Speedway Store 5314

(7-Eleven Store 46745 - Former TNS 76)

Q2 June 2024

GWM Event Report

ADEC File #2265.26.037

Stantec

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 (2Q June 2024 GWM Event, dated July 2024) to the Alaska Department of Environmental Conservation. If you have any questions or need additional information concerning this groundwater monitoring report, please contact me at (907) 227-9883 or via email at bob.gilfilian@stantec.com.

Regards,

STANTEC CONSULTING SERVICES, INC.

Robert Gilfilian

Robert (Bob) Gilfilian, P.E.

Project Technical Lead

Principal Senior Civil Engineer

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

ACRONYMS AND ABBREVIATIONS

AAC	Alaska Administrative Code
ADEC	Alaska Department of Environmental Conservation
AK	Alaska Test Method
BTEX	benzene, toluene, ethylbenzene, and xylenes
Chemox	chemical oxidation
DO	dissolved oxygen
DRO	diesel range organics
EPA	U.S. Environmental Protection Agency
GCL	groundwater cleanup level
gpm	gallons per minute
GRO	gasoline range organics
IW	injection well
Klozur® One	Trademarked chemical oxidizer developed by PeroxyChem
mg/L	milligrams per liter
MW	monitoring well
PAH	polycyclic aromatic hydrocarbon
ORP	oxidation-reduction potential
QA	quality assurance
QC	quality control
Speedway	Speedway, LLC
Stantec	Stantec Consulting Services, Inc.
Tesoro	Tesoro Refining and Marketing Company
TMB	Trimethylbenzene
UST	underground storage tank
VOC	Volatile Organic Compounds

1.0 INTRODUCTION

This Groundwater Monitoring Event Report was prepared by Stantec Consulting Services Inc. (Stantec) on behalf of Speedway Store 5314 (7-Eleven Store 46745 - Former TNS 76), located at 3600 Palmer-Wasilla Highway, Wasilla, Alaska (**Figure 1**). Background and historical information for this site is summarized in **Appendix A**. The methods used for this monitoring event were conducted in accordance with the Alaska Department of Environmental Conservation (ADEC) approved 2024 Corrective Action Plan (CAP) for this site. The 2024 CAP work plan tasks are summarized in **Appendix B**.

This second quarter 2024 groundwater monitoring event was conducted on June 17, 2024, by Stantec environmental staff including Bob Gilfilian, Principal Engineer; Sydney Souza, Environmental Geologist; and Jeremiah Malenfant, Geologist-in-Training. Stantec field staff completed the monthly chemical oxidation (chemox) injection event on June 18, 2024.

2.0 FIELD ACTIVITIES

On June 17, 2024, Stantec completed the following field activities as part of this groundwater monitoring event:

- Measured the depth to groundwater in Monitoring Wells MW-1, MW-2, MW-3, MW-4, and remediation well RW19-1. Groundwater depth measurements were used by the SampleServe™ program to calculate the hydraulic gradient and direction of flow of the groundwater table.

- Measured the following intrinsic water quality parameters in all five monitoring/remediation wells: pH, temperature, dissolved oxygen (DO), oxidation-reduction potential (ORP), and specific conductance.

- Collected groundwater samples from all five monitoring/remediation wells and a duplicate (of MW-3) and submitted them for laboratory analysis of: U.S. Environmental Protection Agency (EPA) Method 8260C for petroleum fuel associated volatile organic compounds including benzene, toluene, ethylbenzene, and xylenes (BTEX), 1,2,4- Trimethylbenzene (TMB) and 1,3,5-TMB, as well as polycyclic aromatic hydrocarbons (PAHs), specifically naphthalene, by EPA 8270D; Alaska Test Method (AK)101 for GRO; AK102 for DRO; and metals by EPA 6010C (ICP) for sodium.

On June 18, 2024, Stantec completed a monthly injection of chemox treatment into the 3 remediation wells (IW-1, IW-2 and IW-3). Field methods and procedures are provided in **Appendix B**. Field measurements and notes are provided in **Appendix C**.

3.0 GROUNDWATER MONITORING RESULTS

3.1 GROUNDWATER ELEVATIONS

Table 1 presents groundwater elevations at this site based on the depths to static groundwater levels measured during this monitoring event. The recirculation pump in RW19-1 was discharged

on a continuous basis at about 1.5 gallons per minute (gpm) across all wells located in the "footprint" of the former underground storage tank (UST) shown on the site plan presented on **Figure 2**.

Table 1 Groundwater Elevations
Measured on June 17, 2024

Monitoring Well Identification	Top of Casing Elevation (feet relative to datum)[1]	Depth to Groundwater (feet btoc)	Groundwater Elevation (feet relative to datum)[1]
MW-1	94.73	19.24	75.49
MW-2	95.07	18.07	77.00
MW-3	94.46	17.27	77.19
MW-4	95.01	17.98	77.03
RW 19-1	95.73	23.95	71.78

Key:
1 – Based on a vertical control survey of June 17, 2024, using an elevation datum of 100.0 feet established on the benchmark on the concrete base of the existing on-site drinking water well.
feet btoc – feet below top of monitoring well casing

The hydraulic gradient across the site was found to be approximately 0.083 feet per foot directed northwest at 291 degrees. The calculation of groundwater hydraulic flow was based on the static water levels in the five on-site wells measured with the groundwater recirculation pump running. The groundwater flow direction is consistent with past monitoring events. A plot of groundwater elevation contours generated by the SampleServe software program, as well as a rose diagram, generated by the Surfer™ software program, of past groundwater direction and gradient, is included in **Figure 3.** The SampleServe program uses a combination of kriging and nearest-neighbor analyses to generate the contours.

3.2 INTRINSIC WATER QUALITY PARAMETERS

Intrinsic water quality data collected during this monitoring event is presented in **Table 2**. ORP measurements ranged from 172.4 millivolts (mV) to 261.9 mV, which is slightly more oxidizing than past events. The pH values in all the wells were noted to be slightly acidic. Specific conductance readings ranged from 837 micro-Siemens per centimeter-degree Celcius (µS/cm°C) to 1877 µS/cm°C which are consistent with historical values measured at this site. High specific conductance readings and higher ORP readings are indicative of the influence of chemox treatment.

Table 2 Intrinsic Water Quality Parameters
Measurements taken on June 17, 2024

Well ID	Volume Purged (gallons)	Temp. (˚C)	pH	Dissolved Oxygen (mg/L)	ORP (mV)	Specific Conductance (µs/cm °C)
MW-1	2.5	8.1	6.01	2.50	208.9	1877
MW-2	4.5	7.9	6.31	1.84	251.6	1352
MW-3	4	7.9	6.76	1.84	261.9	1352
MW-4	5	9.5	6.83	3.13	172.4	1375
RW19-1	NA	12.3	6.71	3.80	185.9	837

Key:
ºC – degrees Celsius
µS/cm°C – microSiemens per centimeter ºC
mg/L – milligrams per liter
mV – millivolts
NA – not applicable
ORP – oxidation-reduction potential
pH – -log [H+]
SC – specific conductance at 25ºC
Temp. – temperature
NM – Not Measured

3.3 ANALYTICAL WATER QUALITY DATA

Laboratory analytical results for BTEX, GRO, DRO, 1,2,4-TMB, 1,3,5-TMB, sodium, and naphthalene detected in groundwater samples collected during this monitoring event are summarized in **Tables 3a and 3b**. Historical results for the current and previous monitoring events are presented in **Appendix D**. The complete laboratory analytical report and laboratory data review checklist is provided in **Appendix E**.

Table 3a Groundwater Analytical Results for BTEX, GRO, and DRO
Samples collected on June 17, 2024

Sample Identification	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	GRO (mg/L)	DRO (mg/L)
MW-1	**0.0120**	U(0.00100)	U(0.00100)	U(0.00300)	U(0.100)	U(0.170)
MW-2	**0.0565**	0.00357	0.00894	0.000943 J	0.0863 J	0.278 J
MW-3	**0.0712**	U(0.0100)	**0.218**	**0.3050**	1.53	1.15
DUP 1 (dup. of MW-3)	**0.0526**	U(0.00500)	**0.161**	**0.2067**	1.17	1.27
MW-4	**0.0622**	0.00189	**0.0519**	0.05856	0.679	0.388 J
RW 19-1	**0.0115**	U(0.00500)	0.0134	0.0263	0.0898 J	U(0.800)
GCLs	**0.0046**	**1.1**	**0.015**	**0.19**	**2.2**	**1.5**

Table 3b Groundwater Analytical Results for Naphthalene, TMB, and Sodium
Samples collected on June 17, 2024

Sample Identification	1,2,4-TMB (mg/L)	1,3,5-TMB (mg/L)	Naphthalene[1] (mg/L)	Sodium (mg/L)
MW-1	U(0.00100)	U(0.00100)	U(0.000250)	76.7
MW-2	U(0.00100)	U(0.00100)	0.000300	167
MW-3	**0.0764**	0.0127	**0.00775**	101
DUP 1 (dup. of MW-3)	**0.0576**	0.00929	**0.00663**	100
MW-4	**0.0715**	0.00444	**0.00227**	108
RW19-1	0.00490 J	0.000741 J	U(0.000250)	34.8
GCLs	**0.056**	**0.060**	**0.0017**	**NA**

Key:
1 – Analyzed by EPA Method 8270D-SIM
AK – Alaska Test Method
DUP – Duplicate
TMB – Trimethylbenzene
mg/L – milligrams per liter
B – The same analyte is found in the associated blank.
BTEX – benzene, toluene, ethylbenzene, and xylenes
DRO – Diesel range organics, analyzed by AK102
GCLs – Groundwater cleanup levels, per ADEC 18 AAC 75.345, Table C, updated September 29, 2018.
GRO – Gasoline range organics, analyzed by AK101
J – The identification of the analyte is acceptable; the reported value is an estimate.
U( ) – Undetected above laboratory reporting limits shown in parentheses.
Bold – indicates the concentration exceeds the GCL or, if not detected, the practical quantitation limit exceeds the GCL.

3.4 QUALITY ASSURANCE (QA)/ QUALITY CONTROL (QC) REVIEW

Pace analytical performed all analysis of groundwater samples for this sampling event. **Table 4** provides a summary of the laboratory QC objectives and outcomes for this monitoring event. Laboratory QC data and the ADEC Laboratory Data Review Checklist are included with the laboratory report in **Appendix E**.

All samples were extracted and analyzed within the relevant hold times. A duplicate sample set was collected to determine the precision of the field collection and laboratory analyses for this sampling event. Sample DUP 1 is a duplicate of sample MW-3. The data presented in **Table 4** shows that the precision for the duplicate sample set was outside the established QA criteria for ethylbenzene and xylenes, and at the precision threshold for benzene.

Table 4 Laboratory Quality Control Objectives

Quality Control Designation	Tolerance	Results for this Event
Holding Times		
DRO/Water/to analyze	40 days	14 days
DRO/Water/to extract	14 days	12 days
GRO/Water/to analyze	14 days	7 days
VOCs/Water/to analyze	14 days	7 days
PAH/Water/to analyze	14 days	7 days
Field Duplicates – Precision		
Benzene/Water	± 30%	30.0%
Toluene/Water	± 30%	NC
Ethylbenzene/Water	± 30%	**30.1%**
Xylenes/Water	± 30%	**38.4%**
GRO/Water	± 30%	26.7%
DRO/Water	± 30%	9.92%
1,2,4-TMB/Water	± 30%	28.1%
1,3,5-TMB/Water	± 30%	31.0%
Naphthalene/Water	± 30%	15.6%
Sodium/Water	± 30%	0.995%

Key:
% – percent
± – plus or minus
BTEX – benzene, toluene, ethylbenzene, and xylenes
DRO – diesel range organics
GRO – gasoline range organics
TMB – Trimethylbenzene
PAH – polycyclic aromatic hydrocarbon
VOC – Volatile Organic Compounds
NC – not calculated due to analyte being undetected in sample

4.0 REMEDIATION SYSTEM

The re-circulation of pumped groundwater from RW19-1 is coupled with periodic injection (typically monthly during the non-freeze time of year) of a chemox product that is injected into the three remediation wells (IW-1, IW-2, and IW-3). On June 18, 2024, Stantec completed a groundwater remediation event that involved the manual injection of a mixture of two 55-pound bags of Klozur One® product each mixed with 50 gallons of tap water into each the three remediation wells for a total of 330 total pounds of chemox injected onsite. Additional flushing was not required in the wells due to the continuous flow from the recirculation pump. Due to less consistent flow into IW-1, the well was flushed from the store hose for one hour. Upon completion of the chemox injection process, the flow from the on-site recirculation well (RW19-1) was reconnected to discharge constant flow into all three wells at approximately 3 gpm with a backpressure of 65 psi. The next scheduled monthly injection of chemox into the treatment wells is in July 2024.

5.0 DISCUSSION OF FINDINGS

The laboratory analytical sample results showed petroleum associated analytes were present at concentrations exceeding ADEC groundwater cleanup levels (GCLs) as listed in Alaska Administrative Code (AAC) 18 AAC 75.345 Table C (9/18/2019) for the following monitoring wells:

- MW-1: Benzene.
- MW-2: Benzene.
- MW-3: Benzene, ethylbenzene, xylene, 1,2,4-TMB, and naphthalene.
- MW-4: Benzene, ethylbenzene, 1,2,4-TMB, and naphthalene.
- RW19-1: Benzene.

Overall, ethylbenzene concentrations across the site have come down. Benzene was detected above GCLs in MW-1 for the first time since July of last year.

The hydraulic gradient across the site was found to be approximately 0.083 feet per foot directed northwest at 291 degrees. The calculation of groundwater hydraulic flow was based on the static water levels in the five on-site wells measured with the groundwater recirculation pump running. The groundwater flow direction is consistent with past monitoring events.

6.0 CONCLUSIONS AND RECOMMENDATIONS

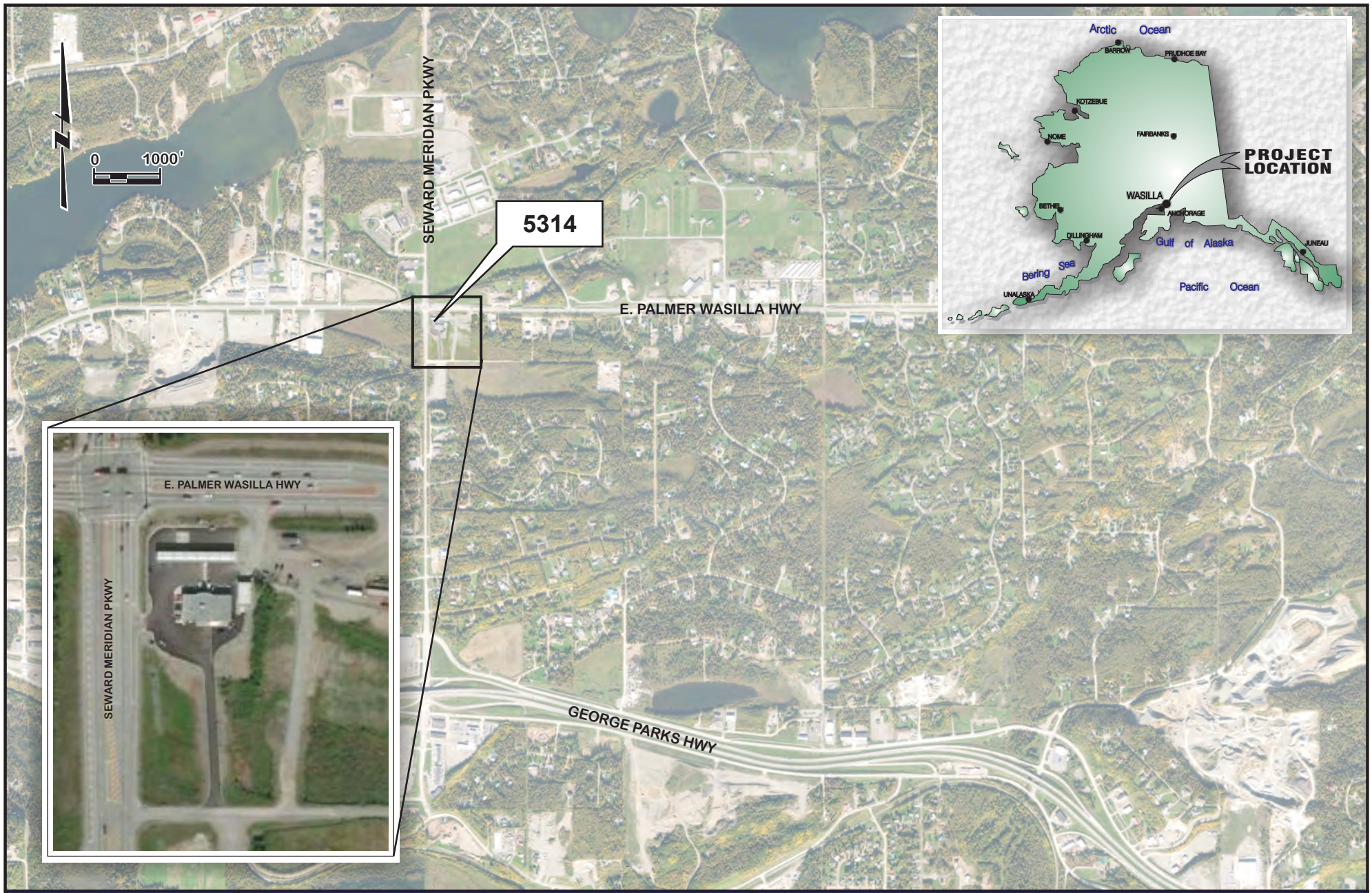
No anomalies were found during the first quarter 2024 monitoring event at this site that would require additional corrective action or changes to the ADEC-approved year 2024 Corrective Action Work Plan for this site.

7.0 LIMITATIONS

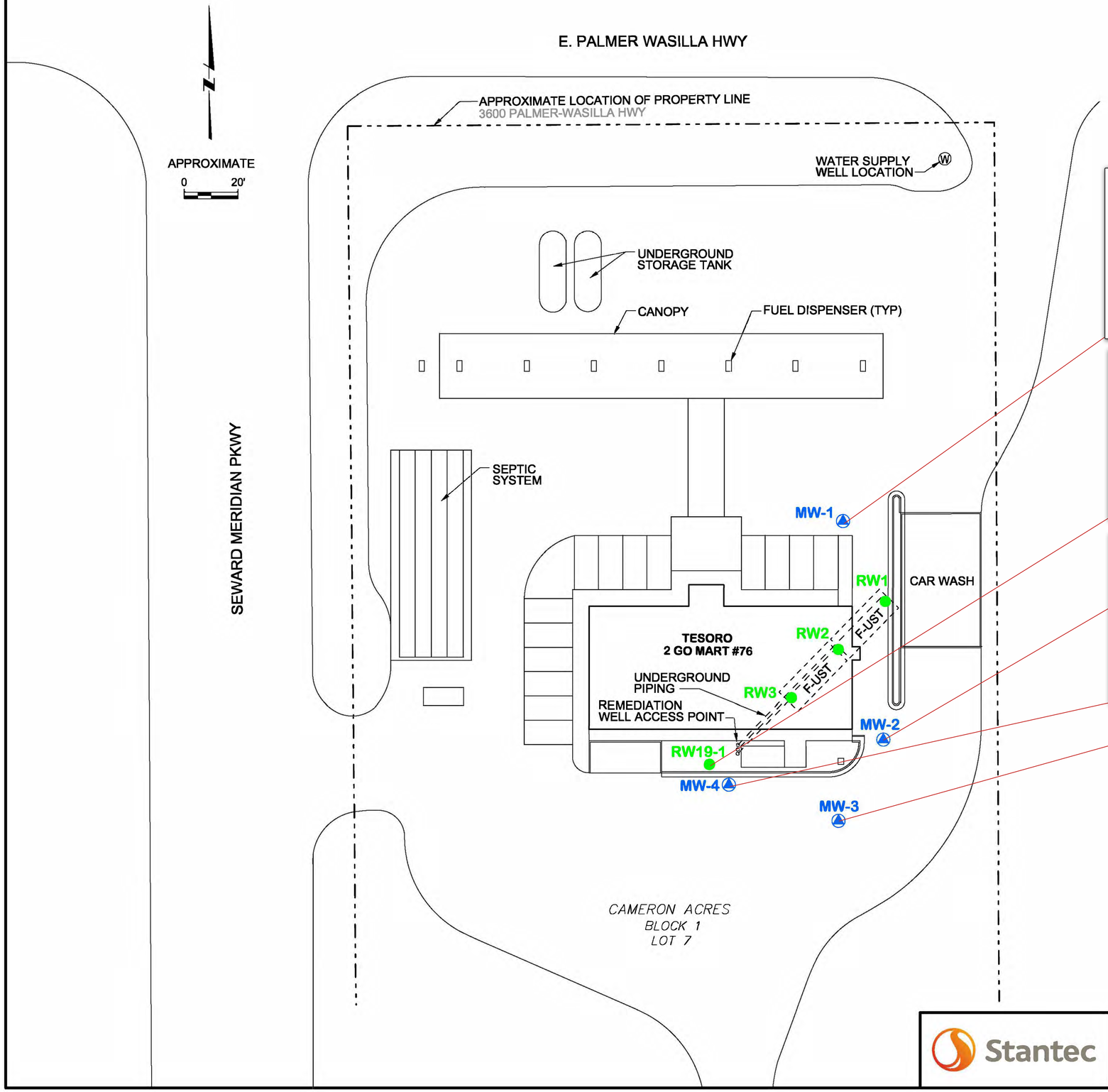
Stantec conducted this monitoring event in accordance with the 2024 Corrective Action Work Plan approved by ADEC, and in a manner consistent with the level of skill ordinarily exercised by members of the profession currently practicing under similar conditions. All sampling activities were completed 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 consider 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. Thereport 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



Stantec	SPEEDWAY STORE 5314 (7-ELEVEN 46745 - FORMER TNS 76) 2Q JUNE 2024 GWM EVENT REPORT	LOCATION AND VICINITY MAP	FIGURE 1



SITE DATA COMPARED TO ADEC Groundwater Cleanup Levels (GCLs)

ND	NOT DETECTED
--	NOT SAMPLED
50	SAMPLED & UNDER GCL
100	SAMPLED & OVER GCL
FP	FREE PRODUCT

DISPLAYED IN mg/L

124-TMB	0.056 mg/L
135-TMB	0.06 mg/L
BENZENE	0.0046 mg/L
DRO	1.5 mg/L
ETHYLBENZENE	0.015 mg/L
GRO	2.2 mg/L
NAPHTHALENE	0.0017 mg/L
SODIUM	
TOLUENE	1.1 mg/L
TOTAL XYLENES	0.19 mg/L

MW-1	6/17/24
124-TMB	U(0.00100)
135-TMB	U(0.00100)
BENZENE	0.012
DRO	U(0.800)
ETHYLBENZENE	U(0.00100)
GRO	U(0.100)
NAPHTHALENE	U(0.000250)
SODIUM	76.7
TOLUENE	U(0.00100)
TOTAL XYLENES	U(0.00300)

RW19-1	6/17/24
124-TMB	0.0049
135-TMB	0.000741
BENZENE	0.0115
DRO	U(0.800)
ETHYLBENZENE	0.0134
GRO	0.0898
NAPHTHALENE	U(0.000250)
SODIUM	34.8
TOLUENE	U(0.00500)
TOTAL XYLENES	0.0263

MW-2	6/17/24
124-TMB	U(0.00100)
135-TMB	U(0.00100)
BENZENE	0.0565
DRO	0.278
ETHYLBENZENE	0.00894
GRO	0.0863
NAPHTHALENE	0.0003
SODIUM	167
TOLUENE	0.00357
TOTAL XYLENES	0.000943

MW-4	6/17/24
124-TMB	0.0715
135-TMB	0.00444
BENZENE	0.0622
DRO	0.388
ETHYLBENZENE	0.0519
GRO	0.679
NAPHTHALENE	0.00227
SODIUM	108
TOLUENE	0.00189
TOTAL XYLENES	0.05856

MW-3	6/17/24
124-TMB	0.0764
135-TMB	0.0127
BENZENE	0.0712
DRO	1.15
ETHYLBENZENE	0.218
GRO	1.53
NAPHTHALENE	0.00775
SODIUM	101
TOLUENE	U(0.0100)
TOTAL XYLENES	0.305

LEGEND:

F-UST	FORMER UNDERGROUND STORAGE TANK
▲	MONITORING WELL LOCATION
●	REMEDIATION WELL LOCATION
DRO	DIESEL RANGE ORGANICS
GRO	GASOLINE RANGE ORGANICS
GW Elev	GROUNDWATER ELEVATION IN FEET
RW	REMEDIATION WELL
TMB	TRIMETHYLBENZENE
U	UNDETECTED ABOVE PRACTICAL QUANTITATION LIMITS SHOWN IN PARENTHESES
W	DRINKING WATER WELL

Stantec

Speedway 5314
(7-Eleven 46745 - Former TNS 76)
Q2 GWM Event June 2024

Boxmap with Analytical Data Results

FIGURE
2

E. PALMER WASILLA HWY

APPROXIMATE LOCATION OF PROPERTY LINE
3600 PALMER-WASILLA HWY

N

APPROXIMATE
0 20'

WATER SUPPLY WELL LOCATION (W)

UNDERGROUND STORAGE TANK

CANOPY

FUEL DISPENSER (TYP)

SEPTIC SYSTEM

SEWARD MERIDIAN PKWY

MW-1 75.5

RW1

CAR WASH

F-UST

TESORO
2 GO MART #76

RW2

UNDERGROUND PIPING

RW3

REMEDIATION WELL ACCESS POINT

14

15

16

MW-2 77.0

RW19-1 71.8

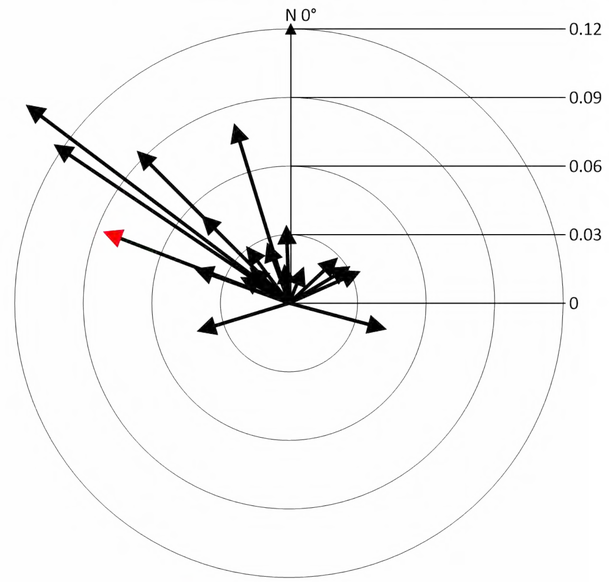
MW-4 77.0

17

MW-3 77.2

CAMERON ACRES
BLOCK 1
LOT 7

Groundwater Flow Direction (degrees azimuthal) and Gradient (ft/ft)



June 17, 2024

LEGEND:

F-UST	FORMER UNDERGROUND STORAGE TANK
▲	MONITORING WELL LOCATION
●	REMEDIATION WELL LOCATION
DRO	DIESEL RANGE ORGANICS
GRO	GASOLINE RANGE ORGANICS
GW Elev	GROUNDWATER ELEVATION IN FEET
RW	REMEDIATION WELL
TMB	TRIMETHYLBENZENE
U	UNDETECTED ABOVE PRACTICAL QUANTITATION LIMITS SHOWN IN PARENTHESES
(W)	DRINKING WATER WELL

Stantec

Speedway 5314
(7-Eleven 46745 - Former TNS 76)
Q2 GWM Event June 2024

Groundwater Elevation Contours

FIGURE
3

APPENDIX A

Site Background

APPENDIX A – SITE BACKGROUND

Speedway Store 5314 (7-Eleven Store 46745 - Former TNS 76) located at 3600 Palmer-Wasilla Highway, Wasilla, Alaska
ADEC File #2265.26.037

Speedway Store 5314 (former Tesoro 2 Go Mart #76) is a retail fuel and convenience store facility located at 3600 Palmer-Wasilla Highway, Wasilla, Alaska (Figure 1). The legal description for the property is Lot 7, Block 1, Cameron Acres Subdivision, Matanuska-Susitna Borough.

Two 15,000-gallon underground storage tanks (USTs) were installed at the site in 1995. Based on historical records, this is the first retail fuel convenience store to occupy this location. The site is covered with asphalt paving with concrete in the area over the USTs and fuel dispenser islands. The former UST system and dispensing components were removed from September to October 2014 and replaced with a new UST fueling system. The new UST fueling system consists of two 15,000-gallon fiberglass-reinforced plastic, double-walled USTs installed on January 29, 2015, and seven fuel dispensers (six gasoline and one diesel). Distribution piping consists of 2-inch fiberglass primary and 3-inch fiberglass secondary.

In addition, the former convenience store was demolished and replaced with a new convenience store that was constructed at a different location on the property. The property is over 1 acre in size and is served with an on-site drinking water well and on-site septic tank and drainfield system.

October 2014. During the 2014 Site Assessment of the UST closure, a petroleum fuel release was discovered in the subsurface soils partially surrounding and underlying the USTs. At that time, a very deep test pit was excavated beneath the former USTs to the groundwater table. Field screening with a photoionization detector (PID) indicated that petroleum contamination was present throughout the vadose zone and extended to the underlying groundwater table. Due to site safety concerns with sloughing soils, it was not feasible to excavate all of the contaminated soil below the former USTs.

A Release Investigation (RI) was conducted by MWH Americas, Inc. (MWH) subsequent to the closure of the former USTs. The RI included the installation of a soil vapor extraction (SVE) remediation well and several groundwater monitoring wells. MWH completed a groundwater monitoring event after the monitoring wells were installed. Follow-up water samples were collected from the onsite drinking water well for appropriate laboratory analyses.

The findings of the RI indicated a significant amount of petroleum contamination had impacted the subsurface soils and shallow groundwater table at the site. The soil samples collected indicate higher concentrations of gasoline range organics (GRO) and benzene, toluene, ethylbenzene, and xylenes (BTEX) constituents directly below the location occupied by the former USTs at Remediation Wells RW-2 and RW-3. Benzene was detected above Alaska Department of Environmental Conservation (ADEC) groundwater cleanup level (GCL) in groundwater at monitoring wells installed at the site. GRO contaminants have also impacted the groundwater table. The system has been monitored on a quarterly basis since the completion of the RI.

February 2015. Benzene exceeded the GCL in Monitoring Well MW-2. BTEX, GRO, and diesel range organics (DRO) exceeded GCLs in Monitoring Well MW-3. Benzene, toluene, and GRO exceeded GCLs in Monitoring Well MW-4.

June 2015. MWH installed and placed into operation a SVE system at the site. Early results indicate that the system is effectively removing petroleum-related vapors from the subsurface. Additionally, a surface water sample was collected from an on-site nearby wetland surface water area. Xylenes and DRO were detected in the water sample; however, the concentrations were below the ADEC groundwater and surface water cleanup levels.

September 2015. Benzene and DRO exceeded GCLs in Monitoring Well MW-2. BTEX and DRO exceeded GCLs in Monitoring Well MW-3. Benzene exceeded GCL in Monitoring Well MW-4. The SVE remediation system blower was offline, requiring maintenance.

November 2015. Benzene exceeded GCL in Monitoring Well MW-1. Benzene, GRO, and DRO exceeded the GCL in Monitoring Well MW-2. Benzene, toluene, and GRO all remained above their GCLs, consistent with the past five monitoring events, at Monitoring Well MW-3.

December 2015. Maintenance was performed on the SVE system on December 31, 2015. A replacement SVE system blower was installed. The system was brought back online on the date of the replacement blower installation. A PID was used to monitor the system effluent after the initial 15 minutes of operation and indicated that 424 parts per million by volume were being removed by the system.

January 2016. Benzene exceeded the GCL in Monitoring Well MW-1. Benzene, toluene, ethylbenzene, and DRO exceeded their GCLs in Monitoring Well MW-2; and benzene, toluene, ethylbenzene, xylenes, GRO, and DRO exceeded their GCLs in Monitoring Well MW-3. The laboratory did not provide results for requested GRO analyses for samples from Monitoring Wells MW-2 and MW-4.

May 2016. In Monitoring Wells MW-1, MW-2, and MW-4, only benzene exceeded GCL. MW-3 exceeded GCLs for all analytes tested. There were no detections in the Carmen Lot 7 drinking water sample. An SVE effluent sample was collected to monitor SVE performance.

October 2016. In Monitoring Well MW-1, only benzene exceeded GCL. In Monitoring Well MW-2, all analytes but toluene and DRO exceeded GCLs. Monitoring Well MW-3 exceeded GCLs for all analytes tested. Monitoring Well MW-4 had no exceedances. There were no detections in the Carmen Lot 7 drinking water sample. An SVE effluent sample was collected to monitor SVE performance.

December 2016. In Monitoring Well MW-1, only benzene exceeded GCL. In Monitoring Well MW-2, all analytes but toluene exceeded GCLs. Monitoring Well MW-3 exceeded GCLs for benzene, GRO, and DRO. Monitoring Well MW-4 and the Carmen Lot 7 drinking water sample had no exceedances. Both Monitoring Wells MW-3 and MW-4 had insufficient sample volumes to complete all analytical testing. The SVE system observed for operation and performance.

February 2017. Benzene was the only analyte to exceed the GCL in Monitoring Wells MW-1 and MW-4. Benzene and ethylbenzene exceeded GCLs in Monitoring Well MW-2, and all analytes exceeded their GCLs in Monitoring Well MW-3. The SVE system was frozen due to record cold temperatures experienced during January 2017. A subsequent site visit on February 16, 2017, was made to thaw and restore the SVE system to normal operation.

April 2017. In addition to testing for BTEX, DRO, and GRO, expanded testing for volatile organic compounds (VOCs), and polynuclear aromatic hydrocarbons (PAHs) were conducted on all monitoring wells. Benzene was the only analyte to exceed the GCL in Monitoring Wells MW-1 and MW-4. BTEX (minus toluene) and GRO exceeded their GCLs in Monitoring Well MW-2, consistent with previous monitoring events. The expanded testing found 1,2,4-trimethlybenzene and naphthalene to also exceed GCLs. In Monitoring Well MW-3, BTEX and DRO exceeded their GCLs, also consistent with previous monitoring events. The expanded testing found 1,2,4-trimethlybenzene, 1,3,5-trimethlybenzene, and naphthalene to also exceed GCLs. Pilot Testing (conducted in May 2017) of air injection into remediation wells to volatize groundwater and smear zone contaminants indicated a slight increase of volatilization when air is injected into RW-2, and RW-3.

September 2017. Except for the following, all analytes were below GCLs in the wells sampled:

- Monitoring Well MW-1 – benzene exceeded the GCL.
- Monitoring Well MW-2 – benzene, ethylbenzene, xylenes and GRO exceeded their GCLs.
- Monitoring Well MW-3 – BTEX, GRO, and DRO were above their GCLs. The MW-3 duplicate sample provided results within established Quality Assurance/Quality Control (QA/QC) standards.
- Monitoring Well MW-4 – benzene, ethylbenzene, xylenes, and GRO exceeded their GCLs.

The SVE contaminant vapor mass removal was less than observed during pilot test in May 2017 and requires additional optimization.

February 2018. Except for the following, all analytes were below GCLs in the wells sampled:

- Monitoring Well MW-1 – benzene.
- Monitoring Well MW-2 – benzene, ethylbenzene, xylenes, and GRO (GRO was not detected, but the Reporting Limit exceeded the GCL).
- Monitoring Well MW-3 – BTEX and GRO (GRO was not detected, but the Reporting Limit exceeded the GCL). The MW-3 duplicate sample provided results within established QA/QC standards.
- Monitoring Well MW-4 – benzene, ethylbenzene, xylenes, and GRO.

The SVE contaminant vapor mass removal was less than previously observed on site. In addition, the field work included an assessment of the buried piping systems for the air sparging (AS) and SVE systems. The assessment was performed with a downhole camera capable of recording

photographs and video of the interior conditions of the piping system. The findings of the downhole camera assessment of the buried piping system was inconclusive.
June 2018. The results from the June 29, 2018, monitoring event supports the continued pattern that GRO contamination persists on site and is observed in Monitoring Wells MW-2 and MW-3. In addition, Monitoring Well MW-3 is consistently the most contaminated well. In summary, the results of the groundwater analytical sampling showed that analytes detected above the GCLs were:

- Monitoring Well MW-1: Benzene.
- Monitoring Well MW-2: Benzene, ethylbenzene, xylenes, GRO, and naphthalene.
- Monitoring Well MW-3: BTEX, GRO and naphthalene. Except for GRO, the duplicate sample provided results within established QA/QC standards.
- Monitoring Well MW-4: Benzene, ethylbenzene, and naphthalene.

A representative water sample from the on-site drinking water well serving the Tesoro 2 Go Mart was sampled and tested for VOCs. The water sample was found to have no detectable levels of contaminants of concern, except the laboratory reporting limits were over the GCLs for 1,1,2-trichloroethane (TCA) and vinyl chloride.

The SVE contaminant vapor mass removal is very low and based on the recent pattern of decline suggest that the SVE system performance requires additional optimization. Alternative treatment options are currently being evaluated and, if determine feasible, a new work plan will be presented to ADEC for review and approval prior to making any changes.

September 2018. Results of the groundwater analytical sampling showed that analytes detected above ADEC GCLs were:

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

Several analytes for VOCs were reported as undetected but had laboratory reporting limits that equaled or exceeded their corresponding GCLs. The results from this monitoring event supports the continued pattern that GRO contamination persists at the site and is observed in Monitoring Wells MW-2 and MW-3. In addition, Monitoring Well MW-3 is consistently the most contaminated well.

The approximate hydraulic gradient across the site was found to be approximately 0.03 feet per foot directed toward the north-northeast at 14 degrees. The groundwater flow direction and gradient are consistent with past monitoring events.

The SVE contaminant vapor mass removal is very low and, based on the recent pattern of decline, suggests that the SVE system performance requires additional optimization. Alternative treatment options are currently being evaluated and, if determine feasible, a new work plan will be presented to ADEC for review and approval prior to making any changes.

October 2018. Results of the groundwater analytical sampling showed that analytes detected above ADEC GCLs were:

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

Several VOCs were reported as undetected but had laboratory reporting limits that equaled or exceeded their corresponding GCLs. The results from this October 26, 2018, monitoring event supports the continued pattern that GRO contamination persists at the site and is observed in Monitoring Wells MW-2 and MW-3. In addition, Monitoring Well MW-3 is consistently the most contaminated on-site monitoring well.

The approximate hydraulic gradient across the site was found to be approximately 0.03 feet per foot directed toward the north at 358 degrees. The groundwater flow direction and gradient are consistent with past monitoring events.

The SVE contaminant vapor mass removal is very low and, based on the recent pattern of decline, suggests that the SVE system performance requires additional optimization. Alternative treatment options are currently being evaluated and, if determined to be feasible, a new work plan will be presented to ADEC in 2019 for review and approval prior to making any changes.

February 2019. Results of the groundwater analytical sampling showed that analytes detected above ADEC GCLs were:

- Monitoring Well MW-2: Benzene, ethylbenzene, xylenes, and GRO.
- Monitoring Well MW-3: Benzene, ethylbenzene, xylenes, and DRO.
- Monitoring Well MW-4: Benzene

The existing bio-sparge treatment system is not functional and will be replaced. In the 2nd quarter of 2019, Stantec plans to install a groundwater recirculation system based on pump and treat technology. The SVE contaminant vapor mass removal is very low and, based on the recent pattern of decline, suggests that the SVE system performance requires additional optimization. Alternative treatment options are currently being evaluated and, if determine feasible, a new work plan will be presented to ADEC for review and approval prior to making any changes.

April 2019. The monitoring event included: measuring the depth to groundwater; measuring water quality parameters; and collecting and analyzing groundwater samples from Monitoring Wells MW-1, MW-2, MW-3, and MW-4, as well as the on-site drinking water well.

Results of the groundwater analytical sampling showed that analytes detected above ADEC GCLs in the primary samples were:

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

A representative water sample from the on-site drinking water well serving the Tesoro 2Go Mart was sampled and tested for VOCs. The water sample was found to have no detectable levels of contaminants of concern, except the laboratory reporting limits were over the GCLs for 1,1,2-TCA, 1,2,3-trichloropropane, 1,2-dibromoethane, and vinyl chloride.

The groundwater hydraulic gradient across the site was found to be approximately 0.04 feet per foot directed toward the west-northwest at 290 degrees. The groundwater flow direction and gradient are inconsistent with past monitoring events in that the direction of flow is to the west rather than historically to the north with a slightly higher gradient.

July 2019. The monitoring event included: measuring the depth to groundwater; measuring water quality parameters; and collecting and analyzing groundwater samples from Monitoring Wells MW-1, MW-2, MW-3, and MW-4.

Results of the groundwater analytical sampling showed that analytes detected above ADEC GCLs in the primary samples were:

- Monitoring Well MW-1: Benzene.
- Monitoring Well MW-2: Benzene, ethylbenzene, xylenes, and GRO.
- Monitoring Well MW-3: BTEX, GRO, and DRO.
- Monitoring Well MW-4: Benzene.

The groundwater hydraulic gradient across the site was found to be approximately 0.013 feet per foot directed toward the north-northeast at 22 degrees. The groundwater flow direction and gradient are consistent with past monitoring events.

Stantec plans to drill a new 4” diameter remediation well and repurpose the current bio-sparge system. The new well and bio-sparge system will be converted into a groundwater recirculation system to allow injection of chemical oxidation products. The implementation of this change in the remediation system will occur in the 4th quarter of 2019.

October 2019. The monitoring event included: measuring the depth to groundwater; measuring water quality parameters; and collecting and analyzing groundwater samples from Monitoring Wells MW-1, MW-2, MW-3, and MW-4.

Results of the groundwater analytical sampling showed that analytes detected above ADEC GCLs in the primary samples were:

- Monitoring Well MW-2: Benzene and ethylbenzene.

- Monitoring Well MW-3: benzene, ethylbenzene, xylenes, and GRO.
- Monitoring Well MW-4: Benzene.

The groundwater hydraulic gradient across the site was found to be approximately 0.013 feet per foot directed toward the north at 350 degrees. The groundwater flow direction and gradient are consistent with past monitoring events.

Stantec plans to drill a new 4" diameter remediation well (RW 19-1) and repurpose the current bio-sparge system. The new well and bio-sparge system will be converted into a groundwater recirculation system to allow injection of chemical oxidation products. The implementation of this change in the remediation system will occur in the 2nd quarter of 2020.

August 2020. The 3rd quarter groundwater monitoring event included: measuring the depth to groundwater; measuring water quality parameters; and collecting and analyzing groundwater samples from Monitoring Wells MW-1, MW-2, MW-3, MW-4, and Remediation Well RW19-1.

Results of the groundwater analytical sampling showed that analytes detected above ADEC groundwater cleanup levels (GCLs) in the primary samples were:

- Monitoring Well MW-2: Benzene, ethylbenzene, and xylenes.
- Monitoring Well MW-3: Benzene, ethylbenzene, xylenes, gasoline range organics (GRO), and diesel range organics (DRO).
- Monitoring Well MW-4: Benzene.

The hydraulic gradient across the site was found to be approximately 0.025 feet per foot directed toward the north at 47 degrees. The groundwater flow direction and gradient are consistent with past monitoring events. A historical summary of the groundwater flow for the last 10 monitoring events is shown in the "rose diagram" presented on the Site Plan drawing.

In 2019 Stantec installed a groundwater recirculation system based on pump and treat technology. The 4" diameter remediation well (RW 19-1) that was installed in October 2019, is connected to the existing underground piping system (formerly used for the bio-sparge system) consisting of 3 vertical injection wells located under the northeast portion of the existing store building. Chemical oxidation injection of Klozur One® product directly into the 3 vertical injection wells was conducted during this monitoring event. A total of 330 pounds of Klozur One® and 750 gallons of water pumped from RW19-1 was injected into the in-situ groundwater treatment system.

October 2020. The 4th quarter groundwater monitoring event included: measuring the depth to groundwater; measuring intrinsic water quality parameters; and collecting and analyzing groundwater samples from monitoring wells MW-01, MW-02, MW-03, MW-04 and remediation well RW19-1.

Results of the groundwater analytical sampling showed that analytes detected above ADEC GCLs in the primary samples were:

- Monitoring well MW-1: Benzene

- Monitoring well MW-2: Benzene, ethylbenzene, and 1,2,4-trimethylbenzene.
- Monitoring well MW-3: Benzene, ethylbenzene, xylenes, gasoline range organics (GRO), diesel range organics (DRO), naphthalene, 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene.
- Monitoring well MW-4: Benzene.

No contaminants were detected in the drinking water sample collected from the water spigot in the store's utility sink.

The hydraulic gradient across the site was found to be approximately 0.032 feet per foot directed toward the north-east at 28 degrees. The groundwater flow direction and gradient are consistent with past monitoring events. A historical summary of the groundwater flow for the last 11 monitoring events is shown in the "rose diagram" presented on the Site Plan drawing.

On September 3, 2020 - prior to the 4th quarter groundwater monitoring event, Stantec completed an injection of chemox products. A chemox solution consisting of two 55-pound bags of Klozur One® product mixed with 50 gallons of water was injected into each of the three remediation wells of the former bio-sparge system (RW-1, RW-2, and RW-3). An additional 200 gallons of water from RW19-1 was injected directly into each remediation well (RW-1, RW-2, and RW-3) immediately after the injection of the chemox solution. In summary, a total of 330 pounds of Klozur One® and 750 gallons of water pumped from RW19-1 was injected into the in-situ groundwater treatment system.

March 2021. The 1st quarter 2021 groundwater monitoring event included: measuring the depth to groundwater; measuring intrinsic water quality parameters; and collecting and analyzing groundwater samples from monitoring wells MW-01, MW-02, MW-03, MW-04 and remediation well RW19-1.

Results of the groundwater analytical sampling showed that analytes detected above ADEC GCLs in the primary samples were:

- Monitoring well MW-2: Benzene.
- Monitoring well MW-3: Benzene, ethylbenzene, xylenes, toluene, gasoline range organics (GRO), and diesel range organics (DRO).
- Monitoring well MW-4: Benzene.

The hydraulic gradient across the site was found to be approximately 0.024 feet per foot directed toward the northwest at 340 degrees. The calculated groundwater gradient and flow direction do not account for the water table drawdown associated with remediation well RW19-1. The groundwater gradient and flow direction are consistent with past monitoring events.

The operation of the groundwater recirculation well (RW 19-1) was checked and noted to be operating within normal range. The submersible pump runs on a continuous basis and observed to discharge approximately a total flow rate of 1.5 gallons per minute into the three on-site injection wells (RW-1, RW-2 and RW-3) that are located within the "footprint" of the former underground storage tank (UST).

May 2021. The 2nd quarter 2021 groundwater monitoring event included: measuring the depth to groundwater; measuring intrinsic water quality parameters; and collecting and analyzing groundwater samples from monitoring wells MW-01, MW-02, MW-03, MW-04 and remediation well RW19-1.

Results of the groundwater analytical sampling showed that analytes detected above ADEC GCLs in the primary samples were:

- Monitoring well MW-2: Benzene.
- Monitoring well MW-3: Benzene, ethylbenzene, xylenes, toluene, GRO, DRO, naphthalene, 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene.
- Monitoring well MW-4: Benzene.

The approximate hydraulic gradient and direction of groundwater flow across the site was found to be approximately 0.027 feet per foot directed toward the northeast at 59 degrees. The calculated groundwater gradient and flow direction do not account for the water table drawdown associated with remediation well RW19-1. The groundwater gradient and flow direction are generally consistent with past monitoring events. The gradient and direction of flow was graphically calculated by triangulation method.

The operation of the groundwater recirculation well (RW 19-1) was checked and noted to be operating within normal range. The submersible pump runs on a continuous basis and observed to discharge approximately a total flow rate of 1 to 2 gallons per minute into the three on-site injection wells (RW-1, RW-2 and RW-3) that are located within the "footprint" of the former underground storage tank (UST).

Chemox injection via the three remediation wells took place on May 19, 2021, during the completion of the groundwater monitoring event. Stantec completed an injection of two 55-pound bags of Klozur One® product mixed with 50 gallons of water was injected into each of the three remediation wells of the former bio-sparge system (RW-1, RW-2, and RW-3) for a total 330 pounds of Klozur One® and 750 gallons of water pumped from RW19-1 was injected into the in-situ groundwater treatment system. The next scheduled injection of chemox into the treatment wells is planned for the third quarter of 2021.

July 2021. The 2nd quarter 2021 groundwater monitoring event included: measuring the depth to groundwater; measuring intrinsic water quality parameters; and collecting and analyzing groundwater samples from monitoring wells MW-01, MW-02, MW-03, MW-04 and remediation well RW19-1.

Results of the groundwater analytical sampling showed that analytes detected above ADEC GCLs in the samples were:

- Monitoring well MW-3: Benzene, ethylbenzene, xylenes, gasoline range organics (GRO), diesel range organics (DRO), 1,2,4-trimethylbenzene (TMB) and 1,3,5-TMB.

- Monitoring well MW-4: Benzene.

However, the laboratory reported the test results for naphthalene in all of the wells were non-detect but all of them were above the ADEC GCL for naphthalene. Consequently, are shown in this report as exceedance of the naphthalene GCL.

The hydraulic gradient across the site was found to be approximately 0.027 feet per foot directed toward the northeast at 59 degrees. The calculation by triangulation of groundwater hydraulic flow was based on the static water levels in the four on-site monitoring wells and the pumping water level in "pump and treat" well (RW 19-1). The groundwater gradient and flow direction are generally consistent with past monitoring events.

The operation of the groundwater recirculation "pump and treat" well (RW 19-1) was checked and noted to be operating within normal range. The well's submersible pump runs on a continuous basis (24 hours each day). Upon arrival to the site on July 28, 2021, the well pump was discharging approximately 1.4 gallons per minute (gpm) into the three on-site treatment/remediation (injection) wells (RW-1, RW-2 and RW-3) that are located within the "footprint" of the former underground storage tank (UST). The pumped groundwater is treated in-situ with a chemical oxidation (chemox) injection process.

On July 28, 2021, Stantec completed groundwater remediation event that included the injection of chemical oxidation (chemox) solution into the three treatment/remediation wells. The injection process involved the manual injection of a mixture of two 55-pound bags of Klozur One® product and 50 gallons of tap water into each of the three remediation wells. Following the injection of the chemox solution, Stantec injected additional 250 to 300 gallons of tap water to "hydraulically push" the chemox mixture into each remediation well.

October 2021: The fourth quarter 2021 monitoring event was conducted on October 14, 2021, and included the following field activities: measuring the depth to groundwater; measuring water quality parameters; and collecting and analyzing groundwater samples from Monitoring Wells MW-1, MW-2, MW-3, MW-4, and Remediation Well RW19-1. In addition, a representative water sample was collected for analysis for appropriate drinking water parameters from the store's on-site drinking water well. The laboratory analytical sample results showed petroleum associated analytes were present at concentrations exceeding ADEC groundwater cleanup levels (GCLs) for the following monitoring wells:

- Monitoring well MW-1: Benzene
- Monitoring well MW-2: Benzene and ethylbenzene.
- Monitoring well MW-3: Benzene, ethylbenzene, xylenes, gasoline range organics (GRO), diesel range organics (DRO), naphthalene, 1,2,4-trimethylbenzene (TMB) and 1,3,5-TMB.
- Monitoring well MW-4: Benzene.

No contaminants of concern were detected in the drinking water sample collected from the store.

The hydraulic gradient across the site was found to be approximately 0.04 feet per foot directed toward the west-northwest at 285 degrees. The calculation of groundwater hydraulic flow was performed by the "Surfer®" modeling software in conjunction with the static water levels in the four on-site monitoring wells and the pumping water level in "pump and treat" recirculation well (RW 19-1). Due to the operation of the recirculation well RW-19-1, the groundwater flow direction

was slightly altered to the west and the gradient was slightly higher compared to past monitoring events.

The well pump in RW-19-1 was discharging approximately 1.4 gallons per minute (gpm) into the three on-site treatment/remediation (injection) wells (RW-1, RW-2 and RW-3) that are located within the footprint of the former underground storage tank (UST). The well's submersible pump runs on a continuous basis (24 hours each day). The pumped groundwater is treated in-situ with the periodic dosing/injection of a chemical oxidant (chemox) product.

On October 1, 2021, Stantec completed groundwater remediation event that included the injection of chemox solution into the three treatment/remediation wells. The injection process involved the Speedway Store 5314 (former Tesoro 2 Go Mart #76) Page 2 October 2021 4Q Monitoring Event Report November 2021 manual injection of a mixture of two 55-pound bags of Klozur One® product and 50 gallons of tap water into each of the three remediation wells. Following the injection of the chemox solution, Stantec injected additional 250 to 300 gallons of tap water into each remediation well to hydraulically push the chemox mixture into the subsurface formation.

March 2022: This first quarter 2022 monitoring event report was conducted on March 17, 2022 and included the following field activities: measuring the depth to groundwater; measuring water quality parameters; and collecting and analyzing groundwater samples from Monitoring Wells MW-1, MW-2, MW-3, MW-4, and Remediation Well RW19-1.

The laboratory analytical sample results showed petroleum associated analytes were present at concentrations exceeding ADEC groundwater cleanup levels (GCLs) as listed in Alaska Administrative Code (AAC) 18AAC 75.345 Table C (9/18/2019) for the following monitoring wells:

- Monitoring Well MW-2: Benzene.
- Monitoring well MW-3: Benzene, ethylbenzene, xylenes, gasoline range organics (GRO), diesel range organics (DRO), naphthalene, 1,2,4-trimethylbenzene (TMB), and 1,3,5-TMB.
- Monitoring well MW-4: Benzene, ethylbenzene, xylenes, gasoline range organics (GRO), diesel range organics (DRO), naphthalene, 1,2,4-TMB, and 1,3,5-TMB.
- Remediation Well RW19-1: Benzene.

The hydraulic gradient across the site was found to be approximately 0.019 feet per foot directed northwest at 312 degrees. The calculation of groundwater hydraulic flow was based on the static water levels in the five on-site wells measured during the monitoring event on March 17. The groundwater gradient and flow direction are generally consistent with past monitoring events.

On March 25, 2022, Stantec completed groundwater remediation event that included the injection of chemical oxidation (chemox) solution into the three treatment/remediation wells. The injection process involved the manual injection of a mixture of two 55-pound bags of Klozur One® product and 50 gallons of tap water into each of the three remediation wells for a total of 100 gallons per well and 300 gallons of chemox solution total. Following the injection of the chemox solution,

Stantec injected an additional 100 gallons of tap water into each remediation well to hydraulically push the chemox mixture into the subsurface formation.

June 2022: This second quarter 2022 monitoring event report was conducted on June 22 and 23, 2022 and included the following field activities: measuring the depth to groundwater; measuring water quality parameters; and collecting and analyzing groundwater samples from Monitoring Wells MW-1, MW-2, MW-3, MW-4, and Remediation Well RW19-1.

The laboratory analytical sample results showed petroleum associated analytes were present at concentrations exceeding ADEC groundwater cleanup levels (GCLs) as listed in Alaska Administrative Code (AAC) 18AAC 75.345 Table C (9/18/2019) for the following monitoring wells:

- Monitoring Well MW-1: Benzene.
- Monitoring Well MW-2: Benzene.
- Monitoring well MW-3: Benzene, ethylbenzene, xylenes, gasoline range organics (GRO), diesel range organics (DRO), naphthalene, 1,2,4-trimethylbenzene (TMB), and 1,3,5-TMB.
- Monitoring well MW-4: Benzene, ethylbenzene, xylenes, GRO, naphthalene, 1,2,4-TMB, and 1,3,5-TMB.
- Remediation Well RW19-1: Benzene, ethylbenzene and 1,2,4-TMB.

The hydraulic gradient across the site was found to be approximately 0.078 feet per foot directed north-northwest at 343 degrees.

During the 2Q 2022, Stantec completed two groundwater remediation events that included the monthly injection of chemical oxidation (chemox) solution into the three treatment/remediation wells. The chemox was injected on May 16 and June 16, 2022. The chemox injection process involved the manual injection of a mixture of two 55-pound bags of Klozur One® product and 50 gallons of tap water into each of the three remediation wells (RW-1, RW-2 and RW-3) for a total of 100 gallons per well and 300 gallons of chemox solution total. Following the injection of the chemox solution, Stantec injected an additional one to two hundred gallons of tap water into each remediation well to hydraulically push the chemox mixture into the subsurface formation.

August 2022: This third quarter 2022 monitoring event report was conducted on August 19, 2022 and included the following field activities: measuring the depth to groundwater; measuring water quality parameters; and collecting and analyzing groundwater samples from Monitoring Wells MW-1, MW-2, MW-3, MW-4, and Remediation Well RW19-1.

The laboratory analytical sample results showed petroleum associated analytes were present at concentrations exceeding ADEC GCLs for the following monitoring wells:

- Monitoring Well MW-1: Benzene.
- Monitoring Well MW-2: Benzene.
- Monitoring well MW-3: Naphthalene, as well as benzene and naphthalene in the duplicate sample.

- Monitoring well MW-4: Benzene, ethylbenzene, and naphthalene.
- Remediation Well RW19-1: Benzene.

The hydraulic gradient across the site was found to be approximately 0.020 feet per foot directed northwest at 298 degrees. The calculation of groundwater hydraulic flow was based on the static water levels in the five on-site wells measured with the groundwater recirculation pump on during the monitoring event on August 19. The groundwater flow direction is more westerly than in past monitoring events, while the gradient is generally consistent.

Flow from RW 19-1 was discharged at approximately 1 gpm on a continuous basis into injection well RW-2 located in the footprint of the former UST. Between June 23 and July 20 of this year, the pump was turned off to protect the pump during low groundwater elevation conditions due to low rainfall in the early to mid summer.

October 2022: The fourth quarter monitoring event was completed on October 5, 2022. The laboratory analytical sample results showed petroleum associated analytes were present at concentrations exceeding ADEC groundwater cleanup levels (GCLs) as listed in Alaska Administrative Code (AAC) 18AAC 75.345 Table C (9/18/2019) for the following monitoring wells:

- Monitoring Well MW-1: Benzene.
- Monitoring Well MW-2: Benzene.
- Monitoring well MW-3: Benzene, ethylbenzene, total xylenes, naphthalene, and 1,2,4-TMB. 1,3,5-TMB was also detected in the duplicate sample.
- Monitoring well MW-4: Benzene, ethylbenzene, total xylenes, naphthalene, and 1,2,4-TMB.
- Remediation Well RW19-1: Benzene.

The hydraulic gradient across the site was found to be approximately 0.14 feet per foot directed north-northwest at 307 degrees. The increased gradient observed during this monitoring event is due to well rehabilitation in RW19-1 increasing the cone of influence of the remediation system. It is anticipated that the gradient will decrease over time as groundwater flow conditions adjust to the increased pumping level.

On October 6, Stantec staff pulled the pump and cleaned it and the drop tube, and purged the well to clean iron flocculant off the screen. The submersible pump in the recirculation well has since been operating on a continuous basis (24 hours each day).

On October 6, 2022, Stantec completed groundwater remediation event that included the injection of chemox solution into the three treatment/remediation wells. The injection process involved the manual injection of a mixture of two 55-pound bags of Klozur One® product and 50 gallons of tap water into each of the three remediation wells (RW-1, RW-2 and RW-3) for a total of 100 gallons per well and 300 gallons of chemox solution total. It was noted that the chemox solution was accepted less readily in well RW-2 than the other wells. Following the injection of the chemox solution, Stantec injected an additional 100-200 gallons of tap water into each remediation well to hydraulically push the chemox mixture into the subsurface formation. Upon completion of the

chemox injection process, the flow from the on-site recirculation well (RW 19-1) was reconnected to discharge constant flow into RW-2.

March 2023: This monitoring event was completed on March 9, 2023. The laboratory analytical sample results showed petroleum associated analytes were present at concentrations exceeding ADEC groundwater cleanup levels (GCLs) as listed in Alaska Administrative Code (AAC) 18AAC 75.345 Table C (9/18/2019) for the following monitoring wells:

- Monitoring Well MW-2: Benzene and ethylbenzene.
- Monitoring well MW-3: Benzene, ethylbenzene, total xylenes, GRO, DRO, naphthalene, 1,2,4-TMB, and 1,3,5-TMB.
- Monitoring well MW-4: Benzene, ethylbenzene, total xylenes, naphthalene, 1,2,4-TMB, and 1,3,5-TMB.
- Remediation Well RW19-1: Benzene and ethylbenzene.

The hydraulic gradient across the site was found to be approximately 0.027 feet per foot directed northwest at 323 degrees. The calculation of groundwater hydraulic flow was based on the static water levels in the five on-site wells measured with the groundwater recirculation pump running. The groundwater flow direction and gradient are consistent with past monitoring events.

On March 28, 2023, Stantec completed a groundwater remediation event that included the injection of chemox solution into the three treatment/remediation wells. It was noted that the chemox solution was accepted less readily in wells RW-1 and RW-2 than in the past. Following the chemox event, water from the recirculation well was directed into RW-1.

April 2023: The laboratory analytical sample results showed petroleum associated analytes were present at concentrations exceeding ADEC groundwater cleanup levels (GCLs) as listed in Alaska Administrative Code (AAC) 18AAC 75.345 Table C (9/18/2019) for the following monitoring wells:

- Monitoring Well MW-2: Benzene.
- Monitoring well MW-3 and DUP: Benzene, ethylbenzene, total xylenes, DRO, and naphthalene.
- Monitoring well MW-4: Benzene and ethylbenzene.
- Remediation Well RW19-1: Benzene and ethylbenzene.

The hydraulic gradient across the site was found to be approximately 0.05 feet per foot directed northwest at 315 degrees. The calculation of groundwater hydraulic flow was based on the static water levels in the five on-site wells measured with the groundwater recirculation pump running. The groundwater flow direction and gradient are consistent with past monitoring events.

Monitoring well MW-4 has historically shown more contamination. However, results from this monitoring event show that petroleum contaminant concentrations have decreased in MW-4 since the Q1 sampling event.

July 2023: The laboratory analytical sample results showed petroleum associated analytes were present at concentrations exceeding ADEC groundwater cleanup levels (GCLs) as listed in Alaska Administrative Code (AAC) 18AAC 75.345 Table C (9/18/2019) for the following monitoring wells:

- Monitoring Well MW-1: Benzene.
- Monitoring Well MW-2: Benzene.
- Monitoring well MW-3 and DUP: Benzene, ethylbenzene, and 1,2,4-TMB
- Monitoring well MW-4: Benzene, ethylbenzene, 1,2,4-TMB, and naphthalene
- Remediation Well RW19-1: Benzene and ethylbenzene.

The hydraulic gradient across the site was found to be approximately 0.038 feet per foot directed west at 253 degrees. The calculation of groundwater hydraulic flow was based on the static water levels in the five on-site wells measured with the groundwater recirculation pump running. The groundwater gradient is consistent with past monitoring events, but the flow direction is more westerly due to the increased drawdown in remediation well RW19-1.

Monitoring well MW-4 has historically shown more contamination. The previous monitoring event showed a decrease in contamination. However, results from this monitoring event show that petroleum contaminant concentrations are still relatively high in MW-4 since the Q1 sampling event.

On July 14, 2023, Stantec completed a groundwater remediation event that included the injection of chemox solution into the three treatment/remediation wells. The injection process involved the manual injection of a mixture of two 55-pound bags of Klozur One® product each mixed with 50 gallons of tap water into the three remediation wells (RW-1, RW-2, and RW-3) for a total of 100 gallons each for all three remediation wells and 330 pounds of chemox solution total. Following the injection of the chemox solution, Stantec injected an additional approximately 150 gallons of tap water into the three remediation wells (RW-1, RW-2, and RW-3) to hydraulically push the chemox mixture into the subsurface formation.

October 2023: The laboratory analytical sample results showed petroleum associated analytes were present at concentrations exceeding ADEC groundwater cleanup levels (GCLs) as listed in Alaska Administrative Code (AAC) 18AAC 75.345 Table C (9/18/2019) for the following monitoring wells:

- MW-2: Benzene.
- MW-3: Ethylbenzene.
- MW-4: Benzene, ethylbenzene, & naphthalene.
- RW19-1: Benzene.

The hydraulic gradient across the site was found to be approximately 0.12 feet per foot directed northwest at 304 degrees. The calculation of groundwater hydraulic flow was based on the static water levels in the five on-site wells measured with the groundwater recirculation pump running.

The groundwater flow direction is consistent with past monitoring events, but the gradient is larger due to the increased drawdown in remediation well RW19-1.

No BTEX constituents were detected above GCLs in the drinking water well serving the site. However, DRO was detected below GCLs. DRO was last detected in this well in 2020.

March 2024: The laboratory analytical sample results showed petroleum associated analytes were present at concentrations exceeding ADEC groundwater cleanup levels (GCLs) as listed in Alaska Administrative Code (AAC) 18 AAC 75.345 Table C (9/18/2019) for the following monitoring wells:

- MW-2: Benzene, ethylbenzene.
- MW-3: Benzene, ethylbenzene, xylene, GRO, 1,2,4-TMB, 1,3,5-TMB, and naphthalene.
- MW-4: Benzene, ethylbenzene.
- RW19-1: Benzene, ethylbenzene.

Due to the warm temperature of the sample cooler when it arrived at the laboratory, the sample results could be skewed. These results should be examined with this in mind.

The hydraulic gradient across the site was found to be approximately 0.090 feet per foot directed northwest at 315 degrees. The calculation of groundwater hydraulic flow was based on the static water levels in the five on-site wells measured with the groundwater recirculation pump running. The groundwater flow direction is consistent with past monitoring events.

June 2024: The laboratory analytical sample results showed petroleum associated analytes were present at concentrations exceeding ADEC groundwater cleanup levels (GCLs) as listed in Alaska Administrative Code (AAC) 18 AAC 75.345 Table C (9/18/2019) for the following monitoring wells:

- MW-1: Benzene.
- MW-2: Benzene.
- MW-3: Benzene, ethylbenzene, xylene, 1,2,4-TMB, and naphthalene.
- MW-4: Benzene, ethylbenzene, 1,2,4-TMB, and naphthalene.
- RW19-1: Benzene.

Overall, ethylbenzene concentrations across the site have come down. Benzene was detected above GCLs in MW-1 for the first time since July of last year.

The hydraulic gradient across the site was found to be approximately 0.083 feet per foot directed northwest at 291 degrees. The calculation of groundwater hydraulic flow was based on the static water levels in the five on-site wells measured with the groundwater recirculation pump running. The groundwater flow direction is consistent with past monitoring events.

APPENDIX B

Field Methods & Procedures

APPENDIX B – FIELD METHODS AND PROCEDURES

Speedway Store 5314 (7-Eleven Store 46745 - Former TNS 76) located at 3600 Palmer-Wasilla Highway, Fairbanks, Alaska
Lot 7, Block 1, Cameron Acres Subdivision, Matanuska-Susitna Borough
ADEC File #2265.26.037

The following table presents the proposed tasks for the Alaska Department of Environmental Conservation (ADEC)-approved 2024 Corrective Action Plan (CAP). The scope of these tasks is based on the results and findings of the monitoring and remediation completed to date at the site.

2024 Work Plan Schedule Speedway Store 5314

Work Plan Task		1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Task 1	Monitoring Wells: MW-1, MW-2, MW-3, and MW-4 including Remediation/Recirculation Well RW19-1	V, G, D, P, S & I	V, G, D, P, S & I	V, G, D, P, S & I	V, G, D, P, S & I
	On-site Domestic Drinking Water Well				D & E
Task 2	O&M Recirculation Groundwater Treatment System	✓	✓	✓	✓
Task 3	Chemical Oxidation Treatment	✓	✓	✓	✓

Key:
AK – Alaska Test Method
D – Diesel range organics by AK102.
EPA – U.S. Environmental Protection Agency
E – Drinking Water parameters by EPA Test Method 524.2.
G – Gasoline range organics by AK101.
I – Indicators, parameters tested include dissolved oxygen, specific conductance, oxygen-reduction potential, pH, and temperature.
O&M – Operation and Maintenance
V – Volatile organic compounds by EPA Test Method 8260C.
S – Sodium analyzed by Metals (ICP) Method 6010C.
P - Polynuclear aromatic hydrocarbons (PAHs), i.e., semi-volatile organic compounds, by EPA Test Method 8270D Selective Ion Monitoring (SIM).

The CAP for the year 2024 will be implemented by Stantec on behalf of Speedway. Groundwater monitoring will be conducted to track migration and trends of contaminants that are present at the site. All sampling activities will be completed in accordance with ADEC's *Underground Storage Tanks Procedures Manual– Standard Sampling Procedures* (March 22, 2017). The methods that will be used for conducting a monitoring event, unless otherwise noted in the monitoring report, will include:

- The static water levels in the monitoring wells will be measured with respect to the top of each well casing. The elevation of the static water level will be based on an arbitrary datum established on-site during a vertical control survey that will be completed by Stantec on an annual basis. The survey will be performed during the summer after the seasonal frost layer thaws.
- The monitoring wells will be purged of a minimum of three well bore volumes prior to collecting the water samples. A new, disposable, Teflon® bailer will be used to sample each well. The first bail of water removed from each well will be examined for petroleum odor, sheen, and any other unique physical features.
- Water samples will be collected in laboratory-supplied sample containers. The samples will be delivered to an ADEC-approved laboratory in accordance with standard chain-of-custody procedures.
- Additional water samples will be collected from the monitoring wells after the well has been purged, as described above, and tested in the field for chemical and physical intrinsic parameters listed in the 2024 Schedule shown above.

APPENDIX C

Field Measurements & Notes

TNS 76 May Chemox 05/06/24

Personnel: Remi, Sydney

Weather: Sunny windy

Objective: inject chemox into 3 wells

0945 Arrive, check in

1000 Bag 1 into IW-1

1017 Bag 2 into IW-1

1036 Bag 3 into IW-2

1053 Bag 4 into IW-2

1108 Bag 5 into IW-3

1122 Bag 6 into IW-3

1133 Pack up, make sure system is running properly, sign out

65 psi

TNS 76 Q2 GWM 6/17/24

Personnel: Anneka, Bob, Remi, Sydney

Weather: Hot and sunny

Objective: Sample 5 wells, vertical control survey, ORM

1025 Arrive on site.

MW-1 19.24', 24.64' purged 2.5 gal

8.1°C, 1877 µS/cm, 6.01, 208.9 mV, 2.50 mg/L DO

1043 sampled MW-1

MW-2: 27.21', 18.07' 4.5 gal purge.

Temp: 9.0°C SPC: 1962 pH: 6.31

DO: 2.85 ORP: 251.6

1112 Sampled MW-2

MW-3: 25.47', 17.27' purge 4 gal

temp: 7.9 SPC: 1352 pH: 6.76

DO: 1.84 ORP: 261.9

1152 Sampled MW-2 + DUP

MW-4: 27.71', 17.98' purged 5 gal

9.5°C, 1375 µS/cm, 6.83, 172.4 mV, 3.13 mg/L DO

1228 Sampled MW-4

TNS 76 Q2 GWM continued 6/17/24

RW19-1 23.95' to water,
- flowing ~1.5 gpm, 61 psi
12.3°C, 837 mS/m/c, 6.71, 185.9 mV, 3.80 mg/L DO
1236 Sampled RW19-1

1300 Out to Home Depot grab fittings for RW19-1
- 3/4" gate valve
- Hose flow meter
- 25' PEX (1")
- Sharkbite to NPT (male 1")
- " " (female 1")

1342 back. No flow meter. Replacing drop tube w/ PEX

RW19-1 SWL (pump off) = 20.91' BTOC
- N side
TD = 31' BTOC

1445 Leaving site. Pump ~3 gpm @ 70 psi.

TNS 76 Q2 June Chemox 6/18/24

Personnel: Remi, Sydney, Anneka
Weather: Sunny
Objective: Chemox

0925 Arrive, Check in
0947 Bag 1 IW-1
1010 Bag 2 IW-1
1031 Bag 3 into IW-2
1052 Bag 4 into IW-2
1110 Bag 5 into IW-3
1123 Bag 6 into IW-3
1130 Flush IW-1

APPENDIX D

Historical Monitoring Data

Speedway 5314
3600 E. Palmer Wasilla Highway

	Well Screen Interval	Ground Water Elevation	124-TMB	135-TMB	Benzene	DRO	Ethylbenzene	GRO	Naphthalene	Sodium	Toluene	Total Xylenes
Unit	**ft**	**ft**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**
GW Human Health Cleanup			0.056	0.06	0.0046	1.5	0.015	2.2	0.0017		1.1	0.19
MW-1												
11/06/2014	--	--	—	—	**0.0270**	0.36	U (0.0005)	0.0670	—	—	U (0.0005)	U (0.0015)
02/25/2015	--	--	—	—	0.001300	U (0.41)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)
06/10/2015	--	--	—	—	U (0.002)	0.50	U (0.003)	U (0.060)	—	—	U (0.002)	U (0.002)
09/02/2015	--	--	—	—	0.001100	U (0.40)	U (0.001)	U (0.1)	—	—	U (0.001)	U (0.003)
11/12/2015	--	--	—	—	**0.0290**	U (0.21)	U (0.003)	0.14	—	—	U (0.002)	U (0.002)
01/20/2016	--	--	—	—	**0.0710**	0.22	U (0.003)	0.18	—	—	U (0.002)	U (0.002)
05/09/2016	--	--	—	—	**0.0260**	U (0.45)	U (0.001)	0.10	—	—	U (0.001)	U (0.003)
10/13/2016	--	--	—	—	**0.0530**	0.36	U (0.001)	0.84	—	—	U (0.001)	U (0.003)
12/09/2016	--	--	—	—	**0.0270**	0.67	U (0.002)	0.0670	—	—	U (0.002)	U (0.003)
02/08/2017	--	--	—	—	**0.0100**	0.27	U (0.003)	0.0570	—	—	U (0.002)	U (0.002)
04/24/2017	--	--	—	—	**0.009600**	U (0.0003)	U (0.003)	U (0.001)	—	—	U (0.002)	U (0.003)
09/01/2017	--	--	—	—	**0.006800**	0.25	U (0.003)	U (1.0)	—	—	U (0.002)	U (0.002)
02/15/2018	--	--	—	—	**0.0120**	U (0.13)	U (0.003)	U (1.0)	—	—	U (0.002)	U (0.003)
06/29/2018	--	--	—	—	**0.0260**	0.30	U (0.003)	U (0.25)	—	—	U (0.002)	U (0.003)
09/11/2018	--	--	—	—	**0.0100**	U (0.27)	U (0.001)	U (0.15)	—	—	U (0.001)	U (0.002)
10/26/2018	--	--	—	—	**0.0150**	0.31	U (0.003)	U (0.25)	—	—	U (0.002)	U (0.003)
02/25/2019	--	--	—	—	0.003700	0.19	U (0.003)	U (0.25)	—	—	U (0.002)	U (0.003)
04/25/2019	--	--	—	—	U (0.003)	U (0.27)	U (0.003)	U (0.25)	—	—	U (0.002)	U (0.003)
07/25/2019	--	--	—	—	**0.007100**	0.27	U (0.003)	U (0.25)	—	—	U (0.002)	U (0.003)
10/18/2019	--	--	—	—	U (0.003)	0.16	U (0.003)	U (0.25)	—	—	U (0.002)	U (0.003)
08/11/2020	--	73.27	—	—	0.0026200	U (0.808)	U (0.001)	U (0.1)	—	35.8	U (0.001)	U (0.003)
10/12/2020	--	72.88	U (0.001)	U (0.001)	**0.0054800**	0.369	U (0.001)	0.0110	U (0.000250)	43.6	U (0.001)	U (0.002)
03/23/2021	--	73.38	—	—	0.000526000	U (0.840)	U (0.001)	0.0130	—	33.2	U (0.001)	U (0.001)
05/19/2021	--	73.17	U(0.00100)	U(0.00100)	**0.0048100**	U (0.840)	U (0.001)	0.03020	U(0.00500)	35.0	U (0.001)	U (0.002)
07/14/2021	--	72.93	U (0.00100)	U (0.00100)	0.0017700	0.317	U (0.001)	U (0.1)	U (0.00500)	32.2	U (0.001)	U (0.003)
10/14/2021	--	75.24	U(0.00100)	U(0.00100)	**0.01670**	0.427	U (0.001)	0.06690	U(0.000250)	59.7	U (0.001)	U (0.002)
03/17/2022	--	75.93	U(0.00100)	U(0.00100)	0.000111000	0.263	U(0.00100)	U(0.100)	U(0.000250)	133	U(0.00100)	U(0.00300)
06/22/2022	--	73.67	U(0.00100)	U(0.00100)	**0.0097500**	U(0.800)	U(0.00100)	0.03750	U(0.000250)	49.2	U(0.00100)	U(0.00300)
08/19/2022	--	75.72	U(0.00100)	0.000106000	**0.0060600**	U(0.800)	U(0.00100)	0.05090	U(0.000250)	85.3	U(0.00100)	0.000456000
10/05/2022	--	--	U(0.00100)	U(0.00100)	**0.04770**	U(0.800)	U(0.00100)	0.08130	U(0.000250)	54.8	U(0.00100)	U(0.00300)
03/09/2023	--	75.05	U(0.00100)	U(0.00100)	0.0022400	0.281 J,B	0.000167 J	0.0303 J	U(0.000250)	55.4	U(0.00100)	U(0.00300)
04/26/2023	--	76.74	—	—	**0.0680**	0.334	0.000237000	0.178	U(0.00025)	70.6	U(0.00100)	0.0031300
07/13/2023	--	79.30	U(0.00100)	U(0.00100)	**0.01030**	0.341	U(0.00100)	0.06110	U(0.000250)	90.3	U(0.00100)	U(0.00100)
11/03/2023	--	76.62	U(0.00100)	U(0.00100)	0.0043400	0.508	U(0.00100)	0.04730	U(0.000250)	154	U(0.00100)	U(0.00300)
03/21/2024	--	76.20	U(0.00100)	U(0.00100)	0.0019400	U(0.800)	U(0.00100)	0.125	U(0.000250)	107	U(0.00100)	U(0.00100)
06/17/2024	--	75.49	U(0.00100)	U(0.00100)	**0.0120**	U(0.800)	U(0.00100)	U(0.100)	U(0.000250)	76.7	U(0.00100)	U(0.00300)
MW-2												
11/06/2014	--	--	—	—	**0.0670**	0.19	**0.0160**	0.68	—	—	0.0260	0.13
02/25/2015	--	--	—	—	**0.0220**	U (0.41)	0.003400	0.13	—	—	0.004500	0.0200

Speedway 5314
3600 E. Palmer Wasilla Highway

Unit	Well Screen Interval ft	Ground Water Elevation ft	124-TMB ppm	135-TMB ppm	Benzene ppm	DRO ppm	Ethylbenzene ppm	GRO ppm	Naphthalene ppm	Sodium ppm	Toluene ppm	Total Xylenes ppm
GW Human Health Cleanup			0.056	0.06	0.0046	1.5	0.015	2.2	0.0017		1.1	0.19
06/10/2015	--	--	—	—	U (0.002)	1.10	U (0.003)	**6.10**	—	—	U (0.002)	**1.82**
09/02/2015	--	--	—	—	**0.0890**	**1.80**	**0.0650**	U (10)	—	—	0.0560	**1.40**
11/12/2015	--	--	—	—	**0.0910**	**1.80**	**0.13**	**22.0**	—	—	0.11	0.179
01/20/2016	--	--	—	—	**0.52**	**1.60**	**0.83**	—	—	—	**1.50**	**5.10**
05/09/2016	--	--	—	—	**0.41**	0.95	**0.35**	U (10)	—	—	0.37	**2.80**
10/13/2016	--	--	—	—	**0.42**	0.98	**0.48**	**9.20**	—	—	0.63	**2.62**
12/09/2016	--	--	—	—	**0.57**	**1.70**	**0.50**	**11.0**	—	—	0.17	**1.01**
02/08/2017	--	--	—	—	**0.0530**	0.20	**0.0210**	0.58	—	—	U (0.002)	0.0960
04/24/2017	--	--	—	—	**0.0360**	0.94	**0.0350**	**2.60**	—	—	0.0120	**0.66**
09/01/2017	--	--	—	—	**0.0830**	1.30	**0.45**	**9.70**	—	—	0.0260	**2.33**
02/15/2018	--	--	—	—	**0.0670**	0.98	**0.14**	U (10)	—	—	0.0200	**0.97**
06/29/2018	--	--	—	—	**0.17**	1.20	**0.59**	**6.00**	—	—	0.25	**3.30**
09/11/2018	--	--	—	—	**0.0940**	0.74	**0.18**	**4.80**	—	—	0.13	**1.08**
10/26/2018	--	--	—	—	**0.17**	1.00	**0.48**	**11.0**	—	—	0.28	**3.01**
02/25/2019	--	--	—	—	**0.0920**	1.20	**0.18**	**5.40**	—	—	0.22	**1.41**
04/25/2019	--	--	—	—	**0.0510**	0.93	U (0.003)	**3.60**	—	—	0.13	**1.28**
07/25/2019	--	--	—	—	**0.0790**	0.89	**0.20**	**5.40**	—	—	0.13	**1.47**
10/18/2019	--	--	—	—	**0.0250**	0.24	**0.0220**	0.74	—	—	0.006500	0.101
08/11/2020	--	74.49	—	—	**0.05990**	0.553	**0.07590**	0.921	—	33.2	0.01070	**0.465**
10/12/2020	--	74.58	**0.109**	0.03290	**0.16**	0.409	**0.04550**	0.755	0.000405000	55.2	U (0.001)	0.168
03/23/2021	--	73.53	—	—	**0.0054200**	U (0.840)	U (0.001)	0.02270	—	48.1	U (0.001)	U (0.003)
05/19/2021	--	73.57	0.0027800	0.001200	0.0033800	U (0.840)	0.000461000	0.03740	U(0.00500)	25.4	U (0.001)	0.0050100
07/14/2021	--	73.97	0.0048700	0.0010700	0.0039900	0.272	0.0019300	0.05040	U (0.00500)	32.8	U (0.001)	0.0046500
10/14/2021	--	76.78	**0.07060**	0.01850	**0.02920**	0.589	**0.01760**	0.628	0.000277000	50.3	0.01090	0.1308
03/17/2022	--	76.98	0.01130	0.0033500	**0.01890**	0.288	0.0072300	0.249	U(0.000250)	180	0.000395000	0.023130
06/22/2022	--	74.73	U(0.00100)	U(0.00100)	**0.02030**	0.38	0.0058300	0.327	U(0.000250)	87.7	0.0056700	0.0045400
08/19/2022	--	77.77	U(0.00100)	U(0.00100)	**0.0230**	0.198	0.0064100	0.137	U(0.000250)	86.3	0.0017100	0.0077500
10/05/2022	--	--	0.0090700	0.0030400	**0.0078100**	U(0.800)	0.0044600	0.117	U(0.000250)	37.3	0.000291000	0.01050
03/09/2023	--	76.66	0.02990	0.0087900	**0.05930**	0.451 J,B	**0.01770**	0.375	0.0011400	36.7	0.000918 J	0.038850
04/26/2023	--	77.75	—	—	**0.01230**	0.318	0.0027300	0.128	0.000109000	51.4	0.000342000	0.01020
07/13/2023	--	77.36	0.0220	0.0066100	**0.01290**	0.349	0.005300	0.343	0.000347000	61.2	U(0.00100)	0.0020100
11/03/2023	--	77.65	0.0033700	0.00098000	0.004400	0.695	0.0029900	0.08240	U(0.000250)	37.1	U(0.00100)	0.010580
03/21/2024	--	77.23	0.01080	0.0033400	**0.04420**	U(0.800)	**0.01820**	0.34	0.000217000	111	U(0.00100)	0.00100
06/17/2024	--	77.00	U(0.00100)	U(0.00100)	**0.05650**	0.278	0.0089400	0.08630	0.0003000	167	0.0035700	0.000943000
MW-3												
11/06/2014	--	--	—	—	**5.00**	**3.50**	**37.0**	**240**	—	—	**7.40**	**39.0**
02/25/2015	--	--	—	—	**2.90**	**8.60**	**6.70**	**180**	—	—	**34.0**	**37.0**
06/10/2015	--	--	—	—	**5.20**	**9.50**	**8.20**	**210**	—	—	**38.0**	**48.0**
09/02/2015	--	--	—	—	**3.70**	**5.10**	**4.40**	U (200)	—	—	**24.0**	**28.0**
11/12/2015	--	--	—	—	**1.30**	**3.60**	**0.21**	**87.0**	—	—	**2.10**	**1.69**

Speedway 5314
3600 E. Palmer Wasilla Highway

Unit	Well Screen Interval ft	Ground Water Elevation ft	124-TMB ppm	135-TMB ppm	Benzene ppm	DRO ppm	Ethylbenzene ppm	GRO ppm	Naphthalene ppm	Sodium ppm	Toluene ppm	Total Xylenes ppm
GW Human Health Cleanup			0.056	0.06	0.0046	1.5	0.015	2.2	0.0017		1.1	0.19
01/20/2016	--	--	—	—	**3.80**	**4.10**	**4.20**	**120**	—	—	**13.0**	**25.3**
05/09/2016	--	--	—	—	**2.10**	1.50	**2.20**	**69.0**	—	—	**21.0**	**33.0**
10/13/2016	--	--	—	—	**1.20**	**2.00**	**2.90**	**46.0**	—	—	**4.20**	**14.6**
12/09/2016	--	--	—	—	**0.17**	**3.30**	—	**100**	—	—	—	**0.54**
02/08/2017	--	--	—	—	**39.0**	**3.90**	**53.0**	**98.0**	—	—	**99.0**	**103**
04/24/2017	--	--	—	—	**2.50**	**6.70**	**5.20**	U (200)	—	—	**14.0**	**28.9**
09/01/2017	--	--	—	—	**0.61**	**1.90**	**3.70**	**75.0**	—	—	**9.30**	**21.4**
02/15/2018	--	--	—	—	**0.30**	1.30	**2.90**	U (100)	—	—	**3.80**	**15.6**
06/29/2018	--	--	—	—	**0.28**	1.10	**1.70**	**23.0**	—	—	1.10	**8.20**
09/11/2018	--	--	—	—	**0.29**	0.91	**1.00**	**14.0**	—	—	0.53	**5.60**
10/26/2018	--	--	—	—	**0.32**	0.93	**0.89**	**15.0**	—	—	0.36	**4.30**
02/25/2019	--	--	—	—	**0.95**	**4.60**	**2.30**	U (1.3)	—	—	0.69	**11.4**
04/25/2019	--	--	—	—	**0.14**	0.64	U (1.5)	**11.0**	—	—	0.13	U (1.5)
07/25/2019	--	--	—	—	**0.68**	**1.90**	**2.40**	**41.0**	—	—	**1.20**	**11.6**
10/18/2019	--	--	—	—	**0.21**	1.20	**1.70**	**21.0**	—	—	0.66	**9.70**
08/11/2020	--	75.60	—	—	**0.737**	**4.89**	**2.99**	**32.8**	—	52.4	1.05	**17.0**
10/12/2020	--	76.20	**2.91**	**0.764**	**0.32**	**5.22**	**2.46**	**29.4**	**0.04890**	66.1	0.868	**14.89**
03/23/2021	--	75.12	—	—	**0.45**	U (0.840)	**3.73**	**54.3**	—	U(3.00)	**1.21**	**21.6**
05/19/2021	--	76.08	**2.24**	**0.631**	**0.473**	**5.08**	**2.04**	**31.1**	U(1.00)	47.0	0.186	**11.1**
07/14/2021	--	75.93	**2.16**	**0.594**	**0.581**	**3.87**	**2.65**	**30.3**	U (1.00)	49.8	0.156	**12.87**
10/14/2021	--	77.13	**1.31**	**0.33**	**0.0840**	**2.11**	**0.741**	**15.8**	**0.01090**	41.2	0.13	**4.147**
03/17/2022	--	76.99	**1.49**	**0.46**	**0.06420**	**3.44**	**0.07640**	**13.9**	**0.02380**	110	0.01040	**4.351**
06/22/2022	--	77.52	**1.90**	**0.62**	**0.09230**	**3.24**	**0.739**	**10.2**	**0.02620**	74.8	0.03360	**3.776**
08/19/2022	--	77.96	0.0280	0.0070700	**0.01190**	1.49	0.01060	0.559	**0.0031500**	68.9	U(0.00500)	**0.2237**
10/05/2022	--	--	**0.343**	**0.09250**	**0.0200**	0.92	**0.168**	**2.83**	**0.004200**	56.0	0.000379000	**0.618**
03/09/2023	--	76.79	**1.35**	**0.339**	**0.153**	2.10 B	**0.959**	**10.3**	**0.02740**	55.6	0.03320	**4.512**
04/26/2023	--	77.80	—	—	**0.02410**	**2.16**	**0.09520**	1.24	**0.0028400**	53.3	U(0.0100)	**0.375**
07/13/2023	--	77.39	**0.06380**	0.0190	**0.009900**	1.14	**0.0670**	1.10	0.000881000	60.0	0.0015900	0.05580
11/03/2023	--	77.63	0.0270	0.0082100	0.0039800	1.12	**0.02920**	0.389	0.000631000	45.5	0.000497000	0.1068
03/21/2024	--	77.19	**0.911**	**0.271**	**0.102**	0.922	**0.511**	**7.64**	**0.01360**	63.2	0.01280	**0.254**
06/17/2024	--	77.25	**0.07640**	0.01270	**0.07120**	1.15	**0.218**	1.53	**0.0077500**	101	U(0.0100)	**0.305**
MW-4												
11/06/2014	--	--	—	—	**0.94**	0.45	**0.30**	**13.0**	—	—	**1.90**	**1.50**
02/25/2015	--	--	—	—	**3.70**	1.00	**0.56**	**29.0**	—	—	**6.60**	**2.70**
06/10/2015	--	--	—	—	**1.10**	0.99	**0.54**	**14.0**	—	—	**2.30**	**2.70**
09/02/2015	--	--	—	—	**0.0260**	U (0.40)	0.00700	0.30	—	—	U (0.001)	0.0300
11/12/2015	--	--	—	—	—	U (0.21)	—	U (0.050)	—	—	—	—
01/20/2016	--	--	—	—	0.004300	0.15	U (0.003)	—	—	—	U (0.002)	U (0.002)
05/09/2016	--	--	—	—	**0.009200**	U (0.42)	U (0.001)	U (0.1)	—	—	U (0.001)	U (0.003)
10/13/2016	--	--	—	—	U (0.00020)	0.18	U (0.001)	U (0.1)	—	—	U (0.001)	U (0.003)

Speedway 5314
3600 E. Palmer Wasilla Highway

	Well Screen Interval	Ground Water Elevation	124-TMB	135-TMB	Benzene	DRO	Ethylbenzene	GRO	Naphthalene	Sodium	Toluene	Total Xylenes
Unit	**ft**	**ft**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**
GW Human Health Cleanup			0.056	0.06	0.0046	1.5	0.015	2.2	0.0017		1.1	0.19
12/09/2016	--	--	—	—	—	0.18	—	U (0.05)	—	—	—	—
02/08/2017	--	--	—	—	**0.0170**	0.18	U (0.003)	U (0.05)	—	—	U (0.002)	U (0.002)
04/24/2017	--	--	—	—	**0.0120**	U (0.0003)	0.004900	U (0.001)	—	—	U (0.002)	U (0.003)
09/01/2017	--	--	—	—	**0.55**	0.48	**0.38**	**5.10**	—	—	U (0.050)	**0.74**
02/15/2018	--	--	—	—	**0.19**	0.29	**0.26**	**3.30**	—	—	U (0.10)	**0.438**
06/29/2018	--	--	—	—	**0.0900**	0.19	**0.0220**	0.52	—	—	U (0.002)	0.0270
09/11/2018	--	--	—	—	**0.008600**	U (0.28)	0.005200	U (0.15)	—	—	U (0.001)	0.006200
10/26/2018	--	--	—	—	**0.0130**	0.15	0.004500	U (0.25)	—	—	U (0.002)	0.008900
02/25/2019	--	--	—	—	**0.0260**	0.20	0.003400	U (0.25)	—	—	U (0.002)	0.008900
04/25/2019	--	--	—	—	U (0.003)	U (0.27)	U (0.003)	U (0.25)	—	—	U (0.002)	U (0.003)
07/25/2019	--	--	—	—	**0.0510**	0.16	U (0.003)	U (0.25)	—	—	U (0.002)	0.007800
10/18/2019	--	--	—	—	**0.0200**	U (0.12)	0.005900	U (0.25)	—	—	0.0150	0.02770
08/11/2020	--	75.74	—	—	**0.0540**	U (0.800)	0.000455000	0.0840	—	58.4	U (0.001)	0.0093300
10/12/2020	--	76.05	0.01120	0.0017400	**0.129**	U (0.800)	0.0069900	0.313	0.000465000	36.2	U (0.001)	0.02640
03/23/2021	--	73.83	—	—	**0.0790**	0.266	**0.01780**	0.274	—	47.1	U (0.001)	0.03450
05/19/2021	--	75.89	0.01710	0.0042300	**0.03070**	U (0.840)	0.0032800	0.153	U(0.00500)	67.5	U (0.001)	0.01230
07/14/2021	--	75.81	0.0037400	0.000529000	**0.01760**	0.371	0.000375000	0.06820	U (0.00500)	76.7	U (0.001)	0.0038300
10/14/2021	--	75.05	0.0056100	0.000233000	**0.0056400**	0.521	0.0031800	0.105	0.000209000	63.4	U (0.001)	0.0078800
03/17/2022	--	76.92	**0.273**	**0.106**	**0.214**	0.683	**0.186**	**2.80**	**0.0033400**	41.6	0.168	**0.857**
06/22/2022	--	76.20	**0.401**	**0.128**	**0.409**	0.816	**0.373**	**4.88**	**0.0094100**	91.0	U(0.0500)	**1.49**
08/19/2022	--	77.72	U(0.00500)	U(0.00500)	**0.09210**	1.29	**0.02370**	0.638	**0.0065700**	104	U(0.00500)	0.0025300
10/05/2022	--	--	**0.09080**	0.04280	**0.06440**	0.565	**0.131**	0.885	**0.0074600**	66.2	U(0.00500)	**0.198**
03/09/2023	--	76.78	**0.313**	**0.0820**	**0.159**	0.941 B	**0.157**	2.00	**0.0045300**	45.9	0.0028300	**0.4931**
04/26/2023	--	77.76	—	—	**0.03680**	0.311	**0.04870**	0.625	0.0011600	61.5	U(0.00100)	0.118
07/13/2023	--	77.13	**0.06790**	0.0150	**0.08590**	1.08	**0.08970**	1.17	**0.0081800**	205	0.01130	0.0062900
11/03/2023	--	77.41	0.0130	U(0.00100)	**0.0840**	1.08	**0.02990**	0.487	**0.0045900**	235	0.0051800	0.02730
03/21/2024	--	77.05	0.0013200	0.003200	**0.05970**	0.252	**0.01680**	0.498	0.000513000	95.8	U(0.00100)	0.001200
06/17/2024	--	77.03	**0.07150**	0.0044400	**0.06220**	0.388	**0.05190**	0.679	**0.0022700**	108	0.0018900	0.058560
RW19-1												
08/11/2020	--	73.12	—	—	0.0012600	U (0.848)	U (0.001)	U (0.100)	—	28.8	U (0.001)	0.000489000
10/12/2020	--	70.87	U (0.001)	U (0.001)	0.000609000	U (0.800)	U (0.001)	U (0.100)	U (0.000250)	28.6	U (0.001)	U (0.002)
03/23/2021	--	--	—	—	U (0.001)	U (0.840)	U (0.001)	0.01190	—	25.9	U (0.001)	U (0.003)
05/19/2021	--	--	U(0.00100)	U(0.00100)	U (0.001)	U (0.800)	U (0.001)	0.01580	U(0.00500)	28.8	U (0.001)	U (0.002)
07/14/2021	--	70.48	U (0.00100)	U (0.00100)	U (0.001)	0.297	U (0.001)	U (0.100)	U (0.00500)	28.8	U (0.001)	U (0.003)
10/14/2021	--	72.83	U(0.00100)	U(0.00100)	0.000506000	0.387	U (0.001)	0.04260	U(0.000250)	32.3	U (0.001)	U (0.002)
03/17/2022	--	75.68	0.0070200	0.0038800	**0.0048800**	U(0.888)	0.0031100	0.147	0.000108000	48.2	U(0.00100)	0.028120
06/23/2022	--	73.55	0.01690	0.0054700	**0.02570**	U(0.800)	**0.0190**	0.223	0.000452000	36.9	0.0016600	0.08220
08/19/2022	--	69.73	0.0017300	0.000659000	**0.01070**	0.443	0.0083800	0.21	0.000186000	36.9	0.0010400	0.022440
10/05/2022	--	--	0.0024500	0.000995000	**0.0073700**	U(0.800)	0.0067800	0.06320	0.000239000	33.6	U(0.00100)	0.0095300
03/09/2023	--	75.44	0.02950	0.0080100	**0.02620**	0.274 J,B	**0.03530**	0.24	0.000209 J	34.9	U(0.00100)	0.09580

Speedway 5314
3600 E. Palmer Wasilla Highway

		Well Screen Interval	Ground Water Elevation	124-TMB	135-TMB	Benzene	DRO	Ethylbenzene	GRO	Naphthalene	Sodium	Toluene	Total Xylenes
Unit	**ft**	**ft**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**
GW Human Health Cleanup			0.056	0.06	0.0046	1.5	0.015	2.2	0.0017		1.1	0.19
04/26/2023	--	75.77	—	—	**0.02080**	0.355	**0.02520**	0.248	0.000483000	38.6	U(0.00100)	0.05210
07/13/2023	--	75.51	0.01210	0.0044400	**0.02210**	0.347	**0.01830**	0.253	U(0.000500)	56.0	0.000291000	0.000733000
11/03/2023	--	69.52	0.000608000	0.00056000	**0.0069700**	1.06	0.0060100	0.08810	U(0.000250)	29.3	U(0.00100)	0.0079100
03/21/2024	--	72.38	0.03020	0.0047900	**0.117**	0.224	**0.09540**	0.853	0.000264000	71.4	U(0.00100)	0.0021100
06/17/2024	--	71.78	0.004900	0.000741000	**0.01150**	U(0.800)	0.01340	0.08980	U(0.000250)	34.8	U(0.00500)	0.02630

APPENDIX E

Laboratory Analytical Report and ADEC Laboratory Data Review Checklist

ANALYTICAL REPORT

July 02, 2024

Stantec - Anchorage, AK

Sample Delivery Group:	L1748413
Samples Received:	06/19/2024
Project Number:	203723698
Description:	Store 5314
Site:	SPEEDWAY 5314
Report To:	Ms. Sydney Souza 725 E Fireweed Lane Suite 200 Anchorage, AK 99503

Entire Report Reviewed By:

Shane Gambill
Project Manager

Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 mydata.pacelabs.com

TABLE OF CONTENTS

MW-1 L1748413-01 GW

Collected by: Sydney Souza | Collected date/time: 06/17/24 10:43 | Received date/time: 06/19/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG2311713	1	06/26/24 13:15	06/26/24 17:57	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG2310968	1	06/24/24 19:53	06/24/24 19:53	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG2310887	1	06/24/24 17:47	06/24/24 17:47	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG2313035	1	06/29/24 15:22	07/01/24 01:41	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG2310469	1	06/24/24 08:53	06/24/24 19:15	JCH	Mt. Juliet, TN

MW-2 L1748413-02 GW

Collected by: Sydney Souza | Collected date/time: 06/17/24 11:12 | Received date/time: 06/19/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG2311713	1	06/26/24 13:15	06/26/24 17:59	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG2310968	1	06/24/24 20:20	06/24/24 20:20	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG2310887	1	06/24/24 18:12	06/24/24 18:12	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG2313035	1	06/29/24 15:22	07/01/24 02:01	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG2310469	1	06/24/24 08:53	06/24/24 19:32	JRM	Mt. Juliet, TN

MW-3 L1748413-03 GW

Collected by: Sydney Souza | Collected date/time: 06/17/24 11:52 | Received date/time: 06/19/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG2311713	1	06/26/24 13:15	06/26/24 18:01	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG2310968	1	06/24/24 20:47	06/24/24 20:47	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG2310887	10	06/24/24 19:26	06/24/24 19:26	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG2313035	1	06/29/24 15:22	07/01/24 02:22	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG2310469	1	06/24/24 08:53	06/24/24 19:49	JCH	Mt. Juliet, TN

MW-4 L1748413-04 GW

Collected by: Sydney Souza | Collected date/time: 06/17/24 12:28 | Received date/time: 06/19/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG2311713	1	06/26/24 13:15	06/26/24 18:03	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG2310968	1	06/24/24 21:14	06/24/24 21:14	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG2310887	1	06/24/24 18:37	06/24/24 18:37	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG2313035	1	06/29/24 15:22	07/01/24 02:42	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG2310469	1	06/24/24 08:53	06/24/24 20:06	JCH	Mt. Juliet, TN

RW19-1 L1748413-05 GW

Collected by: Sydney Souza | Collected date/time: 06/17/24 12:36 | Received date/time: 06/19/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG2311713	1	06/26/24 13:15	06/26/24 18:05	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG2310968	1	06/24/24 21:41	06/24/24 21:41	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG2310887	5	06/24/24 19:51	06/24/24 19:51	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG2313035	1	06/29/24 15:22	07/01/24 03:02	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG2310469	1	06/24/24 08:53	06/24/24 20:24	JCH	Mt. Juliet, TN

DUP L1748413-06 GW

Collected by: Sydney Souza
Collected date/time: 06/17/24 11:57
Received date/time: 06/19/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG2311713	1	06/26/24 13:15	06/26/24 18:07	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG2310968	1	06/24/24 22:08	06/24/24 22:08	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG2311864	5	06/26/24 04:13	06/26/24 04:13	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG2313035	1	06/29/24 15:22	07/01/24 10:09	MAA	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG2310469	1	06/24/24 08:53	06/24/24 20:41	JCH	Mt. Juliet, TN

TRIP BLANK L1748413-07 GW

Collected by: Sydney Souza
Collected date/time: 06/17/24 09:00
Received date/time: 06/19/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260C	WG2310887	1	06/24/24 12:46	06/24/24 12:46	ACG	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.

Shane Gambill
Project Manager

Metals (ICP) by Method 6010D

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Sodium	76.7		0.504	3.00	1	06/26/2024 17:57	WG2311713

Volatile Organic Compounds (GC) by Method AK101

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
TPHGAK C6 to C10	U		0.0287	0.100	1	06/24/2024 19:53	WG2310968
(S) a,a,a-Trifluorotoluene(FID)	*85.9*			*50.0-150*		*06/24/2024 19:53*	WG2310968
(S) a,a,a-Trifluorotoluene(PID)	*107*			*79.0-125*		*06/24/2024 19:53*	WG2310968

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	0.0120		0.0000941	0.00100	1	06/24/2024 17:47	WG2310887
n-Butylbenzene	U		0.000157	0.00100	1	06/24/2024 17:47	WG2310887
sec-Butylbenzene	U		0.000125	0.00100	1	06/24/2024 17:47	WG2310887
tert-Butylbenzene	U		0.000127	0.00100	1	06/24/2024 17:47	WG2310887
Ethylbenzene	U		0.000137	0.00100	1	06/24/2024 17:47	WG2310887
Isopropylbenzene	U		0.000105	0.00100	1	06/24/2024 17:47	WG2310887
Naphthalene	U		0.00100	0.00500	1	06/24/2024 17:47	WG2310887
Toluene	U		0.000278	0.00100	1	06/24/2024 17:47	WG2310887
1,2,4-Trimethylbenzene	U		0.000322	0.00100	1	06/24/2024 17:47	WG2310887
1,3,5-Trimethylbenzene	U		0.000104	0.00100	1	06/24/2024 17:47	WG2310887
m&p-Xylene	U		0.000430	0.00200	1	06/24/2024 17:47	WG2310887
o-Xylene	U		0.000174	0.00100	1	06/24/2024 17:47	WG2310887
(S) Toluene-d8	*110*			*80.0-120*		*06/24/2024 17:47*	WG2310887
(S) 4-Bromofluorobenzene	*93.1*			*77.0-126*		*06/24/2024 17:47*	WG2310887
(S) 1,2-Dichloroethane-d4	*98.6*			*70.0-130*		*06/24/2024 17:47*	WG2310887

Semi-Volatile Organic Compounds (GC) by Method AK102

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
AK102 DRO C10-C25	U		0.170	0.800	1	07/01/2024 01:41	WG2313035
(S) o-Terphenyl	*75.9*			*50.0-150*		*07/01/2024 01:41*	WG2313035

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
Anthracene	U		0.0000190	0.0000500	1	06/24/2024 19:15	WG2310469
Acenaphthene	U		0.0000190	0.0000500	1	06/24/2024 19:15	WG2310469
Acenaphthylene	U		0.0000171	0.0000500	1	06/24/2024 19:15	WG2310469
Benzo(a)anthracene	U		0.0000203	0.0000500	1	06/24/2024 19:15	WG2310469
Benzo(a)pyrene	U		0.0000184	0.0000500	1	06/24/2024 19:15	WG2310469
Benzo(b)fluoranthene	U		0.0000168	0.0000500	1	06/24/2024 19:15	WG2310469
Benzo(g,h,i)perylene	U		0.0000184	0.0000500	1	06/24/2024 19:15	WG2310469
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	06/24/2024 19:15	WG2310469
Chrysene	U		0.0000179	0.0000500	1	06/24/2024 19:15	WG2310469
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	06/24/2024 19:15	WG2310469
Fluoranthene	U		0.0000270	0.000100	1	06/24/2024 19:15	WG2310469
Fluorene	U		0.0000169	0.0000500	1	06/24/2024 19:15	WG2310469
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	06/24/2024 19:15	WG2310469
Naphthalene	U		0.0000917	0.000250	1	06/24/2024 19:15	WG2310469
Phenanthrene	U		0.0000180	0.0000500	1	06/24/2024 19:15	WG2310469
Pyrene	U		0.0000169	0.0000500	1	06/24/2024 19:15	WG2310469

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

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
1-Methylnaphthalene	U		0.0000687	0.000250	1	06/24/2024 19:15	WG2310469
2-Methylnaphthalene	U		0.0000674	0.000250	1	06/24/2024 19:15	WG2310469
(S) Nitrobenzene-d5	*104*			*31.0-160*		*06/24/2024 19:15*	WG2310469
(S) 2-Fluorobiphenyl	*93.7*			*48.0-148*		*06/24/2024 19:15*	WG2310469
(S) p-Terphenyl-d14	*92.1*			*37.0-146*		*06/24/2024 19:15*	WG2310469

Metals (ICP) by Method 6010D

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Sodium	167		0.504	3.00	1	06/26/2024 17:59	WG2311713

Volatile Organic Compounds (GC) by Method AK101

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
TPHGAK C6 to C10	0.0863	J	0.0287	0.100	1	06/24/2024 20:20	WG2310968
(S) a,a,a-Trifluorotoluene(FID)	*87.2*			*50.0-150*		*06/24/2024 20:20*	WG2310968
(S) a,a,a-Trifluorotoluene(PID)	*107*			*79.0-125*		*06/24/2024 20:20*	WG2310968

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	0.0565		0.0000941	0.00100	1	06/24/2024 18:12	WG2310887
n-Butylbenzene	U		0.000157	0.00100	1	06/24/2024 18:12	WG2310887
sec-Butylbenzene	0.000372	J	0.000125	0.00100	1	06/24/2024 18:12	WG2310887
tert-Butylbenzene	U		0.000127	0.00100	1	06/24/2024 18:12	WG2310887
Ethylbenzene	0.00894		0.000137	0.00100	1	06/24/2024 18:12	WG2310887
Isopropylbenzene	0.00119		0.000105	0.00100	1	06/24/2024 18:12	WG2310887
Naphthalene	U		0.00100	0.00500	1	06/24/2024 18:12	WG2310887
Toluene	0.00357		0.000278	0.00100	1	06/24/2024 18:12	WG2310887
1,2,4-Trimethylbenzene	U		0.000322	0.00100	1	06/24/2024 18:12	WG2310887
1,3,5-Trimethylbenzene	U		0.000104	0.00100	1	06/24/2024 18:12	WG2310887
m&p-Xylene	0.000722	J	0.000430	0.00200	1	06/24/2024 18:12	WG2310887
o-Xylene	0.000221	J	0.000174	0.00100	1	06/24/2024 18:12	WG2310887
(S) Toluene-d8	*104*			*80.0-120*		*06/24/2024 18:12*	WG2310887
(S) 4-Bromofluorobenzene	*96.8*			*77.0-126*		*06/24/2024 18:12*	WG2310887
(S) 1,2-Dichloroethane-d4	*99.7*			*70.0-130*		*06/24/2024 18:12*	WG2310887

Semi-Volatile Organic Compounds (GC) by Method AK102

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
AK102 DRO C10-C25	0.278	J	0.170	0.800	1	07/01/2024 02:01	WG2313035
(S) o-Terphenyl	*90.4*			*50.0-150*		*07/01/2024 02:01*	WG2313035

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
Anthracene	U		0.0000190	0.0000500	1	06/24/2024 19:32	WG2310469
Acenaphthene	U		0.0000190	0.0000500	1	06/24/2024 19:32	WG2310469
Acenaphthylene	U		0.0000171	0.0000500	1	06/24/2024 19:32	WG2310469
Benzo(a)anthracene	U		0.0000203	0.0000500	1	06/24/2024 19:32	WG2310469
Benzo(a)pyrene	U		0.0000184	0.0000500	1	06/24/2024 19:32	WG2310469
Benzo(b)fluoranthene	U		0.0000168	0.0000500	1	06/24/2024 19:32	WG2310469
Benzo(g,h,i)perylene	U		0.0000184	0.0000500	1	06/24/2024 19:32	WG2310469
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	06/24/2024 19:32	WG2310469
Chrysene	U		0.0000179	0.0000500	1	06/24/2024 19:32	WG2310469
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	06/24/2024 19:32	WG2310469
Fluoranthene	U		0.0000270	0.000100	1	06/24/2024 19:32	WG2310469
Fluorene	0.0000328	J	0.0000169	0.0000500	1	06/24/2024 19:32	WG2310469
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	06/24/2024 19:32	WG2310469
Naphthalene	0.000300		0.0000917	0.000250	1	06/24/2024 19:32	WG2310469
Phenanthrene	U		0.0000180	0.0000500	1	06/24/2024 19:32	WG2310469
Pyrene	U		0.0000169	0.0000500	1	06/24/2024 19:32	WG2310469

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
1-Methylnaphthalene	0.0000802	J	0.0000687	0.000250	1	06/24/2024 19:32	WG2310469
2-Methylnaphthalene	0.000104	J	0.0000674	0.000250	1	06/24/2024 19:32	WG2310469
(S) Nitrobenzene-d5	*119*			*31.0-160*		*06/24/2024 19:32*	WG2310469
(S) 2-Fluorobiphenyl	*94.7*			*48.0-148*		*06/24/2024 19:32*	WG2310469
(S) p-Terphenyl-d14	*83.7*			*37.0-146*		*06/24/2024 19:32*	WG2310469

Metals (ICP) by Method 6010D

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Sodium	101		0.504	3.00	1	06/26/2024 18:01	WG2311713

Volatile Organic Compounds (GC) by Method AK101

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
TPHGAK C6 to C10	1.53		0.0287	0.100	1	06/24/2024 20:47	WG2310968
(S) a,a,a-Trifluorotoluene(FID)	*87.0*			*50.0-150*		*06/24/2024 20:47*	WG2310968
(S) a,a,a-Trifluorotoluene(PID)	*103*			*79.0-125*		*06/24/2024 20:47*	WG2310968

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	0.0712		0.000941	0.0100	10	06/24/2024 19:26	WG2310887
n-Butylbenzene	U		0.00157	0.0100	10	06/24/2024 19:26	WG2310887
sec-Butylbenzene	0.00296	J	0.00125	0.0100	10	06/24/2024 19:26	WG2310887
tert-Butylbenzene	U		0.00127	0.0100	10	06/24/2024 19:26	WG2310887
Ethylbenzene	0.218		0.00137	0.0100	10	06/24/2024 19:26	WG2310887
Isopropylbenzene	0.0195		0.00105	0.0100	10	06/24/2024 19:26	WG2310887
Naphthalene	U		0.0100	0.0500	10	06/24/2024 19:26	WG2310887
Toluene	U		0.00278	0.0100	10	06/24/2024 19:26	WG2310887
1,2,4-Trimethylbenzene	0.0764		0.00322	0.0100	10	06/24/2024 19:26	WG2310887
1,3,5-Trimethylbenzene	0.0127		0.00104	0.0100	10	06/24/2024 19:26	WG2310887
m&p-Xylene	0.270		0.00430	0.0200	10	06/24/2024 19:26	WG2310887
o-Xylene	0.0350		0.00174	0.0100	10	06/24/2024 19:26	WG2310887
(S) Toluene-d8	*103*			*80.0-120*		*06/24/2024 19:26*	WG2310887
(S) 4-Bromofluorobenzene	*95.9*			*77.0-126*		*06/24/2024 19:26*	WG2310887
(S) 1,2-Dichloroethane-d4	*103*			*70.0-130*		*06/24/2024 19:26*	WG2310887

Semi-Volatile Organic Compounds (GC) by Method AK102

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
AK102 DRO C10-C25	1.15		0.170	0.800	1	07/01/2024 02:22	WG2313035
(S) o-Terphenyl	*112*			*50.0-150*		*07/01/2024 02:22*	WG2313035

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
Anthracene	U		0.0000190	0.0000500	1	06/24/2024 19:49	WG2310469
Acenaphthene	0.0000627		0.0000190	0.0000500	1	06/24/2024 19:49	WG2310469
Acenaphthylene	U		0.0000171	0.0000500	1	06/24/2024 19:49	WG2310469
Benzo(a)anthracene	U		0.0000203	0.0000500	1	06/24/2024 19:49	WG2310469
Benzo(a)pyrene	U		0.0000184	0.0000500	1	06/24/2024 19:49	WG2310469
Benzo(b)fluoranthene	U		0.0000168	0.0000500	1	06/24/2024 19:49	WG2310469
Benzo(g,h,i)perylene	U		0.0000184	0.0000500	1	06/24/2024 19:49	WG2310469
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	06/24/2024 19:49	WG2310469
Chrysene	U		0.0000179	0.0000500	1	06/24/2024 19:49	WG2310469
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	06/24/2024 19:49	WG2310469
Fluoranthene	U		0.0000270	0.000100	1	06/24/2024 19:49	WG2310469
Fluorene	0.000119		0.0000169	0.0000500	1	06/24/2024 19:49	WG2310469
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	06/24/2024 19:49	WG2310469
Naphthalene	0.00775		0.0000917	0.000250	1	06/24/2024 19:49	WG2310469
Phenanthrene	0.0000493	J	0.0000180	0.0000500	1	06/24/2024 19:49	WG2310469
Pyrene	U		0.0000169	0.0000500	1	06/24/2024 19:49	WG2310469

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
1-Methylnaphthalene	0.00225		0.0000687	0.000250	1	06/24/2024 19:49	WG2310469
2-Methylnaphthalene	0.00349		0.0000674	0.000250	1	06/24/2024 19:49	WG2310469
(S) Nitrobenzene-d5	*132*			*31.0-160*		*06/24/2024 19:49*	WG2310469
(S) 2-Fluorobiphenyl	*93.7*			*48.0-148*		*06/24/2024 19:49*	WG2310469
(S) p-Terphenyl-d14	*91.6*			*37.0-146*		*06/24/2024 19:49*	WG2310469

Metals (ICP) by Method 6010D

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Sodium	108		0.504	3.00	1	06/26/2024 18:03	WG2311713

Volatile Organic Compounds (GC) by Method AK101

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
TPHGAK C6 to C10	0.679		0.0287	0.100	1	06/24/2024 21:14	WG2310968
(S) a,a,a-Trifluorotoluene(FID)	*86.8*			*50.0-150*		*06/24/2024 21:14*	WG2310968
(S) a,a,a-Trifluorotoluene(PID)	*104*			*79.0-125*		*06/24/2024 21:14*	WG2310968

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	0.0622		0.0000941	0.00100	1	06/24/2024 18:37	WG2310887
n-Butylbenzene	0.00157		0.000157	0.00100	1	06/24/2024 18:37	WG2310887
sec-Butylbenzene	0.00340		0.000125	0.00100	1	06/24/2024 18:37	WG2310887
tert-Butylbenzene	U		0.000127	0.00100	1	06/24/2024 18:37	WG2310887
Ethylbenzene	0.0519		0.000137	0.00100	1	06/24/2024 18:37	WG2310887
Isopropylbenzene	0.0172		0.000105	0.00100	1	06/24/2024 18:37	WG2310887
Naphthalene	0.00231	J	0.00100	0.00500	1	06/24/2024 18:37	WG2310887
Toluene	0.00189		0.000278	0.00100	1	06/24/2024 18:37	WG2310887
1,2,4-Trimethylbenzene	0.0715		0.000322	0.00100	1	06/24/2024 18:37	WG2310887
1,3,5-Trimethylbenzene	0.00444		0.000104	0.00100	1	06/24/2024 18:37	WG2310887
m&p-Xylene	0.0568		0.000430	0.00200	1	06/24/2024 18:37	WG2310887
o-Xylene	0.00176		0.000174	0.00100	1	06/24/2024 18:37	WG2310887
(S) Toluene-d8	*104*			*80.0-120*		*06/24/2024 18:37*	WG2310887
(S) 4-Bromofluorobenzene	*97.9*			*77.0-126*		*06/24/2024 18:37*	WG2310887
(S) 1,2-Dichloroethane-d4	*101*			*70.0-130*		*06/24/2024 18:37*	WG2310887

Semi-Volatile Organic Compounds (GC) by Method AK102

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
AK102 DRO C10-C25	0.388	J	0.170	0.800	1	07/01/2024 02:42	WG2313035
(S) o-Terphenyl	*107*			*50.0-150*		*07/01/2024 02:42*	WG2313035

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
Anthracene	U		0.0000190	0.0000500	1	06/24/2024 20:06	WG2310469
Acenaphthene	0.0000514		0.0000190	0.0000500	1	06/24/2024 20:06	WG2310469
Acenaphthylene	U		0.0000171	0.0000500	1	06/24/2024 20:06	WG2310469
Benzo(a)anthracene	U		0.0000203	0.0000500	1	06/24/2024 20:06	WG2310469
Benzo(a)pyrene	U		0.0000184	0.0000500	1	06/24/2024 20:06	WG2310469
Benzo(b)fluoranthene	U		0.0000168	0.0000500	1	06/24/2024 20:06	WG2310469
Benzo(g,h,i)perylene	U		0.0000184	0.0000500	1	06/24/2024 20:06	WG2310469
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	06/24/2024 20:06	WG2310469
Chrysene	U		0.0000179	0.0000500	1	06/24/2024 20:06	WG2310469
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	06/24/2024 20:06	WG2310469
Fluoranthene	U		0.0000270	0.000100	1	06/24/2024 20:06	WG2310469
Fluorene	0.000114		0.0000169	0.0000500	1	06/24/2024 20:06	WG2310469
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	06/24/2024 20:06	WG2310469
Naphthalene	0.00227		0.0000917	0.000250	1	06/24/2024 20:06	WG2310469
Phenanthrene	0.0000360	J	0.0000180	0.0000500	1	06/24/2024 20:06	WG2310469
Pyrene	U		0.0000169	0.0000500	1	06/24/2024 20:06	WG2310469

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
1-Methylnaphthalene	0.00173		0.0000687	0.000250	1	06/24/2024 20:06	WG2310469
2-Methylnaphthalene	0.00304		0.0000674	0.000250	1	06/24/2024 20:06	WG2310469
(S) Nitrobenzene-d5	*127*			*31.0-160*		*06/24/2024 20:06*	WG2310469
(S) 2-Fluorobiphenyl	*96.3*			*48.0-148*		*06/24/2024 20:06*	WG2310469
(S) p-Terphenyl-d14	*88.4*			*37.0-146*		*06/24/2024 20:06*	WG2310469

Metals (ICP) by Method 6010D

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Sodium	34.8		0.504	3.00	1	06/26/2024 18:05	WG2311713

Volatile Organic Compounds (GC) by Method AK101

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
TPHGAK C6 to C10	0.0898	J	0.0287	0.100	1	06/24/2024 21:41	WG2310968
(S) a,a,a-Trifluorotoluene(FID)	*89.2*			*50.0-150*		*06/24/2024 21:41*	WG2310968
(S) a,a,a-Trifluorotoluene(PID)	*106*			*79.0-125*		*06/24/2024 21:41*	WG2310968

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	0.0115		0.000471	0.00500	5	06/24/2024 19:51	WG2310887
n-Butylbenzene	U		0.000785	0.00500	5	06/24/2024 19:51	WG2310887
sec-Butylbenzene	U		0.000625	0.00500	5	06/24/2024 19:51	WG2310887
tert-Butylbenzene	U		0.000635	0.00500	5	06/24/2024 19:51	WG2310887
Ethylbenzene	0.0134		0.000685	0.00500	5	06/24/2024 19:51	WG2310887
Isopropylbenzene	0.000983	J	0.000525	0.00500	5	06/24/2024 19:51	WG2310887
Naphthalene	U		0.00500	0.0250	5	06/24/2024 19:51	WG2310887
Toluene	U		0.00139	0.00500	5	06/24/2024 19:51	WG2310887
1,2,4-Trimethylbenzene	0.00490	J	0.00161	0.00500	5	06/24/2024 19:51	WG2310887
1,3,5-Trimethylbenzene	0.000741	J	0.000520	0.00500	5	06/24/2024 19:51	WG2310887
m&p-Xylene	0.0213		0.00215	0.0100	5	06/24/2024 19:51	WG2310887
o-Xylene	U		0.000870	0.00500	5	06/24/2024 19:51	WG2310887
(S) Toluene-d8	*109*			*80.0-120*		*06/24/2024 19:51*	WG2310887
(S) 4-Bromofluorobenzene	*99.0*			*77.0-126*		*06/24/2024 19:51*	WG2310887
(S) 1,2-Dichloroethane-d4	*103*			*70.0-130*		*06/24/2024 19:51*	WG2310887

Sample Narrative:

L1748413-05 WG2310887: Lowest possible dilution due to sample foaming.

Semi-Volatile Organic Compounds (GC) by Method AK102

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
AK102 DRO C10-C25	U		0.170	0.800	1	07/01/2024 03:02	WG2313035
(S) o-Terphenyl	*108*			*50.0-150*		*07/01/2024 03:02*	WG2313035

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
Anthracene	U		0.0000190	0.0000500	1	06/24/2024 20:24	WG2310469
Acenaphthene	U		0.0000190	0.0000500	1	06/24/2024 20:24	WG2310469
Acenaphthylene	U		0.0000171	0.0000500	1	06/24/2024 20:24	WG2310469
Benzo(a)anthracene	U		0.0000203	0.0000500	1	06/24/2024 20:24	WG2310469
Benzo(a)pyrene	U		0.0000184	0.0000500	1	06/24/2024 20:24	WG2310469
Benzo(b)fluoranthene	U		0.0000168	0.0000500	1	06/24/2024 20:24	WG2310469
Benzo(g,h,i)perylene	U		0.0000184	0.0000500	1	06/24/2024 20:24	WG2310469
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	06/24/2024 20:24	WG2310469
Chrysene	U		0.0000179	0.0000500	1	06/24/2024 20:24	WG2310469
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	06/24/2024 20:24	WG2310469
Fluoranthene	U		0.0000270	0.000100	1	06/24/2024 20:24	WG2310469
Fluorene	U		0.0000169	0.0000500	1	06/24/2024 20:24	WG2310469
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	06/24/2024 20:24	WG2310469

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	06/24/2024 20:24	WG2310469
Phenanthrene	U		0.0000180	0.0000500	1	06/24/2024 20:24	WG2310469
Pyrene	U		0.0000169	0.0000500	1	06/24/2024 20:24	WG2310469
1-Methylnaphthalene	U		0.0000687	0.000250	1	06/24/2024 20:24	WG2310469
2-Methylnaphthalene	U		0.0000674	0.000250	1	06/24/2024 20:24	WG2310469
(S) Nitrobenzene-d5	*103*			*31.0-160*		*06/24/2024 20:24*	WG2310469
(S) 2-Fluorobiphenyl	*92.1*			*48.0-148*		*06/24/2024 20:24*	WG2310469
(S) p-Terphenyl-d14	*89.5*			*37.0-146*		*06/24/2024 20:24*	WG2310469

Metals (ICP) by Method 6010D

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Sodium	100		0.504	3.00	1	06/26/2024 18:07	WG2311713

Volatile Organic Compounds (GC) by Method AK101

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
TPHGAK C6 to C10	1.17		0.0287	0.100	1	06/24/2024 22:08	WG2310968
(S) a,a,a-Trifluorotoluene(FID)	*89.3*			*50.0-150*		*06/24/2024 22:08*	WG2310968
(S) a,a,a-Trifluorotoluene(PID)	*103*			*79.0-125*		*06/24/2024 22:08*	WG2310968

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	0.0526		0.000471	0.00500	5	06/26/2024 04:13	WG2311864
n-Butylbenzene	0.00531		0.000785	0.00500	5	06/26/2024 04:13	WG2311864
sec-Butylbenzene	0.00230	J	0.000625	0.00500	5	06/26/2024 04:13	WG2311864
tert-Butylbenzene	U		0.000635	0.00500	5	06/26/2024 04:13	WG2311864
Ethylbenzene	0.161		0.000685	0.00500	5	06/26/2024 04:13	WG2311864
Isopropylbenzene	0.0159		0.000525	0.00500	5	06/26/2024 04:13	WG2311864
Naphthalene	U		0.00500	0.0250	5	06/26/2024 04:13	WG2311864
Toluene	U		0.00139	0.00500	5	06/26/2024 04:13	WG2311864
1,2,4-Trimethylbenzene	0.0576		0.00161	0.00500	5	06/26/2024 04:13	WG2311864
1,3,5-Trimethylbenzene	0.00929		0.000520	0.00500	5	06/26/2024 04:13	WG2311864
m&p-Xylene	0.181		0.00215	0.0100	5	06/26/2024 04:13	WG2311864
o-Xylene	0.0257		0.000870	0.00500	5	06/26/2024 04:13	WG2311864
(S) Toluene-d8	*104*			*80.0-120*		*06/26/2024 04:13*	WG2311864
(S) 4-Bromofluorobenzene	*97.9*			*77.0-126*		*06/26/2024 04:13*	WG2311864
(S) 1,2-Dichloroethane-d4	*103*			*70.0-130*		*06/26/2024 04:13*	WG2311864

Semi-Volatile Organic Compounds (GC) by Method AK102

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
AK102 DRO C10-C25	1.27		0.170	0.800	1	07/01/2024 10:09	WG2313035
(S) o-Terphenyl	*98.8*			*50.0-150*		*07/01/2024 10:09*	WG2313035

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
Anthracene	U		0.0000190	0.0000500	1	06/24/2024 20:41	WG2310469
Acenaphthene	0.0000495	J	0.0000190	0.0000500	1	06/24/2024 20:41	WG2310469
Acenaphthylene	U		0.0000171	0.0000500	1	06/24/2024 20:41	WG2310469
Benzo(a)anthracene	U		0.0000203	0.0000500	1	06/24/2024 20:41	WG2310469
Benzo(a)pyrene	U		0.0000184	0.0000500	1	06/24/2024 20:41	WG2310469
Benzo(b)fluoranthene	U		0.0000168	0.0000500	1	06/24/2024 20:41	WG2310469
Benzo(g,h,i)perylene	U		0.0000184	0.0000500	1	06/24/2024 20:41	WG2310469
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	06/24/2024 20:41	WG2310469
Chrysene	U		0.0000179	0.0000500	1	06/24/2024 20:41	WG2310469
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	06/24/2024 20:41	WG2310469
Fluoranthene	U		0.0000270	0.000100	1	06/24/2024 20:41	WG2310469
Fluorene	0.000110		0.0000169	0.0000500	1	06/24/2024 20:41	WG2310469
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	06/24/2024 20:41	WG2310469
Naphthalene	0.00663		0.0000917	0.000250	1	06/24/2024 20:41	WG2310469
Phenanthrene	0.0000437	J	0.0000180	0.0000500	1	06/24/2024 20:41	WG2310469
Pyrene	U		0.0000169	0.0000500	1	06/24/2024 20:41	WG2310469

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
1-Methylnaphthalene	0.00191		0.0000687	0.000250	1	06/24/2024 20:41	WG2310469
2-Methylnaphthalene	0.00288		0.0000674	0.000250	1	06/24/2024 20:41	WG2310469
(S) Nitrobenzene-d5	*128*			*31.0-160*		*06/24/2024 20:41*	WG2310469
(S) 2-Fluorobiphenyl	*92.1*			*48.0-148*		*06/24/2024 20:41*	WG2310469
(S) p-Terphenyl-d14	*89.5*			*37.0-146*		*06/24/2024 20:41*	WG2310469

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Benzene	U		0.0000941	0.00100	1	06/24/2024 12:46	WG2310887
n-Butylbenzene	U		0.000157	0.00100	1	06/24/2024 12:46	WG2310887
sec-Butylbenzene	U		0.000125	0.00100	1	06/24/2024 12:46	WG2310887
tert-Butylbenzene	U		0.000127	0.00100	1	06/24/2024 12:46	WG2310887
Ethylbenzene	U		0.000137	0.00100	1	06/24/2024 12:46	WG2310887
Isopropylbenzene	U		0.000105	0.00100	1	06/24/2024 12:46	WG2310887
Naphthalene	U		0.00100	0.00500	1	06/24/2024 12:46	WG2310887
Toluene	U		0.000278	0.00100	1	06/24/2024 12:46	WG2310887
1,2,4-Trimethylbenzene	U		0.000322	0.00100	1	06/24/2024 12:46	WG2310887
1,3,5-Trimethylbenzene	U		0.000104	0.00100	1	06/24/2024 12:46	WG2310887
m&p-Xylene	U		0.000430	0.00200	1	06/24/2024 12:46	WG2310887
o-Xylene	U		0.000174	0.00100	1	06/24/2024 12:46	WG2310887
(S) Toluene-d8	*110*			*80.0-120*		*06/24/2024 12:46*	WG2310887
(S) 4-Bromofluorobenzene	*99.4*			*77.0-126*		*06/24/2024 12:46*	WG2310887
(S) 1,2-Dichloroethane-d4	*101*			*70.0-130*		*06/24/2024 12:46*	WG2310887

Method Blank (MB)

(MB) R4086962-1 06/26/24 17:35

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

Laboratory Control Sample (LCS)

(LCS) R4086962-2 06/26/24 17:36

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Sodium	10.0	9.74	97.4	80.0-120	

L1748222-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1748222-05 06/26/24 17:38 • (MS) R4086962-4 06/26/24 17:42 • (MSD) R4086962-5 06/26/24 17:44

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	53.2	61.6	61.5	84.2	83.5	1	75.0-125			0.118	20

Method Blank (MB)

(MB) R4086264-3 06/24/24 11:38

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
TPHGAK C6 to C10	U		0.0287	0.100
(S) a,a,a-Trifluorotoluene(FID)	*58.7*	J2		*60.0-120*
(S) a,a,a-Trifluorotoluene(PID)	*107*			*79.0-125*

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

(LCS) R4086264-1 06/24/24 10:16 • (LCSD) R4086264-2 06/24/24 10:43

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	4.88	4.92	97.6	98.4	60.0-120			0.816	20
(S) a,a,a-Trifluorotoluene(FID)				*92.0*	*91.7*	*60.0-120*				
(S) a,a,a-Trifluorotoluene(PID)				*117*	*119*	*79.0-125*				

L1748395-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1748395-01 06/24/24 14:01 • (MS) R4086264-4 06/24/24 22:36 • (MSD) R4086264-5 06/24/24 23:03

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPHGAK C6 to C10	5.00	0.142	5.82	5.65	114	110	1	70.0-130			2.96	20
(S) a,a,a-Trifluorotoluene(FID)					*96.1*	*95.7*		*50.0-150*				
(S) a,a,a-Trifluorotoluene(PID)					*119*	*119*		*79.0-125*				

Method Blank (MB)

(MB) R4086221-3 06/24/24 09:27

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.0000941	0.00100
n-Butylbenzene	U		0.000157	0.00100
sec-Butylbenzene	U		0.000125	0.00100
tert-Butylbenzene	U		0.000127	0.00100
Ethylbenzene	U		0.000137	0.00100
Isopropylbenzene	U		0.000105	0.00100
Naphthalene	U		0.00100	0.00500
Toluene	U		0.000278	0.00100
1,2,4-Trimethylbenzene	U		0.000322	0.00100
1,3,5-Trimethylbenzene	U		0.000104	0.00100
m&p-Xylene	U		0.000430	0.00200
o-Xylene	U		0.000174	0.00100
(S) Toluene-d8	*105*			*80.0-120*
(S) 4-Bromofluorobenzene	*99.8*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*102*			*70.0-130*

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

(LCS) R4086221-1 06/24/24 08:19 • (LCSD) R4086221-2 06/24/24 08:41

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 %
Benzene	0.00500	0.00526	0.00511	105	102	70.0-123			2.89	20
n-Butylbenzene	0.00500	0.00473	0.00498	94.6	99.6	73.0-125			5.15	20
sec-Butylbenzene	0.00500	0.00555	0.00561	111	112	75.0-125			1.08	20
tert-Butylbenzene	0.00500	0.00539	0.00564	108	113	76.0-124			4.53	20
Ethylbenzene	0.00500	0.00549	0.00530	110	106	79.0-123			3.52	20
Isopropylbenzene	0.00500	0.00540	0.00535	108	107	76.0-127			0.930	20
Naphthalene	0.00500	0.00456	0.00436	91.2	87.2	54.0-135	J	J	4.48	20
Toluene	0.00500	0.00532	0.00535	106	107	79.0-120			0.562	20
1,2,4-Trimethylbenzene	0.00500	0.00540	0.00550	108	110	76.0-121			1.83	20
1,3,5-Trimethylbenzene	0.00500	0.00535	0.00534	107	107	76.0-122			0.187	20
m&p-Xylene	0.0100	0.0107	0.0110	107	110	80.0-122			2.76	20
o-Xylene	0.00500	0.00560	0.00540	112	108	80.0-122			3.64	20
(S) Toluene-d8				*103*	*104*	*80.0-120*				
(S) 4-Bromofluorobenzene				*102*	*103*	*77.0-126*				
(S) 1,2-Dichloroethane-d4				*102*	*101*	*70.0-130*				

Method Blank (MB)

(MB) R4086606-3 06/25/24 21:45

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.0000941	0.00100
n-Butylbenzene	U		0.000157	0.00100
sec-Butylbenzene	U		0.000125	0.00100
tert-Butylbenzene	U		0.000127	0.00100
Ethylbenzene	U		0.000137	0.00100
Isopropylbenzene	U		0.000105	0.00100
Naphthalene	U		0.00100	0.00500
Toluene	U		0.000278	0.00100
1,2,4-Trimethylbenzene	U		0.000322	0.00100
1,3,5-Trimethylbenzene	U		0.000104	0.00100
m&p-Xylene	U		0.000430	0.00200
o-Xylene	U		0.000174	0.00100
(S) Toluene-d8	*108*			*80.0-120*
(S) 4-Bromofluorobenzene	*104*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*111*			*70.0-130*

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

(LCS) R4086606-1 06/25/24 20:47 • (LCSD) R4086606-2 06/25/24 21:06

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 %
Benzene	0.00500	0.00509	0.00509	102	102	70.0-123			0.000	20
n-Butylbenzene	0.00500	0.00479	0.00458	95.8	91.6	73.0-125			4.48	20
sec-Butylbenzene	0.00500	0.00576	0.00533	115	107	75.0-125			7.75	20
tert-Butylbenzene	0.00500	0.00532	0.00522	106	104	76.0-124			1.90	20
Ethylbenzene	0.00500	0.00484	0.00472	96.8	94.4	79.0-123			2.51	20
Isopropylbenzene	0.00500	0.00496	0.00471	99.2	94.2	76.0-127			5.17	20
Naphthalene	0.00500	0.00461	0.00512	92.2	102	54.0-135	J		10.5	20
Toluene	0.00500	0.00489	0.00483	97.8	96.6	79.0-120			1.23	20
1,2,4-Trimethylbenzene	0.00500	0.00502	0.00508	100	102	76.0-121			1.19	20
1,3,5-Trimethylbenzene	0.00500	0.00537	0.00541	107	108	76.0-122			0.742	20
m&p-Xylene	0.0100	0.00976	0.00953	97.6	95.3	80.0-122			2.38	20
o-Xylene	0.00500	0.00484	0.00478	96.8	95.6	80.0-122			1.25	20
(S) Toluene-d8				*104*	*103*	*80.0-120*				
(S) 4-Bromofluorobenzene				*94.8*	*93.6*	*77.0-126*				
(S) 1,2-Dichloroethane-d4				*108*	*108*	*70.0-130*				

Method Blank (MB)

(MB) R4088514-1 06/30/24 21:23

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
AK102 DRO C10-C25	U		0.170	0.800
(S) o-Terphenyl	*117*			*60.0-120*

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

(LCS) R4088514-2 06/30/24 22:39 • (LCSD) R4088514-3 06/30/24 23:00

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	%	%	%			%	%
AK102 DRO C10-C25	6.00	5.07	4.91	84.5	81.8	75.0-125			3.21	20
(S) o-Terphenyl				*95.3*	*103*	*60.0-120*				

L1748395-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1748395-01 06/30/24 23:20 • (MS) R4088514-4 06/30/24 23:40 • (MSD) R4088514-5 07/01/24 00:00

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
AK102 DRO C10-C25	6.00	0.735	5.97	5.65	87.2	81.9	1	75.0-125			5.51	20
(S) o-Terphenyl					*98.9*	*101*		*50.0-150*				

Method Blank (MB)

(MB) R4086037-3 06/24/24 17:14

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	*114*			*31.0-160*
(S) 2-Fluorobiphenyl	*101*			*48.0-148*
(S) p-Terphenyl-d14	*98.0*			*37.0-146*

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

(LCS) R4086037-1 06/24/24 16:40 • (LCSD) R4086037-2 06/24/24 16:57

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	0.00227	0.00215	114	107	67.0-150			5.43	20
Acenaphthene	0.00200	0.00210	0.00201	105	100	65.0-138			4.38	20
Acenaphthylene	0.00200	0.00236	0.00227	118	114	66.0-140			3.89	20
Benzo(a)anthracene	0.00200	0.00230	0.00218	115	109	61.0-140			5.36	20
Benzo(a)pyrene	0.00200	0.00215	0.00204	107	102	60.0-143			5.25	20
Benzo(b)fluoranthene	0.00200	0.00197	0.00198	98.5	99.0	58.0-141			0.506	20
Benzo(g,h,i)perylene	0.00200	0.00205	0.00197	103	98.5	52.0-153			3.98	20
Benzo(k)fluoranthene	0.00200	0.00195	0.00188	97.5	94.0	58.0-148			3.66	20
Chrysene	0.00200	0.00221	0.00213	111	106	64.0-144			3.69	20
Dibenz(a,h)anthracene	0.00200	0.00209	0.00200	104	100	52.0-155			4.40	20
Fluoranthene	0.00200	0.00239	0.00227	119	114	69.0-153			5.15	20
Fluorene	0.00200	0.00227	0.00219	114	109	64.0-136			3.59	20

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

(LCS) R4086037-1 06/24/24 16:40 • (LCSD) R4086037-2 06/24/24 16:57

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 %
Indeno(1,2,3-cd)pyrene	0.00200	0.00219	0.00216	109	108	54.0-153			1.38	20
Naphthalene	0.00200	0.00210	0.00198	105	99.0	61.0-137			5.88	20
Phenanthrene	0.00200	0.00215	0.00206	107	103	62.0-137			4.28	20
Pyrene	0.00200	0.00211	0.00205	105	103	60.0-142			2.88	20
1-Methylnaphthalene	0.00200	0.00227	0.00214	114	107	66.0-142			5.90	20
2-Methylnaphthalene	0.00200	0.00221	0.00209	111	104	62.0-136			5.58	20
(S) Nitrobenzene-d5				*111*	*103*	*31.0-160*				
(S) 2-Fluorobiphenyl				*97.0*	*92.5*	*48.0-148*				
(S) p-Terphenyl-d14				*91.5*	*89.0*	*37.0-146*				

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
J	The identification of the analyte is acceptable; the reported value is an estimate.
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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

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

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

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

Company Name/Address:
Stantec - Anchorage, AK

725 E Fireweed Lane
Suite 200
Anchorage, AK 99503

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

Report to:
Ms. Sydney Souza

Email To: **craig.cothron@pacelabs.com**
sydney.souza@stantec.com AKST

Project Description:
~~Store 5325~~ 5314

City/State Collected: Wasilla, AK

Please Circle: PT MT CT ET

Phone: ~~907-266-1108~~ 907-229-1514

Client Project # ~~203723785~~ 203723698

Lab Project # ~~STAAAKSSA-5325~~ 5314

Collected by (print): Sydney Souza

Site/Facility ID # Speedway 5314

P.O. # 203723698

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

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	AK101 40mlAmb HCl	AK102 100ml Amb HCl	NAICP 250mlHDPE-HNO3	PAHSIMLVID 40mlAmb-NoPres-WT	V8260C 40mlAmb-HCl	V8260C 40mlAmb-HCl-Blk	Remarks	Sample # (lab only)
MW-1	G	GW		6/17/24	1043	11	X	X	X	X	X			-01
MW-2		GW			1112	11	X	X	X	X	X			-02
MW-3		GW			1152	11	X	X	X	X	X			-03
MW-4		GW			1228	11	X	X	X	X	X			-04
RW19-1		GW			1236	11	X	X	X	X	X			-05
DUP	↓	GW		↓	1157	11	X	X	X	X	X			-06
		GW				~~11~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~		
TRIP BLANK	—	~~GW~~		6/17/24	0900	1						X		-07

Chain of Custody Page ___ of ___

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN

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

SDG # L1748413
D026

Acctnum: **STAAAKSSA**
Template: **T253826**
Prelogin: **P1078197**
PM: **034 - Craig Cothron**
PB: 5.29.24 BK
Shipped Via: **FedEX 2nd Day**

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

Remarks:WO - 1106511130 - PO 203723785

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking # 744 7411 4526 2505

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

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	
	6/17/24	1600			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: EDA6 °C 5.3+0.3=5.6	Bottles Received: 66
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) Charles Stevenson	Date: 6-18-24	Time: 9:00

PH-10BDH5021
TRC-4072A72
Date/Time

Hold:

Condition: NCF / OK

6-19-24 cs

ADEC Contaminated Sites Program Laboratory Data Review Checklist

Completed By:	Remi Malenfant	**CS Site Name:**	Tesoro Northstore #76	**Lab Name:**	Pace Analytical
Title:	Environmental Scientist	**ADEC File No.:**	100.26.159	**Lab Report No.:**	L1748413
Consulting Firm:	Stantec Consulting Services Inc.	**Hazard ID No.:**	26295	**Lab Report Date:**	July 2, 2024

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

1. **Laboratory**

   a. Did an ADEC Contaminated Sites Laboratory Approval Program (CS-LAP) approved laboratory receive and perform all the submitted sample analyses?
   Yes ☒ No ☐ N/A ☐
   Comments: Click or tap here to enter text.

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses CS-LAP approved?
   Yes ☐ No ☐ N/A ☒
   Comments: Samples were not transferred

2. **Chain of Custody (CoC)**

   a. Is the CoC information completed, signed, and dated (including released/received by)?
   Yes ☒ No ☐ N/A ☐
   Comments: Click or tap here to enter text.

   b. Were the correct analyses requested?
   Yes ☒ No ☐ N/A ☐
   Analyses requested: AK101, AK102, Sodium, 8270 SIM PAHs, 8260C VOCs
   Comments: Click or tap here to enter text.

3. **Laboratory Sample Receipt Documentation**

   a. Is the sample/cooler temperature documented and within range at receipt (0° to 6° C)?
   Yes ☒ No ☐ N/A ☐
   Cooler temperature(s): 5.6° C
   Comments: Click or tap here to enter text.

b. Is the sample preservation acceptable – acidified waters, methanol preserved soil (GRO, BTEX, VOCs, etc.)?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

c. Is the sample condition documented – broken, leaking, zero headspace (VOA vials); canister vacuum/pressure checked and no open valves, etc.?
Yes ☒ No ☐ N/A ☐
Comments: Sample condition documented as OK

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, canister not holding a vacuum, etc.?
Yes ☐ No ☐ N/A ☒
Comments: No discrepancies documented

e. Is the data quality or usability affected?
Yes ☐ No ☒ N/A ☐
Comments: Click or tap here to enter text.

4. Case Narrative

a. Is the case narrative present and understandable?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

b. Are there discrepancies, errors, or QC failures identified by the lab?
Yes ☐ No ☒ N/A ☐
Comments: Case narrative documents no errors or discrepancies “unless qualified or notated within report”.

c. Were all the corrective actions documented?
Yes ☐ No ☐ N/A ☒
Comments: No corrective actions taken

d. What is the effect on data quality/usability according to the case narrative?
Comments: No effect on data quality/usability

5. Sample Results

a. Are the correct analyses performed/reported as requested on CoC?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

b. Are all applicable holding times met?
Yes ☒ No ☐ N/A ☐

Comments: Click or tap here to enter text.

c. Are all soils reported on a dry weight basis?
Yes ☐ No ☐ N/A ☒
Comments: No soil samples submitted to the lab

d. Are the reported limits of quantitation (LoQ) or limits of detections (LOD), or reporting limits (RL) less than the Cleanup Level or the action level for the project?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

e. Is the data quality or usability affected?
Yes ☐ No ☒ N/A ☐
Comments: Click or tap here to enter text.

6. QC Samples

a. Method Blank

i. Was one method blank reported per matrix, analysis, and 20 samples?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

ii. Are all method blank results less than LOQ (or RL)?
Yes ☒ No ☐
Comments: J-flagged result for a surrogate in GRO

iii. If above LoQ or RL, what samples are affected?
Comments: Click or tap here to enter text.

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
Yes ☐ No ☐ N/A ☒
Comments: No affected samples

v. Data quality or usability affected?
Yes ☐ No ☐ N/A ☒
Comments: No.

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

i. Organics – Are one LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)
Yes ☒ No ☐ N/A ☐

Comments: Click or tap here to enter text.

ii. Metals/Inorganics – Are one LCS and one sample duplicate reported per matrix, analysis and 20 samples?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

iii. Accuracy – Are all percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)
Yes ☒ No ☐ N/A ☐
Comments: J-flagged naphthalene results in 8260

iv. Precision – Are all relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? Was the RPD reported from LCS/LCSD, and or sample/sample duplicate? (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

v. If %R or RPD is outside of acceptable limits, what samples are affected?
Comments: 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. Is the data quality or usability affected?
Yes ☐ No ☒ N/A ☐
Comments: Naphthalene not measured by 8260

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

i. Organics – Are one MS/MSD reported per matrix, analysis and 20 samples?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

ii. Metals/Inorganics – Are one MS/MSD reported per matrix, analysis and 20 samples?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

iii. Accuracy – Are all percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

iv. Precision – Are all relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from MS/MSD, and or sample/sample duplicate.
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

v. If %R or RPD is outside of acceptable limits, what samples are affected?
Comments: Click or tap here to enter text.

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
Yes ☐ No ☐ N/A ☒
Comments: No affected samples

vii. Is the data quality or usability affected?
Yes ☐ No ☒ N/A ☐
Comments: Click or tap here to enter text.

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

i. Are surrogate/IDA recoveries reported for organic analyses – field, QC, and laboratory samples?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

ii. Accuracy – Are all percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods 50-150 %R for field samples and 60-120 %R for QC samples; all other analyses see the laboratory report pages)
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

iii. Do the sample results with failed surrogate/IDA recoveries have data flags? If so, are the data flags clearly defined?
Yes ☐ No ☐ N/A ☒
Comments: No affected samples

iv. Is the data quality or usability affected?
Yes ☐ No ☒ N/A ☐

Comments: Click or tap here to enter text.

e. Trip Blanks

i. Is one trip blank reported per matrix, analysis, and for each cooler containing volatile samples? Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

ii. Are all results less than LoQ or RL?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

iii. If above LoQ or RL, what samples are affected?
Comments: None.

iv. Is the data quality or usability affected?
Yes ☐ No ☒ N/A ☐
Comments: No affected samples.

f. Field Duplicate

i. Are one field duplicate submitted per matrix, analysis, and 10 project samples?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

ii. Was the duplicate submitted blind to lab?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

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

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

Where R_1 = Sample Concentration

R_2 = Field Duplicate Concentration

Is the data quality or usability affected? (Explain)

Yes ☐ No ☒ N/A ☐
Comments: Ethylbenzene and Xylenes are over the RPD limits.

iv. Is the data quality or usability affected? (Explain)
Yes ☐ No ☒ N/A ☐

Comments: The samples which are over GCLs for ethylbenzene and xylenes are well enough over the GCL to not be affected by inaccurate analyses.

g. Decontamination or Equipment Blanks

i. Were decontamination or equipment blanks collected?
Yes ☐ No ☐ N/A ☒
Comments: Used disposable equipment

ii. Are all results less than LoQ or RL?
Yes ☐ No ☐ N/A ☒
Comments: Used disposable equipment

iii. If above LoQ or RL, specify what samples are affected.
Comments: Click or tap here to enter text.

iv. Are data quality or usability affected?
Yes ☐ No ☐ N/A ☒
Comments: Click or tap here to enter text.

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

a. Are they defined and appropriate?
Yes ☒ No ☐ N/A ☐
Comments:

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

ACRONYMS AND ABBREVIATIONS

AAC	Alaska Administrative Code
ADEC	Alaska Department of Environmental Conservation
AK	Alaska Test Method
BTEX	benzene, toluene, ethylbenzene, and xylenes
Chemox	chemical oxidation
DO	dissolved oxygen
DRO	diesel range organics
EPA	U.S. Environmental Protection Agency
GCL	groundwater cleanup level
gpm	gallons per minute
GRO	gasoline range organics
IW	injection well
Klozur® One	Trademarked chemical oxidizer developed by PeroxyChem
mg/L	milligrams per liter
MW	monitoring well
PAH	polycyclic aromatic hydrocarbon
ORP	oxidation-reduction potential
QA	quality assurance
QC	quality control
Speedway	Speedway, LLC
Stantec	Stantec Consulting Services, Inc.
Tesoro	Tesoro Refining and Marketing Company
TMB	Trimethylbenzene
UST	underground storage tank
VOC	Volatile Organic Compounds

1.0 INTRODUCTION

This Groundwater Monitoring Event Report was prepared by Stantec Consulting Services Inc. (Stantec) on behalf of Speedway Store 5314 (7-Eleven Store 46745 - Former TNS 76), located at 3600 Palmer-Wasilla Highway, Wasilla, Alaska (**Figure 1**). Background and historical information for this site is summarized in **Appendix A**. The methods used for this monitoring event were conducted in accordance with the Alaska Department of Environmental Conservation (ADEC) approved 2024 Corrective Action Plan (CAP) for this site. The 2024 CAP work plan tasks are summarized in **Appendix B**.

This second quarter 2024 groundwater monitoring event was conducted on June 17, 2024, by Stantec environmental staff including Bob Gilfilian, Principal Engineer; Sydney Souza, Environmental Geologist; and Jeremiah Malenfant, Geologist-in-Training. Stantec field staff completed the monthly chemical oxidation (chemox) injection event on June 18, 2024.

2.0 FIELD ACTIVITIES

On June 17, 2024, Stantec completed the following field activities as part of this groundwater monitoring event:

- Measured the depth to groundwater in Monitoring Wells MW-1, MW-2, MW-3, MW-4, and remediation well RW19-1. Groundwater depth measurements were used by the SampleServe™ program to calculate the hydraulic gradient and direction of flow of the groundwater table.

- Measured the following intrinsic water quality parameters in all five monitoring/remediation wells: pH, temperature, dissolved oxygen (DO), oxidation-reduction potential (ORP), and specific conductance.

- Collected groundwater samples from all five monitoring/remediation wells and a duplicate (of MW-3) and submitted them for laboratory analysis of: U.S. Environmental Protection Agency (EPA) Method 8260C for petroleum fuel associated volatile organic compounds including benzene, toluene, ethylbenzene, and xylenes (BTEX), 1,2,4- Trimethylbenzene (TMB) and 1,3,5-TMB, as well as polycyclic aromatic hydrocarbons (PAHs), specifically naphthalene, by EPA 8270D; Alaska Test Method (AK)101 for GRO; AK102 for DRO; and metals by EPA 6010C (ICP) for sodium.

On June 18, 2024, Stantec completed a monthly injection of chemox treatment into the 3 remediation wells (IW-1, IW-2 and IW-3). Field methods and procedures are provided in **Appendix B**. Field measurements and notes are provided in **Appendix C**.

3.0 GROUNDWATER MONITORING RESULTS

3.1 GROUNDWATER ELEVATIONS

Table 1 presents groundwater elevations at this site based on the depths to static groundwater levels measured during this monitoring event. The recirculation pump in RW19-1 was discharged

on a continuous basis at about 1.5 gallons per minute (gpm) across all wells located in the "footprint" of the former underground storage tank (UST) shown on the site plan presented on **Figure 2**.

Table 1 Groundwater Elevations
Measured on June 17, 2024

Monitoring Well Identification	Top of Casing Elevation (feet relative to datum)[1]	Depth to Groundwater (feet btoc)	Groundwater Elevation (feet relative to datum)[1]
MW-1	94.73	19.24	75.49
MW-2	95.07	18.07	77.00
MW-3	94.46	17.27	77.19
MW-4	95.01	17.98	77.03
RW 19-1	95.73	23.95	71.78

Key:
1 – Based on a vertical control survey of June 17, 2024, using an elevation datum of 100.0 feet established on the benchmark on the concrete base of the existing on-site drinking water well.
feet btoc – feet below top of monitoring well casing

The hydraulic gradient across the site was found to be approximately 0.083 feet per foot directed northwest at 291 degrees. The calculation of groundwater hydraulic flow was based on the static water levels in the five on-site wells measured with the groundwater recirculation pump running. The groundwater flow direction is consistent with past monitoring events. A plot of groundwater elevation contours generated by the SampleServe software program, as well as a rose diagram, generated by the Surfer™ software program, of past groundwater direction and gradient, is included in **Figure 3.** The SampleServe program uses a combination of kriging and nearest-neighbor analyses to generate the contours.

3.2 INTRINSIC WATER QUALITY PARAMETERS

Intrinsic water quality data collected during this monitoring event is presented in **Table 2**. ORP measurements ranged from 172.4 millivolts (mV) to 261.9 mV, which is slightly more oxidizing than past events. The pH values in all the wells were noted to be slightly acidic. Specific conductance readings ranged from 837 micro-Siemens per centimeter-degree Celcius (µS/cm°C) to 1877 µS/cm°C which are consistent with historical values measured at this site. High specific conductance readings and higher ORP readings are indicative of the influence of chemox treatment.

Table 2 Intrinsic Water Quality Parameters
Measurements taken on June 17, 2024

Well ID	Volume Purged (gallons)	Temp. (˚C)	pH	Dissolved Oxygen (mg/L)	ORP (mV)	Specific Conductance (µs/cm °C)
MW-1	2.5	8.1	6.01	2.50	208.9	1877
MW-2	4.5	7.9	6.31	1.84	251.6	1352
MW-3	4.0	7.9	6.76	1.84	261.9	1352
MW-4	5.0	9.5	6.83	3.13	172.4	1375
RW19-1	NA	12.3	6.71	3.80	185.9	837

Key:
ºC – degrees Celsius
µS/cm°C – microSiemens per centimeter ºC
mg/L – milligrams per liter
mV – millivolts
NA – not applicable
ORP – oxidation-reduction potential
pH – -log [H+]
SC – specific conductance at 25ºC
Temp. – temperature
NM – Not Measured

3.3 ANALYTICAL WATER QUALITY DATA

Laboratory analytical results for BTEX, GRO, DRO, 1,2,4-TMB, 1,3,5-TMB, sodium, and naphthalene detected in groundwater samples collected during this monitoring event are summarized in **Tables 3a and 3b**. Historical results for the current and previous monitoring events are presented in **Appendix D**. The complete laboratory analytical report and laboratory data review checklist is provided in **Appendix E**.

Table 3a Groundwater Analytical Results for BTEX, GRO, and DRO
Samples collected on June 17, 2024

Sample Identification	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	GRO (mg/L)	DRO (mg/L)
MW-1	**0.0120**	U(0.00100)	U(0.00100)	U(0.00300)	U(0.100)	U(0.170)
MW-2	**0.0565**	0.00357	0.00894	0.000943 J	0.0863 J	0.278 J
MW-3	**0.0712**	U(0.0100)	**0.218**	**0.3050**	1.53	1.15
DUP 1 (dup. of MW-3)	**0.0526**	U(0.00500)	**0.161**	**0.2067**	1.17	1.27
MW-4	**0.0622**	0.00189	**0.0519**	0.05856	0.679	0.388 J
RW 19-1	**0.0115**	U(0.00500)	0.0134	0.0263	0.0898 J	U(0.800)
GCLs	**0.0046**	**1.1**	**0.015**	**0.19**	**2.2**	**1.5**

Table 3b Groundwater Analytical Results for Naphthalene, TMB, and Sodium
Samples collected on June 17, 2024

Sample Identification	1,2,4-TMB (mg/L)	1,3,5-TMB (mg/L)	Naphthalene[1] (mg/L)	Sodium (mg/L)
MW-1	U(0.00100)	U(0.00100)	U(0.000250)	76.7
MW-2	U(0.00100)	U(0.00100)	0.000300	167
MW-3	**0.0764**	0.0127	**0.00775**	101
DUP 1 (dup. of MW-3)	**0.0576**	0.00929	**0.00663**	100
MW-4	**0.0715**	0.00444	**0.00227**	108
RW19-1	0.00490 J	0.000741 J	U(0.000250)	34.8
GCLs	**0.056**	**0.060**	**0.0017**	**NA**

Key:
1 – Analyzed by EPA Method 8270D-SIM
AK – Alaska Test Method
DUP – Duplicate
TMB – Trimethylbenzene
mg/L – milligrams per liter
B – The same analyte is found in the associated blank.
BTEX – benzene, toluene, ethylbenzene, and xylenes
DRO – Diesel range organics, analyzed by AK102
GCLs – Groundwater cleanup levels, per ADEC 18 AAC 75.345, Table C, updated September 29, 2018.
GRO – Gasoline range organics, analyzed by AK101
J – The identification of the analyte is acceptable; the reported value is an estimate.
U( ) – Undetected above laboratory reporting limits shown in parentheses.
Bold – indicates the concentration exceeds the GCL or, if not detected, the practical quantitation limit exceeds the GCL.

3.4 QUALITY ASSURANCE (QA)/ QUALITY CONTROL (QC) REVIEW

Pace analytical performed all analysis of groundwater samples for this sampling event. **Table 4** provides a summary of the laboratory QC objectives and outcomes for this monitoring event. Laboratory QC data and the ADEC Laboratory Data Review Checklist are included with the laboratory report in **Appendix E**.

All samples were extracted and analyzed within the relevant hold times. A duplicate sample set was collected to determine the precision of the field collection and laboratory analyses for this sampling event. Sample DUP 1 is a duplicate of sample MW-3. The data presented in **Table 4** shows that the precision for the duplicate sample set was outside the established QA criteria for ethylbenzene and xylenes, and at the precision threshold for benzene.

Table 4 Laboratory Quality Control Objectives

Quality Control Designation	Tolerance	Results for this Event
Holding Times		
DRO/Water/to analyze	40 days	14 days
DRO/Water/to extract	14 days	12 days
GRO/Water/to analyze	14 days	7 days
VOCs/Water/to analyze	14 days	7 days
PAH/Water/to analyze	14 days	7 days
Field Duplicates – Precision		
Benzene/Water	± 30%	30.0%
Toluene/Water	± 30%	NC
Ethylbenzene/Water	± 30%	**30.1%**
Xylenes/Water	± 30%	**38.4%**
GRO/Water	± 30%	26.7%
DRO/Water	± 30%	9.92%
1,2,4-TMB/Water	± 30%	28.1%
1,3,5-TMB/Water	± 30%	31.0%
Naphthalene/Water	± 30%	15.6%
Sodium/Water	± 30%	0.995%

Key:
% – percent
± – plus or minus
BTEX – benzene, toluene, ethylbenzene, and xylenes
DRO – diesel range organics
GRO – gasoline range organics
TMB – Trimethylbenzene
PAH – polycyclic aromatic hydrocarbon
VOC – Volatile Organic Compounds
NC – not calculated due to analyte being undetected in sample

4.0 REMEDIATION SYSTEM

The re-circulation of pumped groundwater from RW19-1 is coupled with periodic injection (typically monthly during the non-freeze time of year) of a chemox product that is injected into the three remediation wells (IW-1, IW-2, and IW-3). On June 18, 2024, Stantec completed a groundwater remediation event that involved the manual injection of a mixture of two 55-pound bags of Klozur One® product each mixed with 50 gallons of tap water into each the three remediation wells for a total of 330 total pounds of chemox injected onsite. Additional flushing was not required in the wells due to the continuous flow from the recirculation pump. Due to less consistent flow into IW-1, the well was flushed from the store hose for one hour. Upon completion of the chemox injection process, the flow from the on-site recirculation well (RW19-1) was reconnected to discharge constant flow into all three wells at approximately 3 gpm with a backpressure of 65 psi. The next scheduled monthly injection of chemox into the treatment wells is in July 2024.

5.0 DISCUSSION OF FINDINGS

The laboratory analytical sample results showed petroleum associated analytes were present at concentrations exceeding ADEC groundwater cleanup levels (GCLs) as listed in Alaska Administrative Code (AAC) 18 AAC 75.345 Table C (9/18/2019) for the following monitoring wells:

- MW-1: Benzene.
- MW-2: Benzene.
- MW-3: Benzene, ethylbenzene, xylene, 1,2,4-TMB, and naphthalene.
- MW-4: Benzene, ethylbenzene, 1,2,4-TMB, and naphthalene.
- RW19-1: Benzene.

Overall, ethylbenzene concentrations across the site have come down. Benzene was detected above GCLs in MW-1 for the first time since July of last year.

The hydraulic gradient across the site was found to be approximately 0.083 feet per foot directed northwest at 291 degrees. The calculation of groundwater hydraulic flow was based on the static water levels in the five on-site wells measured with the groundwater recirculation pump running. The groundwater flow direction is consistent with past monitoring events.

6.0 CONCLUSIONS AND RECOMMENDATIONS

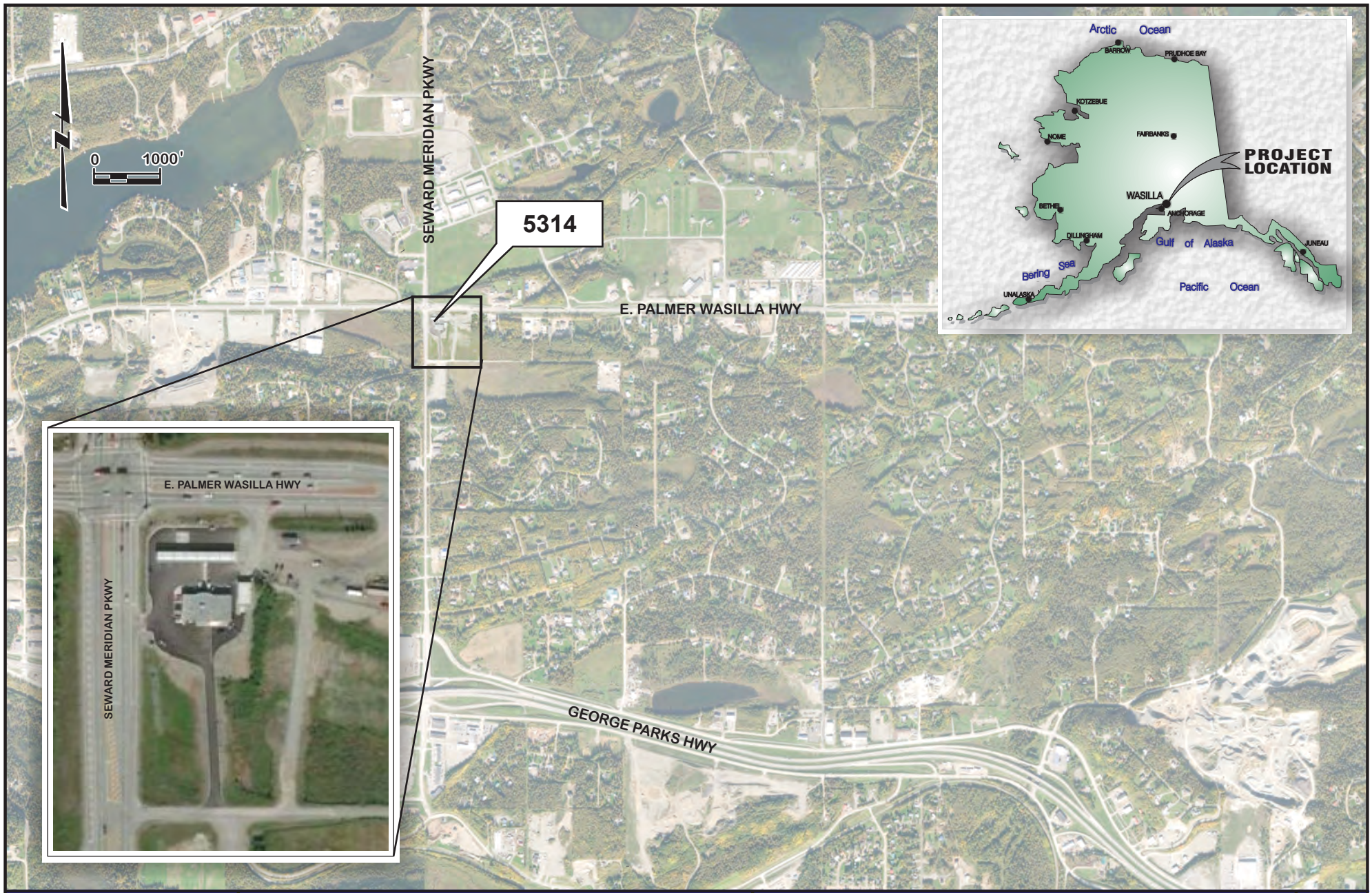
No anomalies were found during the first quarter 2024 monitoring event at this site that would require additional corrective action or changes to the ADEC-approved year 2024 Corrective Action Work Plan for this site.

7.0 LIMITATIONS

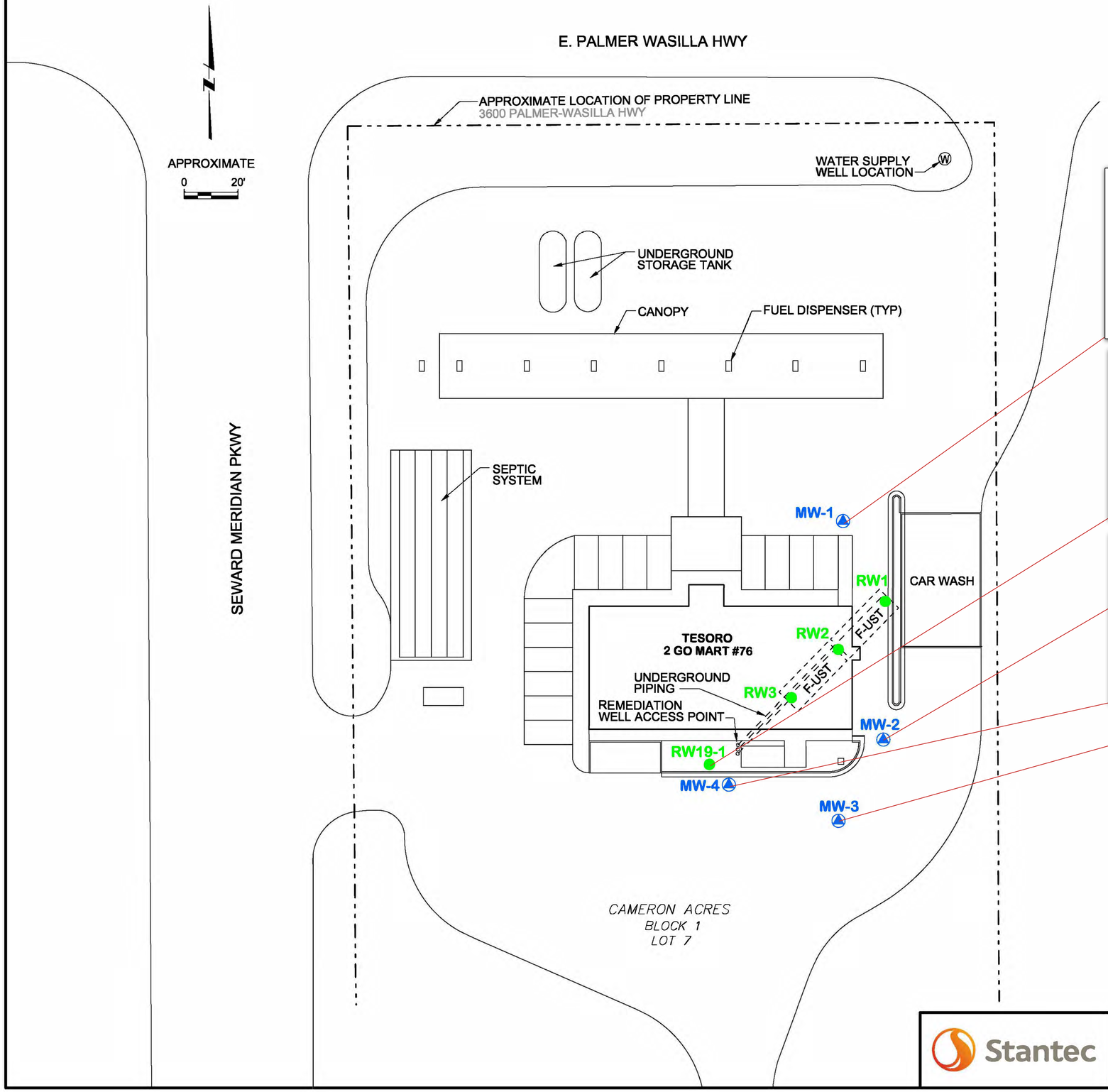
Stantec conducted this monitoring event in accordance with the 2024 Corrective Action Work Plan approved by ADEC, and in a manner consistent with the level of skill ordinarily exercised by members of the profession currently practicing under similar conditions. All sampling activities were completed 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 consider 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. Thereport 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



Stantec	SPEEDWAY STORE 5314 (7-ELEVEN 46745 - FORMER TNS 76) 2Q JUNE 2024 GWM EVENT REPORT	LOCATION AND VICINITY MAP	FIGURE 1



SITE DATA COMPARED TO ADEC Groundwater Cleanup Levels (GCLs)

ND	NOT DETECTED
--	NOT SAMPLED
50	SAMPLED & UNDER GCL
100	SAMPLED & OVER GCL
FP	FREE PRODUCT

DISPLAYED IN mg/L

124-TMB	0.056 mg/L
135-TMB	0.06 mg/L
BENZENE	0.0046 mg/L
DRO	1.5 mg/L
ETHYLBENZENE	0.015 mg/L
GRO	2.2 mg/L
NAPHTHALENE	0.0017 mg/L
SODIUM	
TOLUENE	1.1 mg/L
TOTAL XYLENES	0.19 mg/L

MW-1	6/17/24
124-TMB	U(0.00100)
135-TMB	U(0.00100)
BENZENE	0.012
DRO	U(0.800)
ETHYLBENZENE	U(0.00100)
GRO	U(0.100)
NAPHTHALENE	U(0.000250)
SODIUM	76.7
TOLUENE	U(0.00100)
TOTAL XYLENES	U(0.00300)

RW19-1	6/17/24
124-TMB	0.0049
135-TMB	0.000741
BENZENE	0.0115
DRO	U(0.800)
ETHYLBENZENE	0.0134
GRO	0.0898
NAPHTHALENE	U(0.000250)
SODIUM	34.8
TOLUENE	U(0.00500)
TOTAL XYLENES	0.0263

MW-2	6/17/24
124-TMB	U(0.00100)
135-TMB	U(0.00100)
BENZENE	0.0565
DRO	0.278
ETHYLBENZENE	0.00894
GRO	0.0863
NAPHTHALENE	0.0003
SODIUM	167
TOLUENE	0.00357
TOTAL XYLENES	0.000943

MW-4	6/17/24
124-TMB	0.0715
135-TMB	0.00444
BENZENE	0.0622
DRO	0.388
ETHYLBENZENE	0.0519
GRO	0.679
NAPHTHALENE	0.00227
SODIUM	108
TOLUENE	0.00189
TOTAL XYLENES	0.05856

MW-3	6/17/24
124-TMB	0.0764
135-TMB	0.0127
BENZENE	0.0712
DRO	1.15
ETHYLBENZENE	0.218
GRO	1.53
NAPHTHALENE	0.00775
SODIUM	101
TOLUENE	U(0.0100)
TOTAL XYLENES	0.305

LEGEND:

F-UST	FORMER UNDERGROUND STORAGE TANK
▲	MONITORING WELL LOCATION
●	REMEDIATION WELL LOCATION
DRO	DIESEL RANGE ORGANICS
GRO	GASOLINE RANGE ORGANICS
GW Elev	GROUNDWATER ELEVATION IN FEET
RW	REMEDIATION WELL
TMB	TRIMETHYLBENZENE
U	UNDETECTED ABOVE PRACTICAL QUANTITATION LIMITS SHOWN IN PARENTHESES
W	DRINKING WATER WELL

Stantec

Speedway 5314
(7-Eleven 46745 - Former TNS 76)
Q2 GWM Event June 2024

Boxmap with Analytical Data Results

FIGURE
2

E. PALMER WASILLA HWY

APPROXIMATE LOCATION OF PROPERTY LINE
3600 PALMER-WASILLA HWY

N

APPROXIMATE
0 20'

WATER SUPPLY WELL LOCATION (W)

UNDERGROUND STORAGE TANK

CANOPY

FUEL DISPENSER (TYP)

SEPTIC SYSTEM

SEWARD MERIDIAN PKWY

MW-1 75.5

RW1

CAR WASH

F-UST

TESORO
2 GO MART #76

RW2

UNDERGROUND PIPING

RW3

REMEDIATION WELL ACCESS POINT

14

15

16

MW-2 77.0

RW19-1 71.8

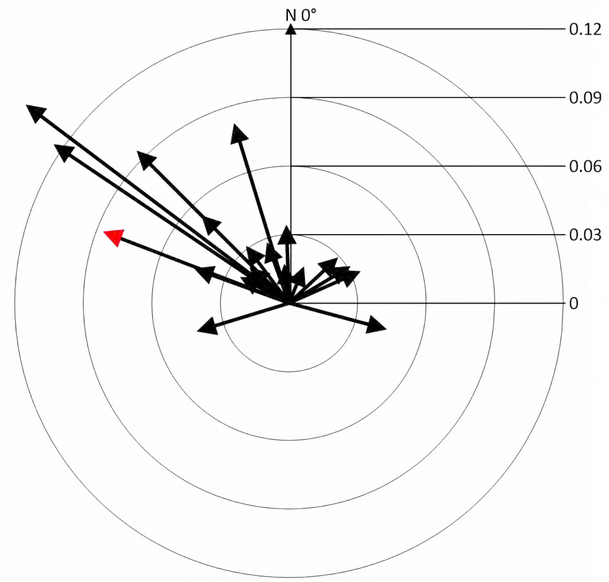
MW-4 77.0

17

MW-3 77.2

CAMERON ACRES
BLOCK 1
LOT 7

Groundwater Flow Direction (degrees azimuthal) and Gradient (ft/ft)



June 17, 2024

LEGEND:

F-UST	FORMER UNDERGROUND STORAGE TANK
▲	MONITORING WELL LOCATION
●	REMEDIATION WELL LOCATION
DRO	DIESEL RANGE ORGANICS
GRO	GASOLINE RANGE ORGANICS
GW Elev	GROUNDWATER ELEVATION IN FEET
RW	REMEDIATION WELL
TMB	TRIMETHYLBENZENE
U	UNDETECTED ABOVE PRACTICAL QUANTITATION LIMITS SHOWN IN PARENTHESES
(W)	DRINKING WATER WELL

Stantec

Speedway 5314
(7-Eleven 46745 - Former TNS 76)
Q2 GWM Event June 2024

Groundwater Elevation Contours

FIGURE
3

APPENDIX A

Site Background

APPENDIX A – SITE BACKGROUND

Speedway Store 5314 (7-Eleven Store 46745 - Former TNS 76) located at 3600 Palmer-Wasilla Highway, Wasilla, Alaska
ADEC File #2265.26.037

Speedway Store 5314 (former Tesoro 2 Go Mart #76) is a retail fuel and convenience store facility located at 3600 Palmer-Wasilla Highway, Wasilla, Alaska (Figure 1). The legal description for the property is Lot 7, Block 1, Cameron Acres Subdivision, Matanuska-Susitna Borough.

Two 15,000-gallon underground storage tanks (USTs) were installed at the site in 1995. Based on historical records, this is the first retail fuel convenience store to occupy this location. The site is covered with asphalt paving with concrete in the area over the USTs and fuel dispenser islands. The former UST system and dispensing components were removed from September to October 2014 and replaced with a new UST fueling system. The new UST fueling system consists of two 15,000-gallon fiberglass-reinforced plastic, double-walled USTs installed on January 29, 2015, and seven fuel dispensers (six gasoline and one diesel). Distribution piping consists of 2-inch fiberglass primary and 3-inch fiberglass secondary.

In addition, the former convenience store was demolished and replaced with a new convenience store that was constructed at a different location on the property. The property is over 1 acre in size and is served with an on-site drinking water well and on-site septic tank and drainfield system.

October 2014. During the 2014 Site Assessment of the UST closure, a petroleum fuel release was discovered in the subsurface soils partially surrounding and underlying the USTs. At that time, a very deep test pit was excavated beneath the former USTs to the groundwater table. Field screening with a photoionization detector (PID) indicated that petroleum contamination was present throughout the vadose zone and extended to the underlying groundwater table. Due to site safety concerns with sloughing soils, it was not feasible to excavate all of the contaminated soil below the former USTs.

A Release Investigation (RI) was conducted by MWH Americas, Inc. (MWH) subsequent to the closure of the former USTs. The RI included the installation of a soil vapor extraction (SVE) remediation well and several groundwater monitoring wells. MWH completed a groundwater monitoring event after the monitoring wells were installed. Follow-up water samples were collected from the onsite drinking water well for appropriate laboratory analyses.

The findings of the RI indicated a significant amount of petroleum contamination had impacted the subsurface soils and shallow groundwater table at the site. The soil samples collected indicate higher concentrations of gasoline range organics (GRO) and benzene, toluene, ethylbenzene, and xylenes (BTEX) constituents directly below the location occupied by the former USTs at Remediation Wells RW-2 and RW-3. Benzene was detected above Alaska Department of Environmental Conservation (ADEC) groundwater cleanup level (GCL) in groundwater at monitoring wells installed at the site. GRO contaminants have also impacted the groundwater table. The system has been monitored on a quarterly basis since the completion of the RI.

February 2015. Benzene exceeded the GCL in Monitoring Well MW-2. BTEX, GRO, and diesel range organics (DRO) exceeded GCLs in Monitoring Well MW-3. Benzene, toluene, and GRO exceeded GCLs in Monitoring Well MW-4.

June 2015. MWH installed and placed into operation a SVE system at the site. Early results indicate that the system is effectively removing petroleum-related vapors from the subsurface. Additionally, a surface water sample was collected from an on-site nearby wetland surface water area. Xylenes and DRO were detected in the water sample; however, the concentrations were below the ADEC groundwater and surface water cleanup levels.

September 2015. Benzene and DRO exceeded GCLs in Monitoring Well MW-2. BTEX and DRO exceeded GCLs in Monitoring Well MW-3. Benzene exceeded GCL in Monitoring Well MW-4. The SVE remediation system blower was offline, requiring maintenance.

November 2015. Benzene exceeded GCL in Monitoring Well MW-1. Benzene, GRO, and DRO exceeded the GCL in Monitoring Well MW-2. Benzene, toluene, and GRO all remained above their GCLs, consistent with the past five monitoring events, at Monitoring Well MW-3.

December 2015. Maintenance was performed on the SVE system on December 31, 2015. A replacement SVE system blower was installed. The system was brought back online on the date of the replacement blower installation. A PID was used to monitor the system effluent after the initial 15 minutes of operation and indicated that 424 parts per million by volume were being removed by the system.

January 2016. Benzene exceeded the GCL in Monitoring Well MW-1. Benzene, toluene, ethylbenzene, and DRO exceeded their GCLs in Monitoring Well MW-2; and benzene, toluene, ethylbenzene, xylenes, GRO, and DRO exceeded their GCLs in Monitoring Well MW-3. The laboratory did not provide results for requested GRO analyses for samples from Monitoring Wells MW-2 and MW-4.

May 2016. In Monitoring Wells MW-1, MW-2, and MW-4, only benzene exceeded GCL. MW-3 exceeded GCLs for all analytes tested. There were no detections in the Carmen Lot 7 drinking water sample. An SVE effluent sample was collected to monitor SVE performance.

October 2016. In Monitoring Well MW-1, only benzene exceeded GCL. In Monitoring Well MW-2, all analytes but toluene and DRO exceeded GCLs. Monitoring Well MW-3 exceeded GCLs for all analytes tested. Monitoring Well MW-4 had no exceedances. There were no detections in the Carmen Lot 7 drinking water sample. An SVE effluent sample was collected to monitor SVE performance.

December 2016. In Monitoring Well MW-1, only benzene exceeded GCL. In Monitoring Well MW-2, all analytes but toluene exceeded GCLs. Monitoring Well MW-3 exceeded GCLs for benzene, GRO, and DRO. Monitoring Well MW-4 and the Carmen Lot 7 drinking water sample had no exceedances. Both Monitoring Wells MW-3 and MW-4 had insufficient sample volumes to complete all analytical testing. The SVE system observed for operation and performance.

February 2017. Benzene was the only analyte to exceed the GCL in Monitoring Wells MW-1 and MW-4. Benzene and ethylbenzene exceeded GCLs in Monitoring Well MW-2, and all analytes exceeded their GCLs in Monitoring Well MW-3. The SVE system was frozen due to record cold temperatures experienced during January 2017. A subsequent site visit on February 16, 2017, was made to thaw and restore the SVE system to normal operation.

April 2017. In addition to testing for BTEX, DRO, and GRO, expanded testing for volatile organic compounds (VOCs), and polynuclear aromatic hydrocarbons (PAHs) were conducted on all monitoring wells. Benzene was the only analyte to exceed the GCL in Monitoring Wells MW-1 and MW-4. BTEX (minus toluene) and GRO exceeded their GCLs in Monitoring Well MW-2, consistent with previous monitoring events. The expanded testing found 1,2,4-trimethlybenzene and naphthalene to also exceed GCLs. In Monitoring Well MW-3, BTEX and DRO exceeded their GCLs, also consistent with previous monitoring events. The expanded testing found 1,2,4-trimethlybenzene, 1,3,5-trimethlybenzene, and naphthalene to also exceed GCLs. Pilot Testing (conducted in May 2017) of air injection into remediation wells to volatize groundwater and smear zone contaminants indicated a slight increase of volatilization when air is injected into RW-2, and RW-3.

September 2017. Except for the following, all analytes were below GCLs in the wells sampled:

- Monitoring Well MW-1 – benzene exceeded the GCL.
- Monitoring Well MW-2 – benzene, ethylbenzene, xylenes and GRO exceeded their GCLs.
- Monitoring Well MW-3 – BTEX, GRO, and DRO were above their GCLs. The MW-3 duplicate sample provided results within established Quality Assurance/Quality Control (QA/QC) standards.
- Monitoring Well MW-4 – benzene, ethylbenzene, xylenes, and GRO exceeded their GCLs.

The SVE contaminant vapor mass removal was less than observed during pilot test in May 2017 and requires additional optimization.

February 2018. Except for the following, all analytes were below GCLs in the wells sampled:

- Monitoring Well MW-1 – benzene.
- Monitoring Well MW-2 – benzene, ethylbenzene, xylenes, and GRO (GRO was not detected, but the Reporting Limit exceeded the GCL).
- Monitoring Well MW-3 – BTEX and GRO (GRO was not detected, but the Reporting Limit exceeded the GCL). The MW-3 duplicate sample provided results within established QA/QC standards.
- Monitoring Well MW-4 – benzene, ethylbenzene, xylenes, and GRO.

The SVE contaminant vapor mass removal was less than previously observed on site. In addition, the field work included an assessment of the buried piping systems for the air sparging (AS) and SVE systems. The assessment was performed with a downhole camera capable of recording

photographs and video of the interior conditions of the piping system. The findings of the downhole camera assessment of the buried piping system was inconclusive.
June 2018. The results from the June 29, 2018, monitoring event supports the continued pattern that GRO contamination persists on site and is observed in Monitoring Wells MW-2 and MW-3. In addition, Monitoring Well MW-3 is consistently the most contaminated well. In summary, the results of the groundwater analytical sampling showed that analytes detected above the GCLs were:

- Monitoring Well MW-1: Benzene.
- Monitoring Well MW-2: Benzene, ethylbenzene, xylenes, GRO, and naphthalene.
- Monitoring Well MW-3: BTEX, GRO and naphthalene. Except for GRO, the duplicate sample provided results within established QA/QC standards.
- Monitoring Well MW-4: Benzene, ethylbenzene, and naphthalene.

A representative water sample from the on-site drinking water well serving the Tesoro 2 Go Mart was sampled and tested for VOCs. The water sample was found to have no detectable levels of contaminants of concern, except the laboratory reporting limits were over the GCLs for 1,1,2-trichloroethane (TCA) and vinyl chloride.

The SVE contaminant vapor mass removal is very low and based on the recent pattern of decline suggest that the SVE system performance requires additional optimization. Alternative treatment options are currently being evaluated and, if determine feasible, a new work plan will be presented to ADEC for review and approval prior to making any changes.

September 2018. Results of the groundwater analytical sampling showed that analytes detected above ADEC GCLs were:

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

Several analytes for VOCs were reported as undetected but had laboratory reporting limits that equaled or exceeded their corresponding GCLs. The results from this monitoring event supports the continued pattern that GRO contamination persists at the site and is observed in Monitoring Wells MW-2 and MW-3. In addition, Monitoring Well MW-3 is consistently the most contaminated well.

The approximate hydraulic gradient across the site was found to be approximately 0.03 feet per foot directed toward the north-northeast at 14 degrees. The groundwater flow direction and gradient are consistent with past monitoring events.

The SVE contaminant vapor mass removal is very low and, based on the recent pattern of decline, suggests that the SVE system performance requires additional optimization. Alternative treatment options are currently being evaluated and, if determine feasible, a new work plan will be presented to ADEC for review and approval prior to making any changes.

October 2018. Results of the groundwater analytical sampling showed that analytes detected above ADEC GCLs were:

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

Several VOCs were reported as undetected but had laboratory reporting limits that equaled or exceeded their corresponding GCLs. The results from this October 26, 2018, monitoring event supports the continued pattern that GRO contamination persists at the site and is observed in Monitoring Wells MW-2 and MW-3. In addition, Monitoring Well MW-3 is consistently the most contaminated on-site monitoring well.

The approximate hydraulic gradient across the site was found to be approximately 0.03 feet per foot directed toward the north at 358 degrees. The groundwater flow direction and gradient are consistent with past monitoring events.

The SVE contaminant vapor mass removal is very low and, based on the recent pattern of decline, suggests that the SVE system performance requires additional optimization. Alternative treatment options are currently being evaluated and, if determined to be feasible, a new work plan will be presented to ADEC in 2019 for review and approval prior to making any changes.

February 2019. Results of the groundwater analytical sampling showed that analytes detected above ADEC GCLs were:

- Monitoring Well MW-2: Benzene, ethylbenzene, xylenes, and GRO.
- Monitoring Well MW-3: Benzene, ethylbenzene, xylenes, and DRO.
- Monitoring Well MW-4: Benzene

The existing bio-sparge treatment system is not functional and will be replaced. In the 2nd quarter of 2019, Stantec plans to install a groundwater recirculation system based on pump and treat technology. The SVE contaminant vapor mass removal is very low and, based on the recent pattern of decline, suggests that the SVE system performance requires additional optimization. Alternative treatment options are currently being evaluated and, if determine feasible, a new work plan will be presented to ADEC for review and approval prior to making any changes.

April 2019. The monitoring event included: measuring the depth to groundwater; measuring water quality parameters; and collecting and analyzing groundwater samples from Monitoring Wells MW-1, MW-2, MW-3, and MW-4, as well as the on-site drinking water well.

Results of the groundwater analytical sampling showed that analytes detected above ADEC GCLs in the primary samples were:

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

A representative water sample from the on-site drinking water well serving the Tesoro 2Go Mart was sampled and tested for VOCs. The water sample was found to have no detectable levels of contaminants of concern, except the laboratory reporting limits were over the GCLs for 1,1,2-TCA, 1,2,3-trichloropropane, 1,2-dibromoethane, and vinyl chloride.

The groundwater hydraulic gradient across the site was found to be approximately 0.04 feet per foot directed toward the west-northwest at 290 degrees. The groundwater flow direction and gradient are inconsistent with past monitoring events in that the direction of flow is to the west rather than historically to the north with a slightly higher gradient.

July 2019. The monitoring event included: measuring the depth to groundwater; measuring water quality parameters; and collecting and analyzing groundwater samples from Monitoring Wells MW-1, MW-2, MW-3, and MW-4.

Results of the groundwater analytical sampling showed that analytes detected above ADEC GCLs in the primary samples were:

- Monitoring Well MW-1: Benzene.
- Monitoring Well MW-2: Benzene, ethylbenzene, xylenes, and GRO.
- Monitoring Well MW-3: BTEX, GRO, and DRO.
- Monitoring Well MW-4: Benzene.

The groundwater hydraulic gradient across the site was found to be approximately 0.013 feet per foot directed toward the north-northeast at 22 degrees. The groundwater flow direction and gradient are consistent with past monitoring events.

Stantec plans to drill a new 4” diameter remediation well and repurpose the current bio-sparge system. The new well and bio-sparge system will be converted into a groundwater recirculation system to allow injection of chemical oxidation products. The implementation of this change in the remediation system will occur in the 4th quarter of 2019.

October 2019. The monitoring event included: measuring the depth to groundwater; measuring water quality parameters; and collecting and analyzing groundwater samples from Monitoring Wells MW-1, MW-2, MW-3, and MW-4.

Results of the groundwater analytical sampling showed that analytes detected above ADEC GCLs in the primary samples were:

- Monitoring Well MW-2: Benzene and ethylbenzene.

- Monitoring Well MW-3: benzene, ethylbenzene, xylenes, and GRO.
- Monitoring Well MW-4: Benzene.

The groundwater hydraulic gradient across the site was found to be approximately 0.013 feet per foot directed toward the north at 350 degrees. The groundwater flow direction and gradient are consistent with past monitoring events.

Stantec plans to drill a new 4" diameter remediation well (RW 19-1) and repurpose the current bio-sparge system. The new well and bio-sparge system will be converted into a groundwater recirculation system to allow injection of chemical oxidation products. The implementation of this change in the remediation system will occur in the 2nd quarter of 2020.

August 2020. The 3rd quarter groundwater monitoring event included: measuring the depth to groundwater; measuring water quality parameters; and collecting and analyzing groundwater samples from Monitoring Wells MW-1, MW-2, MW-3, MW-4, and Remediation Well RW19-1.

Results of the groundwater analytical sampling showed that analytes detected above ADEC groundwater cleanup levels (GCLs) in the primary samples were:

- Monitoring Well MW-2: Benzene, ethylbenzene, and xylenes.
- Monitoring Well MW-3: Benzene, ethylbenzene, xylenes, gasoline range organics (GRO), and diesel range organics (DRO).
- Monitoring Well MW-4: Benzene.

The hydraulic gradient across the site was found to be approximately 0.025 feet per foot directed toward the north at 47 degrees. The groundwater flow direction and gradient are consistent with past monitoring events. A historical summary of the groundwater flow for the last 10 monitoring events is shown in the "rose diagram" presented on the Site Plan drawing.

In 2019 Stantec installed a groundwater recirculation system based on pump and treat technology. The 4" diameter remediation well (RW 19-1) that was installed in October 2019, is connected to the existing underground piping system (formerly used for the bio-sparge system) consisting of 3 vertical injection wells located under the northeast portion of the existing store building. Chemical oxidation injection of Klozur One® product directly into the 3 vertical injection wells was conducted during this monitoring event. A total of 330 pounds of Klozur One® and 750 gallons of water pumped from RW19-1 was injected into the in-situ groundwater treatment system.

October 2020. The 4th quarter groundwater monitoring event included: measuring the depth to groundwater; measuring intrinsic water quality parameters; and collecting and analyzing groundwater samples from monitoring wells MW-01, MW-02, MW-03, MW-04 and remediation well RW19-1.

Results of the groundwater analytical sampling showed that analytes detected above ADEC GCLs in the primary samples were:

- Monitoring well MW-1: Benzene

- Monitoring well MW-2: Benzene, ethylbenzene, and 1,2,4-trimethylbenzene.
- Monitoring well MW-3: Benzene, ethylbenzene, xylenes, gasoline range organics (GRO), diesel range organics (DRO), naphthalene, 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene.
- Monitoring well MW-4: Benzene.

No contaminants were detected in the drinking water sample collected from the water spigot in the store's utility sink.

The hydraulic gradient across the site was found to be approximately 0.032 feet per foot directed toward the north-east at 28 degrees. The groundwater flow direction and gradient are consistent with past monitoring events. A historical summary of the groundwater flow for the last 11 monitoring events is shown in the "rose diagram" presented on the Site Plan drawing.

On September 3, 2020 - prior to the 4th quarter groundwater monitoring event, Stantec completed an injection of chemox products. A chemox solution consisting of two 55-pound bags of Klozur One® product mixed with 50 gallons of water was injected into each of the three remediation wells of the former bio-sparge system (RW-1, RW-2, and RW-3). An additional 200 gallons of water from RW19-1 was injected directly into each remediation well (RW-1, RW-2, and RW-3) immediately after the injection of the chemox solution. In summary, a total of 330 pounds of Klozur One® and 750 gallons of water pumped from RW19-1 was injected into the in-situ groundwater treatment system.

March 2021. The 1st quarter 2021 groundwater monitoring event included: measuring the depth to groundwater; measuring intrinsic water quality parameters; and collecting and analyzing groundwater samples from monitoring wells MW-01, MW-02, MW-03, MW-04 and remediation well RW19-1.

Results of the groundwater analytical sampling showed that analytes detected above ADEC GCLs in the primary samples were:

- Monitoring well MW-2: Benzene.
- Monitoring well MW-3: Benzene, ethylbenzene, xylenes, toluene, gasoline range organics (GRO), and diesel range organics (DRO).
- Monitoring well MW-4: Benzene.

The hydraulic gradient across the site was found to be approximately 0.024 feet per foot directed toward the northwest at 340 degrees. The calculated groundwater gradient and flow direction do not account for the water table drawdown associated with remediation well RW19-1. The groundwater gradient and flow direction are consistent with past monitoring events.

The operation of the groundwater recirculation well (RW 19-1) was checked and noted to be operating within normal range. The submersible pump runs on a continuous basis and observed to discharge approximately a total flow rate of 1.5 gallons per minute into the three on-site injection wells (RW-1, RW-2 and RW-3) that are located within the "footprint" of the former underground storage tank (UST).

May 2021. The 2nd quarter 2021 groundwater monitoring event included: measuring the depth to groundwater; measuring intrinsic water quality parameters; and collecting and analyzing groundwater samples from monitoring wells MW-01, MW-02, MW-03, MW-04 and remediation well RW19-1.

Results of the groundwater analytical sampling showed that analytes detected above ADEC GCLs in the primary samples were:

- Monitoring well MW-2: Benzene.
- Monitoring well MW-3: Benzene, ethylbenzene, xylenes, toluene, GRO, DRO, naphthalene, 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene.
- Monitoring well MW-4: Benzene.

The approximate hydraulic gradient and direction of groundwater flow across the site was found to be approximately 0.027 feet per foot directed toward the northeast at 59 degrees. The calculated groundwater gradient and flow direction do not account for the water table drawdown associated with remediation well RW19-1. The groundwater gradient and flow direction are generally consistent with past monitoring events. The gradient and direction of flow was graphically calculated by triangulation method.

The operation of the groundwater recirculation well (RW 19-1) was checked and noted to be operating within normal range. The submersible pump runs on a continuous basis and observed to discharge approximately a total flow rate of 1 to 2 gallons per minute into the three on-site injection wells (RW-1, RW-2 and RW-3) that are located within the "footprint" of the former underground storage tank (UST).

Chemox injection via the three remediation wells took place on May 19, 2021, during the completion of the groundwater monitoring event. Stantec completed an injection of two 55-pound bags of Klozur One® product mixed with 50 gallons of water was injected into each of the three remediation wells of the former bio-sparge system (RW-1, RW-2, and RW-3) for a total 330 pounds of Klozur One® and 750 gallons of water pumped from RW19-1 was injected into the in-situ groundwater treatment system. The next scheduled injection of chemox into the treatment wells is planned for the third quarter of 2021.

July 2021. The 2nd quarter 2021 groundwater monitoring event included: measuring the depth to groundwater; measuring intrinsic water quality parameters; and collecting and analyzing groundwater samples from monitoring wells MW-01, MW-02, MW-03, MW-04 and remediation well RW19-1.

Results of the groundwater analytical sampling showed that analytes detected above ADEC GCLs in the samples were:

- Monitoring well MW-3: Benzene, ethylbenzene, xylenes, gasoline range organics (GRO), diesel range organics (DRO), 1,2,4-trimethylbenzene (TMB) and 1,3,5-TMB.

- Monitoring well MW-4: Benzene.

However, the laboratory reported the test results for naphthalene in all of the wells were non-detect but all of them were above the ADEC GCL for naphthalene. Consequently, are shown in this report as exceedance of the naphthalene GCL.

The hydraulic gradient across the site was found to be approximately 0.027 feet per foot directed toward the northeast at 59 degrees. The calculation by triangulation of groundwater hydraulic flow was based on the static water levels in the four on-site monitoring wells and the pumping water level in "pump and treat" well (RW 19-1). The groundwater gradient and flow direction are generally consistent with past monitoring events.

The operation of the groundwater recirculation "pump and treat" well (RW 19-1) was checked and noted to be operating within normal range. The well's submersible pump runs on a continuous basis (24 hours each day). Upon arrival to the site on July 28, 2021, the well pump was discharging approximately 1.4 gallons per minute (gpm) into the three on-site treatment/remediation (injection) wells (RW-1, RW-2 and RW-3) that are located within the "footprint" of the former underground storage tank (UST). The pumped groundwater is treated in-situ with a chemical oxidation (chemox) injection process.

On July 28, 2021, Stantec completed groundwater remediation event that included the injection of chemical oxidation (chemox) solution into the three treatment/remediation wells. The injection process involved the manual injection of a mixture of two 55-pound bags of Klozur One® product and 50 gallons of tap water into each of the three remediation wells. Following the injection of the chemox solution, Stantec injected additional 250 to 300 gallons of tap water to "hydraulically push" the chemox mixture into each remediation well.

October 2021: The fourth quarter 2021 monitoring event was conducted on October 14, 2021, and included the following field activities: measuring the depth to groundwater; measuring water quality parameters; and collecting and analyzing groundwater samples from Monitoring Wells MW-1, MW-2, MW-3, MW-4, and Remediation Well RW19-1. In addition, a representative water sample was collected for analysis for appropriate drinking water parameters from the store's on-site drinking water well. The laboratory analytical sample results showed petroleum associated analytes were present at concentrations exceeding ADEC groundwater cleanup levels (GCLs) for the following monitoring wells:

- Monitoring well MW-1: Benzene
- Monitoring well MW-2: Benzene and ethylbenzene.
- Monitoring well MW-3: Benzene, ethylbenzene, xylenes, gasoline range organics (GRO), diesel range organics (DRO), naphthalene, 1,2,4-trimethylbenzene (TMB) and 1,3,5-TMB.
- Monitoring well MW-4: Benzene.

No contaminants of concern were detected in the drinking water sample collected from the store.

The hydraulic gradient across the site was found to be approximately 0.04 feet per foot directed toward the west-northwest at 285 degrees. The calculation of groundwater hydraulic flow was performed by the "Surfer®" modeling software in conjunction with the static water levels in the four on-site monitoring wells and the pumping water level in "pump and treat" recirculation well (RW 19-1). Due to the operation of the recirculation well RW-19-1, the groundwater flow direction

was slightly altered to the west and the gradient was slightly higher compared to past monitoring events.

The well pump in RW-19-1 was discharging approximately 1.4 gallons per minute (gpm) into the three on-site treatment/remediation (injection) wells (RW-1, RW-2 and RW-3) that are located within the footprint of the former underground storage tank (UST). The well's submersible pump runs on a continuous basis (24 hours each day). The pumped groundwater is treated in-situ with the periodic dosing/injection of a chemical oxidant (chemox) product.

On October 1, 2021, Stantec completed groundwater remediation event that included the injection of chemox solution into the three treatment/remediation wells. The injection process involved the Speedway Store 5314 (former Tesoro 2 Go Mart #76) Page 2 October 2021 4Q Monitoring Event Report November 2021 manual injection of a mixture of two 55-pound bags of Klozur One® product and 50 gallons of tap water into each of the three remediation wells. Following the injection of the chemox solution, Stantec injected additional 250 to 300 gallons of tap water into each remediation well to hydraulically push the chemox mixture into the subsurface formation.

March 2022: This first quarter 2022 monitoring event report was conducted on March 17, 2022 and included the following field activities: measuring the depth to groundwater; measuring water quality parameters; and collecting and analyzing groundwater samples from Monitoring Wells MW-1, MW-2, MW-3, MW-4, and Remediation Well RW19-1.

The laboratory analytical sample results showed petroleum associated analytes were present at concentrations exceeding ADEC groundwater cleanup levels (GCLs) as listed in Alaska Administrative Code (AAC) 18AAC 75.345 Table C (9/18/2019) for the following monitoring wells:

- Monitoring Well MW-2: Benzene.
- Monitoring well MW-3: Benzene, ethylbenzene, xylenes, gasoline range organics (GRO), diesel range organics (DRO), naphthalene, 1,2,4-trimethylbenzene (TMB), and 1,3,5-TMB.
- Monitoring well MW-4: Benzene, ethylbenzene, xylenes, gasoline range organics (GRO), diesel range organics (DRO), naphthalene, 1,2,4-TMB, and 1,3,5-TMB.
- Remediation Well RW19-1: Benzene.

The hydraulic gradient across the site was found to be approximately 0.019 feet per foot directed northwest at 312 degrees. The calculation of groundwater hydraulic flow was based on the static water levels in the five on-site wells measured during the monitoring event on March 17. The groundwater gradient and flow direction are generally consistent with past monitoring events.

On March 25, 2022, Stantec completed groundwater remediation event that included the injection of chemical oxidation (chemox) solution into the three treatment/remediation wells. The injection process involved the manual injection of a mixture of two 55-pound bags of Klozur One® product and 50 gallons of tap water into each of the three remediation wells for a total of 100 gallons per well and 300 gallons of chemox solution total. Following the injection of the chemox solution,

Stantec injected an additional 100 gallons of tap water into each remediation well to hydraulically push the chemox mixture into the subsurface formation.

June 2022: This second quarter 2022 monitoring event report was conducted on June 22 and 23, 2022 and included the following field activities: measuring the depth to groundwater; measuring water quality parameters; and collecting and analyzing groundwater samples from Monitoring Wells MW-1, MW-2, MW-3, MW-4, and Remediation Well RW19-1.

The laboratory analytical sample results showed petroleum associated analytes were present at concentrations exceeding ADEC groundwater cleanup levels (GCLs) as listed in Alaska Administrative Code (AAC) 18AAC 75.345 Table C (9/18/2019) for the following monitoring wells:

- Monitoring Well MW-1: Benzene.
- Monitoring Well MW-2: Benzene.
- Monitoring well MW-3: Benzene, ethylbenzene, xylenes, gasoline range organics (GRO), diesel range organics (DRO), naphthalene, 1,2,4-trimethylbenzene (TMB), and 1,3,5-TMB.
- Monitoring well MW-4: Benzene, ethylbenzene, xylenes, GRO, naphthalene, 1,2,4-TMB, and 1,3,5-TMB.
- Remediation Well RW19-1: Benzene, ethylbenzene and 1,2,4-TMB.

The hydraulic gradient across the site was found to be approximately 0.078 feet per foot directed north-northwest at 343 degrees.

During the 2Q 2022, Stantec completed two groundwater remediation events that included the monthly injection of chemical oxidation (chemox) solution into the three treatment/remediation wells. The chemox was injected on May 16 and June 16, 2022. The chemox injection process involved the manual injection of a mixture of two 55-pound bags of Klozur One® product and 50 gallons of tap water into each of the three remediation wells (RW-1, RW-2 and RW-3) for a total of 100 gallons per well and 300 gallons of chemox solution total. Following the injection of the chemox solution, Stantec injected an additional one to two hundred gallons of tap water into each remediation well to hydraulically push the chemox mixture into the subsurface formation.

August 2022: This third quarter 2022 monitoring event report was conducted on August 19, 2022 and included the following field activities: measuring the depth to groundwater; measuring water quality parameters; and collecting and analyzing groundwater samples from Monitoring Wells MW-1, MW-2, MW-3, MW-4, and Remediation Well RW19-1.

The laboratory analytical sample results showed petroleum associated analytes were present at concentrations exceeding ADEC GCLs for the following monitoring wells:

- Monitoring Well MW-1: Benzene.
- Monitoring Well MW-2: Benzene.
- Monitoring well MW-3: Naphthalene, as well as benzene and naphthalene in the duplicate sample.

- Monitoring well MW-4: Benzene, ethylbenzene, and naphthalene.
- Remediation Well RW19-1: Benzene.

The hydraulic gradient across the site was found to be approximately 0.020 feet per foot directed northwest at 298 degrees. The calculation of groundwater hydraulic flow was based on the static water levels in the five on-site wells measured with the groundwater recirculation pump on during the monitoring event on August 19. The groundwater flow direction is more westerly than in past monitoring events, while the gradient is generally consistent.

Flow from RW 19-1 was discharged at approximately 1 gpm on a continuous basis into injection well RW-2 located in the footprint of the former UST. Between June 23 and July 20 of this year, the pump was turned off to protect the pump during low groundwater elevation conditions due to low rainfall in the early to mid summer.

October 2022: The fourth quarter monitoring event was completed on October 5, 2022. The laboratory analytical sample results showed petroleum associated analytes were present at concentrations exceeding ADEC groundwater cleanup levels (GCLs) as listed in Alaska Administrative Code (AAC) 18AAC 75.345 Table C (9/18/2019) for the following monitoring wells:

- Monitoring Well MW-1: Benzene.
- Monitoring Well MW-2: Benzene.
- Monitoring well MW-3: Benzene, ethylbenzene, total xylenes, naphthalene, and 1,2,4-TMB. 1,3,5-TMB was also detected in the duplicate sample.
- Monitoring well MW-4: Benzene, ethylbenzene, total xylenes, naphthalene, and 1,2,4-TMB.
- Remediation Well RW19-1: Benzene.

The hydraulic gradient across the site was found to be approximately 0.14 feet per foot directed north-northwest at 307 degrees. The increased gradient observed during this monitoring event is due to well rehabilitation in RW19-1 increasing the cone of influence of the remediation system. It is anticipated that the gradient will decrease over time as groundwater flow conditions adjust to the increased pumping level.

On October 6, Stantec staff pulled the pump and cleaned it and the drop tube, and purged the well to clean iron flocculant off the screen. The submersible pump in the recirculation well has since been operating on a continuous basis (24 hours each day).

On October 6, 2022, Stantec completed groundwater remediation event that included the injection of chemox solution into the three treatment/remediation wells. The injection process involved the manual injection of a mixture of two 55-pound bags of Klozur One® product and 50 gallons of tap water into each of the three remediation wells (RW-1, RW-2 and RW-3) for a total of 100 gallons per well and 300 gallons of chemox solution total. It was noted that the chemox solution was accepted less readily in well RW-2 than the other wells. Following the injection of the chemox solution, Stantec injected an additional 100-200 gallons of tap water into each remediation well to hydraulically push the chemox mixture into the subsurface formation. Upon completion of the

chemox injection process, the flow from the on-site recirculation well (RW 19-1) was reconnected to discharge constant flow into RW-2.

March 2023: This monitoring event was completed on March 9, 2023. The laboratory analytical sample results showed petroleum associated analytes were present at concentrations exceeding ADEC groundwater cleanup levels (GCLs) as listed in Alaska Administrative Code (AAC) 18AAC 75.345 Table C (9/18/2019) for the following monitoring wells:

- Monitoring Well MW-2: Benzene and ethylbenzene.
- Monitoring well MW-3: Benzene, ethylbenzene, total xylenes, GRO, DRO, naphthalene, 1,2,4-TMB, and 1,3,5-TMB.
- Monitoring well MW-4: Benzene, ethylbenzene, total xylenes, naphthalene, 1,2,4-TMB, and 1,3,5-TMB.
- Remediation Well RW19-1: Benzene and ethylbenzene.

The hydraulic gradient across the site was found to be approximately 0.027 feet per foot directed northwest at 323 degrees. The calculation of groundwater hydraulic flow was based on the static water levels in the five on-site wells measured with the groundwater recirculation pump running. The groundwater flow direction and gradient are consistent with past monitoring events.

On March 28, 2023, Stantec completed a groundwater remediation event that included the injection of chemox solution into the three treatment/remediation wells. It was noted that the chemox solution was accepted less readily in wells RW-1 and RW-2 than in the past. Following the chemox event, water from the recirculation well was directed into RW-1.

April 2023: The laboratory analytical sample results showed petroleum associated analytes were present at concentrations exceeding ADEC groundwater cleanup levels (GCLs) as listed in Alaska Administrative Code (AAC) 18AAC 75.345 Table C (9/18/2019) for the following monitoring wells:

- Monitoring Well MW-2: Benzene.
- Monitoring well MW-3 and DUP: Benzene, ethylbenzene, total xylenes, DRO, and naphthalene.
- Monitoring well MW-4: Benzene and ethylbenzene.
- Remediation Well RW19-1: Benzene and ethylbenzene.

The hydraulic gradient across the site was found to be approximately 0.05 feet per foot directed northwest at 315 degrees. The calculation of groundwater hydraulic flow was based on the static water levels in the five on-site wells measured with the groundwater recirculation pump running. The groundwater flow direction and gradient are consistent with past monitoring events.

Monitoring well MW-4 has historically shown more contamination. However, results from this monitoring event show that petroleum contaminant concentrations have decreased in MW-4 since the Q1 sampling event.

July 2023: The laboratory analytical sample results showed petroleum associated analytes were present at concentrations exceeding ADEC groundwater cleanup levels (GCLs) as listed in Alaska Administrative Code (AAC) 18AAC 75.345 Table C (9/18/2019) for the following monitoring wells:

- Monitoring Well MW-1: Benzene.
- Monitoring Well MW-2: Benzene.
- Monitoring well MW-3 and DUP: Benzene, ethylbenzene, and 1,2,4-TMB
- Monitoring well MW-4: Benzene, ethylbenzene, 1,2,4-TMB, and naphthalene
- Remediation Well RW19-1: Benzene and ethylbenzene.

The hydraulic gradient across the site was found to be approximately 0.038 feet per foot directed west at 253 degrees. The calculation of groundwater hydraulic flow was based on the static water levels in the five on-site wells measured with the groundwater recirculation pump running. The groundwater gradient is consistent with past monitoring events, but the flow direction is more westerly due to the increased drawdown in remediation well RW19-1.

Monitoring well MW-4 has historically shown more contamination. The previous monitoring event showed a decrease in contamination. However, results from this monitoring event show that petroleum contaminant concentrations are still relatively high in MW-4 since the Q1 sampling event.

On July 14, 2023, Stantec completed a groundwater remediation event that included the injection of chemox solution into the three treatment/remediation wells. The injection process involved the manual injection of a mixture of two 55-pound bags of Klozur One® product each mixed with 50 gallons of tap water into the three remediation wells (RW-1, RW-2, and RW-3) for a total of 100 gallons each for all three remediation wells and 330 pounds of chemox solution total. Following the injection of the chemox solution, Stantec injected an additional approximately 150 gallons of tap water into the three remediation wells (RW-1, RW-2, and RW-3) to hydraulically push the chemox mixture into the subsurface formation.

October 2023: The laboratory analytical sample results showed petroleum associated analytes were present at concentrations exceeding ADEC groundwater cleanup levels (GCLs) as listed in Alaska Administrative Code (AAC) 18AAC 75.345 Table C (9/18/2019) for the following monitoring wells:

- MW-2: Benzene.
- MW-3: Ethylbenzene.
- MW-4: Benzene, ethylbenzene, & naphthalene.
- RW19-1: Benzene.

The hydraulic gradient across the site was found to be approximately 0.12 feet per foot directed northwest at 304 degrees. The calculation of groundwater hydraulic flow was based on the static water levels in the five on-site wells measured with the groundwater recirculation pump running.

The groundwater flow direction is consistent with past monitoring events, but the gradient is larger due to the increased drawdown in remediation well RW19-1.

No BTEX constituents were detected above GCLs in the drinking water well serving the site. However, DRO was detected below GCLs. DRO was last detected in this well in 2020.

March 2024: The laboratory analytical sample results showed petroleum associated analytes were present at concentrations exceeding ADEC groundwater cleanup levels (GCLs) as listed in Alaska Administrative Code (AAC) 18 AAC 75.345 Table C (9/18/2019) for the following monitoring wells:

- MW-2: Benzene, ethylbenzene.
- MW-3: Benzene, ethylbenzene, xylene, GRO, 1,2,4-TMB, 1,3,5-TMB, and naphthalene.
- MW-4: Benzene, ethylbenzene.
- RW19-1: Benzene, ethylbenzene.

Due to the warm temperature of the sample cooler when it arrived at the laboratory, the sample results could be skewed. These results should be examined with this in mind.

The hydraulic gradient across the site was found to be approximately 0.090 feet per foot directed northwest at 315 degrees. The calculation of groundwater hydraulic flow was based on the static water levels in the five on-site wells measured with the groundwater recirculation pump running. The groundwater flow direction is consistent with past monitoring events.

June 2024: The laboratory analytical sample results showed petroleum associated analytes were present at concentrations exceeding ADEC groundwater cleanup levels (GCLs) as listed in Alaska Administrative Code (AAC) 18 AAC 75.345 Table C (9/18/2019) for the following monitoring wells:

- MW-1: Benzene.
- MW-2: Benzene.
- MW-3: Benzene, ethylbenzene, xylene, 1,2,4-TMB, and naphthalene.
- MW-4: Benzene, ethylbenzene, 1,2,4-TMB, and naphthalene.
- RW19-1: Benzene.

Overall, ethylbenzene concentrations across the site have come down. Benzene was detected above GCLs in MW-1 for the first time since July of last year.

The hydraulic gradient across the site was found to be approximately 0.083 feet per foot directed northwest at 291 degrees. The calculation of groundwater hydraulic flow was based on the static water levels in the five on-site wells measured with the groundwater recirculation pump running. The groundwater flow direction is consistent with past monitoring events.

APPENDIX B

Field Methods & Procedures

APPENDIX B – FIELD METHODS AND PROCEDURES

Speedway Store 5314 (7-Eleven Store 46745 - Former TNS 76) located at 3600 Palmer-Wasilla Highway, Fairbanks, Alaska
Lot 7, Block 1, Cameron Acres Subdivision, Matanuska-Susitna Borough
ADEC File #2265.26.037

The following table presents the proposed tasks for the Alaska Department of Environmental Conservation (ADEC)-approved 2024 Corrective Action Plan (CAP). The scope of these tasks is based on the results and findings of the monitoring and remediation completed to date at the site.

2024 Work Plan Schedule Speedway Store 5314

Work Plan Task		1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Task 1	Monitoring Wells: MW-1, MW-2, MW-3, and MW-4 including Remediation/Recirculation Well RW19-1	V, G, D, P, S & I	V, G, D, P, S & I	V, G, D, P, S & I	V, G, D, P, S & I
	On-site Domestic Drinking Water Well				D & E
Task 2	O&M Recirculation Groundwater Treatment System	✓	✓	✓	✓
Task 3	Chemical Oxidation Treatment	✓	✓	✓	✓

Key:
AK – Alaska Test Method
D – Diesel range organics by AK102.
EPA – U.S. Environmental Protection Agency
E – Drinking Water parameters by EPA Test Method 524.2.
G – Gasoline range organics by AK101.
I – Indicators, parameters tested include dissolved oxygen, specific conductance, oxygen-reduction potential, pH, and temperature.
O&M – Operation and Maintenance
V – Volatile organic compounds by EPA Test Method 8260C.
S – Sodium analyzed by Metals (ICP) Method 6010C.
P - Polynuclear aromatic hydrocarbons (PAHs), i.e., semi-volatile organic compounds, by EPA Test Method 8270D Selective Ion Monitoring (SIM).

The CAP for the year 2024 will be implemented by Stantec on behalf of Speedway. Groundwater monitoring will be conducted to track migration and trends of contaminants that are present at the site. All sampling activities will be completed in accordance with ADEC's *Underground Storage Tanks Procedures Manual– Standard Sampling Procedures* (March 22, 2017). The methods that will be used for conducting a monitoring event, unless otherwise noted in the monitoring report, will include:

- The static water levels in the monitoring wells will be measured with respect to the top of each well casing. The elevation of the static water level will be based on an arbitrary datum established on-site during a vertical control survey that will be completed by Stantec on an annual basis. The survey will be performed during the summer after the seasonal frost layer thaws.
- The monitoring wells will be purged of a minimum of three well bore volumes prior to collecting the water samples. A new, disposable, Teflon® bailer will be used to sample each well. The first bail of water removed from each well will be examined for petroleum odor, sheen, and any other unique physical features.
- Water samples will be collected in laboratory-supplied sample containers. The samples will be delivered to an ADEC-approved laboratory in accordance with standard chain-of-custody procedures.
- Additional water samples will be collected from the monitoring wells after the well has been purged, as described above, and tested in the field for chemical and physical intrinsic parameters listed in the 2024 Schedule shown above.

APPENDIX C

Field Measurements & Notes

TNS 76 May Chemox 05/06/24

Personnel: Remi, Sydney

Weather: Sunny windy

Objective: inject chemox into 3 wells

0945 Arrive, check in

1000 Bag 1 into IW-1

1017 Bag 2 into IW-1

1036 Bag 3 into IW-2

1053 Bag 4 into IW-2

1108 Bag 5 into IW-3

1122 Bag 6 into IW-3

1133 Pack up, make sure system is running properly, sign out

65 psi

TNS 76 Q2 GWM 6/17/24

Personnel: Anneka, Bob, Remi, Sydney

Weather: Hot and sunny

Objective: Sample 5 wells, vertical control survey, ORM

1025 Arrive on site.

MW-1 19.24', 24.64' purged 2.5 gal

8.1°C, 1877 µS/cm, 6.01, 208.9 mV, 2.50 mg/L DO

1043 sampled MW-1

MW-2: 27.21', 18.07' 4.5 gal purge.

Temp: 9.0°C SPC: 1962 pH: 6.31

DO: 2.85 ORP: 251.6

1112 Sampled MW-2

MW-3: 25.47', 17.27' purge 4 gal

temp: 7.9 SPC: 1352 pH: 6.76

DO: 1.84 ORP: 261.9

1152 Sampled MW-2 + DUP

MW-4: 27.71', 17.98' purged 5 gal

9.5°C, 1375 µS/cm, 6.83, 172.4 mV, 3.13 mg/L DO

1228 Sampled MW-4

TNS 76 Q2 GWM continued 6/17/24

RW19-1 23.95' to water,
- flowing ~1.5 gpm, 61 psi
12.3°C, 837 mS/m/c, 6.71, 185.9 mV, 3.80 mg/L DO
1236 Sampled RW19-1

1300 Out to Home Depot grab fittings for RW19-1
- 3/4" gate valve
- Hose flow meter
- 25' PEX (1")
- Sharkbite to NPT (male 1")
- " " (female 1")

1342 back. No flow meter. Replacing drop tube w/ PEX

RW19-1 SWL (pump off) = 20.91' BTOC
- N side
TD = 31' BTOC

1445 Leaving site. Pump ~3 gpm @ 70 psi.

TNS 76 Q2 June Chemox 6/18/24

Personnel: Remi, Sydney, Anneka
Weather: Sunny
Objective: Chemox

0925 Arrive, Check in
0947 Bag 1 IW-1
1010 Bag 2 IW-1
1031 Bag 3 into IW-2
1052 Bag 4 into IW-2
1110 Bag 5 into IW-3
1123 Bag 6 into IW-3
1130 Flush IW-1

APPENDIX D

Historical Monitoring Data

Speedway 5314
3600 E. Palmer Wasilla Highway

	Well Screen Interval	Ground Water Elevation	124-TMB	135-TMB	Benzene	DRO	Ethylbenzene	GRO	Naphthalene	Sodium	Toluene	Total Xylenes
Unit	**ft**	**ft**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**
GW Human Health Cleanup			0.056	0.06	0.0046	1.5	0.015	2.2	0.0017		1.1	0.19
MW-1												
11/06/2014	--	--	—	—	**0.0270**	0.36	U (0.0005)	0.0670	—	—	U (0.0005)	U (0.0015)
02/25/2015	--	--	—	—	0.001300	U (0.41)	U (0.0005)	U (0.05)	—	—	U (0.0005)	U (0.0015)
06/10/2015	--	--	—	—	U (0.002)	0.50	U (0.003)	U (0.060)	—	—	U (0.002)	U (0.002)
09/02/2015	--	--	—	—	0.001100	U (0.40)	U (0.001)	U (0.1)	—	—	U (0.001)	U (0.003)
11/12/2015	--	--	—	—	**0.0290**	U (0.21)	U (0.003)	0.14	—	—	U (0.002)	U (0.002)
01/20/2016	--	--	—	—	**0.0710**	0.22	U (0.003)	0.18	—	—	U (0.002)	U (0.002)
05/09/2016	--	--	—	—	**0.0260**	U (0.45)	U (0.001)	0.10	—	—	U (0.001)	U (0.003)
10/13/2016	--	--	—	—	**0.0530**	0.36	U (0.001)	0.84	—	—	U (0.001)	U (0.003)
12/09/2016	--	--	—	—	**0.0270**	0.67	U (0.002)	0.0670	—	—	U (0.002)	U (0.003)
02/08/2017	--	--	—	—	**0.0100**	0.27	U (0.003)	0.0570	—	—	U (0.002)	U (0.002)
04/24/2017	--	--	—	—	**0.009600**	U (0.0003)	U (0.003)	U (0.001)	—	—	U (0.002)	U (0.003)
09/01/2017	--	--	—	—	**0.006800**	0.25	U (0.003)	U (1.0)	—	—	U (0.002)	U (0.002)
02/15/2018	--	--	—	—	**0.0120**	U (0.13)	U (0.003)	U (1.0)	—	—	U (0.002)	U (0.003)
06/29/2018	--	--	—	—	**0.0260**	0.30	U (0.003)	U (0.25)	—	—	U (0.002)	U (0.003)
09/11/2018	--	--	—	—	**0.0100**	U (0.27)	U (0.001)	U (0.15)	—	—	U (0.001)	U (0.002)
10/26/2018	--	--	—	—	**0.0150**	0.31	U (0.003)	U (0.25)	—	—	U (0.002)	U (0.003)
02/25/2019	--	--	—	—	0.003700	0.19	U (0.003)	U (0.25)	—	—	U (0.002)	U (0.003)
04/25/2019	--	--	—	—	U (0.003)	U (0.27)	U (0.003)	U (0.25)	—	—	U (0.002)	U (0.003)
07/25/2019	--	--	—	—	**0.007100**	0.27	U (0.003)	U (0.25)	—	—	U (0.002)	U (0.003)
10/18/2019	--	--	—	—	U (0.003)	0.16	U (0.003)	U (0.25)	—	—	U (0.002)	U (0.003)
08/11/2020	--	73.27	—	—	0.0026200	U (0.808)	U (0.001)	U (0.1)	—	35.8	U (0.001)	U (0.003)
10/12/2020	--	72.88	U (0.001)	U (0.001)	**0.0054800**	0.369	U (0.001)	0.0110	U (0.000250)	43.6	U (0.001)	U (0.002)
03/23/2021	--	73.38	—	—	0.000526000	U (0.840)	U (0.001)	0.0130	—	33.2	U (0.001)	U (0.001)
05/19/2021	--	73.17	U(0.00100)	U(0.00100)	**0.0048100**	U (0.840)	U (0.001)	0.03020	U(0.00500)	35.0	U (0.001)	U (0.002)
07/14/2021	--	72.93	U (0.00100)	U (0.00100)	0.0017700	0.317	U (0.001)	U (0.1)	U (0.00500)	32.2	U (0.001)	U (0.003)
10/14/2021	--	75.24	U(0.00100)	U(0.00100)	**0.01670**	0.427	U (0.001)	0.06690	U(0.000250)	59.7	U (0.001)	U (0.002)
03/17/2022	--	75.93	U(0.00100)	U(0.00100)	0.000111000	0.263	U(0.00100)	U(0.100)	U(0.000250)	133	U(0.00100)	U(0.00300)
06/22/2022	--	73.67	U(0.00100)	U(0.00100)	**0.0097500**	U(0.800)	U(0.00100)	0.03750	U(0.000250)	49.2	U(0.00100)	U(0.00300)
08/19/2022	--	75.72	U(0.00100)	0.000106000	**0.0060600**	U(0.800)	U(0.00100)	0.05090	U(0.000250)	85.3	U(0.00100)	0.000456000
10/05/2022	--	--	U(0.00100)	U(0.00100)	**0.04770**	U(0.800)	U(0.00100)	0.08130	U(0.000250)	54.8	U(0.00100)	U(0.00300)
03/09/2023	--	75.05	U(0.00100)	U(0.00100)	0.0022400	0.281 J,B	0.000167 J	0.0303 J	U(0.000250)	55.4	U(0.00100)	U(0.00300)
04/26/2023	--	76.74	—	—	**0.0680**	0.334	0.000237000	0.178	U(0.00025)	70.6	U(0.00100)	0.0031300
07/13/2023	--	79.30	U(0.00100)	U(0.00100)	**0.01030**	0.341	U(0.00100)	0.06110	U(0.000250)	90.3	U(0.00100)	U(0.00100)
11/03/2023	--	76.62	U(0.00100)	U(0.00100)	0.0043400	0.508	U(0.00100)	0.04730	U(0.000250)	154	U(0.00100)	U(0.00300)
03/21/2024	--	76.20	U(0.00100)	U(0.00100)	0.0019400	U(0.800)	U(0.00100)	0.125	U(0.000250)	107	U(0.00100)	U(0.00100)
06/17/2024	--	75.49	U(0.00100)	U(0.00100)	**0.0120**	U(0.800)	U(0.00100)	U(0.100)	U(0.000250)	76.7	U(0.00100)	U(0.00300)
MW-2												
11/06/2014	--	--	—	—	**0.0670**	0.19	**0.0160**	0.68	—	—	0.0260	0.13
02/25/2015	--	--	—	—	**0.0220**	U (0.41)	0.003400	0.13	—	—	0.004500	0.0200

Speedway 5314
3600 E. Palmer Wasilla Highway

Unit	Well Screen Interval ft	Ground Water Elevation ft	124-TMB ppm	135-TMB ppm	Benzene ppm	DRO ppm	Ethylbenzene ppm	GRO ppm	Naphthalene ppm	Sodium ppm	Toluene ppm	Total Xylenes ppm
GW Human Health Cleanup			0.056	0.06	0.0046	1.5	0.015	2.2	0.0017		1.1	0.19
06/10/2015	--	--	—	—	U (0.002)	1.10	U (0.003)	**6.10**	—	—	U (0.002)	**1.82**
09/02/2015	--	--	—	—	**0.0890**	**1.80**	**0.0650**	U (10)	—	—	0.0560	**1.40**
11/12/2015	--	--	—	—	**0.0910**	**1.80**	**0.13**	**22.0**	—	—	0.11	0.179
01/20/2016	--	--	—	—	**0.52**	**1.60**	**0.83**	—	—	—	**1.50**	**5.10**
05/09/2016	--	--	—	—	**0.41**	0.95	**0.35**	U (10)	—	—	0.37	**2.80**
10/13/2016	--	--	—	—	**0.42**	0.98	**0.48**	**9.20**	—	—	0.63	**2.62**
12/09/2016	--	--	—	—	**0.57**	**1.70**	**0.50**	**11.0**	—	—	0.17	**1.01**
02/08/2017	--	--	—	—	**0.0530**	0.20	**0.0210**	0.58	—	—	U (0.002)	0.0960
04/24/2017	--	--	—	—	**0.0360**	0.94	**0.0350**	**2.60**	—	—	0.0120	**0.66**
09/01/2017	--	--	—	—	**0.0830**	1.30	**0.45**	**9.70**	—	—	0.0260	**2.33**
02/15/2018	--	--	—	—	**0.0670**	0.98	**0.14**	U (10)	—	—	0.0200	**0.97**
06/29/2018	--	--	—	—	**0.17**	1.20	**0.59**	**6.00**	—	—	0.25	**3.30**
09/11/2018	--	--	—	—	**0.0940**	0.74	**0.18**	**4.80**	—	—	0.13	**1.08**
10/26/2018	--	--	—	—	**0.17**	1.00	**0.48**	**11.0**	—	—	0.28	**3.01**
02/25/2019	--	--	—	—	**0.0920**	1.20	**0.18**	**5.40**	—	—	0.22	**1.41**
04/25/2019	--	--	—	—	**0.0510**	0.93	U (0.003)	**3.60**	—	—	0.13	**1.28**
07/25/2019	--	--	—	—	**0.0790**	0.89	**0.20**	**5.40**	—	—	0.13	**1.47**
10/18/2019	--	--	—	—	**0.0250**	0.24	**0.0220**	0.74	—	—	0.006500	0.101
08/11/2020	--	74.49	—	—	**0.05990**	0.553	**0.07590**	0.921	—	33.2	0.01070	**0.465**
10/12/2020	--	74.58	**0.109**	0.03290	**0.16**	0.409	**0.04550**	0.755	0.000405000	55.2	U (0.001)	0.168
03/23/2021	--	73.53	—	—	**0.0054200**	U (0.840)	U (0.001)	0.02270	—	48.1	U (0.001)	U (0.003)
05/19/2021	--	73.57	0.0027800	0.001200	0.0033800	U (0.840)	0.000461000	0.03740	U(0.00500)	25.4	U (0.001)	0.0050100
07/14/2021	--	73.97	0.0048700	0.0010700	0.0039900	0.272	0.0019300	0.05040	U (0.00500)	32.8	U (0.001)	0.0046500
10/14/2021	--	76.78	**0.07060**	0.01850	**0.02920**	0.589	**0.01760**	0.628	0.000277000	50.3	0.01090	0.1308
03/17/2022	--	76.98	0.01130	0.0033500	**0.01890**	0.288	0.0072300	0.249	U(0.000250)	180	0.000395000	0.023130
06/22/2022	--	74.73	U(0.00100)	U(0.00100)	**0.02030**	0.38	0.0058300	0.327	U(0.000250)	87.7	0.0056700	0.0045400
08/19/2022	--	77.77	U(0.00100)	U(0.00100)	**0.0230**	0.198	0.0064100	0.137	U(0.000250)	86.3	0.0017100	0.0077500
10/05/2022	--	--	0.0090700	0.0030400	**0.0078100**	U(0.800)	0.0044600	0.117	U(0.000250)	37.3	0.000291000	0.01050
03/09/2023	--	76.66	0.02990	0.0087900	**0.05930**	0.451 J,B	**0.01770**	0.375	0.0011400	36.7	0.000918 J	0.038850
04/26/2023	--	77.75	—	—	**0.01230**	0.318	0.0027300	0.128	0.000109000	51.4	0.000342000	0.01020
07/13/2023	--	77.36	0.0220	0.0066100	**0.01290**	0.349	0.005300	0.343	0.000347000	61.2	U(0.00100)	0.0020100
11/03/2023	--	77.65	0.0033700	0.00098000	0.004400	0.695	0.0029900	0.08240	U(0.000250)	37.1	U(0.00100)	0.010580
03/21/2024	--	77.23	0.01080	0.0033400	**0.04420**	U(0.800)	**0.01820**	0.34	0.000217000	111	U(0.00100)	0.00100
06/17/2024	--	77.00	U(0.00100)	U(0.00100)	**0.05650**	0.278	0.0089400	0.08630	0.0003000	167	0.0035700	0.000943000
MW-3												
11/06/2014	--	--	—	—	**5.00**	**3.50**	**37.0**	**240**	—	—	**7.40**	**39.0**
02/25/2015	--	--	—	—	**2.90**	**8.60**	**6.70**	**180**	—	—	**34.0**	**37.0**
06/10/2015	--	--	—	—	**5.20**	**9.50**	**8.20**	**210**	—	—	**38.0**	**48.0**
09/02/2015	--	--	—	—	**3.70**	**5.10**	**4.40**	U (200)	—	—	**24.0**	**28.0**
11/12/2015	--	--	—	—	**1.30**	**3.60**	**0.21**	**87.0**	—	—	**2.10**	**1.69**

Speedway 5314
3600 E. Palmer Wasilla Highway

Unit	Well Screen Interval ft	Ground Water Elevation ft	124-TMB ppm	135-TMB ppm	Benzene ppm	DRO ppm	Ethylbenzene ppm	GRO ppm	Naphthalene ppm	Sodium ppm	Toluene ppm	Total Xylenes ppm
GW Human Health Cleanup			0.056	0.06	0.0046	1.5	0.015	2.2	0.0017		1.1	0.19
01/20/2016	--	--	—	—	**3.80**	**4.10**	**4.20**	**120**	—	—	**13.0**	**25.3**
05/09/2016	--	--	—	—	**2.10**	1.50	**2.20**	**69.0**	—	—	**21.0**	**33.0**
10/13/2016	--	--	—	—	**1.20**	**2.00**	**2.90**	**46.0**	—	—	**4.20**	**14.6**
12/09/2016	--	--	—	—	**0.17**	**3.30**	—	**100**	—	—	—	**0.54**
02/08/2017	--	--	—	—	**39.0**	**3.90**	**53.0**	**98.0**	—	—	**99.0**	**103**
04/24/2017	--	--	—	—	**2.50**	**6.70**	**5.20**	U (200)	—	—	**14.0**	**28.9**
09/01/2017	--	--	—	—	**0.61**	**1.90**	**3.70**	**75.0**	—	—	**9.30**	**21.4**
02/15/2018	--	--	—	—	**0.30**	1.30	**2.90**	U (100)	—	—	**3.80**	**15.6**
06/29/2018	--	--	—	—	**0.28**	1.10	**1.70**	**23.0**	—	—	1.10	**8.20**
09/11/2018	--	--	—	—	**0.29**	0.91	**1.00**	**14.0**	—	—	0.53	**5.60**
10/26/2018	--	--	—	—	**0.32**	0.93	**0.89**	**15.0**	—	—	0.36	**4.30**
02/25/2019	--	--	—	—	**0.95**	**4.60**	**2.30**	U (1.3)	—	—	0.69	**11.4**
04/25/2019	--	--	—	—	**0.14**	0.64	U (1.5)	**11.0**	—	—	0.13	U (1.5)
07/25/2019	--	--	—	—	**0.68**	**1.90**	**2.40**	**41.0**	—	—	**1.20**	**11.6**
10/18/2019	--	--	—	—	**0.21**	1.20	**1.70**	**21.0**	—	—	0.66	**9.70**
08/11/2020	--	75.60	—	—	**0.737**	**4.89**	**2.99**	**32.8**	—	52.4	1.05	**17.0**
10/12/2020	--	76.20	**2.91**	**0.764**	**0.32**	**5.22**	**2.46**	**29.4**	**0.04890**	66.1	0.868	**14.89**
03/23/2021	--	75.12	—	—	**0.45**	U (0.840)	**3.73**	**54.3**	—	U(3.00)	**1.21**	**21.6**
05/19/2021	--	76.08	**2.24**	**0.631**	**0.473**	**5.08**	**2.04**	**31.1**	U(1.00)	47.0	0.186	**11.1**
07/14/2021	--	75.93	**2.16**	**0.594**	**0.581**	**3.87**	**2.65**	**30.3**	U (1.00)	49.8	0.156	**12.87**
10/14/2021	--	77.13	**1.31**	**0.33**	**0.0840**	**2.11**	**0.741**	**15.8**	**0.01090**	41.2	0.13	**4.147**
03/17/2022	--	76.99	**1.49**	**0.46**	**0.06420**	**3.44**	**0.07640**	**13.9**	**0.02380**	110	0.01040	**4.351**
06/22/2022	--	77.52	**1.90**	**0.62**	**0.09230**	**3.24**	**0.739**	**10.2**	**0.02620**	74.8	0.03360	**3.776**
08/19/2022	--	77.96	0.0280	0.0070700	**0.01190**	1.49	0.01060	0.559	**0.0031500**	68.9	U(0.00500)	**0.2237**
10/05/2022	--	--	**0.343**	**0.09250**	**0.0200**	0.92	**0.168**	**2.83**	**0.004200**	56.0	0.000379000	**0.618**
03/09/2023	--	76.79	**1.35**	**0.339**	**0.153**	2.10 B	**0.959**	**10.3**	**0.02740**	55.6	0.03320	**4.512**
04/26/2023	--	77.80	—	—	**0.02410**	**2.16**	**0.09520**	1.24	**0.0028400**	53.3	U(0.0100)	**0.375**
07/13/2023	--	77.39	**0.06380**	0.0190	**0.009900**	1.14	**0.0670**	1.10	0.000881000	60.0	0.0015900	0.05580
11/03/2023	--	77.63	0.0270	0.0082100	0.0039800	1.12	**0.02920**	0.389	0.000631000	45.5	0.000497000	0.1068
03/21/2024	--	77.19	**0.911**	**0.271**	**0.102**	0.922	**0.511**	**7.64**	**0.01360**	63.2	0.01280	**0.254**
06/17/2024	--	77.25	**0.07640**	0.01270	**0.07120**	1.15	**0.218**	1.53	**0.0077500**	101	U(0.0100)	**0.305**
MW-4												
11/06/2014	--	--	—	—	**0.94**	0.45	**0.30**	**13.0**	—	—	**1.90**	**1.50**
02/25/2015	--	--	—	—	**3.70**	1.00	**0.56**	**29.0**	—	—	**6.60**	**2.70**
06/10/2015	--	--	—	—	**1.10**	0.99	**0.54**	**14.0**	—	—	**2.30**	**2.70**
09/02/2015	--	--	—	—	**0.0260**	U (0.40)	0.00700	0.30	—	—	U (0.001)	0.0300
11/12/2015	--	--	—	—	—	U (0.21)	—	U (0.050)	—	—	—	—
01/20/2016	--	--	—	—	0.004300	0.15	U (0.003)	—	—	—	U (0.002)	U (0.002)
05/09/2016	--	--	—	—	**0.009200**	U (0.42)	U (0.001)	U (0.1)	—	—	U (0.001)	U (0.003)
10/13/2016	--	--	—	—	U (0.00020)	0.18	U (0.001)	U (0.1)	—	—	U (0.001)	U (0.003)

Speedway 5314
3600 E. Palmer Wasilla Highway

	Well Screen Interval	Ground Water Elevation	124-TMB	135-TMB	Benzene	DRO	Ethylbenzene	GRO	Naphthalene	Sodium	Toluene	Total Xylenes
Unit	**ft**	**ft**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**
GW Human Health Cleanup			0.056	0.06	0.0046	1.5	0.015	2.2	0.0017		1.1	0.19
12/09/2016	--	--	—	—	—	0.18	—	U (0.05)	—	—	—	—
02/08/2017	--	--	—	—	**0.0170**	0.18	U (0.003)	U (0.05)	—	—	U (0.002)	U (0.002)
04/24/2017	--	--	—	—	**0.0120**	U (0.0003)	0.004900	U (0.001)	—	—	U (0.002)	U (0.003)
09/01/2017	--	--	—	—	**0.55**	0.48	**0.38**	**5.10**	—	—	U (0.050)	**0.74**
02/15/2018	--	--	—	—	**0.19**	0.29	**0.26**	**3.30**	—	—	U (0.10)	**0.438**
06/29/2018	--	--	—	—	**0.0900**	0.19	**0.0220**	0.52	—	—	U (0.002)	0.0270
09/11/2018	--	--	—	—	**0.008600**	U (0.28)	0.005200	U (0.15)	—	—	U (0.001)	0.006200
10/26/2018	--	--	—	—	**0.0130**	0.15	0.004500	U (0.25)	—	—	U (0.002)	0.008900
02/25/2019	--	--	—	—	**0.0260**	0.20	0.003400	U (0.25)	—	—	U (0.002)	0.008900
04/25/2019	--	--	—	—	U (0.003)	U (0.27)	U (0.003)	U (0.25)	—	—	U (0.002)	U (0.003)
07/25/2019	--	--	—	—	**0.0510**	0.16	U (0.003)	U (0.25)	—	—	U (0.002)	0.007800
10/18/2019	--	--	—	—	**0.0200**	U (0.12)	0.005900	U (0.25)	—	—	0.0150	0.02770
08/11/2020	--	75.74	—	—	**0.0540**	U (0.800)	0.000455000	0.0840	—	58.4	U (0.001)	0.0093300
10/12/2020	--	76.05	0.01120	0.0017400	**0.129**	U (0.800)	0.0069900	0.313	0.000465000	36.2	U (0.001)	0.02640
03/23/2021	--	73.83	—	—	**0.0790**	0.266	**0.01780**	0.274	—	47.1	U (0.001)	0.03450
05/19/2021	--	75.89	0.01710	0.0042300	**0.03070**	U (0.840)	0.0032800	0.153	U(0.00500)	67.5	U (0.001)	0.01230
07/14/2021	--	75.81	0.0037400	0.000529000	**0.01760**	0.371	0.000375000	0.06820	U (0.00500)	76.7	U (0.001)	0.0038300
10/14/2021	--	75.05	0.0056100	0.000233000	**0.0056400**	0.521	0.0031800	0.105	0.000209000	63.4	U (0.001)	0.0078800
03/17/2022	--	76.92	**0.273**	**0.106**	**0.214**	0.683	**0.186**	**2.80**	**0.0033400**	41.6	0.168	**0.857**
06/22/2022	--	76.20	**0.401**	**0.128**	**0.409**	0.816	**0.373**	**4.88**	**0.0094100**	91.0	U(0.0500)	**1.49**
08/19/2022	--	77.72	U(0.00500)	U(0.00500)	**0.09210**	1.29	**0.02370**	0.638	**0.0065700**	104	U(0.00500)	0.0025300
10/05/2022	--	--	**0.09080**	0.04280	**0.06440**	0.565	**0.131**	0.885	**0.0074600**	66.2	U(0.00500)	**0.198**
03/09/2023	--	76.78	**0.313**	**0.0820**	**0.159**	0.941 B	**0.157**	2.00	**0.0045300**	45.9	0.0028300	**0.4931**
04/26/2023	--	77.76	—	—	**0.03680**	0.311	**0.04870**	0.625	0.0011600	61.5	U(0.00100)	0.118
07/13/2023	--	77.13	**0.06790**	0.0150	**0.08590**	1.08	**0.08970**	1.17	**0.0081800**	205	0.01130	0.0062900
11/03/2023	--	77.41	0.0130	U(0.00100)	**0.0840**	1.08	**0.02990**	0.487	**0.0045900**	235	0.0051800	0.02730
03/21/2024	--	77.05	0.0013200	0.003200	**0.05970**	0.252	**0.01680**	0.498	0.000513000	95.8	U(0.00100)	0.001200
06/17/2024	--	77.03	**0.07150**	0.0044400	**0.06220**	0.388	**0.05190**	0.679	**0.0022700**	108	0.0018900	0.058560
RW19-1												
08/11/2020	--	73.12	—	—	0.0012600	U (0.848)	U (0.001)	U (0.100)	—	28.8	U (0.001)	0.000489000
10/12/2020	--	70.87	U (0.001)	U (0.001)	0.000609000	U (0.800)	U (0.001)	U (0.100)	U (0.000250)	28.6	U (0.001)	U (0.002)
03/23/2021	--	--	—	—	U (0.001)	U (0.840)	U (0.001)	0.01190	—	25.9	U (0.001)	U (0.003)
05/19/2021	--	--	U(0.00100)	U(0.00100)	U (0.001)	U (0.800)	U (0.001)	0.01580	U(0.00500)	28.8	U (0.001)	U (0.002)
07/14/2021	--	70.48	U (0.00100)	U (0.00100)	U (0.001)	0.297	U (0.001)	U (0.100)	U (0.00500)	28.8	U (0.001)	U (0.003)
10/14/2021	--	72.83	U(0.00100)	U(0.00100)	0.000506000	0.387	U (0.001)	0.04260	U(0.000250)	32.3	U (0.001)	U (0.002)
03/17/2022	--	75.68	0.0070200	0.0038800	**0.0048800**	U(0.888)	0.0031100	0.147	0.000108000	48.2	U(0.00100)	0.028120
06/23/2022	--	73.55	0.01690	0.0054700	**0.02570**	U(0.800)	**0.0190**	0.223	0.000452000	36.9	0.0016600	0.08220
08/19/2022	--	69.73	0.0017300	0.000659000	**0.01070**	0.443	0.0083800	0.21	0.000186000	36.9	0.0010400	0.022440
10/05/2022	--	--	0.0024500	0.000995000	**0.0073700**	U(0.800)	0.0067800	0.06320	0.000239000	33.6	U(0.00100)	0.0095300
03/09/2023	--	75.44	0.02950	0.0080100	**0.02620**	0.274 J,B	**0.03530**	0.24	0.000209 J	34.9	U(0.00100)	0.09580

Speedway 5314
3600 E. Palmer Wasilla Highway

		Well Screen Interval	Ground Water Elevation	124-TMB	135-TMB	Benzene	DRO	Ethylbenzene	GRO	Naphthalene	Sodium	Toluene	Total Xylenes
Unit	**ft**	**ft**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**
GW Human Health Cleanup			0.056	0.06	0.0046	1.5	0.015	2.2	0.0017		1.1	0.19
04/26/2023	--	75.77	—	—	**0.02080**	0.355	**0.02520**	0.248	0.000483000	38.6	U(0.00100)	0.05210
07/13/2023	--	75.51	0.01210	0.0044400	**0.02210**	0.347	**0.01830**	0.253	U(0.000500)	56.0	0.000291000	0.000733000
11/03/2023	--	69.52	0.000608000	0.00056000	**0.0069700**	1.06	0.0060100	0.08810	U(0.000250)	29.3	U(0.00100)	0.0079100
03/21/2024	--	72.38	0.03020	0.0047900	**0.117**	0.224	**0.09540**	0.853	0.000264000	71.4	U(0.00100)	0.0021100
06/17/2024	--	71.78	0.004900	0.000741000	**0.01150**	U(0.800)	0.01340	0.08980	U(0.000250)	34.8	U(0.00500)	0.02630

APPENDIX E

Laboratory Analytical Report and ADEC Laboratory Data Review Checklist

ANALYTICAL REPORT

July 02, 2024

Stantec - Anchorage, AK

Sample Delivery Group:	L1748413
Samples Received:	06/19/2024
Project Number:	203723698
Description:	Store 5314
Site:	SPEEDWAY 5314
Report To:	Ms. Sydney Souza 725 E Fireweed Lane Suite 200 Anchorage, AK 99503

Entire Report Reviewed By:

Shane Gambill
Project Manager

Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 mydata.pacelabs.com

TABLE OF CONTENTS

MW-1 L1748413-01 GW

Collected by: Sydney Souza | Collected date/time: 06/17/24 10:43 | Received date/time: 06/19/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG2311713	1	06/26/24 13:15	06/26/24 17:57	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG2310968	1	06/24/24 19:53	06/24/24 19:53	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG2310887	1	06/24/24 17:47	06/24/24 17:47	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG2313035	1	06/29/24 15:22	07/01/24 01:41	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG2310469	1	06/24/24 08:53	06/24/24 19:15	JCH	Mt. Juliet, TN

MW-2 L1748413-02 GW

Collected by: Sydney Souza | Collected date/time: 06/17/24 11:12 | Received date/time: 06/19/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG2311713	1	06/26/24 13:15	06/26/24 17:59	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG2310968	1	06/24/24 20:20	06/24/24 20:20	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG2310887	1	06/24/24 18:12	06/24/24 18:12	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG2313035	1	06/29/24 15:22	07/01/24 02:01	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG2310469	1	06/24/24 08:53	06/24/24 19:32	JRM	Mt. Juliet, TN

MW-3 L1748413-03 GW

Collected by: Sydney Souza | Collected date/time: 06/17/24 11:52 | Received date/time: 06/19/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG2311713	1	06/26/24 13:15	06/26/24 18:01	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG2310968	1	06/24/24 20:47	06/24/24 20:47	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG2310887	10	06/24/24 19:26	06/24/24 19:26	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG2313035	1	06/29/24 15:22	07/01/24 02:22	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG2310469	1	06/24/24 08:53	06/24/24 19:49	JCH	Mt. Juliet, TN

MW-4 L1748413-04 GW

Collected by: Sydney Souza | Collected date/time: 06/17/24 12:28 | Received date/time: 06/19/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG2311713	1	06/26/24 13:15	06/26/24 18:03	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG2310968	1	06/24/24 21:14	06/24/24 21:14	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG2310887	1	06/24/24 18:37	06/24/24 18:37	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG2313035	1	06/29/24 15:22	07/01/24 02:42	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG2310469	1	06/24/24 08:53	06/24/24 20:06	JCH	Mt. Juliet, TN

RW19-1 L1748413-05 GW

Collected by: Sydney Souza | Collected date/time: 06/17/24 12:36 | Received date/time: 06/19/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG2311713	1	06/26/24 13:15	06/26/24 18:05	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG2310968	1	06/24/24 21:41	06/24/24 21:41	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG2310887	5	06/24/24 19:51	06/24/24 19:51	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG2313035	1	06/29/24 15:22	07/01/24 03:02	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG2310469	1	06/24/24 08:53	06/24/24 20:24	JCH	Mt. Juliet, TN

DUP L1748413-06 GW

Collected by: Sydney Souza
Collected date/time: 06/17/24 11:57
Received date/time: 06/19/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG2311713	1	06/26/24 13:15	06/26/24 18:07	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG2310968	1	06/24/24 22:08	06/24/24 22:08	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG2311864	5	06/26/24 04:13	06/26/24 04:13	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG2313035	1	06/29/24 15:22	07/01/24 10:09	MAA	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG2310469	1	06/24/24 08:53	06/24/24 20:41	JCH	Mt. Juliet, TN

TRIP BLANK L1748413-07 GW

Collected by: Sydney Souza
Collected date/time: 06/17/24 09:00
Received date/time: 06/19/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260C	WG2310887	1	06/24/24 12:46	06/24/24 12:46	ACG	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.

Shane Gambill
Project Manager

Metals (ICP) by Method 6010D

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Sodium	76.7		0.504	3.00	1	06/26/2024 17:57	WG2311713

Volatile Organic Compounds (GC) by Method AK101

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
TPHGAK C6 to C10	U		0.0287	0.100	1	06/24/2024 19:53	WG2310968
(S) a,a,a-Trifluorotoluene(FID)	*85.9*			*50.0-150*		*06/24/2024 19:53*	WG2310968
(S) a,a,a-Trifluorotoluene(PID)	*107*			*79.0-125*		*06/24/2024 19:53*	WG2310968

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	0.0120		0.0000941	0.00100	1	06/24/2024 17:47	WG2310887
n-Butylbenzene	U		0.000157	0.00100	1	06/24/2024 17:47	WG2310887
sec-Butylbenzene	U		0.000125	0.00100	1	06/24/2024 17:47	WG2310887
tert-Butylbenzene	U		0.000127	0.00100	1	06/24/2024 17:47	WG2310887
Ethylbenzene	U		0.000137	0.00100	1	06/24/2024 17:47	WG2310887
Isopropylbenzene	U		0.000105	0.00100	1	06/24/2024 17:47	WG2310887
Naphthalene	U		0.00100	0.00500	1	06/24/2024 17:47	WG2310887
Toluene	U		0.000278	0.00100	1	06/24/2024 17:47	WG2310887
1,2,4-Trimethylbenzene	U		0.000322	0.00100	1	06/24/2024 17:47	WG2310887
1,3,5-Trimethylbenzene	U		0.000104	0.00100	1	06/24/2024 17:47	WG2310887
m&p-Xylene	U		0.000430	0.00200	1	06/24/2024 17:47	WG2310887
o-Xylene	U		0.000174	0.00100	1	06/24/2024 17:47	WG2310887
(S) Toluene-d8	*110*			*80.0-120*		*06/24/2024 17:47*	WG2310887
(S) 4-Bromofluorobenzene	*93.1*			*77.0-126*		*06/24/2024 17:47*	WG2310887
(S) 1,2-Dichloroethane-d4	*98.6*			*70.0-130*		*06/24/2024 17:47*	WG2310887

Semi-Volatile Organic Compounds (GC) by Method AK102

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
AK102 DRO C10-C25	U		0.170	0.800	1	07/01/2024 01:41	WG2313035
(S) o-Terphenyl	*75.9*			*50.0-150*		*07/01/2024 01:41*	WG2313035

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
Anthracene	U		0.0000190	0.0000500	1	06/24/2024 19:15	WG2310469
Acenaphthene	U		0.0000190	0.0000500	1	06/24/2024 19:15	WG2310469
Acenaphthylene	U		0.0000171	0.0000500	1	06/24/2024 19:15	WG2310469
Benzo(a)anthracene	U		0.0000203	0.0000500	1	06/24/2024 19:15	WG2310469
Benzo(a)pyrene	U		0.0000184	0.0000500	1	06/24/2024 19:15	WG2310469
Benzo(b)fluoranthene	U		0.0000168	0.0000500	1	06/24/2024 19:15	WG2310469
Benzo(g,h,i)perylene	U		0.0000184	0.0000500	1	06/24/2024 19:15	WG2310469
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	06/24/2024 19:15	WG2310469
Chrysene	U		0.0000179	0.0000500	1	06/24/2024 19:15	WG2310469
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	06/24/2024 19:15	WG2310469
Fluoranthene	U		0.0000270	0.000100	1	06/24/2024 19:15	WG2310469
Fluorene	U		0.0000169	0.0000500	1	06/24/2024 19:15	WG2310469
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	06/24/2024 19:15	WG2310469
Naphthalene	U		0.0000917	0.000250	1	06/24/2024 19:15	WG2310469
Phenanthrene	U		0.0000180	0.0000500	1	06/24/2024 19:15	WG2310469
Pyrene	U		0.0000169	0.0000500	1	06/24/2024 19:15	WG2310469

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

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
1-Methylnaphthalene	U		0.0000687	0.000250	1	06/24/2024 19:15	WG2310469
2-Methylnaphthalene	U		0.0000674	0.000250	1	06/24/2024 19:15	WG2310469
(S) Nitrobenzene-d5	*104*			*31.0-160*		*06/24/2024 19:15*	WG2310469
(S) 2-Fluorobiphenyl	*93.7*			*48.0-148*		*06/24/2024 19:15*	WG2310469
(S) p-Terphenyl-d14	*92.1*			*37.0-146*		*06/24/2024 19:15*	WG2310469

Metals (ICP) by Method 6010D

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Sodium	167		0.504	3.00	1	06/26/2024 17:59	WG2311713

Volatile Organic Compounds (GC) by Method AK101

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
TPHGAK C6 to C10	0.0863	J	0.0287	0.100	1	06/24/2024 20:20	WG2310968
(S) a,a,a-Trifluorotoluene(FID)	*87.2*			*50.0-150*		*06/24/2024 20:20*	WG2310968
(S) a,a,a-Trifluorotoluene(PID)	*107*			*79.0-125*		*06/24/2024 20:20*	WG2310968

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	0.0565		0.0000941	0.00100	1	06/24/2024 18:12	WG2310887
n-Butylbenzene	U		0.000157	0.00100	1	06/24/2024 18:12	WG2310887
sec-Butylbenzene	0.000372	J	0.000125	0.00100	1	06/24/2024 18:12	WG2310887
tert-Butylbenzene	U		0.000127	0.00100	1	06/24/2024 18:12	WG2310887
Ethylbenzene	0.00894		0.000137	0.00100	1	06/24/2024 18:12	WG2310887
Isopropylbenzene	0.00119		0.000105	0.00100	1	06/24/2024 18:12	WG2310887
Naphthalene	U		0.00100	0.00500	1	06/24/2024 18:12	WG2310887
Toluene	0.00357		0.000278	0.00100	1	06/24/2024 18:12	WG2310887
1,2,4-Trimethylbenzene	U		0.000322	0.00100	1	06/24/2024 18:12	WG2310887
1,3,5-Trimethylbenzene	U		0.000104	0.00100	1	06/24/2024 18:12	WG2310887
m&p-Xylene	0.000722	J	0.000430	0.00200	1	06/24/2024 18:12	WG2310887
o-Xylene	0.000221	J	0.000174	0.00100	1	06/24/2024 18:12	WG2310887
(S) Toluene-d8	*104*			*80.0-120*		*06/24/2024 18:12*	WG2310887
(S) 4-Bromofluorobenzene	*96.8*			*77.0-126*		*06/24/2024 18:12*	WG2310887
(S) 1,2-Dichloroethane-d4	*99.7*			*70.0-130*		*06/24/2024 18:12*	WG2310887

Semi-Volatile Organic Compounds (GC) by Method AK102

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
AK102 DRO C10-C25	0.278	J	0.170	0.800	1	07/01/2024 02:01	WG2313035
(S) o-Terphenyl	*90.4*			*50.0-150*		*07/01/2024 02:01*	WG2313035

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
Anthracene	U		0.0000190	0.0000500	1	06/24/2024 19:32	WG2310469
Acenaphthene	U		0.0000190	0.0000500	1	06/24/2024 19:32	WG2310469
Acenaphthylene	U		0.0000171	0.0000500	1	06/24/2024 19:32	WG2310469
Benzo(a)anthracene	U		0.0000203	0.0000500	1	06/24/2024 19:32	WG2310469
Benzo(a)pyrene	U		0.0000184	0.0000500	1	06/24/2024 19:32	WG2310469
Benzo(b)fluoranthene	U		0.0000168	0.0000500	1	06/24/2024 19:32	WG2310469
Benzo(g,h,i)perylene	U		0.0000184	0.0000500	1	06/24/2024 19:32	WG2310469
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	06/24/2024 19:32	WG2310469
Chrysene	U		0.0000179	0.0000500	1	06/24/2024 19:32	WG2310469
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	06/24/2024 19:32	WG2310469
Fluoranthene	U		0.0000270	0.000100	1	06/24/2024 19:32	WG2310469
Fluorene	0.0000328	J	0.0000169	0.0000500	1	06/24/2024 19:32	WG2310469
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	06/24/2024 19:32	WG2310469
Naphthalene	0.000300		0.0000917	0.000250	1	06/24/2024 19:32	WG2310469
Phenanthrene	U		0.0000180	0.0000500	1	06/24/2024 19:32	WG2310469
Pyrene	U		0.0000169	0.0000500	1	06/24/2024 19:32	WG2310469

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
1-Methylnaphthalene	0.0000802	J	0.0000687	0.000250	1	06/24/2024 19:32	WG2310469
2-Methylnaphthalene	0.000104	J	0.0000674	0.000250	1	06/24/2024 19:32	WG2310469
(S) Nitrobenzene-d5	*119*			*31.0-160*		*06/24/2024 19:32*	WG2310469
(S) 2-Fluorobiphenyl	*94.7*			*48.0-148*		*06/24/2024 19:32*	WG2310469
(S) p-Terphenyl-d14	*83.7*			*37.0-146*		*06/24/2024 19:32*	WG2310469

Metals (ICP) by Method 6010D

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Sodium	101		0.504	3.00	1	06/26/2024 18:01	WG2311713

Volatile Organic Compounds (GC) by Method AK101

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
TPHGAK C6 to C10	1.53		0.0287	0.100	1	06/24/2024 20:47	WG2310968
(S) a,a,a-Trifluorotoluene(FID)	*87.0*			*50.0-150*		*06/24/2024 20:47*	WG2310968
(S) a,a,a-Trifluorotoluene(PID)	*103*			*79.0-125*		*06/24/2024 20:47*	WG2310968

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	0.0712		0.000941	0.0100	10	06/24/2024 19:26	WG2310887
n-Butylbenzene	U		0.00157	0.0100	10	06/24/2024 19:26	WG2310887
sec-Butylbenzene	0.00296	J	0.00125	0.0100	10	06/24/2024 19:26	WG2310887
tert-Butylbenzene	U		0.00127	0.0100	10	06/24/2024 19:26	WG2310887
Ethylbenzene	0.218		0.00137	0.0100	10	06/24/2024 19:26	WG2310887
Isopropylbenzene	0.0195		0.00105	0.0100	10	06/24/2024 19:26	WG2310887
Naphthalene	U		0.0100	0.0500	10	06/24/2024 19:26	WG2310887
Toluene	U		0.00278	0.0100	10	06/24/2024 19:26	WG2310887
1,2,4-Trimethylbenzene	0.0764		0.00322	0.0100	10	06/24/2024 19:26	WG2310887
1,3,5-Trimethylbenzene	0.0127		0.00104	0.0100	10	06/24/2024 19:26	WG2310887
m&p-Xylene	0.270		0.00430	0.0200	10	06/24/2024 19:26	WG2310887
o-Xylene	0.0350		0.00174	0.0100	10	06/24/2024 19:26	WG2310887
(S) Toluene-d8	*103*			*80.0-120*		*06/24/2024 19:26*	WG2310887
(S) 4-Bromofluorobenzene	*95.9*			*77.0-126*		*06/24/2024 19:26*	WG2310887
(S) 1,2-Dichloroethane-d4	*103*			*70.0-130*		*06/24/2024 19:26*	WG2310887

Semi-Volatile Organic Compounds (GC) by Method AK102

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
AK102 DRO C10-C25	1.15		0.170	0.800	1	07/01/2024 02:22	WG2313035
(S) o-Terphenyl	*112*			*50.0-150*		*07/01/2024 02:22*	WG2313035

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
Anthracene	U		0.0000190	0.0000500	1	06/24/2024 19:49	WG2310469
Acenaphthene	0.0000627		0.0000190	0.0000500	1	06/24/2024 19:49	WG2310469
Acenaphthylene	U		0.0000171	0.0000500	1	06/24/2024 19:49	WG2310469
Benzo(a)anthracene	U		0.0000203	0.0000500	1	06/24/2024 19:49	WG2310469
Benzo(a)pyrene	U		0.0000184	0.0000500	1	06/24/2024 19:49	WG2310469
Benzo(b)fluoranthene	U		0.0000168	0.0000500	1	06/24/2024 19:49	WG2310469
Benzo(g,h,i)perylene	U		0.0000184	0.0000500	1	06/24/2024 19:49	WG2310469
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	06/24/2024 19:49	WG2310469
Chrysene	U		0.0000179	0.0000500	1	06/24/2024 19:49	WG2310469
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	06/24/2024 19:49	WG2310469
Fluoranthene	U		0.0000270	0.000100	1	06/24/2024 19:49	WG2310469
Fluorene	0.000119		0.0000169	0.0000500	1	06/24/2024 19:49	WG2310469
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	06/24/2024 19:49	WG2310469
Naphthalene	0.00775		0.0000917	0.000250	1	06/24/2024 19:49	WG2310469
Phenanthrene	0.0000493	J	0.0000180	0.0000500	1	06/24/2024 19:49	WG2310469
Pyrene	U		0.0000169	0.0000500	1	06/24/2024 19:49	WG2310469

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
1-Methylnaphthalene	0.00225		0.0000687	0.000250	1	06/24/2024 19:49	WG2310469
2-Methylnaphthalene	0.00349		0.0000674	0.000250	1	06/24/2024 19:49	WG2310469
(S) Nitrobenzene-d5	*132*			*31.0-160*		*06/24/2024 19:49*	WG2310469
(S) 2-Fluorobiphenyl	*93.7*			*48.0-148*		*06/24/2024 19:49*	WG2310469
(S) p-Terphenyl-d14	*91.6*			*37.0-146*		*06/24/2024 19:49*	WG2310469

Metals (ICP) by Method 6010D

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Sodium	108		0.504	3.00	1	06/26/2024 18:03	WG2311713

Volatile Organic Compounds (GC) by Method AK101

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
TPHGAK C6 to C10	0.679		0.0287	0.100	1	06/24/2024 21:14	WG2310968
(S) a,a,a-Trifluorotoluene(FID)	*86.8*			*50.0-150*		*06/24/2024 21:14*	WG2310968
(S) a,a,a-Trifluorotoluene(PID)	*104*			*79.0-125*		*06/24/2024 21:14*	WG2310968

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	0.0622		0.0000941	0.00100	1	06/24/2024 18:37	WG2310887
n-Butylbenzene	0.00157		0.000157	0.00100	1	06/24/2024 18:37	WG2310887
sec-Butylbenzene	0.00340		0.000125	0.00100	1	06/24/2024 18:37	WG2310887
tert-Butylbenzene	U		0.000127	0.00100	1	06/24/2024 18:37	WG2310887
Ethylbenzene	0.0519		0.000137	0.00100	1	06/24/2024 18:37	WG2310887
Isopropylbenzene	0.0172		0.000105	0.00100	1	06/24/2024 18:37	WG2310887
Naphthalene	0.00231	J	0.00100	0.00500	1	06/24/2024 18:37	WG2310887
Toluene	0.00189		0.000278	0.00100	1	06/24/2024 18:37	WG2310887
1,2,4-Trimethylbenzene	0.0715		0.000322	0.00100	1	06/24/2024 18:37	WG2310887
1,3,5-Trimethylbenzene	0.00444		0.000104	0.00100	1	06/24/2024 18:37	WG2310887
m&p-Xylene	0.0568		0.000430	0.00200	1	06/24/2024 18:37	WG2310887
o-Xylene	0.00176		0.000174	0.00100	1	06/24/2024 18:37	WG2310887
(S) Toluene-d8	*104*			*80.0-120*		*06/24/2024 18:37*	WG2310887
(S) 4-Bromofluorobenzene	*97.9*			*77.0-126*		*06/24/2024 18:37*	WG2310887
(S) 1,2-Dichloroethane-d4	*101*			*70.0-130*		*06/24/2024 18:37*	WG2310887

Semi-Volatile Organic Compounds (GC) by Method AK102

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
AK102 DRO C10-C25	0.388	J	0.170	0.800	1	07/01/2024 02:42	WG2313035
(S) o-Terphenyl	*107*			*50.0-150*		*07/01/2024 02:42*	WG2313035

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
Anthracene	U		0.0000190	0.0000500	1	06/24/2024 20:06	WG2310469
Acenaphthene	0.0000514		0.0000190	0.0000500	1	06/24/2024 20:06	WG2310469
Acenaphthylene	U		0.0000171	0.0000500	1	06/24/2024 20:06	WG2310469
Benzo(a)anthracene	U		0.0000203	0.0000500	1	06/24/2024 20:06	WG2310469
Benzo(a)pyrene	U		0.0000184	0.0000500	1	06/24/2024 20:06	WG2310469
Benzo(b)fluoranthene	U		0.0000168	0.0000500	1	06/24/2024 20:06	WG2310469
Benzo(g,h,i)perylene	U		0.0000184	0.0000500	1	06/24/2024 20:06	WG2310469
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	06/24/2024 20:06	WG2310469
Chrysene	U		0.0000179	0.0000500	1	06/24/2024 20:06	WG2310469
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	06/24/2024 20:06	WG2310469
Fluoranthene	U		0.0000270	0.000100	1	06/24/2024 20:06	WG2310469
Fluorene	0.000114		0.0000169	0.0000500	1	06/24/2024 20:06	WG2310469
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	06/24/2024 20:06	WG2310469
Naphthalene	0.00227		0.0000917	0.000250	1	06/24/2024 20:06	WG2310469
Phenanthrene	0.0000360	J	0.0000180	0.0000500	1	06/24/2024 20:06	WG2310469
Pyrene	U		0.0000169	0.0000500	1	06/24/2024 20:06	WG2310469

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
1-Methylnaphthalene	0.00173		0.0000687	0.000250	1	06/24/2024 20:06	WG2310469
2-Methylnaphthalene	0.00304		0.0000674	0.000250	1	06/24/2024 20:06	WG2310469
(S) Nitrobenzene-d5	*127*			*31.0-160*		*06/24/2024 20:06*	WG2310469
(S) 2-Fluorobiphenyl	*96.3*			*48.0-148*		*06/24/2024 20:06*	WG2310469
(S) p-Terphenyl-d14	*88.4*			*37.0-146*		*06/24/2024 20:06*	WG2310469

Metals (ICP) by Method 6010D

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Sodium	34.8		0.504	3.00	1	06/26/2024 18:05	WG2311713

Volatile Organic Compounds (GC) by Method AK101

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
TPHGAK C6 to C10	0.0898	J	0.0287	0.100	1	06/24/2024 21:41	WG2310968
(S) a,a,a-Trifluorotoluene(FID)	*89.2*			*50.0-150*		*06/24/2024 21:41*	WG2310968
(S) a,a,a-Trifluorotoluene(PID)	*106*			*79.0-125*		*06/24/2024 21:41*	WG2310968

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	0.0115		0.000471	0.00500	5	06/24/2024 19:51	WG2310887
n-Butylbenzene	U		0.000785	0.00500	5	06/24/2024 19:51	WG2310887
sec-Butylbenzene	U		0.000625	0.00500	5	06/24/2024 19:51	WG2310887
tert-Butylbenzene	U		0.000635	0.00500	5	06/24/2024 19:51	WG2310887
Ethylbenzene	0.0134		0.000685	0.00500	5	06/24/2024 19:51	WG2310887
Isopropylbenzene	0.000983	J	0.000525	0.00500	5	06/24/2024 19:51	WG2310887
Naphthalene	U		0.00500	0.0250	5	06/24/2024 19:51	WG2310887
Toluene	U		0.00139	0.00500	5	06/24/2024 19:51	WG2310887
1,2,4-Trimethylbenzene	0.00490	J	0.00161	0.00500	5	06/24/2024 19:51	WG2310887
1,3,5-Trimethylbenzene	0.000741	J	0.000520	0.00500	5	06/24/2024 19:51	WG2310887
m&p-Xylene	0.0213		0.00215	0.0100	5	06/24/2024 19:51	WG2310887
o-Xylene	U		0.000870	0.00500	5	06/24/2024 19:51	WG2310887
(S) Toluene-d8	*109*			*80.0-120*		*06/24/2024 19:51*	WG2310887
(S) 4-Bromofluorobenzene	*99.0*			*77.0-126*		*06/24/2024 19:51*	WG2310887
(S) 1,2-Dichloroethane-d4	*103*			*70.0-130*		*06/24/2024 19:51*	WG2310887

Sample Narrative:

L1748413-05 WG2310887: Lowest possible dilution due to sample foaming.

Semi-Volatile Organic Compounds (GC) by Method AK102

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
AK102 DRO C10-C25	U		0.170	0.800	1	07/01/2024 03:02	WG2313035
(S) o-Terphenyl	*108*			*50.0-150*		*07/01/2024 03:02*	WG2313035

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
Anthracene	U		0.0000190	0.0000500	1	06/24/2024 20:24	WG2310469
Acenaphthene	U		0.0000190	0.0000500	1	06/24/2024 20:24	WG2310469
Acenaphthylene	U		0.0000171	0.0000500	1	06/24/2024 20:24	WG2310469
Benzo(a)anthracene	U		0.0000203	0.0000500	1	06/24/2024 20:24	WG2310469
Benzo(a)pyrene	U		0.0000184	0.0000500	1	06/24/2024 20:24	WG2310469
Benzo(b)fluoranthene	U		0.0000168	0.0000500	1	06/24/2024 20:24	WG2310469
Benzo(g,h,i)perylene	U		0.0000184	0.0000500	1	06/24/2024 20:24	WG2310469
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	06/24/2024 20:24	WG2310469
Chrysene	U		0.0000179	0.0000500	1	06/24/2024 20:24	WG2310469
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	06/24/2024 20:24	WG2310469
Fluoranthene	U		0.0000270	0.000100	1	06/24/2024 20:24	WG2310469
Fluorene	U		0.0000169	0.0000500	1	06/24/2024 20:24	WG2310469
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	06/24/2024 20:24	WG2310469

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	06/24/2024 20:24	WG2310469
Phenanthrene	U		0.0000180	0.0000500	1	06/24/2024 20:24	WG2310469
Pyrene	U		0.0000169	0.0000500	1	06/24/2024 20:24	WG2310469
1-Methylnaphthalene	U		0.0000687	0.000250	1	06/24/2024 20:24	WG2310469
2-Methylnaphthalene	U		0.0000674	0.000250	1	06/24/2024 20:24	WG2310469
(S) Nitrobenzene-d5	*103*			*31.0-160*		*06/24/2024 20:24*	WG2310469
(S) 2-Fluorobiphenyl	*92.1*			*48.0-148*		*06/24/2024 20:24*	WG2310469
(S) p-Terphenyl-d14	*89.5*			*37.0-146*		*06/24/2024 20:24*	WG2310469

Metals (ICP) by Method 6010D

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Sodium	100		0.504	3.00	1	06/26/2024 18:07	WG2311713

Volatile Organic Compounds (GC) by Method AK101

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
TPHGAK C6 to C10	1.17		0.0287	0.100	1	06/24/2024 22:08	WG2310968
(S) a,a,a-Trifluorotoluene(FID)	*89.3*			*50.0-150*		*06/24/2024 22:08*	WG2310968
(S) a,a,a-Trifluorotoluene(PID)	*103*			*79.0-125*		*06/24/2024 22:08*	WG2310968

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	0.0526		0.000471	0.00500	5	06/26/2024 04:13	WG2311864
n-Butylbenzene	0.00531		0.000785	0.00500	5	06/26/2024 04:13	WG2311864
sec-Butylbenzene	0.00230	J	0.000625	0.00500	5	06/26/2024 04:13	WG2311864
tert-Butylbenzene	U		0.000635	0.00500	5	06/26/2024 04:13	WG2311864
Ethylbenzene	0.161		0.000685	0.00500	5	06/26/2024 04:13	WG2311864
Isopropylbenzene	0.0159		0.000525	0.00500	5	06/26/2024 04:13	WG2311864
Naphthalene	U		0.00500	0.0250	5	06/26/2024 04:13	WG2311864
Toluene	U		0.00139	0.00500	5	06/26/2024 04:13	WG2311864
1,2,4-Trimethylbenzene	0.0576		0.00161	0.00500	5	06/26/2024 04:13	WG2311864
1,3,5-Trimethylbenzene	0.00929		0.000520	0.00500	5	06/26/2024 04:13	WG2311864
m&p-Xylene	0.181		0.00215	0.0100	5	06/26/2024 04:13	WG2311864
o-Xylene	0.0257		0.000870	0.00500	5	06/26/2024 04:13	WG2311864
(S) Toluene-d8	*104*			*80.0-120*		*06/26/2024 04:13*	WG2311864
(S) 4-Bromofluorobenzene	*97.9*			*77.0-126*		*06/26/2024 04:13*	WG2311864
(S) 1,2-Dichloroethane-d4	*103*			*70.0-130*		*06/26/2024 04:13*	WG2311864

Semi-Volatile Organic Compounds (GC) by Method AK102

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
AK102 DRO C10-C25	1.27		0.170	0.800	1	07/01/2024 10:09	WG2313035
(S) o-Terphenyl	*98.8*			*50.0-150*		*07/01/2024 10:09*	WG2313035

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
Anthracene	U		0.0000190	0.0000500	1	06/24/2024 20:41	WG2310469
Acenaphthene	0.0000495	J	0.0000190	0.0000500	1	06/24/2024 20:41	WG2310469
Acenaphthylene	U		0.0000171	0.0000500	1	06/24/2024 20:41	WG2310469
Benzo(a)anthracene	U		0.0000203	0.0000500	1	06/24/2024 20:41	WG2310469
Benzo(a)pyrene	U		0.0000184	0.0000500	1	06/24/2024 20:41	WG2310469
Benzo(b)fluoranthene	U		0.0000168	0.0000500	1	06/24/2024 20:41	WG2310469
Benzo(g,h,i)perylene	U		0.0000184	0.0000500	1	06/24/2024 20:41	WG2310469
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	06/24/2024 20:41	WG2310469
Chrysene	U		0.0000179	0.0000500	1	06/24/2024 20:41	WG2310469
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	06/24/2024 20:41	WG2310469
Fluoranthene	U		0.0000270	0.000100	1	06/24/2024 20:41	WG2310469
Fluorene	0.000110		0.0000169	0.0000500	1	06/24/2024 20:41	WG2310469
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	06/24/2024 20:41	WG2310469
Naphthalene	0.00663		0.0000917	0.000250	1	06/24/2024 20:41	WG2310469
Phenanthrene	0.0000437	J	0.0000180	0.0000500	1	06/24/2024 20:41	WG2310469
Pyrene	U		0.0000169	0.0000500	1	06/24/2024 20:41	WG2310469

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
1-Methylnaphthalene	0.00191		0.0000687	0.000250	1	06/24/2024 20:41	WG2310469
2-Methylnaphthalene	0.00288		0.0000674	0.000250	1	06/24/2024 20:41	WG2310469
(S) Nitrobenzene-d5	*128*			*31.0-160*		*06/24/2024 20:41*	WG2310469
(S) 2-Fluorobiphenyl	*92.1*			*48.0-148*		*06/24/2024 20:41*	WG2310469
(S) p-Terphenyl-d14	*89.5*			*37.0-146*		*06/24/2024 20:41*	WG2310469

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Benzene	U		0.0000941	0.00100	1	06/24/2024 12:46	WG2310887
n-Butylbenzene	U		0.000157	0.00100	1	06/24/2024 12:46	WG2310887
sec-Butylbenzene	U		0.000125	0.00100	1	06/24/2024 12:46	WG2310887
tert-Butylbenzene	U		0.000127	0.00100	1	06/24/2024 12:46	WG2310887
Ethylbenzene	U		0.000137	0.00100	1	06/24/2024 12:46	WG2310887
Isopropylbenzene	U		0.000105	0.00100	1	06/24/2024 12:46	WG2310887
Naphthalene	U		0.00100	0.00500	1	06/24/2024 12:46	WG2310887
Toluene	U		0.000278	0.00100	1	06/24/2024 12:46	WG2310887
1,2,4-Trimethylbenzene	U		0.000322	0.00100	1	06/24/2024 12:46	WG2310887
1,3,5-Trimethylbenzene	U		0.000104	0.00100	1	06/24/2024 12:46	WG2310887
m&p-Xylene	U		0.000430	0.00200	1	06/24/2024 12:46	WG2310887
o-Xylene	U		0.000174	0.00100	1	06/24/2024 12:46	WG2310887
(S) Toluene-d8	*110*			*80.0-120*		*06/24/2024 12:46*	WG2310887
(S) 4-Bromofluorobenzene	*99.4*			*77.0-126*		*06/24/2024 12:46*	WG2310887
(S) 1,2-Dichloroethane-d4	*101*			*70.0-130*		*06/24/2024 12:46*	WG2310887

Method Blank (MB)

(MB) R4086962-1 06/26/24 17:35

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

Laboratory Control Sample (LCS)

(LCS) R4086962-2 06/26/24 17:36

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Sodium	10.0	9.74	97.4	80.0-120	

L1748222-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1748222-05 06/26/24 17:38 • (MS) R4086962-4 06/26/24 17:42 • (MSD) R4086962-5 06/26/24 17:44

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	53.2	61.6	61.5	84.2	83.5	1	75.0-125			0.118	20

Method Blank (MB)

(MB) R4086264-3 06/24/24 11:38

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
TPHGAK C6 to C10	U		0.0287	0.100
(S) a,a,a-Trifluorotoluene(FID)	*58.7*	J2		*60.0-120*
(S) a,a,a-Trifluorotoluene(PID)	*107*			*79.0-125*

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

(LCS) R4086264-1 06/24/24 10:16 • (LCSD) R4086264-2 06/24/24 10:43

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	4.88	4.92	97.6	98.4	60.0-120			0.816	20
(S) a,a,a-Trifluorotoluene(FID)				*92.0*	*91.7*	*60.0-120*				
(S) a,a,a-Trifluorotoluene(PID)				*117*	*119*	*79.0-125*				

L1748395-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1748395-01 06/24/24 14:01 • (MS) R4086264-4 06/24/24 22:36 • (MSD) R4086264-5 06/24/24 23:03

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPHGAK C6 to C10	5.00	0.142	5.82	5.65	114	110	1	70.0-130			2.96	20
(S) a,a,a-Trifluorotoluene(FID)					*96.1*	*95.7*		*50.0-150*				
(S) a,a,a-Trifluorotoluene(PID)					*119*	*119*		*79.0-125*				

Method Blank (MB)

(MB) R4086221-3 06/24/24 09:27

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.0000941	0.00100
n-Butylbenzene	U		0.000157	0.00100
sec-Butylbenzene	U		0.000125	0.00100
tert-Butylbenzene	U		0.000127	0.00100
Ethylbenzene	U		0.000137	0.00100
Isopropylbenzene	U		0.000105	0.00100
Naphthalene	U		0.00100	0.00500
Toluene	U		0.000278	0.00100
1,2,4-Trimethylbenzene	U		0.000322	0.00100
1,3,5-Trimethylbenzene	U		0.000104	0.00100
m&p-Xylene	U		0.000430	0.00200
o-Xylene	U		0.000174	0.00100
(S) Toluene-d8	*105*			*80.0-120*
(S) 4-Bromofluorobenzene	*99.8*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*102*			*70.0-130*

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

(LCS) R4086221-1 06/24/24 08:19 • (LCSD) R4086221-2 06/24/24 08:41

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 %
Benzene	0.00500	0.00526	0.00511	105	102	70.0-123			2.89	20
n-Butylbenzene	0.00500	0.00473	0.00498	94.6	99.6	73.0-125			5.15	20
sec-Butylbenzene	0.00500	0.00555	0.00561	111	112	75.0-125			1.08	20
tert-Butylbenzene	0.00500	0.00539	0.00564	108	113	76.0-124			4.53	20
Ethylbenzene	0.00500	0.00549	0.00530	110	106	79.0-123			3.52	20
Isopropylbenzene	0.00500	0.00540	0.00535	108	107	76.0-127			0.930	20
Naphthalene	0.00500	0.00456	0.00436	91.2	87.2	54.0-135	J	J	4.48	20
Toluene	0.00500	0.00532	0.00535	106	107	79.0-120			0.562	20
1,2,4-Trimethylbenzene	0.00500	0.00540	0.00550	108	110	76.0-121			1.83	20
1,3,5-Trimethylbenzene	0.00500	0.00535	0.00534	107	107	76.0-122			0.187	20
m&p-Xylene	0.0100	0.0107	0.0110	107	110	80.0-122			2.76	20
o-Xylene	0.00500	0.00560	0.00540	112	108	80.0-122			3.64	20
(S) Toluene-d8				*103*	*104*	*80.0-120*				
(S) 4-Bromofluorobenzene				*102*	*103*	*77.0-126*				
(S) 1,2-Dichloroethane-d4				*102*	*101*	*70.0-130*				

Method Blank (MB)

(MB) R4086606-3 06/25/24 21:45

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.0000941	0.00100
n-Butylbenzene	U		0.000157	0.00100
sec-Butylbenzene	U		0.000125	0.00100
tert-Butylbenzene	U		0.000127	0.00100
Ethylbenzene	U		0.000137	0.00100
Isopropylbenzene	U		0.000105	0.00100
Naphthalene	U		0.00100	0.00500
Toluene	U		0.000278	0.00100
1,2,4-Trimethylbenzene	U		0.000322	0.00100
1,3,5-Trimethylbenzene	U		0.000104	0.00100
m&p-Xylene	U		0.000430	0.00200
o-Xylene	U		0.000174	0.00100
(S) Toluene-d8	*108*			*80.0-120*
(S) 4-Bromofluorobenzene	*104*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*111*			*70.0-130*

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

(LCS) R4086606-1 06/25/24 20:47 • (LCSD) R4086606-2 06/25/24 21:06

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 %
Benzene	0.00500	0.00509	0.00509	102	102	70.0-123			0.000	20
n-Butylbenzene	0.00500	0.00479	0.00458	95.8	91.6	73.0-125			4.48	20
sec-Butylbenzene	0.00500	0.00576	0.00533	115	107	75.0-125			7.75	20
tert-Butylbenzene	0.00500	0.00532	0.00522	106	104	76.0-124			1.90	20
Ethylbenzene	0.00500	0.00484	0.00472	96.8	94.4	79.0-123			2.51	20
Isopropylbenzene	0.00500	0.00496	0.00471	99.2	94.2	76.0-127			5.17	20
Naphthalene	0.00500	0.00461	0.00512	92.2	102	54.0-135	J		10.5	20
Toluene	0.00500	0.00489	0.00483	97.8	96.6	79.0-120			1.23	20
1,2,4-Trimethylbenzene	0.00500	0.00502	0.00508	100	102	76.0-121			1.19	20
1,3,5-Trimethylbenzene	0.00500	0.00537	0.00541	107	108	76.0-122			0.742	20
m&p-Xylene	0.0100	0.00976	0.00953	97.6	95.3	80.0-122			2.38	20
o-Xylene	0.00500	0.00484	0.00478	96.8	95.6	80.0-122			1.25	20
(S) Toluene-d8				*104*	*103*	*80.0-120*				
(S) 4-Bromofluorobenzene				*94.8*	*93.6*	*77.0-126*				
(S) 1,2-Dichloroethane-d4				*108*	*108*	*70.0-130*				

Method Blank (MB)

(MB) R4088514-1 06/30/24 21:23

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
AK102 DRO C10-C25	U		0.170	0.800
(S) o-Terphenyl	*117*			*60.0-120*

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

(LCS) R4088514-2 06/30/24 22:39 • (LCSD) R4088514-3 06/30/24 23:00

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	%	%	%			%	%
AK102 DRO C10-C25	6.00	5.07	4.91	84.5	81.8	75.0-125			3.21	20
(S) o-Terphenyl				*95.3*	*103*	*60.0-120*				

L1748395-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1748395-01 06/30/24 23:20 • (MS) R4088514-4 06/30/24 23:40 • (MSD) R4088514-5 07/01/24 00:00

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
AK102 DRO C10-C25	6.00	0.735	5.97	5.65	87.2	81.9	1	75.0-125			5.51	20
(S) o-Terphenyl					*98.9*	*101*		*50.0-150*				

Method Blank (MB)

(MB) R4086037-3 06/24/24 17:14

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	*114*			*31.0-160*
(S) 2-Fluorobiphenyl	*101*			*48.0-148*
(S) p-Terphenyl-d14	*98.0*			*37.0-146*

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

(LCS) R4086037-1 06/24/24 16:40 • (LCSD) R4086037-2 06/24/24 16:57

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	0.00227	0.00215	114	107	67.0-150			5.43	20
Acenaphthene	0.00200	0.00210	0.00201	105	100	65.0-138			4.38	20
Acenaphthylene	0.00200	0.00236	0.00227	118	114	66.0-140			3.89	20
Benzo(a)anthracene	0.00200	0.00230	0.00218	115	109	61.0-140			5.36	20
Benzo(a)pyrene	0.00200	0.00215	0.00204	107	102	60.0-143			5.25	20
Benzo(b)fluoranthene	0.00200	0.00197	0.00198	98.5	99.0	58.0-141			0.506	20
Benzo(g,h,i)perylene	0.00200	0.00205	0.00197	103	98.5	52.0-153			3.98	20
Benzo(k)fluoranthene	0.00200	0.00195	0.00188	97.5	94.0	58.0-148			3.66	20
Chrysene	0.00200	0.00221	0.00213	111	106	64.0-144			3.69	20
Dibenz(a,h)anthracene	0.00200	0.00209	0.00200	104	100	52.0-155			4.40	20
Fluoranthene	0.00200	0.00239	0.00227	119	114	69.0-153			5.15	20
Fluorene	0.00200	0.00227	0.00219	114	109	64.0-136			3.59	20

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

(LCS) R4086037-1 06/24/24 16:40 • (LCSD) R4086037-2 06/24/24 16:57

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 %
Indeno(1,2,3-cd)pyrene	0.00200	0.00219	0.00216	109	108	54.0-153			1.38	20
Naphthalene	0.00200	0.00210	0.00198	105	99.0	61.0-137			5.88	20
Phenanthrene	0.00200	0.00215	0.00206	107	103	62.0-137			4.28	20
Pyrene	0.00200	0.00211	0.00205	105	103	60.0-142			2.88	20
1-Methylnaphthalene	0.00200	0.00227	0.00214	114	107	66.0-142			5.90	20
2-Methylnaphthalene	0.00200	0.00221	0.00209	111	104	62.0-136			5.58	20
(S) Nitrobenzene-d5				*111*	*103*	*31.0-160*				
(S) 2-Fluorobiphenyl				*97.0*	*92.5*	*48.0-148*				
(S) p-Terphenyl-d14				*91.5*	*89.0*	*37.0-146*				

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
J	The identification of the analyte is acceptable; the reported value is an estimate.
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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

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

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

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

Company Name/Address:
Stantec - Anchorage, AK

725 E Fireweed Lane
Suite 200
Anchorage, AK 99503

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

Report to:
Ms. Sydney Souza

Email To: **craig.cothron@pacelabs.com**
sydney.souza@stantec.com AKST

Project Description:
~~Store 5325~~ 5314

City/State Collected: Wasilla, AK

Please Circle: PT MT CT ET

Phone: ~~907-266-1108~~ 907-229-1514

Client Project # ~~203723785~~ 203723698

Lab Project # ~~STAAAKSSA-5325~~ 5314

Collected by (print): Sydney Souza

Site/Facility ID # Speedway 5314

P.O. # 203723698

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

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	AK101 40mlAmb HCl	AK102 100ml Amb HCl	NAICP 250mlHDPE-HNO3	PAHSIMLVID 40mlAmb-NoPres-WT	V8260C 40mlAmb-HCl	V8260C 40mlAmb-HCl-Blk	Remarks	Sample # (lab only)
MW-1	G	GW		6/17/24	1043	11	X	X	X	X	X			-01
MW-2		GW			1112	11	X	X	X	X	X			-02
MW-3		GW			1152	11	X	X	X	X	X			-03
MW-4		GW			1228	11	X	X	X	X	X			-04
RW19-1		GW			1236	11	X	X	X	X	X			-05
DUP	↓	GW		↓	1157	11	X	X	X	X	X			-06
		GW				~~11~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~		
TRIP BLANK	—	~~GW~~		6/17/24	0900	1						X		-07

Chain of Custody Page ___ of ___

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN

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

SDG # L1748413
D026

Acctnum: **STAAAKSSA**
Template: **T253826**
Prelogin: **P1078197**
PM: **034 - Craig Cothron**
PB: 5.29.24 BK
Shipped Via: **FedEX 2nd Day**

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

Remarks:WO - 1106511130 - PO 203723785

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking # 744 7411 4526 2505

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

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	
	6/17/24	1600			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: EDA6 °C 5.3+0.3=5.6	Bottles Received: 66
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) Charles Stevenson	Date: 6-18-24	Time: 9:00

PH-10BDH5021
TRC-4072A72
Date/Time

Hold:

Condition: NCF / OK

6-19-24 cs

ADEC Contaminated Sites Program Laboratory Data Review Checklist

Completed By:	Remi Malenfant	**CS Site Name:**	Tesoro Northstore #76	**Lab Name:**	Pace Analytical
Title:	Environmental Scientist	**ADEC File No.:**	100.26.159	**Lab Report No.:**	L1748413
Consulting Firm:	Stantec Consulting Services Inc.	**Hazard ID No.:**	26295	**Lab Report Date:**	July 2, 2024

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

1. **Laboratory**

   a. Did an ADEC Contaminated Sites Laboratory Approval Program (CS-LAP) approved laboratory receive and perform all the submitted sample analyses?
   Yes ☒ No ☐ N/A ☐
   Comments: Click or tap here to enter text.

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses CS-LAP approved?
   Yes ☐ No ☐ N/A ☒
   Comments: Samples were not transferred

2. **Chain of Custody (CoC)**

   a. Is the CoC information completed, signed, and dated (including released/received by)?
   Yes ☒ No ☐ N/A ☐
   Comments: Click or tap here to enter text.

   b. Were the correct analyses requested?
   Yes ☒ No ☐ N/A ☐
   Analyses requested: AK101, AK102, Sodium, 8270 SIM PAHs, 8260C VOCs
   Comments: Click or tap here to enter text.

3. **Laboratory Sample Receipt Documentation**

   a. Is the sample/cooler temperature documented and within range at receipt (0° to 6° C)?
   Yes ☒ No ☐ N/A ☐
   Cooler temperature(s): 5.6° C
   Comments: Click or tap here to enter text.

b. Is the sample preservation acceptable – acidified waters, methanol preserved soil (GRO, BTEX, VOCs, etc.)?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

c. Is the sample condition documented – broken, leaking, zero headspace (VOA vials); canister vacuum/pressure checked and no open valves, etc.?
Yes ☒ No ☐ N/A ☐
Comments: Sample condition documented as OK

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, canister not holding a vacuum, etc.?
Yes ☐ No ☐ N/A ☒
Comments: No discrepancies documented

e. Is the data quality or usability affected?
Yes ☐ No ☒ N/A ☐
Comments: Click or tap here to enter text.

4. Case Narrative

a. Is the case narrative present and understandable?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

b. Are there discrepancies, errors, or QC failures identified by the lab?
Yes ☐ No ☒ N/A ☐
Comments: Case narrative documents no errors or discrepancies “unless qualified or notated within report”.

c. Were all the corrective actions documented?
Yes ☐ No ☐ N/A ☒
Comments: No corrective actions taken

d. What is the effect on data quality/usability according to the case narrative?
Comments: No effect on data quality/usability

5. Sample Results

a. Are the correct analyses performed/reported as requested on CoC?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

b. Are all applicable holding times met?
Yes ☒ No ☐ N/A ☐

Comments: Click or tap here to enter text.

c. Are all soils reported on a dry weight basis?
Yes ☐ No ☐ N/A ☒
Comments: No soil samples submitted to the lab

d. Are the reported limits of quantitation (LoQ) or limits of detections (LOD), or reporting limits (RL) less than the Cleanup Level or the action level for the project?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

e. Is the data quality or usability affected?
Yes ☐ No ☒ N/A ☐
Comments: Click or tap here to enter text.

6. QC Samples

a. Method Blank

i. Was one method blank reported per matrix, analysis, and 20 samples?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

ii. Are all method blank results less than LOQ (or RL)?
Yes ☒ No ☐
Comments: J-flagged result for a surrogate in GRO

iii. If above LoQ or RL, what samples are affected?
Comments: Click or tap here to enter text.

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
Yes ☐ No ☐ N/A ☒
Comments: No affected samples

v. Data quality or usability affected?
Yes ☐ No ☐ N/A ☒
Comments: No.

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

i. Organics – Are one LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)
Yes ☒ No ☐ N/A ☐

Comments: Click or tap here to enter text.

ii. Metals/Inorganics – Are one LCS and one sample duplicate reported per matrix, analysis and 20 samples?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

iii. Accuracy – Are all percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)
Yes ☒ No ☐ N/A ☐
Comments: J-flagged naphthalene results in 8260

iv. Precision – Are all relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? Was the RPD reported from LCS/LCSD, and or sample/sample duplicate? (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

v. If %R or RPD is outside of acceptable limits, what samples are affected?
Comments: 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. Is the data quality or usability affected?
Yes ☐ No ☒ N/A ☐
Comments: Naphthalene not measured by 8260

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

i. Organics – Are one MS/MSD reported per matrix, analysis and 20 samples?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

ii. Metals/Inorganics – Are one MS/MSD reported per matrix, analysis and 20 samples?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

iii. Accuracy – Are all percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

iv. Precision – Are all relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from MS/MSD, and or sample/sample duplicate.
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

v. If %R or RPD is outside of acceptable limits, what samples are affected?
Comments: Click or tap here to enter text.

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
Yes ☐ No ☐ N/A ☒
Comments: No affected samples

vii. Is the data quality or usability affected?
Yes ☐ No ☒ N/A ☐
Comments: Click or tap here to enter text.

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

i. Are surrogate/IDA recoveries reported for organic analyses – field, QC, and laboratory samples?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

ii. Accuracy – Are all percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods 50-150 %R for field samples and 60-120 %R for QC samples; all other analyses see the laboratory report pages)
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

iii. Do the sample results with failed surrogate/IDA recoveries have data flags? If so, are the data flags clearly defined?
Yes ☐ No ☐ N/A ☒
Comments: No affected samples

iv. Is the data quality or usability affected?
Yes ☐ No ☒ N/A ☐

Comments: Click or tap here to enter text.

e. Trip Blanks

i. Is one trip blank reported per matrix, analysis, and for each cooler containing volatile samples? Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

ii. Are all results less than LoQ or RL?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

iii. If above LoQ or RL, what samples are affected?
Comments: None.

iv. Is the data quality or usability affected?
Yes ☐ No ☒ N/A ☐
Comments: No affected samples.

f. Field Duplicate

i. Are one field duplicate submitted per matrix, analysis, and 10 project samples?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

ii. Was the duplicate submitted blind to lab?
Yes ☒ No ☐ N/A ☐
Comments: Click or tap here to enter text.

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

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

Where R_1 = Sample Concentration

R_2 = Field Duplicate Concentration

Is the data quality or usability affected? (Explain)

Yes ☐ No ☒ N/A ☐
Comments: Ethylbenzene and Xylenes are over the RPD limits.

iv. Is the data quality or usability affected? (Explain)
Yes ☐ No ☒ N/A ☐

Comments: The samples which are over GCLs for ethylbenzene and xylenes are well enough over the GCL to not be affected by inaccurate analyses.

g. Decontamination or Equipment Blanks

i. Were decontamination or equipment blanks collected?
Yes ☐ No ☐ N/A ☒
Comments: Used disposable equipment

ii. Are all results less than LoQ or RL?
Yes ☐ No ☐ N/A ☒
Comments: Used disposable equipment

iii. If above LoQ or RL, specify what samples are affected.
Comments: Click or tap here to enter text.

iv. Are data quality or usability affected?
Yes ☐ No ☐ N/A ☒
Comments: Click or tap here to enter text.

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

a. Are they defined and appropriate?
Yes ☒ No ☐ N/A ☐
Comments: