Speedway Store 5315
(Former Tesoro 2 Go Mart #111)
ADEC File #100.26.026

4Q - October 2021 GWM Event Report

Prepared For

Stantec

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
AS	air sparging
BTEX	benzene, toluene, ethylbenzene, and xylenes
Chemox	chemical oxidation
DO	dissolved oxygen
DRO	diesel range organics
EIT	Engineer in Training
EPA	U.S. Environmental Protection Agency
G	monitor well label
GCL	groundwater cleanup level
gpm	gallons per minute
GRO	gasoline range organics
Klozur® One	Trademarked chemical oxidizer developed by PeroxyChem
mg/L	milligrams per liter
MW	monitoring well
NE	Northeast
PAH	polycyclic aromatic hydrocarbon
PQL	practical quantitation limit
ORP	oxidation-reduction potential
QA	quality assurance
QC	quality control
RM	remediation well
SE	Southeast
SIM	selective ion monitoring
Speedway	Speedway, LLC
Stantec	Stantec Consulting Services Inc.
Tesoro	Tesoro Refining and Marketing Company
SVE	soil vapor extraction
VOC	volatile organic compound
UST	underground storage tank

1.0 EXECUTIVE SUMMARY

This fourth quarter 2021 (semi-annual) Groundwater Monitoring Event Report was prepared by Stantec Consulting Services Inc. (Stantec) on behalf of Speedway LLC for Store #5315 (formerly known as Tesoro 2 Go Mart #111), located at 3679 College Road, Fairbanks, Alaska (Figure 1). The methods used for this monitoring event were conducted in accordance with the 2021 Alaska Department of Environmental Conservation (ADEC) approved Work Plans for this site.

On October 12, 2021, the Stantec team, which included Engineer in Training (EIT) Geoff Moorhead and EIT Leslie Petre, conducted a fourth quarter (semi-annual) analytical sampling event of Monitoring Wells MW G-1, MW G-5, MW-10, MW-11, MW-12, MW-13, MW-16, MW-17-1, MW-17-2, and Remediation Wells RM-1, and RM-2.

The professional modeling software program (Surfer®) was used to calculate the average groundwater hydraulic flow across the site. The groundwater gradient was calculated to be approximately 0.002 feet per foot with flow trending toward the north-northeast at 30 degrees presented on **Figure 2**. It is important to note that there is a large variation in groundwater elevation across the site caused by the active pump and treat remediation system. Observation of the groundwater elevation data (see groundwater contours in **Appendix C**) suggests that there is a depression of the groundwater table at remediation/recirculation wells RM-1 and RM-2 and slight mounding of the groundwater table at monitoring wells G-5, and MW-17-2. In conclusion, it is recommended the average gradient and direction of flow across the site as calculated with Surfer® not be a crucial determination but more important to note the confirmation of flow towards the pump and treat wells (RM-1 and RM-2).

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

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

On October 14, 2021, Stantec conducted a chemical oxidation (chemox) injection of Klozur® One product into five treatment/injection points consisting of SVE-1, SVE-2, SVE-3, NE Injection Well, SE Injection

Well. The Klozur® One product was mixed with potable water from the retail convenience store. Following the chemox injection, the Klozur® One solution was "hydraulically flushed" into the subsurface formation by injecting additional potable water into several of the wells. In summary, a total of 550 pounds of Klozur® One product mixed with 1,100 gallons of potable water plus was injected into the subsurface via the remediation wells during the chemox injection process. In addition, 165 gallons of potable water was used to flush the chemox into the subsurface formation.

2.0 SITE BACKGROUND

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

3.0 FIELD ACTIVITIES

The following field activities were conducted during the October 12, 2021, monitoring and treatment event:

- Measured static groundwater levels at Monitoring and Remediation Wells G-1, G-5, MW-10, MW-11, MW-12, MW-13, MW-16, MW-17-1, MW-17-2, RM-1 and RM-2
- Collected groundwater samples and field measurements of the following intrinsic water quality parameters from Monitoring and Remediation Wells G-1, G-5, MW-10, MW-11, MW-12, duplicate of MW-12, MW-13, MW-16, MW-17-1, MW-17-2, duplicate of MW-17-2, RM-1 and RM-2: pH, temperature, oxidation-reduction potential, dissolved oxygen, and conductivity.
- Samples from the above locations were submitted for the following laboratory analysis: GRO by Alaska Test Method (AK)101, DRO by AK102, volatile organic compounds (VOCs) by U.S. Environmental Protection Agency (EPA) Test Method 8260C, semi-volatile organic compounds (SVOCs) with EPA Test Method 8270D-SIM, and Metals 6010 for sodium.
- Completed chemox injection with Klozur One® solution into remediation wells SVE-1, SVE-2, SVE-3, NE Injection Well and SE Injection Well.

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

4.0 GROUNDWATER MONITORING RESULTS

Groundwater Levels. Table 1 presents groundwater elevations at this site based on the depths to groundwater measured during the October 2021 monitoring event. The "pump and treat" remediation system creates large variation in the groundwater elevations across the site. As shown on the groundwater contour map in **Appendix C**, there is a depression of the groundwater table at "pump and treat" remediation wells RM-1 and RM-2 and slight mounding of the groundwater table at MW G-5, and MW-

17-2. In conclusion, it is recommended the average gradient and direction of flow across the site as calculated by regression analyses via Surfer® not be applied to the site but rather note the confirmation of flow towards the "pump and treat" wells (RM-1 and RM-2).

Table 1 Groundwater Elevations

Measured on October 12, 2021

Monitoring Well Identification	Top of Casing Elevation (feet)[1]	Depth to Groundwater (feet)	Groundwater Elevation (amsl feet)
G-1	429.97	12.01	417.96
G-5	431.36	12.15	419.21
MW-10	430.12	12.14	417.98
MW-11	430.50	12.56	417.94
MW-12	427.84	9.84	418.00
MW-13	429.76	11.76	418.00
MW-16	429.29	11.29	418.00
MW-17-1	430.17	12.54	417.63
MW-17-2	430.79	12.22	418.57
RM-1	428.22	10.40	417.82
RM-2	430.79	13.00	417.79

Key:

1 Based on a vertical control survey completed on July 21, 2021, using an elevation datum of 432.00 feet located next to the front entrance of the store.

amsl above mean sea level NM Not measured

Field Parameters. The results of water quality parameter testing of the water samples collected during this monitoring event are presented in **Table 2**. It is noted that pH levels in October 2021 were consistent with those of past monitoring events. DO levels are considerably lower than those of last year with the exception of MW-12 which had a DO of 13.06 mg/L in October 2021 compared to 6.01 mg/L in October 2020. The high DO level in MW-12 may be an indication of lingering effect from past use of Klozur® CR solution that was used a couple years ago on this site. ORP levels are consistent with those of past monitoring events with the exception of RM-1 and RM-2 which have ORP levels of 66.6 mV in RM-1 and 78.5 mV in RM-2 compared to 31.5 mV in RM-1 and 15.1 mV in RM-2 on October 14-15, 2020.

Table 2 Field Measured Intrinsic Water Quality Parameters

Measured on October 12, 2021

Monitoring Well Identification	Volume Purged (gallons)	Temperature (ºC)	pH	Dissolved Oxygen (mg/L)	ORP (mV)
G-1	12.5	3.50	6.46	1.34	132.6
G-5	2.8	3.40	6.53	1.00	109.7
MW-10	10.5	3.10	6.73	2.77	161.4
MW-11	5.9	3.20	6.68	1.72	103.1
MW-12	7.1	4.90	6.75	13.06	173.2
MW-13	6.4	5.40	6.41	1.55	156.4
MW-16	13.1	4.70	6.50	2.31	157.4
MW-17-1	3.2	2.80	6.75	1.12	36.0
MW-17-2	3.3	3.00	6.57	1.13	60.8
RM-1	Pump Running	5.40	6.76	4.27	66.6
RM-2	Pump Running	3.30	6.70	0.46	78.5

Key:

ºC	degrees Celsius	ORP	oxidation-reduction potential
µs/cm°C	microSiemens per centimeter degrees Celsius	pH	log [H^+]
mg/L	milligrams per liter	PR	Pump running
mV	millivolts	SC	specific conductance corrected to 25 ºC
DO	Dissolved Oxygen		

Water Sample Analytical Results. All wells were sampled in accordance with the 2021 Work Plan. All historical monitoring data for this site are tabulated in **Appendix D**. Laboratory analytical results for compounds detected in groundwater samples collected during these events are summarized in **Table 3 and Table 4.** The laboratory analytical reports are provided in **Appendix E**. Lab results from this monitoring event suggest that contaminant concentrations are continuing to decrease or remain relatively low as summarized below:

- Monitoring well MW-10 had concentrations below GCLs for benzene, ethylbenzene, and xylenes for the first time since March 2017. In addition, toluene and GRO concentrations continue to decrease. DRO remains above GCLs with a slight increase in concentration from 1.74 mg/L in October 2020 to 2.43 mg/L during this sampling event.
- Monitoring well MW-11 had reported concentrations below GCLs in October 2020 but those concentrations have since returned to concentrations above GCLs for ethylbenzene, total xylenes, GRO, and DRO. Despite the ethylbenzene, xylenes, GRO, and DRO concentrations exceeding GCLs, it appears that concentrations are continuing a long-term decreasing trend.
- MW-12, MW-13, MW-16, G-1, G-5, RM-2, MW-17-1, and MW-17-2 also appear to be continuing a general decreasing trend for benzene, toluene, ethylbenzene, total xylenes, GRO and DRO. Over the last three monitoring events, beginning in August 2020, there appears to be an increasing trend in GRO and DRO at remediation well RM-1.
- Sodium levels are increasing at MW-10, MW-11, MW-12, MW-13, RM-1, RM-2, and MW-17-1 suggesting possible impact from the onsite chemox injections.

Table 3 Groundwater Analytical Results

Samples Collected on October 12, 2021

ID	BENZENE	TOLUENE	ETHYL-BENZENE	XYLENE (TOTAL)	GRO	DRO	1,2,4-TRIMETHYL-BENZENE	1,3,5-TRIMETHYL-BENZENE	NAPH-THALENE	SODIUM
UNITS	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
G-1	0.00102	U (0.00100)	U (0.00100)	0.000267 J	0.0427	0.704 J	U (0.00100)	0.000223	**0.00188 J[1]**	74.0
G-5	**0.00607**	0.000300 J	**0.0661**	0.0928	0.909	1.42	**0.110**	0.00373	**0.0173[1]**	65.0
MW-10	0.000209 J,Q	U (0.00500)	0.00142 J	0.00214 J	0.280 B,J	**2.43**	0.000853 J,Q	0.000438 J,Q	0.000728 J3[1]	96.5
MW-11	0.00103	0.000688 J	**0.492 Q**	**1.38**	**5.40**	**1.97**	**0.435 Q**	**0.117**	**0.0571[1]**	80.8
MW-12	0.000217 J	0.00215	**0.0722**	**0.500**	1.93	0.989	0.0514	0.0191	**0.0179[1]**	77.5
DUP1	0.000190 J	0.00215	**0.0736**	**0.524**	2.16	1.01	0.0542	0.0211	**0.0154[1]**	78.1
MW-13	U (0.00100)	U (0.00100)	0.000274 J	0.00769	0.0684 B,J	0.538 J	0.00234	0.00202	U (0.000250)[2]	81.4
MW-16	U (0.00100)	U (0.00100)	U (0.00100)	0.000223 J	U (0.100)	**1.57**	U (0.00100)	U (0.00100)	U (0.000250)[2]	43.5
MW-17-1	**1.61 Q**	**5.27 Q**	**1.03 E**	**3.69**	**30.9**	**3.68**	**0.442**	**0.103**	**0.0626[1]**	93.9
MW-17-2	0.00157 J	0.00590	0.00324 J	0.0107 J	0.0560 B,J	**3.22**	0.00475 J	0.000774 J	**0.00781 J[1]**	67.5
DUP2	0.000557 J	U (0.00100)	0.000914 J	0.00297 J	0.0627 J	**3.92**	0.00162	0.000303 J	**0.00245 J[1]**	67.6
RM-1	0.000358 J	0.000503 J	**0.142**	**1.25**	**5.34**	**2.22**	**0.286 Q**	**0.115**	**0.0481[1]**	67.3
RM-2	0.000496 J	U (0.00100)	**0.0401**	0.0617	0.645	0.650 J	0.0250	0.0167	**0.0132[1]**	35.4
GCLS	**0.0046**	**1.1**	**0.015**	**0.19**	**2.2**	**1.5**	**0.056**	**0.06**	**0.0017**	NA

Key:

1 Results from VOC Method 8270 D

Bold indicates the concentration exceeds the GCL or the estimated quantitation limit exceeds the GCL

italics The identification of the analyte is acceptable; the reported value is an estimate.

DUP Duplicate sample of the preceding sample.

DRO Diesel range organics analyzed by AK102.

J The identification of the analyte is acceptable; the reported value is an estimate.

J3 The associated batch QC was outside the established quality control range for precision.

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

GRO Gasoline range organics analyzed by AK101.

mg/L milligrams per liter

NA Not Applicable.

( ) Undetected above practical quantitation limits shown in parentheses.

Q Sample was prepared and/or analyzed past holding time as defined in the method. Concentrations should be considered minimum values.

B Analyte found in associated blank.

E The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).

Quality Assurance (QA)/Quality Control (QC) Review. Pace Analytical performed all analysis of groundwater samples for the March 2021 sampling event. Pace Analytical met all laboratory QA/QC criteria during the analysis of groundwater samples for this sampling event with the exception of the hold time to analyze VOCs by method 8260C samples as noted in **Table 4.** Affected samples and analytes were flagged with the Q qualifier. The Q qualifier denotes that the sample was prepared and/or analyzed past holding time as defined in the method and that the concentrations should be considered minimum values.

DUP1 is a duplicate of sample MW-12 and DUP2 is a duplicate sample of sample MW-17-2. The duplicate sample sets were collected to determine the precision of the field collection and laboratory analysis for this sampling event. Data presented in **Table 4** shows a high level of precision for Duplicate Sample Set 1. Duplicate Sample Set 2 exceeded precision tolerances for benzene, ethylbenzene, xylenes, 1,2,4-TMB, 1,3,5-TMB, and naphthalene. The precision tolerance exceedance for the offending analytes is attributed to the low, estimated concentrations for each analyte measured in the parent sample and/or the duplicate sample.

Laboratory QC data and the ADEC Laboratory Data Review Checklists are included in **Appendix E**.

Table 4 Laboratory Quality Control Objectives

Samples Collected on October 12, 2021

Quality Control Designation	Tolerance	Results for This Event	
Holding Times			
DRO/Water/to analyze	40 days	15 days	
DRO/Water/to extract	14 days	14 days	
GRO/Water/to analyze	14 days	10 days	
VOCs/Water/to analyze	14 days	14 - 16 days[1]	
SVOCs/Water/to analyze	40 days	8 days	
SVOCs/Water/to extract	7 days	7 days	
Field Duplicate – Precision			
Benzene/Water	± 30%	DUP1	*13.27 %*
		DUP2	***95.25 %***
Toluene/Water	± 30%	DUP1	0 %
		DUP2	NC
Ethylbenzene/Water	± 30%	DUP1	1.92 %
		DUP2	***111.99 %***
Xylenes/Water	± 30%	DUP1	4.69 %
		DUP2	***113.09 %***
GRO/Water	± 30%	DUP1	11.25 %
		DUP2	*11.29 %*
DRO/Water	± 30%	DUP1	2.10 %
		DUP2	19.61 %
1,2,4-Trimethylbenzene	± 30%	DUP1	5.30 %
		DUP2	***98.27 %***
1,3,5-Trimethylbenzene	± 30%	DUP1	9.95 %
		DUP2	***87.47 %***
Naphthalene	± 30%	DUP1	*15.01%*
		DUP2	**104.48 %**

Key:

%	Absolute value percentage of variance	SVOC	Semi-volatile organic compound
±	Absolute Value	VOC	Volatile organic compound
DRO	diesel range organics	*Italics*	The identification of the analyte is acceptable; the reported value is an estimate.
GRO	gasoline range organics	**BOLD**	Exceeds precision tolerance
NC	Not Calculated, undetected in duplicate	1	Analytes analyzed past hold times flagged with Q qualifier.

5.0 REMEDIATION SYSTEM OPERATION AND IN-SITU CHEMOX REMEDIATION

On October 14, 2021, Stantec conducted a chemical oxidation (chemox) injection of Klozur® One product into five treatment/injection points consisting of SVE-1, SVE-2, SVE-3, NE Injection Well, SE Injection Well. The Klozur® One product was mixed with potable water from the retail convenience store. Following the chemox injection, the Klozur® One solution was "hydraulically flushed" into the subsurface formation by injecting additional potable water into several of the wells.

The amounts of Klozur® One and potable water injected into each well is summarized below:

- SVE-1: Chemox solution consisting of 110 pounds of Klozur® One with 220 gallons of potable water followed by an additional 55 gallons of potable water.
- SVE-2: Chemox solution consisting of 110 pounds of Klozur® One with 220 gallons of potable water followed by an additional 55 gallons of potable water.
- SVE-3: Chemox solution consisting of 110 pounds of Klozur® One with 220 gallons of potable water followed by an additional 55 gallons of potable water.
- NE Injection Well: Chemox solution consisting of 110 pounds of Klozur® One with 220 gallons of potable water.
- SE Injection Well: Chemox solution consisting of 110 pounds of Klozur® One with 220 gallons of potable water.

In summary, a total of 550 pounds of Klozur® One product mixed with 1,100 gallons of potable water plus was injected into the subsurface via the remediation wells during the chemox injection process. In addition, 165 gallons of potable water was used to flush the chemox into the subsurface formation.

6.0 CONCLUSIONS

Results of the October 2021 groundwater analytical sampling showed that the following analytes were detected above ADEC GCLs as listed in Alaska Administrative Code (AAC) 18AAC 75.345 Table C (updated November 18. 2021) in the following wells:

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

- RM-1: Ethylbenzene, xylenes, DRO, GRO, 1,2,4-TMB, 1,3,5-TMB and naphthalene.
- RM-2: Ethylbenzene, and naphthalene.

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

7.0 RECOMMENDATIONS AND PROPOSED ACTIVITIES

No anomalies were found during the October 2021 (semi-annual) groundwater monitoring that would require additional corrective action or changes to the approved year 2021 Corrective Action Work Plan for this site.

8.0 LIMITATIONS

Stantec conducted this monitoring event in accordance with the 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). No other warranty, expressed or implied, is made. Data and recommendations made herein were prepared for Speedway, LLC Store 5315 (the former Tesoro 2 Go Mart #111). Information herein is for use at this site in accordance with the purpose of the report described.

FIGURES

FILE: S:\CAD\Proj\Tesoro\TGMart111_185751227\MonEvent\2021\4Q-December2021\Fig01 Location and Vicinity Map.cdr

Stantec

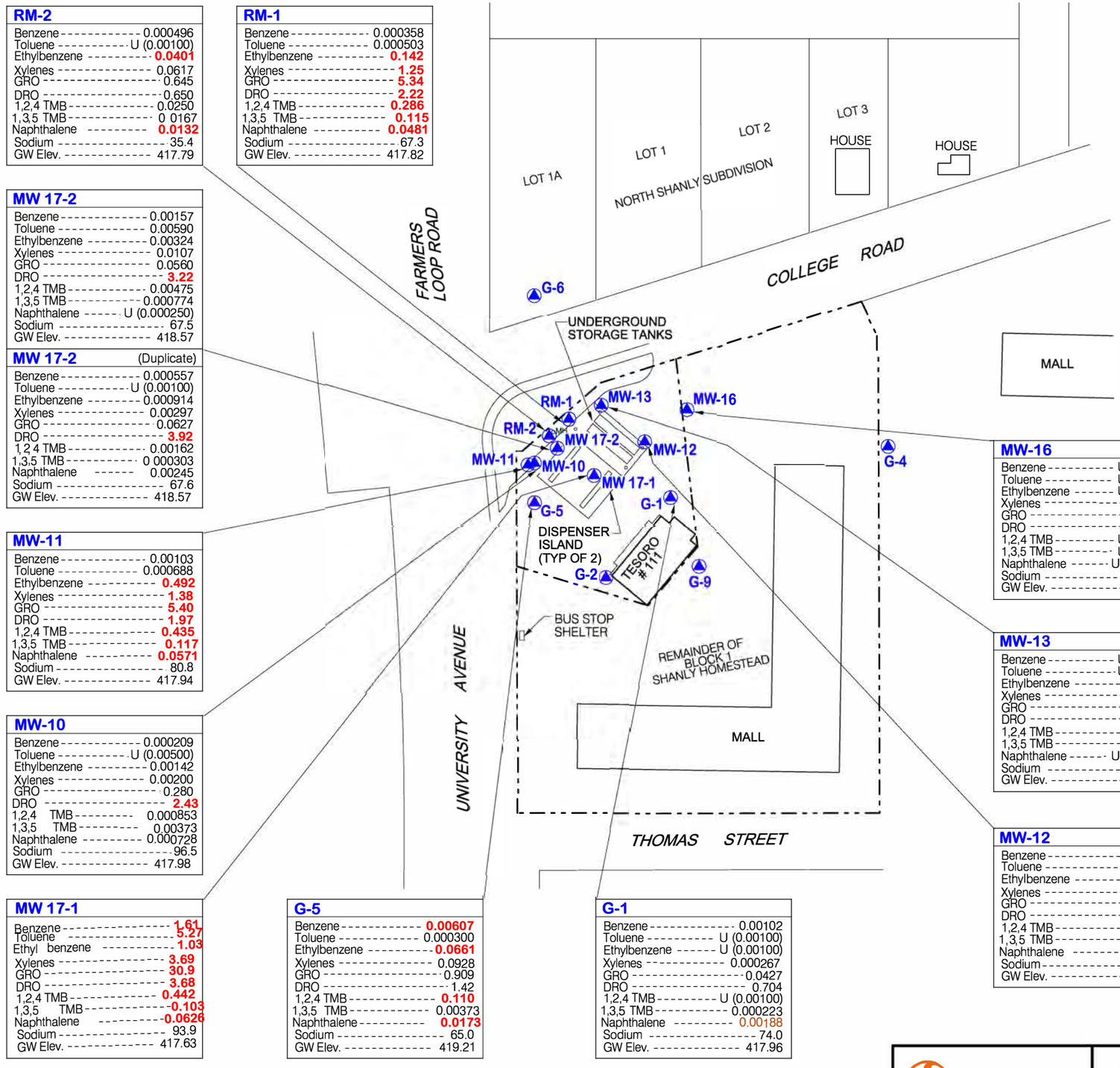
SPEEDWAY STORE 5315
(FORMER TESORO 2 GO MART #111)

4Q-OCTOBER 2021 GWM EVENT REPORT

LOCATION AND VICINITY MAP

FIGURE
1

185705364



RM-2

Benzene	0.000496
Toluene	U (0.00100)
Ethylbenzene	**0.0401**
Xylenes	0.0617
GRO	0.645
DRO	0.650
1,2,4 TMB	0.0250
1,3,5 TMB	0 0167
Naphthalene	**0.0132**
Sodium	35.4
GW Elev.	417.79

RM-1

Benzene	0.000358
Toluene	0.000503
Ethylbenzene	**0.142**
Xylenes	**1.25**
GRO	**5.34**
DRO	**2.22**
1,2,4 TMB	**0.286**
1,3,5 TMB	**0.115**
Naphthalene	**0.0481**
Sodium	67.3
GW Elev.	417.82

MW 17-2

Benzene	0.00157
Toluene	0.00590
Ethylbenzene	0.00324
Xylenes	0.0107
GRO	0.0560
DRO	**3.22**
1,2,4 TMB	0.00475
1,3,5 TMB	0.000774
Naphthalene	U (0.000250)
Sodium	67.5
GW Elev.	418.57

MW 17-2 (Duplicate)

Benzene	0.000557
Toluene	U (0.00100)
Ethylbenzene	0.000914
Xylenes	0.00297
GRO	0.0627
DRO	**3.92**
1,2,4 TMB	0.00162
1,3,5 TMB	0 000303
Naphthalene	0.00245
Sodium	67.6
GW Elev.	418.57

MW-11

Benzene	0.00103
Toluene	0.000688
Ethylbenzene	**0.492**
Xylenes	**1.38**
GRO	**5.40**
DRO	**1.97**
1,2,4 TMB	**0.435**
1,3,5 TMB	**0.117**
Naphthalene	**0.0571**
Sodium	80.8
GW Elev.	417.94

MW-10

Benzene	0.000209
Toluene	U (0.00500)
Ethylbenzene	0.00142
Xylenes	0.00200
GRO	0.280
DRO	**2.43**
1,2,4 TMB	0.000853
1,3,5 TMB	0.00373
Naphthalene	0.000728
Sodium	96.5
GW Elev.	417.98

MW 17-1

Benzene	**1.61**
Toluene	**5.27**
Ethyl benzene	**1.03**
Xylenes	**3.69**
GRO	**30.9**
DRO	**3.68**
1,2,4 TMB	**0.442**
1,3,5 TMB	**0.103**
Naphthalene	**0.0626**
Sodium	93.9
GW Elev.	417.63

G-5

Benzene	**0.00607**
Toluene	0.000300
Ethylbenzene	**0.0661**
Xylenes	0.0928
GRO	0.909
DRO	1.42
1,2,4 TMB	**0.110**
1,3,5 TMB	0.00373
Naphthalene	**0.0173**
Sodium	65.0
GW Elev.	419.21

G-1

Benzene	0.00102
Toluene	U (0.00100)
Ethylbenzene	U (0.00100)
Xylenes	0.000267
GRO	0.0427
DRO	0.704
1,2,4 TMB	U (0.00100)
1,3,5 TMB	0.000223
Naphthalene	0.00188
Sodium	74.0
GW Elev.	417.96

MW-16

Benzene	U (0.00100)
Toluene	U (0.00100)
Ethylbenzene	U (0.00100)
Xylenes	0.000223
GRO	U (0.100)
DRO	**1.57**
1,2,4 TMB	U (0.00100)
1,3,5 TMB	U (0.00100)
Naphthalene	U (0.000250)
Sodium	43.5
GW Elev.	418.00

MW-13

Benzene	U (0.00100)
Toluene	U (0.00100)
Ethylbenzene	0.000274
Xylenes	0.00769
GRO	0.0684
DRO	0.538
1,2,4 TMB	0.00234
1,3,5 TMB	0.00202
Naphthalene	U (0.000250)
Sodium	81.4
GW Elev.	418.00

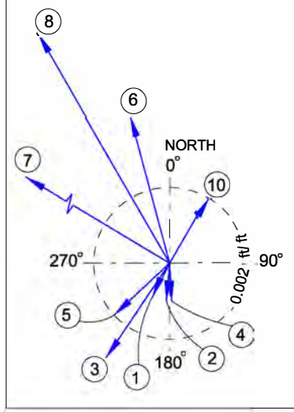
MW-12

Benzene	0.000217
Toluene	0.00215
Ethylbenzene	**0.0722**
Xylenes	**0.500**
GRO	1.93
DRO	0.989
1,2,4 TMB	0.0514
1,3,5 TMB	0 0191
Naphthalene	**0.0179**
Sodium	77.5
GW Elev.	418.00

MW-12 (Duplicate)

Benzene	0.000190
Toluene	0.00215
Ethylbenzene	**0.0736**
Xylenes	**0.524**
GRO	2.16
DRO	1.01
1,2,4 TMB	0.0542
1,3 5 TMB	0 0211
Naphthalene	**0.0154**
Sodium	78.1
GW Elev.	418.00

GROUNDWATER FLOW SUMMARY



	DATE	BEARING	GRADIENT (ft/ft)
1	MARCH 16, 2017	207°	0.001
2	JULY 7, 2017	185°	0.001
3	MARCH 29, 2018	214°	0.003
4	SEPT. 4, 2018	177°	0.001
5	MARCH 13, 2019	227°	0.002
6	JULY 29, 2019	345°	0.004
7	AUGUST 4, 2020	301°	0.023
8	OCT. 15, 2020	330°	0.007
9	MARCH 13, 2021	NC	NC
10	OCT. 12, 2021	30°	0.002

LEGEND:

— - - —	PROPERTY LINE
▲	MONITORING WELL LOCATION
DRO	DIESEL RANGE ORGANICS
ft/ft	FEET PER FOOT
GRO	GASOLINE RANGE ORGANICS
GW Elev.	GROUNDWATER ELEVATION IN FEET
NC	NOT CALCULATED
TMB	TRIMETHYLBENZENE
U	UNDETECTED ABOVE PRACTICAL QUANTITATION LIMIT SHOWN IN PARENTHESES

NOTES:

1. RESULTS SHOWN ARE FOR WELLS SAMPLED ON OCTOBER 12, 2021.
2. RESULTS ARE IN MILLIGRAMS PER LITER.
3. BOLD/RED TEXT INDICATES CONTAMINANT CONCENTRATIONS ABOVE CLEANUP LEVELS FOR THIS SITE.
4. RM-1 OPERATING DURING GAUGING.

N

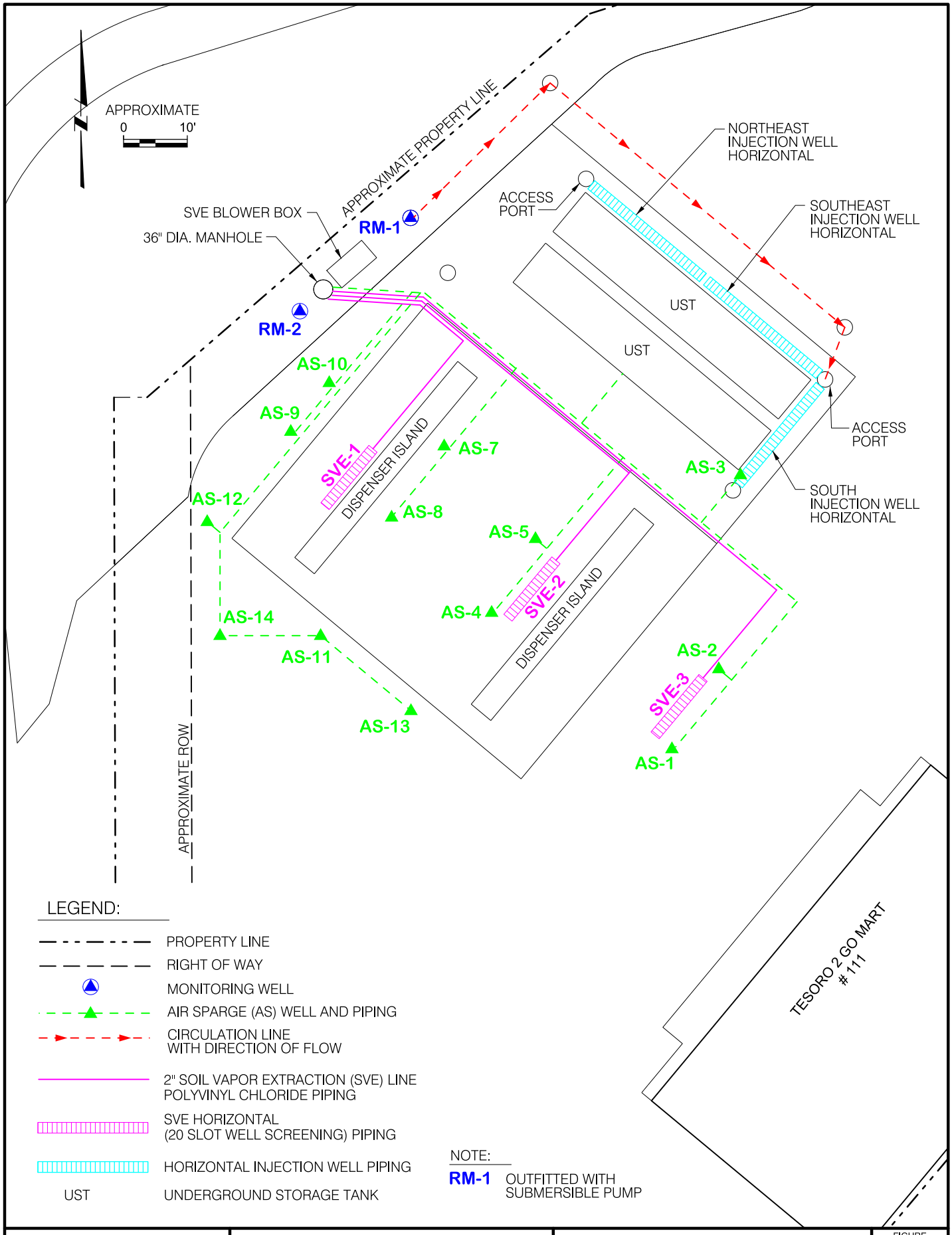
APPROXIMATE
0 50'

Stantec

SPEEDWAY STORE 5315
(FORMER TESORO 2 GO MART #111)
4Q-OCTOBER 2021 GWM EVENT REPORT

SITE PLAN
WITH GROUNDWATER
ANALYTICAL RESULTS

FIGURE
2
185705364



FILE: C:\D\CAD\Pro\Speedway_Tesoro\Speedway 5315 (TGMart111)_185705364\MonEvent\2021\4Q_December 2021\FIG03 Remediation System Layout.dgn

TIME: 01-DEC-2021 10:14

Stantec

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

4Q-OCTOBER 2021 GWM EVENT REPORT

REMEDIATION SYSTEM LAYOUT

FIGURE
3

185705364

APPENDIX A

Site Background

APPENDIX A – SITE BACKGROUND

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

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

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

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

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

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

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

August through October 1998. The canopy and fuel dispenser system were upgraded to include new fuel dispensers, a tank monitoring system, and a cathodic protection system. Soil samples collected from below the former dispensers and piping exceeded SCLs for hydrocarbons. As a

result, piping was laid in these excavations for expansion of the air sparge (AS) and soil vapor extraction (SVE) system. In addition, six vertical cathodic protection anodes were spaced around the USTs.

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

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

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

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

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

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

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

June 2013. A first round of chemical oxidation application of Klozur CR® was injected into two on-site wells (Monitoring Well MW-10 and AS Well AS-9). Monitoring Well G-5 was used to measure the chemical oxidation impact to the groundwater table. The prior and post injection

results of intrinsic parameters clearly indicated the effectiveness of the chemical oxidant – in particular with respect to the sodium, pH, total organic carbon (TOC), and dissolved oxygen levels. The laboratory analytical results indicated significant reductions in the petroleum contaminants of concern.

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

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

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

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

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

July 2015. Petroleum compounds were found to exceed GCLs in Monitoring Wells MW-10, MW-11, MW-12, and MW-16, as well as Remediation Well RM-1. The SVE system remained in operations. Well rehabilitation, by acid treatment, was performed in RM-1 and the south horizontal injection well. Chemical oxidation treatment with the manual injection of Klozur CR® product was performed at the southeast and northeast horizontal injection wells.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

APPENDIX B

Field Methods and Procedures

APPENDIX B – FIELD METHODS AND PROCEDURES

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

The following table presents the proposed tasks for the Alaska Department of Environmental Conservation (ADEC)-approved 2021 Corrective Action Work Plan. The scope of these tasks is based on the results and findings of the monitoring and remediation completed to date at Speedway Store 5315 (former Tesoro 2 Go Mart #111), ADEC Facility ID #1112; ADEC File #100.26.026.

2021 Work Plan Schedule for Speedway Store 5315 (former Tesoro 2Go Mart 111)

- *Task 1 –Groundwater Monitoring*

  This task consists of semi-annual monitoring of the groundwater wells and quarterly monitoring of the remediation/recirculation wells (RM-1 and RM-2). Sampling locations and analyses for the groundwater monitoring wells and remediation wells are listed on the 2021 Work Plan Schedule below.

Work Plan Tasks for 2021		1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Task 1	Monitoring Wells: MW-11, MW-12, MW-13, MW-16, MW-10, G-1, G-5, MW 17-1, and MW 17-2	V, G, D, I & S		V, G, D, P, I & S	
	Recirculation/Remediation Wells: RM-1 and RM-2	V, G, D, I & S	V, G, D, I & S	V, G, D, P, I & S	V, G, D, I & S
Task 2	Install a buried insulated water discharge line from recirculation well RM-2 to connect to water discharge line from RM-1.		✓	✓	
Task 3	O&M Groundwater Recirculation Wells RM-1 & RM-2	✓	✓	✓	✓
Task 4	Chemical Oxidation Treatment		✓	✓	✓

Key:

AK – Alaska Test Method
D – Diesel range organics by AK102.
E – Drinking water parameters by EPA Method 524.1.
G – Gasoline range organics by AK101.
I – Intrinsic indicators consisting of 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).

- *Task 2 – Install a buried insulated water discharge line from recirculation well RM-2 to connect to water discharge line from RM-1.*

  The plumbing system for the discharge of flow from recirculation well RM-2 will be extended to connect via a buried insulated water line from RM-2 to the existing discharge water line from recirculation well RM-1. The plumbing addition will allow the winter shut down of RM-1 pump when the groundwater table drops below the feasible pumping level in the well casing. When RM-1 is seasonally shut down then a portion of the flow from RM-2 will be discharged into the groundwater injection line (former SVE line) located on the southeast edge of the UST.

- *Task 3 – O&M Groundwater Recirculation Wells RM-1 & RM-2*

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

- *Task 4 – Chemical Oxidation Treatment*

  Stantec proposes to provide chemical oxidation treatment of the petroleum contaminated soil and groundwater three times a year into the three existing horizontal injection lines located beneath the fuel dispenser islands and the two injection lines located on the east side of the USTs. The injection of chemox will occur in the 2nd, 3rd and 4th quarters of the year. The first annual injection will occur in the spring of the year after the winter frost dissipates, and the second and third injections will take place several months later just prior to winter freeze-up. Five hundred (500) gallons of a prepared solution of the chemical oxidant Klozur One® (a chemical mixture consisting primarily of sodium persulfate) will be injected into the five existing horizontal injection lines with a dose of 100 gallons per injection well. The chemox mixture for each well will consist of 110 pounds Klozur One® mixed with approximately 100 gallons of clear water. The horizontal injection well located along the northeast edge of the USTs will receive an additional 200 gallons of clear water to provide a "hydraulic push" to distribute the chemox solution into the surrounding formation. The other four injection lines are continuously dosed with recirculated groundwater discharged from remediation/recirculation wells RM-1 & RM-2. The on-site monitoring wells will be sampled semi-annually as outlined in Task 1 to assess treatment impact on the groundwater table. The remediation/recirculation wells will be sampled on

a quarterly basis. In addition, the groundwater monitoring wells will be sampled for sodium to check on the distribution/migration of the oxidant.

The Corrective Action Plan for the year 2021 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 2021 Work Plan Schedule shown above.

APPENDIX C

Field Measurements and Notes and Groundwater Elevation Contours

Project: Store 5315 (TNS 111) **Date:** October 12, 2021

Project Phase: 2021 4th Quarter Monitoring

Project number: 185705364 **Sampler:** Leslie Petre and Geoff Moorhead

Well I.D.	Volume Purged (gallons)	Sheen/ Odor	Temp. (^{o}C)	pH	Dissolved Oxygen (mg/L)	ORP (mv)	Specific Conductance (µs/cm)	Top of Casing[1]	Depth to GW feet	GW Elevation	Total Depth (feet btoc)
G-1	12.5	n/n	3.50	6.46	1.34	132.6	13.90	429.97	12.01	417.96	18.38
G-5	2.8	n/n	3.40	6.53	1.00	109.7	10.70	431.36	12.15	419.21	17.90
MW-10	10.5	n/y	3.10	6.73	2.77	161.4	14.90	430.12	12.14	417.98	17.53
MW-11	5.9	n/y	3.20	6.68	1.72	103.1	12.30	430.50	12.56	417.94	24.71
MW-12	7.1	n/n	4.90	6.75	13.06	173.2	11.90	427.84	9.84	418.00	24.28
MW-13	6.4	n/n	5.40	6.41	1.55	156.4	10.80	429.76	11.76	418.00	24.80
MW-16	13.1	n/n	4.70	6.50	2.31	157.4	11.60	429.29	11.29	418.00	18.02
MW 17-1	3.2	n/y	2.80	6.75	1.12	36.0	15.80	430.17	12.54	417.63	19.15
MW 17-2	3.3	n/y	3.00	6.57	1.13	60.8	10.60	430.79	12.22	418.57	19.05
RM-1	Pump running	n/y	5.40	6.76	4.27	66.6	11.30	428.22	10.40	417.82	NM
RM-2	Pump runnning	n/y	3.30	6.70	0.46	78.5	8.24	430.79	13.00	417.79	NM

1 - Based on vertical control survey completed July 2021, using an elevation datum of 432.00 feet

GW - groundwater
NP - not purged
Y - yes
mv - millivolts
ORP -- oxidation-reduction potential
µS/cm - microsiemens per centimeter
mg/L - milligrams per liter
Samples analyzed for AK101, AK102, 8260 (BTEX), Sodium, **Nathphalene by 8270 D**
N - no
Purge volumes calculated in field with hydro-terra.com
NA - not applicable
NM - not measured

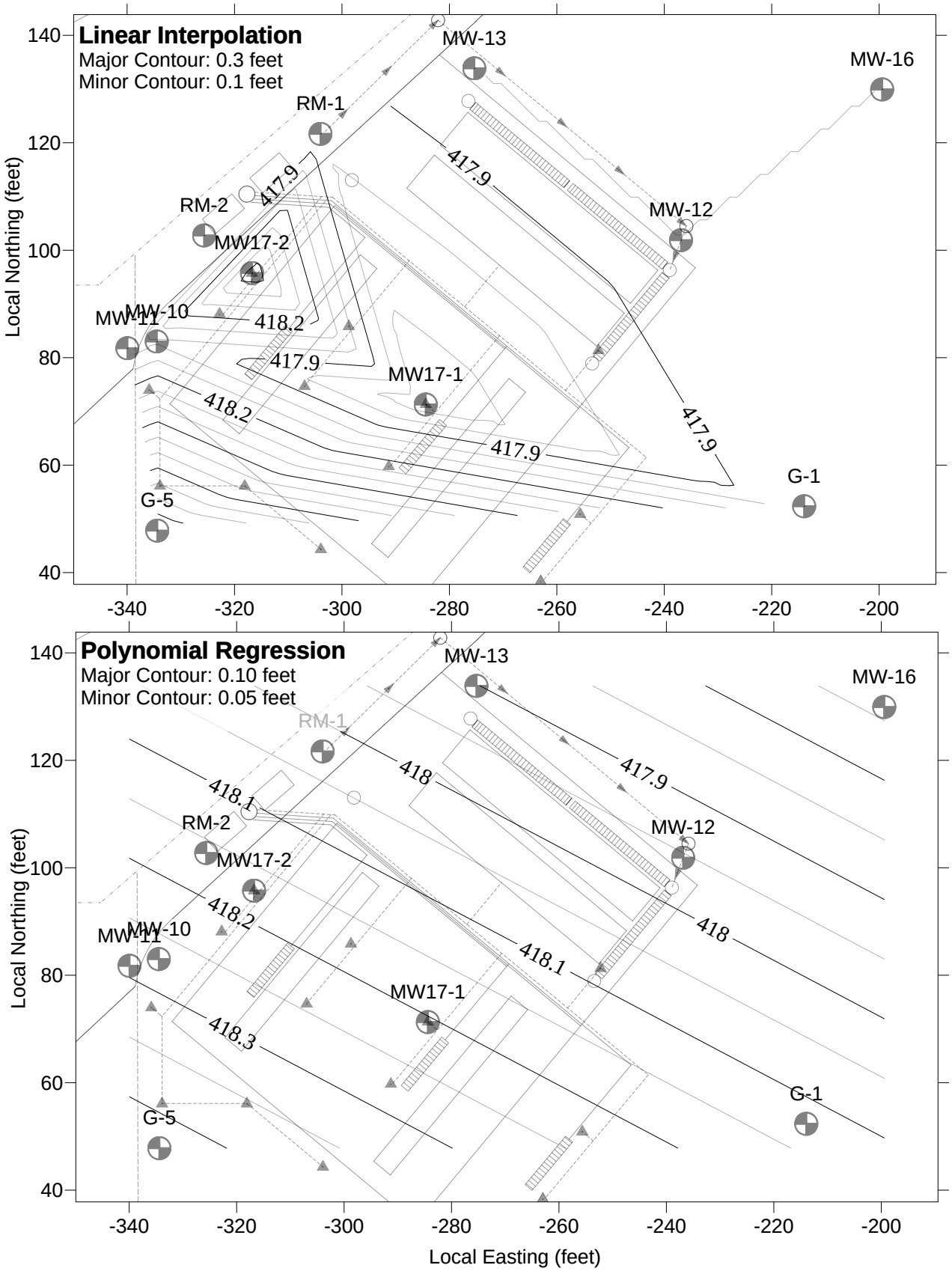
Air Temp:
Wind:
Humidity:
Pressure:
Precip:
Source:

NOTES:		Well Dia.	Sample Date and Time
G-1	no odor or sheen, light orage color	4"	10/12/21 @ 11:50am
G-5	light orange color	2"	10/12/21 @ 3:55pm
MW-10	grey color, slight odor	4"	10/12/21 @ 4:30pm
MW-11	grey color, slight odor	2"	10/12/21 @ 4:35pm
MW-12	Very orange initially, cleared to a pale yellow	2"	10/12/21 @ 12:30pm
MW-13	Dark grey	2"	10/12/212 @ 2:55pm
MW-16	very clear initially then went dark	4"	10/12/21 @ 1:55pm
MW 17-1		2"	10/12/21 @ 7:05pm
MW 17-2		2"	10/12/21 @ 6:20pm
RM-1	clear to orange	4"	10/12/21 @ 5:40pm
RM-2	Ran pump for 1.7 hr @ 3gpm, yellow color	4"	10/12/21 @ 5:17pm
Dup 1	of MW-12		
Dup 2	Of MW 17-2		

Instruments / methods used for above measurements:			Model
Static water level		Solinst	
pH		YSI	
Conductivity		YSI	
Dissolved Oxygen		YSI	
ORP		YSI	
Temperature		YSI	

Notes on Remediation System Operation:

Speedway Store 5315
Groundwater Elevation Contours
October 12, 2021



Elevation datum is locally established benchmark at 432.00 feet.

APPENDIX D

Tables of Historical Monitoring Data

Monitoring Well MW-10

Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	GRO (mg/L)	DRO (mg/L)	Sodium mg/L	GW Elev (feet)
10-Mar-94	**19**	**24**	**2.3**	**19**	NT	NT	NM	418.07
09-Sep-94	**15.2**	**18**	**0.9**	**14.9**	NT	NT	NM	419.89
12-Dec-94	**16.7**	**20**	**2.1**	**15.5**	NT	NT	NM	418.1
15-Aug-97	**8.3**	**14.4**	**1.16**	**9.35**	**77**	NT	NM	415.92
27-May-99	**6.88**	**13.4**	**1.35**	**7.17**	**64**	**12.8**	NM	415.09
17-Apr-00	**1.86**	**7.06**	**0.887**	**3.47**	**35**	**5.84**	NM	413.89
26-Oct-00	**1.88**	**7.2**	**0.914**	**5.53**	**39.7**	**9.04**	NM	417.44
13-Dec-01	**2.7**	**9.6**	**1.59**	**7.73**	**53.8**	**10.1**	NM	413.14
01-May-02	**0.0122**	0.0074	0.0137	0.117	1.1	**1.96**	NM	414.55
19-Aug-02	**1.92**	**3.55**	**0.664**	**3.512**	**27.5**	**15.9**	NM	417.86
05-Nov-02	**0.0456**	0.00533	**0.0368**	0.1189	1.7	**6.78**	NM	417.06
19-Mar-03	**0.477**	0.313	**0.319**	**1.404**	**8.8**	**12.9**	NM	416.21
05-Aug-03	**2.54**	**8.79**	**0.876**	**7.09**	**61.8**	**17.6**	NM	418.43
08-Mar-04	**0.198**	0.912	U (0.025)	**2.89**	**12.8**	**10.3**	NM	414.92
15-Sep-04	**0.0802**	0.00234	**0.0497**	**0.446**	2.06	**6.01**	NM	416.64
15-Jul-05	**0.416**	**3.37**	**0.513**	**3.63**	**25.6**	**14.9**	NM	417.82
27-Jul-06	**0.413**	**5.3**	**0.714**	**4.88**	**32.5**	**16.3**	NM	417.06
02-Mar-07	**0.203**	**2.33**	**0.545**	**3.9**	**32.8**	**8.8**	NM	414.23
17-Oct-07	0.00324	0.00102	0.0105	0.0406	1.15	**6.43**	NM	416.47
05-Jun-08	**0.23**	**2.9**	**1.18**	**8.14**	**38.4**	**10.2**	NM	415.69
29-Sep-08	0.00139	0.00403	0.012	0.0777	1.18	**3.67**	NM	417.20
25-Feb-09	**0.0778**	**2.7**	**1.18**	**8.89**	**43.4**	**30.3**	NM	NM
21-Jul-09	**0.014**	**1.77**	**1.26**	**12.2**	**47.3**	**11.8**	NM	416.71
17-Mar-10	0.0027	**1.50**	**1.20**	**9.5**	**92**	**16.2**	NM	413.98
15-Sep-10	**0.00635**	0.0902	**0.776**	**4.06**	**16.2**	**21.3**	NM	416.60
22-Mar-11	0.00425	0.0195	**0.678**	**3.15**	**16.0**	**17.4**	NM	414.01
01-Sep-11	**0.00673**	0.0908	**0.498**	**3**	**22.5**	**30.5**	NM	417.49
13-Mar-12	**U (0.010)**	U (0.010)	**0.118**	**0.679**	**4.2**	**10.3**	NM	414.42
23-Jul-12	0.00226	0.0012	0.00161	U (0.0030)	0.32	**2.57**	NM	416.97
21-Feb-13	0.000877	0.00156	0.00702	0.166	**2.69**	**4.55**	NM	414.24
13-Aug-13	0.00245	0.00455	**0.022**	0.0755	1.59	**10.3**	NM	416.54*
19-Mar-14	0.000642	0.00404	**0.015**	0.119	1.98	**7.82**	NM	414.30
31-Jul-14	**0.011**	0.00240	**0.047**	**1.20**	**5.0**	**10.0**	NM	419.65
03-Mar-15	0.00067	U (0.0005)	0.0020	0.0063	0.23	**3.2**	NM	414.98
27-Jul-15	0.0012	0.0020	0.0037	0.011	0.65	**4.0**	NM	416.16
23-Feb-16	U (0.001)	U (0.001)	U (0.001)	U (0.001)	U (0.05)	**2.7**	NM	415.20
06-Oct-16	U (0.001)	U (0.001)	U (0.001)	U (0.001)	U (0.05)	**2.3**	NM	418.72
16-Mar-17	**0.011**	0.0027	**0.16**	**0.489**	**3.7**	**6.7**	NM	414.92
29-Mar-18	**0.022**	0.01	**0.35**	**1.3**	**9.6**	**13**	NM	414.6
07-Sep-18	**0.027**	0.0052	**0.27**	**1.283**	**5.2**	**13**	NM	418.69
13-Mar-19	**0.016**	U (0.002)	**0.21**	**0.726**	**3.5**	**8**	NM	415.23
29-Jul-19	**U (0.15)**	U (0.1)	**0.2**	**0.82**	**5.6**	**13**	NM	416.33
04-Aug-20	**0.0577**	0.142	**0.6**	**1.89**	**4.2**	**1.9**	**60**	419.74
15-Oct-20	**0.00506**	0.0387	**0.0649**	**0.198**	1.12	**1.74**	50.9	418.63
30-Mar-21	NM	NM	NM	NM	NM	NM	NM	NM
12-Oct-21	0.000209 J,Q	U (0.005)	0.00142 J	0.00214 J	0.280 B,J	**2.43**	96.5	417.98
GCLs	**0.0046**	**1.1**	**0.015**	**0.19**	**2.2**	**1.5**	NA	NA

* Event dates that sampling did not occur on have been removed from this chart.

Monitoring Well MW-11

Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	GRO (mg/L)	DRO (mg/L)	Sodium mg/L	GW Elev (feet)
28-Sep-12	**0.235**	0.594	**0.873**	**5.52**	**40.3**	**19.4**	NM	416.27
21-Feb-13	**0.0177**	0.00707	**1.61**	**7.2**	**41.1**	**5.72**	NM	414.26
13-Aug-13	**0.257**	0.0152	**0.600**	**1.15**	**5.45**	**7.79**	NM	416.53
19-Mar-14	**0.0933**	0.0548	**0.915**	**3.28**	**22.1**	**14.1**	NM	414.33
31-Jul-14	**0.088**	0.032	**0.510**	**2.0**	**10.0**	**7.0**	NM	419.65
03-Mar-15	**0.038**	0.071	**0.600**	**2.9**	**17.0**	**3.0**	NM	414.99
27-Jul-15	**0.460**	0.160	**1.50**	**6.6**	**34.0**	**13.0**	NM	416.20
23-Feb-16	U (0.001)	U (0.001)	U (0.001)	0.0025	0.13	1.2	NM	415.22
06-Oct-16	U (0.001)	U (0.001)	0.0068	0.0025	0.20	0.77	NM	418.74
16-Mar-17	**U (0.2)**	0.48	**0.89**	**3.99**	**14**	**6.2**	NM	414.93
07-Jul-17	**0.110**	0.260	**0.400**	**1.76**	**7.10**	**7.40**	NM	416.97
29-Mar-18	**U (0.15)**	0.71	**0.92**	**6.1**	**U (90)**	**8.0**	NM	414.62
07-Sep-18	**0.068**	0.066	**0.57**	**2.29**	**7.8**	**3.2**	NM	418.71
13-Mar-19	**0.1**	0.3	**0.85**	**5**	**19**	**9.9**	NM	415.23
29-Jul-19	**U (0.15)**	0.16	**0.67**	**4.96**	**15**	**9.8**	NM	416.28
04-Aug-20	**0.057**	0.00403	**0.434**	**1.75**	**5.63**	**3.51**	NM	419.64
15-Oct-20	0.000929 J	0.00121	0.0106	0.081	0.386 J	1.06 J	48.2	418.6
30-Mar-21	NM	NM	NM	NM	NM	NM	NM	NM
12-Oct-21	0.00103	0.000688 J	**0.492 Q**	**1.38**	**5.40**	**1.97**	80.8	417.94
GCLs	**0.0046**	**1.1**	**0.015**	**0.19**	**2.2**	**1.5**	NA	NA

Monitoring Well MW-12

Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	GRO (mg/L)	DRO (mg/L)	Sodium mg/L	GW Elev (feet)
28-Sep-12	0.00438	**13.9**	**3.51**	**19.5**	**165**	**2.74**	NM	416.30
21-Feb-13	**0.012**	**7.69**	**2.69**	**12.8**	**71.1**	**3.66**	NM	414.30
13-Aug-13	**0.0334**	**7.30**	**1.00**	**6.21**	**22.6**	**6.05**	NM	416.54
24-Sep-13	**0.00913**	**1.65**	**0.344**	**1.72**	**8.35**	**7.11**	NM	NM
19-Nov-13	**0.0117**	**1.83**	**0.527**	**2.19**	**13.5**	**11.7**	NM	415.65
19-Mar-14	**0.0128**	**2.24**	**0.663**	**5.34**	**27.9**	**11.4**	NM	414.40
31-Jul-14	U (0.0005)	0.01	0.003	0.015	0.18	0.5	NM	419.67
03-Mar-15	U (0.0005)	0.01	**0.022**	**0.240**	**6.8**	1.2	NM	416.05
27-Jul-15	0.00057	0.011	**0.026**	**0.190**	**3.2**	0.99	NM	416.21
23-Feb-16	U (0.001)	U (0.001)	U (0.001)	U (0.001)	U (0.05)	0.32	NM	415.28
06-Oct-16	U (0.001)	U (0.001)	U (0.001)	U (0.001)	U (0.05)	0.39	NM	418.79
16-Mar-17	U (0.02)	U (0.02)	**0.3**	**0.52**	**3.8**	**1.5**	NM	415.00
07-Jul-17	U (0.002)	U (0.04)	**0.13**	**0.38**	**2.8**	1.4	NM	417.04
29-Mar-18	U (0.003)	U (0.002)	U (0.003)	U (0.002)	2.0	0.58	NM	414.69
07-Sep-18	U (0.0004)	U (0.001)	**0.019**	0.063	1.1	0.56	NM	418.78
13-Mar-19	U (0.003)	U (0.002)	**0.01**	0.055	1.3	0.78	NM	415.30
30-Jul-19	U (0.003)	U (0.002)	U (0.003)	0.0039	0.26	0.47	NM	416.38
03-Aug-20	0.000353	0.0364	**0.054**	**0.487**	1.23	0.852	48.7	422.58
14-Oct-20	**0.0192**	0.000817 J	**0.123**	**0.425**	1.08	0.658 J	56.8	418.68
30-Mar-21	0.000395 J	0.000853 J	**0.0221**	0.0676	**2.3**	1.26	57.9	415.36
12-Oct-21	0.000217 J	0.00215	**0.0722**	**0.500**	1.93	0.989	77.5	418.00
GCLs	**0.0046**	**1.1**	**0.015**	**0.19**	**2.2**	**1.5**	NA	NA

Monitoring Well MW-13

Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	GRO (mg/L)	DRO (mg/L)	Sodium mg/L	GW Elev (feet)
28-Sep-12	U (0.0005)	0.0316	**0.0263**	**0.609**	**8.11**	0.738	NM	416.31
21-Feb-13	0.00130	U (0.0005)	0.0125	0.167	0.649	**1.90**	NM	414.31
13-Aug-13	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	0.839	NM	416.55
24-Sep-13	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	0.736	NM	NM
19-Nov-13	U (0.0005)	0.000751	U (0.0005)	0.00168	U (0.05)	0.478	NM	415.48
18-Mar-14	0.00067	0.000846	U (0.0005)	0.00208	0.0593	1.13	NM	414.42
31-Jul-14	U (0.0005)	U (0.001)	U (0.001)	U (0.001)	U (0.05)	U (0.42)	NM	419.67
03-Mar-15	**0.02**	U (0.0005)	**0.028**	0.130	0.820	0.62	NM	415.04
27-Jul-15	U (0.0005)	U (0.0005)	0.0014	0.0046	U (0.05)	0.58	NM	416.24
23-Feb-16	U (0.001)	U (0.001)	0.0096	0.073	1.0	**2.3**	NM	415.31
06-Oct-16	U (0.001)	U (0.001)	U (0.001)	0.0058	U (0.05)	0.65	NM	418.8
16-Mar-17	U (0.002)	U (0.002)	U (0.0053)	0.013	0.150	0.44	NM	415.02
07-Jul-17	U (0.002)	U (0.002)	U (0.003)	U (0.002)	U (1.0)	0.32	NM	417.06
29-Mar-18	U (0.003)	U (0.002)	U (0.003)	U (0.002)	U (1)	0.45	NM	414.70
07-Sep-18	U (0.0004)	U (0.001)	U (0.001)	U (0.002)	U (0.15)	0.43	NM	418.76
13-Mar-19	U (0.003)	U (0.002)	0.0072	0.0094	U (1.3)	0.36	NM	415.34
29-Jul-19	U (0.003)	U (0.002)	0.0085	0.0214	0.45	1.1	NM	416.37
03-Aug-20	0.000323	0.0351	**0.0439**	**0.454**	1.01	0.6	49.6	419.57
14-Oct-20	**0.018**	0.0108	**0.155**	**0.63**	1.86	1.3	140.0	418.67
30-Mar-21	0.00019 J	U (0.001)	0.00361	0.00705	0.139 B	0.341 J	40.6	415.41
12-Oct-21	U (0.001)	U (0.001)	0.000274 J	0.00769	0.0684 B,J	0.538 J	81.4	418.00
GCLs	**0.0046**	**1.1**	**0.015**	**0.19**	**2.2**	**1.5**	NA	NA

Monitoring Well MW-16

Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	GRO (mg/L)	DRO (mg/L)	Sodium mg/L	GW Elev (feet)
26-Feb-92	0.004	U	U	U	NT	NT	NM	418.29
04-Jun-92	0.003	U	U	0.007	NT	NT	NM	418.41
30-Nov-92	**0.51**	0.094	0.056	0.15	NT	NT	NM	416.6
24-Feb-93	**0.41**	0.033	0.036	0.084	NT	NT	NM	418.13
18-Aug-93	**0.099**	U	U	0.014	NT	NT	NM	420.26
23-Nov-93	**0.039**	U	U	0.004	NT	NT	NM	419.59
10-Mar-94	**0.005**	0.001	U	U	NT	NT	NM	418.28
01-Jun-94	**0.022**	U	0.003	0.003	NT	NT	NM	418.82
14-Dec-94	**0.012**	U	0.001	U	NT	NT	NM	418.22
20-Dec-95	**0.055**	U	U	0.003	NT	NT	NM	414.53
16-May-96	**0.007**	U	U	U	NT	NT	NM	415.78
09-Dec-96	**0.0071**	U	U	U	NT	NT	NM	415.43
20-Mar-97	**0.0056**	U	U	U	NT	NT	NM	414.4
18-Nov-97	0.00134	0.00101	U	0.00135	U	NT	NM	415.22
01-May-98	**0.00567**	0.00308	0.00193	0.00739	0.089	0.534	NM	414.38
14-Oct-98	U	U	U	0.00222	U	0.281	NM	416.59
27-May-99	0.00203	U	U	U	U	**2.64**	NM	415.29
05-Nov-99	U	U	U	U	U	**13**	NM	415.51
17-Apr-00	0.00305	U	U	U	U	**3.66**	NM	414.15
26-Oct-00	0.00186	0.00261	U	0.003	U	**3.98**	NM	417.47
30-May-01	0.0007	U	U	U	U	**6.65**	NM	413.63
13-Dec-01	**0.0480**	0.302	0.0109	0.0554	0.9	**5.29**	NM	413.23
19-Aug-02	U (0.0005)	U (0.002)	U (0.002)	0.00896	U (0.09)	U (0.5)	NM	417.85
05-Nov-02	0.000589	U (0.002)	U (0.002)	0.00234	U (0.09)	0.595	NM	417.07
19-Mar-03	0.000531	0.00653	U (0.002)	0.00469	U (0.09)	1.1	NM	416.23
08-Mar-04	U (0.0005)	0.0288	U (0.0005)	U (0.001)	0.072	**2.85**	NM	414.95
15-Sep-04	0.0006	0.0143	U (0.0005)	U (0.0015)	0.0521	1.36	NM	416.65
15-Jul-05	0.0007	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	1.06	NM	417.99
16-Feb-06	U (0.0005)	0.0225	U (0.0005)	U (0.0015)	0.0641	**2.09**	NM	414.58
27-Jul-06	0.000638	0.0108	U (0.0005)	U (0.0015)	U (0.05)	1.06	NM	417.08
02-Mar-07	U (0.0005)	0.00206	U (0.0005)	U (0.0015)	U (0.05)	**1.95**	NM	414.25
17-Oct-07	U (0.0025)	0.00318	U (0.0025)	U (0.0075)	U (0.25)	**6.53**	NM	416.62
05-Jun-08	U (0.0005)	0.0117	U (0.0005)	U (0.0015)	0.0761	**4.4**	NM	415.88*
29-Sep-08	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	**2.69**	NM	417.26
25-Feb-09	U (0.0005)	0.0135	U (0.0005)	U (0.0015)	0.0633	**3.44**	NM	414.49
21-Jul-09	U (0.0005)	U (0.001)	U (0.001)	U (0.003)	U (0.05)	0.564	NM	416.76
17-Mar-10	U (0.001)	U (0.001)	U (0.001)	U (0.002)	U (0.05)	0.586	NM	413.98
15-Sep-10	U (0.0005)	U (0.0005)	0.000796	0.00508	U (0.05)	**2.35**	NM	416.52
22-Mar-11	U (0.0005)	0.0852	U (0.0005)	U (0.0015)	0.221	**2.82**	NM	413.98
01-Sep-11	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	**2.38**	NM	417.42
13-Mar-12	U (0.0005)	0.0845	U (0.0005)	U (0.0015)	0.241	**4.18**	NM	414.39
23-Jul-12	U (0.0005)	U (0.0010)	U (0.0010)	U (0.0030)	U (0.05)	1.04	NM	417.64
21-Feb-13	U (0.0005)	0.066	U (0.0005)	U (0.0015)	0.182	1.38	NM	414.34
13-Aug-13	U (0.0005)	0.00143	U (0.0005)	U (0.0015)	U (0.05)	**3.61**	NM	416.56
18-Mar-14	U (0.0005)	0.0694	U (0.0005)	U (0.0015)	0.178	**3.17**	NM	414.51
31-Jul-14	U (0.0005)	U (0.001)	U (0.001)	U (0.001)	U (0.05)	**2.3**	NM	419.7
03-Mar-15	**0.015**	0.039	0.0073	0.130	0.740	1.3	NM	415.2
27-Jul-15	**0.0068**	0.0016	0.0057	0.071	0.420	0.81	NM	416.22
23-Feb-16	U (0.001)	U (0.001)	U (0.001)	0.0058	U (0.05)	0.40	NM	415.26

Monitoring Well MW-16 (Continued)

Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	GRO (mg/L)	DRO (mg/L)	Sodium mg/L	GW Elev (feet)
16-Mar-17	U (0.002)	U (0.002)	U (0.003)	U (0.002)	U (0.05)	0.88	NM	414.98
07-Jul-17	U (0.002)	U (0.002)	U (0.003)	U (0.003)	U (1.0)	**3.7**	NM	417.02
13-Mar-19	U(0.003)	U (0.002)	U (0.003)	U (0.003)	U (1.3)	**1.9**	NM	415.27
30-Jul-19	U(0.003)	U (0.002)	U (0.003)	0.003	U (0.25)	0.39	NM	415.37
14-Oct-20	**0.0144**	0.000556 J	0.000399 J	0.0241	0.0468 J	0.918	49.60	418.63
30-Mar-21	U (0.001)	U (0.001)	U (0.001)	0.000994 J	0.0233 BJ	0.97	36.10	415.38
12-Oct-21	U (0.001)	U (0.001)	U (0.001)	0.000223 J	U (0.1)	**1.57**	43.5	418.00
GCLs	**0.0046**	**1.1**	**0.015**	**0.19**	**2.2**	**1.5**	NA	NA

* Event dates that sampling did not occur on have been removed from this chart.

Monitoring Well G-1

Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	GRO (mg/L)	DRO (mg/L)	Sodium mg/L	GW Elev (feet)
20-Dec-95	**1.54**	**1.26**	**0.56**	**2.53**	NT	NT	NM	414.48
16-May-96	**5.9**	**3.9**	**1.8**	**8.2**	NT	NT	NM	415.71
09-Dec-96	**2.1**	**2.1**	**0.73**	**3.1**	NT	NT	NM	NM
20-Mar-97	**2.1**	**2.5**	**0.81**	**4.3**	NT	NT	NM	NM
01-May-98	**4.83**	**6.67**	**2.18**	**10.13**	**60**	**5.03**	NM	NM
14-Oct-98	**5.04**	**3.81**	**1.8**	**7.47**	**43**	**4.37**	NM	416.35
27-May-99	**4.34**	**5.02**	**1.94**	**8.89**	**43**	**5.46**	NM	415.3
05-Nov-99	**2.59**	**1.74**	**1.01**	**3.89**	**23**	**3.16**	NM	415.48
17-Apr-00	**3.12**	**3.77**	**1.64**	**7.14**	**46**	**5.9**	NM	414.06
30-May-01	**1.59**	0.158	**0.727**	**1.87**	**17**	**2.61**	NM	413.6
01-May-02	**1.3**	0.0371	**0.683**	**1.51**	**8.6**	**1.84**	NM	414.52
19-Aug-02	**0.89**	0.0588	**0.774**	**1.465**	**13.5**	1.41	NM	417.79
05-Nov-02	**0.0616**	U (0.002)	0.00845	0.0666	0.787	U (0.5)	NM	417.06
19-Mar-03	**0.00765**	U (0.002)	U (0.002)	0.00242	U (0.09)	0.509	NM	416.18**
05-Aug-03	**0.11**	0.00209	**0.101**	0.062	1.3	U (0.32)	NM	418.33
08-Mar-04	**0.00979**	U (0.0005)	U (0.0005)	U (0.001)	U (0.05)	U (0.37)	NM	414.92
15-Sep-04	0.00206	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.385)	NM	416.65
10-Jan-05	**0.0327**	U (0.0005)	0.000623	U (0.0015)	0.134	U (0.388)	NM	414.58
15-Jul-05	**0.0626**	U (0.0005)	**0.0445**	0.00354	0.426	U (0.391)	NM	417.94
16-Feb-06	0.00406	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.397)	NM	414.54
27-Jul-06	**0.0222**	0.000805	0.0104	0.00217	0.163	U (0.397)	NM	417.37
02-Mar-07	0.00159	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.424)	NM	414.59
17-Oct-07	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.403)	NM	416.88
05-Jun-08	**0.00614**	U (0.0005)	U (0.0005)	0.00379	0.082	0.877	NM	415.81*
29-Sep-08	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.435)	NM	417.21
25-Feb-09	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.417)	NM	414.48
21-Jul-09	**0.00601**	U (0.001)	U (0.001)	0.00363	0.0954	U (0.397)	NM	416.75
17-Mar-10	U (0.001)	U (0.001)	U (0.001)	U (0.002)	U (0.05)	U (0.431)	NM	414.03
15-Sep-10	U (0.0005)	U (0.0005)	0.00926	0.0619	0.15	U (0.385)	NM	416.56
22-Mar-11	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	0.657	NM	413.97
01-Sep-11	0.0029	0.000601	U (0.0005)	U (0.0015)	0.0719	U (0.410)	NM	417.44
13-Mar-12	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.446)	NM	414.37
23-Jul-12	**0.0134**	U (0.0010)	U (0.0010)	U (0.0030)	0.263	U (0.397)	NM	417.01
21-Feb-13	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.431)	NM	414.26
18-Mar-14	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.403)	NM	414.38
31-Jul-14	0.0026	U (0.001)	0.0022	U (0.001)	0.056	0.67	NM	419.66
03-Mar-15	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.45)	NM	415.09
27-Jul-15	U (0.00054)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	0.25	NM	416.21
23-Feb-16	U (0.001)	U (0.001)	U (0.001)	U (0.001)	U (0.05)	U (0.11)	NM	415.25
06-Oct-16	U (0.001)	U (0.001)	U (0.001)	U (0.001)	U (0.05)	0.24	NM	418.73
16-Mar-17	**0.0058**	U (0.002)	U (0.003)	U (0.002)	U (0.05)	0.60	NM	414.96
29-Mar-18	0.0041	U (0.002)	U (0.003)	U (0.002)	U (1)	0.76	NM	414.63
07-Sep-18	0.0024	U (0.001)	U (0.001)	U (0.002)	U (0.15)	0.28	NM	418.62
12-Mar-19	U (0.003)	U (0.002)	U (0.003)	U (0.003)	**9.4**	0.33	NM	415.23
29-Jul-19	U (0.003)	U (0.002)	U (0.003)	U (0.003)	U (0.25)	0.30	NM	416.29
03-Aug-20	0.000817	U (0.001)	U (0.001)	U (0.003)	0.0109	U (0.800)	66.40	419.66
14-Oct-20	**0.0134**	0.000615	0.000186	0.000653	U (0.10)	0.362	76.4	418.84

Monitoring Well G-1 (Continued)

Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	GRO (mg/L)	DRO (mg/L)	Sodium mg/L	GW Elev (feet)
30-Mar-21	0.00141	U (0.001)	U (0.001)	U (0.003)	0.0194 BJ	0.26	70.10	415.54
22-Jul-21	U (0.0200)	0.124	**0.608**	**3.43**	**10.2**	**2.78**	**52.8**	
12-Oct-21	0.00102	U (0.001)	U (0.001)	0.000267 J	0.0427	0.704 J	74.0	417.96
GCLs	**0.0046**	**1.1**	**0.015**	**0.19**	**2.2**	**1.5**	NA	NA

Monitoring Well G-2

Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	GRO (mg/L)	DRO (mg/L)	Sodium mg/L	GW Elev (feet)
20-Dec-95	**0.069**	U	U	U	NT	NT	NM	414.49
16-May-96	**0.2**	U	U	U	NT	NT	NM	415.74
15-Aug-96	**0.32**	U	U	U	NT	NT	NM	416.57
09-Dec-96	**0.14**	U	U	U	NT	NT	NM	415.42
20-Mar-97	0.002	U	U	U	NT	NT	NM	414.4
15-Aug-97	**0.0253**	U	U	U	0.077	NT	NM	415.88
18-Nov-97	U	U	U	0.00169	U	NT	NM	415.2
01-May-98	**0.00523**	U	U	0.00139	U	0.221	NM	414.35
14-Oct-98	**0.0318**	U	U	0.00135	0.076	0.248	NM	416.55
27-May-99	U	0.00624	U	0.00326	U	0.345	NM	415.27
05-Nov-99	**0.0514**	U	U	U	0.13	U	NM	415.47
17-Apr-00	**0.00749**	U	U	U	U	U	NM	414.12
26-Oct-00	**0.0051**	0.0032	U	0.00759	U	U	NM	417.44
30-May-01	U	U	U	U	U	U	NM	413.58
13-Dec-01	U	U	U	U	U	U	NM	413.04
01-May-02	U	U	U	U	U	U	NM	414.52
19-Aug-02	0.000596	U (0.002)	U (0.002)	U (0.002)	U (0.09)	U (0.505)	NM	417.79
05-Nov-02	U (0.0005)	U (0.002)	U (0.002)	U (0.002)	U (0.09)	U (0.5)	NM	416.99
22-Jul-21	**0.0763**	0.145	**0.728**	**2.27**	**8.01**	**2.14**	**52.3**	
12-Oct-21	NT	NT	NT	NT	NT	NT	NM	NM
GCLs	**0.0046**	**1.1**	**0.015**	**0.19**	**2.2**	**1.5**	NA	NA

*Ground Water monitoring did not occur between November 5, 2002 and July 22, 2021.

Monitoring Well G-3

Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	GRO (mg/L)	DRO (mg/L)	Sodium mg/L	GW Elev (feet)
01-Apr-99	U	0.001	U	U	U	U	NM	NT
27-May-99	U	U	U	U	U	0.413	NM	415.18
05-Nov-99	U	U	U	U	U	0.883	NM	415.41
17-Apr-00	U	U	U	U	U	U	NM	414.07
26-Oct-00	U	U	U	U	U	U	NM	418.18
30-May-01	0.00029	U	0.000718	0.001855	U	U	NM	413.49
13-Dec-01	0.00064	U	U	U	U	U	NM	413.07
19-Aug-02	U (0.0005)	U (0.002)	U (0.002)	0.00241	U (0.09)	U (0.505)	NM	417.74
05-Aug-03	Monitoring Well Destroyed							
GCLs	**0.0046**	**1.1**	**0.015**	**0.19**	**2.2**	**1.5**	NA	NA

*Ground Water monitoring has not occurred since August 19, 2002.

Monitoring Well G-4

Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	GRO (mg/L)	DRO (mg/L)	Sodium mg/L	GW Elev (feet)
01-Apr-99	U	U	U	U	U	U	NM	NM
27-May-99	U	U	U	U	U	U	NM	415.26
05-Nov-99	U	U	U	U	U	U	NM	415.48
17-Apr-00	U	U	U	U	U	U	NM	414.04
26-Oct-00	U	U	U	U	U	U	NM	418.25
30-May-01	U	U	U	0.001	U	U	NM	413.59
13-Dec-01	U	U	U	U	U	U	NM	413.19
19-Aug-02	0.000545	U (0.002)	U (0.002)	0.00366	U (0.09)	U (0.5)	NM	418.13
GCLs	**0.0046**	**1.1**	**0.015**	**0.19**	**2.2**	**1.5**	NA	NA

*Ground Water monitoring has not occurred since August 19, 2002.

Monitoring Well G-5

Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	GRO (mg/L)	DRO (mg/L)	Sodium mg/L	GW Elev (feet)
30-May-01	**12.4**	**11.5**	**2.1**	**9.9**	**107**	**6.47**	NM	412.59
13-Dec-01	**6.21**	**8.71**	**1.71**	**12.74**	**72.8**	**3.05**	NM	413.22
01-May-02	**11.9**	**7.7**	**1.95**	**15.1**	**83.4**	**6.75**	NM	414.55
19-Aug-02	**12.9**	**7.31**	**2**	**8.53**	**86.6**	**7.85**	NM	417.8
05-Nov-02	**5.7**	**4.37**	**1.38**	**6.7**	**41.9**	**7.17**	NM	417.05
19-Mar-03	**2.46**	**1.75**	**0.741**	**5.25**	**30**	**7.55**	NM	416.19
05-Aug-03	**5.07**	**2.99**	**0.943**	**6.41**	**47.5**	**5.78**	NM	418.76
08-Mar-04	0.00254	0.00495	0.00104	0.0327	0.126	**3.45**	NM	414.93
15-Sep-04	**0.00577**	0.00126	0.000506	0.00467	0.061	**1.84**	NM	416.64
10-Jan-05	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	1.22	NM	414.80
15-Jul-05	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	1.19	NM	417.83
16-Feb-06	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	1.08	NM	414.48
27-Jul-06	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	0.865	NM	417.09
02-Mar-07	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	1.03	NM	414.24
17-Oct-07	0.000837	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	**3.44**	NM	416.22
05-Jun-08	U (0.0005)	U (0.0005)	0.00452	0.0316	0.112	1.1	NM	415.73
29-Sep-08	U (0.0005)	U (0.0005)	0.00458	0.0103	0.0794	**1.66**	NM	417.20
25-Feb-09	0.00068	0.00053	0.0579	0.174	**2.53**	1.3	NM	414.45
21-Jul-09	0.0018	U (0.0010	U (0.001)	U (0.003)	U (0.05)	1.27	NM	416.73
17-Mar-10	**0.013**	0.0014	**0.19**	**0.37**	**4.4**	0.961	NM	413.98
15-Sep-10	**0.0849**	0.000886	0.00279	0.0149	0.287	1.10	NM	416.59
22-Mar-11	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	1.04	NM	413.96
01-Sep-11	0.00331	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	0.898	NM	417.44
23-Jul-12	0.00199	U (0.0010)	U (0.0010)	U (0.0030)	U (0.05)	0.57	NM	416.90
13-Aug-13	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	0.884	NM	416.50
18-Mar-14	**0.025**	0.00612	**0.0739**	0.161	**2.44**	0.778	NM	414.36
31-Jul-14	**0.49**	0.0064	**0.071**	**0.21**	**2.2**	1.40	NM	419.24
03-Mar-15	U (0.0005)	U (0.0005)	U (0.0005)	0.0015	U (0.05)	0.430	NM	414.58
27-Jul-15	**0.92**	0.57	**0.59**	**1.1**	**10**	1.40	NM	416.18
23-Feb-16	U (0.001)	U (0.001)	U (0.001)	U (0.001)	U (0.05)	0.21	NM	415.19
06-Oct-16	U (0.001)	U (0.001)	U (0.001)	U (0.001)	U (0.05)	0.95	NM	418.75
16-Mar-17	**0.27**	0.36	**0.56**	**1.91**	**7.9**	1.3	NM	414.93
29-Mar-18	**0.38**	0.3	**0.72**	**2.27**	**14**	**1.6**	NM	414.68
07-Sep-18	**0.61**	0.91	**0.51**	**1.92**	**7.4**	**2.4**	NM	418.68
13-Mar-19	**0.11**	0.011	**0.39**	**1.05**	**5.8**	**1.2**	NM	415.24
30-Jul-19	**U (0.15)**	U (0.1)	**0.18**	**0.71**	**2.9**	1.2	NM	416.31
04-Aug-20	**0.114**	0.000683	**0.123**	0.124	0.712	1.07	77	419.57
14-Oct-20	0.0016	0.00513	0.0148	0.079	0.251	**2.16**	56.7	418.67
12-Oct-21	**0.00607**	0.000300 J	**0.0661**	0.0928	0.909	1.42	65.0	419.21
GCLs	**0.0046**	**1.1**	**0.015**	**0.19**	**2.2**	**1.5**	NA	NA

Monitoring Well G-6

Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	GRO (mg/L)	DRO (mg/L)	Sodium mg/L	GW Elev (feet)
30-May-01	U	U	U	U	U	U	NM	413.54
13-Dec-01	U	U	U	U	U	U	NM	413.26
19-Aug-02	U (0.0005)	U (0.002)	U (0.002)	U (0.002)	U (0.09)	U (0.505)	NM	417.93
GCLs	**0.0046**	**1.1**	**0.015**	**0.19**	**2.2**	**1.5**	NA	NA

*Ground Water monitoring has not occurred since August 19, 2002.

Monitoring Well G-9

Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	GRO (mg/L)	DRO (mg/L)	Sodium mg/L	GW Elev (feet)
07-Nov-03	U (0.0005)	U (0.0005)	U (0.0005)	U (0.001)	U (0.08)	U (0.32)	NM	NM
08-Mar-04	U (0.0005)	U (0.0005)	U (0.0005)	U (0.001)	U (0.05)	U (0.37)	NM	414.96
15-Sep-04	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.385)	NM	416.62
GCLs	**0.0046**	**1.1**	**0.015**	**0.19**	**2.2**	**1.5**	NA	NA

*Ground Water monitoring has not occurred since September 15, 2004.

Remediation Well RM-1

Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	GRO (mg/L)	DRO (mg/L)	Sodium mg/L	GW Elev (feet)
10-Oct-12	**0.0425**	**15.4**	**3.08**	**16.7**	**175**	**10.8**	NM	416.29
21-Feb-13	**0.0251**	**7.25**	**2.14**	**11.3**	**69.9**	**10.7**	NM	414.27
13-Aug-13	**0.0432**	**12.2**	**1.80**	**10.4**	**39.9**	**9.27**	NM	416.55
24-Sep-13	**0.0246**	**6.09**	**0.942**	**6.83**	**27.2**	**12.6**	NM	NM
19-Nov-13	**0.0213**	**2.83**	0.593	5.09	**14.7**	**17.5**	NM	415.53
19-Mar-14	**0.0268**	**0.201**	0.568	2.55	**11.9**	**13.2**	NM	414.37
31-Jul-14	U (0.0005)	0.15	0.084	0.51	1.8	**1.7**	NM	419.58
03-Mar-15	**0.055**	0.68	0.096	1.6	**8.4**	**1.5**	NM	402.63
27-Jul-15	**0.084**	0.770	0.360	2.9	**12.0**	**5.2**	NM	NM
23-Feb-16	U (0.001)	0.93	0.2	1.80	**9.8**	1.3	NM	414.75
06-Oct-16	**0.0067**	0.33	U (0.001)	0.71	**3.5**	0.74	NM	417.91
07-Jul-17	**0.0087**	0.69	**0.45**	**2.73**	**12**	**3.3**	NM	417.04
06-Sep-17	**0.0050**	0.74	**0.270**	**2.000**	**7.6**	**0.92**	NM	NM
07-Sep-18	0.00072	0.23	0.2	2.06	4.7	1.2	NM	413.04
30-Jul-19	**U (0.15)**	0.4	**0.23**	**1.55**	**6.1**	1.1	NM	415.38
24-Oct-19	(0.003) U	0.038	**0.15**	**1.49**	**4.3**	1.4	NM	NM
04-Aug-20	0.000539	0.1	**0.131**	**1.32**	**2.81**	1.23	47.2	417
15-Oct-20	0.00261 J	0.137	**0.246**	**1.89**	**4.26**	**2.31**	52.3	NM
12-Oct-21	0.000358 J	0.000503 J	**0.142**	**1.25**	**5.34**	**2.22**	67.3	417.82
GCLs	**0.0046**	**1.1**	**0.015**	**0.19**	**2.2**	**1.5**	NA	NA

Remediation Well RM-2

Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	GRO (mg/L)	DRO (mg/L)	Sodium mg/L	GW Elev (feet)
29-Aug-19	0.00179	0.00209	**0.0157**	0.0666	0.479	0.384 J	22.9	NM
24-Oct-19	**0.0046**	0.058	**0.089**	**0.342**	2.00	0.45	32.0	NM
04-Aug-20	U (0.001)	U (0.001)	0.000505	0.000565	0.0135	U (0.800)	24.2	NM
15-Oct-20	**0.0226**	0.413	**0.274**	**1.24**	**3.98**	1.49	48.7	NM
30-Mar-21	**0.0297**	0.0541	**0.352**	**0.74**	**4.16**	1.21	41.1	NM
12-Oct-21	0.000496 J	U (0.001)	**0.0401**	0.0617	0.645	0.650 J	35.4	417.79
GCLs	**0.0046**	**1.1**	**0.015**	**0.19**	**2.2**	**1.5**	NA	NA

Monitoring Well MW 17-1

Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	GRO (mg/L)	DRO (mg/L)	Sodium mg/L	GW Elev (feet)
29-Mar-18	**2.9**	**6.6**	**1.2**	**8.5**	**U (100)**	**6**	NM	NM
07-Sep-18	**0.18**	**26**	**3.3**	**18**	**80**	**4.8**	NM	NM
14-Mar-19	**3**	**7.4**	**1.7**	**7.4**	**47**	**3.3**	NM	415.28
30-Jul-19	**0.36**	**9.2**	**3.4**	**14.9**	**88**	**3.9**	NM	416.35
04-Aug-20	**0.126**	**22.5**	**3.47**	**13.8**	**61.1**	**2.78**	56	419.63
15-Oct-20	**0.0231 J**	0.254 J	**0.305**	**2.1**	**5.9**	**4.03**	58.1	418.92
30-Mar-21	0.000535 J	U (0.001)	**0.0401**	0.178	**2.59**	**2.66**	42.4	415.86
12-Oct-21	**1.61 Q**	**5.27 Q**	**1.03 E**	**3.69**	**30.9**	**3.68**	93.9	417.63
GCLs	**0.0046**	**1.1**	**0.015**	**0.19**	**2.2**	**1.5**	NA	NA

Monitoring Well MW 17-2

Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	GRO (mg/L)	DRO (mg/L)	Sodium mg/L	GW Elev (feet)
29-Mar-18	**U (0.30)**	**2.7**	**U (0.30)**	**2.11**	**22**	**12**	NM	NM
07-Sep-18	**0.18**	**3.2**	**0.66**	**4.5**	**17**	**15**	NM	NM
14-Mar-19	**0.047**	**0.94**	**0.094**	**1.49**	**4.2**	**10**	NM	415.28
29-Jul-19	**U (0.15)**	**1.8**	**0.5**	**3.9**	**16**	**8.5**	NM	416.35
04-Aug-20	**0.0505**	0.477	**0.2**	**415**	**5.03**	**20.5**	91.4	419.67
15-Oct-20	0.00395 J	0.0235	**0.0508**	**0.218**	0.601	**8.25**	69.3	418.62
30-Mar-21	0.000952 J	U (0.001)	0.0132	0.0264	0.309	**7.78**	83.9	415.35
12-Oct-21	0.00157 J	0.00590	0.00324 J	0.0107 J	0.0560 B,J	**3.22**	67.5	418.57
GCLs	**0.0046**	**1.1**	**0.015**	**0.19**	**2.2**	**1.5**	NA	NA

Key:
* - Elevation may be biased due to presence of ice plug.
B - The same analyte is found in the associated blank.
DRO - diesel range organics
E - The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
GCLs - ground water cleanup levels
GRO - gasoline range organics
J - The identification of the analyte is acceptable; the reported value is an estimate.
mg/L - milligram per liter
NA - not applicable
NT - not tested
NM - not measured
Q - Sample was prepared and/or analyzed past holding time as defined in the method. Concentrations should be considered minimum values
U - Undetected above practical quantitation limit.
Bold, shade indicates concentration exceeds the GCL or, if not detected, the practical quantitation limit exceeds the GCL

APPENDIX E

Laboratory Analytical Report and ADEC Laboratory Data Review Checklist

ANALYTICAL REPORT

November 18, 2021

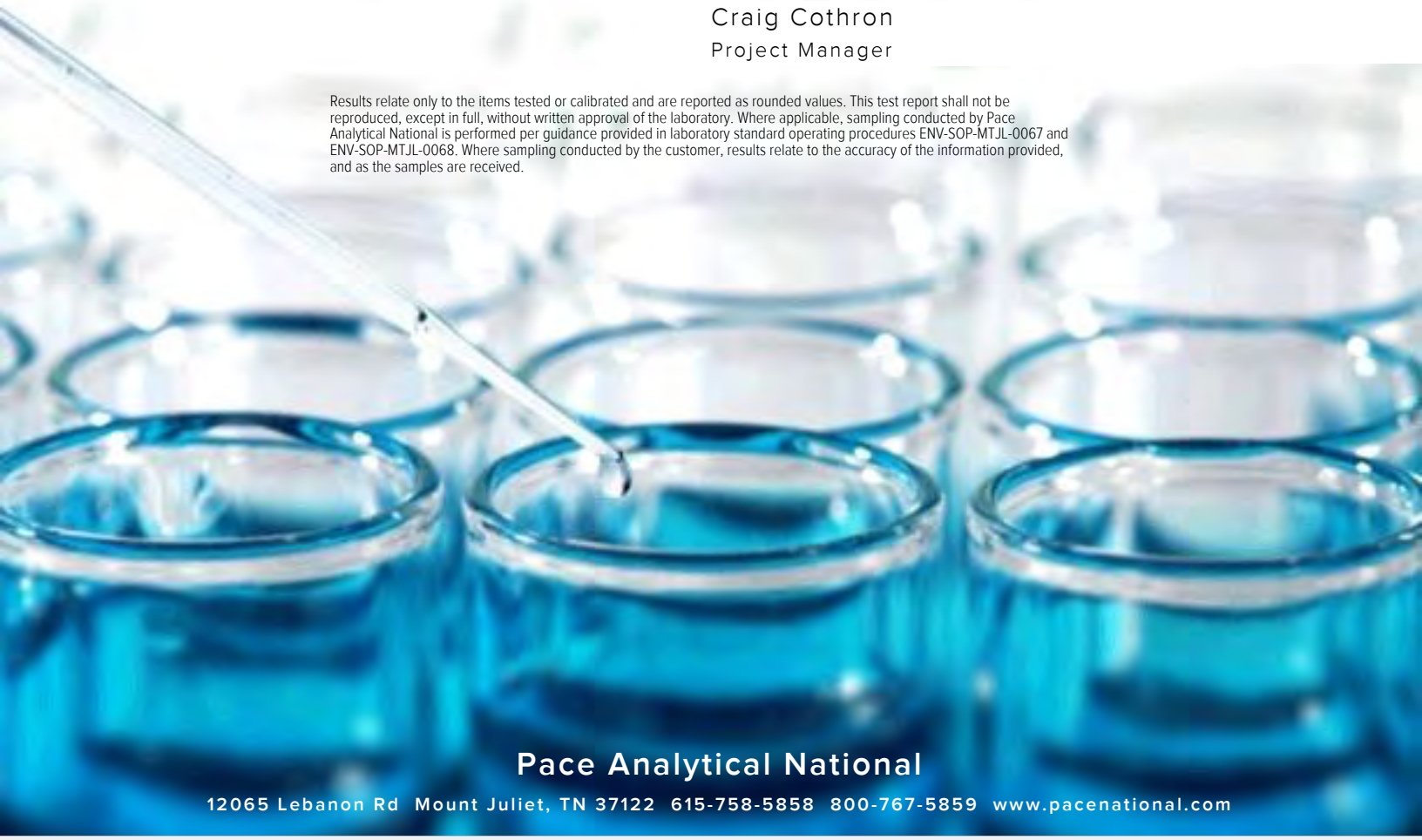
Stantec - Anchorage, AK - Speedway

Sample Delivery Group:	L1418534
Samples Received:	10/15/2021
Project Number:	
Description:	Speedway 5315 TNS 111
Site:	0005315
Report To:	Ms. Leslie Petre 725 E Fireweed Lane Suite 200 Anchorage, AK 99503

Entire Report Reviewed By:

Craig Cothron
Project Manager

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



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

TABLE OF CONTENTS

MW-10 L1418534-01 GW

Collected by: LP/GM | Collected date/time: 10/12/21 16:30 | Received date/time: 10/15/21 14:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010C	WG1765496	1	11/02/21 05:44	11/02/21 15:30	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG1761146	5	10/22/21 12:35	10/22/21 12:35	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1762339	5	10/24/21 06:21	10/24/21 06:21	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1764718	1	10/28/21 11:17	10/28/21 11:17	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG1762545	1.05	10/26/21 13:41	10/27/21 14:52	CAG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1758560	1	10/19/21 13:33	10/20/21 00:24	ADF	Mt. Juliet, TN

MW-11 L1418534-02 GW

Collected by: LP/GM | Collected date/time: 10/12/21 16:35 | Received date/time: 10/15/21 14:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010C	WG1765496	1	11/02/21 05:44	11/02/21 15:33	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG1761146	5	10/22/21 12:56	10/22/21 12:56	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1762339	1	10/24/21 08:30	10/24/21 08:30	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1764718	20	10/28/21 11:36	10/28/21 11:36	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG1762545	1.05	10/26/21 13:41	10/27/21 15:18	CAG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1758560	1	10/19/21 13:33	10/20/21 00:42	ADF	Mt. Juliet, TN

MW-12 L1418534-03 GW

Collected by: LP/GM | Collected date/time: 10/12/21 12:30 | Received date/time: 10/15/21 14:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010C	WG1765496	1	11/02/21 05:44	11/02/21 15:35	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG1761146	1	10/22/21 06:40	10/22/21 06:40	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1762339	1	10/24/21 08:51	10/24/21 08:51	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG1762545	1.05	10/26/21 13:41	10/27/21 15:39	CAG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1758560	1	10/19/21 13:33	10/20/21 01:00	ADF	Mt. Juliet, TN

MW-13 L1418534-04 GW

Collected by: LP/GM | Collected date/time: 10/12/21 14:55 | Received date/time: 10/15/21 14:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010C	WG1765496	1	11/02/21 05:44	11/02/21 15:38	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG1761146	1	10/22/21 07:02	10/22/21 07:02	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1762339	1	10/24/21 02:25	10/24/21 02:25	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG1762545	1.11	10/26/21 13:41	10/27/21 16:01	CAG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1758560	1	10/19/21 13:33	10/20/21 01:17	ADF	Mt. Juliet, TN

MW-16 L1418534-05 GW

Collected by: LP/GM | Collected date/time: 10/12/21 13:55 | Received date/time: 10/15/21 14:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010C	WG1765496	1	11/02/21 05:44	11/02/21 15:40	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG1761146	1	10/22/21 07:24	10/22/21 07:24	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1762339	1	10/24/21 02:47	10/24/21 02:47	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG1762545	1.11	10/26/21 13:41	10/27/21 16:22	CAG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1758560	1	10/19/21 13:33	10/20/21 01:35	ADF	Mt. Juliet, TN

G-01 L1418534-06 GW

Collected by: LP/GM | Collected date/time: 10/12/21 11:50 | Received date/time: 10/15/21 14:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010C	WG1765496	1	11/02/21 05:44	11/02/21 15:43	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG1761146	1	10/22/21 08:11	10/22/21 08:11	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1762339	1	10/24/21 03:08	10/24/21 03:08	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG1762545	1.11	10/26/21 13:41	10/27/21 16:45	CAG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1758560	1	10/19/21 13:33	10/20/21 01:53	ADF	Mt. Juliet, TN

G-05 L1418534-07 GW

Collected by: LP/GM | Collected date/time: 10/12/21 15:55 | Received date/time: 10/15/21 14:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010C	WG1765496	1	11/02/21 05:44	11/02/21 15:46	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG1761146	1	10/22/21 08:33	10/22/21 08:33	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1762339	1	10/24/21 09:12	10/24/21 09:12	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG1762545	1.11	10/26/21 13:41	10/27/21 17:07	CAG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1758560	1	10/19/21 13:33	10/20/21 02:11	ADF	Mt. Juliet, TN

MW-17-01 L1418534-08 GW

Collected by: LP/GM | Collected date/time: 10/12/21 19:00 | Received date/time: 10/15/21 14:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010C	WG1765496	1	11/02/21 05:44	11/02/21 15:48	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG1761146	5	10/22/21 13:18	10/22/21 13:18	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1762339	5	10/24/21 06:42	10/24/21 06:42	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1764718	100	10/28/21 11:55	10/28/21 11:55	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG1762545	1.11	10/26/21 13:41	10/27/21 17:28	CAG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1758560	1	10/19/21 13:33	10/20/21 02:29	ADF	Mt. Juliet, TN

MW-17-02 L1418534-09 GW

Collected by: LP/GM | Collected date/time: 10/12/21 18:20 | Received date/time: 10/15/21 14:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010C	WG1765496	1	11/02/21 05:44	11/02/21 15:51	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG1761146	1	10/22/21 08:55	10/22/21 08:55	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1762339	5	10/24/21 07:04	10/24/21 07:04	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1764367	1	10/28/21 11:35	10/28/21 11:35	GLN	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG1762545	1.05	10/26/21 13:41	10/27/21 17:50	CAG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1758560	1	10/19/21 13:33	10/20/21 02:47	ADF	Mt. Juliet, TN

RM-01 L1418534-10 GW

Collected by: LP/GM | Collected date/time: 10/12/21 17:40 | Received date/time: 10/15/21 14:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010C	WG1765496	1	11/02/21 05:44	11/02/21 15:53	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG1761146	10	10/22/21 13:40	10/22/21 13:40	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1762339	1	10/24/21 03:29	10/24/21 03:29	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1764718	20	10/28/21 12:14	10/28/21 12:14	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG1762545	1	10/26/21 13:41	10/27/21 20:06	CAG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1758560	1	10/19/21 13:33	10/20/21 03:05	ADF	Mt. Juliet, TN

RM-02 L1418534-11 GW

Collected by: LP/GM | Collected date/time: 10/12/21 17:17 | Received date/time: 10/15/21 14:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010C	WG1765496	1	11/02/21 05:44	11/02/21 14:43	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG1761146	1	10/22/21 09:17	10/22/21 09:17	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1762339	1	10/24/21 03:51	10/24/21 03:51	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG1762546	1	10/26/21 09:18	10/27/21 15:04	WCR	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1758560	1	10/19/21 13:33	10/20/21 03:22	ADF	Mt. Juliet, TN

DUP1 L1418534-12 GW

Collected by: LP/GM | Collected date/time: 10/12/21 00:00 | Received date/time: 10/15/21 14:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010C	WG1767790	1	11/03/21 11:44	11/04/21 00:47	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG1761611	1	10/22/21 16:36	10/22/21 16:36	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1762339	1	10/24/21 04:12	10/24/21 04:12	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1764718	10	10/28/21 12:33	10/28/21 12:33	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG1762546	1.05	10/26/21 09:18	10/27/21 15:24	WCR	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1758560	1	10/19/21 13:33	10/20/21 03:40	ADF	Mt. Juliet, TN

DUP2 L1418534-13 GW

Collected by: LP/GM | Collected date/time: 10/12/21 00:00 | Received date/time: 10/15/21 14:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010C	WG1765496	1	11/02/21 05:44	11/02/21 14:45	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG1761611	1	10/22/21 16:58	10/22/21 16:58	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1762339	1	10/24/21 04:34	10/24/21 04:34	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1764718	1	10/28/21 10:20	10/28/21 10:20	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG1762546	1.05	10/26/21 09:18	10/27/21 15:44	WCR	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1758560	1	10/19/21 13:33	10/20/21 03:58	ADF	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Craig Cothron
Project Manager

Metals (ICP) by Method 6010C

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Sodium	96.5		0.504	3.00	1	11/02/2021 15:30	WG1765496

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	0.280	B J	0.143	0.500	5	10/22/2021 12:35	WG1761146
(S) a,a,a-Trifluorotoluene(FID)	*97.2*			*50.0-150*		*10/22/2021 12:35*	WG1761146
(S) a,a,a-Trifluorotoluene(PID)	*97.4*			*79.0-125*		*10/22/2021 12:35*	WG1761146

Sample Narrative:

L1418534-01 WG1761146: Lowest possible dilution due to sample foaming.

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	U		0.000471	0.00500	5	10/24/2021 06:21	WG1762339
Benzene	0.000209	J Q	0.0000941	0.00100	1	10/28/2021 11:17	WG1764718
n-Butylbenzene	U		0.000785	0.00500	5	10/24/2021 06:21	WG1762339
n-Butylbenzene	0.000332	J Q	0.000157	0.00100	1	10/28/2021 11:17	WG1764718
sec-Butylbenzene	U		0.000625	0.00500	5	10/24/2021 06:21	WG1762339
sec-Butylbenzene	0.000280	J Q	0.000125	0.00100	1	10/28/2021 11:17	WG1764718
tert-Butylbenzene	U		0.000635	0.00500	5	10/24/2021 06:21	WG1762339
tert-Butylbenzene	U	Q	0.000127	0.00100	1	10/28/2021 11:17	WG1764718
Ethylbenzene	0.00142	J	0.000685	0.00500	5	10/24/2021 06:21	WG1762339
Ethylbenzene	0.00121	Q	0.000137	0.00100	1	10/28/2021 11:17	WG1764718
Isopropylbenzene	U		0.000525	0.00500	5	10/24/2021 06:21	WG1762339
Isopropylbenzene	0.000290	J Q	0.000105	0.00100	1	10/28/2021 11:17	WG1764718
Naphthalene	U		0.00500	0.0250	5	10/24/2021 06:21	WG1762339
Naphthalene	U	C3 Q	0.00100	0.00500	1	10/28/2021 11:17	WG1764718
Toluene	U		0.00139	0.00500	5	10/24/2021 06:21	WG1762339
Toluene	U	Q	0.000278	0.00100	1	10/28/2021 11:17	WG1764718
1,2,4-Trimethylbenzene	U		0.00161	0.00500	5	10/24/2021 06:21	WG1762339
1,2,4-Trimethylbenzene	0.000853	J Q	0.000322	0.00100	1	10/28/2021 11:17	WG1764718
1,3,5-Trimethylbenzene	U		0.000520	0.00500	5	10/24/2021 06:21	WG1762339
1,3,5-Trimethylbenzene	0.000438	J Q	0.000104	0.00100	1	10/28/2021 11:17	WG1764718
Total Xylenes	0.00214	J	0.000870	0.0150	5	10/24/2021 06:21	WG1762339
Total Xylenes	0.00200	J	0.000174	0.00300	1	10/28/2021 11:17	WG1764718
(S) Toluene-d8	*98.8*			*80.0-120*		*10/24/2021 06:21*	WG1762339
(S) Toluene-d8	*96.4*			*80.0-120*		*10/28/2021 11:17*	WG1764718
(S) 4-Bromofluorobenzene	*99.6*			*77.0-126*		*10/24/2021 06:21*	WG1762339
(S) 4-Bromofluorobenzene	*95.5*			*77.0-126*		*10/28/2021 11:17*	WG1764718
(S) 1,2-Dichloroethane-d4	*114*			*70.0-130*		*10/24/2021 06:21*	WG1762339
(S) 1,2-Dichloroethane-d4	*122*			*70.0-130*		*10/28/2021 11:17*	WG1764718

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	2.43		0.240	0.840	1.05	10/27/2021 14:52	WG1762545
(S) o-Terphenyl	*108*			*50.0-150*		*10/27/2021 14:52*	WG1762545

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Anthracene	U	J3	0.0000190	0.0000500	1	10/20/2021 00:24	WG1758560
Acenaphthene	U	J3	0.0000190	0.0000500	1	10/20/2021 00:24	WG1758560
Acenaphthylene	U	J3	0.0000171	0.0000500	1	10/20/2021 00:24	WG1758560
Benzo(a)anthracene	U	J3	0.0000203	0.0000500	1	10/20/2021 00:24	WG1758560
Benzo(a)pyrene	U	J3	0.0000184	0.0000500	1	10/20/2021 00:24	WG1758560
Benzo(b)fluoranthene	U	J3	0.0000168	0.0000500	1	10/20/2021 00:24	WG1758560
Benzo(g,h,i)perylene	U	J3	0.0000184	0.0000500	1	10/20/2021 00:24	WG1758560
Benzo(k)fluoranthene	U	J3	0.0000202	0.0000500	1	10/20/2021 00:24	WG1758560
Chrysene	U	J3	0.0000179	0.0000500	1	10/20/2021 00:24	WG1758560
Dibenz(a,h)anthracene	U	J3	0.0000160	0.0000500	1	10/20/2021 00:24	WG1758560
Fluoranthene	U	J3	0.0000270	0.000100	1	10/20/2021 00:24	WG1758560
Fluorene	0.000133	J3	0.0000169	0.0000500	1	10/20/2021 00:24	WG1758560
Indeno(1,2,3-cd)pyrene	U	J3	0.0000158	0.0000500	1	10/20/2021 00:24	WG1758560
Naphthalene	0.000728	J3	0.0000917	0.000250	1	10/20/2021 00:24	WG1758560
Phenanthrene	0.0000686	J3	0.0000180	0.0000500	1	10/20/2021 00:24	WG1758560
Pyrene	U	J3	0.0000169	0.0000500	1	10/20/2021 00:24	WG1758560
1-Methylnaphthalene	0.000458	J3	0.0000687	0.000250	1	10/20/2021 00:24	WG1758560
2-Methylnaphthalene	0.000318	J3	0.0000674	0.000250	1	10/20/2021 00:24	WG1758560
(S) Nitrobenzene-d5	*64.0*			*31.0-160*		*10/20/2021 00:24*	WG1758560
(S) 2-Fluorobiphenyl	*96.0*			*48.0-148*		*10/20/2021 00:24*	WG1758560
(S) p-Terphenyl-d14	*110*			*37.0-146*		*10/20/2021 00:24*	WG1758560

Metals (ICP) by Method 6010C

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Sodium	80.8		0.504	3.00	1	11/02/2021 15:33	WG1765496

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	5.40		0.143	0.500	5	10/22/2021 12:56	WG1761146
(S) a,a,a-Trifluorotoluene(FID)	*98.3*			*50.0-150*		*10/22/2021 12:56*	WG1761146
(S) a,a,a-Trifluorotoluene(PID)	*99.2*			*79.0-125*		*10/22/2021 12:56*	WG1761146

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	0.00103		0.0000941	0.00100	1	10/24/2021 08:30	WG1762339
n-Butylbenzene	0.00258		0.000157	0.00100	1	10/24/2021 08:30	WG1762339
sec-Butylbenzene	0.00329		0.000125	0.00100	1	10/24/2021 08:30	WG1762339
tert-Butylbenzene	U		0.000127	0.00100	1	10/24/2021 08:30	WG1762339
Ethylbenzene	0.506	E	0.000137	0.00100	1	10/24/2021 08:30	WG1762339
Ethylbenzene	0.492	Q	0.00274	0.0200	20	10/28/2021 11:36	WG1764718
Isopropylbenzene	0.0148		0.000105	0.00100	1	10/24/2021 08:30	WG1762339
Naphthalene	0.0571		0.00100	0.00500	1	10/24/2021 08:30	WG1762339
Toluene	0.000688	J	0.000278	0.00100	1	10/24/2021 08:30	WG1762339
1,2,4-Trimethylbenzene	0.362	E	0.000322	0.00100	1	10/24/2021 08:30	WG1762339
1,2,4-Trimethylbenzene	0.435	Q	0.00644	0.0200	20	10/28/2021 11:36	WG1764718
1,3,5-Trimethylbenzene	0.117		0.000104	0.00100	1	10/24/2021 08:30	WG1762339
Total Xylenes	1.38		0.000174	0.00300	1	10/24/2021 08:30	WG1762339
Total Xylenes	1.53		0.00348	0.0600	20	10/28/2021 11:36	WG1764718
(S) Toluene-d8	*102*			*80.0-120*		*10/24/2021 08:30*	WG1762339
(S) Toluene-d8	*93.2*			*80.0-120*		*10/28/2021 11:36*	WG1764718
(S) 4-Bromofluorobenzene	*109*			*77.0-126*		*10/24/2021 08:30*	WG1762339
(S) 4-Bromofluorobenzene	*97.2*			*77.0-126*		*10/28/2021 11:36*	WG1764718
(S) 1,2-Dichloroethane-d4	*108*			*70.0-130*		*10/24/2021 08:30*	WG1762339
(S) 1,2-Dichloroethane-d4	*127*			*70.0-130*		*10/28/2021 11:36*	WG1764718

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	1.97		0.240	0.840	1.05	10/27/2021 15:18	WG1762545
(S) o-Terphenyl	*112*			*50.0-150*		*10/27/2021 15:18*	WG1762545

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	J3	0.0000190	0.0000500	1	10/20/2021 00:42	WG1758560
Acenaphthene	0.0000926	J3	0.0000190	0.0000500	1	10/20/2021 00:42	WG1758560
Acenaphthylene	U	J3	0.0000171	0.0000500	1	10/20/2021 00:42	WG1758560
Benzo(a)anthracene	U	J3	0.0000203	0.0000500	1	10/20/2021 00:42	WG1758560
Benzo(a)pyrene	U	J3	0.0000184	0.0000500	1	10/20/2021 00:42	WG1758560
Benzo(b)fluoranthene	U	J3	0.0000168	0.0000500	1	10/20/2021 00:42	WG1758560
Benzo(g,h,i)perylene	U	J3	0.0000184	0.0000500	1	10/20/2021 00:42	WG1758560
Benzo(k)fluoranthene	U	J3	0.0000202	0.0000500	1	10/20/2021 00:42	WG1758560
Chrysene	U	J3	0.0000179	0.0000500	1	10/20/2021 00:42	WG1758560
Dibenz(a,h)anthracene	U	J3	0.0000160	0.0000500	1	10/20/2021 00:42	WG1758560
Fluoranthene	U	J3	0.0000270	0.000100	1	10/20/2021 00:42	WG1758560

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	
Fluorene	0.000219	J3	0.0000169	0.0000500	1	10/20/2021 00:42	WG1758560
Indeno(1,2,3-cd)pyrene	U	J3	0.0000158	0.0000500	1	10/20/2021 00:42	WG1758560
Naphthalene	0.0293	J3	0.0000917	0.000250	1	10/20/2021 00:42	WG1758560
Phenanthrene	0.0000483	J J3	0.0000180	0.0000500	1	10/20/2021 00:42	WG1758560
Pyrene	U	J3	0.0000169	0.0000500	1	10/20/2021 00:42	WG1758560
1-Methylnaphthalene	0.00778	J3	0.0000687	0.000250	1	10/20/2021 00:42	WG1758560
2-Methylnaphthalene	0.00688	J3	0.0000674	0.000250	1	10/20/2021 00:42	WG1758560
(S) Nitrobenzene-d5	*65.0*			*31.0-160*		*10/20/2021 00:42*	WG1758560
(S) 2-Fluorobiphenyl	*93.5*			*48.0-148*		*10/20/2021 00:42*	WG1758560
(S) p-Terphenyl-d14	*109*			*37.0-146*		*10/20/2021 00:42*	WG1758560

Metals (ICP) by Method 6010C

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Sodium	77.5		0.504	3.00	1	11/02/2021 15:35	WG1765496

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	1.93		0.0287	0.100	1	10/22/2021 06:40	WG1761146
(S) a,a,a-Trifluorotoluene(FID)	*96.1*			*50.0-150*		*10/22/2021 06:40*	WG1761146
(S) a,a,a-Trifluorotoluene(PID)	*99.1*			*79.0-125*		*10/22/2021 06:40*	WG1761146

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	0.000217	J	0.0000941	0.00100	1	10/24/2021 08:51	WG1762339
n-Butylbenzene	0.000383	J	0.000157	0.00100	1	10/24/2021 08:51	WG1762339
sec-Butylbenzene	0.000670	J	0.000125	0.00100	1	10/24/2021 08:51	WG1762339
tert-Butylbenzene	0.000310	J	0.000127	0.00100	1	10/24/2021 08:51	WG1762339
Ethylbenzene	0.0722		0.000137	0.00100	1	10/24/2021 08:51	WG1762339
Isopropylbenzene	0.00572		0.000105	0.00100	1	10/24/2021 08:51	WG1762339
Naphthalene	0.0179		0.00100	0.00500	1	10/24/2021 08:51	WG1762339
Toluene	0.00215		0.000278	0.00100	1	10/24/2021 08:51	WG1762339
1,2,4-Trimethylbenzene	0.0514		0.000322	0.00100	1	10/24/2021 08:51	WG1762339
1,3,5-Trimethylbenzene	0.0191		0.000104	0.00100	1	10/24/2021 08:51	WG1762339
Total Xylenes	0.500		0.000174	0.00300	1	10/24/2021 08:51	WG1762339
(S) Toluene-d8	*99.2*			*80.0-120*		*10/24/2021 08:51*	WG1762339
(S) 4-Bromofluorobenzene	*103*			*77.0-126*		*10/24/2021 08:51*	WG1762339
(S) 1,2-Dichloroethane-d4	*113*			*70.0-130*		*10/24/2021 08:51*	WG1762339

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	0.989		0.240	0.840	1.05	10/27/2021 15:39	WG1762545
(S) o-Terphenyl	*109*			*50.0-150*		*10/27/2021 15:39*	WG1762545

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	J3	0.0000190	0.0000500	1	10/20/2021 01:00	WG1758560
Acenaphthene	0.0000779	J3	0.0000190	0.0000500	1	10/20/2021 01:00	WG1758560
Acenaphthylene	U	J3	0.0000171	0.0000500	1	10/20/2021 01:00	WG1758560
Benzo(a)anthracene	U	J3	0.0000203	0.0000500	1	10/20/2021 01:00	WG1758560
Benzo(a)pyrene	U	J3	0.0000184	0.0000500	1	10/20/2021 01:00	WG1758560
Benzo(b)fluoranthene	U	J3	0.0000168	0.0000500	1	10/20/2021 01:00	WG1758560
Benzo(g,h,i)perylene	U	J3	0.0000184	0.0000500	1	10/20/2021 01:00	WG1758560
Benzo(k)fluoranthene	U	J3	0.0000202	0.0000500	1	10/20/2021 01:00	WG1758560
Chrysene	U	J3	0.0000179	0.0000500	1	10/20/2021 01:00	WG1758560
Dibenz(a,h)anthracene	U	J3	0.0000160	0.0000500	1	10/20/2021 01:00	WG1758560
Fluoranthene	U	J3	0.0000270	0.000100	1	10/20/2021 01:00	WG1758560
Fluorene	0.000223	J3	0.0000169	0.0000500	1	10/20/2021 01:00	WG1758560
Indeno(1,2,3-cd)pyrene	U	J3	0.0000158	0.0000500	1	10/20/2021 01:00	WG1758560
Naphthalene	0.00127	J3	0.0000917	0.000250	1	10/20/2021 01:00	WG1758560
Phenanthrene	0.0000272	J J3	0.0000180	0.0000500	1	10/20/2021 01:00	WG1758560
Pyrene	U	J3	0.0000169	0.0000500	1	10/20/2021 01:00	WG1758560
1-Methylnaphthalene	0.00550	J3	0.0000687	0.000250	1	10/20/2021 01:00	WG1758560

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
2-Methylnaphthalene	0.00138	J3	0.0000674	0.000250	1	10/20/2021 01:00	WG1758560
(S) Nitrobenzene-d5	*68.5*			*31.0-160*		*10/20/2021 01:00*	WG1758560
(S) 2-Fluorobiphenyl	*87.0*			*48.0-148*		*10/20/2021 01:00*	WG1758560
(S) p-Terphenyl-d14	*105*			*37.0-146*		*10/20/2021 01:00*	WG1758560

Metals (ICP) by Method 6010C

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Sodium	81.4		0.504	3.00	1	11/02/2021 15:38	WG1765496

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	0.0684	B J	0.0287	0.100	1	10/22/2021 07:02	WG1761146
(S) a,a,a-Trifluorotoluene(FID)	*95.7*			*50.0-150*		*10/22/2021 07:02*	WG1761146
(S) a,a,a-Trifluorotoluene(PID)	*97.7*			*79.0-125*		*10/22/2021 07:02*	WG1761146

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	U		0.0000941	0.00100	1	10/24/2021 02:25	WG1762339
n-Butylbenzene	U		0.000157	0.00100	1	10/24/2021 02:25	WG1762339
sec-Butylbenzene	U		0.000125	0.00100	1	10/24/2021 02:25	WG1762339
tert-Butylbenzene	U		0.000127	0.00100	1	10/24/2021 02:25	WG1762339
Ethylbenzene	0.000274	J	0.000137	0.00100	1	10/24/2021 02:25	WG1762339
Isopropylbenzene	U		0.000105	0.00100	1	10/24/2021 02:25	WG1762339
Naphthalene	U		0.00100	0.00500	1	10/24/2021 02:25	WG1762339
Toluene	U		0.000278	0.00100	1	10/24/2021 02:25	WG1762339
1,2,4-Trimethylbenzene	0.00234		0.000322	0.00100	1	10/24/2021 02:25	WG1762339
1,3,5-Trimethylbenzene	0.00202		0.000104	0.00100	1	10/24/2021 02:25	WG1762339
Total Xylenes	0.00769		0.000174	0.00300	1	10/24/2021 02:25	WG1762339
(S) Toluene-d8	*104*			*80.0-120*		*10/24/2021 02:25*	WG1762339
(S) 4-Bromofluorobenzene	*101*			*77.0-126*		*10/24/2021 02:25*	WG1762339
(S) 1,2-Dichloroethane-d4	*113*			*70.0-130*		*10/24/2021 02:25*	WG1762339

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	0.538	J	0.254	0.888	1.11	10/27/2021 16:01	WG1762545
(S) o-Terphenyl	*106*			*50.0-150*		*10/27/2021 16:01*	WG1762545

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	J3	0.0000190	0.0000500	1	10/20/2021 01:17	WG1758560
Acenaphthene	U	J3	0.0000190	0.0000500	1	10/20/2021 01:17	WG1758560
Acenaphthylene	U	J3	0.0000171	0.0000500	1	10/20/2021 01:17	WG1758560
Benzo(a)anthracene	U	J3	0.0000203	0.0000500	1	10/20/2021 01:17	WG1758560
Benzo(a)pyrene	U	J3	0.0000184	0.0000500	1	10/20/2021 01:17	WG1758560
Benzo(b)fluoranthene	U	J3	0.0000168	0.0000500	1	10/20/2021 01:17	WG1758560
Benzo(g,h,i)perylene	U	J3	0.0000184	0.0000500	1	10/20/2021 01:17	WG1758560
Benzo(k)fluoranthene	U	J3	0.0000202	0.0000500	1	10/20/2021 01:17	WG1758560
Chrysene	U	J3	0.0000179	0.0000500	1	10/20/2021 01:17	WG1758560
Dibenz(a,h)anthracene	U	J3	0.0000160	0.0000500	1	10/20/2021 01:17	WG1758560
Fluoranthene	U	J3	0.0000270	0.000100	1	10/20/2021 01:17	WG1758560
Fluorene	U	J3	0.0000169	0.0000500	1	10/20/2021 01:17	WG1758560
Indeno(1,2,3-cd)pyrene	U	J3	0.0000158	0.0000500	1	10/20/2021 01:17	WG1758560
Naphthalene	U	J3	0.0000917	0.000250	1	10/20/2021 01:17	WG1758560
Phenanthrene	U	J3	0.0000180	0.0000500	1	10/20/2021 01:17	WG1758560
Pyrene	U	J3	0.0000169	0.0000500	1	10/20/2021 01:17	WG1758560
1-Methylnaphthalene	U	J3	0.0000687	0.000250	1	10/20/2021 01:17	WG1758560

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	
2-Methylnaphthalene	U	J3	0.0000674	0.000250	1	10/20/2021 01:17	WG1758560
(S) Nitrobenzene-d5	*54.0*			*31.0-160*		*10/20/2021 01:17*	WG1758560
(S) 2-Fluorobiphenyl	*74.0*			*48.0-148*		*10/20/2021 01:17*	WG1758560
(S) p-Terphenyl-d14	*78.5*			*37.0-146*		*10/20/2021 01:17*	WG1758560

Metals (ICP) by Method 6010C

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Sodium	43.5		0.504	3.00	1	11/02/2021 15:40	WG1765496

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	10/22/2021 07:24	WG1761146
(S) a,a,a-Trifluorotoluene(FID)	*97.6*			*50.0-150*		*10/22/2021 07:24*	WG1761146
(S) a,a,a-Trifluorotoluene(PID)	*98.0*			*79.0-125*		*10/22/2021 07:24*	WG1761146

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	U		0.0000941	0.00100	1	10/24/2021 02:47	WG1762339
n-Butylbenzene	U		0.000157	0.00100	1	10/24/2021 02:47	WG1762339
sec-Butylbenzene	U		0.000125	0.00100	1	10/24/2021 02:47	WG1762339
tert-Butylbenzene	U		0.000127	0.00100	1	10/24/2021 02:47	WG1762339
Ethylbenzene	U		0.000137	0.00100	1	10/24/2021 02:47	WG1762339
Isopropylbenzene	U		0.000105	0.00100	1	10/24/2021 02:47	WG1762339
Naphthalene	U		0.00100	0.00500	1	10/24/2021 02:47	WG1762339
Toluene	U		0.000278	0.00100	1	10/24/2021 02:47	WG1762339
1,2,4-Trimethylbenzene	U		0.000322	0.00100	1	10/24/2021 02:47	WG1762339
1,3,5-Trimethylbenzene	U		0.000104	0.00100	1	10/24/2021 02:47	WG1762339
Total Xylenes	0.000223	J	0.000174	0.00300	1	10/24/2021 02:47	WG1762339
(S) Toluene-d8	*102*			*80.0-120*		*10/24/2021 02:47*	WG1762339
(S) 4-Bromofluorobenzene	*95.3*			*77.0-126*		*10/24/2021 02:47*	WG1762339
(S) 1,2-Dichloroethane-d4	*111*			*70.0-130*		*10/24/2021 02:47*	WG1762339

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	1.57		0.254	0.888	1.11	10/27/2021 16:22	WG1762545
(S) o-Terphenyl	*111*			*50.0-150*		*10/27/2021 16:22*	WG1762545

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	J3	0.0000190	0.0000500	1	10/20/2021 01:35	WG1758560
Acenaphthene	U	J3	0.0000190	0.0000500	1	10/20/2021 01:35	WG1758560
Acenaphthylene	U	J3	0.0000171	0.0000500	1	10/20/2021 01:35	WG1758560
Benzo(a)anthracene	U	J3	0.0000203	0.0000500	1	10/20/2021 01:35	WG1758560
Benzo(a)pyrene	U	J3	0.0000184	0.0000500	1	10/20/2021 01:35	WG1758560
Benzo(b)fluoranthene	U	J3	0.0000168	0.0000500	1	10/20/2021 01:35	WG1758560
Benzo(g,h,i)perylene	U	J3	0.0000184	0.0000500	1	10/20/2021 01:35	WG1758560
Benzo(k)fluoranthene	U	J3	0.0000202	0.0000500	1	10/20/2021 01:35	WG1758560
Chrysene	U	J3	0.0000179	0.0000500	1	10/20/2021 01:35	WG1758560
Dibenz(a,h)anthracene	U	J3	0.0000160	0.0000500	1	10/20/2021 01:35	WG1758560
Fluoranthene	U	J3	0.0000270	0.000100	1	10/20/2021 01:35	WG1758560
Fluorene	U	J3	0.0000169	0.0000500	1	10/20/2021 01:35	WG1758560
Indeno(1,2,3-cd)pyrene	U	J3	0.0000158	0.0000500	1	10/20/2021 01:35	WG1758560
Naphthalene	U	J3	0.0000917	0.000250	1	10/20/2021 01:35	WG1758560
Phenanthrene	U	J3	0.0000180	0.0000500	1	10/20/2021 01:35	WG1758560
Pyrene	0.0000199	J J3	0.0000169	0.0000500	1	10/20/2021 01:35	WG1758560
1-Methylnaphthalene	U	J3	0.0000687	0.000250	1	10/20/2021 01:35	WG1758560

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	
2-Methylnaphthalene	U	J3	0.0000674	0.000250	1	10/20/2021 01:35	WG1758560
(S) Nitrobenzene-d5	*68.5*			*31.0-160*		*10/20/2021 01:35*	WG1758560
(S) 2-Fluorobiphenyl	*93.5*			*48.0-148*		*10/20/2021 01:35*	WG1758560
(S) p-Terphenyl-d14	*113*			*37.0-146*		*10/20/2021 01:35*	WG1758560

Metals (ICP) by Method 6010C

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Sodium	74.0		0.504	3.00	1	11/02/2021 15:43	WG1765496

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	0.0427	B J	0.0287	0.100	1	10/22/2021 08:11	WG1761146
(S) a,a,a-Trifluorotoluene(FID)	*97.8*			*50.0-150*		*10/22/2021 08:11*	WG1761146
(S) a,a,a-Trifluorotoluene(PID)	*97.9*			*79.0-125*		*10/22/2021 08:11*	WG1761146

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	0.00102		0.0000941	0.00100	1	10/24/2021 03:08	WG1762339
n-Butylbenzene	U		0.000157	0.00100	1	10/24/2021 03:08	WG1762339
sec-Butylbenzene	0.000849	J	0.000125	0.00100	1	10/24/2021 03:08	WG1762339
tert-Butylbenzene	U		0.000127	0.00100	1	10/24/2021 03:08	WG1762339
Ethylbenzene	U		0.000137	0.00100	1	10/24/2021 03:08	WG1762339
Isopropylbenzene	0.00148		0.000105	0.00100	1	10/24/2021 03:08	WG1762339
Naphthalene	0.00188	J	0.00100	0.00500	1	10/24/2021 03:08	WG1762339
Toluene	U		0.000278	0.00100	1	10/24/2021 03:08	WG1762339
1,2,4-Trimethylbenzene	U		0.000322	0.00100	1	10/24/2021 03:08	WG1762339
1,3,5-Trimethylbenzene	0.000223	J	0.000104	0.00100	1	10/24/2021 03:08	WG1762339
Total Xylenes	0.000267	J	0.000174	0.00300	1	10/24/2021 03:08	WG1762339
(S) Toluene-d8	*101*			*80.0-120*		*10/24/2021 03:08*	WG1762339
(S) 4-Bromofluorobenzene	*96.1*			*77.0-126*		*10/24/2021 03:08*	WG1762339
(S) 1,2-Dichloroethane-d4	*114*			*70.0-130*		*10/24/2021 03:08*	WG1762339

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	0.704	J	0.254	0.888	1.11	10/27/2021 16:45	WG1762545
(S) o-Terphenyl	*96.5*			*50.0-150*		*10/27/2021 16:45*	WG1762545

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	J3	0.0000190	0.0000500	1	10/20/2021 01:53	WG1758560
Acenaphthene	U	J3	0.0000190	0.0000500	1	10/20/2021 01:53	WG1758560
Acenaphthylene	U	J3	0.0000171	0.0000500	1	10/20/2021 01:53	WG1758560
Benzo(a)anthracene	U	J3	0.0000203	0.0000500	1	10/20/2021 01:53	WG1758560
Benzo(a)pyrene	U	J3	0.0000184	0.0000500	1	10/20/2021 01:53	WG1758560
Benzo(b)fluoranthene	U	J3	0.0000168	0.0000500	1	10/20/2021 01:53	WG1758560
Benzo(g,h,i)perylene	U	J3	0.0000184	0.0000500	1	10/20/2021 01:53	WG1758560
Benzo(k)fluoranthene	U	J3	0.0000202	0.0000500	1	10/20/2021 01:53	WG1758560
Chrysene	U	J3	0.0000179	0.0000500	1	10/20/2021 01:53	WG1758560
Dibenz(a,h)anthracene	U	J3	0.0000160	0.0000500	1	10/20/2021 01:53	WG1758560
Fluoranthene	U	J3	0.0000270	0.000100	1	10/20/2021 01:53	WG1758560
Fluorene	U	J3	0.0000169	0.0000500	1	10/20/2021 01:53	WG1758560
Indeno(1,2,3-cd)pyrene	U	J3	0.0000158	0.0000500	1	10/20/2021 01:53	WG1758560
Naphthalene	0.000418	J3	0.0000917	0.000250	1	10/20/2021 01:53	WG1758560
Phenanthrene	U	J3	0.0000180	0.0000500	1	10/20/2021 01:53	WG1758560
Pyrene	U	J3	0.0000169	0.0000500	1	10/20/2021 01:53	WG1758560
1-Methylnaphthalene	U	J3	0.0000687	0.000250	1	10/20/2021 01:53	WG1758560

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	
2-Methylnaphthalene	U	J3	0.0000674	0.000250	1	10/20/2021 01:53	WG1758560
(S) Nitrobenzene-d5	*68.0*			*31.0-160*		*10/20/2021 01:53*	WG1758560
(S) 2-Fluorobiphenyl	*90.0*			*48.0-148*		*10/20/2021 01:53*	WG1758560
(S) p-Terphenyl-d14	*108*			*37.0-146*		*10/20/2021 01:53*	WG1758560

Metals (ICP) by Method 6010C

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Sodium	65.0		0.504	3.00	1	11/02/2021 15:46	WG1765496

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	0.909		0.0287	0.100	1	10/22/2021 08:33	WG1761146
(S) a,a,a-Trifluorotoluene(FID)	*97.9*			*50.0-150*		*10/22/2021 08:33*	WG1761146
(S) a,a,a-Trifluorotoluene(PID)	*102*			*79.0-125*		*10/22/2021 08:33*	WG1761146

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	0.00607		0.0000941	0.00100	1	10/24/2021 09:12	WG1762339
n-Butylbenzene	0.00198		0.000157	0.00100	1	10/24/2021 09:12	WG1762339
sec-Butylbenzene	0.00234		0.000125	0.00100	1	10/24/2021 09:12	WG1762339
tert-Butylbenzene	U		0.000127	0.00100	1	10/24/2021 09:12	WG1762339
Ethylbenzene	0.0661		0.000137	0.00100	1	10/24/2021 09:12	WG1762339
Isopropylbenzene	0.00914		0.000105	0.00100	1	10/24/2021 09:12	WG1762339
Naphthalene	0.0173		0.00100	0.00500	1	10/24/2021 09:12	WG1762339
Toluene	0.000300	J	0.000278	0.00100	1	10/24/2021 09:12	WG1762339
1,2,4-Trimethylbenzene	0.110		0.000322	0.00100	1	10/24/2021 09:12	WG1762339
1,3,5-Trimethylbenzene	0.00373		0.000104	0.00100	1	10/24/2021 09:12	WG1762339
Total Xylenes	0.0928		0.000174	0.00300	1	10/24/2021 09:12	WG1762339
(S) Toluene-d8	*105*			*80.0-120*		*10/24/2021 09:12*	WG1762339
(S) 4-Bromofluorobenzene	*105*			*77.0-126*		*10/24/2021 09:12*	WG1762339
(S) 1,2-Dichloroethane-d4	*115*			*70.0-130*		*10/24/2021 09:12*	WG1762339

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	1.42		0.254	0.888	1.11	10/27/2021 17:07	WG1762545
(S) o-Terphenyl	*115*			*50.0-150*		*10/27/2021 17:07*	WG1762545

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	J3	0.0000190	0.0000500	1	10/20/2021 02:11	WG1758560
Acenaphthene	0.000102	J3	0.0000190	0.0000500	1	10/20/2021 02:11	WG1758560
Acenaphthylene	U	J3	0.0000171	0.0000500	1	10/20/2021 02:11	WG1758560
Benzo(a)anthracene	U	J3	0.0000203	0.0000500	1	10/20/2021 02:11	WG1758560
Benzo(a)pyrene	U	J3	0.0000184	0.0000500	1	10/20/2021 02:11	WG1758560
Benzo(b)fluoranthene	U	J3	0.0000168	0.0000500	1	10/20/2021 02:11	WG1758560
Benzo(g,h,i)perylene	U	J3	0.0000184	0.0000500	1	10/20/2021 02:11	WG1758560
Benzo(k)fluoranthene	U	J3	0.0000202	0.0000500	1	10/20/2021 02:11	WG1758560
Chrysene	U	J3	0.0000179	0.0000500	1	10/20/2021 02:11	WG1758560
Dibenz(a,h)anthracene	U	J3	0.0000160	0.0000500	1	10/20/2021 02:11	WG1758560
Fluoranthene	U	J3	0.0000270	0.000100	1	10/20/2021 02:11	WG1758560
Fluorene	0.000340	J3	0.0000169	0.0000500	1	10/20/2021 02:11	WG1758560
Indeno(1,2,3-cd)pyrene	U	J3	0.0000158	0.0000500	1	10/20/2021 02:11	WG1758560
Naphthalene	0.0118	J3	0.0000917	0.000250	1	10/20/2021 02:11	WG1758560
Phenanthrene	0.0000755	J3	0.0000180	0.0000500	1	10/20/2021 02:11	WG1758560
Pyrene	U	J3	0.0000169	0.0000500	1	10/20/2021 02:11	WG1758560
1-Methylnaphthalene	0.00403	J3	0.0000687	0.000250	1	10/20/2021 02:11	WG1758560

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	
2-Methylnaphthalene	0.00191	J3	0.0000674	0.000250	1	10/20/2021 02:11	WG1758560
(S) Nitrobenzene-d5	*64.5*			*31.0-160*		*10/20/2021 02:11*	WG1758560
(S) 2-Fluorobiphenyl	*89.5*			*48.0-148*		*10/20/2021 02:11*	WG1758560
(S) p-Terphenyl-d14	*107*			*37.0-146*		*10/20/2021 02:11*	WG1758560

Metals (ICP) by Method 6010C

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Sodium	93.9		0.504	3.00	1	11/02/2021 15:48	WG1765496

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	30.9		0.143	0.500	5	10/22/2021 13:18	WG1761146
(S) a,a,a-Trifluorotoluene(FID)	*97.8*			*50.0-150*		*10/22/2021 13:18*	WG1761146
(S) a,a,a-Trifluorotoluene(PID)	*101*			*79.0-125*		*10/22/2021 13:18*	WG1761146

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	1.59	E	0.000471	0.00500	5	10/24/2021 06:42	WG1762339
Benzene	1.61	Q	0.00941	0.100	100	10/28/2021 11:55	WG1764718
n-Butylbenzene	0.00138	J	0.000785	0.00500	5	10/24/2021 06:42	WG1762339
sec-Butylbenzene	0.00194	J	0.000625	0.00500	5	10/24/2021 06:42	WG1762339
tert-Butylbenzene	U		0.000635	0.00500	5	10/24/2021 06:42	WG1762339
Ethylbenzene	1.03	E	0.000685	0.00500	5	10/24/2021 06:42	WG1762339
Ethylbenzene	0.891	Q	0.0137	0.100	100	10/28/2021 11:55	WG1764718
Isopropylbenzene	0.0351		0.000525	0.00500	5	10/24/2021 06:42	WG1762339
Naphthalene	0.0626		0.00500	0.0250	5	10/24/2021 06:42	WG1762339
Toluene	3.53	E	0.00139	0.00500	5	10/24/2021 06:42	WG1762339
Toluene	5.27	Q	0.0278	0.100	100	10/28/2021 11:55	WG1764718
1,2,4-Trimethylbenzene	0.442		0.00161	0.00500	5	10/24/2021 06:42	WG1762339
1,3,5-Trimethylbenzene	0.103		0.000520	0.00500	5	10/24/2021 06:42	WG1762339
Total Xylenes	3.69		0.000870	0.0150	5	10/24/2021 06:42	WG1762339
Total Xylenes	3.36		0.0174	0.300	100	10/28/2021 11:55	WG1764718
(S) Toluene-d8	*102*			*80.0-120*		*10/24/2021 06:42*	WG1762339
(S) Toluene-d8	*95.4*			*80.0-120*		*10/28/2021 11:55*	WG1764718
(S) 4-Bromofluorobenzene	*107*			*77.0-126*		*10/24/2021 06:42*	WG1762339
(S) 4-Bromofluorobenzene	*97.5*			*77.0-126*		*10/28/2021 11:55*	WG1764718
(S) 1,2-Dichloroethane-d4	*108*			*70.0-130*		*10/24/2021 06:42*	WG1762339
(S) 1,2-Dichloroethane-d4	*121*			*70.0-130*		*10/28/2021 11:55*	WG1764718

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	3.68		0.254	0.888	1.11	10/27/2021 17:28	WG1762545
(S) o-Terphenyl	*107*			*50.0-150*		*10/27/2021 17:28*	WG1762545

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	J3	0.0000190	0.0000500	1	10/20/2021 02:29	WG1758560
Acenaphthene	0.000100	J3	0.0000190	0.0000500	1	10/20/2021 02:29	WG1758560
Acenaphthylene	U	J3	0.0000171	0.0000500	1	10/20/2021 02:29	WG1758560
Benzo(a)anthracene	U	J3	0.0000203	0.0000500	1	10/20/2021 02:29	WG1758560
Benzo(a)pyrene	U	J3	0.0000184	0.0000500	1	10/20/2021 02:29	WG1758560
Benzo(b)fluoranthene	U	J3	0.0000168	0.0000500	1	10/20/2021 02:29	WG1758560
Benzo(g,h,i)perylene	U	J3	0.0000184	0.0000500	1	10/20/2021 02:29	WG1758560
Benzo(k)fluoranthene	U	J3	0.0000202	0.0000500	1	10/20/2021 02:29	WG1758560
Chrysene	U	J3	0.0000179	0.0000500	1	10/20/2021 02:29	WG1758560
Dibenz(a,h)anthracene	U	J3	0.0000160	0.0000500	1	10/20/2021 02:29	WG1758560

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
Fluoranthene	U	J3	0.0000270	0.000100	1	10/20/2021 02:29	WG1758560
Fluorene	0.000265	J3	0.0000169	0.0000500	1	10/20/2021 02:29	WG1758560
Indeno(1,2,3-cd)pyrene	U	J3	0.0000158	0.0000500	1	10/20/2021 02:29	WG1758560
Naphthalene	0.0464	J3	0.0000917	0.000250	1	10/20/2021 02:29	WG1758560
Phenanthrene	0.000122	J3	0.0000180	0.0000500	1	10/20/2021 02:29	WG1758560
Pyrene	0.0000221	J J3	0.0000169	0.0000500	1	10/20/2021 02:29	WG1758560
1-Methylnaphthalene	0.00603	J3	0.0000687	0.000250	1	10/20/2021 02:29	WG1758560
2-Methylnaphthalene	0.00457	J3	0.0000674	0.000250	1	10/20/2021 02:29	WG1758560
(S) Nitrobenzene-d5	*62.0*			*31.0-160*		*10/20/2021 02:29*	WG1758560
(S) 2-Fluorobiphenyl	*81.5*			*48.0-148*		*10/20/2021 02:29*	WG1758560
(S) p-Terphenyl-d14	*97.5*			*37.0-146*		*10/20/2021 02:29*	WG1758560

Metals (ICP) by Method 6010C

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Sodium	67.5		0.504	3.00	1	11/02/2021 15:51	WG1765496

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	0.0560	B J	0.0287	0.100	1	10/22/2021 08:55	WG1761146
(S) a,a,a-Trifluorotoluene(FID)	*97.0*			*50.0-150*		*10/22/2021 08:55*	WG1761146
(S) a,a,a-Trifluorotoluene(PID)	*97.8*			*79.0-125*		*10/22/2021 08:55*	WG1761146

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	0.00157	J	0.000471	0.00500	5	10/24/2021 07:04	WG1762339
Benzene	0.000549	J Q	0.0000941	0.00100	1	10/28/2021 11:35	WG1764367
n-Butylbenzene	U		0.000785	0.00500	5	10/24/2021 07:04	WG1762339
n-Butylbenzene	0.000271	J Q	0.000157	0.00100	1	10/28/2021 11:35	WG1764367
sec-Butylbenzene	U		0.000625	0.00500	5	10/24/2021 07:04	WG1762339
sec-Butylbenzene	U	Q	0.000125	0.00100	1	10/28/2021 11:35	WG1764367
tert-Butylbenzene	U		0.000635	0.00500	5	10/24/2021 07:04	WG1762339
tert-Butylbenzene	U	Q	0.000127	0.00100	1	10/28/2021 11:35	WG1764367
Ethylbenzene	0.00324	J	0.000685	0.00500	5	10/24/2021 07:04	WG1762339
Ethylbenzene	0.000439	J Q	0.000137	0.00100	1	10/28/2021 11:35	WG1764367
Isopropylbenzene	U		0.000525	0.00500	5	10/24/2021 07:04	WG1762339
Isopropylbenzene	U	Q	0.000105	0.00100	1	10/28/2021 11:35	WG1764367
Naphthalene	0.00781	J	0.00500	0.0250	5	10/24/2021 07:04	WG1762339
Naphthalene	0.00103	J Q	0.00100	0.00500	1	10/28/2021 11:35	WG1764367
Toluene	0.00590		0.00139	0.00500	5	10/24/2021 07:04	WG1762339
Toluene	U	Q	0.000278	0.00100	1	10/28/2021 11:35	WG1764367
1,2,4-Trimethylbenzene	0.00475	J	0.00161	0.00500	5	10/24/2021 07:04	WG1762339
1,2,4-Trimethylbenzene	0.00105	Q	0.000322	0.00100	1	10/28/2021 11:35	WG1764367
1,3,5-Trimethylbenzene	0.000774	J	0.000520	0.00500	5	10/24/2021 07:04	WG1762339
1,3,5-Trimethylbenzene	0.000148	J Q	0.000104	0.00100	1	10/28/2021 11:35	WG1764367
Total Xylenes	0.0107	J	0.000870	0.0150	5	10/24/2021 07:04	WG1762339
Total Xylenes	0.00127	J Q	0.000174	0.00300	1	10/28/2021 11:35	WG1764367
(S) Toluene-d8	*103*			*80.0-120*		*10/24/2021 07:04*	WG1762339
(S) Toluene-d8	*92.4*			*80.0-120*		*10/28/2021 11:35*	WG1764367
(S) 4-Bromofluorobenzene	*98.3*			*77.0-126*		*10/24/2021 07:04*	WG1762339
(S) 4-Bromofluorobenzene	*88.1*			*77.0-126*		*10/28/2021 11:35*	WG1764367
(S) 1,2-Dichloroethane-d4	*118*			*70.0-130*		*10/24/2021 07:04*	WG1762339
(S) 1,2-Dichloroethane-d4	*110*			*70.0-130*		*10/28/2021 11:35*	WG1764367

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	3.22		0.240	0.840	1.05	10/27/2021 17:50	WG1762545
(S) o-Terphenyl	*107*			*50.0-150*		*10/27/2021 17:50*	WG1762545

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
Anthracene	U	J3	0.0000190	0.0000500	1	10/20/2021 02:47	WG1758560
Acenaphthene	U	J3	0.0000190	0.0000500	1	10/20/2021 02:47	WG1758560
Acenaphthylene	U	J3	0.0000171	0.0000500	1	10/20/2021 02:47	WG1758560
Benzo(a)anthracene	U	J3	0.0000203	0.0000500	1	10/20/2021 02:47	WG1758560
Benzo(a)pyrene	U	J3	0.0000184	0.0000500	1	10/20/2021 02:47	WG1758560
Benzo(b)fluoranthene	U	J3	0.0000168	0.0000500	1	10/20/2021 02:47	WG1758560
Benzo(g,h,i)perylene	U	J3	0.0000184	0.0000500	1	10/20/2021 02:47	WG1758560
Benzo(k)fluoranthene	U	J3	0.0000202	0.0000500	1	10/20/2021 02:47	WG1758560
Chrysene	U	J3	0.0000179	0.0000500	1	10/20/2021 02:47	WG1758560
Dibenz(a,h)anthracene	U	J3	0.0000160	0.0000500	1	10/20/2021 02:47	WG1758560
Fluoranthene	U	J3	0.0000270	0.000100	1	10/20/2021 02:47	WG1758560
Fluorene	U	J3	0.0000169	0.0000500	1	10/20/2021 02:47	WG1758560
Indeno(1,2,3-cd)pyrene	U	J3	0.0000158	0.0000500	1	10/20/2021 02:47	WG1758560
Naphthalene	U	J3	0.0000917	0.000250	1	10/20/2021 02:47	WG1758560
Phenanthrene	U	J3	0.0000180	0.0000500	1	10/20/2021 02:47	WG1758560
Pyrene	U	J3	0.0000169	0.0000500	1	10/20/2021 02:47	WG1758560
1-Methylnaphthalene	U	J3	0.0000687	0.000250	1	10/20/2021 02:47	WG1758560
2-Methylnaphthalene	U	J3	0.0000674	0.000250	1	10/20/2021 02:47	WG1758560
(S) Nitrobenzene-d5	*62.0*			*31.0-160*		*10/20/2021 02:47*	WG1758560
(S) 2-Fluorobiphenyl	*82.5*			*48.0-148*		*10/20/2021 02:47*	WG1758560
(S) p-Terphenyl-d14	*93.0*			*37.0-146*		*10/20/2021 02:47*	WG1758560

Metals (ICP) by Method 6010C

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Sodium	67.3		0.504	3.00	1	11/02/2021 15:53	WG1765496

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	5.34		0.287	1.00	10	10/22/2021 13:40	WG1761146
(S) a,a,a-Trifluorotoluene(FID)	*97.4*			*50.0-150*		*10/22/2021 13:40*	WG1761146
(S) a,a,a-Trifluorotoluene(PID)	*98.8*			*79.0-125*		*10/22/2021 13:40*	WG1761146

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	0.000358	J	0.0000941	0.00100	1	10/24/2021 03:29	WG1762339
n-Butylbenzene	0.00387		0.000157	0.00100	1	10/24/2021 03:29	WG1762339
sec-Butylbenzene	0.00657		0.000125	0.00100	1	10/24/2021 03:29	WG1762339
tert-Butylbenzene	0.00112		0.000127	0.00100	1	10/24/2021 03:29	WG1762339
Ethylbenzene	0.142		0.000137	0.00100	1	10/24/2021 03:29	WG1762339
Isopropylbenzene	0.0217		0.000105	0.00100	1	10/24/2021 03:29	WG1762339
Naphthalene	0.0481		0.00100	0.00500	1	10/24/2021 03:29	WG1762339
Toluene	0.000503	J	0.000278	0.00100	1	10/24/2021 03:29	WG1762339
1,2,4-Trimethylbenzene	0.263	E	0.000322	0.00100	1	10/24/2021 03:29	WG1762339
1,2,4-Trimethylbenzene	0.286	Q	0.00644	0.0200	20	10/28/2021 12:14	WG1764718
1,3,5-Trimethylbenzene	0.115		0.000104	0.00100	1	10/24/2021 03:29	WG1762339
Total Xylenes	1.25		0.000174	0.00300	1	10/24/2021 03:29	WG1762339
Total Xylenes	1.26		0.00348	0.0600	20	10/28/2021 12:14	WG1764718
(S) Toluene-d8	*101*			*80.0-120*		*10/24/2021 03:29*	WG1762339
(S) Toluene-d8	*96.2*			*80.0-120*		*10/28/2021 12:14*	WG1764718
(S) 4-Bromofluorobenzene	*113*			*77.0-126*		*10/24/2021 03:29*	WG1762339
(S) 4-Bromofluorobenzene	*94.7*			*77.0-126*		*10/28/2021 12:14*	WG1764718
(S) 1,2-Dichloroethane-d4	*113*			*70.0-130*		*10/24/2021 03:29*	WG1762339
(S) 1,2-Dichloroethane-d4	*121*			*70.0-130*		*10/28/2021 12:14*	WG1764718

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	2.22		0.229	0.800	1	10/27/2021 20:06	WG1762545
(S) o-Terphenyl	*104*			*50.0-150*		*10/27/2021 20:06*	WG1762545

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	J3	0.0000190	0.0000500	1	10/20/2021 03:05	WG1758560
Acenaphthene	0.000341	J3	0.0000190	0.0000500	1	10/20/2021 03:05	WG1758560
Acenaphthylene	U	J3	0.0000171	0.0000500	1	10/20/2021 03:05	WG1758560
Benzo(a)anthracene	U	J3	0.0000203	0.0000500	1	10/20/2021 03:05	WG1758560
Benzo(a)pyrene	U	J3	0.0000184	0.0000500	1	10/20/2021 03:05	WG1758560
Benzo(b)fluoranthene	U	J3	0.0000168	0.0000500	1	10/20/2021 03:05	WG1758560
Benzo(g,h,i)perylene	U	J3	0.0000184	0.0000500	1	10/20/2021 03:05	WG1758560
Benzo(k)fluoranthene	U	J3	0.0000202	0.0000500	1	10/20/2021 03:05	WG1758560
Chrysene	U	J3	0.0000179	0.0000500	1	10/20/2021 03:05	WG1758560
Dibenz(a,h)anthracene	U	J3	0.0000160	0.0000500	1	10/20/2021 03:05	WG1758560
Fluoranthene	U	J3	0.0000270	0.000100	1	10/20/2021 03:05	WG1758560
Fluorene	0.00127	J3	0.0000169	0.0000500	1	10/20/2021 03:05	WG1758560

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
Indeno(1,2,3-cd)pyrene	U	J3	0.0000158	0.0000500	1	10/20/2021 03:05	WG1758560
Naphthalene	0.0272	J3	0.0000917	0.000250	1	10/20/2021 03:05	WG1758560
Phenanthrene	0.000473	J3	0.0000180	0.0000500	1	10/20/2021 03:05	WG1758560
Pyrene	U	J3	0.0000169	0.0000500	1	10/20/2021 03:05	WG1758560
1-Methylnaphthalene	0.0318	J3	0.0000687	0.000250	1	10/20/2021 03:05	WG1758560
2-Methylnaphthalene	0.0237	J3	0.0000674	0.000250	1	10/20/2021 03:05	WG1758560
(S) Nitrobenzene-d5	*69.0*			*31.0-160*		*10/20/2021 03:05*	WG1758560
(S) 2-Fluorobiphenyl	*83.5*			*48.0-148*		*10/20/2021 03:05*	WG1758560
(S) p-Terphenyl-d14	*101*			*37.0-146*		*10/20/2021 03:05*	WG1758560

Metals (ICP) by Method 6010C

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Sodium	35.4		0.504	3.00	1	11/02/2021 14:43	WG1765496

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	0.645		0.0287	0.100	1	10/22/2021 09:17	WG1761146
(S) a,a,a-Trifluorotoluene(FID)	*96.1*			*50.0-150*		*10/22/2021 09:17*	WG1761146
(S) a,a,a-Trifluorotoluene(PID)	*98.7*			*79.0-125*		*10/22/2021 09:17*	WG1761146

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	0.000496	J	0.0000941	0.00100	1	10/24/2021 03:51	WG1762339
n-Butylbenzene	0.00185		0.000157	0.00100	1	10/24/2021 03:51	WG1762339
sec-Butylbenzene	0.00270		0.000125	0.00100	1	10/24/2021 03:51	WG1762339
tert-Butylbenzene	0.000245	J	0.000127	0.00100	1	10/24/2021 03:51	WG1762339
Ethylbenzene	0.0401		0.000137	0.00100	1	10/24/2021 03:51	WG1762339
Isopropylbenzene	0.00764		0.000105	0.00100	1	10/24/2021 03:51	WG1762339
Naphthalene	0.0132		0.00100	0.00500	1	10/24/2021 03:51	WG1762339
Toluene	U		0.000278	0.00100	1	10/24/2021 03:51	WG1762339
1,2,4-Trimethylbenzene	0.0250		0.000322	0.00100	1	10/24/2021 03:51	WG1762339
1,3,5-Trimethylbenzene	0.0167		0.000104	0.00100	1	10/24/2021 03:51	WG1762339
Total Xylenes	0.0617		0.000174	0.00300	1	10/24/2021 03:51	WG1762339
(S) Toluene-d8	*99.2*			*80.0-120*		*10/24/2021 03:51*	WG1762339
(S) 4-Bromofluorobenzene	*100*			*77.0-126*		*10/24/2021 03:51*	WG1762339
(S) 1,2-Dichloroethane-d4	*113*			*70.0-130*		*10/24/2021 03:51*	WG1762339

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	0.650	J	0.229	0.800	1	10/27/2021 15:04	WG1762546
(S) o-Terphenyl	*87.5*			*50.0-150*		*10/27/2021 15:04*	WG1762546

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	J3	0.0000190	0.0000500	1	10/20/2021 03:22	WG1758560
Acenaphthene	0.0000452	J J3	0.0000190	0.0000500	1	10/20/2021 03:22	WG1758560
Acenaphthylene	U	J3	0.0000171	0.0000500	1	10/20/2021 03:22	WG1758560
Benzo(a)anthracene	U	J3	0.0000203	0.0000500	1	10/20/2021 03:22	WG1758560
Benzo(a)pyrene	U	J3	0.0000184	0.0000500	1	10/20/2021 03:22	WG1758560
Benzo(b)fluoranthene	U	J3	0.0000168	0.0000500	1	10/20/2021 03:22	WG1758560
Benzo(g,h,i)perylene	U	J3	0.0000184	0.0000500	1	10/20/2021 03:22	WG1758560
Benzo(k)fluoranthene	U	J3	0.0000202	0.0000500	1	10/20/2021 03:22	WG1758560
Chrysene	U	J3	0.0000179	0.0000500	1	10/20/2021 03:22	WG1758560
Dibenz(a,h)anthracene	U	J3	0.0000160	0.0000500	1	10/20/2021 03:22	WG1758560
Fluoranthene	U	J3	0.0000270	0.000100	1	10/20/2021 03:22	WG1758560
Fluorene	0.000119	J3	0.0000169	0.0000500	1	10/20/2021 03:22	WG1758560
Indeno(1,2,3-cd)pyrene	U	J3	0.0000158	0.0000500	1	10/20/2021 03:22	WG1758560
Naphthalene	0.00482	J3	0.0000917	0.000250	1	10/20/2021 03:22	WG1758560
Phenanthrene	0.0000560	J3	0.0000180	0.0000500	1	10/20/2021 03:22	WG1758560
Pyrene	U	J3	0.0000169	0.0000500	1	10/20/2021 03:22	WG1758560
1-Methylnaphthalene	0.00346	J3	0.0000687	0.000250	1	10/20/2021 03:22	WG1758560

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
2-Methylnaphthalene	0.00172	J3	0.0000674	0.000250	1	10/20/2021 03:22	WG1758560
(S) Nitrobenzene-d5	*59.5*			*31.0-160*		*10/20/2021 03:22*	WG1758560
(S) 2-Fluorobiphenyl	*89.5*			*48.0-148*		*10/20/2021 03:22*	WG1758560
(S) p-Terphenyl-d14	*103*			*37.0-146*		*10/20/2021 03:22*	WG1758560

Metals (ICP) by Method 6010C

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Sodium	78.1		0.504	3.00	1	11/04/2021 00:47	WG1767790

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	2.16		0.0287	0.100	1	10/22/2021 16:36	WG1761611
(S) a,a,a-Trifluorotoluene(FID)	*97.1*			*50.0-150*		*10/22/2021 16:36*	WG1761611
(S) a,a,a-Trifluorotoluene(PID)	*99.5*			*79.0-125*		*10/22/2021 16:36*	WG1761611

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	0.000190	J	0.0000941	0.00100	1	10/24/2021 04:12	WG1762339
n-Butylbenzene	0.000322	J	0.000157	0.00100	1	10/24/2021 04:12	WG1762339
sec-Butylbenzene	0.000758	J	0.000125	0.00100	1	10/24/2021 04:12	WG1762339
tert-Butylbenzene	0.000336	J	0.000127	0.00100	1	10/24/2021 04:12	WG1762339
Ethylbenzene	0.0736		0.000137	0.00100	1	10/24/2021 04:12	WG1762339
Isopropylbenzene	0.00613		0.000105	0.00100	1	10/24/2021 04:12	WG1762339
Naphthalene	0.0154		0.00100	0.00500	1	10/24/2021 04:12	WG1762339
Toluene	0.00215		0.000278	0.00100	1	10/24/2021 04:12	WG1762339
1,2,4-Trimethylbenzene	0.0542		0.000322	0.00100	1	10/24/2021 04:12	WG1762339
1,3,5-Trimethylbenzene	0.0211		0.000104	0.00100	1	10/24/2021 04:12	WG1762339
Total Xylenes	0.524		0.000174	0.00300	1	10/24/2021 04:12	WG1762339
Total Xylenes	0.496		0.00174	0.0300	10	10/28/2021 12:33	WG1764718
(S) Toluene-d8	*97.0*			*80.0-120*		*10/24/2021 04:12*	WG1762339
(S) Toluene-d8	*96.7*			*80.0-120*		*10/28/2021 12:33*	WG1764718
(S) 4-Bromofluorobenzene	*98.9*			*77.0-126*		*10/24/2021 04:12*	WG1762339
(S) 4-Bromofluorobenzene	*95.4*			*77.0-126*		*10/28/2021 12:33*	WG1764718
(S) 1,2-Dichloroethane-d4	*113*			*70.0-130*		*10/24/2021 04:12*	WG1762339
(S) 1,2-Dichloroethane-d4	*123*			*70.0-130*		*10/28/2021 12:33*	WG1764718

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	1.01		0.240	0.840	1.05	10/27/2021 15:24	WG1762546
(S) o-Terphenyl	*109*			*50.0-150*		*10/27/2021 15:24*	WG1762546

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	J3	0.0000190	0.0000500	1	10/20/2021 03:40	WG1758560
Acenaphthene	0.0000838	J3	0.0000190	0.0000500	1	10/20/2021 03:40	WG1758560
Acenaphthylene	U	J3	0.0000171	0.0000500	1	10/20/2021 03:40	WG1758560
Benzo(a)anthracene	U	J3	0.0000203	0.0000500	1	10/20/2021 03:40	WG1758560
Benzo(a)pyrene	U	J3	0.0000184	0.0000500	1	10/20/2021 03:40	WG1758560
Benzo(b)fluoranthene	U	J3	0.0000168	0.0000500	1	10/20/2021 03:40	WG1758560
Benzo(g,h,i)perylene	U	J3	0.0000184	0.0000500	1	10/20/2021 03:40	WG1758560
Benzo(k)fluoranthene	U	J3	0.0000202	0.0000500	1	10/20/2021 03:40	WG1758560
Chrysene	U	J3	0.0000179	0.0000500	1	10/20/2021 03:40	WG1758560
Dibenz(a,h)anthracene	U	J3	0.0000160	0.0000500	1	10/20/2021 03:40	WG1758560
Fluoranthene	U	J3	0.0000270	0.000100	1	10/20/2021 03:40	WG1758560
Fluorene	0.000255	J3	0.0000169	0.0000500	1	10/20/2021 03:40	WG1758560
Indeno(1,2,3-cd)pyrene	U	J3	0.0000158	0.0000500	1	10/20/2021 03:40	WG1758560

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	
Naphthalene	0.00459	J3	0.0000917	0.000250	1	10/20/2021 03:40	WG1758560
Phenanthrene	0.0000264	J J3	0.0000180	0.0000500	1	10/20/2021 03:40	WG1758560
Pyrene	U	J3	0.0000169	0.0000500	1	10/20/2021 03:40	WG1758560
1-Methylnaphthalene	0.00696	J3	0.0000687	0.000250	1	10/20/2021 03:40	WG1758560
2-Methylnaphthalene	0.00375	J3	0.0000674	0.000250	1	10/20/2021 03:40	WG1758560
(S) Nitrobenzene-d5	*67.0*			*31.0-160*		*10/20/2021 03:40*	WG1758560
(S) 2-Fluorobiphenyl	*88.5*			*48.0-148*		*10/20/2021 03:40*	WG1758560
(S) p-Terphenyl-d14	*112*			*37.0-146*		*10/20/2021 03:40*	WG1758560

Metals (ICP) by Method 6010C

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Sodium	67.6		0.504	3.00	1	11/02/2021 14:45	WG1765496

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	0.0627	J	0.0287	0.100	1	10/22/2021 16:58	WG1761611
(S) a,a,a-Trifluorotoluene(FID)	*97.4*			*50.0-150*		*10/22/2021 16:58*	WG1761611
(S) a,a,a-Trifluorotoluene(PID)	*97.5*			*79.0-125*		*10/22/2021 16:58*	WG1761611

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	0.000557	J	0.0000941	0.00100	1	10/24/2021 04:34	WG1762339
n-Butylbenzene	U		0.000157	0.00100	1	10/24/2021 04:34	WG1762339
sec-Butylbenzene	U		0.000125	0.00100	1	10/24/2021 04:34	WG1762339
tert-Butylbenzene	U		0.000127	0.00100	1	10/24/2021 04:34	WG1762339
Ethylbenzene	0.000914	J	0.000137	0.00100	1	10/24/2021 04:34	WG1762339
Isopropylbenzene	U		0.000105	0.00100	1	10/24/2021 04:34	WG1762339
Naphthalene	0.00245	J	0.00100	0.00500	1	10/24/2021 04:34	WG1762339
Toluene	U		0.000278	0.00100	1	10/24/2021 04:34	WG1762339
1,2,4-Trimethylbenzene	0.00162		0.000322	0.00100	1	10/24/2021 04:34	WG1762339
1,3,5-Trimethylbenzene	0.000303	J	0.000104	0.00100	1	10/24/2021 04:34	WG1762339
Total Xylenes	0.00297	J	0.000174	0.00300	1	10/24/2021 04:34	WG1762339
Total Xylenes	U		0.000174	0.00300	1	10/28/2021 10:20	WG1764718
(S) Toluene-d8	*102*			*80.0-120*		*10/24/2021 04:34*	WG1762339
(S) Toluene-d8	*92.4*			*80.0-120*		*10/28/2021 10:20*	WG1764718
(S) 4-Bromofluorobenzene	*100*			*77.0-126*		*10/24/2021 04:34*	WG1762339
(S) 4-Bromofluorobenzene	*95.2*			*77.0-126*		*10/28/2021 10:20*	WG1764718
(S) 1,2-Dichloroethane-d4	*115*			*70.0-130*		*10/24/2021 04:34*	WG1762339
(S) 1,2-Dichloroethane-d4	*126*			*70.0-130*		*10/28/2021 10:20*	WG1764718

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	3.92		0.240	0.840	1.05	10/27/2021 15:44	WG1762546
(S) o-Terphenyl	*77.8*			*50.0-150*		*10/27/2021 15:44*	WG1762546

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	J3	0.0000190	0.0000500	1	10/20/2021 03:58	WG1758560
Acenaphthene	U	J3	0.0000190	0.0000500	1	10/20/2021 03:58	WG1758560
Acenaphthylene	U	J3	0.0000171	0.0000500	1	10/20/2021 03:58	WG1758560
Benzo(a)anthracene	U	J3	0.0000203	0.0000500	1	10/20/2021 03:58	WG1758560
Benzo(a)pyrene	U	J3	0.0000184	0.0000500	1	10/20/2021 03:58	WG1758560
Benzo(b)fluoranthene	U	J3	0.0000168	0.0000500	1	10/20/2021 03:58	WG1758560
Benzo(g,h,i)perylene	U	J3	0.0000184	0.0000500	1	10/20/2021 03:58	WG1758560
Benzo(k)fluoranthene	U	J3	0.0000202	0.0000500	1	10/20/2021 03:58	WG1758560
Chrysene	U	J3	0.0000179	0.0000500	1	10/20/2021 03:58	WG1758560
Dibenz(a,h)anthracene	U	J3	0.0000160	0.0000500	1	10/20/2021 03:58	WG1758560
Fluoranthene	U	J3	0.0000270	0.000100	1	10/20/2021 03:58	WG1758560
Fluorene	U	J3	0.0000169	0.0000500	1	10/20/2021 03:58	WG1758560
Indeno(1,2,3-cd)pyrene	U	J3	0.0000158	0.0000500	1	10/20/2021 03:58	WG1758560

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	
Naphthalene	U	J3	0.0000917	0.000250	1	10/20/2021 03:58	WG1758560
Phenanthrene	U	J3	0.0000180	0.0000500	1	10/20/2021 03:58	WG1758560
Pyrene	U	J3	0.0000169	0.0000500	1	10/20/2021 03:58	WG1758560
1-Methylnaphthalene	U	J3	0.0000687	0.000250	1	10/20/2021 03:58	WG1758560
2-Methylnaphthalene	U	J3	0.0000674	0.000250	1	10/20/2021 03:58	WG1758560
(S) Nitrobenzene-d5	*61.5*			*31.0-160*		*10/20/2021 03:58*	WG1758560
(S) 2-Fluorobiphenyl	*89.0*			*48.0-148*		*10/20/2021 03:58*	WG1758560
(S) p-Terphenyl-d14	*103*			*37.0-146*		*10/20/2021 03:58*	WG1758560

Method Blank (MB)

(MB) R3724694-1 11/02/21 14:59

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) R3724694-2 11/02/21 15:01

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Sodium	10.0	9.73	97.3	80.0-120	

L1418623-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1418623-01 11/02/21 15:04 • (MS) R3724694-4 11/02/21 15:09 • (MSD) R3724694-5 11/02/21 15:12

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	12.9	23.8	23.9	109	109	1	75.0-125			0.224	20

Method Blank (MB)

(MB) R3725292-1 11/04/21 00:31

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) R3725292-2 11/04/21 00:34

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Sodium	10.0	9.69	96.9	80.0-120	

L1420504-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1420504-03 11/04/21 00:37 • (MS) R3725292-4 11/04/21 00:42 • (MSD) R3725292-5 11/04/21 00:44

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	2.05	11.7	11.7	96.0	96.2	1	75.0-125			0.150	20

Method Blank (MB)

(MB) R3723602-2 10/22/21 06:18

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
TPHGAK C6 to C10	0.0298	J	0.0287	0.100
(S) a,a,a-Trifluorotoluene(PID)	*97.6*			*79.0-125*
(S) a,a,a-Trifluorotoluene(FID)	*96.3*			*60.0-120*

Laboratory Control Sample (LCS)

(LCS) R3723602-1 10/22/21 05:06

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPHGAK C6 to C10	5.00	5.40	108	60.0-120	
(S) a,a,a-Trifluorotoluene(PID)			*131*	*79.0-125*	J1
(S) a,a,a-Trifluorotoluene(FID)			*115*	*60.0-120*	

Method Blank (MB)

(MB) R3721349-2 10/22/21 15:30

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(PID)	*98.1*			*79.0-125*
(S) a,a,a-Trifluorotoluene(FID)	*96.9*			*60.0-120*

Laboratory Control Sample (LCS)

(LCS) R3721349-1 10/22/21 14:46

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPHGAK C6 to C10	5.00	5.29	106	60.0-120	
(S) a,a,a-Trifluorotoluene(PID)			*130*	*79.0-125*	J1
(S) a,a,a-Trifluorotoluene(FID)			*114*	*60.0-120*	

L1418584-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1418584-01 10/22/21 19:53 • (MS) R3721349-3 10/22/21 23:10 • (MSD) R3721349-4 10/22/21 23:32

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	0.0324	4.90	4.99	97.4	99.2	1	70.0-130			1.82	20
(S) a,a,a-Trifluorotoluene(PID)					*127*	*126*		*79.0-125*	J1	J1		
(S) a,a,a-Trifluorotoluene(FID)					*116*	*116*		*50.0-150*				

Method Blank (MB)

(MB) R3722245-2 10/24/21 02:04

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.0000941	0.00100
n-Butylbenzene	U		0.000157	0.00100
sec-Butylbenzene	U		0.000125	0.00100
tert-Butylbenzene	U		0.000127	0.00100
Ethylbenzene	U		0.000137	0.00100
Isopropylbenzene	U		0.000105	0.00100
Naphthalene	U		0.00100	0.00500
Toluene	U		0.000278	0.00100
1,2,4-Trimethylbenzene	U		0.000322	0.00100
1,3,5-Trimethylbenzene	U		0.000104	0.00100
Xylenes, Total	U		0.000174	0.00300
(S) Toluene-d8	*101*			*80.0-120*
(S) 4-Bromofluorobenzene	*102*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*113*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3722245-1 10/24/21 01:21

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.00500	0.00480	96.0	70.0-123	
n-Butylbenzene	0.00500	0.00445	89.0	73.0-125	
sec-Butylbenzene	0.00500	0.00453	90.6	75.0-125	
tert-Butylbenzene	0.00500	0.00444	88.8	76.0-124	
Ethylbenzene	0.00500	0.00468	93.6	79.0-123	
Isopropylbenzene	0.00500	0.00454	90.8	76.0-127	
Naphthalene	0.00500	0.00441	88.2	54.0-135	
Toluene	0.00500	0.00446	89.2	79.0-120	
1,2,4-Trimethylbenzene	0.00500	0.00460	92.0	76.0-121	
1,3,5-Trimethylbenzene	0.00500	0.00467	93.4	76.0-122	
Xylenes, Total	0.0150	0.0133	88.7	79.0-123	
(S) Toluene-d8			*99.2*	*80.0-120*	
(S) 4-Bromofluorobenzene			*100*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*120*	*70.0-130*	

Method Blank (MB)

(MB) R3722531-2 10/28/21 03:30

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.0000941	0.00100
n-Butylbenzene	U		0.000157	0.00100
sec-Butylbenzene	U		0.000125	0.00100
tert-Butylbenzene	U		0.000127	0.00100
Ethylbenzene	U		0.000137	0.00100
Isopropylbenzene	U		0.000105	0.00100
Naphthalene	U		0.00100	0.00500
Toluene	U		0.000278	0.00100
1,2,4-Trimethylbenzene	U		0.000322	0.00100
1,3,5-Trimethylbenzene	U		0.000104	0.00100
Xylenes, Total	U		0.000174	0.00300
(S) Toluene-d8	*96.9*			*80.0-120*
(S) 4-Bromofluorobenzene	*87.9*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*113*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3722531-1 10/28/21 02:23

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.00500	0.00466	93.2	70.0-123	
n-Butylbenzene	0.00500	0.00587	117	73.0-125	
sec-Butylbenzene	0.00500	0.00578	116	75.0-125	
tert-Butylbenzene	0.00500	0.00465	93.0	76.0-124	
Ethylbenzene	0.00500	0.00400	80.0	79.0-123	
Isopropylbenzene	0.00500	0.00451	90.2	76.0-127	
Naphthalene	0.00500	0.00492	98.4	54.0-135	
Toluene	0.00500	0.00402	80.4	79.0-120	
1,2,4-Trimethylbenzene	0.00500	0.00576	115	76.0-121	
1,3,5-Trimethylbenzene	0.00500	0.00579	116	76.0-122	
Xylenes, Total	0.0150	0.0128	85.3	79.0-123	
(S) Toluene-d8			*94.7*	*80.0-120*	
(S) 4-Bromofluorobenzene			*88.6*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*108*	*70.0-130*	

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

Method Blank (MB)

(MB) R3723613-3 10/28/21 06:03

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.0000941	0.00100
n-Butylbenzene	U		0.000157	0.00100
sec-Butylbenzene	U		0.000125	0.00100
tert-Butylbenzene	U		0.000127	0.00100
Ethylbenzene	U		0.000137	0.00100
Isopropylbenzene	U		0.000105	0.00100
Naphthalene	U		0.00100	0.00500
Toluene	U		0.000278	0.00100
1,2,4-Trimethylbenzene	U		0.000322	0.00100
1,3,5-Trimethylbenzene	U		0.000104	0.00100
Xylenes, Total	U		0.000174	0.00300
(S) Toluene-d8	*94.6*			*80.0-120*
(S) 4-Bromofluorobenzene	*93.3*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*122*			*70.0-130*

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

(LCS) R3723613-1 10/28/21 05:06 • (LCSD) R3723613-2 10/28/21 05:26

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	0.00520	0.00518	104	104	70.0-123			0.385	20
n-Butylbenzene	0.00500	0.00474	0.00488	94.8	97.6	73.0-125			2.91	20
sec-Butylbenzene	0.00500	0.00479	0.00492	95.8	98.4	75.0-125			2.68	20
tert-Butylbenzene	0.00500	0.00440	0.00452	88.0	90.4	76.0-124			2.69	20
Ethylbenzene	0.00500	0.00456	0.00471	91.2	94.2	79.0-123			3.24	20
Isopropylbenzene	0.00500	0.00464	0.00480	92.8	96.0	76.0-127			3.39	20
Naphthalene	0.00500	0.00390	0.00386	78.0	77.2	54.0-135			1.03	20
Toluene	0.00500	0.00465	0.00472	93.0	94.4	79.0-120			1.49	20
1,2,4-Trimethylbenzene	0.00500	0.00491	0.00498	98.2	99.6	76.0-121			1.42	20
1,3,5-Trimethylbenzene	0.00500	0.00506	0.00512	101	102	76.0-122			1.18	20
Xylenes, Total	0.0150	0.0139	0.0141	92.7	94.0	79.0-123			1.43	20
(S) Toluene-d8				*95.4*	*96.1*	*80.0-120*				
(S) 4-Bromofluorobenzene				*95.9*	*96.5*	*77.0-126*				
(S) 1,2-Dichloroethane-d4				*119*	*120*	*70.0-130*				

Method Blank (MB)

(MB) R3722040-1 10/27/21 08:54

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
AK102 DRO C10-C25	U		0.229	0.800
(S) o-Terphenyl	*88.1*			*60.0-120*

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

(LCS) R3722040-2 10/27/21 09:21 • (LCSD) R3722040-3 10/27/21 09:47

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	5.36	5.11	89.3	85.2	75.0-125			4.78	20
(S) o-Terphenyl				*111*	*98.3*	*60.0-120*				

L1418603-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1418603-02 10/27/21 20:49 • (MS) R3722040-6 10/27/21 21:10 • (MSD) R3722040-7 10/27/21 21:32

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
AK102 DRO C10-C25	6.00	1.47	7.09	7.35	93.7	98.0	1	75.0-125			3.60	20
(S) o-Terphenyl					*120*	*125*		*50.0-150*				

Method Blank (MB)

(MB) R3722277-1 10/27/21 13:21

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
AK102 DRO C10-C25	U		0.229	0.800
(S) o-Terphenyl	*86.3*			*60.0-120*

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

(LCS) R3722277-2 10/27/21 13:41 • (LCSD) R3722277-3 10/27/21 14:01

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
AK102 DRO C10-C25	6.00	5.88	6.38	98.0	106	75.0-125			8.16	20
(S) o-Terphenyl				*115*	*116*	*60.0-120*				

L1418584-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1418584-01 10/27/21 19:08 • (MS) R3722277-6 10/27/21 19:28 • (MSD) R3722277-7 10/27/21 19:48

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 %
AK102 DRO C10-C25	6.00	0.831	6.41	6.03	93.0	86.7	1	75.0-125			6.11	20
(S) o-Terphenyl					*59.1*	*81.8*		*50.0-150*				

Method Blank (MB)

(MB) R3718841-3 10/19/21 21:25

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	*73.0*			*31.0-160*
(S) 2-Fluorobiphenyl	*97.5*			*48.0-148*
(S) p-Terphenyl-d14	*121*			*37.0-146*

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

(LCS) R3718841-1 10/19/21 20:50 • (LCSD) R3718841-2 10/19/21 21:08

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	0.00236	0.00175	118	87.5	67.0-150		J3	29.7	20
Acenaphthene	0.00200	0.00223	0.00172	111	86.0	65.0-138		J3	25.8	20
Acenaphthylene	0.00200	0.00239	0.00181	119	90.5	66.0-140		J3	27.6	20
Benzo(a)anthracene	0.00200	0.00235	0.00179	117	89.5	61.0-140		J3	27.1	20
Benzo(a)pyrene	0.00200	0.00220	0.00157	110	78.5	60.0-143		J3	33.4	20
Benzo(b)fluoranthene	0.00200	0.00216	0.00157	108	78.5	58.0-141		J3	31.6	20
Benzo(g,h,i)perylene	0.00200	0.00214	0.00143	107	71.5	52.0-153		J3	39.8	20
Benzo(k)fluoranthene	0.00200	0.00215	0.00162	107	81.0	58.0-148		J3	28.1	20
Chrysene	0.00200	0.00231	0.00180	115	90.0	64.0-144		J3	24.8	20
Dibenz(a,h)anthracene	0.00200	0.00218	0.00145	109	72.5	52.0-155		J3	40.2	20
Fluoranthene	0.00200	0.00225	0.00174	112	87.0	69.0-153		J3	25.6	20
Fluorene	0.00200	0.00241	0.00186	120	93.0	64.0-136		J3	25.8	20

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

(LCS) R3718841-1 10/19/21 20:50 • (LCSD) R3718841-2 10/19/21 21:08

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	0.00220	0.00147	110	73.5	54.0-153		J3	39.8	20
Naphthalene	0.00200	0.00231	0.00174	115	87.0	61.0-137		J3	28.1	20
Phenanthrene	0.00200	0.00231	0.00175	115	87.5	62.0-137		J3	27.6	20
Pyrene	0.00200	0.00234	0.00172	117	86.0	60.0-142		J3	30.5	20
1-Methylnaphthalene	0.00200	0.00253	0.00197	126	98.5	66.0-142		J3	24.9	20
2-Methylnaphthalene	0.00200	0.00240	0.00184	120	92.0	62.0-136		J3	26.4	20
(S) Nitrobenzene-d5				*88.0*	*63.0*	*31.0-160*				
(S) 2-Fluorobiphenyl				*118*	*95.0*	*48.0-148*				
(S) p-Terphenyl-d14				*144*	*114*	*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
B	The same analyte is found in the associated blank.
C3	The reported concentration is an estimate. The continuing calibration standard associated with this data responded low. Method sensitivity check is acceptable.
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
J3	The associated batch QC was outside the established quality control range for precision.
Q	Sample was prepared and/or analyzed past holding time as defined in the method. Concentrations should be considered minimum values.

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	LAO000356
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 - Speedway

725 E Fireweed Lane
Suite 200
Anchorage, AK 99503

Billing Information:
Accounts Payable
PO Box 1510
Springfield, OH 45501

Report to:
Ms. Leslie Petre

Email To: craig.cothron@pacelabs.com

Project Description:
Speedway 5315 TNS 111

City/State Collected: Fairbanks/AK

Please Circle: PT MT CT ET

Phone: 907-~~266-1108~~ 450-1428

Client Project #

Lab Project #
STAAAKSSA-5315

Collected by (print): Leslie Petre & Geoff Moorhead

Site/Facility ID #
0005315

P.O. #

Collected by (signature):

Quote #

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
Date Results Needed

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					Remarks	Sample # (lab only)
MW-10	G	GW		10/12/21	1630	11	X	X	X	X	X						-01
MW-11	G	GW		10/12/21	1635	11	X	X	X	X	X						-02
MW-12	G	GW		10/12/21	1230	11	X	X	X	X	X						-03
MW-13	G	GW		10/12/21	1455	11	X	X	X	X	X						-04
MW-16	G	GW		10/12/21	1355	11	X	X	X	X	X						-05
G-1	G	GW		10/12/21	1150	11	X	X	X	X	X						-06
G-5	G	GW		10/12/21	1555	11	X	X	X	X	X						-07
MW-17-1	G	GW		10/12/21	1900	11	X	X	X	X	X						-08
MW-17-2	G	GW		10/12/21	1820	11	X	X	X	X	X						-09
RW-1	G	GW		10/12/21	1740	11	X	X	X	X	X						-10

Analysis / Container / Preservative

Pres Chk: 12

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

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking # 531899459610/9600

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
	10/14/21	1100	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)
			K. Holen

Trip Blank Received: Yes / No
HCL / MeoH
TBR

Temp: .5to-.5 °C Bottles Received: 14

Date: 10/15/21 Time: 1415

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

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 __N
If Applicable
VOA Zero Headspace: X __N
Preservation Correct/Checked: X __N
RAD Screen <0.5 mR/hr: X __N

4.2+.0=4.2 (cooler 2)

Chain of Custody Page 1 of 2

Pace Analytical®

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 # L1418534

Table C186

Acctnum: STAAAKSSA
Template: T175450
Prelogin: P875080
PM: 034 - Craig Cothron
PB: 9/20/21 tod
Shipped Via: FedEX 2nd Day

Company Name/Address:
Stantec - Anchorage, AK - Speedway

725 E Fireweed Lane
Suite 200
Anchorage, AK 99503

Billing Information:
Accounts Payable
PO Box 1510
Springfield, OH 45501

Report to:
Ms. Leslie Petre

Email To: craig.cothron@pacelabs.com

Project Description:
Speedway 5315 TNS 111

City/State Collected: Fairbanks, AK

Please Circle: PT MT CT ET

Phone: 907-~~266-1108~~ 450-1428

Client Project #

Lab Project #
STAAAKSSA-5315

Collected by (print):
Leslie Petre & Geoff Moorhead

Site/Facility ID #
0005315

P.O. #

Collected by (signature):

Quote #

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

Date Results Needed

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	Remarks	Sample # (lab only)
RW-2	G	GW		10/12/21	1717	11	X	X	X	X	X		-11
DUPLICATE 1	G	GW		10/12/21	1230	11	X	X	X	X	X		-12
DUPLICATE 2	G	GW		10/12/21	1820	11	X	X	X	X	X		-13

Analysis / Container / Preservative

Pres Chk

Chain of Custody Page 2 of 2

Pace Analytical®

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 # L1418534

Table #

Acctnum: STAAAKSSA

Template: T175450

Prelogin: P875080

PM: 034 - Craig Cothron

PB: 9/20/21 1100

Shipped Via: FedEX 2nd Day

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

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking #

Sample Receipt Checklist

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

	Date:	Time:		
Relinquished by: (Signature)	10/14/21	1100	Received by: (Signature)	Trip Blank Received: Yes / No HCl / MeoH TBR
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 4.7 °C Bottles Received: 13
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 10/15/21 Time: 1415

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

4.7+0.4=5.1 (cooler 2)

Laboratory Report Number	L1418534	CS Site Name	Tesoro – Northstore #111
Laboratory Report Date	11/18/2021	ADEC File Number	100.26.026

Laboratory Data Review Checklist

Completed By:

Austin Badger

Title:

Engineer in Training

Date:

12/08/2021

Consultant Firm:

Stantec Consulting Service, Inc.

Laboratory Name:

Pace Analytical

Laboratory Report Number:

L1418534

Laboratory Report Date:

11/18/2021

CS Site Name:

Tesoro – Northstore #111

ADEC File Number:

100.26.026

Hazard Identification Number:

24247

Laboratory Report Number	L1418534	CS Site Name	Tesoro – Northstore #111
Laboratory Report Date	11/18/2021	ADEC File Number	100.26.026

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

1. Laboratory

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

   Yes☒ No☐ N/A☐ Comments:

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

   Yes☒ No☐ N/A☐ Comments:

2. Chain of Custody (CoC)

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

   Yes☒ No☐ N/A☐ Comments:

   b. Correct analyses requested?

   Yes☒ No☐ N/A☐ Comments:

3. Laboratory Sample Receipt Documentation

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

   Yes☒ No☐ N/A☐ Comments:

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

   Yes☒ No☐ N/A☐ Comments:

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

   Yes☒ No☐ N/A☐ Comments:

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

Yes☐ No☐ N/A☒ Comments:

No discrepancies.

e. Data quality or usability affected?

Comments:

No.

4. Case Narrative

a. Present and understandable?

Yes☒ No☐ N/A☐ Comments:

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

Yes☐ No☐ N/A☒ Comments:

No discrepancies, errors, or QC failures identified by the lab in the case narrative.

c. Were all corrective actions documented?

Yes☐ No☐ N/A☒ Comments:

No corrective action documented in the case narrative.

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

Comments:

No effect on data quality/usability.

5. Samples Results

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

Yes☒ No☐ N/A☐ Comments:

b. All applicable holding times met?

Yes☐ No☒ N/A☐ Comments:

MW-11 (L1418534-02 GW)
Applicable holding times to analyze not met for ethylbenzene, and 1,2,4-trimethylbenzene.
MW-17-1 (L1418534-08 GW)
Applicable holding times to analyze not met for benzene, ethylbenzene and toluene.
RM-1 (L1418534-10 GW)
Applicable holding times to analyze not met for 1,2,4-trimethylbenzene.

c. All soils reported on a dry weight basis?

Yes☐ No☐ N/A☒ Comments:

No soil samples submitted to the lab.

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

Yes☒ No☐ N/A☐ Comments:

e. Data quality or usability affected?

No.

6. QC Samples

a. Method Blank

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

Yes☒ No☐ N/A☐ Comments:

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

Yes☒ No☐ N/A☐ Comments:

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

Comments:

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

Yes☐ No☐ N/A☒ Comments:

No affected samples.

v. Data quality or usability affected?

Comments:

No.

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

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

Yes☒ No☐ N/A☐ Comments:

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

Yes☒ No☐ N/A☐ Comments:

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

Yes☒ No☐ N/A☐ Comments:

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

Yes☐ No☒ N/A☐ Comments:

Laboratory Control Sample Duplicate (LCSD) ((LCS) R3718841-2)
All analytes flagged with qualifier J3. J3 defined by lab as "The associated batch QC was outside the established quality control range for precision."

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

Comments:

(LCS) R3718841-1 and (LCSD) R3718841-2.

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

Yes☒ No☐ N/A☐ Comments:

J3 defined by lab as "The associated batch QC was outside the established quality control range for precision."

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

Comments:

No

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

Note: Leave blank if not required for project

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

Yes☐ No☐ N/A☐ Comments:

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

Yes☐ No☐ N/A☐ Comments:

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

Yes☐ No☐ N/A☐ Comments:

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

Yes☐ No☐ N/A☐ Comments:

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

Comments:

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

Yes☐ No☐ N/A☐ Comments:

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

Comments:

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:

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

Yes☐ No☐ N/A☐ Comments:

Laboratory Control Sample (LCS) ((LCS) R3723602-1) %R for (S) a,a,a-trifluorotoluene(PID) flagged with qualifier J1. Qualifier J1 defined by lab as "Surrogate recovery limits have been exceeded; values are outside upper control limits." **Laboratory Control Sample (LCS) ((LCS) R3721349-1)** %R for (S) a,a,a-trifluorotoluene(PID) flagged with qualifier J1. Qualifier J1 defined by lab as "Surrogate recovery limits have been exceeded; values are outside upper control limits." **Matrix Spike (MS) ((MS) R3721349-3) Matrix Spike Duplicate (MSD) ((MSD) R3721349-4)** %R for (S) a,a,a-trifluorotoluene(PID) flagged with qualifier J1. Qualifier J1 defined by lab as "Surrogate recovery limits have been exceeded; values are outside upper control limits." **Matrix Spike Duplicate (MSD) ((MSD) R3721349-4)** %R for (S) a,a,a-trifluorotoluene(PID) flagged with qualifier J1. Qualifier J1 defined by lab as "Surrogate recovery limits have been exceeded; values are outside upper control limits."

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:

Qualifier J1 defined by lab as "Surrogate recovery limits have been exceeded; values are outside upper control limits."

iv. Data quality or usability affected?

Comments:

No.

e. Trip Blanks

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

Yes☐ No☒ N/A☐ Comments:

No trip blank submitted to the lab.

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

Yes☒ No☐ N/A☐ Comments:

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

Yes☐ No☐ N/A☐ Comments:

No trip blank submitted to the lab.

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

Comments:

v. Data quality or usability affected?

Comments:

No.

f. Field Duplicate

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

Yes☒ No☐ N/A☐ Comments:

ii. Submitted blind to lab?

Yes☒ No☐ N/A☐ Comments:

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

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

Where R_1 = Sample Concentration
R_2 = Field Duplicate Concentration

Yes☐ No☒ N/A☐ Comments:

DUP1
RPD greater than specified project objectives for naphthalene.
DUP2
RPD greater than specified project objectives for benzene, ethylbenzene, xylenes, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene.

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

Comments:

No. Analytes with duplicate RPD greater than specified project objectives are significantly greater or less than GCLs.

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

Yes☐ No☐ N/A☒ Comments:

No reusable equipment used during this sampling event.

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

Yes☐ No☐ N/A☒ Comments:

No reusable equipment used during this sampling event.

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

Comments:

iii. Data quality or usability affected?

Comments:

No.

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

a. Defined and appropriate?

Yes☒ No☐ N/A☐ Comments:
