	benzene, toluene, ethylbenzene, and xylenes
chemox	chemical oxidation
DO	dissolved oxygen
DRO	diesel range organics
DUP	duplicate sample
EDB	ethylene dibromide
EPA	U.S. Environmental Protection Agency
G	monitor well label
GCL	groundwater cleanup level
gpm	gallons per minute
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
LLC	limited-liability company
mg/L	milligrams per liter
MW	monitoring well
NA	Not applicable
NE	Northeast
NM	Not measured
ORP	oxidation-reduction potential
PAH	polycyclic aromatic hydrocarbon
QA/QC	quality assurance/ quality control
RM	remediation well
SE	Southeast
SIM	selective ion monitoring
Speedway	Speedway, LLC
Stantec	Stantec Consulting Services Inc.
SVE	Soil vapor extraction
Tesoro	Tesoro Refining and Marketing Company
TMB	trimethylbenzene
U	analyte not detected above the reported detection limit in parentheses
UST	underground storage tank
VOC	volatile organic compound
WP	Work Plan

## 1.0 INTRODUCTION

This supplemental report for the October 2022 Groundwater Monitoring Event was prepared by Stantec Consulting Services Inc. (Stantec) on behalf of 7-Eleven for former Tesoro Northstore (TNS) #111, located at 3679 College Road, Fairbanks, Alaska (**Figure 1**). The methods used for this monitoring event were conducted in accordance with the 2022 Alaska Department of Environmental Conservation (ADEC) approved Work Plans for this site.

On October 26, 2022, the Stantec team, which included Engineer in Training (EIT) Geoff Moorhead and EIT Leslie Petre, conducted the October analytical sampling event of a limited number of wells that included Monitoring Wells MW-17-1, MW-17-2, and Remediation Well RM-2. The purpose of the monitoring event was to assess the effectiveness of the injecting chemox solution into the groundwater table that are represented by the selected monitoring and remediation wells. In addition, the well samples were tested for lead and ethylene dibromide (EDB).

The in-situ groundwater treatment system for this site consists of a “pump and treat” system whereby remediation well RM-2 is used as groundwater recirculation well that distributes captured groundwater into upgradient injection wells. On a monthly basis during the non-freezing time of the year, a chemox solution, consisting of Klozur<sup>®</sup> One product, is injected into the upgradient wells via flow from the recirculation well RM-2.

## 2.0 SITE BACKGROUND

Background information for this site is summarized in **Appendix A**.

## 3.0 FIELD ACTIVITIES

The following field activities were conducted during the October 26, 2022, monitoring event:

- Collected field measurements of the following intrinsic water quality parameters from wells MW-17-1, MW-17-2, and RM-2: pH, temperature, oxidation-reduction potential, dissolved oxygen, and conductivity.
- Samples from the above locations were submitted for the following laboratory analysis: GRO by Alaska Test Method (AK)101, DRO by AK102, volatile organic compounds (VOCs) by U.S. Environmental Protection Agency (EPA) Test Method 8260C, polycyclic aromatic hydrocarbons (PAHs) by EPA Test Method 8270D with selective ion monitoring (SIM), EPA 8011 for ethylene dibromide (EDB), EPA Metals 6010D for sodium, and EPA 6020 for lead.

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

## 4.0 GROUNDWATER MONITORING RESULTS

### 4.1 FIELD PARAMETERS

The results of water quality parameter testing of the water samples collected during this monitoring event are presented in **Table 1**. It was of interest to note that a low ORP value was measured in remediation well RM-2. The low ORP value is indicative of a more reducing environment in the groundwater pumped from RM-2 as compared to the upgradient groundwater represented by monitoring wells MW 17-1 and MW 17-2.

**Table 1 Field Measured Intrinsic Water Quality Parameters**

Measured on October 26, 2022

Well Identification	Volume Purged (gallons)	Depth to Water (feet)	Temperature (°C)	pH	Dissolved Oxygen (mg/L)	Specific Conductance (µS/cm °C)	ORP (mV)
MW-17-1	3	13.37	2.5	6.83	1.19	1990	148.2
MW-17-2	3	13.01	3.4	6.6	1.37	1800	211.7
RM-2	NM	NM	3.3	6.86	1.18	1230	-0.53

Key:

°C	degrees Celsius		
µs/cm°C	microSiemens per centimeter degrees Celsius	ORP	oxidation-reduction potential
mg/L	milligrams per liter	pH	log [H <sup>+</sup> ]
mV	millivolts	NM	Not measured
DO	Dissolved Oxygen		

## 4.2 WATER SAMPLE ANALYTICAL RESULTS

All wells were sampled in accordance with the 2022 Work Plan. Historical monitoring data for this site are tabulated in **Appendix D**. Laboratory analytical results for compounds detected in groundwater samples collected during these events are summarized in **Table 2**. The laboratory analytical reports are provided in **Appendix E**.

**Table 2 Groundwater Analytical Results**

Samples Collected on October 26, 2022

ID	BENZENE	TOLUENE	ETHYL-BENZENE	XYLENE (TOTAL)	GRO	DRO	EDB	Lead	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-17-1	<b>0.0585 J (0.100)</b>	0.0404 J (0.100)	<b>0.603</b>	<b>1.62</b>	<b>6.34</b>	<b>4.44</b>	<b>0.000241</b>	<b>1.06</b>	<b>0.0624</b>	143
MW-17-2	<b>0.0485</b>	0.000738 J (0.00100)	0.00638	0.0193	0.227	<b>1.76</b>	<b>0.000951</b>	<b>0.145</b>	U (0.000250)	146
RM-2	<b>0.0312</b>	U (0.0100)	<b>0.263</b>	<b>0.632</b>	<b>2.75</b>	0.727 J (0.800)	<b>0.000150</b>	U (0.00200)	<b>0.0426</b>	64.0
DUP	<b>0.0315</b>	U (0.0100)	<b>0.278</b>	<b>0.659</b>	<b>2.72</b>	0.812	<b>0.000154</b>	U (0.00200)	<b>0.0419</b>	64.2
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>0.000075</b>	<b>0.015</b>	<b>0.0017</b>	<b>NA</b>

Key:

- |  |  |
|--|--|
| <p>1 Results from VOC Method 8270 D</p> <p><b>Bold</b> indicates the concentration exceeds the GCL or the estimated quantitation limit exceeds the GCL</p> <p>DUP Duplicate sample of the preceding sample.</p> <p>DRO Diesel range organics analyzed by AK102.</p> <p>J The identification of the analyte is acceptable; the reported value is an estimate.</p> | <p>GCLs Groundwater cleanup levels, 18 AAC 75.345, Table C, (9/18/2019)</p> <p>GRO Gasoline range organics analyzed by AK101.</p> <p>mg/L milligrams per liter</p> <p>NA Not Applicable.</p> <p>U ( ) Undetected above practical quantitation limits shown in parentheses.</p> <p>B Analyte found in associated blank.</p> |
|--|--|

### 4.3 QUALITY ASSURANCE (QA)/QUALITY CONTROL (QC) REVIEW

Pace Analytical performed all analysis of groundwater samples for the October 2022 sampling event. Pace Analytical met all laboratory QA/QC criteria during the analysis of groundwater samples for this sampling event.

DUP is a duplicate of sample RM-2. The duplicate sample set was collected to determine the precision of the field collection and laboratory analysis for this sampling event. Data presented in **Table 3** shows the laboratory met precision tolerances for all analytes for which it could be calculated. Laboratory QC data and the ADEC Laboratory Data Review Checklists are included in **Appendix E**.

**Table 3 Laboratory Quality Control Objectives**

Samples Collected on October 26, 2022

Quality Control Designation	Tolerance	Results for This Event
<b>Holding Times</b>		
DRO/Water/to analyze	40 days	10 days <sup>1</sup>
DRO/Water/to extract	14 days	9 days <sup>1</sup>
GRO/Water/to analyze	14 days	12 days
VOCs/Water/to analyze	14 days	9 days <sup>1</sup>
PAHs/Water/to analyze	40 days	7 days
PAHs/Water/to extract	7 days	6 days
<b>Field Duplicate – Precision</b>		
Benzene/Water	± 30%	0.96%
Toluene/Water	± 30%	NC
Ethylbenzene/Water	± 30%	5.5%
Xylenes/Water	± 30%	4.2%
GRO/Water	± 30%	1.1%
DRO/Water	± 30%	11%
Ethylene dibromide	± 30%	2.6%
Lead	± 30%	NC
Naphthalene	± 30%	1.7%
Sodium	± 30%	0.31%

Key:

% Absolute value percentage of variance  
 ± Absolute Value  
 DRO diesel range organics  
 GRO gasoline range organics  
 1 Maximum time. Some samples extracted or analyzed earlier.

PAH Polycyclic aromatic hydrocarbon  
 VOC Volatile organic compound  
**BOLD** Exceeds precision tolerance  
 NC Not Calculated, undetected in duplicate or Sample.



## 5.0 CONCLUSIONS AND RECOMMENDATIONS

Results of the analytical sampling showed analytes were present at concentrations exceeding ADEC groundwater cleanup levels (GCLs) as listed in Alaska Administrative Code (AAC) 18AAC 75.345 Table C (updated September 18, 2019) for all wells sampled. Monitoring and remediation wells and the respective analytes in exceedance of ADEC GCLs included:

- Benzene and EDB were detected above the GCLs in all wells sampled.
- Ethylbenzene, total xylenes, GRO, and naphthalene were detected above the GCLs in all samples except MW-17-2.
- DRO and lead were detected above the GCLs in MW-17-1 and MW-17-2.
- Toluene was not detected above the GCLs in any of the wells sampled.

The groundwater gradient was not calculated for this event due to the reduced number of sampling locations.

### 5.1 PROPOSED REMEDIATION ACTIVITIES

No anomalies were found during the October 2022 supplemental groundwater monitoring event that would require additional corrective action or changes to the approved year 2022 Corrective Action Work Plan for this site. However, several recommendations for site improvements in the operation of the “pump and treat” remediation system will be proposed in the new Corrective Action Work Plan for 2023 and presented to the ADEC for subsequent approval to implement.

## 6.0 LIMITATIONS

Stantec conducted this monitoring event in accordance with the 2022 Corrective Action Work Plan approved by ADEC, and in a manner consistent with the level of skill ordinarily exercised by members of the profession currently practicing under similar conditions. All sampling activities were completed in accordance with the ADEC *Underground Storage Tanks Procedures Manual – Standard Sampling Procedures* (March 22, 2017). The conclusions in this report are Stantec’s professional opinion, as of the time of the report, and concerning the scope described in the report. The opinions in the document are based on conditions and information existing at the time the scope of work was conducted and do not take into account any subsequent changes. This report relates solely to the specific project for which Stantec was retained and the stated purpose for which the report was prepared. The report is not to be used or relied on for any variation or extension of the project, or for any other project or purpose, and any unauthorized use or reliance is at the recipient’s own risk.

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

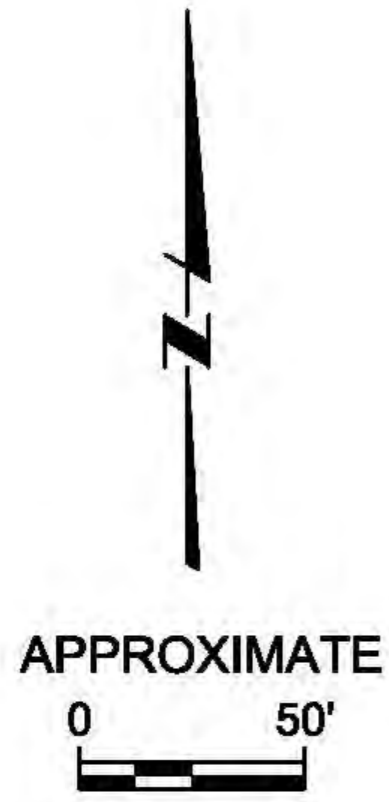
---

## **FIGURES**

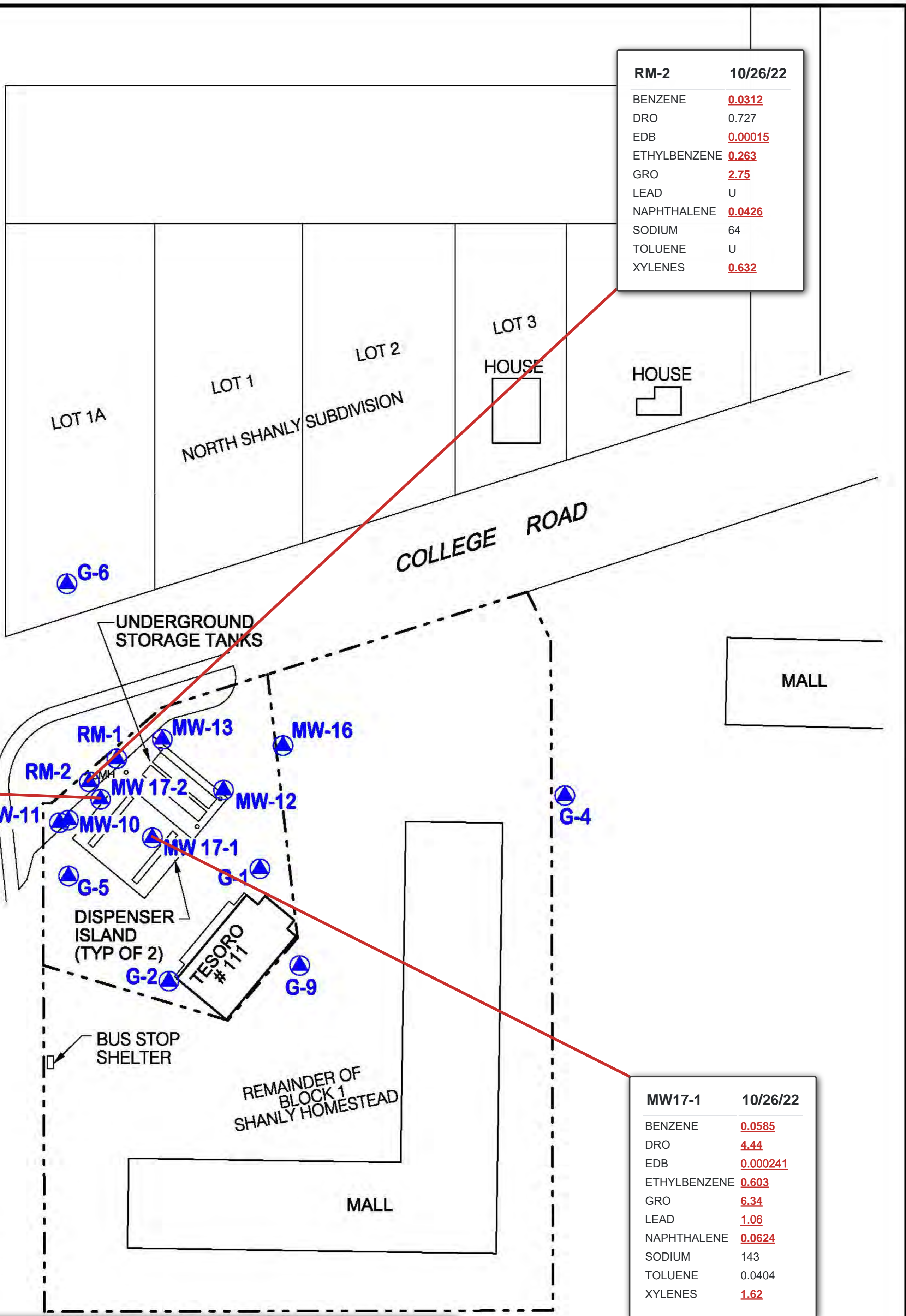
---

- Figure 1      Location and Vicinity Map  
Figure 2      Site Map Plan with Analytical Data
-





RM-2	10/26/22
BENZENE	<u>0.0312</u>
DRO	0.727
EDB	<u>0.00015</u>
ETHYLBENZENE	<u>0.263</u>
GRO	<u>2.75</u>
LEAD	U
NAPHTHALENE	<u>0.0426</u>
SODIUM	64
TOLUENE	U
XYLENES	<u>0.632</u>



MW17-2	10/26/22
BENZENE	<u>0.0485</u>
DRO	<u>1.76</u>
EDB	<u>0.000951</u>
ETHYLBENZENE	0.00638
GRO	0.227
LEAD	<u>0.145</u>
NAPHTHALENE	U
SODIUM	146
TOLUENE	0.000738
XYLENES	0.0193

MW17-1	10/26/22
BENZENE	<u>0.0585</u>
DRO	<u>4.44</u>
EDB	<u>0.000241</u>
ETHYLBENZENE	<u>0.603</u>
GRO	<u>6.34</u>
LEAD	<u>1.06</u>
NAPHTHALENE	<u>0.0624</u>
SODIUM	143
TOLUENE	0.0404
XYLENES	<u>1.62</u>

SITE DATA COMPARED TO ADEC Groundwater Cleanup Levels (GCLs)		BENZENE 0.0046 mg/L	
ND	NOT DETECTED	DRO	1.5 mg/L
--	NOT SAMPLED	EDB	0.000075 mg/L
50	SAMPLED & UNDER GCL	ETHYLBENZENE	0.015 mg/L
<u>100</u>	SAMPLED & OVER GCL	GRO	2.2 mg/L
<u>FP</u>	FREE PRODUCT	LEAD	0.015 mg/L
DISPLAYED IN mg/L		NAPHTHALENE	0.0017 mg/L
		SODIUM	
		TOLUENE	1.1 mg/L
		XYLENES	0.19 mg/L

**LEGEND:**  
 - - - - - PROPERTY LINE  
 MONITORING WELL LOCATION



**SPEEDWAY STORE 5315  
(FORMER TESORO 2 GO MART #111)**

**Site Map with Analytical Data Results**

FIGURE  
**2**

185705774

---

## **APPENDIX A**

---

### *Site Background*

---

## APPENDIX A – SITE BACKGROUND

**Tesoro 2 Go Mart #111** (3679 College Road, Fairbanks, Alaska)  
**ADEC Facility ID #1112; ADEC File #102.26.026**

Tesoro 2 Go Mart #111 is a retail fuel service station located at the corner of University Drive and College Road in Fairbanks, Alaska. The service station is operated in conjunction with a Tesoro convenience store. A fuel dispensing service station is reported to have been operated at this site since 1971.

Gilfilian Engineering & Environmental Testing (GE<sup>2</sup>T), MWH Americas, Inc. (MWH), and Stantec Consulting Services Inc. (Stantec) have performed numerous site investigations and monitoring events at this site since 1995.

**November 1990.** Shannon & Wilson Inc. installed three groundwater monitoring wells (MW-1, MW-3, and MW-4) and drilled one soil boring (SB-2) at the site to evaluate potential for soil and groundwater contamination prior to right-of-way acquisition. Monitoring Well MW-1 and Boring SB-2 were drilled near the former underground storage tanks (USTs). Petroleum hydrocarbons were detected above Alaska Department of Environmental Conservation (ADEC) soil cleanup levels (SCLs) in MW-1 and Boring SB-2.

**February 1991.** A release investigation (RI) was conducted by Shannon & Wilson Inc., during which two monitoring wells (MW-10 and MW-16) and seven soil borings were installed. Petroleum hydrocarbons were detected above SCLs in six of the nine soil borings. Petroleum-related compounds were detected in all monitoring wells sampled. The highest concentrations were detected in MW-1 and MW-10.

**September 1992.** Two 12,000-gallon USTs, one 8,000-gallon UST, and one 1,000-gallon UST were removed and replaced with three 10,000-gallon STIP-3, single wall USTs. Petroleum hydrocarbons were detected above SCLs in the UST removal excavations. Due to a nearby high flow groundwater extraction process along the Chena River, operated by a non-Tesoro entity, the groundwater table was lowered by many feet in the surrounding area. Prior to the pumping operation, the groundwater table was typically 12 feet below the ground surface (bgs). When the USTs were replaced, the groundwater was found at 22 feet bgs. After the pumping operation along the Chena River was completed, the groundwater table returned to normal levels. The drop and rise of the groundwater resulted in spreading the smear zone of petroleum contamination over a 12-foot vertical range beneath the site.

**July 1995.** GE<sup>2</sup>T installed two new monitoring wells (G-1 and G-2). Petroleum hydrocarbons were not detected above SCLs but were above the ADEC groundwater cleanup levels (GCLs) in both monitoring wells.

**August through October 1998.** The canopy and fuel dispenser system were upgraded to include new fuel dispensers, a tank monitoring system, and a cathodic protection system. Soil samples collected from below the former dispensers and piping exceeded SCLs for hydrocarbons. As a result, piping was laid in these excavations for expansion of the air sparge (AS) and soil vapor

extraction (SVE) system. In addition, six vertical cathodic protection anodes were spaced around the USTs.

**May 1991.** A Phase III RI was conducted that involved drilling two soil borings off the site and installing two new monitoring wells (G-3 and G-4). Petroleum hydrocarbons were not detected above SCLs (borings) or GCLs (monitoring wells), indicating these wells are located beyond the extent of groundwater contamination at the site.

**May 2001.** A RI was conducted that involved drilling two soil borings and installing two new monitoring wells (on-site G-5 and off-site G-6). Samples collected from G-6 did not exceed SCLs or GCLs, but both were exceeded in samples from G-5 (on-site well)

**May 2003.** Four additional AS wells were installed at the site. Benzene was detected above the SCL in AS Wells AS-13 and AS-14, and diesel range organics (DRO) was detected slightly above the SCL in AS-14. No other compounds were detected above the SCLs.

**November 2003.** A RI was performed at the site. The RI involved drilling one soil boring that was completed as a 2-inch diameter monitoring well (G-9). No analytes of concern were detected at concentrations above the laboratory practical quantitation limits (PQLs) in soil or groundwater samples collected during the RI.

**June 2010.** A sampling event was conducted for sulfolane in Monitoring Well MW-10. Sample results were non-detect.

**June 2012.** MWH conducted an UST closure site assessment. The former UST system consisted of three 10,000-gallon capacity gasoline and diesel tanks, associated piping, and three dispenser islands with one overhead canopy. The three USTs were replaced with two, multi-compartment, 15,000-gallon capacity fiberglass USTs. Petroleum-contaminated soil was encountered during the UST removal. The contaminated soil was removed from the site for off-site thermal treatment. Soil contamination was found at 13 feet bgs, a couple of feet below the bottom of the new USTs. Due to the groundwater conditions, the saturated contaminated soil could not be removed and, therefore, was left in-place.

**September 2012.** A RI was performed at the site. The RI involved advancing four soil borings (three around the new USTs in the northern portion of the site and one along the west edge of the site) and collecting three soil samples from each soil boring. Three groundwater monitoring wells (MW-11, MW-12, and MW-13) and one air lift well (RM-1) were installed in the four soil borings and groundwater samples were collected. Petroleum hydrocarbons were detected above SCLs in the soil borings along the west edge of the site, the northern portion of the property line on the east side of the USTs, and the northern side of the dispenser island. Petroleum hydrocarbons were detected above the GCLs in all three monitoring wells.

**June 2013.** A first round of chemical oxidation application of Klozur CR<sup>®</sup> was injected into two on-site wells (Monitoring Well MW-10 and AS Well AS-9). Monitoring Well G-5 was used to measure the chemical oxidation impact to the groundwater table. The prior and post injection results of intrinsic parameters clearly indicated the effectiveness of the chemical oxidant – in particular with respect to the sodium, pH, total organic carbon (TOC), and dissolved oxygen levels.

The laboratory analytical results indicated significant reductions in the petroleum contaminants of concern.

**July 2013.** A pump test was conducted of Remediation Well RM-1, which was initially designed and constructed to serve as an air-lift well. Due to concerns about maintaining a continuous pumping air-lift well in the sub-Arctic climate found in the Fairbanks area, it was decided to pump the well with a submersible well pump. The field test data collected during the 2-day well pump test indicated that, by recirculating the water pumped from RM-1 into the upgradient horizontal wells that were installed along the bottom edge of the USTs, the contaminated groundwater flowing beneath the USTs would be captured in RM-1. Then the groundwater could be pumped (re-circulated) back into the upgradient horizontal wells. On a quarterly basis, the groundwater would undergo chemical oxidation with the injection of Klozur CR<sup>®</sup> into the horizontal wells. Also, it was initially planned to add air in the well pump discharge line via a venturi air injector.

**August/September 2013.** Two rounds of Klozur CR<sup>®</sup> were injected into one on-site well (Monitoring Well MW-12). Water samples were collected from Monitoring Wells MW-12 and MW-13, and Remediation Well RM-1 prior to and approximately 6 and 8 weeks after the first round of Klozur CR<sup>®</sup> application. Most analytes of concern showed a significant reduction in concentrations. In addition, the dissolved oxygen level in MW-12 was noted to be very high, which confirmed the claim that Klozur CR<sup>®</sup> provides an extended oxygen release for long-term remediation of contaminant plumes in groundwater. Given these positive preliminary pilot test findings, MWH recommended additional rounds of application of Klozur CR<sup>®</sup> chemical oxidant to treat the residual contamination found in the area beneath the USTs.

**March 2014.** Petroleum compounds were found to exceed GCLs in Monitoring Wells G-1, MW-10, MW-11, MW-12, MW-16, and Remediation Well RM-1. The SVE system remained in operation. The AS system operation was temporarily inactive pending system upgrades.

**July 2014.** Petroleum compounds were found to exceed GCLs in Monitoring Wells G-5, MW-10, MW-11, and MW-16, as well as Remediation Well RM-1. The SVE system remained in operation. The AS system operation was temporarily inactive pending system upgrades. During July, Remediation Well RM-1 was outfitted with a submersible pump and linked to a series of horizontal injection wells which were positioned at the water table interface along the east and southern periphery of the UST system upgrades at the site. An in-line venturi was installed to aerate water within the remediation system prior to injection.

**March 2015.** Petroleum compounds were found to exceed GCLs in Monitoring Wells MW-10, MW-11, MW-12, and MW-16, as well as Remediation Well RM-1. The SVE system remained in operation. The operation of the groundwater circulation system was suspended due to mineral deposits or biological growth (related to the abundance of aqueous iron in the system) that fouled the submersible pump and lowered the efficiency of the well screen at the remediation well (RM-1).

**July 2015.** Petroleum compounds were found to exceed GCLs in Monitoring Wells MW-10, MW-11, MW-12, and MW-16, as well as Remediation Well RM-1. The SVE system remained in operations. Well rehabilitation, by acid treatment, was performed in RM-1 and the south horizontal



injection well. Chemical oxidation treatment with the manual injection of Klozur CR<sup>®</sup> product was performed at the southeast and northeast horizontal injection wells.

**February 2016.** Results of the analytical sampling showed the analytes detected above the GCLs included: DRO in Monitoring Wells MW-10 and MW-13, and gasoline range organics (GRO) in Remediation Well RM-1. Chemical oxidation treatment with the manual injection of Klozur CR<sup>®</sup> product was performed at the southeast and northeast horizontal injection wells.

**October 2016.** Results of the analytical sampling showed that DRO was detected above the GCL in Monitoring Well MW-10, and benzene and GRO were detected above the GCLs in Remediation Well RM-1. Remediation Well RM-1 was manually injected with NUWELL<sup>™</sup>. Chemical oxidation treatment with the manual injection of Klozur CR<sup>®</sup> product was performed at the southeast and northeast horizontal injection wells.

**March 2017.** Results of the analytical sampling showed analytes present above the GCLs in Monitoring Wells G-1, G-5, MW-10, MW-11, and MW-12. Analytes in exceedance included benzene, ethylbenzene, xylenes, GRO, and DRO. The SVE system continues to operate within normal parameters. Remediation Well RM-1 remains inactive, following the discovery of a frozen circulation line the last week of November 2016. The AS system is currently inactive pending evaluation of the system.

**July 2017.** Results of the analytical sampling showed analytes present above the GCLs in Monitoring Wells G-1, MW-11, MW-12, and MW-16. Monitoring Wells G-5 and MW-10 had ice plugs present. The expanded suite of volatile organic compounds (VOCs) and polynuclear aromatic hydrocarbons (PAHs) for Monitoring Wells MW-11, MW-12, and Remediation Well RM-1 also indicated GCL exceedances. Remediation Wells RM-1 was placed back in operation at 1.4 gallons per minute at 90 pounds per square inch (psi). SVE and AS systems currently inactive.

**March 2018.** Results of the analytical sampling showed analytes were present above the GCLs in Monitoring Wells G-5, MW-10, MW-11, MW17-1, and MW17-2. Remediation Well RM-1 was shut down during the winter because of the continued power failure of the newly installed heat trace. The SVE and AS systems remain inactive.

**September 2018.** Results of the analytical sampling showed analytes were present at concentrations exceeding ADEC GCLs in Monitoring Wells G-5, MW-10, MW-11, MW-12, MW17-1, and MW17-2, as well as Remediation Well RM-1. Analytes in exceedance included: BTEX, GRO, DRO, VOCs, and/or PAHs.

Upon arrival at the site, Remediation Well RM-1, for the groundwater recirculation chemox treatment system, was not operating due to freeze damage caused by heat trace failure. The RM-1 well pump was placed back into continuous operation after repairs were made to the water line located in RM-1 manhole.

A chemox solution consisting of 110 pounds of Klozur One, with approximately 800 gallons of clean water, was injected into the two horizontal groundwater injection wells located along the eastern edge of the UST.

**March 2019.** Results of the analytical sampling showed analytes were present at concentrations exceeding ADEC GCLs in Monitoring Wells G-1, G-5, MW-10, MW-11, MW-16, MW 17-1, and MW 17-2. Analytes in exceedance included: BTEX, GRO, and DRO. It is noted that GRO above the GCL was detected in Monitoring Well G-1, which was uncharacteristic since this well has not had an exceedance for GRO in past 17 years of monitoring. This well will be resampled during the semi-annual monitoring event to further assess the groundwater condition in this area of the site.

Upon arrival at the site, Remediation Well RM-1, for the groundwater recirculation chemox treatment system, was operating but was shut off due to debris entering the pump intake. It will be cleaned and restarted after daily air temperatures remain above freezing.

**July 2019.** Results of the analytical sampling showed analytes were present at concentrations exceeding ADEC GCLs in Monitoring Wells G-5, MW-10, MW-11, MW 17-1, and MW 17-2 and Remediation Well RM-1. Analytes in exceedance included: BTEX; GRO; DRO; 1,2,4-trimethylbenzene; 1,3,5-trimethylbenzene; naphthalene; and 1-methylnaphthalene. It was noted that GRO above the GCL was detected in Monitoring Well G-1 during March 2019 monitoring (an anomaly after 17 years of sampling), and this well was resampled during this semi-annual monitoring event and GRO was found to be under the PQL and the GCL.

**October 2019.** A high dose chemox solution of 165 lbs of Klozur One to 150 gallons of water was injected into three SVE access lines (SVE-1, SVE-2, and SVE-3) while 110 lbs of Klozur<sup>®</sup> One was injected into the horizontal groundwater injection well on the eastern edge of the UST. The Klozur<sup>®</sup> treatments were then pushed into the formation with more than 1000 gallons of water from RM-2. Analytical sampling of RM-1 and RM-2 was conducted. Analyte levels exceeding ADEC GCLs in RM-2 were Benzene, Ethylbenzene, and Xylene. Analyte levels exceeding ADEC GCLs in RM-1 were Ethylbenzene, Xylene, and GRO.

**July and August 2020.** RM-1 was turned off in January 2020 due to the system freezing. RM-1 was brought back online July 1, 2020. On July 15, 2020, a chemox solution of 110 lbs of Klozur<sup>®</sup> One to 100 gallons of water was injected into the three SVE access lines and into the horizontal groundwater injection well on the eastern edge of the UST, then pushed into the formation with 150 gallons of water from RM-2 at each point. In total the site was treated with 440 lbs of Klozur<sup>®</sup> One. A leaking fitting on the line feeding the eastern edge of the UST from the freeze up the previous winter was repaired.

Results of the analytical sampling showed analytes were present at concentrations exceeding ADEC GCLs in Monitoring Wells G-5, MW-10, MW-11, MW 17-1, and MW 17-2 and Remediation Well RM-1. Analytes in exceedance included: BTEX; GRO; DRO; 1,2,4-trimethylbenzene; 1,3,5-trimethylbenzene; naphthalene; and 1-methylnaphthalene. It was noted that sodium was detected for all locations sampled

After the August 2020 sampling event, a low profile equipment shed was installed over remediation well RM-2. Subsequently plumbing was installed to facilitate recirculated groundwater flow pumped from RM-2 to discharge on a full time and year round basis into the three former SVE horizontal wells located beneath and adjacent to the fuel dispenser islands. Since September 3, 2020, RM-2 had recirculated more than 316,000 gallons of water into the SVE lines prior to the October 14, 2020 sampling event.

**October 2020.** Stantec conducted a fourth quarter analytical sampling event of Monitoring Wells MW-10, MW-11, MW-12, MW-13, MW-16, MW 17-1, MW 17-2, G-1, and G-5 as well as Remediation Wells RM-1 and RM-2. The groundwater depth measurements indicate the average hydraulic gradient was approximately 0.007 feet per foot directed toward the northwest at 330 degrees. Analytes in exceedance included: benzene, ethylbenzene, and xylenes (BTEX); gasoline range organics (GRO); diesel range organics (DRO), 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, and naphthalene. It is noted that analytes levels for RM-2 measurable increased since the August 2020 monitoring event which is interpreted as an indication that the remediation well is capturing the contaminated groundwater plume. Equally important is the finding that the petroleum contaminant levels have decreased appreciably in MWs 17-1 and 17-2 which may be a positive indication of in-situ treatment with the chemox injection.

On October 15, 2020, a chemical oxidation (chemox) injection with Klozur<sup>®</sup> One of 550 pounds of Klozur<sup>®</sup> combined with 350 gallons of water from RM-2 into five treatment points that was then pushed into the formation with flow from RM-1 and RM-2. The Klozur<sup>®</sup> One injections were into the three soil vapor extraction (SVE) system lines on the western portion of the site and into the two former SVE horizontal lines along the eastern edge of the UST located on the eastern portion of the site. In November 2020, RM-1 shutoff to prevent clogging of the eastern SVE injection lines from the high amount of iron oxide (precipitates and flocculation) noted during the O&M and sampling events in 2020.

**March 2021.** Stantec conducted a first quarter (semi-annual) analytical sampling event of Monitoring Wells MW-12, MW-13, MW 17-1, MW 17-2, and G-1, as well as Remediation Well RM-1. Results of the March 2021 groundwater analytical sampling showed that analytes detected above ADEC groundwater cleanup levels (GCLs) as listed in Alaska Administrative Code (AAC) 18AAC 75.345 Table C (9/18/2019) for all wells tested in the primary groundwater samples were:

- Monitoring well MW 12: Ethylbenzene.
- Monitoring well MW 17-1: Ethylbenzene, xylenes, gasoline range organics (GRO), diesel range organics (DRO), 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, and naphthalene.
- Monitoring well MW 17-2: DRO, and naphthalene (non-detect lab reporting level exceeded ADEC GCL).
- Remediation well RM-2: Benzene, ethylbenzene, xylenes, GRO, DRO, 1,2,4-trimethylbenzene, and naphthalene.

It is noted that analytes levels for RM-2 measurable increased since the August 2020 monitoring event which is interpreted as an indication that the remediation well is capturing the contaminated groundwater plume. Equally important is the finding that the petroleum contaminant levels have decreased appreciably in MWs 17-1 and 17-2 which may be a positive indication of in-situ treatment with the chemox injection.

Hydraulic gradient and direction of groundwater flow was not calculated for this monitoring event since the pumping level in remediation well RM-2 was not measured to determine the radius of influence.

**October 2021.** Stantec conducted a fourth quarter (semi-annual) analytical sampling event of Monitoring Wells MW G-1, MW G-5, MW-10, MW-11, MW-12, MW-13, MW-16, MW-17-1, MW-17-2, and Remediation Wells RM-1, and RM-2. Results of the analytical sampling showed analytes were present at concentrations exceeding ADEC groundwater cleanup levels (GCLs) as listed in Alaska Administrative Code (AAC) 18AAC 75.345 Table C (updated November 18, 2021) for all wells tested. Monitoring wells and the respective analytes in exceedance of ADEC GCLs included:

- G-1: Naphthalene
- G-5: Benzene, ethylbenzene, 1,2,4-trimethylbenzene (TMB), and naphthalene.
- MW-10: DRO.
- MW-11: Ethylbenzene, xylenes, DRO, GRO, 1,2,4-TMB, 1,3,5-TMB, and naphthalene.
- MW-12: Ethylbenzene, xylenes, and naphthalene.
- MW-16: DRO.
- MW 17-1: Benzene, toluene, ethylbenzene, xylenes, DRO, GRO, 1,2,4-TMB, 1,3,5-TMB, and naphthalene.
- MW 17-2: DRO, and naphthalene.
- RM-1: Ethylbenzene, xylenes, DRO, GRO, 1,2,4-TMB, 1,3,5-TMB, and naphthalene.
- RM-2: Ethylbenzene, and naphthalene.

The professional modeling software program (Surfer<sup>®</sup>) was used to calculate with polynomial regression the average groundwater hydraulic flow across the site. The groundwater gradient was calculated to be approximately 0.002 feet per foot with flow trending toward the north-northeast at 30 degrees presented on **Figure 2**. However, the “pump and treat” remediation system creates large variation in the groundwater elevations across the site. As shown on the groundwater contour map in **Appendix C**, there is a depression of the groundwater table at “pump and treat” remediation wells RM-1 and RM-2 and slight mounding of the groundwater table at MW G-5, and MW-17-2. In conclusion, it is recommended the average gradient and direction of flow across the site as calculated by regression analyses not be applied to the site but rather note the confirmation of flow towards the “pump and treat” wells (RM-1 and RM-2).

On October 14, 2021, Stantec conducted a chemical oxidation (chemox) injection of Klozur<sup>®</sup> One product into five treatment/injection points consisting of SVE-1, SVE-2, SVE-3, NE Injection Well, SE Injection Well. The Klozur<sup>®</sup> One product was mixed with potable water from the retail convenience store. Following the chemox injection, the Klozur<sup>®</sup> One solution was “hydraulically flushed” into the subsurface formation by injecting additional potable water into several of the wells. In summary, a total of 550 pounds of Klozur<sup>®</sup> One product mixed with 1,100 gallons of potable water plus was injected into the subsurface via the remediation wells during the chemox injection process. In addition, 165 gallons of potable water was used to flush the chemox into the subsurface formation.

**May 2022.** Stantec conducted the second quarter 2022 Groundwater Monitoring Event that involved the sampling of Monitoring Wells MW G-1, MW G-5, MW-10, MW-11, MW-12, MW-

16, MW-17-1, MW-17-2, and Remediation Well RM-2. Several of the well sampled had analytes of concern at concentrations exceeding ADEC groundwater cleanup levels (GCLs) as listed in Alaska Administrative Code (AAC) 18AAC 75.345, Table C (updated September 18, 2019) for all wells tested. Monitoring wells and the respective analytes in exceedance of ADEC GCLs included:

- G-1: Naphthalene
- G-5: Benzene, ethylbenzene, total xylenes, 1,2,4-trimethylbenzene (TMB), and naphthalene.
- MW-10: Ethylbenzene, DRO, 1,2,4-TMB, and naphthalene.
- MW-11: Benzene, ethylbenzene, total xylenes, DRO, GRO, 1,2,4-TMB, 1,3,5-TMB, and naphthalene.
- MW-12: Ethylbenzene and 1,2,4-TMB.
- MW 17-1: Benzene, toluene, ethylbenzene, total xylenes, DRO, GRO, 1,2,4-TMB, 1,3,5-TMB, and naphthalene.
- MW 17-2: Ethylbenzene, total xylenes, GRO, DRO, 1,2,4-TMB, and naphthalene.

The groundwater gradient was calculated to be approximately 0.003 feet per foot with flow trending toward the south-southwest at 198 degrees.

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:** On September 20 and 21, 2022, the Stantec team, which included Engineer in Training (EIT) Geoff Moorhead and EIT Leslie Petre, conducted the 4<sup>th</sup> quarter analytical sampling event of Monitoring Wells G-1, G-5, MW-10, MW-11, MW-12, MW-13, MW-16, MW-17-1, MW-17-2, and Remediation Wells RM-1 and RM-2.

Results of the analytical sampling showed analytes were present at concentrations exceeding ADEC groundwater cleanup levels (GCLs) as listed in Alaska Administrative Code (AAC) 18AAC 75.345 Table C (updated September 18, 2019) for all wells except G-1 and MW-10. Monitoring wells and the respective analytes in exceedance of ADEC GCLs included:

- G-5: Benzene, ethylbenzene, total xylenes, GRO, 1,2,4-trimethylbenzene (TMB), and naphthalene.
- MW-11: Benzene, ethylbenzene, total xylenes, DRO, GRO, 1,2,4-TMB, 1,3,5-TMB, and naphthalene.
- MW-12: Benzene, ethylbenzene, 1,2,4-TMB, and naphthalene.
- MW-13: Benzene and ethylbenzene.
- MW-16: DRO.

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

During the monitoring event the groundwater flow was determined to be to the north at approximately 345° towards the pump and treat wells (RM-1 and RM-2) with a gradient of 0.006 feet per foot. The groundwater level was not measured in RM-2, making it difficult to determine the effect of the pump's drawdown on the groundwater system.

Monthly between July and October, chemox treatments were conducted which involved the injection of 550 pounds of Klozur<sup>®</sup> One and 1700 gallons of water from the onsite remediation well into formation to treat in-situ contamination.

**October 2022:** On September 20 and 21, 2022, the Stantec team, which included Engineer in Training (EIT) Geoff Moorhead and EIT Leslie Petre, conducted the October analytical sampling event of Monitoring Wells MW-17-1, MW-17-2, and Remediation Well RM-2.

Monitoring wells and the respective analytes in exceedance of ADEC GCLs included:

- Benzene and EDB were detected above GCLs in all wells sampled.
- Ethylbenzene, total xylenes, GRO, and naphthalene were detected above GCLs in all samples except MW-17-2.
- DRO and lead were detected above GCLs in MW-17-1 and MW-17-2.
- Toluene was not detected above GCLs in any of the wells sampled.

The groundwater gradient was not calculated for this event due to the reduced number of sampling locations.

---

## **APPENDIX B**

---

### *Field Methods and Procedures*

---

## APPENDIX B – FIELD METHODS AND PROCEDURES

**Tesoro 2 Go Mart #111** (3679 College Road, Fairbanks, Alaska)

The following table presents the proposed tasks for the Alaska Department of Environmental Conservation (ADEC)-approved 2022 Corrective Action Work Plan. The scope of these tasks is based on the results and findings of the monitoring and remediation completed to date at 7-Eleven Store #46746 (former Speedway Store 5315, TNS111), ADEC Facility ID #1112; ADEC File #100.26.026.

### 2022 Work Plan Schedule for Speedway Store 5315 (former Tesoro 2Go Mart 111)

- Task 1 –Groundwater Monitoring

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

Work Plan Tasks for 2022		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-11, MW-12, MW-13, MW-16, MW-10, G-1, G-5, MW 17-1, and MW 17-2	V, G, D, P, I & S		V, G, D, P, I & S	
	Recirculation/Remediation Wells: RM-1 and RM-2	V, G, D, P, I & S	V, G, D, P, I & S	V, G, D, P, I & S	V, G, D, P, I & S
Task 2	O&M Groundwater Recirculation Wells RM-1 & RM-2	✓	✓	✓	✓
Task 3	Chemical Oxidation Treatment	✓	✓	✓	✓
Task 4	Modifications to Groundwater Pump & Treat Recirculation/Distribution System		✓	✓	

Key:

AK – Alaska Test Method

D – Diesel range organics by AK102.

E – Drinking water parameters by EPA Method 524.1.

G – Gasoline range organics by AK101.

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

O&M – Operation and Maintenance

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

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



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

- Task 2 – O&M Groundwater Recirculation Wells RM-1 & RM-2

Perform quarterly maintenance on the remediation system, which consists of the existing 4-inch diameter well RM-1 and 4-inch diameter well RM-2 groundwater recirculation systems used for treating the vadose zone soil and groundwater beneath the existing USTs and fuel dispenser islands. The in-situ remediation system provides treatment of the contaminated groundwater with the injection of chemical oxidant (see Task 3). The submersible pumps for the two treatment systems will run continuously (24-hours per day). The pumping system will be monitored daily for electrical usage, water pressure and water line temperature with iMonnit® wireless sensors and the equipment checked monthly with maintenance provided on an as needed basis.

- Task 3 – Chemical Oxidation Treatment

Stantec proposes to provide chemical oxidation treatment of the petroleum contaminated soil and groundwater four times a year into the three existing horizontal injection lines located beneath the fuel dispenser islands and the two injection lines located on the east side of the USTs. The injection of chemox will occur in all quarters of the year. A total of five hundred (500) gallons of a prepared solution of the chemical oxidant Klozur One® (a chemical mixture consisting primarily of sodium persulfate) will be injected into the five existing horizontal injection lines with a dose of 100 gallons per injection well. The chemox mixture for each well will consist of 110 pounds Klozur One® mixed with approximately 100 gallons of water pumped from RM-2 well.

The horizontal injection well located along the northeast edge of the USTs will receive an additional 200 gallons of water pumped from RM-2 well to provide a “hydraulic push” to distribute the chemox solution into the surrounding formation. The other four injection lines are continuously dosed with recirculated groundwater discharged from remediation/recirculation wells RM-1 & RM-2.

The on-site monitoring wells will be sampled semi-annually as outlined in Task 1 to assess treatment impact on the groundwater table. The remediation/recirculation wells will be sampled on a quarterly basis. In addition, the groundwater monitoring wells will be sampled for sodium to check on the distribution/migration of the chemical oxidant.

- Task 4 – Modifications to Groundwater Pump & Treat Recirculation/Distribution System

The purpose of this task is to make modifications to improve the operation and distribution of the existing ground water pump and treat system. Two modifications described below will be made to the underground plumbing system that receives and distributes the discharge of the groundwater from remediation wells RM-1 and RM-2.

1. The first modification will consist of a water line connection to the existing 4 inch diameter well that is used for the chemox injection into the horizontal injection line located along the northeast edge of the underground storage tank shown in the attached layout of the remediation system figure (Figure 3). This plumbing connection should provide additional distribution during the recirculation of groundwater across the northeast portion of the site.
2. The second modification will consist of assessing the condition of the existing air sparge line that is connected to the former AS Well #14 shown on Figure 2. If the air

sparge line is found to be functional then it will be connected to the existing plumbing system that receives the discharge of flow from the remediation well RM-2. The AS well will be decommissioned and replaced with a shallow (15-foot deep) 4-inch diameter screened well for the injection of chemox and recirculation of groundwater discharged from RM-2.

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

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

- The static water levels in the monitoring wells will be measured with respect to the top of each well casing. The elevation of the static water level will be based on an arbitrary datum established on-site during a vertical control survey that will be completed by Stantec on an annual basis. The survey will be performed during the summer after the seasonal frost layer thaws.
- The monitoring wells will be purged of a minimum of three well bore volumes prior to collecting the water samples. A new, disposable, Teflon<sup>®</sup> bailer will be used to sample each well. The first bail of water removed from each well will be examined for petroleum odor, sheen, and any other unique physical features.
- Water samples will be collected in laboratory-supplied sample containers. The samples will be delivered to an ADEC-approved laboratory in accordance with standard chain-of-custody procedures.
- Additional water samples will be collected from the monitoring wells after the well has been purged, as described above, and tested in the field for chemical and physical intrinsic parameters listed in the 2022 Work Plan Schedule shown above.

---

## **APPENDIX C**

---

### *Field Measurements and Notes*

---



Speedway5315/  
Site Name: TNS111

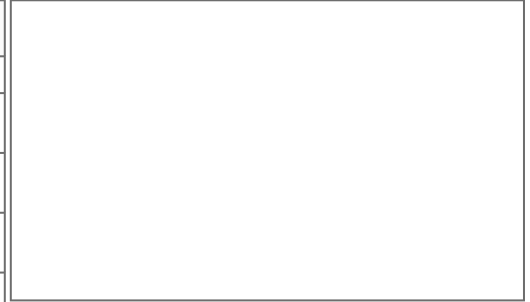
Date: 10/26/2022, 5:23 PM

Name(s): Leslie Petre

Well ID	Free Product (ft)	Water (ft)	Bottom (ft)
MW17-1	N/A	13.37	19.15
TOC	Well Dia. (in)	Screen Length (ft)	Well Material
430.55	2.0		pvc
Latitude (decimal)	Longitude (decimal)	Weather	
64.8554993	-147.8120863	sunny 16°F	

Analytical Parameters	Bottles to be filled
Sodium	1 X 250 mL Poly ✓
BTEX	3 X 40 mL Amber VOAs ✓
GRO	3 X 40 mL Amber VOAs ✓
PAH	2 X 40 mL Amber VOAs ✓
DRO	2 X 100 mL Amber Glass ✓
EDB & EDC-EPA 8011	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)
16:48	13.37													

Sample Collected? Yes Time 17:23 Total Pumped from Well? 3 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.

Speedway5315/

Date: 10/27/2022, 8:34 AM

Name(s): Leslie Petre

Site Name: TNS111

Well ID	Free Product (ft)	Water (ft)	Bottom (ft)
MW17-2	N/A	13.01	19.08
TOC	Well Dia. (in)	Screen Length (ft)	Well Material
430.17	2.0		
Latitude (decimal)		Longitude (decimal)	Weather
64.855543		-147.8124095	sunny 16°F

Analytical Parameters	Bottles to be filled
DRO	2 X 100 mL Amber Glass ✓
GRO	3 X 40 mL Amber VOAs ✓
PAH	2 X 40 mL Amber VOAs ✓
EDB & EDC-EPA 8011	3 X 40 mL Amber VOAs ✓
Sodium	1 X 250 mL Poly ✓
BTEX	3 X 40 mL Amber VOAs ✓

Type/Model Meter Used: YSI 556  
 Calibrated: (date) \_\_\_\_\_ (time) \_\_\_\_\_  
 Cell Vol: None  
 Type/Model Pump Used: Submersible  
 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)
16:06	13.01	X												

Sample Collected? Yes Time 08:34 Total Pumped from Well? 3 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.

Speedway5315/  
Site Name: TNS111

Date: 10/26/2022, 6:11 PM

Name(s): Leslie Petre

Well ID	Free Product (ft)	Water (ft)	Bottom (ft)
RM-2	N/A		
TOC	Well Dia. (in)	Screen Length (ft)	Well Material
430.79	4.0		
Latitude (decimal)	Longitude (decimal)	Weather	
64.8555998	-147.8123245		

Analytical Parameters	Bottles to be filled
EDB & EDC-EPA 8011	3 X 40 mL Amber VOAs ✓
DRO	2 X 100 mL Amber Glass ✓
GRO	3 X 40 mL Amber VOAs ✓
Sodium	1 X 250 mL Poly ✓
PAH	2 X 40 mL Amber VOAs ✓
BTEX	3 X 40 mL Amber VOAs ✓

--

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

QA/QC: Duplicate #1

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)
		<del>X</del>												

Sample Collected? Yes      Time 18:11      Total Pumped from Well? 0 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.

**Speedway5315/**
**Date: 10/26/2022, 5:23 PM**
**Name(s): Leslie Petre**
**Site Name: TNS111**

Location ID	GPS Latitude (decimal)	GPS Longitude (decimal)
MW17-1	64.8554993	-147.8120863
<b>Field Data</b>		
Sampler Names: Geoff Moorhead		Sheen/Odor?: N/y
pH: 6.83		Specific Conductance: 1.99
DO: 1.19		Temperature (C): 2.5
ORP: 148.2		Purge Volume (gal): 2.82
Notes: Low odor		



**Speedway5315/**
**Date: 10/27/2022, 8:34 AM**
**Name(s): Leslie Petre**
**Site Name: TNS111**

Location ID	GPS Latitude (decimal)	GPS Longitude (decimal)
MW17-2	64.855543	-147.8124095
<b>Field Data</b>		
Sampler Names: Geoff Moorhead		Sheen/Odor?: N/y
pH: 6.6		Specific Conductance: 1.8
DO: 1.37		Temperature (C): 3.4
ORP: 211.7		Purge Volume (gal): 2.97
Notes: Low level odor		

Speedway5315/

Date: 10/26/2022, 6:11 PM

Name(s): Leslie Petre

Site Name: TNS111

Location ID	GPS Latitude (decimal)	GPS Longitude (decimal)
RM-2	64.8555998	-147.8123245
<b>Field Data</b>		
Sampler Names: Leslie Petre		Sheen/Odor?: N/y
pH: 6.86		Specific Conductance: 1.23
DO: 1.18		Temperature (C): 3.3
ORP: -0.53		Purge Volume (gal): None
Notes:		

---

## **APPENDIX D**

---

### *Tables of Historical Monitoring Data*

---

## Analytical Data Results Table

Speedway 5315/TNS111  
 7-Eleven - Paula Sime  
 3679 College Rd  
 Fairbanks, Alaska 99709

	Well Screen Interval	Ground Water Elevation	1,2,4-TMB	1,3,5-TMB	Benzene	DRO	Ethylbenzene	GRO	Naphthalene	Sodium	Toluene	Xylenes
Unit	ft	ft	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>
<b>G1</b>												
12/20/1995	--	414.48	—	—	<u>1.54</u>	—	<u>0.56</u>	—	—	—	<u>1.26</u>	<u>2.53</u>
05/16/1996	--	415.71	—	—	<u>5.9</u>	—	<u>1.8</u>	—	—	—	<u>3.9</u>	<u>8.2</u>
12/09/1996	--	--	—	—	<u>2.1</u>	—	<u>0.73</u>	—	—	—	<u>2.1</u>	<u>3.1</u>
03/20/1997	--	--	—	—	<u>2.1</u>	—	<u>0.81</u>	—	—	—	<u>2.5</u>	<u>4.3</u>
11/18/1997	--	415.22	—	—	<u>4.91</u>	—	<u>1.89</u>	—	—	—	<u>4.21</u>	<u>8</u>
05/01/1998	--	--	—	—	<u>4.83</u>	<u>5.03</u>	<u>2.18</u>	<u>60</u>	—	—	<u>6.67</u>	<u>10.13</u>
10/14/1998	--	416.35	—	—	<u>5.04</u>	<u>4.37</u>	<u>1.8</u>	<u>43</u>	—	—	<u>3.81</u>	<u>7.47</u>
05/27/1999	--	415.3	—	—	<u>4.34</u>	<u>5.46</u>	<u>1.94</u>	<u>43</u>	—	—	<u>5.02</u>	<u>8.89</u>
11/05/1999	--	415.48	—	—	<u>2.59</u>	<u>3.16</u>	<u>1.01</u>	<u>23</u>	—	—	<u>1.74</u>	<u>3.89</u>
04/17/2000	--	414.06	—	—	<u>3.12</u>	<u>5.9</u>	<u>1.64</u>	<u>46</u>	—	—	<u>3.77</u>	<u>7.14</u>
10/26/2000	--	417.48	—	—	<u>3.04</u>	<u>2.19</u>	<u>1.15</u>	<u>23</u>	—	0.596	—	<u>3.39</u>
05/30/2001	--	413.6	—	—	<u>1.59</u>	<u>2.61</u>	<u>0.727</u>	<u>17</u>	—	0.158	—	<u>1.87</u>
05/01/2002	--	414.52	—	—	<u>1.3</u>	<u>1.84</u>	<u>0.683</u>	<u>8.6</u>	—	0.0371	—	<u>1.51</u>
08/19/2002	--	417.79	—	—	<u>0.89</u>	1.41	<u>0.774</u>	<u>13.5</u>	—	0.0588	—	<u>1.465</u>
11/05/2002	--	417.06	—	—	<u>0.0616</u>	U (0.5)	0.00845	0.787	—	U (0.002)	—	0.0666
03/19/2003	--	416.18	—	—	<u>0.00765</u>	0.509	U (0.002)	U (0.09)	—	U (0.002)	—	0.00242
08/05/2003	--	418.33	—	—	<u>0.11</u>	U (0.32)	<u>0.101</u>	1.3	—	0.00209	—	0.062
03/08/2004	--	414.92	—	—	<u>0.00979</u>	U (0.37)	U (0.0005)	U (0.05)	—	U (0.0005)	—	U (0.001)
09/15/2004	--	416.65	—	—	0.00206	U (0.385)	U (0.0005)	U (0.05)	—	U (0.0005)	—	U (0.0015)
01/10/2005	--	414.58	—	—	<u>0.0327</u>	U (0.388)	0.000623	0.134	—	U (0.0005)	—	U (0.0015)
07/15/2005	--	417.94	—	—	<u>0.0626</u>	U (0.391)	<u>0.0445</u>	0.426	—	U (0.0005)	—	0.00354
02/16/2006	--	414.54	—	—	0.00406	U (0.397)	U (0.0005)	U (0.05)	—	U (0.0005)	—	U (0.0015)
07/27/2006	--	417.37	—	—	<u>0.0222</u>	U (0.397)	0.0104	0.163	—	0.000805	—	0.00217
03/02/2007	--	414.59	—	—	0.00159	U (0.424)	U (0.0005)	U (0.05)	—	U (0.0005)	—	U (0.0015)
10/17/2007	--	416.88	—	—	U (0.0005)	U (0.403)	U (0.0005)	U (0.05)	—	U (0.0005)	—	U (0.0015)
06/05/2008	--	415.81	—	—	<u>0.00614</u>	0.877	U (0.0005)	0.082	—	U (0.0005)	—	0.00379
09/29/2008	--	417.21	—	—	U (0.0005)	U (0.435)	U (0.0005)	U (0.05)	—	U (0.0005)	—	U (0.0015)
02/25/2009	--	414.48	—	—	U (0.0005)	U (0.417)	U (0.0005)	U (0.05)	—	U (0.0005)	—	U (0.0015)
07/21/2009	--	416.75	—	—	<u>0.00601</u>	U (0.397)	U (0.001)	0.0954	—	U (0.001)	—	0.00363
03/17/2010	--	414.03	—	—	U (0.001)	U (0.431)	U (0.001)	U (0.05)	—	U (0.001)	—	U (0.002)
09/15/2010	--	416.56	—	—	U (0.0005)	U (0.385)	0.00926	0.15	—	U (0.0005)	—	0.0619
03/22/2011	--	413.97	—	—	U (0.0005)	0.657	U (0.0005)	U (0.05)	—	U (0.0005)	—	U (0.0015)
09/01/2011	--	417.44	—	—	0.0029	U (0.410)	U (0.0005)	0.0719	—	0.000601	—	U (0.0015)
03/13/2012	--	414.37	—	—	U (0.0005)	U (0.446)	U (0.0005)	U (0.05)	—	U (0.0005)	—	U (0.0015)
07/23/2012	--	417.01	—	—	<u>0.0134</u>	U (0.397)	U (0.0010)	0.263	—	U (0.0010)	—	U (0.0030)
02/21/2013	--	414.26	—	—	U (0.0005)	U (0.431)	U (0.0005)	U (0.05)	—	U (0.0005)	—	U (0.0015)
08/13/2013	--	416.5	—	—	<u>0.00621</u>	U (0.413)	U (0.0005)	U (0.05)	—	0.000688	—	U (0.0015)
03/18/2014	--	414.38	—	—	U (0.0005)	U (0.403)	U (0.0005)	U (0.05)	—	U (0.0005)	—	U (0.0015)
07/31/2014	--	419.66	—	—	0.0026	0.67	0.0022	0.056	—	U (0.001)	—	U (0.001)

## Analytical Data Results Table

Speedway 5315/TNS111  
 7-Eleven - Paula Sime  
 3679 College Rd  
 Fairbanks, Alaska 99709

	Well Screen Interval	Ground Water Elevation	124-TMB	135-TMB	Benzene	DRO	Ethylbenzene	GRO	Naphthalene	Sodium	Toluene	Xylenes
Unit	ft	ft	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
<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>
03/03/2015	--	415.09	—	—	U (0.0005)	U (0.45)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)
07/27/2015	--	416.21	—	—	U (0.00054)	0.25	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)
02/23/2016	--	415.25	—	—	U (0.001)	U (0.11)	U (0.001)	U (0.05)	—	—	U (0.001)	U (0.001)
10/06/2016	--	418.73	—	—	U (0.001)	0.24	U (0.001)	U (0.05)	—	—	U (0.001)	U (0.001)
03/16/2017	--	414.96	—	—	<u>0.0058</u>	0.6	U (0.003)	U (0.05)	—	—	U (0.002)	U (0.002)
03/29/2018	--	414.63	—	—	0.0041	0.76	U (0.003)	U (1)	—	—	U (0.002)	U (0.002)
09/07/2018	--	418.62	—	—	0.0024	0.28	U (0.001)	U (0.15)	—	—	U (0.001)	U (0.002)
03/12/2019	--	415.23	—	—	U (0.003)	0.33	U (0.003)	<u>9.4</u>	—	—	U (0.002)	U (0.003)
07/29/2019	--	416.29	—	—	U (0.003)	0.3	U (0.003)	U (0.25)	—	—	U (0.002)	U (0.003)
08/03/2020	--	419.66	—	—	0.000817	U (0.800)	U (0.001)	0.0109	—	—	U (0.001)	U (0.003)
10/14/2020	--	418.84	—	—	<u>0.0134</u>	0.362	0.000186	U (0.10)	—	—	0.000615	0.000653
03/30/2021	--	415.54	—	—	0.00141	0.256	U (0.001)	0.0194 BJ	—	—	U (0.001)	U (0.003)
07/22/2021	--	--	—	—	U (0.0200)	<u>2.78</u>	<u>0.608</u>	<u>10.2</u>	—	—	0.124	<u>3.43</u>
10/12/2021	--	417.96	—	—	0.00102	0.704 J	U (0.001)	0.0427	—	—	U (0.001)	0.000267 J
05/17/2022	--	418.0	0.00106	0.00192	0.00242	0.586	0.00293	0.0829	<u>0.00173</u>	78.1	U(0.00100)	0.00109
09/21/2022	--	417.47	U(0.00100)	U(0.00100)	0.000813	0.367	U(0.00100)	U(0.100)	0.000752	78.5	U(0.00100)	U(0.00300)
<b>G2</b>												
12/20/1995	--	414.49	—	—	<u>0.069</u>	—	U	—	—	—	U	U
05/16/1996	--	415.74	—	—	<u>0.2</u>	—	U	—	—	—	U	U
08/15/1996	--	416.57	—	—	<u>0.32</u>	—	U	—	—	—	U	U
12/09/1996	--	415.42	—	—	<u>0.14</u>	—	U	—	—	—	U	U
03/20/1997	--	414.4	—	—	0.002	—	U	—	—	—	U	U
08/15/1997	--	415.88	—	—	<u>0.0253</u>	—	U	0.077	—	—	U	U
11/18/1997	--	415.2	—	—	U	—	U	U	—	—	U	0.00169
05/01/1998	--	414.35	—	—	<u>0.00523</u>	0.221	U	U	—	—	U	0.00139
10/14/1998	--	416.55	—	—	<u>0.0318</u>	0.248	U	0.076	—	—	U	0.00135
05/27/1999	--	415.27	—	—	U	0.345	U	U	—	—	0.00624	0.00326
11/05/1999	--	415.47	—	—	<u>0.0514</u>	U	U	0.13	—	—	U	U
04/17/2000	--	414.12	—	—	<u>0.00749</u>	U	U	U	—	—	U	U
10/26/2000	--	417.44	—	—	<u>0.0051</u>	U	U	U	—	—	0.0032	0.00759
05/30/2001	--	413.58	—	—	U	U	U	U	—	—	U	U
12/13/2001	--	413.04	—	—	U	U	U	U	—	—	U	U
05/01/2002	--	414.52	—	—	U	U	U	U	—	—	U	U
08/19/2002	--	417.79	—	—	0.000596	U (0.505)	U (0.002)	U (0.09)	—	—	U (0.002)	U (0.002)
11/05/2002	--	416.99	—	—	U (0.0005)	U (0.5)	U (0.002)	U (0.09)	—	—	U (0.002)	U (0.002)
07/22/2021	--	--	—	—	<u>0.0763</u>	<u>2.14</u>	<u>0.728</u>	<u>8.01</u>	—	—	0.145	<u>2.27</u>
<b>G3</b>												
04/01/1999	--	--	—	—	U	U	U	U	—	—	0.001	U
05/27/1999	--	--	—	—	U	0.413	U	U	—	—	U	U
11/05/1999	--	--	—	—	U	0.883	U	U	—	—	U	U

# Analytical Data Results Table

Speedway5315/TNS111  
 7-Eleven - Paula Sime  
 3679 College Rd  
 Fairbanks, Alaska 99709

	Well Screen Interval	Ground Water Elevation	1,2,4-TMB	1,3,5-TMB	Benzene	DRO	Ethylbenzene	GRO	Naphthalene	Sodium	Toluene	Xylenes
Unit	ft	ft	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>
04/17/2000	--	--	—	—	U	U	U	U	—	—	U	U
10/26/2000	--	--	—	—	U	U	U	U	—	—	U	U
05/30/2001	--	--	—	—	0.00029	U	0.000718	U	—	—	U	0.001855
12/13/2001	--	--	—	—	0.00064	U	U	U	—	—	U	U
08/19/2002	--	--	—	—	U (0.0005)	U (0.505)	U (0.002)	U (0.09)	—	—	U (0.002)	0.00241
<b>G4</b>												
04/01/1999	--	--	—	—	U	U	U	U	—	—	U	U
05/27/1999	--	--	—	—	U	U	U	U	—	—	U	U
11/05/1999	--	--	—	—	U	U	U	U	—	—	U	U
04/17/2000	--	--	—	—	U	U	U	U	—	—	U	U
10/26/2000	--	--	—	—	U	U	U	U	—	—	U	U
05/30/2001	--	--	—	—	U	U	U	U	—	—	U	0.001
12/13/2001	--	--	—	—	U	U	U	U	—	—	U	U
08/19/2002	--	--	—	—	0.000545	U (0.5)	U (0.002)	U (0.09)	—	—	U (0.002)	0.00366
<b>G5</b>												
05/30/2001	--	412.59	—	—	<u>12.4</u>	<u>6.47</u>	<u>2.1</u>	<u>107</u>	—	—	<u>11.5</u>	<u>9.9</u>
12/13/2001	--	413.22	—	—	<u>6.21</u>	<u>3.05</u>	<u>1.71</u>	<u>72.8</u>	—	—	<u>8.71</u>	<u>12.74</u>
05/01/2002	--	414.55	—	—	<u>11.9</u>	<u>6.75</u>	<u>1.95</u>	<u>83.4</u>	—	—	<u>7.7</u>	<u>15.1</u>
08/19/2002	--	417.8	—	—	<u>12.9</u>	<u>7.85</u>	<u>2</u>	<u>86.6</u>	—	—	<u>7.31</u>	<u>8.53</u>
11/05/2002	--	417.05	—	—	<u>5.7</u>	<u>7.17</u>	<u>1.38</u>	<u>41.9</u>	—	—	<u>4.37</u>	<u>6.7</u>
03/19/2003	--	416.19	—	—	<u>2.46</u>	<u>7.55</u>	<u>0.741</u>	<u>30</u>	—	—	<u>1.75</u>	<u>5.25</u>
08/05/2003	--	418.76	—	—	<u>5.07</u>	<u>5.78</u>	<u>0.943</u>	<u>47.5</u>	—	—	<u>2.99</u>	<u>6.41</u>
03/08/2004	--	414.93	—	—	0.00254	<u>3.45</u>	0.00104	0.126	—	—	0.00495	0.0327
09/15/2004	--	416.64	—	—	<u>0.00577</u>	<u>1.84</u>	0.000506	0.061	—	—	0.00126	0.00467
01/10/2005	--	414.8	—	—	U (0.0005)	1.22	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)
07/15/2005	--	417.83	—	—	U (0.0005)	1.19	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)
02/16/2006	--	414.48	—	—	U (0.0005)	1.08	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)
07/27/2006	--	417.09	—	—	U (0.0005)	0.865	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)
03/02/2007	--	414.24	—	—	U (0.0005)	1.03	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)
10/17/2007	--	416.22	—	—	0.000837	<u>3.44</u>	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)
06/05/2008	--	415.73	—	—	U (0.0005)	1.1	0.00452	0.112	—	—	U (0.0005)	0.0316
09/29/2008	--	417.2	—	—	U (0.0005)	<u>1.66</u>	0.00458	0.0794	—	—	U (0.0005)	0.0103
02/25/2009	--	414.45	—	—	0.00068	1.3	<u>0.0579</u>	<u>2.53</u>	—	—	0.00053	0.174
07/21/2009	--	416.73	—	—	0.0018	1.27	U (0.001)	U (0.05)	—	—	U (0.0010)	U (0.003)
03/17/2010	--	413.98	—	—	<u>0.013</u>	0.961	<u>0.19</u>	<u>4.4</u>	—	—	0.0014	<u>0.37</u>
09/15/2010	--	416.59	—	—	<u>0.0849</u>	1.1	0.00279	0.287	—	—	0.000886	0.0149
03/22/2011	--	413.96	—	—	U (0.0005)	1.04	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)
09/01/2011	--	417.44	—	—	0.00331	0.898	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)
03/13/2012	--	414.37	—	—	<u>0.0307</u>	1.02	<u>0.113</u>	<u>3.63</u>	—	—	0.00346	<u>0.23</u>
07/23/2012	--	416.9	—	—	0.00199	0.571	U (0.0010)	U (0.05)	—	—	U (0.0010)	U (0.0030)

## Analytical Data Results Table

Speedway5315/TNS111  
 7-Eleven - Paula Sime  
 3679 College Rd  
 Fairbanks, Alaska 99709

	Well Screen Interval	Ground Water Elevation	124-TMB	135-TMB	Benzene	DRO	Ethylbenzene	GRO	Naphthalene	Sodium	Toluene	Xylenes
Unit	ft	ft	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
<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>
08/13/2013	--	416.5	—	—	U (0.0005)	0.884	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)
03/18/2014	--	414.36	—	—	<u>0.025</u>	0.778	<u>0.0739</u>	<u>2.44</u>	—	—	0.00612	0.161
07/31/2014	--	419.24	—	—	<u>0.49</u>	1.4	<u>0.071</u>	2.2	—	—	0.0064	<u>0.21</u>
03/03/2015	--	414.58	—	—	U (0.0005)	0.43	U (0.0005)	U (0.05)	—	—	U (0.0005)	0.0015
07/27/2015	--	416.18	—	—	<u>0.92</u>	1.4	<u>0.59</u>	<u>10</u>	—	—	0.57	<u>1.1</u>
02/23/2016	--	415.19	—	—	U (0.001)	0.21	U (0.001)	U (0.05)	—	—	U (0.001)	U (0.001)
10/06/2016	--	418.75	—	—	U (0.001)	0.95	U (0.001)	U (0.05)	—	—	U (0.001)	U (0.001)
03/16/2017	--	414.93	—	—	<u>0.27</u>	1.3	<u>0.56</u>	<u>7.9</u>	—	—	0.36	<u>1.91</u>
03/29/2018	--	414.68	—	—	<u>0.38</u>	<u>1.6</u>	<u>0.72</u>	<u>14</u>	—	—	0.3	<u>2.27</u>
09/07/2018	--	418.68	—	—	<u>0.61</u>	<u>2.4</u>	<u>0.51</u>	<u>7.4</u>	—	—	0.91	<u>1.92</u>
03/13/2019	--	415.24	—	—	<u>0.11</u>	1.2	<u>0.39</u>	<u>5.8</u>	—	—	0.011	<u>1.05</u>
07/30/2019	--	416.31	—	—	U (0.15)	1.2	<u>0.18</u>	<u>2.9</u>	—	—	U (0.1)	<u>0.71</u>
08/04/2020	--	419.57	—	—	<u>0.114</u>	1.07	<u>0.123</u>	0.712	—	—	0.000683	0.124
10/14/2020	--	418.67	—	—	0.0016	<u>2.16</u>	0.0148	0.251	—	—	0.00513	0.079
10/12/2021	--	419.21	—	—	<u>0.00607</u>	1.42	<u>0.0661</u>	0.909	—	—	0.000300 J	0.0928
05/17/2022	--	417.95	<u>0.0681</u>	0.00399	<u>0.0462</u>	1.46	<u>0.315</u>	1.45	<u>0.0397</u>	66.8	0.178	<u>0.258</u>
09/20/2022	--	417.59	<u>0.122</u>	0.0446	<u>0.0476</u>	1.05	<u>0.266</u>	<u>2.89</u>	<u>0.0357</u>	61.5	0.02	<u>0.666</u>
<b>G6</b>												
05/30/2001	--	--	—	—	U	U	U	U	—	—	U	U
12/13/2001	--	--	—	—	U	U	U	U	—	—	U	U
08/19/2002	--	--	—	—	U (0.0005)	U (0.505)	U (0.002)	U (0.09)	—	—	U (0.002)	U (0.002)
<b>G9</b>												
11/07/2003	--	--	—	—	U (0.0005)	U (0.32)	U (0.0005)	U (0.08)	—	—	U (0.0005)	U (0.001)
03/08/2004	--	--	—	—	U (0.0005)	U (0.37)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.001)
09/15/2004	--	--	—	—	U (0.0005)	U (0.385)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)
<b>MW17-1</b>												
03/29/2018	--	--	—	—	<u>2.9</u>	<u>6</u>	<u>1.2</u>	U (100)	—	—	<u>6.6</u>	<u>8.5</u>
09/07/2018	--	--	—	—	<u>0.18</u>	<u>4.8</u>	<u>3.3</u>	<u>80</u>	—	—	<u>26</u>	<u>18</u>
03/14/2019	--	415.28	—	—	<u>3</u>	<u>3.3</u>	<u>1.7</u>	<u>47</u>	—	—	<u>7.4</u>	<u>7.4</u>
07/30/2019	--	416.35	—	—	<u>0.36</u>	<u>3.9</u>	<u>3.4</u>	<u>88</u>	—	—	<u>9.2</u>	<u>14.9</u>
08/04/2020	--	419.63	—	—	<u>0.126</u>	<u>2.78</u>	<u>3.47</u>	<u>61.1</u>	—	—	<u>22.5</u>	<u>13.8</u>
10/15/2020	--	418.92	—	—	0.0231 J	<u>4.03</u>	<u>0.305</u>	<u>5.9</u>	—	—	0.254 J	<u>2.1</u>
03/30/2021	--	415.86	—	—	0.000535 J	<u>2.66</u>	<u>0.0401</u>	<u>2.59</u>	—	—	U (0.001)	0.178
10/12/2021	--	417.63	—	—	1.61 Q	<u>3.68</u>	1.03 E	<u>30.9</u>	—	—	5.27 Q	<u>3.69</u>
05/17/2022	--	417.95	<u>1.53</u>	<u>0.315</u>	<u>0.582</u>	<u>7.43</u>	<u>3.03</u>	<u>30.8</u>	<u>0.241</u>	60.3	<u>1.63</u>	<u>9.48</u>
09/21/2022	--	417.52	<u>0.761</u>	<u>0.172</u>	<u>0.36</u>	<u>4.2</u>	<u>1.41</u>	<u>15</u>	<u>0.138</u>	117	0.313	<u>4.2</u>
10/26/2022	--	417.18	—	—	<u>0.0585</u>	<u>4.44</u>	<u>0.603</u>	<u>6.34</u>	<u>0.0624</u>	143	0.0404	<u>1.62</u>
<b>MW17-2</b>												
03/29/2018	--	--	—	—	U (0.30)	<u>12</u>	U (0.30)	<u>22</u>	—	—	<u>2.7</u>	<u>2.11</u>

## Analytical Data Results Table

Speedway5315/TNS111  
 7-Eleven - Paula Sime  
 3679 College Rd  
 Fairbanks, Alaska 99709

	Well Screen Interval	Ground Water Elevation	124-TMB	135-TMB	Benzene	DRO	Ethylbenzene	GRO	Naphthalene	Sodium	Toluene	Xylenes
Unit	ft	ft	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
<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>
09/07/2018	--	--			<u>0.18</u>	<u>15</u>	<u>0.66</u>	<u>17</u>			<u>3.2</u>	<u>4.5</u>
03/14/2019	--	415.28			<u>0.047</u>	<u>10</u>	<u>0.094</u>	<u>4.2</u>			0.94	<u>1.49</u>
07/29/2019	--	416.35			U (0.15)	<u>8.5</u>	<u>0.5</u>	<u>16</u>			<u>1.8</u>	<u>3.9</u>
08/04/2020	--	419.67			<u>0.0505</u>	<u>20.5</u>	<u>0.236</u>	<u>5.03</u>			0.477	<u>415</u>
10/15/2020	--	418.62			0.00395 J	<u>8.25</u>	<u>0.0508</u>	0.601			0.0235	<u>0.218</u>
03/30/2021	--	415.35			0.000952 J	<u>7.78</u>	0.0132	0.309			U (0.001)	0.0264
10/12/2021	--	418.57			0.00157 J	<u>3.22</u>	0.00324 J	0.0560 B,J			0.0059	0.0107 J
05/17/2022	--	418.02	<u>0.241</u>	<u>0.0679</u>	0.00325	<u>7.44</u>	<u>0.618</u>	<u>4.5</u>	<u>0.0269</u>	70.9	0.00417	<u>1.5</u>
09/21/2022	--	417.49	0.00208	0.000324	<u>0.0327</u>	<u>3.13</u>	0.00702	0.194	0.000392	206	0.0011	0.0198
10/26/2022	--	417.16			<u>0.0485</u>	<u>1.76</u>	0.00638	0.227	U	146	0.000738	0.0193
<b>MW-10</b>												
03/10/1994	--	418.07			<u>19</u>		<u>2.3</u>				<u>24</u>	<u>19</u>
09/09/1994	--	419.89			<u>15.2</u>		<u>0.9</u>				<u>18</u>	<u>14.9</u>
12/12/1994	--	418.1			<u>16.7</u>		<u>2.1</u>				<u>20</u>	<u>15.5</u>
08/15/1997	--	415.92			<u>8.3</u>		<u>1.16</u>	<u>77</u>			<u>14.4</u>	<u>9.35</u>
05/27/1999	--	415.09			<u>6.88</u>	<u>12.8</u>	<u>1.35</u>	<u>64</u>			<u>13.4</u>	<u>7.17</u>
04/17/2000	--	413.89			<u>1.86</u>	<u>5.84</u>	<u>0.887</u>	<u>35</u>			<u>7.06</u>	<u>3.47</u>
10/26/2000	--	417.44			<u>1.88</u>	<u>9.04</u>	<u>0.914</u>	<u>39.7</u>			<u>7.2</u>	<u>5.53</u>
12/13/2001	--	413.14			<u>2.7</u>	<u>10.1</u>	<u>1.59</u>	<u>53.8</u>			<u>9.6</u>	<u>7.73</u>
05/01/2002	--	414.55			<u>0.0122</u>	<u>1.96</u>	0.0137	1.1			0.0074	0.117
08/19/2002	--	417.86			<u>1.92</u>	<u>15.9</u>	<u>0.664</u>	<u>27.5</u>			<u>3.55</u>	<u>3.512</u>
11/05/2002	--	417.06			<u>0.0456</u>	<u>6.78</u>	<u>0.0368</u>	1.7			0.00533	0.1189
03/19/2003	--	416.21			<u>0.477</u>	<u>12.9</u>	<u>0.319</u>	<u>8.8</u>			0.313	<u>1.404</u>
08/05/2003	--	418.43			<u>2.54</u>	<u>17.6</u>	<u>0.876</u>	<u>61.8</u>			<u>8.79</u>	<u>7.09</u>
03/08/2004	--	414.92			<u>0.198</u>	<u>10.3</u>	U (0.025)	<u>12.8</u>			0.912	<u>2.89</u>
09/15/2004	--	416.64			<u>0.0802</u>	<u>6.01</u>	<u>0.0497</u>	2.06			0.00234	<u>0.446</u>
07/15/2005	--	417.82			<u>0.416</u>	<u>14.9</u>	<u>0.513</u>	<u>25.6</u>			<u>3.37</u>	<u>3.63</u>
07/27/2006	--	417.06			<u>0.413</u>	<u>16.3</u>	<u>0.714</u>	<u>32.5</u>			<u>5.3</u>	<u>4.88</u>
03/02/2007	--	414.23			<u>0.203</u>	<u>8.8</u>	<u>0.545</u>	<u>32.8</u>			<u>2.33</u>	<u>3.9</u>
10/17/2007	--	416.47			0.00324	<u>6.43</u>	0.0105	1.15			0.00102	0.0406
06/05/2008	--	415.69			<u>0.23</u>	<u>10.2</u>	<u>1.18</u>	<u>38.4</u>			<u>2.9</u>	<u>8.14</u>
09/29/2008	--	417.2			0.00139	<u>3.67</u>	0.012	1.18			0.00403	0.0777
02/25/2009	--	--			<u>0.0778</u>	<u>30.3</u>	<u>1.18</u>	<u>43.4</u>			<u>2.7</u>	<u>8.89</u>
07/21/2009	--	416.71			<u>0.014</u>	<u>11.8</u>	<u>1.26</u>	<u>47.3</u>			<u>1.77</u>	<u>12.2</u>
03/17/2010	--	413.98			0.0027	<u>16.2</u>	<u>1.2</u>	<u>92</u>			<u>1.5</u>	<u>9.5</u>
09/15/2010	--	416.6			<u>0.00635</u>	<u>21.3</u>	<u>0.776</u>	<u>16.2</u>			0.0902	<u>4.06</u>
03/22/2011	--	414.01			0.00425	<u>17.4</u>	<u>0.678</u>	<u>16</u>			0.0195	<u>3.15</u>
09/01/2011	--	417.49			<u>0.00673</u>	<u>30.5</u>	<u>0.498</u>	<u>22.5</u>			0.0908	<u>3</u>
03/13/2012	--	414.42			U (0.010)	<u>10.3</u>	<u>0.118</u>	<u>4.24</u>			U (0.010)	<u>0.679</u>
07/23/2012	--	416.97			0.00226	<u>2.57</u>	0.00161	0.32			0.0012	U (0.0030)



## Analytical Data Results Table

Speedway5315/TNS111  
 7-Eleven - Paula Sime  
 3679 College Rd  
 Fairbanks, Alaska 99709

		Well Screen Interval	Ground Water Elevation										
Unit	ft	ft	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
			1,2,4-TMB	1,3,5-TMB	Benzene	DRO	Ethylbenzene	GRO	Naphthalene	Sodium	Toluene	Xylenes	
<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>	
02/21/2013	--	414.24	—	—	0.000877	<u>4.55</u>	0.00702	<u>2.69</u>	—	—	0.00156	0.166	
08/13/2013	--	416.54	—	—	0.00245	<u>10.3</u>	<u>0.0216</u>	1.59	—	—	0.00455	0.0755	
03/19/2014	--	414.3	—	—	0.000642	<u>7.82</u>	0.0145	1.98	—	—	0.00404	0.119	
07/31/2014	--	419.65	—	—	<u>0.011</u>	<u>10</u>	<u>0.047</u>	<u>5</u>	—	—	0.0024	<u>1.2</u>	
03/03/2015	--	414.98	—	—	0.00067	<u>3.2</u>	0.002	0.23	—	—	U (0.0005)	0.0063	
07/27/2015	--	416.16	—	—	0.0012	<u>4</u>	0.0037	0.65	—	—	0.002	0.011	
02/23/2016	--	415.2	—	—	U (0.001)	<u>2.7</u>	U (0.001)	U (0.05)	—	—	U (0.001)	U (0.001)	
10/06/2016	--	418.72	—	—	U (0.001)	<u>2.3</u>	U (0.001)	U (0.05)	—	—	U (0.001)	U (0.001)	
03/16/2017	--	414.92	—	—	<u>0.011</u>	<u>6.7</u>	<u>0.16</u>	<u>3.7</u>	—	—	0.0027	<u>0.489</u>	
03/29/2018	--	414.6	—	—	<u>0.022</u>	<u>13</u>	<u>0.35</u>	<u>9.6</u>	—	—	0.01	<u>1.3</u>	
09/07/2018	--	418.69	—	—	<u>0.027</u>	<u>13</u>	<u>0.27</u>	<u>5.2</u>	—	—	0.0052	<u>1.283</u>	
03/13/2019	--	415.23	—	—	<u>0.016</u>	<u>8</u>	<u>0.21</u>	<u>3.5</u>	—	—	U (0.002)	<u>0.726</u>	
07/29/2019	--	416.33	—	—	U (0.15)	<u>13</u>	<u>0.2</u>	<u>5.6</u>	—	—	U (0.1)	<u>0.82</u>	
08/04/2020	--	419.74	—	—	<u>0.0577</u>	<u>1.9</u>	<u>0.597</u>	<u>4.2</u>	—	—	0.142	<u>1.89</u>	
10/15/2020	--	418.63	—	—	<u>0.00506</u>	<u>1.74</u>	<u>0.0649</u>	1.12	—	—	0.0387	<u>0.198</u>	
10/12/2021	--	417.98	—	—	0.000209 J,Q	<u>2.43</u>	0.00142 J	0.280 B,J	—	—	U (0.005)	0.00214 J	
05/17/2022	--	418.01	<u>0.0694</u>	0.0185	0.00147	<u>3.65</u>	<u>0.0318</u>	0.858	<u>0.00286</u>	68.8	0.003	0.0913	
09/20/2022	--	417.45	0.0201	0.00596	0.0021	1.34	0.00955	0.105	0.0015	111	0.000407	0.025	
<b>MW-11</b>													
09/28/2012	--	416.27	—	—	<u>0.235</u>	<u>19.4</u>	<u>0.873</u>	<u>40.3</u>	—	—	0.594	<u>5.52</u>	
02/21/2013	--	414.26	—	—	<u>0.0177</u>	<u>5.72</u>	<u>1.61</u>	<u>41.1</u>	—	—	0.00707	<u>7.2</u>	
08/13/2013	--	416.53	—	—	<u>0.257</u>	<u>7.79</u>	<u>0.6</u>	<u>5.45</u>	—	—	0.0152	<u>1.15</u>	
03/19/2014	--	414.33	—	—	<u>0.0933</u>	<u>14.1</u>	<u>0.915</u>	<u>22.1</u>	—	—	0.0548	<u>3.28</u>	
07/31/2014	--	419.65	—	—	<u>0.088</u>	<u>7</u>	<u>0.51</u>	<u>10</u>	—	—	0.032	<u>2</u>	
03/03/2015	--	414.99	—	—	<u>0.038</u>	<u>3</u>	<u>0.6</u>	<u>17</u>	—	—	0.071	<u>2.9</u>	
07/27/2015	--	416.2	—	—	<u>0.46</u>	<u>13</u>	<u>1.5</u>	<u>34</u>	—	—	0.16	<u>6.6</u>	
02/23/2016	--	415.22	—	—	U (0.001)	1.2	U (0.001)	0.13	—	—	U (0.001)	0.0025	
10/06/2016	--	418.74	—	—	U (0.001)	0.77	0.0068	0.2	—	—	U (0.001)	0.0025	
03/16/2017	--	414.93	—	—	U (0.2)	<u>6.2</u>	<u>0.89</u>	<u>14</u>	—	—	0.48	<u>3.99</u>	
07/07/2017	--	416.97	—	—	<u>0.11</u>	<u>7.4</u>	<u>0.4</u>	<u>7.1</u>	—	—	0.26	<u>1.76</u>	
03/29/2018	--	414.62	—	—	U (0.15)	<u>8</u>	<u>0.92</u>	U (90)	—	—	0.71	<u>6.1</u>	
09/07/2018	--	418.71	—	—	<u>0.068</u>	<u>3.2</u>	<u>0.57</u>	<u>7.8</u>	—	—	0.066	<u>2.29</u>	
03/13/2019	--	415.23	—	—	<u>0.1</u>	<u>9.9</u>	<u>0.85</u>	<u>19</u>	—	—	0.3	<u>5</u>	
07/29/2019	--	416.28	—	—	U (0.15)	<u>9.8</u>	<u>0.67</u>	<u>15</u>	—	—	0.16	<u>4.96</u>	
08/04/2020	--	419.64	—	—	<u>0.057</u>	<u>3.51</u>	<u>0.434</u>	<u>5.63</u>	—	—	0.00403	<u>1.75</u>	
10/15/2020	--	418.6	—	—	0.000929 J	1.06 J	0.0106	0.386 J	—	—	0.00121	0.081	
10/12/2021	--	417.94	—	—	0.00103	<u>1.97</u>	0.492 Q	<u>5.4</u>	—	—	0.000688 J	<u>1.38</u>	
05/17/2022	--	418.05	<u>0.531</u>	<u>0.126</u>	<u>0.00712</u>	<u>3.7</u>	<u>1.29</u>	<u>6.62</u>	<u>0.161</u>	72.1	0.00793	<u>2.19</u>	
09/20/2022	--	417.45	<u>0.227</u>	<u>0.061</u>	<u>0.00578</u>	<u>1.63</u>	<u>0.315</u>	<u>2.53</u>	<u>0.0441</u>	102	0.000431	<u>0.733</u>	
<b>MW-12</b>													

## Analytical Data Results Table

Speedway5315/TNS111  
 7-Eleven - Paula Sime  
 3679 College Rd  
 Fairbanks, Alaska 99709

	Well Screen Interval	Ground Water Elevation	124-TMB	135-TMB	Benzene	DRO	Ethylbenzene	GRO	Naphthalene	Sodium	Toluene	Xylenes
Unit	ft	ft	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
<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>
09/28/2012	--	416.3	—	—	0.00438	<u>2.74</u>	<u>3.51</u>	<u>165</u>	—	—	<u>13.9</u>	<u>19.5</u>
02/21/2013	--	414.3	—	—	<u>0.012</u>	<u>3.66</u>	<u>2.69</u>	<u>71.1</u>	—	—	<u>7.69</u>	<u>12.8</u>
08/13/2013	--	416.54	—	—	<u>0.0334</u>	<u>6.05</u>	<u>1</u>	<u>22.6</u>	—	—	<u>7.3</u>	<u>6.21</u>
09/24/2013	--	--	—	—	<u>0.00913</u>	<u>7.11</u>	<u>0.344</u>	<u>8.35</u>	—	—	<u>1.65</u>	<u>1.72</u>
11/19/2013	--	415.65	—	—	<u>0.0117</u>	<u>11.7</u>	<u>0.527</u>	<u>13.5</u>	—	—	<u>1.83</u>	<u>2.19</u>
03/19/2014	--	414.4	—	—	<u>0.0128</u>	<u>11.4</u>	<u>0.663</u>	<u>27.9</u>	—	—	<u>2.24</u>	<u>5.34</u>
07/31/2014	--	419.67	—	—	U (0.0005)	0.5	0.0027	0.18	—	—	0.0063	0.015
03/03/2015	--	416.05	—	—	U (0.0005)	1.2	<u>0.022</u>	<u>6.8</u>	—	—	0.01	<u>0.24</u>
07/27/2015	--	416.21	—	—	0.00057	0.99	<u>0.026</u>	<u>3.2</u>	—	—	0.011	0.19
02/23/2016	--	415.28	—	—	U (0.001)	0.32	U (0.001)	U (0.05)	—	—	U (0.001)	U (0.001)
10/06/2016	--	418.79	—	—	U (0.001)	0.39	U (0.001)	U (0.05)	—	—	U (0.001)	U (0.001)
03/16/2017	--	415.0	—	—	U (0.02)	1.5	<u>0.3</u>	<u>3.8</u>	—	—	U (0.02)	<u>0.52</u>
07/07/2017	--	417.04	—	—	U (0.002)	1.4	<u>0.13</u>	<u>2.8</u>	—	—	U (0.04)	<u>0.38</u>
03/29/2018	--	414.69	—	—	U (0.003)	0.58	U (0.003)	2	—	—	U (0.002)	U (0.002)
09/07/2018	--	418.78	—	—	U (0.0004)	0.56	<u>0.019</u>	1.1	—	—	U (0.001)	0.063
03/13/2019	--	415.3	—	—	U (0.003)	0.78	0.01	1.3	—	—	U (0.002)	0.055
07/30/2019	--	416.38	—	—	U (0.003)	0.47	U (0.003)	0.26	—	—	U (0.002)	0.0039
08/03/2020	--	422.58	—	—	0.000353	0.852	<u>0.0538</u>	1.23	—	—	0.0364	<u>0.487</u>
10/14/2020	--	418.68	—	—	<u>0.0192</u>	0.658 J	<u>0.123</u>	1.08	—	—	0.000817 J	<u>0.425</u>
03/30/2021	--	415.36	—	—	0.000395 J	1.26	<u>0.0221</u>	<u>2.3</u>	—	—	0.000853 J	0.0676
10/12/2021	--	418.0	—	—	0.000217 J	0.989	<u>0.0722</u>	1.93	—	—	0.00215	<u>0.5</u>
05/17/2022	--	418.03	<u>0.116</u>	0.025	0.000342	0.745	<u>0.0184</u>	0.547	0.000545	66.9	0.000613	0.094
09/21/2022	--	417.55	<u>0.0572</u>	0.0238	<u>0.024</u>	0.787	<u>0.098</u>	0.528	<u>0.0058</u>	66.5	0.00243	0.188
<b>MW-13</b>												
09/28/2012	--	416.31	—	—	U (0.0005)	0.738	<u>0.0263</u>	<u>8.11</u>	—	—	0.0316	<u>0.609</u>
02/21/2013	--	414.31	—	—	0.0013	<u>1.9</u>	0.0125	0.649	—	—	U (0.0005)	0.167
08/13/2013	--	416.55	—	—	U (0.0005)	0.839	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)
09/24/2013	--	--	—	—	U (0.0005)	0.736	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)
11/19/2013	--	415.48	—	—	U (0.0005)	0.478	U (0.0005)	U (0.05)	—	—	0.000751	0.00168
03/18/2014	--	414.42	—	—	0.000671	1.13	U (0.0005)	0.0593	—	—	0.000846	0.00208
07/31/2014	--	419.67	—	—	U (0.0005)	U (0.42)	U (0.001)	U (0.05)	—	—	U (0.001)	U (0.001)
03/03/2015	--	415.04	—	—	<u>0.02</u>	0.62	<u>0.028</u>	0.82	—	—	U (0.0005)	0.13
07/27/2015	--	416.24	—	—	U (0.0005)	0.58	0.0014	U (0.05)	—	—	U (0.0005)	0.0046
02/23/2016	--	415.31	—	—	U (0.001)	<u>2.3</u>	0.0096	1	—	—	U (0.001)	0.073
10/06/2016	--	418.8	—	—	U (0.001)	0.65	U (0.001)	U (0.05)	—	—	U (0.001)	0.0058
03/16/2017	--	415.02	—	—	U (0.002)	0.44	U (0.0053)	0.15	—	—	U (0.002)	0.013
07/07/2017	--	417.06	—	—	U (0.002)	0.32	U (0.003)	U (1.0)	—	—	U (0.002)	U (0.002)
03/29/2018	--	414.7	—	—	U (0.003)	0.45	U (0.003)	U (1)	—	—	U (0.002)	U (0.002)
09/07/2018	--	418.76	—	—	U (0.0004)	0.43	U (0.001)	U (0.15)	—	—	U (0.001)	U (0.002)
03/13/2019	--	415.34	—	—	U (0.003)	0.36	0.0072	U (1.3)	—	—	U (0.002)	0.0094

## Analytical Data Results Table

Speedway5315/TNS111  
 7-Eleven - Paula Sime  
 3679 College Rd  
 Fairbanks, Alaska 99709

		Well Screen Interval	Ground Water Elevation										
	Unit	ft	ft	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>
	07/29/2019	--	416.37	—	—	U (0.003)	1.1	0.0085	0.45	—	—	U (0.002)	0.0214
	08/03/2020	--	419.57	—	—	0.000323	0.554	<u>0.0439</u>	1.01	—	—	0.0351	<u>0.454</u>
	10/14/2020	--	418.67	—	—	<u>0.018</u>	1.3	<u>0.155</u>	1.86	—	—	0.0108	<u>0.63</u>
	03/30/2021	--	415.41	—	—	0.00019 J	0.341 J	0.00361	0.139 B	—	—	U (0.001)	0.00705
	10/12/2021	--	418.0	—	—	U (0.001)	0.538 J	0.000274 J	0.0684 B,J	—	—	U (0.001)	0.00769
	09/21/2022	--	417.54	0.0153	0.00749	<u>0.00797</u>	0.569	<u>0.0309</u>	0.293	U(0.000250)	64.1	0.0012	0.0724
<b>MW-16</b>													
	02/26/1992	--	418.29	—	—	0.004	—	U	—	—	—	U	U
	06/04/1992	--	418.41	—	—	0.003	—	U	—	—	—	U	0.007
	11/30/1992	--	416.6	—	—	<u>0.51</u>	—	<u>0.056</u>	—	—	—	0.094	0.15
	02/24/1993	--	418.13	—	—	<u>0.41</u>	—	<u>0.036</u>	—	—	—	0.033	0.084
	08/18/1993	--	420.26	—	—	<u>0.099</u>	—	U	—	—	—	U	0.014
	11/23/1993	--	419.59	—	—	<u>0.039</u>	—	U	—	—	—	U	0.004
	03/10/1994	--	418.28	—	—	<u>0.005</u>	—	U	—	—	—	0.001	U
	06/01/1994	--	418.82	—	—	<u>0.022</u>	—	0.003	—	—	—	U	0.003
	09/08/1994	--	420.22	—	—	U	—	U	—	—	—	U	U
	12/14/1994	--	418.22	—	—	<u>0.012</u>	—	0.001	—	—	—	U	U
	12/20/1995	--	414.53	—	—	<u>0.055</u>	—	U	—	—	—	U	0.003
	05/16/1996	--	415.78	—	—	<u>0.007</u>	—	U	—	—	—	U	U
	08/15/1996	--	416.58	—	—	U	—	U	—	—	—	U	U
	12/09/1996	--	415.43	—	—	<u>0.0071</u>	—	U	—	—	—	U	U
	03/20/1997	--	414.4	—	—	<u>0.0056</u>	—	U	—	—	—	U	U
	11/18/1997	--	415.22	—	—	0.00134	—	U	U	—	—	0.00101	0.00135
	05/01/1998	--	414.38	—	—	<u>0.00567</u>	0.534	0.00193	0.089	—	—	0.00308	0.00739
	10/14/1998	--	416.59	—	—	U	0.281	U	U	—	—	U	0.00222
	05/27/1999	--	415.29	—	—	0.00203	<u>2.64</u>	U	U	—	—	U	U
	11/05/1999	--	415.51	—	—	U	<u>13</u>	U	U	—	—	U	U
	04/17/2000	--	414.15	—	—	0.00305	<u>3.66</u>	U	U	—	—	U	U
	10/26/2000	--	417.47	—	—	0.00186	<u>3.98</u>	U	U	—	—	0.00261	0.003
	05/30/2001	--	413.63	—	—	0.0007	<u>6.65</u>	U	U	—	—	U	U
	12/13/2001	--	413.23	—	—	<u>0.048</u>	<u>5.29</u>	0.0109	0.9	—	—	0.302	0.0554
	08/19/2002	--	417.85	—	—	U (0.0005)	U (0.5)	U (0.002)	U (0.09)	—	—	U (0.002)	0.00896
	11/05/2002	--	417.07	—	—	0.000589	0.595	U (0.002)	U (0.09)	—	—	U (0.002)	0.00234
	03/19/2003	--	416.23	—	—	0.000531	1.1	U (0.002)	U (0.09)	—	—	0.00653	0.00469
	03/08/2004	--	414.95	—	—	U (0.0005)	<u>2.85</u>	U (0.0005)	0.072	—	—	0.0288	U (0.001)
	09/15/2004	--	416.65	—	—	0.0006	1.36	U (0.0005)	0.0521	—	—	0.0143	U (0.0015)
	01/10/2005	--	414.7	—	—	0.000648	1.24	U (0.0005)	0.175	—	—	0.0886	0.00221
	07/15/2005	--	417.99	—	—	0.0007	1.06	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)
	02/16/2006	--	414.58	—	—	U (0.0005)	<u>2.09</u>	U (0.0005)	0.0641	—	—	0.0225	U (0.0015)
	07/27/2006	--	417.08	—	—	0.000638	1.06	U (0.0005)	U (0.05)	—	—	0.0108	U (0.0015)

## Analytical Data Results Table

Speedway5315/TNS111  
 7-Eleven - Paula Sime  
 3679 College Rd  
 Fairbanks, Alaska 99709

	Well Screen Interval	Ground Water Elevation	124-TMB	135-TMB	Benzene	DRO	Ethylbenzene	GRO	Naphthalene	Sodium	Toluene	Xylenes
Unit	ft	ft	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
<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>
03/02/2007	--	414.25	—	—	U (0.0005)	<u>1.95</u>	U (0.0005)	U (0.05)	—	—	0.00206	U (0.0015)
10/17/2007	--	416.62	—	—	U (0.0025)	<u>6.53</u>	U (0.0025)	U (0.25)	—	—	0.00318	U (0.0075)
06/05/2008	--	415.88	—	—	U (0.0005)	<u>4.4</u>	U (0.0005)	0.0761	—	—	0.0117	U (0.0015)
09/29/2008	--	417.26	—	—	U (0.0005)	<u>2.69</u>	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)
02/25/2009	--	414.49	—	—	U (0.0005)	<u>3.44</u>	U (0.0005)	0.0633	—	—	0.0135	U (0.0015)
07/21/2009	--	416.76	—	—	U (0.0005)	0.564	U (0.001)	U (0.05)	—	—	U (0.001)	U (0.003)
03/17/2010	--	413.98	—	—	U (0.001)	0.586	U (0.001)	U (0.05)	—	—	U (0.001)	U (0.002)
09/15/2010	--	416.52	—	—	U (0.0005)	<u>2.35</u>	0.000796	U (0.05)	—	—	U (0.0005)	0.00508
03/22/2011	--	413.98	—	—	U (0.0005)	<u>2.82</u>	U (0.0005)	0.221	—	—	0.0852	U (0.0015)
09/01/2011	--	417.42	—	—	U (0.0005)	<u>2.38</u>	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)
03/13/2012	--	414.39	—	—	U (0.0005)	<u>4.18</u>	U (0.0005)	0.241	—	—	0.0845	U (0.0015)
07/23/2012	--	417.64	—	—	U (0.0005)	1.04	U (0.0010)	U (0.05)	—	—	U (0.0010)	U (0.0030)
02/21/2013	--	414.34	—	—	U (0.0005)	1.38	U (0.0005)	0.182	—	—	0.066	U (0.0015)
08/13/2013	--	416.56	—	—	U (0.0005)	<u>3.61</u>	U (0.0005)	U (0.05)	—	—	0.00143	U (0.0015)
03/18/2014	--	414.51	—	—	U (0.0005)	<u>3.17</u>	U (0.0005)	0.178	—	—	0.0694	U (0.0015)
07/31/2014	--	419.7	—	—	U (0.0005)	<u>2.3</u>	U (0.001)	U (0.05)	—	—	U (0.001)	U (0.001)
03/03/2015	--	415.2	—	—	<u>0.015</u>	1.3	0.0073	0.74	—	—	0.039	0.13
07/27/2015	--	416.22	—	—	<u>0.0068</u>	0.81	0.0057	0.42	—	—	0.0016	0.071
02/23/2016	--	415.26	—	—	U (0.001)	0.4	U (0.001)	U (0.05)	—	—	U (0.001)	0.0058
10/06/2016	--	418.77	—	—	U (0.001)	0.35	U (0.001)	U (0.05)	—	—	U (0.001)	0.0024
03/16/2017	--	414.98	—	—	U (0.002)	0.88	U (0.003)	U (0.05)	—	—	U (0.002)	U (0.002)
07/07/2017	--	417.02	—	—	U (0.002)	<u>3.7</u>	U (0.003)	U (1.0)	—	—	U (0.002)	U (0.003)
09/07/2018	--	418.73	—	—	U (0.0004)	0.34	U (0.001)	U (0.15)	—	—	U (0.001)	U (0.002)
03/13/2019	--	415.27	—	—	U (0.003)	<u>1.9</u>	U (0.003)	U (1.3)	—	—	U (0.002)	U (0.003)
07/30/2019	--	415.37	—	—	U (0.003)	0.39	U (0.003)	U (0.25)	—	—	U (0.002)	0.003
10/14/2020	--	418.63	—	—	<u>0.0144</u>	0.918	0.000399 J	0.0468 J	—	—	0.000556 J	0.0241
03/30/2021	--	415.38	—	—	U (0.001)	0.97	U (0.001)	0.0233 BJ	—	—	U (0.001)	0.000994 J
10/12/2021	--	418.0	—	—	U (0.001)	<u>1.57</u>	U (0.001)	U (0.1)	—	—	U (0.001)	0.000223 J
05/17/2022	--	418.08	0.000654	0.000128	U(0.00100)	0.967	U(0.00100)	0.0297	U(0.000250)	40.4	U(0.00100)	0.000339
09/20/2022	<b>FP</b>	417.51	<b>FP</b>	<b>FP</b>	<b>FP</b>	<b>FP</b>	<b>FP</b>	<b>FP</b>	<b>FP</b>	<b>FP</b>	<b>FP</b>	<b>FP</b>
<b>RM-1</b>												
10/10/2012	--	416.29	—	—	<u>0.0425</u>	1.4	<u>0.084</u>	<u>7.6</u>	—	—	<u>6.09</u>	<u>1.8</u>
02/21/2013	--	414.27	—	—	0.000539	0.92	<u>0.942</u>	<u>9.8</u>	—	—	<u>15.4</u>	<u>0.51</u>
08/13/2013	--	416.55	—	—	0.00072	1.3	<u>3.08</u>	1.8	—	—	0.0922	<u>6.83</u>
09/24/2013	--	--	—	—	<u>0.0067</u>	<u>1.7</u>	<u>0.131</u>	<u>27.2</u>	—	—	0.23	<u>16.7</u>
11/19/2013	--	415.53	—	—	<u>0.055</u>	<u>12.6</u>	<u>0.2</u>	<u>175</u>	—	—	0.33	<u>1.32</u>
03/19/2014	--	414.37	—	—	<u>0.0213</u>	<u>10.8</u>	U (0.001)	<u>2.81</u>	—	—	0.68	<u>2.06</u>
07/31/2014	--	419.58	—	—	<u>0.0251</u>	1.23	<u>0.096</u>	<u>4.7</u>	—	—	<u>2.83</u>	<u>0.71</u>
03/03/2015	--	402.63	—	—	0.00261 J	1.2	<u>0.593</u>	<u>3.5</u>	—	—	<u>7.25</u>	<u>1.6</u>
07/27/2015	--	--	—	—	U (0.15)	0.74	<u>2.14</u>	<u>8.4</u>	—	—	0.137	<u>5.09</u>

## Analytical Data Results Table

Speedway5315/TNS111  
 7-Eleven - Paula Sime  
 3679 College Rd  
 Fairbanks, Alaska 99709

Unit	Well Screen Interval	Ground Water Elevation	124-TMB	135-TMB	Benzene	DRO	Ethylbenzene	GRO	Naphthalene	Sodium	Toluene	Xylenes
	ft	ft	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>
02/23/2016	--	414.75	—	—	<u>0.0087</u>	1.5	<u>0.246</u>	<u>14.7</u>	—	—	0.4	<u>11.3</u>
10/06/2016	--	417.91	—	—	<u>0.084</u>	<u>17.5</u>	<u>0.23</u>	<u>69.9</u>	—	—	0.69	<u>1.89</u>
07/07/2017	--	417.04	—	—	<u>0.0268</u>	<u>10.7</u>	<u>0.45</u>	<u>4.26</u>	—	—	0.77	<u>1.55</u>
09/06/2017	--	--	—	—	<u>0.0432</u>	<u>2.31</u>	<u>0.36</u>	<u>6.1</u>	—	—	0.201	<u>2.73</u>
09/07/2018	--	413.04	—	—	0.000358 J	1.1	<u>0.568</u>	<u>12</u>	—	—	<u>12.2</u>	<u>2.9</u>
07/30/2019	--	415.38	—	—	(0.003) U	<u>3.3</u>	<u>1.8</u>	<u>12</u>	—	—	0.000503 J	<u>2.55</u>
10/24/2019	--	--	—	—	<u>0.005</u>	<u>5.2</u>	<u>0.142</u>	<u>11.9</u>	—	—	0.038	<u>10.4</u>
08/04/2020	--	417.0	—	—	U (0.001)	<u>13.2</u>	<u>0.15</u>	<u>39.9</u>	—	—	0.74	<u>1.25</u>
10/15/2020	--	--	—	—	U (0.0005)	<u>9.27</u>	<u>0.27</u>	<u>5.34</u>	—	—	0.93	<u>1.49</u>
10/12/2021	--	417.82	—	—	<u>0.0246</u>	<u>2.22</u>	<u>0.2</u>	<u>4.3</u>	—	—	0.15	<u>2</u>
09/20/2022	--	417.43	<u>0.826</u>	<u>0.32</u>	0.000939	<u>3.32</u>	<u>0.266</u>	<u>7.88</u>	<u>0.0699</u>	62.8	0.0026	<u>1.98</u>
<b>RM-2</b>												
08/29/2019	--	--	—	—	0.00179	0.384 J	<u>0.0157</u>	0.479	—	—	0.00209	0.0666
10/24/2019	--	--	—	—	0.0046	0.45	<u>0.089</u>	2	—	—	0.058	<u>0.342</u>
08/04/2020	--	--	—	—	U (0.001)	U (0.800)	0.000505	0.0135	—	—	U (0.001)	0.000565
10/15/2020	--	--	—	—	<u>0.0226</u>	1.49	<u>0.274</u>	<u>3.98</u>	—	—	0.413	<u>1.24</u>
03/30/2021	--	--	—	—	<u>0.0297</u>	1.21	<u>0.352</u>	<u>4.16</u>	—	—	0.0541	<u>0.74</u>
10/12/2021	--	417.79	—	—	0.000496 J	0.650 J	<u>0.0401</u>	0.645	—	—	U (0.001)	0.0617
05/17/2022	--	418.05	0.00149	0.000547	0.000133	U(0.840)	0.0049	0.133	0.000327	25.8	U(0.00100)	0.00183
09/20/2022	--	--	<u>0.147</u>	0.0549	<u>0.0484</u>	0.95	<u>0.286</u>	<u>2.96</u>	<u>0.0374</u>	60.4	0.0271	<u>0.756</u>
10/26/2022	--	--	—	—	<u>0.0312</u>	0.727	<u>0.263</u>	<u>2.75</u>	<u>0.0426</u>	64	U	<u>0.632</u>

---

## **APPENDIX E**

---

*Laboratory Analytical Report and  
ADEC Laboratory Data Review  
Checklist*

---

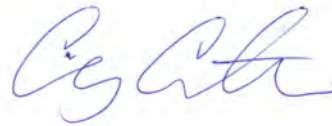
- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

## Stantec - Anchorage, AK

Sample Delivery Group: L1551725  
Samples Received: 10/28/2022  
Project Number:  
Description: Speedway 5315 - Fairbanks, AK

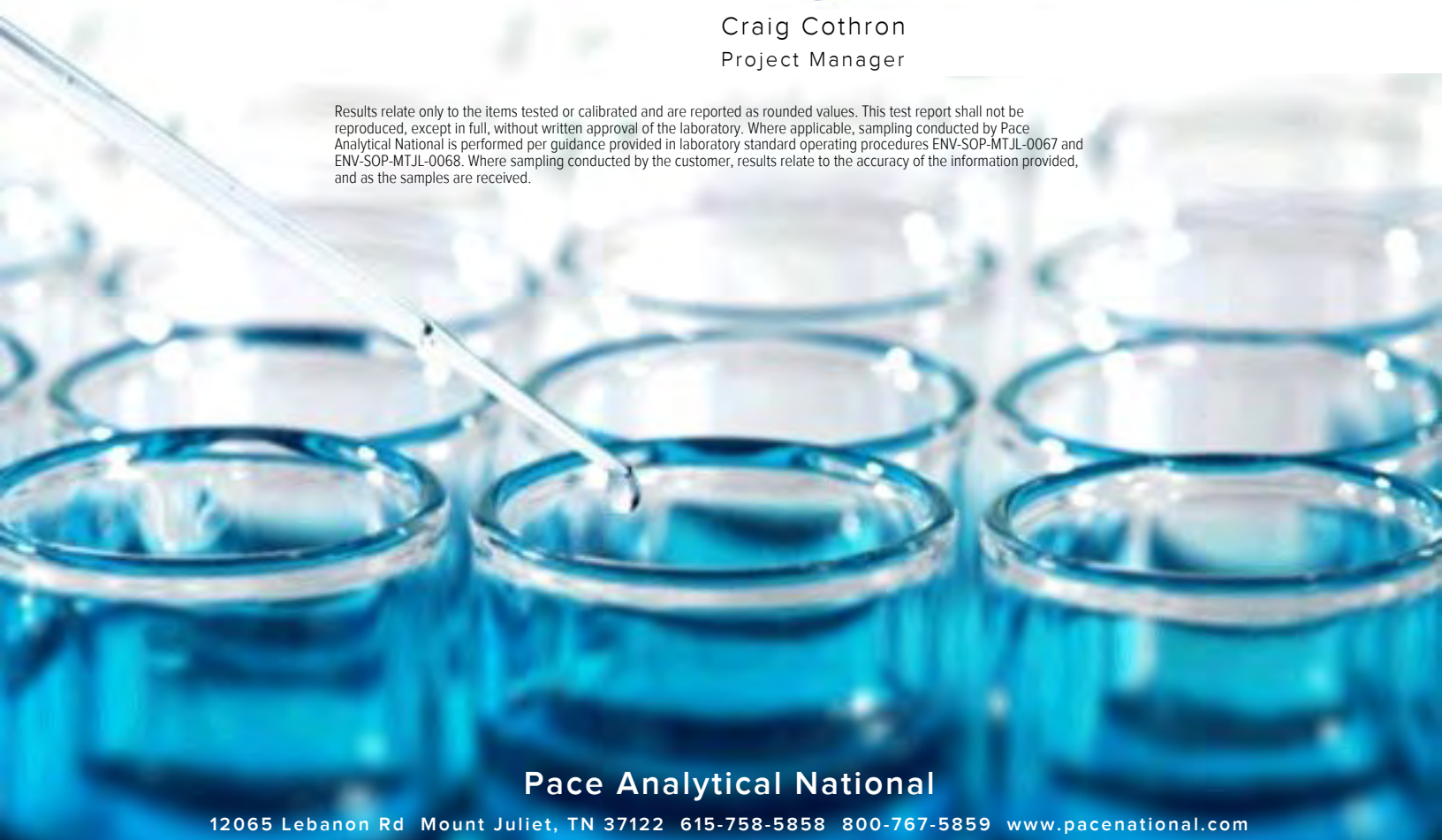
Report To: Ms. Leslie Petre  
725 E Fireweed Lane  
Suite 200  
Anchorage, AK 99503

Entire Report Reviewed By:



Craig Cothron  
Project Manager

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

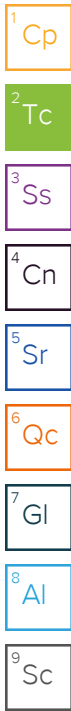


**Pace Analytical National**

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 [www.pacenational.com](http://www.pacenational.com)

# TABLE OF CONTENTS

<b>Cp: Cover Page</b>	1
<b>Tc: Table of Contents</b>	2
<b>Ss: Sample Summary</b>	3
<b>Cn: Case Narrative</b>	4
<b>Sr: Sample Results</b>	5
RM-2 L1551725-01	5
MW 17-1 L1551725-02	7
MW 17-2 L1551725-03	9
DUPLICATE L1551725-04	11
<b>Qc: Quality Control Summary</b>	13
Metals (ICP) by Method 6010D	13
Metals (ICPMS) by Method 6020	14
Volatile Organic Compounds (GC) by Method AK101	16
Volatile Organic Compounds (GC/MS) by Method 8260D	17
EDB / DBCP by Method 8011	18
Semi-Volatile Organic Compounds (GC) by Method AK102	19
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	20
<b>Gl: Glossary of Terms</b>	22
<b>Al: Accreditations &amp; Locations</b>	23
<b>Sc: Sample Chain of Custody</b>	24





# SAMPLE SUMMARY

## RM-2 L1551725-01 GW

Collected by Geoff Moorhead      Collected date/time 10/26/22 18:11      Received date/time 10/28/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1956283	1	11/09/22 22:17	11/10/22 11:14	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1957855	1	11/11/22 14:50	11/12/22 00:53	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG1954943	1	11/07/22 00:48	11/07/22 00:48	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1954105	10	11/04/22 03:17	11/04/22 03:17	JHH	Mt. Juliet, TN
EDB / DBCP by Method 8011	WG1952817	1	11/02/22 07:08	11/02/22 18:25	HMH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG1952930	1	11/04/22 05:37	11/04/22 20:57	HLJ	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1951881	1	11/01/22 11:15	11/02/22 14:08	JMB	Mt. Juliet, TN

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

## MW 17-1 L1551725-02 GW

Collected by Geoff Moorhead      Collected date/time 10/26/22 17:23      Received date/time 10/28/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1956283	1	11/09/22 22:17	11/10/22 11:18	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1957855	1	11/11/22 14:50	11/12/22 00:56	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG1954943	20	11/07/22 02:08	11/07/22 02:08	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1954105	100	11/04/22 03:36	11/04/22 03:36	JHH	Mt. Juliet, TN
EDB / DBCP by Method 8011	WG1952817	1	11/02/22 07:08	11/02/22 18:37	HMH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG1952930	1	11/04/22 05:37	11/04/22 21:20	HLJ	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1951881	1	11/01/22 11:15	11/02/22 14:28	JMB	Mt. Juliet, TN

## MW 17-2 L1551725-03 GW

Collected by Geoff Moorhead      Collected date/time 10/26/22 16:34      Received date/time 10/28/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1956283	1	11/09/22 22:17	11/10/22 11:21	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1957857	1	11/11/22 09:35	11/11/22 15:55	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG1954943	1	11/07/22 01:15	11/07/22 01:15	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1954105	1	11/03/22 23:10	11/03/22 23:10	JHH	Mt. Juliet, TN
EDB / DBCP by Method 8011	WG1952817	5.1	11/02/22 07:08	11/03/22 18:30	RDH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG1952930	1	11/04/22 05:37	11/05/22 20:36	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1951881	1	11/01/22 11:15	11/02/22 14:48	JMB	Mt. Juliet, TN

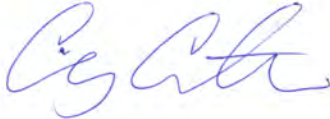
## DUPLICATE L1551725-04 GW

Collected by Geoff Moorhead      Collected date/time 10/26/22 18:11      Received date/time 10/28/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1956283	1	11/09/22 22:17	11/10/22 11:23	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1957857	1	11/11/22 09:35	11/11/22 15:59	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG1954943	1	11/07/22 01:42	11/07/22 01:42	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1954105	10	11/04/22 03:55	11/04/22 03:55	JHH	Mt. Juliet, TN
EDB / DBCP by Method 8011	WG1952817	1	11/02/22 07:08	11/02/22 19:01	HMH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG1952930	1	11/04/22 05:37	11/04/22 22:06	HLJ	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1951881	1	11/01/22 11:15	11/02/22 15:08	JMB	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	64.0		0.504	3.00	1	11/10/2022 11:14	<a href="#">WG1956283</a>

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Lead	U		0.000849	0.00200	1	11/12/2022 00:53	<a href="#">WG1957855</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	2.75		0.0287	0.100	1	11/07/2022 00:48	<a href="#">WG1954943</a>
(S) a,a,a-Trifluorotoluene(FID)	97.4			50.0-150		11/07/2022 00:48	<a href="#">WG1954943</a>
(S) a,a,a-Trifluorotoluene(PID)	101			79.0-125		11/07/2022 00:48	<a href="#">WG1954943</a>

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Benzene	0.0312		0.000941	0.0100	10	11/04/2022 03:17	<a href="#">WG1954105</a>
Toluene	U		0.00278	0.0100	10	11/04/2022 03:17	<a href="#">WG1954105</a>
Ethylbenzene	0.263		0.00137	0.0100	10	11/04/2022 03:17	<a href="#">WG1954105</a>
Total Xylenes	0.632		0.00174	0.0300	10	11/04/2022 03:17	<a href="#">WG1954105</a>
(S) Toluene-d8	104			80.0-120		11/04/2022 03:17	<a href="#">WG1954105</a>
(S) 4-Bromofluorobenzene	106			77.0-126		11/04/2022 03:17	<a href="#">WG1954105</a>
(S) 1,2-Dichloroethane-d4	80.8			70.0-130		11/04/2022 03:17	<a href="#">WG1954105</a>

EDB / DBCP by Method 8011

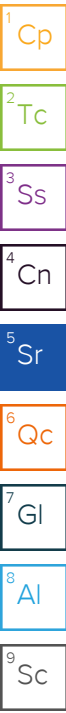
Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Ethylene Dibromide	0.000150		0.00000536	0.0000200	1	11/02/2022 18:25	<a href="#">WG1952817</a>

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	0.727	J	0.170	0.800	1	11/04/2022 20:57	<a href="#">WG1952930</a>
(S) o-Terphenyl	74.8			50.0-150		11/04/2022 20:57	<a href="#">WG1952930</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	11/02/2022 14:08	<a href="#">WG1951881</a>
Acenaphthene	0.000121		0.0000190	0.0000500	1	11/02/2022 14:08	<a href="#">WG1951881</a>
Acenaphthylene	U		0.0000171	0.0000500	1	11/02/2022 14:08	<a href="#">WG1951881</a>
Benzo(a)anthracene	U		0.0000203	0.0000500	1	11/02/2022 14:08	<a href="#">WG1951881</a>
Benzo(a)pyrene	U		0.0000184	0.0000500	1	11/02/2022 14:08	<a href="#">WG1951881</a>
Benzo(b)fluoranthene	U		0.0000168	0.0000500	1	11/02/2022 14:08	<a href="#">WG1951881</a>
Benzo(g,h,i)perylene	U		0.0000184	0.0000500	1	11/02/2022 14:08	<a href="#">WG1951881</a>
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	11/02/2022 14:08	<a href="#">WG1951881</a>
Chrysene	U		0.0000179	0.0000500	1	11/02/2022 14:08	<a href="#">WG1951881</a>
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	11/02/2022 14:08	<a href="#">WG1951881</a>
Fluoranthene	U		0.0000270	0.000100	1	11/02/2022 14:08	<a href="#">WG1951881</a>
Fluorene	0.000310		0.0000169	0.0000500	1	11/02/2022 14:08	<a href="#">WG1951881</a>
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	11/02/2022 14:08	<a href="#">WG1951881</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
Naphthalene	0.0426		0.0000917	0.000250	1	11/02/2022 14:08	<a href="#">WG1951881</a>
Phenanthrene	0.000147		0.0000180	0.0000500	1	11/02/2022 14:08	<a href="#">WG1951881</a>
Pyrene	U		0.0000169	0.0000500	1	11/02/2022 14:08	<a href="#">WG1951881</a>
1-Methylnaphthalene	0.0130		0.0000687	0.000250	1	11/02/2022 14:08	<a href="#">WG1951881</a>
2-Methylnaphthalene	0.00996		0.0000674	0.000250	1	11/02/2022 14:08	<a href="#">WG1951881</a>
<i>(S)</i> Nitrobenzene-d5	119			31.0-160		11/02/2022 14:08	<a href="#">WG1951881</a>
<i>(S)</i> 2-Fluorobiphenyl	102			48.0-148		11/02/2022 14:08	<a href="#">WG1951881</a>
<i>(S)</i> p-Terphenyl-d14	102			37.0-146		11/02/2022 14:08	<a href="#">WG1951881</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	143		0.504	3.00	1	11/10/2022 11:18	<a href="#">WG1956283</a>

## Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Lead	1.06		0.000849	0.00200	1	11/12/2022 00:56	<a href="#">WG1957855</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	6.34		0.574	2.00	20	11/07/2022 02:08	<a href="#">WG1954943</a>
(S) a,a,a-Trifluorotoluene(FID)	93.0			50.0-150		11/07/2022 02:08	<a href="#">WG1954943</a>
(S) a,a,a-Trifluorotoluene(PID)	103			79.0-125		11/07/2022 02:08	<a href="#">WG1954943</a>

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Benzene	0.0585	J	0.00941	0.100	100	11/04/2022 03:36	<a href="#">WG1954105</a>
Toluene	0.0404	J	0.0278	0.100	100	11/04/2022 03:36	<a href="#">WG1954105</a>
Ethylbenzene	0.603		0.0137	0.100	100	11/04/2022 03:36	<a href="#">WG1954105</a>
Total Xylenes	1.62		0.0174	0.300	100	11/04/2022 03:36	<a href="#">WG1954105</a>
(S) Toluene-d8	100			80.0-120		11/04/2022 03:36	<a href="#">WG1954105</a>
(S) 4-Bromofluorobenzene	113			77.0-126		11/04/2022 03:36	<a href="#">WG1954105</a>
(S) 1,2-Dichloroethane-d4	93.6			70.0-130		11/04/2022 03:36	<a href="#">WG1954105</a>

## EDB / DBCP by Method 8011

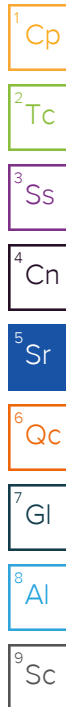
Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Ethylene Dibromide	0.000241		0.00000536	0.0000200	1	11/02/2022 18:37	<a href="#">WG1952817</a>

## 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	4.44		0.170	0.800	1	11/04/2022 21:20	<a href="#">WG1952930</a>
(S) o-Terphenyl	76.5			50.0-150		11/04/2022 21:20	<a href="#">WG1952930</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	0.0000284	J	0.0000190	0.0000500	1	11/02/2022 14:28	<a href="#">WG1951881</a>
Acenaphthene	0.000179		0.0000190	0.0000500	1	11/02/2022 14:28	<a href="#">WG1951881</a>
Acenaphthylene	U		0.0000171	0.0000500	1	11/02/2022 14:28	<a href="#">WG1951881</a>
Benzo(a)anthracene	U		0.0000203	0.0000500	1	11/02/2022 14:28	<a href="#">WG1951881</a>
Benzo(a)pyrene	U		0.0000184	0.0000500	1	11/02/2022 14:28	<a href="#">WG1951881</a>
Benzo(b)fluoranthene	U		0.0000168	0.0000500	1	11/02/2022 14:28	<a href="#">WG1951881</a>
Benzo(g,h,i)perylene	U		0.0000184	0.0000500	1	11/02/2022 14:28	<a href="#">WG1951881</a>
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	11/02/2022 14:28	<a href="#">WG1951881</a>
Chrysene	U		0.0000179	0.0000500	1	11/02/2022 14:28	<a href="#">WG1951881</a>
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	11/02/2022 14:28	<a href="#">WG1951881</a>
Fluoranthene	U		0.0000270	0.000100	1	11/02/2022 14:28	<a href="#">WG1951881</a>
Fluorene	0.000660		0.0000169	0.0000500	1	11/02/2022 14:28	<a href="#">WG1951881</a>
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	11/02/2022 14:28	<a href="#">WG1951881</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
Naphthalene	0.0624		0.0000917	0.000250	1	11/02/2022 14:28	<a href="#">WG1951881</a>
Phenanthrene	0.000402		0.0000180	0.0000500	1	11/02/2022 14:28	<a href="#">WG1951881</a>
Pyrene	0.0000188	J	0.0000169	0.0000500	1	11/02/2022 14:28	<a href="#">WG1951881</a>
1-Methylnaphthalene	0.0107		0.0000687	0.000250	1	11/02/2022 14:28	<a href="#">WG1951881</a>
2-Methylnaphthalene	0.00943		0.0000674	0.000250	1	11/02/2022 14:28	<a href="#">WG1951881</a>
<i>(S)</i> Nitrobenzene-d5	111			31.0-160		11/02/2022 14:28	<a href="#">WG1951881</a>
<i>(S)</i> 2-Fluorobiphenyl	80.5			48.0-148		11/02/2022 14:28	<a href="#">WG1951881</a>
<i>(S)</i> p-Terphenyl-d14	99.5			37.0-146		11/02/2022 14:28	<a href="#">WG1951881</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	146		0.504	3.00	1	11/10/2022 11:21	<a href="#">WG1956283</a>

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Lead	0.145		0.000849	0.00200	1	11/11/2022 15:55	<a href="#">WG1957857</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	0.227		0.0287	0.100	1	11/07/2022 01:15	<a href="#">WG1954943</a>
(S) a,a,a-Trifluorotoluene(FID)	90.4			50.0-150		11/07/2022 01:15	<a href="#">WG1954943</a>
(S) a,a,a-Trifluorotoluene(PID)	102			79.0-125		11/07/2022 01:15	<a href="#">WG1954943</a>

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Benzene	0.0485		0.0000941	0.00100	1	11/03/2022 23:10	<a href="#">WG1954105</a>
Toluene	0.000738	J	0.000278	0.00100	1	11/03/2022 23:10	<a href="#">WG1954105</a>
Ethylbenzene	0.00638		0.000137	0.00100	1	11/03/2022 23:10	<a href="#">WG1954105</a>
Total Xylenes	0.0193		0.000174	0.00300	1	11/03/2022 23:10	<a href="#">WG1954105</a>
(S) Toluene-d8	99.4			80.0-120		11/03/2022 23:10	<a href="#">WG1954105</a>
(S) 4-Bromofluorobenzene	107			77.0-126		11/03/2022 23:10	<a href="#">WG1954105</a>
(S) 1,2-Dichloroethane-d4	84.4			70.0-130		11/03/2022 23:10	<a href="#">WG1954105</a>

EDB / DBCP by Method 8011

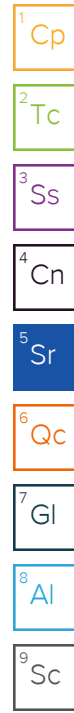
Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Ethylene Dibromide	0.000951		0.0000273	0.000102	5.1	11/03/2022 18:30	<a href="#">WG1952817</a>

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	1.76		0.170	0.800	1	11/05/2022 20:36	<a href="#">WG1952930</a>
(S) o-Terphenyl	71.7			50.0-150		11/05/2022 20:36	<a href="#">WG1952930</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	11/02/2022 14:48	<a href="#">WG1951881</a>
Acenaphthene	U		0.0000190	0.0000500	1	11/02/2022 14:48	<a href="#">WG1951881</a>
Acenaphthylene	U		0.0000171	0.0000500	1	11/02/2022 14:48	<a href="#">WG1951881</a>
Benzo(a)anthracene	U		0.0000203	0.0000500	1	11/02/2022 14:48	<a href="#">WG1951881</a>
Benzo(a)pyrene	U		0.0000184	0.0000500	1	11/02/2022 14:48	<a href="#">WG1951881</a>
Benzo(b)fluoranthene	U		0.0000168	0.0000500	1	11/02/2022 14:48	<a href="#">WG1951881</a>
Benzo(g,h,i)perylene	U		0.0000184	0.0000500	1	11/02/2022 14:48	<a href="#">WG1951881</a>
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	11/02/2022 14:48	<a href="#">WG1951881</a>
Chrysene	U		0.0000179	0.0000500	1	11/02/2022 14:48	<a href="#">WG1951881</a>
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	11/02/2022 14:48	<a href="#">WG1951881</a>
Fluoranthene	U		0.0000270	0.000100	1	11/02/2022 14:48	<a href="#">WG1951881</a>
Fluorene	U		0.0000169	0.0000500	1	11/02/2022 14:48	<a href="#">WG1951881</a>
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	11/02/2022 14:48	<a href="#">WG1951881</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
Naphthalene	U		0.0000917	0.000250	1	11/02/2022 14:48	<a href="#">WG1951881</a>
Phenanthrene	U		0.0000180	0.0000500	1	11/02/2022 14:48	<a href="#">WG1951881</a>
Pyrene	U		0.0000169	0.0000500	1	11/02/2022 14:48	<a href="#">WG1951881</a>
1-Methylnaphthalene	U		0.0000687	0.000250	1	11/02/2022 14:48	<a href="#">WG1951881</a>
2-Methylnaphthalene	U		0.0000674	0.000250	1	11/02/2022 14:48	<a href="#">WG1951881</a>
<i>(S)</i> Nitrobenzene-d5	117			31.0-160		11/02/2022 14:48	<a href="#">WG1951881</a>
<i>(S)</i> 2-Fluorobiphenyl	97.9			48.0-148		11/02/2022 14:48	<a href="#">WG1951881</a>
<i>(S)</i> p-Terphenyl-d14	98.4			37.0-146		11/02/2022 14:48	<a href="#">WG1951881</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	64.2		0.504	3.00	1	11/10/2022 11:23	<a href="#">WG1956283</a>

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Lead	U		0.000849	0.00200	1	11/11/2022 15:59	<a href="#">WG1957857</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	2.72		0.0287	0.100	1	11/07/2022 01:42	<a href="#">WG1954943</a>
(S) a,a,a-Trifluorotoluene(FID)	85.4			50.0-150		11/07/2022 01:42	<a href="#">WG1954943</a>
(S) a,a,a-Trifluorotoluene(PID)	101			79.0-125		11/07/2022 01:42	<a href="#">WG1954943</a>

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Benzene	0.0315		0.000941	0.0100	10	11/04/2022 03:55	<a href="#">WG1954105</a>
Toluene	U		0.00278	0.0100	10	11/04/2022 03:55	<a href="#">WG1954105</a>
Ethylbenzene	0.278		0.00137	0.0100	10	11/04/2022 03:55	<a href="#">WG1954105</a>
Total Xylenes	0.659		0.00174	0.0300	10	11/04/2022 03:55	<a href="#">WG1954105</a>
(S) Toluene-d8	102			80.0-120		11/04/2022 03:55	<a href="#">WG1954105</a>
(S) 4-Bromofluorobenzene	105			77.0-126		11/04/2022 03:55	<a href="#">WG1954105</a>
(S) 1,2-Dichloroethane-d4	83.3			70.0-130		11/04/2022 03:55	<a href="#">WG1954105</a>

EDB / DBCP by Method 8011

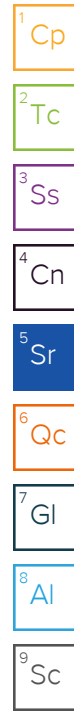
Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Ethylene Dibromide	0.000154		0.00000536	0.0000200	1	11/02/2022 19:01	<a href="#">WG1952817</a>

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	0.812		0.170	0.800	1	11/04/2022 22:06	<a href="#">WG1952930</a>
(S) o-Terphenyl	77.5			50.0-150		11/04/2022 22:06	<a href="#">WG1952930</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	11/02/2022 15:08	<a href="#">WG1951881</a>
Acenaphthene	0.000122		0.0000190	0.0000500	1	11/02/2022 15:08	<a href="#">WG1951881</a>
Acenaphthylene	U		0.0000171	0.0000500	1	11/02/2022 15:08	<a href="#">WG1951881</a>
Benzo(a)anthracene	U		0.0000203	0.0000500	1	11/02/2022 15:08	<a href="#">WG1951881</a>
Benzo(a)pyrene	U		0.0000184	0.0000500	1	11/02/2022 15:08	<a href="#">WG1951881</a>
Benzo(b)fluoranthene	U		0.0000168	0.0000500	1	11/02/2022 15:08	<a href="#">WG1951881</a>
Benzo(g,h,i)perylene	U		0.0000184	0.0000500	1	11/02/2022 15:08	<a href="#">WG1951881</a>
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	11/02/2022 15:08	<a href="#">WG1951881</a>
Chrysene	U		0.0000179	0.0000500	1	11/02/2022 15:08	<a href="#">WG1951881</a>
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	11/02/2022 15:08	<a href="#">WG1951881</a>
Fluoranthene	U		0.0000270	0.000100	1	11/02/2022 15:08	<a href="#">WG1951881</a>
Fluorene	0.000321		0.0000169	0.0000500	1	11/02/2022 15:08	<a href="#">WG1951881</a>
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	11/02/2022 15:08	<a href="#">WG1951881</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
Naphthalene	0.0419		0.0000917	0.000250	1	11/02/2022 15:08	<a href="#">WG1951881</a>
Phenanthrene	0.000155		0.0000180	0.0000500	1	11/02/2022 15:08	<a href="#">WG1951881</a>
Pyrene	U		0.0000169	0.0000500	1	11/02/2022 15:08	<a href="#">WG1951881</a>
1-Methylnaphthalene	0.0132		0.0000687	0.000250	1	11/02/2022 15:08	<a href="#">WG1951881</a>
2-Methylnaphthalene	0.0102		0.0000674	0.000250	1	11/02/2022 15:08	<a href="#">WG1951881</a>
<i>(S)</i> Nitrobenzene-d5	115			31.0-160		11/02/2022 15:08	<a href="#">WG1951881</a>
<i>(S)</i> 2-Fluorobiphenyl	98.5			48.0-148		11/02/2022 15:08	<a href="#">WG1951881</a>
<i>(S)</i> p-Terphenyl-d14	97.0			37.0-146		11/02/2022 15:08	<a href="#">WG1951881</a>

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

Method Blank (MB)

(MB) R3859532-1 11/10/22 11:35

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Sodium	U		0.504	3.00

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

Laboratory Control Sample (LCS)

(LCS) R3859532-2 11/10/22 11:38

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Sodium	10.0	9.84	98.4	80.0-120	

<sup>4</sup>Cn

<sup>5</sup>Sr

L1554602-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1554602-01 11/10/22 11:41 • (MS) R3859532-4 11/10/22 11:47 • (MSD) R3859532-5 11/10/22 11:50

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 %
Sodium	10.0	2470	2430	2430	0.000	0.000	1	75.0-125	<u>EV</u>	<u>EV</u>	0.252	20

<sup>6</sup>Qc

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>Sc

Method Blank (MB)

(MB) R3860279-1 11/11/22 23:21

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Lead	U		0.000849	0.00200

1 Cp

2 Tc

3 Ss

Laboratory Control Sample (LCS)

(LCS) R3860279-2 11/11/22 23:24

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Lead	0.0500	0.0492	98.4	80.0-120	

4 Cn

5 Sr

L1551629-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1551629-08 11/11/22 23:28 • (MS) R3860279-4 11/11/22 23:35 • (MSD) R3860279-5 11/11/22 23:38

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 %
Lead	0.0500	U	0.0499	0.0480	99.8	95.9	1	75.0-125			3.99	20

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3860174-1 11/11/22 15:35

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Lead	U		0.000849	0.00200

Laboratory Control Sample (LCS)

(LCS) R3860174-2 11/11/22 15:38

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Lead	0.0500	0.0478	95.5	80.0-120	

L1551730-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1551730-04 11/11/22 15:42 • (MS) R3860174-4 11/11/22 15:49 • (MSD) R3860174-5 11/11/22 15:52

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 %
Lead	0.0500	U	0.0520	0.0490	104	98.0	1	75.0-125			5.89	20

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

Method Blank (MB)

(MB) R3857622-2 11/06/22 23:29

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)	92.4			60.0-120
(S) a,a,a-Trifluorotoluene(PID)	104			79.0-125

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

(LCS) R3857622-1 11/06/22 22:36 • (LCSD) R3857622-3 11/07/22 03:01

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	4.29	3.61	85.8	72.2	60.0-120			17.2	20
(S) a,a,a-Trifluorotoluene(FID)				103	104	60.0-120				
(S) a,a,a-Trifluorotoluene(PID)				118	115	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) R3858698-3 11/03/22 20:38

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
Benzene	U		0.0000941	0.00100
Toluene	U		0.000278	0.00100
Ethylbenzene	U		0.000137	0.00100
Xylenes, Total	U		0.000174	0.00300
<i>(S) Toluene-d8</i>	98.0			80.0-120
<i>(S) 4-Bromofluorobenzene</i>	111			77.0-126
<i>(S) 1,2-Dichloroethane-d4</i>	91.9			70.0-130

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

(LCS) R3858698-1 11/03/22 19:41 • (LCSD) R3858698-2 11/03/22 20:00

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	%	%	%			%	%
Benzene	0.00500	0.00528	0.00559	106	112	70.0-123			5.70	20
Toluene	0.00500	0.00474	0.00520	94.8	104	79.0-120			9.26	20
Ethylbenzene	0.00500	0.00527	0.00563	105	113	79.0-123			6.61	20
Xylenes, Total	0.0150	0.0161	0.0172	107	115	79.0-123			6.61	20
<i>(S) Toluene-d8</i>				98.4	98.9	80.0-120				
<i>(S) 4-Bromofluorobenzene</i>				113	111	77.0-126				
<i>(S) 1,2-Dichloroethane-d4</i>				94.8	90.2	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

Method Blank (MB)

(MB) R3856508-1 11/02/22 14:05

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Ethylene Dibromide	U		0.0000536	0.0000200

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

L1551642-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1551642-01 11/02/22 14:52 • (DUP) R3856508-3 11/02/22 14:40

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Ethylene Dibromide	U	U	1.1	0.000		20

<sup>4</sup>Cn

<sup>5</sup>Sr

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

(LCS) R3856508-4 11/02/22 16:50 • (LCSD) R3856508-5 11/02/22 19:25

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Ethylene Dibromide	0.000250	0.000303	0.000298	121	119	60.0-140			1.66	20

<sup>6</sup>Qc

<sup>7</sup>Gl

L1551642-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L1551642-02 11/02/22 14:28 • (MS) R3856508-2 11/02/22 14:16

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Ethylene Dibromide	0.000105	U	0.000109	104	1.06	64.0-159	

<sup>8</sup>Al

<sup>9</sup>Sc



Method Blank (MB)

(MB) R3857374-1 11/04/22 10:51

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>	66.0			60.0-120

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

(LCS) R3857374-2 11/04/22 11:13 • (LCSD) R3857374-3 11/04/22 11:36

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	%	%	%			%	%
AK102 DRO C10-C25	6.00	5.10	5.37	85.0	89.5	75.0-125			5.16	20
<i>(S) o-Terphenyl</i>				68.3	70.5	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) R3856405-3 11/02/22 13:28

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Anthracene	U		0.0000190	0.0000500
Acenaphthene	U		0.0000190	0.0000500
Acenaphthylene	U		0.0000171	0.0000500
Benzo(a)anthracene	U		0.0000203	0.0000500
Benzo(a)pyrene	U		0.0000184	0.0000500
Benzo(b)fluoranthene	U		0.0000168	0.0000500
Benzo(g,h,i)perylene	U		0.0000184	0.0000500
Benzo(k)fluoranthene	U		0.0000202	0.0000500
Chrysene	U		0.0000179	0.0000500
Dibenz(a,h)anthracene	U		0.0000160	0.0000500
Fluoranthene	U		0.0000270	0.000100
Fluorene	U		0.0000169	0.0000500
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500
Naphthalene	U		0.0000917	0.000250
Phenanthrene	U		0.0000180	0.0000500
Pyrene	U		0.0000169	0.0000500
1-Methylnaphthalene	U		0.0000687	0.000250
2-Methylnaphthalene	U		0.0000674	0.000250
(S) Nitrobenzene-d5	118			31.0-160
(S) 2-Fluorobiphenyl	102			48.0-148
(S) p-Terphenyl-d14	105			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) R3856405-1 11/02/22 12:49 • (LCSD) R3856405-2 11/02/22 13:09

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	0.00212	0.00206	106	103	67.0-150			2.87	20
Acenaphthene	0.00200	0.00213	0.00214	106	107	65.0-138			0.468	20
Acenaphthylene	0.00200	0.00199	0.00196	99.5	98.0	66.0-140			1.52	20
Benzo(a)anthracene	0.00200	0.00189	0.00185	94.5	92.5	61.0-140			2.14	20
Benzo(a)pyrene	0.00200	0.00210	0.00204	105	102	60.0-143			2.90	20
Benzo(b)fluoranthene	0.00200	0.00211	0.00210	105	105	58.0-141			0.475	20
Benzo(g,h,i)perylene	0.00200	0.00188	0.00191	94.0	95.5	52.0-153			1.58	20
Benzo(k)fluoranthene	0.00200	0.00215	0.00215	108	108	58.0-148			0.000	20
Chrysene	0.00200	0.00212	0.00212	106	106	64.0-144			0.000	20
Dibenz(a,h)anthracene	0.00200	0.00186	0.00189	93.0	94.5	52.0-155			1.60	20
Fluoranthene	0.00200	0.00228	0.00224	114	112	69.0-153			1.77	20
Fluorene	0.00200	0.00214	0.00220	107	110	64.0-136			2.76	20

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

(LCS) R3856405-1 11/02/22 12:49 • (LCSD) R3856405-2 11/02/22 13:09

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	0.00185	0.00185	92.5	92.5	54.0-153			0.000	20
Naphthalene	0.00200	0.00228	0.00228	114	114	61.0-137			0.000	20
Phenanthrene	0.00200	0.00213	0.00207	106	103	62.0-137			2.86	20
Pyrene	0.00200	0.00203	0.00200	102	100	60.0-142			1.49	20
1-Methylnaphthalene	0.00200	0.00224	0.00225	112	112	66.0-142			0.445	20
2-Methylnaphthalene	0.00200	0.00226	0.00231	113	115	62.0-136			2.19	20
<i>(S) Nitrobenzene-d5</i>				117	117	31.0-160				
<i>(S) 2-Fluorobiphenyl</i>				102	101	48.0-148				
<i>(S) p-Terphenyl-d14</i>				103	103	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.

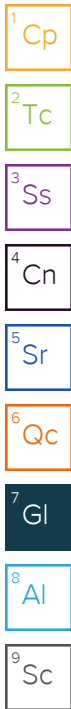
Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location.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

E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
V	The sample concentration is too high to evaluate accurate spike recoveries.



# ACCREDITATIONS & LOCATIONS

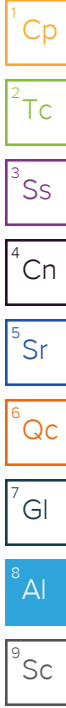
## Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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.



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

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

Report to:  
**Ms. Leslie Petre**

Email To: [craig.cothron@pacelabs.com](mailto:craig.cothron@pacelabs.com)

Project Description:  
**SPEEDWAY 5315**

City/State Collected: **FAIRBANKS, AK**

Please Circle:  
 Alaska

Phone: **907-343-5108**

Client Project #

Lab Project #  
**STAAAKSSA-SPEEDWAYS315**

Collected by (print):  
 Geoff Moorhead

Site/Facility ID #

P.O. #

Collected by (signature):  
 Immediately Packed on Ice N Y X

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

Quote #  
 Date Results Needed

Sample ID

Comp/Grab

Matrix \*

Depth

Date

Time

No. of Cntrs

RM-2  
 MW 17-1  
 MW 17-2  
 Duplicate

GW  
 GW  
 GW  
 GW

10/26/2022  
 10/26/2022  
 10/26/2022  
 10/26/2022

18:11  
 17:23  
 16:34  
 18:11

14  
 14  
 14  
 14

X  
 X  
 X  
 X

X  
 X  
 X  
 X

X  
 X  
 X  
 X

X  
 X  
 X  
 X

X  
 X  
 X  
 X

X  
 X  
 X  
 X

X  
 X  
 X  
 X

X  
 X  
 X  
 X

X  
 X  
 X  
 X

X  
 X  
 X  
 X

X  
 X  
 X  
 X

X  
 X  
 X  
 X

X  
 X  
 X  
 X

X  
 X  
 X  
 X

X  
 X  
 X  
 X

X  
 X  
 X  
 X

X  
 X  
 X  
 X

X  
 X  
 X  
 X

X  
 X  
 X  
 X

X  
 X  
 X  
 X

X  
 X  
 X  
 X

X  
 X  
 X  
 X

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

Remarks:  
 Samples returned via:  
 \_\_\_ UPS \_\_\_ FedEx X \_\_\_ Courier

Tracking # **5882 7561 9548**

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

Relinquished by: (Signature)  
*[Signature]*

Date: **10/27/2022**

Time: **11:30a**

Received by: (Signature)  
*[Signature]*

Trip Blank Received: Yes No  
 HCL / MeOH  
 TBR

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Temp: **8.17 °C**  
**1.170=1.1** Bottles Received: **28**

If preservation required by Login: Date/Time

Relinquished by: (Signature)

Date:

Time:

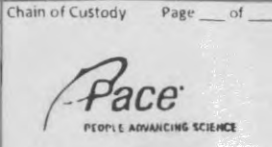
Received for lab by: (Signature)  
*[Signature]*

Date: **10/28** Time: **0900**

Hold:

Condition: NCF / OK

Analysis / Container / Preservation  
 Pres Chk  
 L12



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>

1551725  
**C214**

Accnum: **STAAAKSSA**  
 Template: **T216964**  
 Prelogin: **P952841**  
 PM: **034 - Craig Cothron**  
 PB: **09/23/22**  
 Shipped Via: **FedEX 2nd Day**

Remarks Sample # (lab only)  
 -01  
 -02  
 -03  
 -04

**Laboratory Data Review Checklist**

Completed By:

Jeremiah Malenfant

Title:

Geologist-In-Training

Date:

11/14/2022

Consultant Firm:

Stantec Consulting Services Inc.

Laboratory Name:

Pace Analytical

Laboratory Report Number:

L1551725

Laboratory Report Date:

11/14/2022

CS Site Name:

Speedway Store #5315 (Former TNS 111)

ADEC File Number:

100.26.026

Hazard Identification Number:

24247

L1551725

Laboratory Report Date:

11/14/2022

CS Site Name:

Speedway Store #5315 (Former TNS 111)

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

1. Laboratory

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

Yes  No  N/A  Comments:

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

Yes  No  N/A  Comments:

Samples not transferred

2. Chain of Custody (CoC)

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

Yes  No  N/A  Comments:

b. Correct analyses requested?

Yes  No  N/A  Comments:

3. Laboratory Sample Receipt Documentation

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

Yes  No  N/A  Comments:

1.1 °C

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

Yes  No  N/A  Comments:



L1551725

Laboratory Report Date:

11/14/2022

CS Site Name:

Speedway Store #5315 (Former TNS 111)

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

Yes  No  N/A  Comments:

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

Yes  No  N/A  Comments:

e. Data quality or usability affected?

Comments:

No.

4. Case Narrative

a. Present and understandable?

Yes  No  N/A  Comments:

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

Yes  No  N/A  Comments:

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

c. Were all corrective actions documented?

Yes  No  N/A  Comments:

Dilutions noted in body of report.

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

Comments:

No effect on data quality/usability.

L1551725

Laboratory Report Date:

11/14/2022

CS Site Name:

Speedway Store #5315 (Former TNS 111)

5. Samples Results

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

Yes  No  N/A  Comments:

b. All applicable holding times met?

Yes  No  N/A  Comments:

c. All soils reported on a dry weight basis?

Yes  No  N/A  Comments:

No soil samples submitted to lab.

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

Yes  No  N/A  Comments:

Benzene in MW17-1, but J-flag estimate below.

e. Data quality or usability affected?

No; J-flag estimate below GCL.

6. QC Samples

a. Method Blank

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

Yes  No  N/A  Comments:

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

Yes  No  N/A  Comments:

L1551725

Laboratory Report Date:

11/14/2022

CS Site Name:

Speedway Store #5315 (Former TNS 111)

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

Comments:

None.

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

Yes  No  N/A  Comments:

No affected samples.

v. Data quality or usability affected?

Comments:

No

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

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

Yes  No  N/A  Comments:

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

Yes  No  N/A  Comments:

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

Yes  No  N/A  Comments:

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

Yes  No  N/A  Comments:

L1551725

Laboratory Report Date:

11/14/2022

CS Site Name:

Speedway Store #5315 (Former TNS 111)

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

Comments:

None

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

Yes  No  N/A  Comments:

No affected samples.

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

Comments:

No.

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

**Note: Leave blank if not required for project**

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

Yes  No  N/A  Comments:

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

Yes  No  N/A  Comments:

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

Yes  No  N/A  Comments:

Sodium concentration too high to establish spike recoveries.

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from MS/MSD, and or sample/sample duplicate.

Yes  No  N/A  Comments:

L1551725

Laboratory Report Date:

11/14/2022

CS Site Name:

Speedway Store #5315 (Former TNS 111)

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

Comments:

All sodium samples

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

Yes  No  N/A  Comments:

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

Comments:

No. Sodium used to track influence of chemox treatment

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

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

Yes  No  N/A  Comments:

Not included.

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

Yes  No  N/A  Comments:

Not included.

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

Yes  No  N/A  Comments:

Not included.

iv. Data quality or usability affected?

Comments:

No affected samples.

L1551725

Laboratory Report Date:

11/14/2022

CS Site Name:

Speedway Store #5315 (Former TNS 111)

e. Trip Blanks

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

Yes  No  N/A  Comments:

No Trip Blank submitted to lab.

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

Yes  No  N/A  Comments:

No Trip Blank submitted to lab.

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

Yes  No  N/A  Comments:

No Trip Blank submitted to lab.

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

Comments:

v. Data quality or usability affected?

Comments:

No.

f. Field Duplicate

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

Yes  No  N/A  Comments:

ii. Submitted blind to lab?

Yes  No  N/A  Comments:

L1551725

Laboratory Report Date:

11/14/2022

CS Site Name:

Speedway Store #5315 (Former TNS 111)

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

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

Where  $R_1$  = Sample Concentration  
 $R_2$  = Field Duplicate Concentration

Yes  No  N/A  Comments:

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

Comments:

No

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

Yes  No  N/A  Comments:

All disposable equipment.

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

Yes  No  N/A  Comments:

All disposable equipment.

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

Comments:

None.

iii. Data quality or usability affected?

Comments:

No.

L1551725

Laboratory Report Date:

11/14/2022

CS Site Name:

Speedway Store #5315 (Former TNS 111)

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

a. Defined and appropriate?

Yes  No  N/A

Comments: