Speedway Store 5325
(Former Tesoro 2 Go Mart #52)
ADEC File #2265.26.006

May 2022 2Q GWM Event Report

Prepared For

Speedway

Stantec

AUTHORIZATION TO SUBMIT REPORT

Stantec has been authorized by the client, Speedway/7-Eleven (representative Anne Duarte, EHS/RS, Environmental Specialist) to submit this report to the Alaska Department of Environmental Conservation. If you have any questions or need additional information concerning this groundwater monitoring report, please contact me at (907) 227-9883.

Regards,

STANTEC CONSULTING SERVICES INC.

Bob Gilfilian, P.E.
Project Technical Lead

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

APPENDICES

ACRONYMS AND ABBREVIATIONS

ADEC	Alaska Department of Environmental Conservation
AK	Alaska Test Method
BTEX	Benzene, Toluene, Ethylbenzene, and Xylenes
DO	dissolved oxygen
DRO	diesel range organics
Chemox	chemical oxidation
CAP	corrective action plan
EPA	U.S. Environmental Protection Agency
gpm	gallons per minute
GRO	gasoline range organics
GCL	groundwater cleanup level
mg/L	milligrams per liter
mV	millivolts
ORP	oxidation-reduction potential
PQL	practical quantitation limit
QA	quality assurance
QC	quality control
RDL	reported detection limit
SIM	selective ion method
SC	specific conductance
Stantec	Stantec Consulting Services Inc.
RDL	reported detection limit
Tesoro	Tesoro Refining & Marketing Company
TMB	Trimethylbenzene
μS/cm°C	microSiemens per centimeter ^{o}C
VOC	volatile organic compounds
VSC	vapor stripping and circulation

1.0 EXECUTIVE SUMMARY

This first quarter 2022 Monitoring Event Report was prepared by Stantec Consulting Services Inc. (Stantec) on behalf of Speedway, LLC for Speedway Store 5325 (formerly Tesoro 2 Go Mart #52), located at 7172 West Parks Highway, Wasilla, Alaska (**Figure 1**). Background information for this site is summarized in **Appendix A**. The methods used for this monitoring event were conducted in accordance with the Alaska Department of Environmental Conservation (ADEC) approved 2022 Corrective Action Plan (CAP) for this site. The 2022 CAP work plan tasks are summarized in **Appendix B**.

This monitoring event was conducted on May 11, 2022, by Stantec environmental staff who included: John Marshall, Environmental Scientist, Luke Simms, Environmental Scientist, Bob Gilfilian, Project Technical Lead, and Jeremiah Malenfant, Geologist-in-Training. The monitoring event included the following tasks:

- Measured depth to groundwater in wells G-2, G-3, G-4, G-5, G-6, G-7, RW 16-1, and MW 16-2.
- Measured field intrinsic water quality parameters in groundwater monitoring wells G-1, G-3, G-5, G-7, RW 16-1, and MW 16-2.
- Collected and analyzed groundwater samples from Monitoring Wells G-1, G-3, G-5, G-7, MW 16-2, former Remediation Well RW 16-1, and a duplicate sample of MW 16-2 (sample locations shown on **Figure 2**).
- Completed elevation survey of all monitoring wells.
- Repaired piping system for the air lift recirculation well and restored well operation.
- Following the monitoring event on May 17, conducted an injection of chemox into the remediation wells RW 20-1 and 20-2.
-

Results of the analytical sampling showed petroleum hydrocarbon contaminant concentrations exceeded the groundwater cleanup levels (GCLs) for the following monitoring well:

- Remediation Well RW 16-1: Ethylbenzene, xylenes, gasoline range organics (GRO), diesel range organics (DRO), naphthalene, 1,2,4-Trimethylbenzene (TMB), and 1,3,5-TMB. In addition, the lab's reported detection limit (RDL) for benzene was above the GCL.

The average groundwater gradient across the site was calculated to be approximately 0.011 feet per foot to the west-southwest at 343 degrees, as shown in **Table 2**. The direction of flow was noted to be more westerly than historical groundwater flow measurements, and probably was influenced by groundwater elevation data from MW-6, which has not been regularly included in groundwater calculations. A plot of groundwater elevation contours generated using the SampleServe® software program is included in **Figure 3**.

On May 17, 2022, a remediation event was completed that consisted of injection of a 110lbs of Klozur One (sodium persulfate oxidizer) mixed with 100gal of potable water into each of two

injection wells (RW20-1 and RW20-2), for a total of 220lbs. Each injection was "pushed" into the formation with additional injection of several hundred gallons of potable water.

The operation of the on-site groundwater remediation system, consisting of a vapor stripping and circulation (VSC) system was assessed during the May 17 monitoring event. It was found that the PVC piping used for injecting air into the air-lift well had broken over the winter, making the well inoperable. This was repaired during the monitoring event, and the blower was restarted at 7.5 psi with water flowing into MW G-1 at an approximate flow rate of 1 to 2 gallons per minute. On June 1, Stantec was informed that the ground surface around the air lift well manhole had subsided, creating a pothole in the parking lot. Subsequently Stantec made a site visit to turn off the blower for the air lift well and determined the cause of the subsidence was not caused by the operation of the air lift but appeared to be a structural failure in the base of the 20-year old manhole.

2.0 SITE BACKGROUND

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

3.0 FIELD ACTIVITIES

The following field activities were completed during the second quarter 2022 groundwater monitoring event:

- Measured depth to groundwater in wells G-2, G-3, G-4, G-5, G-6, G-7, RW 16-1, and MW 16-2.
- Measured the following intrinsic water quality parameters in all wells sampled: temperature, pH, oxidation-reduction potential (ORP), dissolved oxygen (DO) and specific conductance (SC).
- Collected and analyzed groundwater samples from Monitoring Wells G-1, G-3, G-5, G-7, MW 16-2, former Remediation Well RW 16-1, and a duplicate sample of MW 16-2 (sample locations shown on **Figure 2**) and submitted them for laboratory analysis for the following: GRO by Alaska Test Method AK101; DRO by AK102; VOCs by U.S. Environmental Protection Agency (EPA) Test Method 8260C; hydrocarbon associated semi-VOCs by EPA Method 8270D-SIM; and sodium by Metals (ICP) by Method 6010C.
- Completed elevation survey of all monitoring wells.
- Repaired piping system for the air lift recirculation well and restored well operation.
- On May 17, 2022, conducted an injection of chemox (Klozur One® product) into the remediation wells RW 20-1 and 20-2.
-

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

4.0 GROUNDWATER MONITORING RESULTS

4.1 GROUNDWATER ELEVATIONS

Table 1 presents groundwater elevations at this site based on the depths to static groundwater levels measured subsequent to this monitoring event, after gaining access to well G-6.

Table 1 Groundwater Elevations
Measured on May 17, 2022

Monitoring Well Identification	Top of Casing Elevation[1] (feet)	Depth to Water (feet btoc)	Groundwater Elevation (feet)
G-1	99.29	NM	NC
G-2	99.25	30.06	69.19
G-3	99.13	30.09	69.04
G-4	98.29	29.61	68.68
G-5	101.44	32.60	68.84
G-6	102.32	31.15	71.17
G-7	99.42	30.73	68.69
RW 16-1	99.44	30.43	69.01
MW 16-2	99.20	30.10	69.10

Key:
1 – G-1, G-2, G-3, G-4, G-5, G-6, G-7, RW16-1, and MW16-2 surveyed on May 17, 2022. Elevations are presented in respect to a local benchmark with 100-foot datum.
btoc – below top of casing.
NM – Not measured.
NC – Not calculated.

The average groundwater gradient across the site was calculated to be approximately 0.011 feet per foot to the west-southwest at 343 degrees. The direction of flow was noted to be more westerly than historical groundwater flow measurements, and probably was influenced by groundwater elevation data from MW-6, which has not been regularly included in groundwater calculations. A plot of groundwater elevation contours generated using the SampleServe® software program is included in **Figure 3**. Groundwater gradients and bearings from the past 10 monitoring events are presented in **Table 2**.

Table 2 Historical Groundwater Flow Direction and Gradient

Date	Flow Direction (azimuth)	Gradient (ft/ft)
10/25/2018	175°	0.02
2/26/2019	152°	0.03
4/23/2019	183°	0.02
7/16/2019	300°	0.011
10/17/2019	221°	0.022
8/12/2020	171°	0.018
10/2/2020	191°	0.007
5/18/2021	182°	0.02
7/21/2021	207°	0.021
10/13/2021	171°	0.008
3/18/2022	198°	0.033
5/17/2022	343°	0.011

4.2 FIELD PARAMETERS

Temperature, pH, ORP, and specific conductance (SC) were measured following purging of the sampled wells. DO measurements are taken prior to purging of the well. Monitoring and remediation wells were purged of three well volumes or until purged dry and allowed to recharge prior to sampling. Results of water quality parameter testing are presented in **Table 3**.

Table 3 Field Parameters
Measured on May 11, 2022

Monitoring Well Identification	Purged Volume (gallons)	Temp. (°C)	pH	DO (mg/L)	ORP (mV)	SC (µs/cm°C)
G-1	NA[1]	4.9	6.94	6.53	225.5	298
G-2	NA	NM	NM	NM	NM	NM
G-3	16	4.8	6.75	6.86	247.2	568
G-4	NA	NM	NM	NM	NM	NM
G-5	2	7.73	6.64	6.48	239.3	567
G-7	4.5	4.9	6.14	10.74	225	157
RW16-1	4.2	5.4	8.27	11.49	271.8	388
MW16-2	3.06	7.35	7.2	8.97	227.9	605

Key:
°C – degrees Celsius
µS/cm°C – microSiemens per centimeter °C
DO – dissolved oxygen
mg/L – milligrams/liter
mV – millivolts
NA – not applicable
ORP – oxidation-reduction potential
pH – -log [H^+]
SC – specific conductance
Temp. – temperature
NM – not measured
d – well purged dry, sampling continued after recharge
1 – well not purged due to air lift injection

All intrinsic water quality parameters measured during this monitoring event were generally consistent with past groundwater quality parameters. A summary of field measurements and notes generated by the SampleServe™ program are provided in **Appendix C**.

4.3 GROUNDWATER SAMPLE ANALYTICAL RESULTS

Pace Analytical Laboratory performed all analysis of groundwater samples for this sampling event. Historical monitoring data for the active wells scheduled to be monitored in the 2022 Corrective Action Plan for this site are presented in **Appendix D**. Historical data for all other inactive wells shown on the site plan (**Figure 2**) have been reported in previous monitoring reports and can be made available if needed. Laboratory analytical results are summarized in **Table 4.** The laboratory analytical report is provided in **Appendix E**.

Monitoring Wells G-1, G-3, G-5, G-7, and MW 16-2, as well as remediation well RW 16-1 were sampled in accordance with the 2022 CAP. Petroleum related contaminant concentrations above GCLs were only detected in Remediation Well RW 16-1 –this well contained exceedances in ethylbenzene, xylenes, GRO, DRO, naphthalene, 1,2,4- and 1,3,5-TMB. Also, the lab's RDL for benzene was above the GCL in sample RW16-1.

Table 4a Groundwater Analytical Results for BTEX, GRO, and DRO
Samples collected on May 11, 2022

Sample Identification	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	GRO (mg/L)	DRO (mg/L)
G-1	U (0.00100)	U (0.00100)	U (0.00100)	U (0.00300)	U (0.100)	1.08
G-2	NM	NM	NM	NM	NM	NM
G-3	U (0.00100)	U (0.00100)	U (0.00100)	U (0.00300)	U (0.100)	U (0.800)
G-4	NM	NM	NM	NM	NM	NM
G-5	U (0.00100)	U (0.00100)	U (0.00100)	U (0.00300)	0.0345	U (0.800)
G-7	U (0.00100)	U (0.00100)	U (0.00100)	U (0.00300)	U (0.100)	U (0.800)
RW16-1	**U (0.0500)**	U (0.0500)	**0.533**	**2.773**	**17.7**	**5.82**
MW16-2	U (0.00100)	U (0.00100)	U (0.00100)	U (0.00300)	0.658	0.473
DUP-01 (duplicate of RW16-2)	0.000105 J	U (0.00100)	U (0.00100)	U (0.00300)	0.596	0.490 J
GCLs	**0.0046**	**1.1**	**0.015**	**0.19**	**2.2**	**1.5**

Table 4b Groundwater Analytical Results Naphthalene, Trimethylbenzene (TMB) and Sodium

Samples collected on May 11, 2022

Sample Identification	Naphthalene[1] (mg/L)	1,2,4-TMB (mg/L)	1,3,5-TMB (mg/L)	Sodium (mg/L)
G-1	U (0.000250)	U (0.00100)	U (0.00100)	23.9
G-2	NM	NM	NM	NM
G-3	U (0.000250)	U (0.00100)	U (0.00100)	22.0
G-4	NM	NM	NM	NM
G-5	U (0.000250)	U (0.00100)	U (0.00100)	20.2
G-7	U (0.000250)	U (0.00100)	U (0.00100)	5.09
RW16-1	**0.0612**	**3.88**	**0.756**	56.9
MW16-2	U (0.000250)	0.0124	0.00631	21.4
DUP-01 (duplicate of RW16-2)	U (0.000250)	0.0114	0.00546	21.6
GCLs	**0.0017**	**0.056**	**0.060**	**NA**

Key

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

1 - Analyzed by U.S. Environmental Protection Agency Method 8270D-SIM

DRO – Diesel range organics, analyzed by AK102

GCLs - Groundwater cleanup levels, per Alaska Department of Environmental Conservation 18 Alaska Administrative Code 75.345, Table C, updated September 29, 2018.

GRO – Gasoline range organics, analyzed by AK101

mg/L – Milligrams per liter

U – Undetected above practical quantitation limits shown in parentheses

Bold - indicates the concentration exceeds the GCL or, if not detected, the reported detection limit (RDL) exceeds the GCL.

NM – Not Measured

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

Laboratory QC data and the ADEC Laboratory Data Review Checklist are included with the laboratory report in **Appendix E**.

A duplicate sample set was collected to determine the precision of the field collection and laboratory analysis for the sampling event. Sample Dup-01 is a duplicate of Sample MW 16-2. Data presented in **Table 5** show that the precision for the duplicate sample set was within the established QA criteria tolerances for all analytes for which it could be calculated. Precision could not be calculated for benzene, toluene, ethylbenzene, and xylenes because they were not detected above the PQL in one or more samples. The holding times for DRO and VOCs were within

established criteria. The holding time for analyzing GRO was at 14 days, which is the established hold time. The holding time for extracting PAHs was 7 days, which is the established hold time.

Table 5 Laboratory Quality Control Objectives

Quality Control Designation	Tolerance	Results for this Event
Holding Times		
DRO/Water/to analyze	40 days	12 days
DRO/Water/to extract	14 days	12 days
GRO/Water/to analyze	14 days	14 days
VOCs/Water/to analyze	14 days	9-12 days
PAHs/Water/to extract	7 days	7 days
PAHs/Water/to analyze	40 days	8 days
Field Duplicates – Precision		
Benzene/Water	± 30%	NC
Toluene/Water	± 30%	NC
Ethylbenzene/Water	± 30%	NC
Xylenes/Water	± 30%	NC
GRO/Water	± 30%	9.9%
DRO/Water	± 30%	3.5%

Key:
% – percent
± – plus or minus
DRO – diesel range organics
GRO – gasoline range organics
NC – Not calculated because the analyte was not detected above the practical quantitation limit in one or more sample
VOCs – volatile organic compounds
Bold – indicates the value is above acceptable limits

5.0 REMEDIATION SYSTEM

The on-site groundwater treatment process consists of a VSC system and routine (quarterly) injections of a chemox solution into the groundwater table. The chemox solution consists of a mixture of water and an oxidant product commercially referred to as Klozur One®, which is a sodium persulfate compound. In the past, the chemox solution was injected into the formation via remediation well RW 16-1. However, the injection of chemox into RW 16-1 had been problematic due to the small diameter of the well (2-inch) and the tightness of the geologic formation around the well. In 2020, Stantec installed two 4-inch diameter chemox injection wells, RW 20-1 and RW 20-2, located approximately 10-feet northwest and northeast (upgradient) of Remediation Well RW 16-1 (**Figure 2**). These 4-inch diameter wells are now used for the chemox injection

The remediation event on May 17, 2022, consisted of a chemical oxidatant (chemox) injection of a total of 110 pounds of Klozur One® product combined with 100 gallons of potable water from

Tesoro store into each of the two injection wells (RW 20-1 and RW 20-2) that are shown on **Figure 2**. The total amount of 220 pounds of chemox was injected into the groundwater table. The chemox solution was hydraulically "pushed" into the formation with additional injection of several hundred gallons of potable water.

The layout of the on-site remediation VSC/air-lift well system and location of the chemox injection wells RW 20-1 and RW 20-2 are shown on **Figures 2 and 3**. The blower for the air-lift well was replaced on October 4, 2021, and is used to operate the air-lift well on a continuous basis (24-hours per day). The VSC/air-lift well discharges into MW G-1 at an estimated rate of 1 to 2 gpm. Prior to this monitoring event, it was discovered that the PVC piping that delivers pressure to the air-lift well had broken over the winter, and subsequently repaired during the May 2022 monitoring event. In June 2022, the air lift well was turned off due to the subsidence of the manhole housing the air lift well.

6.0 DISCUSSION OF FINDINGS

6.1 GROUNDWATER HYDRAULIC CHARACTERISTICS

The average groundwater gradient across the site was calculated to be approximately 0.011 feet per foot to the west-southwest at 343 degrees. The direction of flow was noted to be more westerly than historical groundwater flow measurements, and probably was influenced by groundwater elevation data from MW-6, which has not been regularly included in groundwater calculations. A plot of groundwater elevation contours generated using the SampleServe® software program is included in **Figure 3**. A plot of groundwater elevation contours based on data collected during this monitoring event, generated using the SampleServe® software program is included in **Figure 3**. Groundwater gradients and bearings from the past 10 monitoring events are presented in **Table 2**.

6.2 GROUNDWATER QUALITY

Results of the analytical sampling showed petroleum hydrocarbon contaminant concentrations exceeded the groundwater cleanup levels (GCLs) for the following monitoring well:

- Remediation Well RW 16-1: Ethylbenzene, xylenes, GRO, DRO, naphthalene, 1,2,4-TMB, and 1,3,5-TMB. In addition, the lab's reported detection limit (RDL) for benzene was above the GCL.

All historic data for benzene, toluene, ethylbenzene, and xylenes (BTEX), GRO, DRO, and groundwater elevations for the monitoring wells associated with this monitoring event are tabulated in **Appendix D**.

6.3 REMEDIATION SYSTEM

The remediation event on May 17, 2022, consisted of a chemical oxidatant (chemox) injection of a total of 110 pounds of Klozur One® product combined with 100 gallons of potable water from Tesoro store into each of the two injection wells (RW 20-1 and RW 20-2) that are shown on **Figure 2**. The total amount of 220 pounds of chemox was injected into the groundwater table. The chemox

solution was hydraulically "pushed" into the formation with additional injection of several hundred gallons of potable water.

7.0 CONCLUSIONS AND RECOMMENDATIONS

No anomalies were found during this first quarter 2022 monitoring event that require additional corrective action or changes to the approved year 2022 Corrective Action Work Plan for this site.

8.0 LIMITATIONS

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

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

FIGURES

FILE: .....\CAD\Proj\Speedway_Tesoro\Speedway5325(TGMart052)\MonEvent\2021\4Q-November2021\Fig01-Location and Vicinity Map

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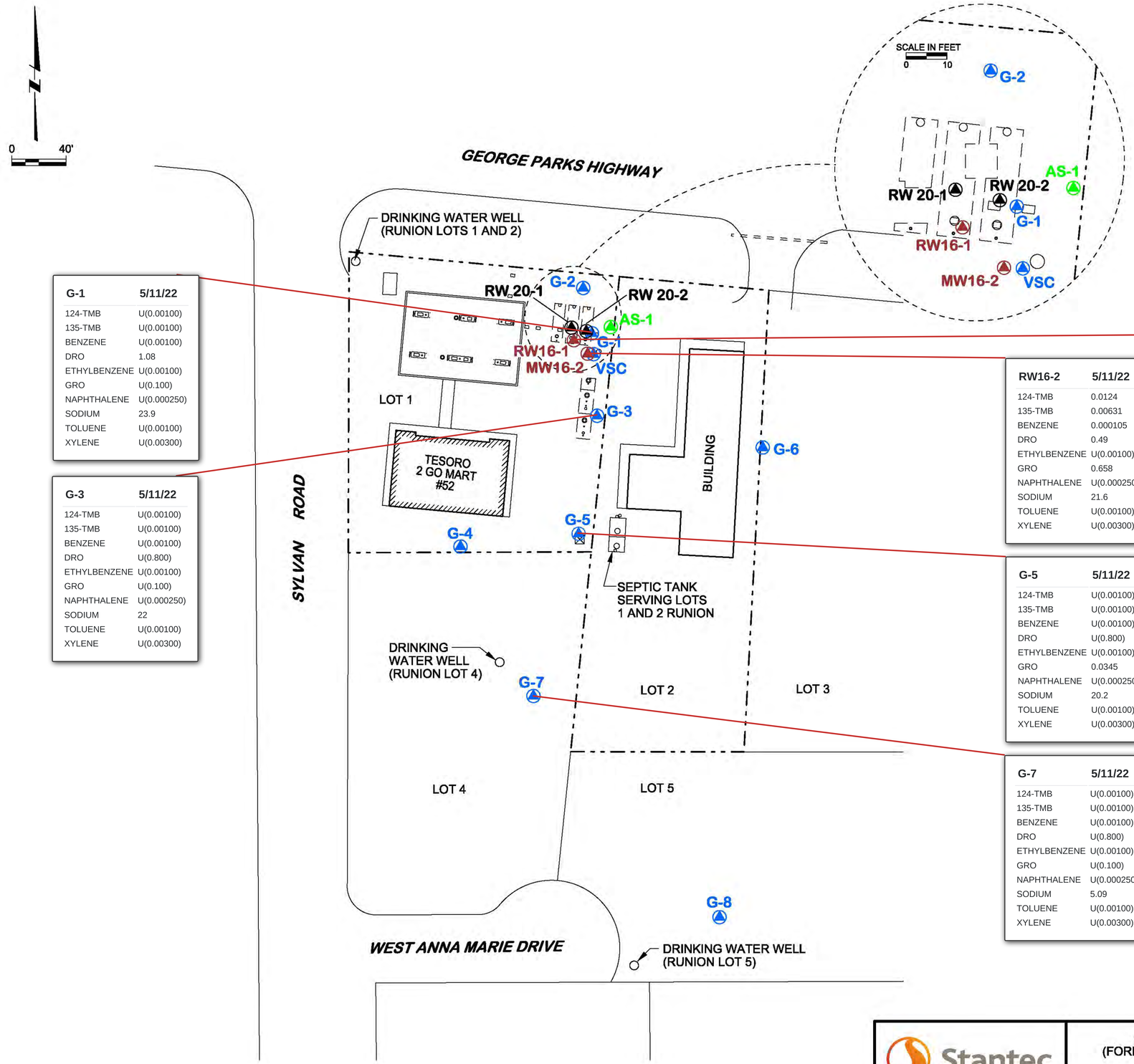
SPEEDWAY STORE 5325
(FORMER TESORO 2 GO MART #52)

2Q May 2022 GWM EVENT REPORT

LOCATION AND VICINITY MAP

FIGURE
1

185705363.
300.100



G-1	5/11/22
124-TMB	U(0.00100)
135-TMB	U(0.00100)
BENZENE	U(0.00100)
DRO	1.08
ETHYLBENZENE	U(0.00100)
GRO	U(0.100)
NAPHTHALENE	U(0.000250)
SODIUM	23.9
TOLUENE	U(0.00100)
XYLENE	U(0.00300)

G-3	5/11/22
124-TMB	U(0.00100)
135-TMB	U(0.00100)
BENZENE	U(0.00100)
DRO	U(0.800)
ETHYLBENZENE	U(0.00100)
GRO	U(0.100)
NAPHTHALENE	U(0.000250)
SODIUM	22
TOLUENE	U(0.00100)
XYLENE	U(0.00300)

RW16-2	5/11/22
124-TMB	0.0124
135-TMB	0.00631
BENZENE	0.000105
DRO	0.49
ETHYLBENZENE	U(0.00100)
GRO	0.658
NAPHTHALENE	U(0.000250)
SODIUM	21.6
TOLUENE	U(0.00100)
XYLENE	U(0.00300)

RW16-1	5/11/22
124-TMB	3.88
135-TMB	0.756
BENZENE	U(0.0500)
DRO	5.82
ETHYLBENZENE	0.533
GRO	17.7
NAPHTHALENE	0.0612
SODIUM	56.9
TOLUENE	U(0.0500)
XYLENE	2.773

G-5	5/11/22
124-TMB	U(0.00100)
135-TMB	U(0.00100)
BENZENE	U(0.00100)
DRO	U(0.800)
ETHYLBENZENE	U(0.00100)
GRO	0.0345
NAPHTHALENE	U(0.000250)
SODIUM	20.2
TOLUENE	U(0.00100)
XYLENE	U(0.00300)

G-7	5/11/22
124-TMB	U(0.00100)
135-TMB	U(0.00100)
BENZENE	U(0.00100)
DRO	U(0.800)
ETHYLBENZENE	U(0.00100)
GRO	U(0.100)
NAPHTHALENE	U(0.000250)
SODIUM	5.09
TOLUENE	U(0.00100)
XYLENE	U(0.00300)

SITE DATA COMPARED TO ADEC Groundwater Cleanup Levels (GCLs)

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

DISPLAYED IN mg/L

124-TMB	0.015 mg/L
135-TMB	0.12 mg/L
BENZENE	0.0046 mg/L
DRO	1.5 mg/L
ETHYLBENZENE	0.015 mg/L
GRO	2.2 mg/L
NAPHTHALENE	0.0017 mg/L
SODIUM	
TOLUENE	1.1 mg/L
XYLENE	0.19 mg/L

LEGEND:

	PROPERTY LINE
	2020 SOIL BORING/MONITORING WELL
	2016 SOIL BORING/MONITORING WELL
	MONITORING WELL
	AIR SPARGE WELL
AS	AIR SPARGE
DRO	DIESEL RANGE ORGANICS
GRO	GASOLINE RANGE ORGANICS
GW Elev	GROUNDWATER ELEVATION IN FEET
NM	NOT MEASURED
TMB	TRIMETHYLBENZENE
U	UNDETECTED ABOVE PRACTICAL QUANTITATION LIMIT SHOWN IN PARENTHESES
VSC	VAPOR STRIPPING AND CIRCULATION

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SPEEDWAY STORE 5325
(FORMER TESORO 2 GO MART #52)

Site Plan with Groundwater Analytical Results

FIGURE
2
185705772

N

0 40'

GEORGE PARKS HIGHWAY

SYLVAN ROAD

WEST ANNA MARIE DRIVE

DRINKING WATER WELL
(RUNION LOTS 1 AND 2)

SCALE IN FEET
0 10

G-2
RW 20-1
RW 20-2
AS-1
G-1
RW16-1
MW16-2
VSC

G-2 69.2
RW 20-1
RW 20-2
AS-1
69.0
69.1
RW16-1
MW16-2
VSC
LOT 1
G-3
69.0
TESORO
2 GO MART
#52
71.2
G-6
BUILDING
69.3
69.6
69.6
70.2
G-5
G-4
68.8
68.7
SEPTIC TANK
SERVING LOTS
1 AND 2 RUNION
69.1
DRINKING
WATER WELL
(RUNION LOT 4)
G-7
68.7
LOT 2
LOT 3
LOT 4
LOT 5
G-8
DRINKING WATER WELL
(RUNION LOT 5)

LEGEND:

	PROPERTY LINE
	2020 SOIL BORING/MONITORING WELL
	2016 SOIL BORING/MONITORING WELL
	MONITORING WELL
	AIR SPARGE WELL
AS	AIR SPARGE
DRO	DIESEL RANGE ORGANICS
GRO	GASOLINE RANGE ORGANICS
GW Elev	GROUNDWATER ELEVATION IN FEET
NM	NOT MEASURED
TMB	TRIMETHYLBENZENE
U	UNDETECTED ABOVE PRACTICAL QUANTITATION LIMIT SHOWN IN PARENTHESES
VSC	VAPOR STRIPPING AND CIRCULATION
	SAMPLESERVE-GENERATED GROUNDWATER ELEVATION CONTOURS

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SPEEDWAY STORE 5325
(FORMER TESORO 2 GO MART #52)

GROUNDWATER ELEVATIONS AND CONTOURS

FIGURE
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APPENDIX A

Site Background

APPENDIX A – SITE BACKGROUND

Tesoro 2 Go Mart #52 (Mile 49 Parks Highway, Wasilla, Alaska)
ADEC Facility ID #648; ADEC File #2265.26.006

September 1996. During the removal of the former underground storage tank (UST) fueling system (consisting of several fuel dispensers, two 12,000-gallon gasoline, and one 12,000-gallon diesel USTs) on September 7, 1996, petroleum contamination was encountered in the surrounding soil. Gilfilian Engineering conducted the UST site assessment work. Approximately 240 cubic yards of gasoline and 60 cubic yards of diesel contaminated soil was excavated and treated at Alaska Soil Recycling.

February 1997. The Alaska Department of Environmental Conservation (ADEC) reviewed the UST Closure Site Assessment Report prepared by Gilfilian Engineering. Subsequently, a Release Investigation (RI) Work Plan prepared by Gilfilian Engineering was approved by ADEC.

April 1997. The findings of the RI (later referred to as Phase I RI) showed high levels of diesel contamination under the diesel dispenser islands and gasoline contamination under the unleaded gasoline UST to 36 feet below ground surface (bgs). The RI included drilling five soil borings and installing and sampling one groundwater monitoring well (identified as G-1). Groundwater was also found to be contaminated. Subsequently, an ADEC-approved work plan was prepared by Gilfilian Engineering for Phase II RI.

December 1997. Phase II RI report submitted to ADEC. The RI included drilling soil borings and installing and sampling four groundwater monitoring wells (G-2, G-3, G-4 and G-5).

April 1998. ADEC approved the installation of a Soil Vapor Extraction (SVE) system.

June 1998. Gilfilian Engineering submitted a Well Search report to ADEC. The well search targeted an area of 0.25-mile radius centered on the gas station site.

July 1998. ADEC approved the work plan prepared by Gilfilian Engineering for a Phase III RI.

August 1998. A Phase III RI was completed at the site by Gilfilian Engineering. The RI included installing and sampling three groundwater monitoring wells (G-6, G-7, and G-8).

January 2002. Several “rising and falling head hydraulic conductivity tests” (slug tests using the Hvorslev method) were performed by Gilfilian Engineering on January 9, 2002. The hydraulic conductivity at Monitoring Wells G-4 and G-7 exceeded 171 feet/day. Based on the high hydraulic conductivity values, Gilfilian Engineering recommended a pilot test to determine the effectiveness of treating the groundwater with a vapor stripping and circulation (VSC) well.

March/April 2002. One soil boring was drilled on March 6, 2002, for installation of a VSC well. Benzene, toluene, ethylbenzene, and xylenes (BTEX), gasoline range organics (GRO), and diesel range organics (DRO) tested in soil samples collected from the soil boring were detected above

ADEC soil cleanup levels (SCLs). In addition, a second soil boring was drilled for installation of an air sparge (AS) well that was designated AS-1. Benzene, ethylbenzene, and GRO were detected above SCLs and BTEX and GRO were above the ADEC groundwater cleanup levels (GCLs) in AS-1. Pilot testing conducted in March and April 2002 showed the hydrogeological formation could not provide adequate water to operate a VSC or AS system at this site. Continued operation of the SVE system only was recommended, and the VSC well was subsequently connected to the SVE system.

June 2002. The SVE system was re-started on June 25, 2002 and was set to withdraw vapors from Wells SVE-1, SVE-5, and SVE-6. A significant increase in the volatile contaminant concentrations to 139 parts per million by volume (ppmv) as measured by a photoionization detector (PID), was noted in the SVE system discharge. By July 3, 2002, the volatile levels dropped to 58.5 ppmv, which was possibly related to the significant decrease in the thickness of free product measured in Monitoring Well G-1 (SVE-1).

December 2002. An SVE pilot study using a 5-horsepower FL-707 Rotron blower was conducted on December 19, 2002. The purpose was to determine if the use of a larger capacity blower would increase the recovery of volatile petroleum contaminants. The dramatic rise in PID readings during the second quarter of 2002 is attributed to the addition of SVE Wells 5, 6, and VSC.

October 2003. A 1-horsepower air compressor was installed for operation of the AS system. The AS well (AS-1) was previously installed at the site in 2002. The VSC manhole was reconfigured to enhance SVE system performance.

July 2004. The AS system was converted into a VSC system for pilot testing on July 21, 2004. Down well piping was installed in Monitoring Well VSC and connected to the compressor air supply line. Pilot testing indicated the system could be an effective groundwater treatment option. The AS compressor was removed from the site for maintenance.

September 2, 2004. The VSC system was activated following ADEC approval. The VSC system was treating approximately 1 gallon of contaminated groundwater per minute, or 1,440 gallons per day. The treated water was transferred (pumped by air) from the VSC well to Monitoring Well G-1 for circulation.

October 2007. Ten confirmation soil borings (CSB-1 through CSB-10) were installed on October 3 through 9, 2007, near the former USTs and areas of previous investigations across the site. Benzene, ethylbenzene, xylenes, GRO, and DRO were detected above the SCLs in two or more borings. Toluene was the only analyte not detected above the SCLs in any soil boring.

September 2008. Three chemical oxidation applications were completed by MWH Americas, Inc. (MWH). Sampling of groundwater monitoring wells noted benzene, ethylbenzene, and GRO detected above the GCLs in Monitoring Well G-3.

February 2009. Monitoring Well G-3 showed a consistent trend in increased hydrocarbon concentrations, and a fine sediment with a hydrocarbon odor was found in the bottom of the

monitoring well. MWH recommended that the well be re-developed to remove the sediment build-up.

March 2009. Monitoring Well G-3 was redeveloped to remove the dark colored sediment. The sediment was noted to have a slight petroleum odor and heavy sheen.

January/June/August 2010. MWH performed potassium permanganate chemical oxidation treatments on January 27 and 28, June 11, and August 20, 2010. A solution of 3 percent potassium permanganate (180, 646, and 767 gallons, respectively) was injected into several groundwater monitoring wells.

October 30, 2012. The chemical oxidant Klozur CR® was injected into three on-site wells (Monitoring Well G-1 and SVE Wells SVE-5 and SVE-6). The Klozur CR® injection process was conducted to test the use of the existing remediation infrastructure for a means of delivering the chemical oxidant into the contaminated groundwater aquifer at the site, as well as evaluating the effectiveness of the chemical oxidant.

October 2012. Groundwater sample results were non-detect in all four monitoring wells sampled. The water table was considerably higher than normal, and the absence of dissolved contaminants was assumed to be associated with the high water table. The last time a high water table was observed was in October 2006, and the concentrations were all non-detects in all monitoring wells except for G-3, which was lower than historical concentrations at that time.

January 30, 2013. DRO was detected in Monitoring Wells G-1, G-3, and G-7, and toluene, ethylbenzene, and xylenes were detected in G-3 – with all analytes below the GCLs. The water table was higher than normal, and the concentrations detected were not believed to be indicative of the groundwater conditions at the site.

December 19, 2013. A chemical oxidation application of Klozur CR® was injected into three on-site wells: Monitoring Well G-1 and Remediation Wells SVE-5 and SVE-6.

February 2014. Groundwater sampling showed contaminant levels in all monitoring wells that were sampled remained below the GCLs for the last seven monitoring events.

May 2014. DRO was detected in Monitoring Well G-3 at 3.3 milligrams per liter (mg/L), exceeding the GCL for the first time since February 2011. The remediation system was operating on a full-time basis.

October 2014. Groundwater sampling showed contaminant levels in all monitoring wells were below GCLs. The remediation system was operating on a full-time basis.

February 2015. GRO and DRO were detected at 4.8 and 12 mg/L, respectively, in Monitoring Well G-3. All other analytes were below GCLs. Remediation system operating on full-time basis.

May 2015. GRO was detected at 2.6 mg/L in the duplicate sample collected from Monitoring Well G-3, the primary and all other analytes were below GCLs.

September 2015. Groundwater sampling showed contaminant levels in all monitoring wells were below GCLs. The remediation system was operating on a full-time basis.

October 2015. Three CSBs were installed by MWH to investigate the extent of any remaining soil contamination at the site. Two areas were investigated: the former diesel dispensers and the former gas dispensers and USTs. Soils encountered in the area of the former diesel dispensers had elevated headspace field screening results; however, DRO concentrations were below laboratory practical quantitation limits (PQLs). Soils encountered in the area of the former gas dispensers and USTs had detectable concentrations of GRO and one exceedance above the SCLs established for the site. Soil GRO contamination was limited to below the current groundwater level at the site. Similar observations were documented in 2007. Analytical results collected from the 2015 CSBs indicate that concentrations of petroleum contamination remaining at the site are generally decreasing when compared to the analytical results from the 2007 CSBs. Future management strategies at the site may include targeted chemical oxidation in the area of the former gas dispensers and USTs as represented by CSB 9-3, with no further cleanup action at the former diesel dispensers.

November 2015. GRO was detected at 3.2 mg/L in Monitoring Well G-3. An analytical sample was collected from the VSC well which indicated all analytes were below GCLs for the first time since September 2004. The remediation system was offline upon arrival at the site and remained offline pending groundwater conditions and further analytical sampling.

January 2016. The first quarter 2016 monitoring event was conducted on January 28, 2016. Results of the analytical sampling showed that all analytes were below GCLs, except GRO concentrations in Monitoring Well G-3. One or more analytes were detected above the PQLs in all the monitoring wells sampled, except Monitoring Well G-5. Analytical results from Remediation Well VSC were below PQLs.

May 2016. The second quarter 2016 monitoring event was conducted on May 9, 2016. All analytes were below the GCLs, only Monitoring Well G-3 had analytes detected above PQLs. Monitoring Wells G-2 and G-5 had insufficient water for sampling.

Four CSBs were placed at four locations surrounding the 2015 CSB 9-3, to the north, south, east, and west. Two discrete analytical soil samples were collected from CSB 16-1, CSB 16-2, and CSB 16-4, and one sample from CSB 16-3. These samples were collected from the locations with the highest PID readings, or at the water table interface if no detections were observed in field screened samples.

CSB 16-1 and CSB 16-2 (Samples CSB 16-1 38 and CSB 16-2 39), which were the closest to the former USTs and located to the north and east of 2015 CSB 9-3, respectively, both had GRO exceedances similar to the findings of the nearby 2015 Boring CSB 9-3. All the samples which exceeded SCLs were below the water table that was measured at a depth of 35.48 feet btoc in nearby Monitoring Well G-3 at the time of drilling. Analytical results at the water table interface at three locations were below laboratory PQLs. The CSB 16-3 and CSB 16-4, located at a greater

distance from the former USTs compared to CSB 16-1 and CSB 16-3 and to the south and west of 2015 CSB 9-3, did not have analyte exceedances. Soil Borings CSB 16-1 and CSB 16-2 were completed with PVC riser and screen assemblies to provide future access points for monitoring and/or remediation activities.

October 2016. The third quarter 2016 monitoring event took place on October 24, 2016. All wells listed in the 2016 Work Plan to be sampled in the third quarter had sufficient water for sampling. Monitoring Well G-3 had GRO detected above GCL. New Wells RW16-1 and MW16-2 were sampled for the first time. Remediation Well RW16-1 had all analytes, except benzene and toluene, detected above their GCLs. Monitoring Well MW16-2 had analytes detected above PQLs, but none above GCLs. The VSC system was not operating.

December 2016. The fourth quarter 2016 monitoring event took place on December 9, 2016. All wells listed in the 2016 Work Plan to be sampled in the fourth quarter had sufficient water for sampling. Monitoring Well G-3 had GRO detected above GCL (update effective November 6, 2016). Drinking water samples had no detections above PQLs. The VSC system was not operating.

February 2017. The first quarter 2017 monitoring event took place on February 8, 2017. Monitoring Wells G-1 and G-3 purged dry and did not recover sufficiently to allow for sampling. Monitoring Well G-5 was dry upon arrival at the site. Remediation Well RW16-1 and Monitoring Well MW16-2 were sampled. Ethylbenzene, xylenes, GRO, and DRO were detected above GCLs in both wells. The VSC system remained off-line due to low groundwater conditions and/or frozen circulation line. The SVE treatment system was not operational and will require maintenance to the blower system following spring breakup.

April and May 2017. The second quarter 2017 monitoring event took place on April 25, 2017. Analytes were detected above their GCLs in Monitoring Wells G-3, G-5, and MW16-2, and Remediation Well RW16-1. These wells had exceedances of specific volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) consisting of 1,2,4- and 1,3,5-trimethylbenzene compounds and naphthalene.

Routine maintenance was conducted on the SVE and VSC systems, but due to unresolved electrical power/control issues, both systems are currently not operating until additional corrective action services are provided by an electrician.

Also, representative water samples were collected from the domestic water systems serving the existing buildings on Lots 1, 3 and 4 in Runion Subdivision, and were analyzed for public drinking water VOCs and DRO. No detectable levels of contaminants were found in any of the domestic drinking water wells.

On May 3, 2017, the first phase of the pilot test was initiated with an injection of a chemical oxidant (chemox) consisting of Klozur CR® into the new Remediation Well RW16-1. The pilot test will be continued during the third and fourth quarters of 2017, when the wells will be resampled to determine the impact of the chemox injection. Subject to the findings of the 2017 monitoring events, the pilot test may be continued in 2018 with several more injections of Klozur CR®.

October 2017. The fourth quarter 2017 monitoring event took place on October 20, 2017. DRO was detected above the GCL in Monitoring Well G-3. Analytes detected above their GCLs in MW16-2 included: ethylbenzene, GRO, naphthalene, and 1,2,4-trimethylbenzene.

The SVE and VSC treatment systems were not operating due to electrical control systems malfunctions. The treatment systems are scheduled for replacement and/or upgrade in 2018.

The pilot test program for the chemox injection was initiated in May 2017 in accordance with the ADEC approved work plan for the 2017 Work Plan Task 3. The test results for intrinsic parameters measured during the October 2017 monitoring event indicate no unusual findings and will be monitored in future quarterly monitoring events scheduled for 2018 with additional applications of Klozur CR® into Remediation Well RW16-1.

February 2018. The first quarter 2018 monitoring event took place on February 13, 2018. Analytes detected above their GCLs included ethylbenzene and GRO in Monitoring Well MW16-2 and DRO in Monitoring Well G-3.

The SVE treatment system was off-line pending repairs. The operation of the VSC system was interrupted in the second quarter of 2017 relating to an issue with the variable frequency drive on the compressor and will be brought back online when the system can be evaluated by a licensed electrician.

Ongoing monitoring of sodium and total organic carbon, relating to the May 2017 chemical oxidation pilot test, showed elevated concentrations of both analytes in Monitoring Well G-3. Conductivity was also found to be elevated in Monitoring Well G-1, which may also indicate the presence of residual chemical oxidant.

August 2018. The third quarter monitoring event took place on August 17, 2018. Results of the analytical sampling showed petroleum hydrocarbon contaminant concentrations exceeding the GCLs for: DRO in Monitoring Wells G-1 and G-3; GRO in Monitoring Well 16-2, and ethylbenzene, xylenes, GRO, and DRO in Remediation Well 16-1.

Several analytes for VOCs and polynuclear aromatic hydrocarbons (PAHs) were reported as undetected but had laboratory reporting limits that equaled or exceeded their corresponding GCLs. These undetected analytes were noted in all the wells that were sampled.

Also, representative water samples were collected from the domestic water systems serving the existing buildings on Lots 1&2, 4, and 5 in Runion Subdivision, and were analyzed for public drinking water VOCs. All the domestic drinking water wells were found to have no detectable levels of contaminants of concern.

The SVE and VSC treatment systems are not operating pending future repairs and/or modifications to the electrical systems which will be evaluated by a licensed electrician.

October 2018. The fourth quarter groundwater monitoring event was conducted on October 25, 2018. The monitoring event included measuring depth to water, field intrinsic water quality

parameters, and collecting and analyzing groundwater samples from Monitoring Wells G-1, G-3, G-5, G-7, and MW16-2. Results of the analytical sampling showed petroleum hydrocarbon contaminant concentrations exceeding the GCLs for: DRO in Monitoring Well G-3; and 1,2,4-trimethylbenzene in Monitoring Well 16-2.

The VSC treatment system is currently operating and pumping, via the air-lift pump, approximately 2 to 3 gallons per minute on a continuous basis. During the 3rd quarter of 2018, Stantec completed a chemox injection Klozur One®. Fifty-five pounds of Klozur One® was mixed with approximately 100 gallons of clean water. The chemox solution was injected into Remediation Well RW 16-1.

February 2019. The first quarter 2019 monitoring event took place on February 26, 2019. The monitoring event included measuring depth to water, field intrinsic water quality parameters, and collecting and analyzing groundwater samples from Monitoring Wells G-1, G-3, G-5, G-7, and MW16-2. The depth to water and field intrinsic water quality parameters were also measured in Remediation Well RW16-1. Results of the analytical sampling showed petroleum hydrocarbon contaminant concentrations exceeding the GCLs for: DRO in Monitoring Well G-3 and GRO in Monitoring Well 16-2.

The VSC and SVE treatment systems were found to be off (inoperative) upon arrival at the site due to an apparent power surge. Upon restart of the systems, the recirculation line was found to be frozen. The VSC and SVE systems were left off until spring thaw.

April 2019. The second quarter 2019 groundwater monitoring event was conducted on April 23 and 24, 2019. The monitoring event included measuring depth to groundwater and field intrinsic water quality parameters and collecting and analyzing groundwater samples from Monitoring Wells G-1, G-2, G-3, G-4, G-5, G-7, and MW16-2 and Remediation Well RW16-1.

Based on the groundwater depth measurements, the average hydraulic gradient was determined to be flowing to the south at a bearing of 183 degrees with a gradient of 0.02 feet per foot. Groundwater flow direction and gradient was noted to be consistent with the historical results for this site.

Results of the analytical sampling showed petroleum hydrocarbon contaminant concentrations exceeded the GCLs for the following monitoring wells:

- Monitoring Well G-3 –DRO, 1,2,4-Trimethylbenzene, and 1,3,5-Trimethylbenzene
- Monitoring Well MW16-2 –GRO, 1,2,4-Trimethylbenzene, and 1,3,5-Trimethylbenzene

Representative water samples were also collected from the domestic water systems serving the existing buildings on Lots 1&2, 4, and 5 in Runion Subdivision, and were analyzed for drinking water analyses and DRO. All the domestic drinking water wells were found to have no detectable levels of contaminants of concern.

During this monitoring event, the on-site groundwater remediation system, consisting of a VSC system was inspected to determine its operational condition. The VSC treatment system was found

to be off (in-operative) upon arrival at the site due to an apparent power surge. The VSC system was left off until such time the electrical supply system could be evaluated to determine the cause of the power outages to the VSC compressor.

July 2019. The third quarter 2019 groundwater monitoring event was conducted on July 16, 2019. The monitoring event included measuring depth to groundwater and field intrinsic water quality parameters and collecting and analyzing groundwater samples from Monitoring Wells G-1, G-3, G-5, G-7, and MW16-2. In addition, depth to groundwater was measured at Monitoring Well G-4 and Remediation Well RW16-1 and field intrinsic water quality parameters were measured at Remediation Well RW16-1.

Based on the groundwater depth measurements, the average hydraulic gradient was determined to be flowing to the south at a bearing of 300 degrees with a gradient of 0.011 feet per foot. Groundwater flow direction and gradient were noted to be inconsistent with the historical results for this site. The change in groundwater flow may be a result of elevation changes due to "frost jacking" of the well casings on one or more monitoring wells that were noted during the sampling event. The elevations of the wells will be resurveyed during the 4th quarter monitoring event.

Results of the analytical sampling showed petroleum hydrocarbon contaminant concentrations exceeded the GCLs for the following monitoring wells:

- Monitoring Well G-1 –DRO
- Monitoring Well G-3 –DRO
- Monitoring Well MW16-2 –GRO

The VSC groundwater treatment system was found to be off (inoperative) upon arrival at the site due to an apparent power surge. On a subsequent site visit conducted during the week of July 22, the VSC compressor was activated and currently remains operational. On July 25, 2019, Stantec injected a chemox solution consisting of 55 pounds of Klozur One® via a pressurized pump system into the remediation well RW 16-1.

October 2019. The fourth quarter 2019 groundwater monitoring event was conducted on October 17, 2019. The monitoring event included measuring depth to groundwater and field intrinsic water quality parameters and collecting and analyzing groundwater samples from Monitoring Wells G-1, G-3, G-5, G-7, and MW16-2. In addition, depth to groundwater was measured at Monitoring Well G-4.

Based on the groundwater depth measurements, the average hydraulic gradient was determined to be flowing to the southwest at a bearing of 221 degrees with a gradient of 0.022 feet per foot. Groundwater flow direction and gradient were noted to be consistent with the historical results for this site. The elevations of the wells were resurveyed during this monitoring event.

Results of the analytical sampling showed petroleum hydrocarbon contaminant concentrations exceeded the GCLs for the following monitoring wells:

- Monitoring Well G-3: DRO
- Monitoring Well MW16-2: 1,2,4-Trimethylbenzene and 1,3,5-Trimethylbenzene

The VSC groundwater treatment system was found to be operating within the normal range of performance with the production of 1 to 2 gallons per minute of recirculated groundwater with an air lift pump in the VSC well. Stantec injected a chemox solution consisting of 55 pounds of Klozur One® via gravity flow into the remediation well RW 16-1.

August 2020. This third quarter 2020 Monitoring Event Report was conducted on August 12, 2020 and included the following tasks: Measuring depth to groundwater, measuring field intrinsic water quality parameters, checking the operation of the in-situ remediation system, and collecting and analyzing groundwater samples from Monitoring Wells G-1, G-3, G-5, MW16-2, and remediation well RW16-1.

Results of the analytical sampling showed petroleum hydrocarbon contaminant concentrations exceeded the groundwater cleanup levels (GCLs) for the following monitoring wells:

- Remediation Well RW16-1: Ethylbenzene, xylenes, diesel range organics (DRO), and gasoline range organics (GRO)

Based on the groundwater depth measurements and the elevation survey of the tops of the monitoring wells, the average hydraulic gradient was determined to be flowing to the south-southeast at a bearing of 171 degrees with a gradient of 0.018 feet per foot. Groundwater flow direction and gradient were noted to be consistent with the historical results for this site.

During this monitoring event, the on-site groundwater remediation system, consisting of a vapor stripping and circulation (VSC) system was inspected to determine operational condition. The VSC compressor that operates the air-lift well was not operating due to a recent power outage. The compressor was activated and the flow from the air-lift well was adjusted to provide a constant flow of approximately 1 to 2 gallons per minute of aerated groundwater that is discharged into MW-1 for recirculation.

October 2020. This fourth quarter 2020 Monitoring Event was conducted on October 2, 2020. Results of the analytical sampling showed petroleum hydrocarbon contaminant concentrations exceeded the groundwater cleanup levels (GCLs) for the following monitoring well:

- Remediation Well RW16-1: Ethylbenzene, xylenes, diesel range organics (DRO), and gasoline range organics (GRO).

Analytical results by Test Method 545.1 (see **Appendix E**) showed no evidence of contamination for the on-site and nearby drinking water wells serving the following properties: Runion Subdivision Lots 1 and 2, Runion Subdivision Lot 4, and Runion Subdivision Lot 5.

Based on the groundwater depth measurements and the elevation survey of the tops of the monitoring wells, the average hydraulic gradient was determined to be flowing to the south-southwest at a bearing of 191 degrees with a gradient of 0.007 feet per foot. Groundwater flow direction and gradient were noted to be similar with the historical results but slightly lower gradient, as shown on the groundwater flow summary ("rose diagram") presented on Figure 2.

During this monitoring event, the on-site groundwater remediation system, consisting of a vapor stripping and circulation (VSC) system (see Figure 3) was inspected to determine operational condition. The VSC compressor that operates the air-lift well was operational and providing adequate flow upon arrival on site.

On October 27, 2020 Stantec finished the installation and development of two 4-inch diameter chemox injection wells, RW 20-1 and RW 20-2, located north of Remediation Well RW16-1. On November 27, 2020 Stantec conducted the first 2020 injection of a chemox Klozur One® solution into the new chemox injection remediation wells, RW 20-1 and RW 20-2. The installation of the new wells will be described in a technical memorandum that will be submitted to ADEC.

March 2021. This first quarter 2021 monitoring event was conducted on March 31, 2021. Results of the analytical sampling showed petroleum hydrocarbon contaminant concentrations exceeded the groundwater cleanup levels (GCLs) for the following monitoring/remediation wells:

- Remediation Well RW 16-1: Ethylbenzene, xylenes, DRO, and GRO. Benzene practical quantitation limits exceeded ADEC groundwater cleanup levels (GCLs).
- Monitoring Well MW 16-2: GRO.

Due to limited data of groundwater elevations in measured wells and their linear positions across the site, the hydraulic gradient and flow direction of the groundwater table could not be calculated for this monitoring event.

During this monitoring event, the on-site groundwater remediation system, consisting of a vapor stripping and circulation (VSC) system (see Figure 3) was inspected to determine operational condition. The VSC compressor that operates the air-lift well was operational but the air-lift well was not checked to determine if the well was discharging to the recirculation/receiving well (MW G-1). The staff noted there was a significant ice plug at the top of MW G-1 which prevented access to the well.

May 2021. This second quarter 2021 monitoring event was conducted on May 18, 2021. Results of the analytical sampling showed petroleum hydrocarbon contaminant concentrations exceeded the groundwater cleanup levels (GCLs) for the following monitoring wells:

- Remediation Well RW 16-1: Ethylbenzene, xylenes, diesel range organics (DRO), gasoline range organics (GRO), 1,2,4 trimethylbenzene, and 1,3,5 trimethylbenzene. Benzene practical quantitation limits exceeded ADEC groundwater cleanup levels (GCLs).
- Monitoring Well MW G-3: DRO.
- The naphthalene practical quantitation limits exceeded ADEC groundwater cleanup levels (GCLs) in all of the wells sampled

The hydraulic gradient across the site was found to be approximately 0.020 feet per foot directed toward the south at 182 degrees; however, the hydraulic flow of the groundwater does not take into account the groundwater level in MW G-1 since this well receives influent pumped from the air-lift well described in the following paragraph. The groundwater gradient and flow direction are generally consistent with past monitoring events.

During this monitoring event, the on-site groundwater remediation system, consisting of a vapor stripping and circulation (VSC) system that includes of an air-lift well (see Figure 3), was inspected to determine operational condition. The VSC compressor that operates the air-lift well was operational and observed to be discharging to the recirculation/receiving well (MW G-1).
In addition, a chemox injection into the groundwater table via remediation wells RW 20-1 and RW 20-2 was completed during the monitoring event. A total of 220 pounds of Klozur One® and approximately 500 gallons of clean water from the store's water system was injected.

July 2021. Results of the analytical sampling showed petroleum hydrocarbon contaminant concentrations exceeded the groundwater cleanup levels (GCLs) for the following monitoring well:

- Monitoring Well G-3: DRO, naphthalene, and both species of trimethylbenzene (TMB).
- Remediation Well RW 16-1: Benzene, ethylbenzene, xylenes, GRO, DRO, and both species of TMB.
- In addition, the RDL for naphthalene in all wells was above the GCL.

The average groundwater gradient across the site was calculated by triangulation to be 0.021 feet per foot to the south-southwest at 207 degrees, as shown in **Figure 3**. This is consistent with historical groundwater gradient and direction of flow data.

During this monitoring event, the on-site groundwater remediation system, consisting of a vapor stripping and circulation (VSC) system (see **Figure 3**) was inspected to determine operational condition. The VSC compressor that operates the air-lift well was not operational due to mechanical failure in one of the fins.

The remediation event on July 21st, 2021, consisted of a total chemical oxidation (chemox) injection of 220 pounds of Klozur® One product combined with 110 gallons of potable water from Tesoro store into two treatment points (RW 20-1 and RW 20-2). The solution was further pushed into the formation with an additional 420 gallons of water.

October 2021. Results of the analytical sampling showed petroleum hydrocarbon contaminant concentrations exceeded the groundwater cleanup levels (GCLs) for the following monitoring well:

- Remediation Well RW 16-1: Benzene, ethylbenzene, xylenes, GRO, DRO, 1,2,4- and 1,3,5-TMB. In addition, the lab RDL for naphthalene in this well was above the GCL.

Analytical results showed no evidence of VOC or DRO contamination for the on-site and nearby drinking water wells serving the following properties: Runion Subdivision Lots 1 and 2, Runion Subdivision Lot 4, and Runion Subdivision Lot 5.

Earlier this year the compressor for the VSC system seized up and was shut down for several months. In September of this year, Stantec ordered a replacement blower that consisted of a Becker compressor model DT-4.10, 0.6 horsepower. The blower was placed into operation on October 4,

2021 and continues to operate the air-lift well to this date on a continuous basis (24-hours per day). The VSC/air-lift well discharges into MW G-1 at an estimated rate of 1 to 2 gpm.

March 2022. Results of the analytical sampling showed petroleum hydrocarbon contaminant concentrations exceeded the groundwater cleanup levels (GCLs) for the following monitoring well:

- Remediation Well RW 16-1: Ethylbenzene, xylenes, gasoline range organics (GRO), diesel range organics (DRO), naphthalene, 1,2,4-Trimethylbenzene (TMB), and 1,3,5-TMB. In addition, the lab's reported detection limit (RDL) for benzene and toluene were above the GCL.
    - A duplicate sample was collected from RW16-1, and confirms the exceedances in ethylbenzene, xylenes, GRO, DRO, naphthalene, 1,2,4-TMB, and 1,3,5-TMB, but concentrations of benzene and toluene in the duplicate sample were below GCLs.

The average groundwater gradient across the site was calculated to be approximately 0.033 feet per foot to the south-southeast at 198 degrees. This is consistent with historical groundwater gradient and direction of flow data.

The on-site groundwater remediation system, consisting of a vapor stripping and circulation (VSC) system was not assessed due to the presence of ice in the receiving well, MW G-1. However, it was noted the VSC compressor that operates the air-lift well was operational upon arriving at the site. The air-lift well typically discharges an approximate flow rate of 1 to 2 gallons per minute (gpm) into MW G-1.

The remediation event on March 24, 2022, consisted of a chemical oxidation (chemox) injection of a total of 110 pounds of Klozur One® product mixed with 100 gallons of potable water from Tesoro store into each of the two injection wells (RW 20-1 and RW 20-2). The total amount of 220 pounds of chemox was injected into the groundwater table and an additional several hundred gallons of potable water used to hydraulically "push" the chemox solution into the aquifer.

May 2022. Results of the analytical sampling showed petroleum hydrocarbon contaminant concentrations exceeded the groundwater cleanup levels (GCLs) for the following monitoring well:

- Remediation Well RW 16-1: Ethylbenzene, xylenes, gasoline range organics (GRO), diesel range organics (DRO), naphthalene, 1,2,4-Trimethylbenzene (TMB), and 1,3,5-TMB. In addition, the lab's reported detection limit (RDL) for benzene was above the GCL.

The average groundwater gradient across the site was calculated to be approximately 0.011 feet per foot to the west-southwest at 343 degrees. The direction of flow was noted to be more westerly than historical groundwater flow measurements, and probably was influenced by groundwater elevation data from MW-6, which has not been regularly included in groundwater calculations.

The operation of the on-site groundwater remediation system was assessed during the monitoring event. It was found that the PVC piping used for injecting air into the air-lift well had broken over the winter, making the well inoperable. This was repaired during the monitoring event, and the blower was restarted at 7.5 psi with water flowing into G-1. Subsequently it was found that the ground surface around the air lift manhole had subsided, creating a pothole in the parking lot. The blower was turned off in June 2022 to ensure it would not exacerbate the subsidence problem.

APPENDIX B

Field Methods and Procedures

APPENDIX B – FIELD METHODS AND PROCEDURES

Speedway Store 5325 (former Tesoro 2 Go Mart #52)

The following table presents the proposed tasks for the Alaska Department of Environmental Conservation (ADEC) approved 2022 Corrective Action Plan (CAP). The scope of these tasks is based on the results and findings of the monitoring and remediation completed to date at this site.

2022 Work Plan Schedule for Speedway Store 5325 (Tesoro 2GoMart 52)

Work Plan Task 2022		1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Task 1	Monitoring Wells: G-1, G-3, G-5, and G-7	V, G, D, S & I	V, G, D, S, & I	V, G, D, S & I	V, G, D, P, S & I
	RM 16-1 & MW 16-2	V, G, D, P, S & I	V, G, D, P, S & I	V, G, D, P, S & I	V, G, D, P, S & I
	Monitoring Wells G-2 and G-4				V, G, D, P, S & I
	Drinking Water Wells serving Lots 1 and 2, Lot 4, and Lot 5 in Runion Subdivision				D & E
Task 2	O&M Air-Lift Well Remediation System	✓	✓	✓	✓
Task 3	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 include: dissolved oxygen, specific conductance, oxygen-reduction potential, pH, and temperature.
O&M – Operation and Maintenance
V – Volatile organic compounds by EPA Test Method 8260C.
S – Sodium analyzed by Metals (ICP) Method 6010C.
P – Polynuclear aromatic hydrocarbons (PAHs), i.e., semi-volatile organic compounds associated with petroleum fuel, by EPA Test Method 8270D Selective Ion Monitoring (SIM).

The CAP for the year 2022 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 2022 Work Plan Schedule shown above.

APPENDIX C

Field Measurements and Notes

Speedway #5325 Date: 05/12/2022 Name(s): _____

Site Name: TNS52

Well ID	Time of Day	Depth to Product	Depth to Water	Depth to Bottom	Product Thickness	Well Diameter	Well Material	Comment(s) on Condition of Well
G-4	16:51		30.9					
RW16-2	14:47		31.32	37.6				
G-1	13:12		29.66			4.0	PVC	
G-7	10:37		32.27	41.65		2.0	pvc	
RW16-1	13:57		31.44	40.0				
G-5	11:46		33.97	41.35				
G-3	15:53		31.38	39.5				

Speedway #5325 Date: 05/11/2022, 1:16 PM

Site Name: TNS52 Name(s): austin.badger@stantec.com

Well ID	Free Product (ft)	Water (ft)	Bottom (ft)
G-1	N/A	29.66	
TOC	Well Dia. (in)	Screen Length (ft)	Well Material
99.29	4.0		PVC
Latitude (decimal)	Longitude (decimal)	Weather	
61.5821862902	-149.630815567	sunny 55°F	

Type/Model Meter Used: _____

Calibrated: (date) _____ (time) _____

Cell Vol: _____

Type/Model Pump Used: _____

Pump Intake? _____ ft

Above / Below Bottom / TOC

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

Purge water disposal: Pour on ground

Time	Depth to Water (ft)	Flow Rate (ml/Min)	pH		Conductivity (ms/cm)		Turbidity (NTU)		Dissolved O2 (mg/l)		Temp. (Celsius)		Oxygen Reduction Potential (ORP) mv	
13:12	29.66	X	Reading	Change* (±0.1)	Reading	Change* (±3%)	Reading	Change* (±10% or <5)	Reading	Change* (±10% or <0.5)	Reading	Change* (±3%)	Reading	Change* (±10mv)

Sample Collected? Yes Time 13:16 Total Pumped from Well? 0 Gal

NOTES / COMMENTS:

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

Speedway #5325 Date: 05/11/2022, 4:30 PM

Site Name: TNS52 Name(s): austin.badger@stantec.com

Well ID	Free Product (ft)	Water (ft)	Bottom (ft)
G-3	N/A	31.38	39.5
TOC	Well Dia. (in)	Screen Length (ft)	Well Material
99.13			
Latitude (decimal)		Longitude (decimal)	Weather
61.5820198468		-149.630777474	sunny 55°F

Type/Model Meter Used: _____

Calibrated: (date) _____ (time) _____

Cell Vol: _____

Type/Model Pump Used: _____

Pump Intake? _____ ft

Above / Below Bottom / TOC

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

QA/QC: Duplicate #1

Time	Depth to Water (ft)	Flow Rate (ml/Min)	pH		Conductivity (ms/cm)		Turbidity (NTU)		Dissolved O2 (mg/l)		Temp. (Celsius)		Oxygen Reduction Potential (ORP) mv	
15:53	31.38	X	Reading	Change* (±0.1)	Reading	Change* (±3%)	Reading	Change* (±10% or <5)	Reading	Change* (±10% or <0.5)	Reading	Change* (±3%)	Reading	Change* (±10mv)

Sample Collected? Yes Time 16:30 Total Pumped from Well? 0 Gal

NOTES / COMMENTS:

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

Speedway #5325 Date: 05/12/2022 Name(s): _____

Site Name: TNS52

Well ID	Free Product (ft)	Water (ft)	Bottom (ft)
G-4	N/A	30.9	
TOC	Well Dia. (in)	Screen Length (ft)	Well Material
98.29			
Latitude (decimal)		Longitude (decimal)	Weather
61.5817561273		-149.631357438	sunny 55°F

Analytical Parameters	Bottles to be filled
N/A	

Type/Model Meter Used: _____

Calibrated: (date) _____ (time) _____

Cell Vol: _____

Type/Model Pump Used: _____

Pump Intake? _____ ft

Above / Below Bottom / TOC

Time	Depth to Water (ft)	Flow Rate (ml/Min)	pH		Conductivity (ms/cm)		Turbidity (NTU)		Dissolved O2 (mg/l)		Temp. (Celsius)		Oxygen Reduction Potential (ORP) mv	
16:51	30.9	X	Reading	Change* (±0.1)	Reading	Change* (±3%)	Reading	Change* (±10% or <5)	Reading	Change* (±10% or <0.5)	Reading	Change* (±3%)	Reading	Change* (±10mv)

Sample Collected? No Time _____ Total Pumped from Well? 0 Gal

NOTES / COMMENTS:

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

Speedway #5325 Date: 05/11/2022, 12:05 PM

Site Name: TNS52 Name(s): austin.badger@stantec.com

Well ID	Free Product (ft)	Water (ft)	Bottom (ft)
G-5	N/A	33.97	41.35
TOC	Well Dia. (in)	Screen Length (ft)	Well Material
101.44			
Latitude (decimal)		Longitude (decimal)	Weather
61.581788987		-149.630862504	sunny 55°F

Type/Model Meter Used: _____

Calibrated: (date) _____ (time) _____

Cell Vol: _____

Type/Model Pump Used: _____

Pump Intake? _____ ft

Above / Below Bottom / TOC

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

Time	Depth to Water (ft)	Flow Rate (ml/Min)	pH		Conductivity (ms/cm)		Turbidity (NTU)		Dissolved O2 (mg/l)		Temp. (Celsius)		Oxygen Reduction Potential (ORP) mv	
			Reading	Change* (±0.1)	Reading	Change* (±3%)	Reading	Change* (±10% or <5)	Reading	Change* (±10% or <0.5)	Reading	Change* (±3%)	Reading	Change* (±10mv)
11:46	33.97													

Sample Collected? Yes Time 12:05 Total Pumped from Well? 0 Gal

NOTES / COMMENTS:

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

Speedway #5325 Date: 05/11/2022, 10:58 AM

Site Name: TNS52 Name(s): austin.badger@stantec.com

Well ID	Free Product (ft)	Water (ft)	Bottom (ft)
G-7	N/A	32.27	41.65
TOC	Well Dia. (in)	Screen Length (ft)	Well Material
99.42	2.0		pvc
Latitude (decimal)	Longitude (decimal)	Weather	
61.581454289	-149.631059783	sunny 55°F	

Type/Model Meter Used: _____

Calibrated: (date) _____ (time) _____

Cell Vol: _____

Type/Model Pump Used: _____

Pump Intake? _____ ft

Above / Below Bottom / TOC

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

Time	Depth to Water (ft)	Flow Rate (ml/Min)	pH		Conductivity (ms/cm)		Turbidity (NTU)		Dissolved O2 (mg/l)		Temp. (Celsius)		Oxygen Reduction Potential (ORP) mv	
10:37	32.27	X	Reading	Change* (±0.1)	Reading	Change* (±3%)	Reading	Change* (±10% or <5)	Reading	Change* (±10% or <0.5)	Reading	Change* (±3%)	Reading	Change* (±10mv)

Sample Collected? Yes Time 10:58 Total Pumped from Well? 0 Gal

NOTES / COMMENTS:

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

Speedway #5325 Date: 05/11/2022, 2:12 PM

Site Name: TNS52 Name(s): austin.badger@stantec.com

Well ID	Free Product (ft)	Water (ft)	Bottom (ft)
RW16-1	N/A	31.44	40.0
TOC	Well Dia. (in)	Screen Length (ft)	Well Material
99.44			
Latitude (decimal)		Longitude (decimal)	Weather
61.5821994		-149.6309133	sunny 55°F

Type/Model Meter Used: _____

Calibrated: (date) _____ (time) _____

Cell Vol: _____

Type/Model Pump Used: _____

Pump Intake? _____ ft

Above / Below Bottom / TOC

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

Time	Depth to Water (ft)	Flow Rate (ml/Min)	pH		Conductivity (ms/cm)		Turbidity (NTU)		Dissolved O2 (mg/l)		Temp. (Celsius)		Oxygen Reduction Potential (ORP) mv	
13:57	31.44		Reading	Change* (±0.1)	Reading	Change* (±3%)	Reading	Change* (±10% or <5)	Reading	Change* (±10% or <0.5)	Reading	Change* (±3%)	Reading	Change* (±10mv)

Sample Collected? Yes Time 14:12 Total Pumped from Well? 0 Gal

NOTES / COMMENTS:

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

Speedway #5325 Date: 05/11/2022, 3:07 PM

Site Name: TNS52 Name(s): austin.badger@stantec.com

Well ID	Free Product (ft)	Water (ft)	Bottom (ft)
RW16-2	N/A	31.32	37.6
TOC	Well Dia. (in)	Screen Length (ft)	Well Material
99.2			
Latitude (decimal)		Longitude (decimal)	Weather
61.5821668		-149.6308637	sunny 55°F

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

Type/Model Meter Used: _____

Calibrated: (date) _____ (time) _____

Cell Vol: _____

Type/Model Pump Used: _____

Pump Intake? _____ ft

Above / Below Bottom / TOC

Time	Depth to Water (ft)	Flow Rate (ml/Min)	pH		Conductivity (ms/cm)		Turbidity (NTU)		Dissolved O2 (mg/l)		Temp. (Celsius)		Oxygen Reduction Potential (ORP) mv	
14:47	31.32		Reading	Change* (±0.1)	Reading	Change* (±3%)	Reading	Change* (±10% or <5)	Reading	Change* (±10% or <0.5)	Reading	Change* (±3%)	Reading	Change* (±10mv)

Sample Collected? Yes Time 15:07 Total Pumped from Well? 0 Gal

NOTES / COMMENTS:

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

Speedway #5325 Date: 05/11/2022, 1:16 PM

Site Name: TNS52 Name(s): austin.badger@stantec.com

Location ID	GPS Latitude (decimal)	GPS Longitude (decimal)
G-1	61.5821862902	-149.630815567

Field Data	
Sampler Names: Luke , john	Sheen/Odor?: None clear
pH: 6.94	Specific Conductance: 0.298
DO: 6.53	Temperature (C): 4.9
ORP: 225.5	Purge Volume (gal):
Notes: Did not purge do to well being next to air injection well	

Speedway #5325 Date: 05/11/2022, 4:30 PM

Site Name: TNS52 Name(s): austin.badger@stantec.com

Location ID	GPS Latitude (decimal)	GPS Longitude (decimal)
G-3	61.5820198468	-149.630777474

Field Data	
Sampler Names: John	Sheen/Odor?:
pH: 6.75	Specific Conductance: 568
DO: 6.86	Temperature (C): 4.8
ORP: 247.2	Purge Volume (gal): 16
Notes: No duplicate, duplicated rw16-1	

Speedway #5325 Date: 05/11/2022, 12:05 PM

Site Name: TNS52 Name(s): austin.badger@stantec.com

Location ID	GPS Latitude (decimal)	GPS Longitude (decimal)
G-5	61.581788987	-149.630862504

Field Data	
Sampler Names: John, Luke, Remy	Sheen/Odor?: None, clean
pH: 6.64	Specific Conductance: 0.567
DO: 6.48	Temperature (C): 7.73
ORP: 239.3	Purge Volume (gal): 2
Notes: Clear purge water, only purged 2 gallons of 3.6 due to losing baler into well	

Speedway #5325 Date: 05/11/2022, 10:58 AM

Site Name: TNS52 Name(s): austin.badger@stantec.com

Location ID	GPS Latitude (decimal)	GPS Longitude (decimal)
G-7	61.581454289	-149.631059783

Field Data	
Sampler Names: John, Luke, Remi	Sheen/Odor?: None
pH: 6.14	Specific Conductance: 157
DO: 10.74	Temperature (C): 4.9
ORP: 225	Purge Volume (gal): 4.5
Notes: Purged water clear no odor , 2.2 inches were cut off of pvc well due to frost jacking	

Speedway #5325 Date: 05/11/2022, 2:12 PM

Site Name: TNS52 Name(s): austin.badger@stantec.com

Location ID	GPS Latitude (decimal)	GPS Longitude (decimal)
RW16-1	61.5821994	-149.6309133

Field Data	
Sampler Names: John, Luke	Sheen/Odor?: Faint odor
pH: 8.27	Specific Conductance: 0.388
DO: 11.49	Temperature (C): 5.4
ORP: 271.8	Purge Volume (gal): 4.2
Notes: Transparent brown , purged dry at 2 gallons	

Speedway #5325 Date: 05/11/2022, 3:07 PM

Site Name: TNS52 Name(s): austin.badger@stantec.com

Location ID	GPS Latitude (decimal)	GPS Longitude (decimal)
RW16-2	61.5821668	-149.6308637

Field Data	
Sampler Names: Luke, John	Sheen/Odor?: Faint order
pH: 7.2	Specific Conductance: 0.605
DO: 8.97	Temperature (C): 7.35
ORP: 227.9	Purge Volume (gal): 3.06
Notes: Need to change to MW16-2 transparent dark gray	

APPENDIX D

Tables of Historical Monitoring Data

Analytical Data Results Table

Speedway #5325 TNS52
Speedway - Anne Duarte
7172 W Parks Hwy
Wasilla, Alaska 99623

Unit	Well Screen Interval ft	Ground Water Elevation ft	Sodium ppm	Naphthalene ppm	Ethylbenzene ppm	135-TMB ppm	124-TMB ppm	Xylene ppm	GRO ppm	Benzene ppm	DRO ppm	Toluene ppm
GW Human Health Cleanup				0.0017	0.015	0.12	0.015	0.19	2.2	0.0046	1.5	1.1
G-1												
04/24/1997	--	--	—	—	12	—	—	64	170	3.7	11	28
09/03/1997	--	--	—	—	5.2	—	—	41	85	0.001	12	12
12/29/1997	--	--	—	—	1.5	—	—	9.3	34	0.042	3.3	2
04/23/1998	--	--	—	—	4.1	—	—	23	91	0.13	8.3	3.9
08/03/1998	--	--	—	—	3	—	—	19	76	0.14	12	3.1
11/02/1998	--	--	—	—	4.76	—	—	27.12	70	0.121	5.58	4.59
02/12/1999	--	--	—	—	4	—	—	24	91	0.001	19	5.4
05/10/1999	--	--	—	—	—	—	—	—	—	—	—	—
05/11/1999	--	--	—	—	—	—	—	—	—	—	—	—
08/30/1999	--	--	—	—	5.6	—	—	36	190	0.001	10	3.1
08/31/1999	--	--	—	—	—	—	—	—	—	—	—	—
10/29/1999	--	--	—	—	0.035	—	—	0.21	0.89	0.001	0.45	0.026
02/08/2000	--	--	—	—	4.4	—	—	26	10	0.001	—	3.3
06/08/2000	--	--	—	—	0.11	—	—	0.61	2.3	0.001	0.33	0.051
08/30/2000	--	--	—	—	0.92	—	—	5	19	0.001	0.57	0.5
11/30/2000	--	--	—	—	2.3	—	—	11	42	0.001	1.9	1.2
02/05/2001	--	--	—	—	4.7	—	—	25	94	0.001	5.2	3.4
05/10/2001	--	--	—	—	2.62	—	—	15.36	41.1	0.001	1.9	0.967
08/16/2001	--	--	—	—	0.652	—	—	6.18	14.3	0.013	1.99	0.401
11/09/2001	--	--	—	—	1.75	—	—	9.55	25.4	0.013	3.16	0.608
02/15/2002	--	--	—	—	3.64	—	—	21.59	66.1	0.036	3.66	2.82
05/30/2002	--	--	—	—	9.94	—	—	51.8	113	0.001	92.6	5.52
08/14/2002	--	--	—	—	6.15	—	—	37.27	99.6	0.048	11.2	2.13
11/14/2002	--	--	—	—	5.37	—	—	27.17	105	0.053	1.51	2.35
01/28/2003	--	--	—	—	1.04	—	—	7.55	24.8	U (0.025)	3.83	0.462
04/17/2003	--	--	—	—	4.55	—	—	26.9	117	0.217	4.7	1.15
07/17/2003	--	--	—	—	6	—	—	35.6	104	U (0.05)	8.34	1.81
10/02/2003	--	--	—	—	5.34	—	—	33.4	137	0.184	U (0.32)	1.84
01/20/2004	--	--	—	—	5.9	—	—	34.8	100	U (0.2)	10.6	2.46
04/13/2004	--	--	—	—	6.37	—	—	37.5	109	U (0.1)	6.97	1.49
07/20/2004	--	--	—	—	2.67	—	—	26.2	87.1	U (0.25)	8.09	0.612
09/02/2004	--	--	—	—	2.6	—	—	18.4	48.5	U (0.05)	4.94	0.38
10/13/2004	--	--	—	—	0.232	—	—	1.87	5.98	U (0.005)	1.9	0.615
01/28/2005	--	--	—	—	0.0843	—	—	0.582	2.08	U (0.0005)	0.818	0.121
04/11/2005	--	--	—	—	0.0374	—	—	0.306	0.963	U (0.0005)	0.78	0.069
08/12/2005	--	--	—	—	U (0.0005)	—	—	0.0031	U (0.05)	U (0.0005)	0.528	U (0.0005)
10/07/2005	--	--	—	—	0.0082	—	—	0.0713	0.24	U (0.0005)	U (0.397)	0.0103
02/14/2006	--	--	—	—	0.0041	—	—	0.0482	0.141	U (0.0005)	0.676	0.00831
04/18/2006	--	--	—	—	0.962	—	—	6.64	24.8	0.0147	8.37	0.0874

Analytical Data Results Table

Speedway #5325 TNS52
Speedway - Anne Duarte
7172 W Parks Hwy
Wasilla, Alaska 99623

Unit	Well Screen Interval ft	Ground Water Elevation ft	Sodium ppm	Naphthalene ppm	Ethylbenzene ppm	135-TMB ppm	124-TMB ppm	Xylene ppm	GRO ppm	Benzene ppm	DRO ppm	Toluene ppm
GW Human Health Cleanup				0.0017	0.015	0.12	0.015	0.19	2.2	0.0046	1.5	1.1
07/06/2006	--	--	—	—	0.00289	—	—	0.0539	0.153	U (0.0005)	U (0.394)	0.00359
10/26/2006	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	U (0.0005)	U (0.391)	U (0.0005)
02/02/2007	--	--	—	—	**0.257**	—	—	**1.95**	**7.79**	U (0.0005)	1.04	0.21
04/19/2007	--	--	—	—	**0.13**	—	—	**1.12**	**4.12**	U (0.0005)	0.894	0.165
08/07/2007	--	--	—	—	**0.0392**	—	—	**0.277**	0.891	U (0.0005)	0.582	0.0536
10/23/2007	--	--	—	—	U (0.0005)	—	—	0.00566	U (0.05)	U (0.0005)	U (0.424)	U (0.0005)
02/21/2008	--	--	—	—	—	—	—	—	—	—	—	—
02/22/2008	--	--	—	—	0.00712	—	—	0.068	0.229	U (0.0005)	0.479	0.0129
04/15/2008	--	--	—	—	0.0137	—	—	0.116	0.45	U (0.0005)	0.667	0.0247
08/27/2008	--	--	—	—	0.00397	—	—	0.0477	0.172	U (0.0005)	U (0.4)	0.00662
10/22/2008	--	--	—	—	**0.0226**	—	—	**0.255**	0.742	U (0.0005)	U (0.427)	0.032
02/05/2009	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	U (0.0005)	U (0.463)	U (0.0005)
02/19/2009	--	--	—	—	—	—	—	—	—	—	—	—
04/08/2009	--	--	—	—	U (0.0005)	—	—	0.0021	U (0.05)	U (0.0005)	U (0.424)	U (0.0005)
07/09/2009	--	--	—	—	U (0.001)	—	—	0.0188	0.106	U (0.0005)	U (0.397)	0.00137
11/04/2009	--	--	—	—	0.00624	—	—	0.0639	0.271	U (0.0005)	U (0.403)	0.00856
01/27/2010	--	--	—	—	U (0.001)	—	—	0.0168	0.0757	U (0.0005)	0.844	0.00123
05/27/2010	--	--	—	—	0.0117	—	—	0.0923	0.257	U (0.0005)	0.538	0.0114
08/19/2010	--	--	—	—	0.000537	—	—	0.0189	0.184	U (0.0005)	U (0.455)	U (0.0005)
10/26/2010	--	--	—	—	0.00443	—	—	0.0574	0.181	U (0.0005)	0.993	0.00441
02/17/2011	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	U (0.0005)	0.491	U (0.0005)
06/09/2011	--	--	—	—	0.000945	—	—	0.0425	0.143	U (0.0005)	0.635	0.000913
09/20/2011	--	--	—	—	U (0.0005)	—	—	0.00236	U (0.05)	U (0.0005)	U (0.431)	U (0.0005)
10/21/2011	--	--	—	—	**0.0565**	—	—	**0.345**	0.851	U (0.0005)	U (0.417)	0.0121
02/17/2012	--	--	—	—	0.00235	—	—	0.041	0.0787	U (0.0005)	0.712	0.00128
05/17/2012	--	--	—	—	**0.025**	—	—	**0.339**	0.941	U (0.0005)	0.596	0.00572
07/18/2012	--	--	—	—	—	—	—	—	—	—	—	—
09/05/2012	--	--	—	—	0.0139	—	—	0.145	0.404	U (0.0005)	U (0.424)	0.00468
10/30/2012	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	U (0.0005)	U (0.439)	U (0.0005)
01/30/2013	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	U (0.0005)	0.461	U (0.0005)
02/15/2013	--	--	—	—	—	—	—	—	—	—	—	—
05/10/2013	--	--	—	—	0.014	—	—	0.166	0.248	U (0.0005)	U (0.424)	0.00067
10/11/2013	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	U (0.0005)	U (0.431)	U (0.0005)
12/11/2013	--	--	—	—	U (0.001)	—	—	U (0.003)	U (0.05)	U (0.0005)	U (0.403)	U (0.001)
02/19/2014	--	--	—	—	U (0.0005)	—	—	0.00281	U (0.05)	U (0.0005)	U (0.403)	0.000667
05/01/2014	--	--	—	—	0.0038	—	—	0.028	0.11	U (0.0005)	U (0.41)	U (0.001)
10/30/2014	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	U (0.0005)	U (0.41)	U (0.0005)
02/11/2015	--	--	—	—	—	—	—	—	—	—	—	—
05/15/2015	--	--	—	—	U (0.003)	—	—	U (0.002)	U (0.05)	U (0.002)	0.34	U (0.002)
09/02/2015	--	--	—	—	U (0.001)	—	—	U (0.003)	0.15	U (0.0002)	U (0.40)	U (0.001)
10/14/2015	--	--	—	—	—	—	—	—	—	—	—	—

Analytical Data Results Table

Speedway #5325 TNS52
Speedway - Anne Duarte
7172 W Parks Hwy
Wasilla, Alaska 99623

Unit	Well Screen Interval ft	Ground Water Elevation ft	Sodium ppm	Naphthalene ppm	Ethylbenzene ppm	135-TMB ppm	124-TMB ppm	Xylene ppm	GRO ppm	Benzene ppm	DRO ppm	Toluene ppm
GW Human Health Cleanup				0.0017	0.015	0.12	0.015	0.19	2.2	0.0046	1.5	1.1
11/12/2015	--	--	—	—	U (0.0030)	—	—	U (0.0020)	U (0.050)	U (0.0020)	0.63	U (0.0020)
01/28/2016	--	--	—	—	U (0.0030)	—	—	U (0.0020)	U (0.050)	U (0.0020)	0.88	U (0.0020)
05/09/2016	--	--	—	—	U (0.001)	—	—	U (0.003)	U (0.1)	U (0.0002)	U (0.41)	U (0.001)
10/24/2016	--	--	—	—	U (0.001)	—	—	U (0.003)	U (0.1)	U (0.0002)	U (0.41)	U (0.001)
12/09/2016	--	--	—	—	U (0.003)	—	—	U (0.003)	U (0.05)	U (0.002)	U (0.11)	U (0.002)
02/08/2017	--	--	—	—	—	—	—	—	—	—	—	—
04/24/2017	--	--	—	—	—	—	—	—	—	—	—	—
04/25/2017	--	--	—	—	U (0.003)	—	—	U (0.002)	U (1.0)	U (0.0002)	0.99	U (0.002)
10/20/2017	--	--	—	—	U (0.003)	—	—	U (0.003)	U (1.0)	U (0.002)	1.4	U (0.002)
02/13/2018	--	--	—	—	U (0.003)	—	—	U (0.002)	U (1.0)	U (0.002)	0.88	U (0.002)
08/17/2018	--	--	—	—	U (0.015)	—	—	U (0.015)	U (0.25)	U (0.015)	1.6	U (0.01)
10/25/2018	--	--	—	—	U (0.003)	—	—	U (0.003)	U (0.25)	U (0.003)	U (0.12)	U (0.002)
02/26/2019	--	--	—	—	0.0066	—	—	U (0.003)	U (0.25)	U (0.003)	0.51	U (0.002)
04/23/2019	--	--	—	—	—	—	—	—	—	—	—	—
04/24/2019	--	--	—	—	U (0.003)	—	—	U (0.003)	U (0.25)	U (0.003)	U (0.25)	U (0.002)
07/16/2019	--	--	—	—	U (0.003)	—	—	U (0.003)	U (0.25)	U (0.003)	1.6	U (0.002)
10/17/2019	--	--	—	—	U (0.003)	—	—	U (0.003)	U (0.25)	U (0.003)	U (0.12)	U (0.002)
08/12/2020	--	93.3	23.4	—	U (0.001)	—	—	U (0.003)	U (0.100)	U (0.001)	0.242	U (0.001)
10/02/2020	--	97.11	—	—	0.000248	—	—	0.00262	0.0337	U (0.001)	U (0.824)	U (0.001)
03/03/2021	--	--	—	—	—	—	—	—	—	—	—	—
03/31/2021	--	--	—	—	—	—	—	—	—	—	—	—
05/18/2021	--	97.04	16.4	U (0.00500)	U (0.001)	U (0.00100)	U (0.00100)	U (0.002)	0.0152	U (0.001)	0.405	U (0.001)
07/21/2021	--	66.87	—	—	—	—	—	—	—	—	—	—
10/13/2021	--	--	56.7	U (0.000250)	0.000325	0.000151	0.000527	0.000554	0.182	0.000169	0.518	U (0.001)
03/18/2022	--	--	—	—	—	—	—	—	—	—	—	—
05/11/2022	--	69.63	23.9	U(0.000250)	U(0.00100)	U(0.00100)	U(0.00100)	U(0.00300)	U(0.100)	U(0.00100)	1.08	U(0.00100)
G-3												
04/24/1997	--	--	—	—	5.4	—	—	26	70	0.001	5.1	7.6
09/03/1997	--	--	—	—	1.4	—	—	7.7	21	0.08	7.5	2
12/29/1997	--	--	—	—	1.5	—	—	4.7	19	0.057	3.5	0.43
04/23/1998	--	--	—	—	3.1	—	—	10	40	0.001	6.9	0.49
08/03/1998	--	--	—	—	3.3	—	—	10	39	0.14	2	0.45
11/02/1998	--	--	—	—	3	—	—	10.27	30	0.001	2.43	0.58
02/12/1999	--	--	—	—	3.9	—	—	12	48	0.001	8	0.52
05/10/1999	--	--	—	—	—	—	—	—	—	—	—	—
05/11/1999	--	--	—	—	1.02	—	—	4.16	14	0.051	17.6	0.12
08/30/1999	--	--	—	—	1.6	—	—	3.9	19	0.001	4.6	0.12
08/31/1999	--	--	—	—	—	—	—	—	—	—	—	—
10/29/1999	--	--	—	—	0.017	—	—	0.073	0.32	0.0018	0.92	0.0016
02/08/2000	--	--	—	—	0.47	—	—	0.89	4	0.007	0	0.038

Analytical Data Results Table

Speedway #5325 TNS52
Speedway - Anne Duarte
7172 W Parks Hwy
Wasilla, Alaska 99623

Unit	Well Screen Interval ft	Ground Water Elevation ft	Sodium ppm	Naphthalene ppm	Ethylbenzene ppm	135-TMB ppm	124-TMB ppm	Xylene ppm	GRO ppm	Benzene ppm	DRO ppm	Toluene ppm
GW Human Health Cleanup				0.0017	0.015	0.12	0.015	0.19	2.2	0.0046	1.5	1.1
06/08/2000	--	--	—	—	0.003	—	—	0.01	0	0.001	1.1	U
08/30/2000	--	--	—	—	0.004	—	—	0.03	0.12	0.001	0.51	0.0018
11/30/2000	--	--	—	—	**0.32**	—	—	**0.68**	**2.9**	**0.006**	**5.5**	0.032
02/05/2001	--	--	—	—	**0.46**	—	—	**0.9**	**4.3**	**0.006**	**5.9**	0.14
05/10/2001	--	--	—	—	0.003	—	—	0.009	0	0.001	**12.8**	U
08/16/2001	--	--	—	—	**0.39**	—	—	**0.856**	**2.76**	**0.005**	**8.75**	0.0613
11/09/2001	--	--	—	—	**0.019**	—	—	0.103	0.57	**0.034**	**1.57**	0.0828
02/15/2002	--	--	—	—	**0.049**	—	—	0.156	0.87	**0.008**	**70.7**	0.119
05/30/2002	--	--	—	—	**0.2**	—	—	**0.605**	**2.25**	**0.021**	**34.2**	0.0809
08/14/2002	--	--	—	—	**0.488**	—	—	**1.49**	**5.44**	**0.029**	**5.68**	0.147
11/14/2002	--	--	—	—	**0.804**	—	—	**1.9704**	**8.97**	**0.0658**	**4.08**	0.186
01/28/2003	--	--	—	—	**0.319**	—	—	**0.644**	**2.93**	**0.0571**	**7.89**	0.0914
04/17/2003	--	--	—	—	**0.0282**	—	—	0.082	0.585	0.00288	**4.58**	0.0274
07/17/2003	--	--	—	—	0.0107	—	—	0.0327	0.233	U (0.0005)	**7.48**	0.0165
10/02/2003	--	--	—	—	0.000626	—	—	0.00232	U (0.08)	U (0.0005)	1.14	0.00224
01/20/2004	--	--	—	—	0.00399	—	—	0.0127	0.144	U (0.0005)	**1.83**	0.0439
04/13/2004	--	--	—	—	**0.0472**	—	—	0.148	0.855	U (0.005)	**2.89**	0.0261
07/20/2004	--	--	—	—	0.0028	—	—	0.00853	0.164	U (0.0005)	**19.4**	0.0305
09/02/2004	--	--	—	—	—	—	—	—	—	—	—	—
10/13/2004	--	--	—	—	U (0.0005)	—	—	U (0.001)	U (0.08)	U (0.0005)	**2.11**	0.000537
01/28/2005	--	--	—	—	0.00078	—	—	0.0038	0.0973	0.000857	**3.65**	0.0293
04/11/2005	--	--	—	—	0.00232	—	—	0.0253	0.127	0.00311	**2.58**	0.0113
08/12/2005	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	U (0.0005)	1.14	U (0.0005)
10/07/2005	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	U (0.0005)	**2.85**	0.00234
02/14/2006	--	--	—	—	0.00129	—	—	0.0072	0.215	0.000874	**3**	0.076
04/18/2006	--	--	—	—	0.000884	—	—	0.00356	0.181	U (0.0005)	**7.64**	0.0614
07/06/2006	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	U (0.0005)	**3.17**	0.00252
10/26/2006	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	U (0.0005)	1.06	U (0.0005)
02/02/2007	--	--	—	—	0.0017	—	—	0.0154	0.236	**0.00528**	**2.27**	0.0513
04/19/2007	--	--	—	—	—	—	—	—	—	—	—	—
08/07/2007	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	U (0.0005)	0.841	U (0.0005)
10/23/2007	--	--	—	—	**0.02**	—	—	0.0319	0.322	**0.00502**	1.41	0.0358
02/21/2008	--	--	—	—	**0.067**	—	—	0.144	0.771	**0.00517**	0.93	0.0307
02/22/2008	--	--	—	—	—	—	—	—	—	—	—	—
04/15/2008	--	--	—	—	**0.135**	—	—	**0.211**	1.44	**0.00562**	0.604	0.04
08/27/2008	--	--	—	—	**0.842**	—	—	**2.88**	**7.26**	**0.0138**	0.978	0.436
10/22/2008	--	--	—	—	**0.96**	—	—	**3.57**	**9.55**	**0.0124**	0.83	0.514
02/05/2009	--	--	—	—	**1.17**	—	—	**4.73**	**15.7**	U (0.01)	0.909	0.234
02/19/2009	--	--	—	—	**0.0834**	—	—	**0.241**	1.04	**0.0071**	**9.47**	0.0493
04/08/2009	--	--	—	—	**0.378**	—	—	**1.43**	**4.2**	U (0.005)	**1.51**	0.0702
07/09/2009	--	--	—	—	**1.12**	—	—	**4.32**	**3.01**	U (0.0005)	**1.81**	0.0415

Analytical Data Results Table

Speedway #5325 TNS52
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Wasilla, Alaska 99623

Unit	Well Screen Interval ft	Ground Water Elevation ft	Sodium ppm	Naphthalene ppm	Ethylbenzene ppm	135-TMB ppm	124-TMB ppm	Xylene ppm	GRO ppm	Benzene ppm	DRO ppm	Toluene ppm
GW Human Health Cleanup				0.0017	0.015	0.12	0.015	0.19	2.2	0.0046	1.5	1.1
11/04/2009	--	--	—	—	**0.579**	—	—	**2.55**	**12.7**	U (0.0005)	U (0.400)	0.101
01/27/2010	--	--	—	—	**0.337**	—	—	**2.01**	**6.47**	U (0.0005)	1.12	0.0157
05/27/2010	--	--	—	—	**0.0379**	—	—	0.137	0.936	U (0.0005)	1.01	0.000748
08/19/2010	--	--	—	—	**0.0336**	—	—	0.12	0.933	U (0.0005)	U (0.403)	0.000756
10/26/2010	--	--	—	—	**0.153**	—	—	**0.643**	**4.62**	U (0.0025)	U (0.397)	U (0.0025)
02/17/2011	--	--	—	—	**0.0647**	—	—	**0.222**	2.11	U (0.0005)	**4.1**	0.00112
06/09/2011	--	--	—	—	**0.0666**	—	—	**0.232**	**2.26**	0.000536	U (0.446)	0.00188
09/20/2011	--	--	—	—	**0.0235**	—	—	0.0794	1.69	U (0.0005)	U (0.400)	0.000718
10/21/2011	--	--	—	—	**0.0325**	—	—	0.105	**2.51**	0.00107	U (0.417)	0.00126
02/17/2012	--	--	—	—	**0.0536**	—	—	0.131	**2.62**	0.000809	1.15	0.000792
05/17/2012	--	--	—	—	**0.0899**	—	—	**0.303**	**5.91**	0.00117	0.56	0.00164
07/18/2012	--	--	—	—	—	—	—	—	—	—	—	—
09/05/2012	--	--	—	—	**0.166**	—	—	0.0486	0.71	U (0.0005)	U (0.424)	U (0.0005)
10/30/2012	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	U (0.0005)	U (0.431)	U (0.0005)
01/30/2013	--	--	—	—	**0.0182**	—	—	0.0555	0.818	U (0.0005)	0.67	0.00364
02/15/2013	--	--	—	—	—	—	—	—	—	—	—	—
05/10/2013	--	--	—	—	**0.0554**	—	—	0.167	1.35	0.00153	U (0.439)	0.00151
10/11/2013	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	U (0.0005)	U (0.391)	U (0.0005)
12/11/2013	--	--	—	—	U (0.001)	—	—	U (0.003)	U (0.05)	U (0.0005)	U (0.417)	U (0.001)
02/19/2014	--	--	—	—	0.00066	—	—	0.00177	U (0.05)	U (0.0005)	0.928	U (0.0005)
05/01/2014	--	--	—	—	0.0066	—	—	0.017	0.3	U (0.0005)	**4.8**	0.001
10/30/2014	--	--	—	—	0.0097	—	—	0.023	0.46	U (0.0005)	1	U (0.0005)
02/11/2015	--	--	—	—	**0.087**	—	—	**0.24**	**4.8**	0.002	**12**	0.0011
05/15/2015	--	--	—	—	0.0078	—	—	0.015	**2.6**	U (0.002)	1.3	U (0.002)
09/02/2015	--	--	—	—	0.0079	—	—	0.0064	1.1	U (0.0002)	U (0.40)	U (0.001)
10/14/2015	--	--	—	—	—	—	—	—	—	—	—	—
11/12/2015	--	--	—	—	**0.036**	—	—	0.069	**3.2**	U (0.0020)	0.26	U (0.0020)
01/28/2016	--	--	—	—	**0.027**	—	—	0.052	**3.2**	U (0.0020)	0.76	U (0.0020)
05/09/2016	--	--	—	—	0.0086	—	—	0.012	1.6	0.0002	0.58	U (0.001)
10/24/2016	--	--	—	—	0.0017	—	—	0.0036	**4.4**	0.0002	0.37	U (0.001)
12/09/2016	--	--	—	—	0.002	—	—	0.0038	**4.2**	U (0.002)	0.48	U (0.002)
02/08/2017	--	--	—	—	—	—	—	—	—	—	—	—
04/24/2017	--	--	—	—	—	—	—	—	—	—	—	—
04/25/2017	--	--	—	—	0.0089	—	—	0.016	**2.3**	U (0.0002)	**4.7**	U (0.002)
10/20/2017	--	--	—	—	U (0.003)	—	—	U(0.003)	U(1.0)	U (0.002)	**3**	U (0.002)
02/13/2018	--	--	—	—	U (0.003)	—	—	0.0047	U (1.0)	U (0.002)	**6.7**	0.0054
08/17/2018	--	--	—	—	0.0047	—	—	0.00938	0.99	U (0.003)	**3.2**	0.00091
10/25/2018	--	--	—	—	U (0.003)	—	—	U (0.003)	0.37	U (0.003)	**2.3**	U (0.002)
02/26/2019	--	--	—	—	0.006	—	—	0.013	1.7	U (0.003)	**8.5**	U (0.002)
04/23/2019	--	--	—	—	—	—	—	—	—	—	—	—
04/24/2019	--	--	—	—	0.0034	—	—	0.0068	1.6	U (0.003)	**7.7**	U (0.002)

Analytical Data Results Table

Speedway #5325 TNS52
Speedway - Anne Duarte
7172 W Parks Hwy
Wasilla, Alaska 99623

Unit	Well Screen Interval ft	Ground Water Elevation ft	Sodium ppm	Naphthalene ppm	Ethylbenzene ppm	135-TMB ppm	124-TMB ppm	Xylene ppm	GRO ppm	Benzene ppm	DRO ppm	Toluene ppm
GW Human Health Cleanup				0.0017	0.015	0.12	0.015	0.19	2.2	0.0046	1.5	1.1
07/16/2019	--	--	—	—	0.0033	—	—	0.006	1.3	U (0.003)	**4.6**	U (0.002)
10/17/2019	--	--	—	—	U (0.003)	—	—	U (0.003)	0.58	U (0.003)	**3.6**	U (0.002)
08/12/2020	--	67.25	8.35	—	0.000754	—	—	0.00159	0.173	U (0.001)	0.339	U (0.001)
10/02/2020	--	66.93	—	—	0.000143	—	—	U (0.002)	0.12	U (0.001)	1.45	U (0.001)
03/03/2021	--	--	—	—	0.00091	—	—	0.00086	1.01	U (0.001)	1.47	U (0.001)
03/31/2021	--	62.99	123	—	—	—	—	—	—	—	—	—
05/18/2021	--	64.72	32.2	U (0.00500)	U (0.001)	0.0457	**0.0452**	U (0.002)	1.36	U (0.001)	**8.48**	U (0.001)
07/21/2021	--	64.55	9.61	**0.00206**	0.00163	0.0669	**0.0599**	0.0015	1.68	U (0.001)	**2.32**	0.000279
10/13/2021	--	67.39	10.7	U (0.000250)	U (0.001)	0.000365	0.000928	U (0.002)	0.176	U (0.001)	0.865	U (0.001)
03/18/2022	--	--	—	—	—	—	—	—	—	—	—	—
05/11/2022	--	67.75	22	U(0.000250)	U(0.00100)	U(0.00100)	U(0.00100)	U(0.00300)	U(0.100)	U(0.00100)	U(0.800)	U(0.00100)
G-4												
04/24/1997	--	--	—	—	U	—	—	0.0048	U	U	—	0.001
09/03/1997	--	--	—	—	U	—	—	U	U	U	0.32	U
12/29/1997	--	--	—	—	U	—	—	U	U	U	U	U
04/23/1998	--	--	—	—	U	—	—	U	U	U	U	U
08/03/1998	--	--	—	—	U	—	—	U	U	U	U	—
11/02/1998	--	--	—	—	U	—	—	0.0011	U	U	U	0.0012
02/12/1999	--	--	—	—	U	—	—	U	U	U	0.36	U
05/10/1999	--	--	—	—	0.0065	—	—	0.0279	0.091	U	**1.98**	U
05/11/1999	--	--	—	—	—	—	—	—	—	—	—	—
08/30/1999	--	--	—	—	U	—	—	U	U	U	U	U
08/31/1999	--	--	—	—	—	—	—	—	—	—	—	—
10/29/1999	--	--	—	—	U	—	—	U	U	U	U	U
02/08/2000	--	--	—	—	—	—	—	—	—	—	—	—
06/08/2000	--	--	—	—	U	—	—	U	U	U	0.3	U
08/30/2000	--	--	—	—	—	—	—	—	—	—	—	—
11/30/2000	--	--	—	—	U	—	—	U	U	U	U	U
02/05/2001	--	--	—	—	—	—	—	—	—	—	—	—
05/10/2001	--	--	—	—	U	—	—	0.002	U	U	U	U
08/16/2001	--	--	—	—	—	—	—	—	—	—	—	—
11/09/2001	--	--	—	—	U	—	—	U	U	U	U	U
02/15/2002	--	--	—	—	—	—	—	—	—	—	—	—
05/30/2002	--	--	—	—	U	—	—	U	U	U (0.0005)	U	0.003
08/14/2002	--	--	—	—	—	—	—	—	—	—	—	—
11/14/2002	--	--	—	—	—	—	—	—	—	—	—	—
01/28/2003	--	--	—	—	—	—	—	—	—	—	—	—
04/17/2003	--	--	—	—	U (0.0005)	—	—	U (0.001)	U (0.08)	U (0.0005)	U (0.25)	U (0.0005)
07/17/2003	--	--	—	—	—	—	—	—	—	—	—	—
10/02/2003	--	--	—	—	—	—	—	—	—	—	—	—

Analytical Data Results Table

Speedway #5325 TNS52
Speedway - Anne Duarte
7172 W Parks Hwy
Wasilla, Alaska 99623

Unit	Well Screen Interval ft	Ground Water Elevation ft	Sodium ppm	Naphthalene ppm	Ethylbenzene ppm	135-TMB ppm	124-TMB ppm	Xylene ppm	GRO ppm	Benzene ppm	DRO ppm	Toluene ppm
GW Human Health Cleanup				0.0017	0.015	0.12	0.015	0.19	2.2	0.0046	1.5	1.1
01/20/2004	--	--	—	—	—	—	—	—	—	—	—	—
04/13/2004	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	U (0.0005)	U (0.5)	U (0.0005)
07/20/2004	--	--	—	—	—	—	—	—	—	—	—	—
09/02/2004	--	--	—	—	—	—	—	—	—	—	—	—
10/13/2004	--	--	—	—	—	—	—	—	—	—	—	—
01/28/2005	--	--	—	—	—	—	—	—	—	—	—	—
04/11/2005	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	U (0.0005)	**1.67**	U (0.0005)
08/12/2005	--	--	—	—	—	—	—	—	—	—	—	—
10/07/2005	--	--	—	—	—	—	—	—	—	—	—	—
02/14/2006	--	--	—	—	—	—	—	—	—	—	—	—
04/18/2006	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	U (0.0005)	U (0.407)	U (0.0005)
07/06/2006	--	--	—	—	—	—	—	—	—	—	—	—
10/26/2006	--	--	—	—	—	—	—	—	—	—	—	—
02/02/2007	--	--	—	—	—	—	—	—	—	—	—	—
04/19/2007	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	U (0.0005)	U (0.431)	U (0.0005)
08/07/2007	--	--	—	—	—	—	—	—	—	—	—	—
10/23/2007	--	--	—	—	—	—	—	—	—	—	—	—
02/21/2008	--	--	—	—	—	—	—	—	—	—	—	—
02/22/2008	--	--	—	—	—	—	—	—	—	—	—	—
04/15/2008	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	U (0.0005)	0.436	U (0.0005)
08/27/2008	--	--	—	—	—	—	—	—	—	—	—	—
10/22/2008	--	--	—	—	—	—	—	—	—	—	—	—
02/05/2009	--	--	—	—	—	—	—	—	—	—	—	—
02/19/2009	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	—	U (0.463)	U (0.0005)
04/08/2009	--	--	—	—	—	—	—	—	—	U (0.0005)	—	—
07/09/2009	--	--	—	—	—	—	—	—	—	—	—	—
11/04/2009	--	--	—	—	—	—	—	—	—	—	—	—
01/27/2010	--	--	—	—	—	—	—	—	—	—	—	—
05/27/2010	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	U (0.0005)	U (0.431)	U (0.0005)
08/19/2010	--	--	—	—	—	—	—	—	—	—	—	—
10/26/2010	--	--	—	—	—	—	—	—	—	—	—	—
02/17/2011	--	--	—	—	—	—	—	—	—	—	—	—
06/09/2011	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	U (0.0005)	U (0.424)	U (0.0005)
09/20/2011	--	--	—	—	—	—	—	—	—	—	—	—
10/21/2011	--	--	—	—	—	—	—	—	—	—	—	—
02/17/2012	--	--	—	—	—	—	—	—	—	—	—	—
05/17/2012	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	—	0.819	U (0.0005)
07/18/2012	--	--	—	—	—	—	—	—	—	—	—	—
09/05/2012	--	--	—	—	—	—	—	—	—	—	—	—
10/30/2012	--	--	—	—	—	—	—	—	—	—	—	—
01/30/2013	--	--	—	—	—	—	—	—	—	—	—	—

Analytical Data Results Table

Speedway #5325 TNS52
Speedway - Anne Duarte
7172 W Parks Hwy
Wasilla, Alaska 99623

Unit	Well Screen Interval ft	Ground Water Elevation ft	Sodium ppm	Naphthalene ppm	Ethylbenzene ppm	135-TMB ppm	124-TMB ppm	Xylene ppm	GRO ppm	Benzene ppm	DRO ppm	Toluene ppm
GW Human Health Cleanup				0.0017	0.015	0.12	0.015	0.19	2.2	0.0046	1.5	1.1
02/15/2013	--	--	—	—	—	—	—	—	—	—	—	—
05/10/2013	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	U (0.0005)	U (0.463)	U (0.0005)
10/11/2013	--	--	—	—	—	—	—	—	—	—	—	—
12/11/2013	--	--	—	—	—	—	—	—	—	—	—	—
02/19/2014	--	--	—	—	—	—	—	—	—	—	—	—
05/01/2014	--	--	—	—	U (0.001)	—	—	U (0.001)	U (0.05)	U (0.0005)	U (0.42)	U (0.001)
10/30/2014	--	--	—	—	—	—	—	—	—	—	—	—
02/11/2015	--	--	—	—	—	—	—	—	—	—	—	—
05/15/2015	--	--	—	—	U (0.003)	—	—	U (0.002)	U (0.05)	U (0.002)	U (0.23)	U (0.002)
09/02/2015	--	--	—	—	—	—	—	—	—	—	—	—
10/14/2015	--	--	—	—	—	—	—	—	—	—	—	—
11/12/2015	--	--	—	—	—	—	—	—	—	—	—	—
01/28/2016	--	--	—	—	—	—	—	—	—	—	—	—
05/09/2016	--	--	—	—	U (0.001)	—	—	U (0.003)	U (0.1)	U (0.0002)	U (0.42)	U (0.001)
10/24/2016	--	--	—	—	—	—	—	—	—	—	—	—
12/09/2016	--	--	—	—	—	—	—	—	—	—	—	—
02/08/2017	--	--	—	—	—	—	—	—	—	—	—	—
04/24/2017	--	--	—	—	—	—	—	—	—	—	—	—
04/25/2017	--	--	—	—	U (0.003)	—	—	U (0.002)	U (1.0)	U (0.0002)	U (0.11)	U (0.002)
10/20/2017	--	--	—	—	—	—	—	—	—	—	—	—
02/13/2018	--	--	—	—	—	—	—	—	—	—	—	—
08/17/2018	--	--	—	—	U (0.003)	—	—	U (0.003)	U (0.25)	U (0.003)	U (0.12)	U (0.002)
10/25/2018	--	--	—	—	—	—	—	—	—	—	—	—
02/26/2019	--	--	—	—	—	—	—	—	—	—	—	—
04/23/2019	--	--	—	—	—	—	—	—	—	—	—	—
04/24/2019	--	--	—	—	U (0.003)	—	—	U (0.003)	U (0.25)	U (0.003)	U (0.28)	U (0.002)
07/16/2019	--	--	—	—	—	—	—	—	—	—	—	—
10/17/2019	--	--	—	—	—	—	—	—	—	—	—	—
08/12/2020	--	--	—	—	—	—	—	—	—	—	—	—
10/02/2020	--	66.26	—	—	U (0.001)	—	—	U (0.002)	U (0.100)	U (0.001)	0.281	U (0.001)
03/03/2021	--	--	—	—	—	—	—	—	—	—	—	—
03/31/2021	--	--	—	—	—	—	—	—	—	—	—	—
05/18/2021	--	62.49	—	—	—	—	—	—	—	—	—	—
07/21/2021	--	62.72	—	—	—	—	—	—	—	—	—	—
10/13/2021	--	66.83	21.9	U (0.000250)	U (0.001)	U (0.00100)	U (0.00100)	U (0.002)	0.058	U (0.001)	0.313	U (0.001)
03/18/2022	--	--	—	—	—	—	—	—	—	—	—	—
05/11/2022	--	67.39	—	—	—	—	—	—	—	—	—	—
G-5												
04/24/1997	--	--	—	—	**0.91**	—	—	**5.2**	**17**	**0.032**	—	0.56
09/03/1997	--	--	—	—	**1.1**	—	—	**5.4**	**25**	0.001	**4.8**	U

Analytical Data Results Table

Speedway #5325 TNS52
Speedway - Anne Duarte
7172 W Parks Hwy
Wasilla, Alaska 99623

Unit	Well Screen Interval ft	Ground Water Elevation ft	Sodium ppm	Naphthalene ppm	Ethylbenzene ppm	135-TMB ppm	124-TMB ppm	Xylene ppm	GRO ppm	Benzene ppm	DRO ppm	Toluene ppm
GW Human Health Cleanup				0.0017	0.015	0.12	0.015	0.19	2.2	0.0046	1.5	1.1
12/29/1997	--	--	—	—	**1**	—	—	**4.7**	**19**	**0.065**	**4**	0.15
04/23/1998	--	--	—	—	**0.38**	—	—	**1.7**	**11**	**0.048**	**2.7**	0.068
08/03/1998	--	--	—	—	U	—	—	0.0019	0	0.001	0.27	U
11/02/1998	--	--	—	—	**0.12**	—	—	**0.27**	**3.7**	**0.026**	**1.82**	0.01
02/12/1999	--	--	—	—	—	—	—	—	—	—	—	—
05/10/1999	--	--	—	—	—	—	—	—	—	—	—	—
05/11/1999	--	--	—	—	—	—	—	—	—	—	—	—
08/30/1999	--	--	—	—	—	—	—	—	—	—	—	—
08/31/1999	--	--	—	—	**0.34**	—	—	**0.9**	**4.6**	**0.011**	0.95	0.029
10/29/1999	--	--	—	—	**0.066**	—	—	0.11	**2.7**	**0.024**	0.4	0.006
02/08/2000	--	--	—	—	**0.053**	—	—	0.1	**4.2**	**0.008**	—	0.006
06/08/2000	--	--	—	—	**0.023**	—	—	0.04	0.61	0.001	0	U
08/30/2000	--	--	—	—	0.004	—	—	0.008	0.22	0.001	0.001	U
11/30/2000	--	--	—	—	**0.079**	—	—	0.14	**3.9**	**0.012**	0.49	0.006
02/05/2001	--	--	—	—	**0.016**	—	—	0.026	2.1	**0.015**	0.32	0.008
05/10/2001	--	--	—	—	**0.061**	—	—	0.1	1.62	**0.007**	0.001	U
08/16/2001	--	--	—	—	**0.042**	—	—	0.065	**2.74**	**0.031**	U	0.011
11/09/2001	--	--	—	—	U	—	—	0.002	0.258	0.004	U	U
02/15/2002	--	--	—	—	—	—	—	—	—	—	—	—
05/30/2002	--	--	—	—	—	—	—	—	—	—	—	—
08/14/2002	--	--	—	—	**0.145**	—	—	0.182	**2.53**	**0.013**	0.552	0.003
11/14/2002	--	--	—	—	U (0.002)	—	—	U (0.002)	0.137	0.00257	U (0.5)	U (0.002)
01/28/2003	--	--	—	—	**0.0733**	—	—	0.0667	**2.4**	**0.064**	1.2	U (0.02)
04/17/2003	--	--	—	—	**0.0834**	—	—	0.186	**3.14**	**0.0181**	0.418	0.002
07/17/2003	--	--	—	—	**0.0666**	—	—	0.184	**2.72**	U (0.005)	U (0.5)	U (0.005)
10/02/2003	--	--	—	—	**0.127**	—	—	**0.217**	**4.33**	**0.0125**	U (0.32)	0.00577
01/20/2004	--	--	—	—	—	—	—	—	—	—	—	—
04/13/2004	--	--	—	—	U (0.0005)	—	—	U (0.0015)	0.0539	U (0.0005)	U (0.5)	U (0.0005)
07/20/2004	--	--	—	—	**0.0561**	—	—	0.0239	1.7	0.00351	0.484	U (0.0005)
09/02/2004	--	--	—	—	—	—	—	—	—	—	—	—
10/13/2004	--	--	—	—	**0.0893**	—	—	0.113	**2.71**	**0.009**	0.443	0.00155
01/28/2005	--	--	—	—	**0.0183**	—	—	0.02	1.35	0.0011	0.45	0.00198
04/11/2005	--	--	—	—	0.0138	—	—	0.0117	1.06	U (0.0005)	U (0.391)	0.000845
08/12/2005	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	U (0.0005)	U (0.41)	U (0.0005)
10/07/2005	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	U (0.0005)	U (0.407)	U (0.0005)
02/14/2006	--	--	—	—	**0.0163**	—	—	0.0066	1.34	0.00186	0.475	0.00136
04/18/2006	--	--	—	—	**0.153**	—	—	**0.24**	2.04	0.0018	0.693	0.000663
07/06/2006	--	--	—	—	**0.0932**	—	—	0.103	1.14	0.00141	U (0.41)	0.00158
10/26/2006	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	U (0.0005)	U (0.41)	U (0.0005)
02/02/2007	--	--	—	—	—	—	—	—	—	—	—	—
04/19/2007	--	--	—	—	**0.0163**	—	—	0.0227	0.774	U (0.0005)	U (0.435)	U (0.0005)

Analytical Data Results Table

Speedway #5325 TNS52
Speedway - Anne Duarte
7172 W Parks Hwy
Wasilla, Alaska 99623

Unit	Well Screen Interval ft	Ground Water Elevation ft	Sodium ppm	Naphthalene ppm	Ethylbenzene ppm	135-TMB ppm	124-TMB ppm	Xylene ppm	GRO ppm	Benzene ppm	DRO ppm	Toluene ppm
GW Human Health Cleanup				0.0017	0.015	0.12	0.015	0.19	2.2	0.0046	1.5	1.1
08/07/2007	--	--	—	—	0.00611	—	—	0.007	0.529	0.00147	U (0.407)	U (0.0005)
10/23/2007	--	--	—	—	0.00534	—	—	0.00603	0.4	U (0.0005)	U (0.446)	U (0.0005)
02/21/2008	--	--	—	—	**0.0592**	—	—	0.0523	1.97	0.00231	U (0.417)	0.000739
02/22/2008	--	--	—	—	—	—	—	—	—	—	—	—
04/15/2008	--	--	—	—	—	—	—	—	—	—	—	—
08/27/2008	--	--	—	—	**0.0203**	—	—	0.0243	0.506	U (0.0005)	U (0.4)	U (0.0005)
10/22/2008	--	--	—	—	0.00629	—	—	0.00512	0.35	U (0.0005)	U (0.420)	U (0.0005)
02/05/2009	--	--	—	—	**0.0898**	—	—	0.101	2.02	0.00093	0.59	0.00211
02/19/2009	--	--	—	—	**0.129**	—	—	**0.262**	1.96	0.00249	0.689	0.00283
04/08/2009	--	--	—	—	**0.26**	—	—	**0.634**	**3.84**	**0.0058**	U (0.435)	0.169
07/09/2009	--	--	—	—	**0.184**	—	—	**0.284**	**2.51**	0.00267	U (0.410)	0.00452
11/04/2009	--	--	—	—	**0.292**	—	—	**0.645**	**4.13**	0.00365	U (0.397)	0.00739
01/27/2010	--	--	—	—	**0.499**	—	—	**1.51**	**7.17**	0.00385	U (0.427)	0.0313
05/27/2010	--	--	—	—	**0.406**	—	—	**1.22**	**5.19**	0.0022	0.668	0.0218
08/19/2010	--	--	—	—	**0.233**	—	—	**0.977**	**3.27**	0.00105	0.415	0.00307
10/26/2010	--	--	—	—	**0.0449**	—	—	0.0723	0.741	U (0.0022)	U (0.403)	U (0.0005)
02/17/2011	--	--	—	—	**0.108**	—	—	**0.472**	**3.11**	0.00291	U (0.410)	0.0034
06/09/2011	--	--	—	—	**0.173**	—	—	**0.856**	**5.08**	0.00199	0.436	0.00405
09/20/2011	--	--	—	—	**0.0362**	—	—	0.138	0.975	0.00101	U (0.403)	0.00133
10/21/2011	--	--	—	—	0.0121	—	—	0.0303	0.365	U (0.0005)	U (0.439)	U (0.0005)
02/17/2012	--	--	—	—	**0.0807**	—	—	**0.476**	**2.8**	0.00403	0.726	0.00497
05/17/2012	--	--	—	—	0.0125	—	—	0.0378	0.683	0.000704	0.541	0.000734
07/18/2012	--	--	—	—	—	—	—	—	—	—	—	—
09/05/2012	--	--	—	—	—	—	—	—	—	—	—	—
10/30/2012	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	U (0.0005)	U (0.410)	U (0.0005)
01/30/2013	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	U (0.0005)	U (0.403)	U (0.0005)
02/15/2013	--	--	—	—	—	—	—	—	—	—	—	—
05/10/2013	--	--	—	—	U (0.0005)	—	—	0.00194	0.221	0.00052	U (0.400)	0.000627
10/11/2013	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	U (0.0005)	U (0.439)	U (0.0005)
12/11/2013	--	--	—	—	U (0.001)	—	—	U (0.003)	U (0.05)	U (0.0005)	U (0.403)	U (0.001)
02/19/2014	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	U (0.0005)	U (0.400)	U (0.0005)
05/01/2014	--	--	—	—	U (0.001)	—	—	U (0.001)	U (0.05)	U (0.005)	U (0.41)	U (0.001)
10/30/2014	--	--	—	—	U (0.0005)	—	—	U (0.0015)	0.19	0.00086	U (0.42)	U (0.0005)
02/11/2015	--	--	—	—	0.0031	—	—	0.0031	0.28	U (0.0005)	U (0.42)	U (0.0005)
05/15/2015	--	--	—	—	—	—	—	—	—	—	—	—
09/02/2015	--	--	—	—	—	—	—	—	—	—	—	—
10/14/2015	--	--	—	—	—	—	—	—	—	—	—	—
11/12/2015	--	--	—	—	U (0.0030)	—	—	U (0.0020)	0.32	U (0.0020)	U (0.21)	U (0.0020)
01/28/2016	--	--	—	—	U (0.0030)	—	—	U (0.0020)	U (0.050)	U (0.0020)	U (0.11)	U (0.0020)
05/09/2016	--	--	—	—	—	—	—	—	—	—	—	—
10/24/2016	--	--	—	—	U (0.001)	—	—	U (0.003)	U (0.1)	U (0.0002)	U (0.41)	U (0.001)

Analytical Data Results Table

Speedway #5325 TNS52
Speedway - Anne Duarte
7172 W Parks Hwy
Wasilla, Alaska 99623

Unit	Well Screen Interval ft	Ground Water Elevation ft	Sodium ppm	Naphthalene ppm	Ethylbenzene ppm	135-TMB ppm	124-TMB ppm	Xylene ppm	GRO ppm	Benzene ppm	DRO ppm	Toluene ppm
GW Human Health Cleanup				0.0017	0.015	0.12	0.015	0.19	2.2	0.0046	1.5	1.1
12/09/2016	--	--	—	—	0.0063	—	—	0.0034	0.17	U (0.002)	U (0.12)	U (0.001)
02/08/2017	--	--	—	—	—	—	—	—	—	—	—	—
04/24/2017	--	--	—	—	**0.085**	—	—	**0.44**	1.4	U (0.0002)	0.22	U (0.001)
04/25/2017	--	--	—	—	—	—	—	—	—	—	—	—
10/20/2017	--	--	—	—	U (0.003)	—	—	U (0.003)	U(1.0)	U (0.002)	U(0.110)	U (0.002)
02/13/2018	--	--	—	—	U (0.003)	—	—	U (0.002)	U (1.0)	U (0.002)	U (0.13)	U (0.002)
08/17/2018	--	--	—	—	U (0.003)	—	—	U (0.003)	U (0.25)	U (0.003)	U (0.12)	U (0.002)
10/25/2018	--	--	—	—	U (0.003)	—	—	U (0.003)	U (0.25)	U (0.003)	U (0.12)	U (0.002)
02/26/2019	--	--	—	—	U (0.003)	—	—	U (0.003)	U (0.25)	U (0.003)	0.12	U (0.002)
04/23/2019	--	--	—	—	—	—	—	—	—	—	—	—
04/24/2019	--	--	—	—	0.0086	—	—	0.0068	U (0.25)	U (0.003)	U (0.27)	U (0.002)
07/16/2019	--	--	—	—	U (0.003)	—	—	U (0.003)	U (0.25)	U (0.003)	U (0.12)	U (0.002)
10/17/2019	--	--	—	—	U (0.003)	—	—	U (0.003)	U (0.25)	U (0.003)	U (0.12)	U (0.002)
08/12/2020	--	66.92	10.6	—	U (0.001)	—	—	U (0.003)	U (0.100)	U (0.001)	U (0.864)	U (0.001)
10/02/2020	--	66.29	—	—	U (0.001)	—	—	U (0.002)	0.0189	0.000236	0.406	U (0.001)
03/03/2021	--	--	—	—	—	—	—	—	—	—	—	—
03/31/2021	--	--	—	—	—	—	—	—	—	—	—	—
05/18/2021	--	62.56	13.9	U (0.00500)	0.0017	0.000191	U (0.00100)	U (0.002)	0.0693	U (0.001)	U (0.800)	U (0.001)
07/21/2021	--	62.64	14.2	U (0.00500)	U (0.001)	0.000507	0.000612	U (0.003)	0.0478	U (0.001)	0.34	U (0.001)
10/13/2021	--	66.89	20.3	U (0.000250)	U (0.001)	U (0.00100)	U (0.00100)	U (0.002)	0.0776	0.000267	0.402	U (0.001)
03/18/2022	--	62.05	17.3	U (0.000250)	0.000484	U (0.00100)	U (0.00100)	U(0.00300)	0.0858	0.000264	U(0.800)	U(0.00100)
05/11/2022	--	67.47	20.2	U(0.000250)	U(0.00100)	U(0.00100)	U(0.00100)	U(0.00300)	0.0345	U(0.00100)	U(0.800)	U(0.00100)
G-7												
04/24/1997	--	--	—	—	—	—	—	—	—	—	—	—
09/03/1997	--	--	—	—	—	—	—	—	—	—	—	—
12/29/1997	--	--	—	—	—	—	—	—	—	—	—	—
04/23/1998	--	--	—	—	—	—	—	—	—	—	—	—
08/03/1998	--	--	—	—	U	—	—	U	U	U	U	U
11/02/1998	--	--	—	—	0.012	—	—	0.058	0.16	U	U	0.005
02/12/1999	--	--	—	—	U	—	—	U	U	U	0.79	U
05/10/1999	--	--	—	—	U	—	—	U	U	U	0.45	U
05/11/1999	--	--	—	—	—	—	—	—	—	—	—	—
08/30/1999	--	--	—	—	U	—	—	U	U	U	U	U
08/31/1999	--	--	—	—	—	—	—	—	—	—	—	—
10/29/1999	--	--	—	—	U	—	—	U	U	U	U	U
02/08/2000	--	--	—	—	—	—	—	—	—	—	—	—
06/08/2000	--	--	—	—	U	—	—	U	U	U	U	U
08/30/2000	--	--	—	—	—	—	—	—	—	—	—	—
11/30/2000	--	--	—	—	U	—	—	U	U	U	U	U
02/05/2001	--	--	—	—	—	—	—	—	—	—	—	—

Analytical Data Results Table

Speedway #5325 TNS52
Speedway - Anne Duarte
7172 W Parks Hwy
Wasilla, Alaska 99623

Unit	Well Screen Interval ft	Ground Water Elevation ft	Sodium ppm	Naphthalene ppm	Ethylbenzene ppm	135-TMB ppm	124-TMB ppm	Xylene ppm	GRO ppm	Benzene ppm	DRO ppm	Toluene ppm
GW Human Health Cleanup				0.0017	0.015	0.12	0.015	0.19	2.2	0.0046	1.5	1.1
05/10/2001	--	--	—	—	U	—	—	U	U	U	U	U
08/16/2001	--	--	—	—	—	—	—	—	—	—	—	—
11/09/2001	--	--	—	—	U	—	—	U	U	U	U	U
02/15/2002	--	--	—	—	—	—	—	—	—	—	—	—
05/30/2002	--	--	—	—	U	—	—	U	U	U	2.47	U
08/14/2002	--	--	—	—	—	—	—	—	—	—	—	—
11/14/2002	--	--	—	—	—	—	—	—	—	—	—	—
01/28/2003	--	--	—	—	—	—	—	—	—	—	—	—
04/17/2003	--	--	—	—	U (0.0005)	—	—	U (0.001)	U (0.08)	U (0.0005)	U (0.25)	U (0.0005)
07/17/2003	--	--	—	—	—	—	—	—	—	—	—	—
10/02/2003	--	--	—	—	—	—	—	—	—	—	—	—
01/20/2004	--	--	—	—	—	—	—	—	—	—	—	—
04/13/2004	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	U (0.0005)	U (0.5)	U (0.0005)
07/20/2004	--	--	—	—	—	—	—	—	—	—	—	—
09/02/2004	--	--	—	—	—	—	—	—	—	—	—	—
10/13/2004	--	--	—	—	—	—	—	—	—	—	—	—
01/28/2005	--	--	—	—	—	—	—	—	—	—	—	—
04/11/2005	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	U (0.0005)	U (0.435)	U (0.0005)
08/12/2005	--	--	—	—	—	—	—	—	—	—	—	—
10/07/2005	--	--	—	—	—	—	—	—	—	—	—	—
02/14/2006	--	--	—	—	—	—	—	—	—	—	—	—
04/18/2006	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	U (0.0005)	U (0.397)	U (0.0005)
07/06/2006	--	--	—	—	—	—	—	—	—	—	—	—
10/26/2006	--	--	—	—	—	—	—	—	—	—	—	—
02/02/2007	--	--	—	—	—	—	—	—	—	—	—	—
04/19/2007	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	U (0.0005)	U (0.42)	U (0.0005)
08/07/2007	--	--	—	—	—	—	—	—	—	—	—	—
10/23/2007	--	--	—	—	—	—	—	—	—	—	—	—
02/21/2008	--	--	—	—	—	—	—	—	—	—	—	—
02/22/2008	--	--	—	—	—	—	—	—	—	—	—	—
04/15/2008	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	U (0.0005)	0.673	U (0.0005)
08/27/2008	--	--	—	—	—	—	—	—	—	—	—	—
10/22/2008	--	--	—	—	—	—	—	—	—	—	—	—
02/05/2009	--	--	—	—	—	—	—	—	—	—	—	—
02/19/2009	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	U (0.0005)	U (0.455)	U (0.0005)
04/08/2009	--	--	—	—	—	—	—	—	—	—	—	—
07/09/2009	--	--	—	—	—	—	—	—	—	—	—	—
11/04/2009	--	--	—	—	—	—	—	—	—	—	—	—
01/27/2010	--	--	—	—	U (0.001)	—	—	U (0.003)	U (0.05)	U (0.0005)	U (0.397)	U (0.001)
05/27/2010	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	U (0.0005)	U (0.439)	U (0.0005)
08/19/2010	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	U (0.0005)	U (0.410)	U (0.0005)

Analytical Data Results Table

Speedway #5325 TNS52
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Unit	Well Screen Interval ft	Ground Water Elevation ft	Sodium ppm	Naphthalene ppm	Ethylbenzene ppm	135-TMB ppm	124-TMB ppm	Xylene ppm	GRO ppm	Benzene ppm	DRO ppm	Toluene ppm
GW Human Health Cleanup				0.0017	0.015	0.12	0.015	0.19	2.2	0.0046	1.5	1.1
10/26/2010	--	--	—	—	U (0.0005)	—	—	U (0.001)	U (0.08)	U (0.0005)	U (0.407)	U (0.0005)
02/17/2011	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	U (0.0005)	U (0.403)	U (0.0005)
06/09/2011	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	U (0.0005)	U (0.439)	U (0.0005)
09/20/2011	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	U (0.0005)	U (0.391)	U (0.0005)
10/21/2011	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	U (0.0005)	U (0.413)	U (0.0005)
02/17/2012	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	U (0.0005)	0.584	U (0.0005)
05/17/2012	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	U (0.0005)	0.628	U (0.0005)
07/18/2012	--	--	—	—	U (0.0010)	—	—	U (0.0030)	U (0.05)	U (0.0005)	U (0.403)	U (0.0010)
09/05/2012	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	U (0.0005)	U (0.400)	U (0.0005)
10/30/2012	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	U (0.0005)	U (0.397)	U (0.0005)
01/30/2013	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	U (0.0005)	0.531	U (0.0005)
02/15/2013	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	U (0.0005)	U (0.403)	U (0.0005)
05/10/2013	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	U (0.0005)	U (0.417)	U (0.0005)
10/11/2013	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	U (0.0005)	U (0.410)	U (0.0005)
12/11/2013	--	--	—	—	U (0.001)	—	—	U (0.003)	U (0.05)	U (0.0005)	U (0.410)	U (0.001)
02/19/2014	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	U (0.0005)	U (0.407)	U (0.0005)
05/01/2014	--	--	—	—	U (0.001)	—	—	U (0.001)	U (0.05)	U (0.0005)	U (0.39)	U (0.001)
10/30/2014	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	U (0.0005)	U (0.39)	U (0.0005)
02/11/2015	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	U (0.0005)	U (0.42)	U (0.0005)
05/15/2015	--	--	—	—	U (0.0005)	—	—	U (0.0015)	U (0.05)	U (0.0005)	U (0.42)	U (0.0005)
09/02/2015	--	--	—	—	U (0.001)	—	—	U (0.001)	0.16	U (0.0020)	U (0.42)	U (0.001)
10/14/2015	--	--	—	—	—	—	—	—	—	—	—	—
11/12/2015	--	--	—	—	U (0.0030)	—	—	U (0.0020)	U (0.050)	U (0.0020)	U (0.20)	U (0.0020)
01/28/2016	--	--	—	—	U (0.0030)	—	—	U (0.0020)	U (0.050)	U (0.0020)	0.23	U (0.0020)
05/09/2016	--	--	—	—	U (0.001)	—	—	U (0.003)	U (0.1)	U (0.0002)	U (0.41)	U (0.001)
10/24/2016	--	--	—	—	U (0.001)	—	—	U (0.003)	U (0.1)	U (0.0002)	U (0.41)	U (0.001)
12/09/2016	--	--	—	—	U (0.003)	—	—	U (0.003)	U (0.05)	U (0.002)	U (0.11)	U (0.002)
02/08/2017	--	--	—	—	U (0.003)	—	—	U (0.002)	U (0.05)	U (0.002)	U (0.11)	U (0.002)
04/24/2017	--	--	—	—	—	—	—	—	—	—	—	—
04/25/2017	--	--	—	—	U (0.001)	—	—	U (0.003)	U (1.0)	U (0.0002)	U (0.11)	U (0.001)
10/20/2017	--	--	—	—	U (0.003)	—	—	U (0.003)	U (1.0)	U (0.002)	U (0.110)	U (0.002)
02/13/2018	--	--	—	—	U (0.003)	—	—	U (0.002)	U (1.0)	U (0.002)	U (0.12)	U (0.002)
08/17/2018	--	--	—	—	U (0.003)	—	—	U (0.003)	U (0.25)	U (0.003)	U (0.12)	U (0.002)
10/25/2018	--	--	—	—	U (0.003)	—	—	U (0.003)	U (0.25)	U (0.003)	U (0.12)	U (0.002)
02/26/2019	--	--	—	—	U (0.003)	—	—	U (0.003)	U (0.25)	U (0.003)	U (0.13)	U (0.002)
04/23/2019	--	--	—	—	—	—	—	—	—	—	—	—
04/24/2019	--	--	—	—	U (0.003)	—	—	U (0.003)	U (0.25)	U (0.003)	U (0.26)	U (0.002)
07/16/2019	--	--	—	—	U (0.003)	—	—	U (0.003)	U (0.25)	U (0.003)	U (0.12)	U (0.002)
10/17/2019	--	--	—	—	U (0.003)	—	—	U (0.003)	U (0.25)	U (0.003)	U (0.12)	U (0.002)
08/12/2020	--	--	—	—	—	—	—	—	—	—	—	—
10/02/2020	--	67.1	—	—	U (0.001)	—	—	U (0.002)	U (0.100)	U (0.001)	U (0.888)	U (0.001)

Analytical Data Results Table

Speedway #5325 TNS52
Speedway - Anne Duarte
7172 W Parks Hwy
Wasilla, Alaska 99623

Unit	Well Screen Interval ft	Ground Water Elevation ft	Sodium ppm	Naphthalene ppm	Ethylbenzene ppm	135-TMB ppm	124-TMB ppm	Xylene ppm	GRO ppm	Benzene ppm	DRO ppm	Toluene ppm
GW Human Health Cleanup				0.0017	0.015	0.12	0.015	0.19	2.2	0.0046	1.5	1.1
03/03/2021	--	--	—	—	—	—	—	—	—	—	—	—
03/31/2021	--	--	—	—	—	—	—	—	—	—	—	—
05/18/2021	--	60.81	9.55	U (0.00500)	U (0.001)	U (0.00100)	U (0.00100)	U (0.002)	0.032	U (0.001)	U (0.800)	U (0.001)
07/21/2021	--	61.67	13.1	U (0.00500)	U (0.001)	U (0.00100)	U (0.00100)	U (0.003)	U (0.100)	U (0.001)	0.251	U (0.001)
10/13/2021	--	66.63	5.05	U (0.000250)	U (0.001)	U (0.00100)	U (0.00100)	U (0.002)	0.0507	U (0.001)	0.358	U (0.001)
03/18/2022	--	59.2	14.3	U (0.000250)	U(0.00100)	U (0.00100)	U (0.00100)	U(0.00300)	U(0.100)	U(0.00100)	U(0.800)	U(0.00100)
05/11/2022	--	67.15	5.09	U(0.000250)	U(0.00100)	U(0.00100)	U(0.00100)	U(0.00300)	U(0.100)	U(0.00100)	U(0.800)	U(0.00100)
RW16-1												
04/24/1997	--	--	—	—	—	—	—	—	—	—	—	—
09/03/1997	--	--	—	—	—	—	—	—	—	—	—	—
12/29/1997	--	--	—	—	—	—	—	—	—	—	—	—
04/23/1998	--	--	—	—	—	—	—	—	—	—	—	—
08/03/1998	--	--	—	—	—	—	—	—	—	—	—	—
11/02/1998	--	--	—	—	—	—	—	—	—	—	—	—
02/12/1999	--	--	—	—	—	—	—	—	—	—	—	—
05/10/1999	--	--	—	—	—	—	—	—	—	—	—	—
05/11/1999	--	--	—	—	—	—	—	—	—	—	—	—
08/30/1999	--	--	—	—	—	—	—	—	—	—	—	—
08/31/1999	--	--	—	—	—	—	—	—	—	—	—	—
10/29/1999	--	--	—	—	—	—	—	—	—	—	—	—
02/08/2000	--	--	—	—	—	—	—	—	—	—	—	—
06/08/2000	--	--	—	—	—	—	—	—	—	—	—	—
08/30/2000	--	--	—	—	—	—	—	—	—	—	—	—
11/30/2000	--	--	—	—	—	—	—	—	—	—	—	—
02/05/2001	--	--	—	—	—	—	—	—	—	—	—	—
05/10/2001	--	--	—	—	—	—	—	—	—	—	—	—
08/16/2001	--	--	—	—	—	—	—	—	—	—	—	—
11/09/2001	--	--	—	—	—	—	—	—	—	—	—	—
02/15/2002	--	--	—	—	—	—	—	—	—	—	—	—
05/30/2002	--	--	—	—	—	—	—	—	—	—	—	—
08/14/2002	--	--	—	—	—	—	—	—	—	—	—	—
11/14/2002	--	--	—	—	—	—	—	—	—	—	—	—
01/28/2003	--	--	—	—	—	—	—	—	—	—	—	—
04/17/2003	--	--	—	—	—	—	—	—	—	—	—	—
07/17/2003	--	--	—	—	—	—	—	—	—	—	—	—
10/02/2003	--	--	—	—	—	—	—	—	—	—	—	—
01/20/2004	--	--	—	—	—	—	—	—	—	—	—	—
04/13/2004	--	--	—	—	—	—	—	—	—	—	—	—
07/20/2004	--	--	—	—	—	—	—	—	—	—	—	—
09/02/2004	--	--	—	—	—	—	—	—	—	—	—	—

Analytical Data Results Table

Speedway #5325 TNS52
Speedway - Anne Duarte
7172 W Parks Hwy
Wasilla, Alaska 99623

Unit	Well Screen Interval ft	Ground Water Elevation ft	Sodium ppm	Naphthalene ppm	Ethylbenzene ppm	135-TMB ppm	124-TMB ppm	Xylene ppm	GRO ppm	Benzene ppm	DRO ppm	Toluene ppm
GW Human Health Cleanup				0.0017	0.015	0.12	0.015	0.19	2.2	0.0046	1.5	1.1
10/13/2004	--	--	—	—	—	—	—	—	—	—	—	—
01/28/2005	--	--	—	—	—	—	—	—	—	—	—	—
04/11/2005	--	--	—	—	—	—	—	—	—	—	—	—
08/12/2005	--	--	—	—	—	—	—	—	—	—	—	—
10/07/2005	--	--	—	—	—	—	—	—	—	—	—	—
02/14/2006	--	--	—	—	—	—	—	—	—	—	—	—
04/18/2006	--	--	—	—	—	—	—	—	—	—	—	—
07/06/2006	--	--	—	—	—	—	—	—	—	—	—	—
10/26/2006	--	--	—	—	—	—	—	—	—	—	—	—
02/02/2007	--	--	—	—	—	—	—	—	—	—	—	—
04/19/2007	--	--	—	—	—	—	—	—	—	—	—	—
08/07/2007	--	--	—	—	—	—	—	—	—	—	—	—
10/23/2007	--	--	—	—	—	—	—	—	—	—	—	—
02/21/2008	--	--	—	—	—	—	—	—	—	—	—	—
02/22/2008	--	--	—	—	—	—	—	—	—	—	—	—
04/15/2008	--	--	—	—	—	—	—	—	—	—	—	—
08/27/2008	--	--	—	—	—	—	—	—	—	—	—	—
10/22/2008	--	--	—	—	—	—	—	—	—	—	—	—
02/05/2009	--	--	—	—	—	—	—	—	—	—	—	—
02/19/2009	--	--	—	—	—	—	—	—	—	—	—	—
04/08/2009	--	--	—	—	—	—	—	—	—	—	—	—
07/09/2009	--	--	—	—	—	—	—	—	—	—	—	—
11/04/2009	--	--	—	—	—	—	—	—	—	—	—	—
01/27/2010	--	--	—	—	—	—	—	—	—	—	—	—
05/27/2010	--	--	—	—	—	—	—	—	—	—	—	—
08/19/2010	--	--	—	—	—	—	—	—	—	—	—	—
10/26/2010	--	--	—	—	—	—	—	—	—	—	—	—
02/17/2011	--	--	—	—	—	—	—	—	—	—	—	—
06/09/2011	--	--	—	—	—	—	—	—	—	—	—	—
09/20/2011	--	--	—	—	—	—	—	—	—	—	—	—
10/21/2011	--	--	—	—	—	—	—	—	—	—	—	—
02/17/2012	--	--	—	—	—	—	—	—	—	—	—	—
05/17/2012	--	--	—	—	—	—	—	—	—	—	—	—
07/18/2012	--	--	—	—	—	—	—	—	—	—	—	—
09/05/2012	--	--	—	—	—	—	—	—	—	—	—	—
10/30/2012	--	--	—	—	—	—	—	—	—	—	—	—
01/30/2013	--	--	—	—	—	—	—	—	—	—	—	—
02/15/2013	--	--	—	—	—	—	—	—	—	—	—	—
05/10/2013	--	--	—	—	—	—	—	—	—	—	—	—
10/11/2013	--	--	—	—	—	—	—	—	—	—	—	—
12/11/2013	--	--	—	—	—	—	—	—	—	—	—	—

Analytical Data Results Table

Speedway #5325 TNS52
Speedway - Anne Duarte
7172 W Parks Hwy
Wasilla, Alaska 99623

Unit	Well Screen Interval ft	Ground Water Elevation ft	Sodium ppm	Naphthalene ppm	Ethylbenzene ppm	135-TMB ppm	124-TMB ppm	Xylene ppm	GRO ppm	Benzene ppm	DRO ppm	Toluene ppm
GW Human Health Cleanup				0.0017	0.015	0.12	0.015	0.19	2.2	0.0046	1.5	1.1
02/19/2014	--	--	—	—	—	—	—	—	—	—	—	—
05/01/2014	--	--	—	—	—	—	—	—	—	—	—	—
10/30/2014	--	--	—	—	—	—	—	—	—	—	—	—
02/11/2015	--	--	—	—	—	—	—	—	—	—	—	—
05/15/2015	--	--	—	—	—	—	—	—	—	—	—	—
09/02/2015	--	--	—	—	—	—	—	—	—	—	—	—
10/14/2015	--	--	—	—	—	—	—	—	—	—	—	—
11/12/2015	--	--	—	—	—	—	—	—	—	—	—	—
01/28/2016	--	--	—	—	—	—	—	—	—	—	—	—
05/09/2016	--	--	—	—	—	—	—	—	—	—	—	—
10/24/2016	--	--	—	—	1.7	—	—	10.1	30	U (0.0002)	4.6	0.019
12/09/2016	--	--	—	—	—	—	—	—	—	—	—	—
02/08/2017	--	--	—	—	7.9	—	—	8.9	25	U (0.002)	2.7	0.0048
04/24/2017	--	--	—	—	—	—	—	—	—	—	—	—
04/25/2017	--	--	—	—	U (0.750)	—	—	4.83	12	U (0.002)	2.4	U (0.001)
10/20/2017	--	--	—	—	—	—	—	—	—	—	—	—
02/13/2018	--	--	—	—	—	—	—	—	—	—	—	—
08/17/2018	--	--	—	—	1.2	—	—	8.5	24	U (0.003)	7.9	0.0018
10/25/2018	--	--	—	—	—	—	—	—	—	—	—	—
02/26/2019	--	--	—	—	—	—	—	—	—	—	—	—
04/23/2019	--	--	—	—	—	—	—	—	—	—	—	—
04/24/2019	--	--	—	—	—	—	—	—	—	—	—	—
07/16/2019	--	--	—	—	—	—	—	—	—	—	—	—
10/17/2019	--	--	—	—	—	—	—	—	—	—	—	—
08/12/2020	--	67.49	65.8	—	1.58	—	—	8.26	5.85	0.00092	2	0.00558
10/02/2020	--	67.2	—	—	0.373	—	—	1.721	3.99	U (0.020)	3.58	0.0174
03/03/2021	--	--	—	—	—	—	—	—	—	—	—	—
03/31/2021	--	67.77	64	—	1.33	—	—	5.28	14	U (0.020)	4.72	U (0.020)
05/18/2021	--	66.12	24.1	U (1.00)	0.761	0.53	2.5	4.8	3.38	U (0.200)	7.24	U (0.200)
07/21/2021	--	65.91	16.7	U (1.00)	1.36	0.597	2.9	7.69	7.22	U (0.200)	9.6	U (0.200)
10/13/2021	--	67.71	11.3	U (1.00)	1.11	0.28	1.83	4.826	7.99	U (0.200)	7.89	U (0.200)
03/18/2022	--	65.51	39.9	0.0486	0.939	0.868	4.04	5.548	23.2	U(0.200)	4.36	U(0.200)
05/11/2022	--	68.0	56.9	0.0612	0.533	0.756	3.88	2.773	17.7	U(0.0500)	5.82	U(0.0500)
RW16-2												
04/24/1997	--	--	—	—	—	—	—	—	—	—	—	—
09/03/1997	--	--	—	—	—	—	—	—	—	—	—	—
12/29/1997	--	--	—	—	—	—	—	—	—	—	—	—
04/23/1998	--	--	—	—	—	—	—	—	—	—	—	—
08/03/1998	--	--	—	—	—	—	—	—	—	—	—	—
11/02/1998	--	--	—	—	—	—	—	—	—	—	—	—

Analytical Data Results Table

Speedway #5325 TNS52
Speedway - Anne Duarte
7172 W Parks Hwy
Wasilla, Alaska 99623

Unit	Well Screen Interval ft	Ground Water Elevation ft	Sodium ppm	Naphthalene ppm	Ethylbenzene ppm	135-TMB ppm	124-TMB ppm	Xylene ppm	GRO ppm	Benzene ppm	DRO ppm	Toluene ppm
GW Human Health Cleanup				0.0017	0.015	0.12	0.015	0.19	2.2	0.0046	1.5	1.1
02/12/1999	--	--	—	—	—	—	—	—	—	—	—	—
05/10/1999	--	--	—	—	—	—	—	—	—	—	—	—
05/11/1999	--	--	—	—	—	—	—	—	—	—	—	—
08/30/1999	--	--	—	—	—	—	—	—	—	—	—	—
08/31/1999	--	--	—	—	—	—	—	—	—	—	—	—
10/29/1999	--	--	—	—	—	—	—	—	—	—	—	—
02/08/2000	--	--	—	—	—	—	—	—	—	—	—	—
06/08/2000	--	--	—	—	—	—	—	—	—	—	—	—
08/30/2000	--	--	—	—	—	—	—	—	—	—	—	—
11/30/2000	--	--	—	—	—	—	—	—	—	—	—	—
02/05/2001	--	--	—	—	—	—	—	—	—	—	—	—
05/10/2001	--	--	—	—	—	—	—	—	—	—	—	—
08/16/2001	--	--	—	—	—	—	—	—	—	—	—	—
11/09/2001	--	--	—	—	—	—	—	—	—	—	—	—
02/15/2002	--	--	—	—	—	—	—	—	—	—	—	—
05/30/2002	--	--	—	—	—	—	—	—	—	—	—	—
08/14/2002	--	--	—	—	—	—	—	—	—	—	—	—
11/14/2002	--	--	—	—	—	—	—	—	—	—	—	—
01/28/2003	--	--	—	—	—	—	—	—	—	—	—	—
04/17/2003	--	--	—	—	—	—	—	—	—	—	—	—
07/17/2003	--	--	—	—	—	—	—	—	—	—	—	—
10/02/2003	--	--	—	—	—	—	—	—	—	—	—	—
01/20/2004	--	--	—	—	—	—	—	—	—	—	—	—
04/13/2004	--	--	—	—	—	—	—	—	—	—	—	—
07/20/2004	--	--	—	—	—	—	—	—	—	—	—	—
09/02/2004	--	--	—	—	—	—	—	—	—	—	—	—
10/13/2004	--	--	—	—	—	—	—	—	—	—	—	—
01/28/2005	--	--	—	—	—	—	—	—	—	—	—	—
04/11/2005	--	--	—	—	—	—	—	—	—	—	—	—
08/12/2005	--	--	—	—	—	—	—	—	—	—	—	—
10/07/2005	--	--	—	—	—	—	—	—	—	—	—	—
02/14/2006	--	--	—	—	—	—	—	—	—	—	—	—
04/18/2006	--	--	—	—	—	—	—	—	—	—	—	—
07/06/2006	--	--	—	—	—	—	—	—	—	—	—	—
10/26/2006	--	--	—	—	—	—	—	—	—	—	—	—
02/02/2007	--	--	—	—	—	—	—	—	—	—	—	—
04/19/2007	--	--	—	—	—	—	—	—	—	—	—	—
08/07/2007	--	--	—	—	—	—	—	—	—	—	—	—
10/23/2007	--	--	—	—	—	—	—	—	—	—	—	—
02/21/2008	--	--	—	—	—	—	—	—	—	—	—	—
02/22/2008	--	--	—	—	—	—	—	—	—	—	—	—

Analytical Data Results Table

Speedway #5325 TNS52
Speedway - Anne Duarte
7172 W Parks Hwy
Wasilla, Alaska 99623

Unit	Well Screen Interval ft	Ground Water Elevation ft	Sodium ppm	Naphthalene ppm	Ethylbenzene ppm	135-TMB ppm	124-TMB ppm	Xylene ppm	GRO ppm	Benzene ppm	DRO ppm	Toluene ppm
GW Human Health Cleanup				0.0017	0.015	0.12	0.015	0.19	2.2	0.0046	1.5	1.1
04/15/2008	--	--	—	—	—	—	—	—	—	—	—	—
08/27/2008	--	--	—	—	—	—	—	—	—	—	—	—
10/22/2008	--	--	—	—	—	—	—	—	—	—	—	—
02/05/2009	--	--	—	—	—	—	—	—	—	—	—	—
02/19/2009	--	--	—	—	—	—	—	—	—	—	—	—
04/08/2009	--	--	—	—	—	—	—	—	—	—	—	—
07/09/2009	--	--	—	—	—	—	—	—	—	—	—	—
11/04/2009	--	--	—	—	—	—	—	—	—	—	—	—
01/27/2010	--	--	—	—	—	—	—	—	—	—	—	—
05/27/2010	--	--	—	—	—	—	—	—	—	—	—	—
08/19/2010	--	--	—	—	—	—	—	—	—	—	—	—
10/26/2010	--	--	—	—	—	—	—	—	—	—	—	—
02/17/2011	--	--	—	—	—	—	—	—	—	—	—	—
06/09/2011	--	--	—	—	—	—	—	—	—	—	—	—
09/20/2011	--	--	—	—	—	—	—	—	—	—	—	—
10/21/2011	--	--	—	—	—	—	—	—	—	—	—	—
02/17/2012	--	--	—	—	—	—	—	—	—	—	—	—
05/17/2012	--	--	—	—	—	—	—	—	—	—	—	—
07/18/2012	--	--	—	—	—	—	—	—	—	—	—	—
09/05/2012	--	--	—	—	—	—	—	—	—	—	—	—
10/30/2012	--	--	—	—	—	—	—	—	—	—	—	—
01/30/2013	--	--	—	—	—	—	—	—	—	—	—	—
02/15/2013	--	--	—	—	—	—	—	—	—	—	—	—
05/10/2013	--	--	—	—	—	—	—	—	—	—	—	—
10/11/2013	--	--	—	—	—	—	—	—	—	—	—	—
12/11/2013	--	--	—	—	—	—	—	—	—	—	—	—
02/19/2014	--	--	—	—	—	—	—	—	—	—	—	—
05/01/2014	--	--	—	—	—	—	—	—	—	—	—	—
10/30/2014	--	--	—	—	—	—	—	—	—	—	—	—
02/11/2015	--	--	—	—	—	—	—	—	—	—	—	—
05/15/2015	--	--	—	—	—	—	—	—	—	—	—	—
09/02/2015	--	--	—	—	—	—	—	—	—	—	—	—
10/14/2015	--	--	—	—	—	—	—	—	—	—	—	—
11/12/2015	--	--	—	—	—	—	—	—	—	—	—	—
01/28/2016	--	--	—	—	—	—	—	—	—	—	—	—
05/09/2016	--	--	—	—	—	—	—	—	—	—	—	—
10/24/2016	--	--	—	—	—	—	—	—	—	—	—	—
12/09/2016	--	--	—	—	**0.022**	—	—	**0.429**	2	U (0.0002)	0.25	U (0.001)
02/08/2017	--	--	—	—	**0.44**	—	—	**3.3**	**19**	U (0.002)	**2.1**	0.0078
04/24/2017	--	--	—	—	—	—	—	—	—	—	—	—
04/25/2017	--	--	—	—	U (0.30)	—	—	**1**	**8.7**	U (0.0002)	0.86	U (0.002)

Analytical Data Results Table

Speedway #5325 TNS52
Speedway - Anne Duarte
7172 W Parks Hwy
Wasilla, Alaska 99623

Unit	Well Screen Interval ft	Ground Water Elevation ft	Sodium ppm	Naphthalene ppm	Ethylbenzene ppm	135-TMB ppm	124-TMB ppm	Xylene ppm	GRO ppm	Benzene ppm	DRO ppm	Toluene ppm
GW Human Health Cleanup				0.0017	0.015	0.12	0.015	0.19	2.2	0.0046	1.5	1.1
10/20/2017	--	--	—	—	**0.042**	—	—	0.125	2.2	U (0.002)	0.26	U (0.002)
02/13/2018	--	--	—	—	**0.051**	—	—	0.177	**6.1**	U (0.002)	0.59	U (0.002)
08/17/2018	--	--	—	—	0.015	—	—	0.0771	**2.4**	U (0.003)	0.63	U (0.002)
10/25/2018	--	--	—	—	0.0036	—	—	0.013	1	U (0.003)	0.31	U (0.002)
02/26/2019	--	--	—	—	0.0066	—	—	0.023	**4.6**	U (0.003)	1.1	U (0.002)
04/23/2019	--	--	—	—	—	—	—	—	—	—	—	—
04/24/2019	--	--	—	—	0.0065	—	—	0.027	**4.2**	U (0.003)	0.58	U (0.002)
07/16/2019	--	--	—	—	0.0066	—	—	0.031	**3.4**	U (0.003)	0.67	U (0.002)
10/17/2019	--	--	—	—	0.0052	—	—	0.023	2.1	U (0.003)	0.3	U (0.002)
08/12/2020	--	67.36	21.7	—	0.00166	—	—	0.00735	1.65	U (0.001)	0.419	U (0.001)
10/02/2020	--	67.05	—	—	0.00072	—	—	0.002772	0.967	U (0.001)	0.25	U (0.001)
03/03/2021	--	--	—	—	—	—	—	—	—	—	—	—
03/31/2021	--	65.19	4.42	—	0.001	—	—	0.00276	**2.86**	U (0.001)	0.585	U (0.001)
05/18/2021	--	66.27	4.72	U (0.00500)	U (0.001)	0.0103	0.011	U (0.002)	0.419	U (0.001)	U (0.800)	U (0.001)
07/21/2021	--	66.08	5.58	U (0.00500)	0.000569	0.0126	0.0145	0.00135	0.724	U (0.001)	0.441	U (0.001)
10/13/2021	--	67.54	71.7	U (0.000250)	U (0.001)	U (0.00100)	U (0.00100)	U (0.002)	0.765	U (0.001)	0.819	U (0.001)
03/18/2022	--	65.86	6.93	0.000106	0.00032	0.0231	**0.0341**	U(0.00300)	1.95	U(0.00100)	0.643	U(0.00100)
05/11/2022	--	67.88	21.6	U(0.000250)	U(0.00100)	0.00631	0.0124	U(0.00300)	0.658	0.000105	0.49	U(0.00100)

APPENDIX E

PACE Laboratory Analytical Report and ADEC Laboratory Data Review Checklist

ANALYTICAL REPORT

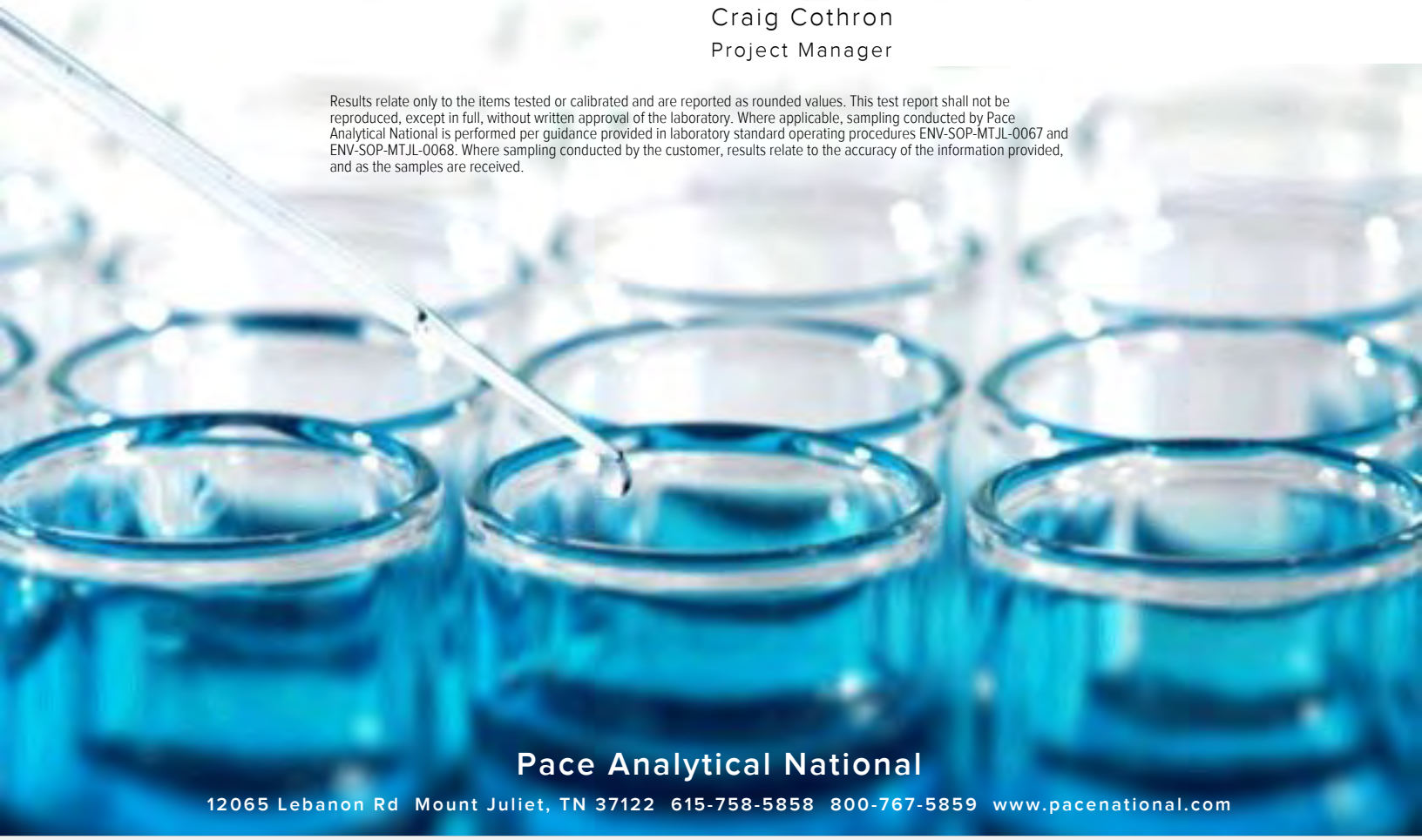
May 25, 2022

Stantec - Anchorage, AK

Sample Delivery Group:	L1493952
Samples Received:	05/14/2022
Project Number:	185705772
Description:	Speedway 5325
Site:	0005325
Report To:	Mr. John Marshall 725 E Fireweed Lane Suite 200 Anchorage, AK 99503

Entire Report Reviewed By:

Craig Cothron
Project Manager



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

TABLE OF CONTENTS

G-01 L1493952-01 GW

Collected by: John Marshall | Collected date/time: 05/11/22 13:16 | Received date/time: 05/14/22 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1867144	1	05/22/22 20:52	05/23/22 15:53	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG1868301	1	05/25/22 06:08	05/25/22 06:08	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1866857	1	05/20/22 23:47	05/20/22 23:47	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG1866856	1	05/23/22 01:12	05/23/22 18:03	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1864557	1	05/18/22 14:07	05/19/22 05:53	AMM	Mt. Juliet, TN

G-03 L1493952-02 GW

Collected by: John Marshall | Collected date/time: 05/11/22 16:30 | Received date/time: 05/14/22 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1867144	1	05/22/22 20:52	05/23/22 15:55	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG1868301	1	05/25/22 06:34	05/25/22 06:34	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1866857	1	05/21/22 00:06	05/21/22 00:06	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG1866856	1	05/23/22 01:12	05/23/22 18:23	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1864557	1	05/18/22 14:07	05/19/22 06:13	AMM	Mt. Juliet, TN

G-05 L1493952-03 GW

Collected by: John Marshall | Collected date/time: 05/11/22 12:05 | Received date/time: 05/14/22 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1867144	1	05/22/22 20:52	05/23/22 15:58	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG1868301	1	05/25/22 07:01	05/25/22 07:01	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1866857	1	05/21/22 00:26	05/21/22 00:26	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG1866856	1	05/23/22 01:12	05/23/22 18:43	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1864558	1	05/18/22 14:11	05/19/22 05:43	AMM	Mt. Juliet, TN

G-07 L1493952-04 GW

Collected by: John Marshall | Collected date/time: 05/11/22 10:58 | Received date/time: 05/14/22 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1867144	1	05/22/22 20:52	05/23/22 16:01	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG1868301	1	05/25/22 07:27	05/25/22 07:27	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1866857	1	05/21/22 00:45	05/21/22 00:45	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG1866856	1	05/23/22 01:12	05/23/22 19:04	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1864558	1	05/18/22 14:11	05/19/22 06:03	AMM	Mt. Juliet, TN

MW16-02 L1493952-05 GW

Collected by: John Marshall | Collected date/time: 05/11/22 15:07 | Received date/time: 05/14/22 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1867144	1	05/22/22 20:52	05/23/22 16:04	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG1868301	1	05/25/22 07:54	05/25/22 07:54	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1866857	1	05/21/22 01:04	05/21/22 01:04	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG1866856	1	05/23/22 01:12	05/23/22 19:24	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1864558	1	05/18/22 14:11	05/19/22 06:23	AMM	Mt. Juliet, TN

DUP1 L1493952-06 GW

Collected by: John Marshall | Collected date/time: 05/11/22 15:09 | Received date/time: 05/14/22 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1867144	1	05/22/22 20:52	05/23/22 16:07	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG1868301	1	05/25/22 08:20	05/25/22 08:20	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1866857	1	05/21/22 05:48	05/21/22 05:48	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG1866856	1	05/23/22 01:12	05/23/22 19:44	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1864558	1	05/18/22 14:11	05/19/22 06:43	AMM	Mt. Juliet, TN

TRIP BLANK L1493952-07 GW

Collected by: John Marshall | Collected date/time: 05/11/22 00:00 | Received date/time: 05/14/22 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1866857	1	05/20/22 22:49	05/20/22 22:49	JAH	Mt. Juliet, TN

RW16-01 L1493952-08 GW

Collected by: John Marshall | Collected date/time: 05/11/22 14:12 | Received date/time: 05/14/22 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1867144	1	05/22/22 20:52	05/23/22 16:10	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method AK101	WG1868301	20	05/25/22 11:42	05/25/22 11:42	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260C	WG1867954	50	05/23/22 12:50	05/23/22 12:50	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG1866856	1	05/23/22 01:12	05/23/22 20:04	DMG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270D-SIM	WG1864558	1	05/18/22 14:11	05/19/22 07:03	AMM	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 6010D

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Sodium	23.9		0.504	3.00	1	05/23/2022 15:53	WG1867144

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	05/25/2022 06:08	WG1868301
(S) a,a,a-Trifluorotoluene(FID)	*92.5*			*50.0-150*		*05/25/2022 06:08*	WG1868301
(S) a,a,a-Trifluorotoluene(PID)	*0.000*	J2		*79.0-125*		*05/25/2022 06:08*	WG1868301

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	05/20/2022 23:47	WG1866857
n-Butylbenzene	U		0.000157	0.00100	1	05/20/2022 23:47	WG1866857
sec-Butylbenzene	U		0.000125	0.00100	1	05/20/2022 23:47	WG1866857
tert-Butylbenzene	U		0.000127	0.00100	1	05/20/2022 23:47	WG1866857
Ethylbenzene	U		0.000137	0.00100	1	05/20/2022 23:47	WG1866857
Isopropylbenzene	U		0.000105	0.00100	1	05/20/2022 23:47	WG1866857
Naphthalene	U	C3	0.00100	0.00500	1	05/20/2022 23:47	WG1866857
Toluene	U		0.000278	0.00100	1	05/20/2022 23:47	WG1866857
1,2,4-Trimethylbenzene	U		0.000322	0.00100	1	05/20/2022 23:47	WG1866857
1,3,5-Trimethylbenzene	U		0.000104	0.00100	1	05/20/2022 23:47	WG1866857
m&p-Xylene	U		0.000430	0.00200	1	05/20/2022 23:47	WG1866857
o-Xylene	U		0.000174	0.00100	1	05/20/2022 23:47	WG1866857
(S) Toluene-d8	*103*			*80.0-120*		*05/20/2022 23:47*	WG1866857
(S) 4-Bromofluorobenzene	*94.6*			*77.0-126*		*05/20/2022 23:47*	WG1866857
(S) 1,2-Dichloroethane-d4	*95.3*			*70.0-130*		*05/20/2022 23:47*	WG1866857

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	1.08		0.229	0.800	1	05/23/2022 18:03	WG1866856
(S) o-Terphenyl	*74.7*			*50.0-150*		*05/23/2022 18:03*	WG1866856

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Anthracene	U		0.0000190	0.0000500	1	05/19/2022 05:53	WG1864557
Acenaphthene	U		0.0000190	0.0000500	1	05/19/2022 05:53	WG1864557
Acenaphthylene	U		0.0000171	0.0000500	1	05/19/2022 05:53	WG1864557
Benzo(a)anthracene	U		0.0000203	0.0000500	1	05/19/2022 05:53	WG1864557
Benzo(a)pyrene	U		0.0000184	0.0000500	1	05/19/2022 05:53	WG1864557
Benzo(b)fluoranthene	U		0.0000168	0.0000500	1	05/19/2022 05:53	WG1864557
Benzo(g,h,i)perylene	U		0.0000184	0.0000500	1	05/19/2022 05:53	WG1864557
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	05/19/2022 05:53	WG1864557
Chrysene	U		0.0000179	0.0000500	1	05/19/2022 05:53	WG1864557
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	05/19/2022 05:53	WG1864557
Fluoranthene	U		0.0000270	0.000100	1	05/19/2022 05:53	WG1864557
Fluorene	U		0.0000169	0.0000500	1	05/19/2022 05:53	WG1864557
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	05/19/2022 05:53	WG1864557
Naphthalene	U		0.0000917	0.000250	1	05/19/2022 05:53	WG1864557
Phenanthrene	U		0.0000180	0.0000500	1	05/19/2022 05:53	WG1864557
Pyrene	U		0.0000169	0.0000500	1	05/19/2022 05:53	WG1864557

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
1-Methylnaphthalene	U		0.0000687	0.000250	1	05/19/2022 05:53	WG1864557
2-Methylnaphthalene	U		0.0000674	0.000250	1	05/19/2022 05:53	WG1864557
(S) Nitrobenzene-d5	*114*			*31.0-160*		*05/19/2022 05:53*	WG1864557
(S) 2-Fluorobiphenyl	*79.0*			*48.0-148*		*05/19/2022 05:53*	WG1864557
(S) p-Terphenyl-d14	*121*			*37.0-146*		*05/19/2022 05:53*	WG1864557

Metals (ICP) by Method 6010D

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Sodium	22.0		0.504	3.00	1	05/23/2022 15:55	WG1867144

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	05/25/2022 06:34	WG1868301
(S) a,a,a-Trifluorotoluene(FID)	*91.3*			*50.0-150*		*05/25/2022 06:34*	WG1868301
(S) a,a,a-Trifluorotoluene(PID)	*0.000*	J2		*79.0-125*		*05/25/2022 06:34*	WG1868301

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	05/21/2022 00:06	WG1866857
n-Butylbenzene	U		0.000157	0.00100	1	05/21/2022 00:06	WG1866857
sec-Butylbenzene	U		0.000125	0.00100	1	05/21/2022 00:06	WG1866857
tert-Butylbenzene	U		0.000127	0.00100	1	05/21/2022 00:06	WG1866857
Ethylbenzene	U		0.000137	0.00100	1	05/21/2022 00:06	WG1866857
Isopropylbenzene	U		0.000105	0.00100	1	05/21/2022 00:06	WG1866857
Naphthalene	U	C3	0.00100	0.00500	1	05/21/2022 00:06	WG1866857
Toluene	U		0.000278	0.00100	1	05/21/2022 00:06	WG1866857
1,2,4-Trimethylbenzene	U		0.000322	0.00100	1	05/21/2022 00:06	WG1866857
1,3,5-Trimethylbenzene	U		0.000104	0.00100	1	05/21/2022 00:06	WG1866857
m&p-Xylene	U		0.000430	0.00200	1	05/21/2022 00:06	WG1866857
o-Xylene	U		0.000174	0.00100	1	05/21/2022 00:06	WG1866857
(S) Toluene-d8	*106*			*80.0-120*		*05/21/2022 00:06*	WG1866857
(S) 4-Bromofluorobenzene	*96.1*			*77.0-126*		*05/21/2022 00:06*	WG1866857
(S) 1,2-Dichloroethane-d4	*93.9*			*70.0-130*		*05/21/2022 00:06*	WG1866857

Semi-Volatile Organic Compounds (GC) by Method AK102

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
AK102 DRO C10-C25	U		0.229	0.800	1	05/23/2022 18:23	WG1866856
(S) o-Terphenyl	*80.4*			*50.0-150*		*05/23/2022 18:23*	WG1866856

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Anthracene	U		0.0000190	0.0000500	1	05/19/2022 06:13	WG1864557
Acenaphthene	U		0.0000190	0.0000500	1	05/19/2022 06:13	WG1864557
Acenaphthylene	U		0.0000171	0.0000500	1	05/19/2022 06:13	WG1864557
Benzo(a)anthracene	U		0.0000203	0.0000500	1	05/19/2022 06:13	WG1864557
Benzo(a)pyrene	U		0.0000184	0.0000500	1	05/19/2022 06:13	WG1864557
Benzo(b)fluoranthene	U		0.0000168	0.0000500	1	05/19/2022 06:13	WG1864557
Benzo(g,h,i)perylene	U		0.0000184	0.0000500	1	05/19/2022 06:13	WG1864557
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	05/19/2022 06:13	WG1864557
Chrysene	U		0.0000179	0.0000500	1	05/19/2022 06:13	WG1864557
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	05/19/2022 06:13	WG1864557
Fluoranthene	U		0.0000270	0.000100	1	05/19/2022 06:13	WG1864557
Fluorene	U		0.0000169	0.0000500	1	05/19/2022 06:13	WG1864557
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	05/19/2022 06:13	WG1864557
Naphthalene	U		0.0000917	0.000250	1	05/19/2022 06:13	WG1864557
Phenanthrene	U		0.0000180	0.0000500	1	05/19/2022 06:13	WG1864557
Pyrene	U		0.0000169	0.0000500	1	05/19/2022 06:13	WG1864557

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
1-Methylnaphthalene	U		0.0000687	0.000250	1	05/19/2022 06:13	WG1864557
2-Methylnaphthalene	U		0.0000674	0.000250	1	05/19/2022 06:13	WG1864557
(S) Nitrobenzene-d5	*118*			*31.0-160*		*05/19/2022 06:13*	WG1864557
(S) 2-Fluorobiphenyl	*121*			*48.0-148*		*05/19/2022 06:13*	WG1864557
(S) p-Terphenyl-d14	*132*			*37.0-146*		*05/19/2022 06:13*	WG1864557

Metals (ICP) by Method 6010D

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Sodium	20.2		0.504	3.00	1	05/23/2022 15:58	WG1867144

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	0.0345	J	0.0287	0.100	1	05/25/2022 07:01	WG1868301
(S) a,a,a-Trifluorotoluene(FID)	*88.3*			*50.0-150*		*05/25/2022 07:01*	WG1868301
(S) a,a,a-Trifluorotoluene(PID)	*0.000*	J2		*79.0-125*		*05/25/2022 07:01*	WG1868301

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	05/21/2022 00:26	WG1866857
n-Butylbenzene	U		0.000157	0.00100	1	05/21/2022 00:26	WG1866857
sec-Butylbenzene	U		0.000125	0.00100	1	05/21/2022 00:26	WG1866857
tert-Butylbenzene	U		0.000127	0.00100	1	05/21/2022 00:26	WG1866857
Ethylbenzene	U		0.000137	0.00100	1	05/21/2022 00:26	WG1866857
Isopropylbenzene	0.000332	J	0.000105	0.00100	1	05/21/2022 00:26	WG1866857
Naphthalene	U	C3	0.00100	0.00500	1	05/21/2022 00:26	WG1866857
Toluene	U		0.000278	0.00100	1	05/21/2022 00:26	WG1866857
1,2,4-Trimethylbenzene	U		0.000322	0.00100	1	05/21/2022 00:26	WG1866857
1,3,5-Trimethylbenzene	U		0.000104	0.00100	1	05/21/2022 00:26	WG1866857
m&p-Xylene	U		0.000430	0.00200	1	05/21/2022 00:26	WG1866857
o-Xylene	U		0.000174	0.00100	1	05/21/2022 00:26	WG1866857
(S) Toluene-d8	*106*			*80.0-120*		*05/21/2022 00:26*	WG1866857
(S) 4-Bromofluorobenzene	*95.4*			*77.0-126*		*05/21/2022 00:26*	WG1866857
(S) 1,2-Dichloroethane-d4	*92.7*			*70.0-130*		*05/21/2022 00:26*	WG1866857

Semi-Volatile Organic Compounds (GC) by Method AK102

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
AK102 DRO C10-C25	U		0.229	0.800	1	05/23/2022 18:43	WG1866856
(S) o-Terphenyl	*78.7*			*50.0-150*		*05/23/2022 18:43*	WG1866856

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Anthracene	U		0.0000190	0.0000500	1	05/19/2022 05:43	WG1864558
Acenaphthene	U		0.0000190	0.0000500	1	05/19/2022 05:43	WG1864558
Acenaphthylene	U		0.0000171	0.0000500	1	05/19/2022 05:43	WG1864558
Benzo(a)anthracene	U		0.0000203	0.0000500	1	05/19/2022 05:43	WG1864558
Benzo(a)pyrene	U		0.0000184	0.0000500	1	05/19/2022 05:43	WG1864558
Benzo(b)fluoranthene	U		0.0000168	0.0000500	1	05/19/2022 05:43	WG1864558
Benzo(g,h,i)perylene	U		0.0000184	0.0000500	1	05/19/2022 05:43	WG1864558
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	05/19/2022 05:43	WG1864558
Chrysene	U		0.0000179	0.0000500	1	05/19/2022 05:43	WG1864558
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	05/19/2022 05:43	WG1864558
Fluoranthene	U		0.0000270	0.000100	1	05/19/2022 05:43	WG1864558
Fluorene	U		0.0000169	0.0000500	1	05/19/2022 05:43	WG1864558
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	05/19/2022 05:43	WG1864558
Naphthalene	U		0.0000917	0.000250	1	05/19/2022 05:43	WG1864558
Phenanthrene	U		0.0000180	0.0000500	1	05/19/2022 05:43	WG1864558
Pyrene	U		0.0000169	0.0000500	1	05/19/2022 05:43	WG1864558

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
1-Methylnaphthalene	U		0.0000687	0.000250	1	05/19/2022 05:43	WG1864558
2-Methylnaphthalene	U		0.0000674	0.000250	1	05/19/2022 05:43	WG1864558
(S) Nitrobenzene-d5	*111*			*31.0-160*		*05/19/2022 05:43*	WG1864558
(S) 2-Fluorobiphenyl	*105*			*48.0-148*		*05/19/2022 05:43*	WG1864558
(S) p-Terphenyl-d14	*127*			*37.0-146*		*05/19/2022 05:43*	WG1864558

Metals (ICP) by Method 6010D

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Sodium	5.09		0.504	3.00	1	05/23/2022 16:01	WG1867144

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	05/25/2022 07:27	WG1868301
(S) a,a,a-Trifluorotoluene(FID)	*92.3*			*50.0-150*		*05/25/2022 07:27*	WG1868301
(S) a,a,a-Trifluorotoluene(PID)	*0.000*	J2		*79.0-125*		*05/25/2022 07:27*	WG1868301

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	05/21/2022 00:45	WG1866857
n-Butylbenzene	U		0.000157	0.00100	1	05/21/2022 00:45	WG1866857
sec-Butylbenzene	U		0.000125	0.00100	1	05/21/2022 00:45	WG1866857
tert-Butylbenzene	U		0.000127	0.00100	1	05/21/2022 00:45	WG1866857
Ethylbenzene	U		0.000137	0.00100	1	05/21/2022 00:45	WG1866857
Isopropylbenzene	U		0.000105	0.00100	1	05/21/2022 00:45	WG1866857
Naphthalene	U	C3	0.00100	0.00500	1	05/21/2022 00:45	WG1866857
Toluene	U		0.000278	0.00100	1	05/21/2022 00:45	WG1866857
1,2,4-Trimethylbenzene	U		0.000322	0.00100	1	05/21/2022 00:45	WG1866857
1,3,5-Trimethylbenzene	U		0.000104	0.00100	1	05/21/2022 00:45	WG1866857
m&p-Xylene	U		0.000430	0.00200	1	05/21/2022 00:45	WG1866857
o-Xylene	U		0.000174	0.00100	1	05/21/2022 00:45	WG1866857
(S) Toluene-d8	*103*			*80.0-120*		*05/21/2022 00:45*	WG1866857
(S) 4-Bromofluorobenzene	*96.3*			*77.0-126*		*05/21/2022 00:45*	WG1866857
(S) 1,2-Dichloroethane-d4	*95.2*			*70.0-130*		*05/21/2022 00:45*	WG1866857

Semi-Volatile Organic Compounds (GC) by Method AK102

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
AK102 DRO C10-C25	U		0.229	0.800	1	05/23/2022 19:04	WG1866856
(S) o-Terphenyl	*76.2*			*50.0-150*		*05/23/2022 19:04*	WG1866856

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Anthracene	U		0.0000190	0.0000500	1	05/19/2022 06:03	WG1864558
Acenaphthene	U		0.0000190	0.0000500	1	05/19/2022 06:03	WG1864558
Acenaphthylene	U		0.0000171	0.0000500	1	05/19/2022 06:03	WG1864558
Benzo(a)anthracene	U		0.0000203	0.0000500	1	05/19/2022 06:03	WG1864558
Benzo(a)pyrene	U		0.0000184	0.0000500	1	05/19/2022 06:03	WG1864558
Benzo(b)fluoranthene	U		0.0000168	0.0000500	1	05/19/2022 06:03	WG1864558
Benzo(g,h,i)perylene	U		0.0000184	0.0000500	1	05/19/2022 06:03	WG1864558
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	05/19/2022 06:03	WG1864558
Chrysene	U		0.0000179	0.0000500	1	05/19/2022 06:03	WG1864558
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	05/19/2022 06:03	WG1864558
Fluoranthene	U		0.0000270	0.000100	1	05/19/2022 06:03	WG1864558
Fluorene	U		0.0000169	0.0000500	1	05/19/2022 06:03	WG1864558
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	05/19/2022 06:03	WG1864558
Naphthalene	U		0.0000917	0.000250	1	05/19/2022 06:03	WG1864558
Phenanthrene	U		0.0000180	0.0000500	1	05/19/2022 06:03	WG1864558
Pyrene	U		0.0000169	0.0000500	1	05/19/2022 06:03	WG1864558

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

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
1-Methylnaphthalene	U		0.0000687	0.000250	1	05/19/2022 06:03	WG1864558
2-Methylnaphthalene	U		0.0000674	0.000250	1	05/19/2022 06:03	WG1864558
(S) Nitrobenzene-d5	*109*			*31.0-160*		*05/19/2022 06:03*	WG1864558
(S) 2-Fluorobiphenyl	*106*			*48.0-148*		*05/19/2022 06:03*	WG1864558
(S) p-Terphenyl-d14	*138*			*37.0-146*		*05/19/2022 06:03*	WG1864558

Metals (ICP) by Method 6010D

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Sodium	21.4		0.504	3.00	1	05/23/2022 16:04	WG1867144

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	0.658		0.0287	0.100	1	05/25/2022 07:54	WG1868301
(S) a,a,a-Trifluorotoluene(FID)	*89.8*			*50.0-150*		*05/25/2022 07:54*	WG1868301
(S) a,a,a-Trifluorotoluene(PID)	*0.000*	J2		*79.0-125*		*05/25/2022 07:54*	WG1868301

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	05/21/2022 01:04	WG1866857
n-Butylbenzene	U		0.000157	0.00100	1	05/21/2022 01:04	WG1866857
sec-Butylbenzene	0.000856	J	0.000125	0.00100	1	05/21/2022 01:04	WG1866857
tert-Butylbenzene	U		0.000127	0.00100	1	05/21/2022 01:04	WG1866857
Ethylbenzene	U		0.000137	0.00100	1	05/21/2022 01:04	WG1866857
Isopropylbenzene	0.000773	J	0.000105	0.00100	1	05/21/2022 01:04	WG1866857
Naphthalene	U	C3	0.00100	0.00500	1	05/21/2022 01:04	WG1866857
Toluene	U		0.000278	0.00100	1	05/21/2022 01:04	WG1866857
1,2,4-Trimethylbenzene	0.0124		0.000322	0.00100	1	05/21/2022 01:04	WG1866857
1,3,5-Trimethylbenzene	0.00631		0.000104	0.00100	1	05/21/2022 01:04	WG1866857
m&p-Xylene	U		0.000430	0.00200	1	05/21/2022 01:04	WG1866857
o-Xylene	U		0.000174	0.00100	1	05/21/2022 01:04	WG1866857
(S) Toluene-d8	*110*			*80.0-120*		*05/21/2022 01:04*	WG1866857
(S) 4-Bromofluorobenzene	*96.5*			*77.0-126*		*05/21/2022 01:04*	WG1866857
(S) 1,2-Dichloroethane-d4	*92.2*			*70.0-130*		*05/21/2022 01:04*	WG1866857

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	0.473	J	0.229	0.800	1	05/23/2022 19:24	WG1866856
(S) o-Terphenyl	*80.1*			*50.0-150*		*05/23/2022 19:24*	WG1866856

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Anthracene	U		0.0000190	0.0000500	1	05/19/2022 06:23	WG1864558
Acenaphthene	U		0.0000190	0.0000500	1	05/19/2022 06:23	WG1864558
Acenaphthylene	U		0.0000171	0.0000500	1	05/19/2022 06:23	WG1864558
Benzo(a)anthracene	U		0.0000203	0.0000500	1	05/19/2022 06:23	WG1864558
Benzo(a)pyrene	U		0.0000184	0.0000500	1	05/19/2022 06:23	WG1864558
Benzo(b)fluoranthene	U		0.0000168	0.0000500	1	05/19/2022 06:23	WG1864558
Benzo(g,h,i)perylene	U		0.0000184	0.0000500	1	05/19/2022 06:23	WG1864558
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	05/19/2022 06:23	WG1864558
Chrysene	U		0.0000179	0.0000500	1	05/19/2022 06:23	WG1864558
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	05/19/2022 06:23	WG1864558
Fluoranthene	U		0.0000270	0.000100	1	05/19/2022 06:23	WG1864558
Fluorene	U		0.0000169	0.0000500	1	05/19/2022 06:23	WG1864558
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	05/19/2022 06:23	WG1864558
Naphthalene	U		0.0000917	0.000250	1	05/19/2022 06:23	WG1864558
Phenanthrene	U		0.0000180	0.0000500	1	05/19/2022 06:23	WG1864558
Pyrene	U		0.0000169	0.0000500	1	05/19/2022 06:23	WG1864558

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l		date / time	
1-Methylnaphthalene	U		0.0000687	0.000250	1	05/19/2022 06:23	WG1864558
2-Methylnaphthalene	U		0.0000674	0.000250	1	05/19/2022 06:23	WG1864558
(S) Nitrobenzene-d5	*104*			*31.0-160*		*05/19/2022 06:23*	WG1864558
(S) 2-Fluorobiphenyl	*102*			*48.0-148*		*05/19/2022 06:23*	WG1864558
(S) p-Terphenyl-d14	*129*			*37.0-146*		*05/19/2022 06:23*	WG1864558

Metals (ICP) by Method 6010D

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Sodium	21.6		0.504	3.00	1	05/23/2022 16:07	WG1867144

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	0.596		0.0287	0.100	1	05/25/2022 08:20	WG1868301
(S) a,a,a-Trifluorotoluene(FID)	*92.4*			*50.0-150*		*05/25/2022 08:20*	WG1868301
(S) a,a,a-Trifluorotoluene(PID)	*0.000*	J2		*79.0-125*		*05/25/2022 08:20*	WG1868301

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	0.000105	J	0.0000941	0.00100	1	05/21/2022 05:48	WG1866857
n-Butylbenzene	U		0.000157	0.00100	1	05/21/2022 05:48	WG1866857
sec-Butylbenzene	0.000989	J	0.000125	0.00100	1	05/21/2022 05:48	WG1866857
tert-Butylbenzene	U		0.000127	0.00100	1	05/21/2022 05:48	WG1866857
Ethylbenzene	U		0.000137	0.00100	1	05/21/2022 05:48	WG1866857
Isopropylbenzene	0.000719	J	0.000105	0.00100	1	05/21/2022 05:48	WG1866857
Naphthalene	U	C3	0.00100	0.00500	1	05/21/2022 05:48	WG1866857
Toluene	U		0.000278	0.00100	1	05/21/2022 05:48	WG1866857
1,2,4-Trimethylbenzene	0.0114		0.000322	0.00100	1	05/21/2022 05:48	WG1866857
1,3,5-Trimethylbenzene	0.00546		0.000104	0.00100	1	05/21/2022 05:48	WG1866857
m&p-Xylene	U		0.000430	0.00200	1	05/21/2022 05:48	WG1866857
o-Xylene	U		0.000174	0.00100	1	05/21/2022 05:48	WG1866857
(S) Toluene-d8	*108*			*80.0-120*		*05/21/2022 05:48*	WG1866857
(S) 4-Bromofluorobenzene	*94.4*			*77.0-126*		*05/21/2022 05:48*	WG1866857
(S) 1,2-Dichloroethane-d4	*93.1*			*70.0-130*		*05/21/2022 05:48*	WG1866857

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	0.490	J	0.229	0.800	1	05/23/2022 19:44	WG1866856
(S) o-Terphenyl	*73.3*			*50.0-150*		*05/23/2022 19:44*	WG1866856

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Anthracene	U		0.0000190	0.0000500	1	05/19/2022 06:43	WG1864558
Acenaphthene	U		0.0000190	0.0000500	1	05/19/2022 06:43	WG1864558
Acenaphthylene	U		0.0000171	0.0000500	1	05/19/2022 06:43	WG1864558
Benzo(a)anthracene	U		0.0000203	0.0000500	1	05/19/2022 06:43	WG1864558
Benzo(a)pyrene	U		0.0000184	0.0000500	1	05/19/2022 06:43	WG1864558
Benzo(b)fluoranthene	U		0.0000168	0.0000500	1	05/19/2022 06:43	WG1864558
Benzo(g,h,i)perylene	U		0.0000184	0.0000500	1	05/19/2022 06:43	WG1864558
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	05/19/2022 06:43	WG1864558
Chrysene	U		0.0000179	0.0000500	1	05/19/2022 06:43	WG1864558
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	05/19/2022 06:43	WG1864558
Fluoranthene	U		0.0000270	0.000100	1	05/19/2022 06:43	WG1864558
Fluorene	U		0.0000169	0.0000500	1	05/19/2022 06:43	WG1864558
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	05/19/2022 06:43	WG1864558
Naphthalene	U		0.0000917	0.000250	1	05/19/2022 06:43	WG1864558
Phenanthrene	U		0.0000180	0.0000500	1	05/19/2022 06:43	WG1864558
Pyrene	0.0000197	J	0.0000169	0.0000500	1	05/19/2022 06:43	WG1864558

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
1-Methylnaphthalene	U		0.0000687	0.000250	1	05/19/2022 06:43	WG1864558
2-Methylnaphthalene	U		0.0000674	0.000250	1	05/19/2022 06:43	WG1864558
(S) Nitrobenzene-d5	*113*			*31.0-160*		*05/19/2022 06:43*	WG1864558
(S) 2-Fluorobiphenyl	*109*			*48.0-148*		*05/19/2022 06:43*	WG1864558
(S) p-Terphenyl-d14	*138*			*37.0-146*		*05/19/2022 06:43*	WG1864558

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	05/20/2022 22:49	WG1866857
n-Butylbenzene	U		0.000157	0.00100	1	05/20/2022 22:49	WG1866857
sec-Butylbenzene	U		0.000125	0.00100	1	05/20/2022 22:49	WG1866857
tert-Butylbenzene	U		0.000127	0.00100	1	05/20/2022 22:49	WG1866857
Ethylbenzene	U		0.000137	0.00100	1	05/20/2022 22:49	WG1866857
Isopropylbenzene	U		0.000105	0.00100	1	05/20/2022 22:49	WG1866857
Naphthalene	U	C3	0.00100	0.00500	1	05/20/2022 22:49	WG1866857
Toluene	U		0.000278	0.00100	1	05/20/2022 22:49	WG1866857
1,2,4-Trimethylbenzene	U		0.000322	0.00100	1	05/20/2022 22:49	WG1866857
1,3,5-Trimethylbenzene	U		0.000104	0.00100	1	05/20/2022 22:49	WG1866857
m&p-Xylene	U		0.000430	0.00200	1	05/20/2022 22:49	WG1866857
o-Xylene	U		0.000174	0.00100	1	05/20/2022 22:49	WG1866857
(S) Toluene-d8	*105*			*80.0-120*		*05/20/2022 22:49*	WG1866857
(S) 4-Bromofluorobenzene	*96.0*			*77.0-126*		*05/20/2022 22:49*	WG1866857
(S) 1,2-Dichloroethane-d4	*93.6*			*70.0-130*		*05/20/2022 22:49*	WG1866857

Metals (ICP) by Method 6010D

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Sodium	56.9		0.504	3.00	1	05/23/2022 16:10	WG1867144

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	17.7		0.574	2.00	20	05/25/2022 11:42	WG1868301
(S) a,a,a-Trifluorotoluene(FID)	*92.2*			*50.0-150*		*05/25/2022 11:42*	WG1868301
(S) a,a,a-Trifluorotoluene(PID)	*0.000*	J2		*79.0-125*		*05/25/2022 11:42*	WG1868301

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		0.00471	0.0500	50	05/23/2022 12:50	WG1867954
n-Butylbenzene	U		0.00785	0.0500	50	05/23/2022 12:50	WG1867954
sec-Butylbenzene	U		0.00625	0.0500	50	05/23/2022 12:50	WG1867954
tert-Butylbenzene	U		0.00635	0.0500	50	05/23/2022 12:50	WG1867954
Ethylbenzene	0.533		0.00685	0.0500	50	05/23/2022 12:50	WG1867954
Isopropylbenzene	0.221		0.00525	0.0500	50	05/23/2022 12:50	WG1867954
Naphthalene	0.0571	J	0.0500	0.250	50	05/23/2022 12:50	WG1867954
Toluene	U		0.0139	0.0500	50	05/23/2022 12:50	WG1867954
1,2,4-Trimethylbenzene	3.88		0.0161	0.0500	50	05/23/2022 12:50	WG1867954
1,3,5-Trimethylbenzene	0.756		0.00520	0.0500	50	05/23/2022 12:50	WG1867954
m&p-Xylene	2.37		0.0215	0.100	50	05/23/2022 12:50	WG1867954
o-Xylene	0.403		0.00870	0.0500	50	05/23/2022 12:50	WG1867954
(S) Toluene-d8	*112*			*80.0-120*		*05/23/2022 12:50*	WG1867954
(S) 4-Bromofluorobenzene	*101*			*77.0-126*		*05/23/2022 12:50*	WG1867954
(S) 1,2-Dichloroethane-d4	*118*			*70.0-130*		*05/23/2022 12:50*	WG1867954

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	5.82		0.229	0.800	1	05/23/2022 20:04	WG1866856
(S) o-Terphenyl	*82.3*			*50.0-150*		*05/23/2022 20:04*	WG1866856

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Anthracene	U		0.0000190	0.0000500	1	05/19/2022 07:03	WG1864558
Acenaphthene	U		0.0000190	0.0000500	1	05/19/2022 07:03	WG1864558
Acenaphthylene	U		0.0000171	0.0000500	1	05/19/2022 07:03	WG1864558
Benzo(a)anthracene	U		0.0000203	0.0000500	1	05/19/2022 07:03	WG1864558
Benzo(a)pyrene	U		0.0000184	0.0000500	1	05/19/2022 07:03	WG1864558
Benzo(b)fluoranthene	U		0.0000168	0.0000500	1	05/19/2022 07:03	WG1864558
Benzo(g,h,i)perylene	U		0.0000184	0.0000500	1	05/19/2022 07:03	WG1864558
Benzo(k)fluoranthene	U		0.0000202	0.0000500	1	05/19/2022 07:03	WG1864558
Chrysene	U		0.0000179	0.0000500	1	05/19/2022 07:03	WG1864558
Dibenz(a,h)anthracene	U		0.0000160	0.0000500	1	05/19/2022 07:03	WG1864558
Fluoranthene	U		0.0000270	0.000100	1	05/19/2022 07:03	WG1864558
Fluorene	0.000566		0.0000169	0.0000500	1	05/19/2022 07:03	WG1864558
Indeno(1,2,3-cd)pyrene	U		0.0000158	0.0000500	1	05/19/2022 07:03	WG1864558
Naphthalene	0.0612		0.0000917	0.000250	1	05/19/2022 07:03	WG1864558
Phenanthrene	0.000238		0.0000180	0.0000500	1	05/19/2022 07:03	WG1864558
Pyrene	U		0.0000169	0.0000500	1	05/19/2022 07:03	WG1864558

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
1-Methylnaphthalene	0.0125		0.0000687	0.000250	1	05/19/2022 07:03	WG1864558
2-Methylnaphthalene	0.0221		0.0000674	0.000250	1	05/19/2022 07:03	WG1864558
(S) Nitrobenzene-d5	*140*			*31.0-160*		*05/19/2022 07:03*	WG1864558
(S) 2-Fluorobiphenyl	*106*			*48.0-148*		*05/19/2022 07:03*	WG1864558
(S) p-Terphenyl-d14	*134*			*37.0-146*		*05/19/2022 07:03*	WG1864558

Method Blank (MB)

(MB) R3795024-1 05/23/22 14:21

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) R3795024-2 05/23/22 14:24

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Sodium	10.0	9.54	95.4	80.0-120	

L1493814-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1493814-04 05/23/22 14:27 • (MS) R3795024-4 05/23/22 14:32 • (MSD) R3795024-5 05/23/22 14:35

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	24.6	33.0	33.0	84.6	84.1	1	75.0-125			0.152	20

Method Blank (MB)

(MB) R3795906-2 05/25/22 02:10

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
TPHGAK C6 to C10	U		0.0287	0.100
(S) a,a,a-Trifluorotoluene(FID)	*95.0*			*60.0-120*
(S) a,a,a-Trifluorotoluene(PID)	*0.000*	J2		*79.0-125*

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

(LCS) R3795906-1 05/25/22 01:17 • (LCSD) R3795906-5 05/25/22 13:28

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPHGAK C6 to C10	5.00	4.86	4.56	97.2	91.2	60.0-120			6.37	20
(S) a,a,a-Trifluorotoluene(FID)				*107*	*104*	*60.0-120*				
(S) a,a,a-Trifluorotoluene(PID)				*0.000*	*0.000*	*79.0-125*	J2	J2		

L1493354-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1493354-04 05/25/22 03:56 • (MS) R3795906-3 05/25/22 12:08 • (MSD) R3795906-4 05/25/22 12:35

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	2.50	0.278	2.06	2.45	71.3	86.9	1	70.0-130			17.3	20
(S) a,a,a-Trifluorotoluene(FID)					*95.1*	*99.8*		*50.0-150*				
(S) a,a,a-Trifluorotoluene(PID)					*0.000*	*0.000*		*79.0-125*	J2	J2		

Method Blank (MB)

(MB) R3794774-3 05/20/22 22:30

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
m&p-Xylenes	U		0.000430	0.00200
o-Xylene	U		0.000174	0.00100
(S) Toluene-d8	*104*			*80.0-120*
(S) 4-Bromofluorobenzene	*91.6*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*91.2*			*70.0-130*

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

(LCS) R3794774-1 05/20/22 21:32 • (LCSD) R3794774-2 05/20/22 21:52

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	0.00495	0.00544	99.0	109	70.0-123			9.43	20
n-Butylbenzene	0.00500	0.00535	0.00587	107	117	73.0-125			9.27	20
sec-Butylbenzene	0.00500	0.00505	0.00537	101	107	75.0-125			6.14	20
tert-Butylbenzene	0.00500	0.00479	0.00510	95.8	102	76.0-124			6.27	20
Ethylbenzene	0.00500	0.00477	0.00520	95.4	104	79.0-123			8.63	20
Isopropylbenzene	0.00500	0.00478	0.00516	95.6	103	76.0-127			7.65	20
Naphthalene	0.00500	0.00342	0.00359	68.4	71.8	54.0-135			4.85	20
Toluene	0.00500	0.00514	0.00545	103	109	79.0-120			5.85	20
1,2,4-Trimethylbenzene	0.00500	0.00499	0.00526	99.8	105	76.0-121			5.27	20
1,3,5-Trimethylbenzene	0.00500	0.00433	0.00470	86.6	94.0	76.0-122			8.19	20
m&p-Xylenes	0.0100	0.00942	0.0103	94.2	103	80.0-122			8.92	20
o-Xylene	0.00500	0.00462	0.00522	92.4	104	80.0-122			12.2	20
(S) Toluene-d8				*103*	*103*	*80.0-120*				
(S) 4-Bromofluorobenzene				*93.6*	*95.3*	*77.0-126*				
(S) 1,2-Dichloroethane-d4				*92.0*	*94.5*	*70.0-130*				

L1494982-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1494982-02 05/21/22 07:04 • (MS) R3794774-4 05/21/22 09:38 • (MSD) R3794774-5 05/21/22 09:57

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 %
Benzene	0.00500	0.00182	0.00568	0.00788	77.2	121	1	17.0-158		J3	32.4	27
n-Butylbenzene	0.00500	U	0.00762	0.00943	152	189	1	31.0-150	J5	J5	21.2	30
sec-Butylbenzene	0.00500	U	0.00575	0.00721	115	144	1	33.0-155			22.5	29
tert-Butylbenzene	0.00500	U	0.00451	0.00578	90.2	116	1	34.0-153			24.7	28
Ethylbenzene	0.00500	0.00123	0.00510	0.00597	77.4	94.8	1	30.0-155			15.7	27
Isopropylbenzene	0.00500	U	0.00799	0.00915	160	183	1	28.0-157	J5	J5	13.5	27
Naphthalene	0.00500	U	0.00374	0.00426	74.8	85.2	1	12.0-156			13.0	35
Toluene	0.00500	0.00112	0.00487	0.00604	75.0	98.4	1	26.0-154			21.4	28
1,2,4-Trimethylbenzene	0.00500	U	0.00463	0.00574	92.6	115	1	26.0-154			21.4	27
1,3,5-Trimethylbenzene	0.00500	U	0.00378	0.00507	75.6	101	1	28.0-153		J3	29.2	27
m&p-Xylenes	0.0100		0.00904	0.0114	70.4	94.0	1	43.0-146			23.1	26
o-Xylene	0.00500		0.00447	0.00572	73.3	98.3	1	45.0-144			24.5	26
(S) Toluene-d8					*100*	*97.8*		*80.0-120*				
(S) 4-Bromofluorobenzene					*91.8*	*89.3*		*77.0-126*				
(S) 1,2-Dichloroethane-d4					*95.9*	*102*		*70.0-130*				

Method Blank (MB)

(MB) R3794980-3 05/23/22 12:29

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.0000941	0.00100
n-Butylbenzene	U		0.000157	0.00100
sec-Butylbenzene	U		0.000125	0.00100
tert-Butylbenzene	U		0.000127	0.00100
Ethylbenzene	U		0.000137	0.00100
Isopropylbenzene	U		0.000105	0.00100
Naphthalene	U		0.00100	0.00500
Toluene	U		0.000278	0.00100
1,2,4-Trimethylbenzene	U		0.000322	0.00100
1,3,5-Trimethylbenzene	U		0.000104	0.00100
m&p-Xylenes	U		0.000430	0.00200
o-Xylene	U		0.000174	0.00100
(S) Toluene-d8	*116*			*80.0-120*
(S) 4-Bromofluorobenzene	*99.4*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*115*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3794980-1 05/23/22 11:06

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.00500	0.00444	88.8	70.0-123	
n-Butylbenzene	0.00500	0.00484	96.8	73.0-125	
sec-Butylbenzene	0.00500	0.00524	105	75.0-125	
tert-Butylbenzene	0.00500	0.00483	96.6	76.0-124	
Ethylbenzene	0.00500	0.00497	99.4	79.0-123	
Isopropylbenzene	0.00500	0.00459	91.8	76.0-127	
Naphthalene	0.00500	0.00545	109	54.0-135	
Toluene	0.00500	0.00492	98.4	79.0-120	
1,2,4-Trimethylbenzene	0.00500	0.00490	98.0	76.0-121	
1,3,5-Trimethylbenzene	0.00500	0.00525	105	76.0-122	
m&p-Xylenes	0.0100	0.00939	93.9	80.0-122	
o-Xylene	0.00500	0.00464	92.8	80.0-122	
(S) Toluene-d8			*113*	*80.0-120*	
(S) 4-Bromofluorobenzene			*98.3*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*116*	*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) R3795206-1 05/23/22 11:36

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	*74.9*			*60.0-120*

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

(LCS) R3795206-2 05/23/22 11:56 • (LCSD) R3795206-3 05/23/22 12:16

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	5.30	5.18	88.3	86.3	75.0-125			2.29	20
(S) o-Terphenyl				*99.8*	*99.6*	*60.0-120*				

L1492169-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1492169-01 05/23/22 13:17 • (MS) R3795206-6 05/23/22 13:38 • (MSD) R3795206-7 05/23/22 13:59

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	6.32	U	5.58	5.16	88.3	81.6	1.05	75.0-125			7.82	20
(S) o-Terphenyl					*98.7*	*96.1*		*50.0-150*				

Sample Narrative:

OS: Dilution due to sample volume.

Method Blank (MB)

(MB) R3793793-3 05/18/22 23:32

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	*109*			*31.0-160*
(S) 2-Fluorobiphenyl	*112*			*48.0-148*
(S) p-Terphenyl-d14	*136*			*37.0-146*

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

(LCS) R3793793-1 05/18/22 22:52 • (LCSD) R3793793-2 05/18/22 23:12

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	0.00204	0.00212	102	106	67.0-150			3.85	20
Acenaphthene	0.00200	0.00213	0.00222	106	111	65.0-138			4.14	20
Acenaphthylene	0.00200	0.00211	0.00219	105	109	66.0-140			3.72	20
Benzo(a)anthracene	0.00200	0.00191	0.00194	95.5	97.0	61.0-140			1.56	20
Benzo(a)pyrene	0.00200	0.00200	0.00208	100	104	60.0-143			3.92	20
Benzo(b)fluoranthene	0.00200	0.00213	0.00221	106	111	58.0-141			3.69	20
Benzo(g,h,i)perylene	0.00200	0.00184	0.00190	92.0	95.0	52.0-153			3.21	20
Benzo(k)fluoranthene	0.00200	0.00223	0.00230	111	115	58.0-148			3.09	20
Chrysene	0.00200	0.00229	0.00231	114	115	64.0-144			0.870	20
Dibenz(a,h)anthracene	0.00200	0.00185	0.00202	92.5	101	52.0-155			8.79	20
Fluoranthene	0.00200	0.00190	0.00202	95.0	101	69.0-153			6.12	20
Fluorene	0.00200	0.00219	0.00227	109	114	64.0-136			3.59	20

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

(LCS) R3793793-1 05/18/22 22:52 • (LCSD) R3793793-2 05/18/22 23:12

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	0.00179	0.00186	89.5	93.0	54.0-153			3.84	20
Naphthalene	0.00200	0.00231	0.00230	115	115	61.0-137			0.434	20
Phenanthrene	0.00200	0.00218	0.00231	109	115	62.0-137			5.79	20
Pyrene	0.00200	0.00243	0.00239	122	119	60.0-142			1.66	20
1-Methylnaphthalene	0.00200	0.00221	0.00220	111	110	66.0-142			0.454	20
2-Methylnaphthalene	0.00200	0.00215	0.00207	108	103	62.0-136			3.79	20
(S) Nitrobenzene-d5				*114*	*112*	*31.0-160*				
(S) 2-Fluorobiphenyl				*110*	*117*	*48.0-148*				
(S) p-Terphenyl-d14				*109*	*131*	*37.0-146*				

Method Blank (MB)

(MB) R3795552-3 05/19/22 05:22

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	*122*			*31.0-160*
(S) 2-Fluorobiphenyl	*114*			*48.0-148*
(S) p-Terphenyl-d14	*147*	J1		*37.0-146*

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

(LCS) R3795552-1 05/19/22 04:42 • (LCSD) R3795552-2 05/19/22 05:02

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	0.00237	0.00239	118	119	67.0-150			0.840	20
Acenaphthene	0.00200	0.00229	0.00233	114	117	65.0-138			1.73	20
Acenaphthylene	0.00200	0.00250	0.00251	125	125	66.0-140			0.399	20
Benzo(a)anthracene	0.00200	0.00232	0.00244	116	122	61.0-140			5.04	20
Benzo(a)pyrene	0.00200	0.00206	0.00229	103	114	60.0-143			10.6	20
Benzo(b)fluoranthene	0.00200	0.00215	0.00221	108	111	58.0-141			2.75	20
Benzo(g,h,i)perylene	0.00200	0.00182	0.00212	91.0	106	52.0-153			15.2	20
Benzo(k)fluoranthene	0.00200	0.00214	0.00221	107	111	58.0-148			3.22	20
Chrysene	0.00200	0.00214	0.00229	107	114	64.0-144			6.77	20
Dibenz(a,h)anthracene	0.00200	0.00185	0.00217	92.5	108	52.0-155			15.9	20
Fluoranthene	0.00200	0.00229	0.00235	114	117	69.0-153			2.59	20
Fluorene	0.00200	0.00233	0.00233	117	117	64.0-136			0.000	20

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

(LCS) R3795552-1 05/19/22 04:42 • (LCSD) R3795552-2 05/19/22 05:02

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	0.00198	0.00231	99.0	115	54.0-153			15.4	20
Naphthalene	0.00200	0.00234	0.00234	117	117	61.0-137			0.000	20
Phenanthrene	0.00200	0.00226	0.00227	113	114	62.0-137			0.442	20
Pyrene	0.00200	0.00227	0.00260	114	130	60.0-142			13.6	20
1-Methylnaphthalene	0.00200	0.00236	0.00238	118	119	66.0-142			0.844	20
2-Methylnaphthalene	0.00200	0.00227	0.00227	114	114	62.0-136			0.000	20
(S) Nitrobenzene-d5				*118*	*119*	*31.0-160*				
(S) 2-Fluorobiphenyl				*111*	*113*	*48.0-148*				
(S) p-Terphenyl-d14				*113*	*139*	*37.0-146*				

L1493286-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1493286-01 05/19/22 11:24 • (MS) R3795552-4 05/19/22 11:44 • (MSD) R3795552-5 05/19/22 12:04

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 %
Anthracene	0.00200	U	0.00201	0.00198	100	99.0	1	56.0-156			1.50	20
Acenaphthene	0.00200	U	0.00209	0.00208	105	104	1	44.0-153			0.480	20
Acenaphthylene	0.00200	U	0.00214	0.00210	107	105	1	53.0-150			1.89	20
Benzo(a)anthracene	0.00200	U	0.00190	0.00174	95.0	87.0	1	47.0-151			8.79	20
Benzo(a)pyrene	0.00200	U	0.00142	0.00123	71.0	61.5	1	45.0-146			14.3	20
Benzo(b)fluoranthene	0.00200	U	0.00165	0.00143	82.5	71.5	1	43.0-142			14.3	20
Benzo(g,h,i)perylene	0.00200	U	0.00112	0.000920	56.0	46.0	1	40.0-147			19.6	20
Benzo(k)fluoranthene	0.00200	U	0.00167	0.00145	83.5	72.5	1	43.0-148			14.1	21
Chrysene	0.00200	U	0.00189	0.00177	94.5	88.5	1	50.0-148			6.56	20
Dibenz(a,h)anthracene	0.00200	U	0.00153	0.00127	76.5	63.5	1	37.0-151			18.6	20
Fluoranthene	0.00200	U	0.00230	0.00217	115	108	1	56.0-157			5.82	20
Fluorene	0.00200	U	0.00208	0.00202	104	101	1	48.0-148			2.93	20
Indeno(1,2,3-cd)pyrene	0.00200	U	0.00119	0.00104	59.5	52.0	1	41.0-148			13.5	20
Naphthalene	0.00200	U	0.00213	0.00213	106	106	1	10.0-160			0.000	20
Phenanthrene	0.00200	U	0.00210	0.00208	105	104	1	47.0-147			0.957	20
Pyrene	0.00200	U	0.00240	0.00234	120	117	1	51.0-148			2.53	20
1-Methylnaphthalene	0.00200	U	0.00218	0.00215	109	108	1	21.0-160			1.39	20
2-Methylnaphthalene	0.00200	U	0.00201	0.00201	100	100	1	31.0-160			0.000	20
(S) Nitrobenzene-d5					*105*	*103*		*31.0-160*				
(S) 2-Fluorobiphenyl					*103*	*103*		*48.0-148*				
(S) p-Terphenyl-d14					*115*	*99.5*		*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
C3	The reported concentration is an estimate. The continuing calibration standard associated with this data responded low. Method sensitivity check is acceptable.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits.
J3	The associated batch QC was outside the established quality control range for precision.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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

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

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

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

Company Name/Address:
Stantec - Anchorage, AK

725 E Fireweed Lane
Suite 200
Anchorage, AK 99503

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

Pres Chk

Report to:
Mr. John Marshall

Email To: craig.cothron@pacelabs.com

Project Description:
Speedway 5325

City/State Collected: Wasilla, AK

Please Circle: PT MT CT ET

Phone: **907-266-1108**

Client Project # 185705772

Lab Project # STAAAKSSA-5325

Collected by (print): John Marshall

Site/Facility ID # 0005325

P.O. #

Collected by (signature): J. Marshall

Immediately Packed on Ice N ___ Y ✓

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

Quote #

Date Results Needed: Standard

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	AK101 40mlAmb HCl	AK102 100ml Amb HCl	NAICP 250mlHDPE-HNO3	PAHSIMLVID 40mlAmb-NoPres-WT	V8260C 40mlAmb-HCl	V8260C 40mlAmb-HCl-Blk					Remarks	Sample # (lab only)
G-01	G	GW		5/11/22	1316	11	X	X	X	X	X							-01
G-03		GW		5/11/22	1630	11	X	X	X	X	X							-02
G-05		GW		5/11/22	1205	11	X	X	X	X	X							-03
G-07		GW		5/11/22	1058	11	X	X	X	X	X							-04
MW16-02		GW		5/11/22	1507	11	X	X	X	X	X							-05
DUP1		GW		5/11/22	1509	11	X	X	X	X	X							-06
TRIP BLANK		GW		5/11/22	—	1						X						-07
RW16-01		GW		5/11/22	1412	11	X	X	X	X	X							-08

* 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 # 5489 4030 9506

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:	Received by: (Signature)
Relinquished by : (Signature)	5/12/22	1500	
Relinquished by : (Signature)			Received by: (Signature)
Relinquished by : (Signature)			Received for lab by: (Signature)

Trip Blank Received: Yes / No
HCl / MeoH
TBR

Temp: DRY °C Bottles Received: 77
0+10=0.4

Date: 5/14/22 Time: 945

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Chain of Custody Page 1 of 1

Pace
PEOPLE ADVANCING SCIENCE

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

SDG # 149352

G021

Acctnum: STAAAKSSA
Template: T175035
Prelogin: P923308
PM: 034 - Craig Cothron
PB: 5-6-2022 GM

Shipped Via: FedEx 2nd Day

L1493952

Chain-of-Custody-Record

COC ID # 00054111

TURN AROUND TIME
STANDARD

Speedway Project Information

Speedway Store #:	C215705325	**Facility ID**	
Address:	7172 W. Parks HWY		
City:	Wasilla	**State:**	AK
Phone #:		**Fax #:**	
Speedway Proj. Mgr:	Anastasia Duarte	****INVOICE TO SPEEDWAY****	
AFE #:	190364	**Work Order #:**	1104120548

Lab Information

Lab:	Pace Analytical Services (TN)
Consultant:	Stantec - Anchorage
Project Mgr:	John Marshall
Address:	725 East Fireweed Lane, Suite 200, Anchorage, Alaska. 99503
Phone #:	**Fax #:**
Sampler:	JM
Shipped:	FedExp
Tracking #:	127364354

Sample ID	Date/Time Sampled	Matrix	Count	Container Type	Preservative	Analysis to be Performed	Method	Remarks
G-01	05/11/2022 01:16pm	W	11	VOA	HCL	AK 8260 VOC Fuels List	8260C	
				VOA	HCL	AK101 - GRO	8015	
				250 ML AMBER GLASS	HCL	AK102 - DRO	8100	
				240 ML PLASTIC	HNO3	Sodium	6010	
				250 ML AMBER GLASS	NONE	PAH	8270D SIM	
G-03	05/11/2022 04:30pm	W	11	VOA	HCL	AK 8260 VOC Fuels List	8260C	
				VOA	HCL	AK101 - GRO	8015	
				250 ML AMBER GLASS	HCL	AK102 - DRO	8100	
				240 ML PLASTIC	HNO3	Sodium	6010	
				250 ML AMBER GLASS	NONE	PAH	8270D SIM	

Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by laboratory:	Date	Time

Special Reporting Requirements:	Lab Notes:	Temp

L1493952

Chain-of-Custody-Record

COC ID # 00054111

TURN AROUND TIME
STANDARD

Speedway Project Information

Speedway Store #:	C215705325	**Facility ID**	
Address:	7172 W. Parks HWY		
City:	Wasilla	**State:**	AK
Phone #:		**Fax #:**	
Speedway Proj. Mgr:	Anastasia Duarte	****INVOICE TO SPEEDWAY****	
AFE #:	190364	**Work Order #:**	1104120548

Lab Information

Lab:	Pace Analytical Services (TN)
Consultant:	Stantec - Anchorage
Project Mgr:	John Marshall
Address:	725 East Fireweed Lane, Suite 200, Anchorage, Alaska. 99503
Phone #:	**Fax #:**
Sampler:	JM
Shipped:	FedExp
Tracking #:	127364354

Sample ID	Date/Time Sampled	Matrix	Count	Container Type	Preservative	Analysis to be Performed	Method	Remarks
G-05	05/11/2022 12:05pm	W	11	VOA	HCL	AK 8260 VOC Fuels List	8260C	
				VOA	HCL	AK101 - GRO	8015	
				250 ML AMBER GLASS	HCL	AK102 - DRO	8100	
				240 ML PLASTIC	HNO3	Sodium	6010	
				250 ML AMBER GLASS	NONE	PAH	8270D SIM	
G-07	05/11/2022 10:58am	W	11	VOA	HCL	AK 8260 VOC Fuels List	8260C	
				VOA	HCL	AK101 - GRO	8015	
				250 ML AMBER GLASS	HCL	AK102 - DRO	8100	
				240 ML PLASTIC	HNO3	Sodium	6010	
				250 ML AMBER GLASS	NONE	PAH	8270D SIM	

Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by laboratory:	Date	Time
Special Reporting Requirements:			Lab Notes:	Temp	

L1493952

Chain-of-Custody-Record

COC ID # 00054111

TURN AROUND TIME
STANDARD

Speedway Project Information

Speedway Store #:	C215705325	**Facility ID**	
Address:	7172 W. Parks HWY		
City:	Wasilla	**State:**	AK
Phone #:		**Fax #:**	
Speedway Proj. Mgr:	Anastasia Duarte	****INVOICE TO SPEEDWAY****	
AFE #:	190364	**Work Order #:**	1104120548

Lab Information

Lab:	Pace Analytical Services (TN)
Consultant:	Stantec - Anchorage
Project Mgr:	John Marshall
Address:	725 East Fireweed Lane, Suite 200, Anchorage, Alaska. 99503
Phone #:	**Fax #:**
Sampler:	JM
Shipped:	FedExp
Tracking #:	127364354

Sample ID	Date/Time Sampled	Matrix	Count	Container Type	Preservative	Analysis to be Performed	Method	Remarks
MW16-02	05/11/2022 03:07pm	W	11	VOA	HCL	AK 8260 VOC Fuels List	8260C	
				VOA	HCL	AK101 - GRO	8015	
				250 ML AMBER GLASS	HCL	AK102 - DRO	8100	
				240 ML PLASTIC	HNO3	Sodium	6010	
				250 ML AMBER GLASS	NONE	PAH	8270D SIM	
RW16-01	05/11/2022 02:12pm	W	11	VOA	HCL	AK 8260 VOC Fuels List	8260C	
				VOA	HCL	AK101 - GRO	8015	
				250 ML AMBER GLASS	HCL	AK102 - DRO	8100	
				240 ML PLASTIC	HNO3	Sodium	6010	
				250 ML AMBER GLASS	NONE	PAH	8270D SIM	

Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by laboratory:	Date	Time
Special Reporting Requirements:			Lab Notes:	Temp	

L1493952

Chain-of-Custody-Record

COC ID # 00054111

TURN AROUND TIME
STANDARD

Speedway Project Information

Speedway Store #:	C215705325	**Facility ID**	
Address:	7172 W. Parks HWY		
City:	Wasilla	**State:**	AK
Phone #:		**Fax #:**	
Speedway Proj. Mgr:	Anastasia Duarte	****INVOICE TO SPEEDWAY****	
AFE #:	190364	**Work Order #:**	1104120548

Lab Information

Lab:	Pace Analytical Services (TN)
Consultant:	Stantec - Anchorage
Project Mgr:	John Marshall
Address:	725 East Fireweed Lane, Suite 200, Anchorage, Alaska. 99503
Phone #:	**Fax #:**
Sampler:	JM
Shipped:	FedExp
Tracking #:	127364354

Sample ID	Date/Time Sampled	Matrix	Count	Container Type	Preservative	Analysis to be Performed	Method	Remarks
TRIP BLANK	05/11/2022 12:00pm	W	1	VOA	HCL	AK 8260 VOC Fuels List	8260C	
DUP1	05/11/2022 12:00am	W	11	VOA	HCL	AK 8260 VOC Fuels List	8260C	
				VOA	HCL	AK101 - GRO	8015	
				250 ML AMBER GLASS	HCL	AK102 - DRO	8100	
				240 ML PLASTIC	HNO3	Sodium	6010	
				250 ML AMBER GLASS	NONE	PAH	8270D SIM	

Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by laboratory:	Date	Time
Special Reporting Requirements:			Lab Notes:	Temp	

L1493952

Chain of Custody Analysis to be Performed
COC ID # 54111

Chain-of-Custody-Record
Printed: 05/17/2022

nalysis Name: AK 8260 VOC Fuels List (Water)

nalysis Description / Method: AK 8260C VOC Fuels Only List / 8260C

ntainer Type / Preservative: VOA / HCL

nalytes: 1,2,4-Trimethylbenzene ug/L, 1,3,5-Trimethylbenzene ug/L, Benzene ug/L, Ethylbenzene ug/L, Isopropylbenzene ug/L, Naphthalene ug/L, Toluene ug/L, m,p-Xylene ug/L, n-Butylbenzene ug/L, o-Xylene ug/L, c-Butylbenzene ug/L, tert-Butylbenzene ug/L

nalysis Name: AK101 - GRO (Water)

nalysis Description / Method: AK101 - GRO (C6-C10) / 8015

ntainer Type / Preservative: VOA / HCL

nalytes: Gasoline Range Organics ug/L

nalysis Name: AK102 - DRO (Water)

nalysis Description / Method: AK102 - DRO (C10-C25) / 8100

ntainer Type / Preservative: 250 ML AMBER GLASS / HCL

nalytes: Diesel Range Organics ug/L

nalysis Name: PAH (Water)

nalysis Description / Method: PAH / 8270D SIM

ntainer Type / Preservative: 250 ML AMBER GLASS / NONE

nalytes: 1-Methylnaphthalene ug/L, 2-Methylnaphthalene ug/L, Acenaphthene ug/L, Acenaphthylene ug/L, Anthracene ug/L, Benzo(a)anthracene ug/L, Benzo(a)pyrene ug/L, Benzo(b)fluoranthene ug/L, enzo(g,h,I)perylene ug/L, Benzo(k)fluoranthene ug/L, Chrysene ug/L, Dibenz(a,h)anthracene ug/L, Fluoranthene ug/L, Fluorene ug/L, Indeno(1,2,3-cd)pyrene ug/L, Naphthalene ug/L, Phenanthrene ug/L, Pyrene ug/L

nalysis Name: Sodium (Water)

L1493952

Chain of Custody Analysis to be Performed
COC ID # 54111

Chain-of-Custody-Record
Printed: 05/17/2022

ıalysis Description / Method: Sodium - 6010 - Metals / 6010

ɔntainer Type / Preservative: 240 ML PLASTIC / HNO3

ıalytes: Sodium ug/L

Laboratory Data Review Checklist

Completed By:

Jeremiah Malenfant

Title:

Geologist-In-Training

Date:

6/14/2022

Consultant Firm:

Stantec Consulting Services Inc.

Laboratory Name:

Pace Analytical

Laboratory Report Number:

L1493952

Laboratory Report Date:

5/14/2022

CS Site Name:

Speedway 5325 (Former T2GM #52)

ADEC File Number:

2265.26.006

Hazard Identification Number:

23769

L1493952

Laboratory Report Date:

5/14/2022

CS Site Name:

Speedway 5325 (Former T2GM #52)

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

1. Laboratory

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

   Yes☒ No☐ N/A☐ Comments:

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

   Yes☐ No☐ N/A☒ Comments:

   Samples not transferred

2. Chain of Custody (CoC)

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

   Yes☒ No☐ N/A☐ Comments:

   b. Correct analyses requested?

   Yes☒ No☐ N/A☐ Comments:

3. Laboratory Sample Receipt Documentation

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

   Yes☒ No☐ N/A☐ Comments:

   0.4 °C

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

   Yes☒ No☐ N/A☐ Comments:

L1493952

Laboratory Report Date:

5/14/2022

CS Site Name:

Speedway 5325 (Former T2GM #52)

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 documented.

e. Data quality or usability affected?

Comments:

No.

4. Case Narrative

a. Present and understandable?

Yes☒ No☐ N/A☐ Comments:

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

Yes☐ No☒ N/A☐ Comments:

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

c. Were all corrective actions documented?

Yes☐ No☐ N/A☒ Comments:

No corrective actions taken.

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

Comments:

No effect on data quality/usability.

L1493952

Laboratory Report Date:

5/14/2022

CS Site Name:

Speedway 5325 (Former T2GM #52)

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:

GRO analyzed at 14 days, PAHs extracted at 7 days

c. All soils reported on a dry weight basis?

Yes☐ No☐ N/A☒ Comments:

No soil samples submitted to lab.

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

Yes☐ No☒ N/A☐ Comments:

Benzene LOQ in sample RW16-1 was 0.0500 mg/L, above the cleanup level of 0.0046. This could be the result of high dilution in this sample (50x).

e. Data quality or usability affected?

Non-detection with an LOQ above GCL treated as an exceedance; other contaminants above GCLs in well suggest actual value above GCL as well.

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:

L1493952

Laboratory Report Date:

5/14/2022

CS Site Name:

Speedway 5325 (Former T2GM #52)

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

Comments:

None.

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

Yes☐ No☐ N/A☒ Comments:

No samples affected.

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:

L1493952

Laboratory Report Date:

5/14/2022

CS Site Name:

Speedway 5325 (Former T2GM #52)

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

Comments:

N/A

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

Yes☐ No☐ N/A☒ Comments:

No affected samples

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

Comments:

No.

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

Note: Leave blank if not required for project

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

Yes☒ No☐ N/A☐ Comments:

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

Yes☒ No☐ N/A☐ Comments:

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

Yes☐ No☒ N/A☐ Comments:

n-Butylbenzene and isopropylbenzene by method 8260C had recoveries above the accepted limits.

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:

Benzene and 1,3,5-TMB by method 8260C had RPDs above the accepted limits.

L1493952

Laboratory Report Date:

5/14/2022

CS Site Name:

Speedway 5325 (Former T2GM #52)

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

Comments:

n-Butylbenzene and isopropylbenzene are not typically reported analytes, benzene was not detected in samples G-3, G-7, and MW16-2 (affected samples), and 1,3,5-TMB was not detected in G-3 and G-7. The 1,3,5-TMB detection in MW16-2 was not flagged in the lab report.

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

Yes☐ No☒ N/A☐ Comments:

See above.

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

Comments:

No; 1,3,5-TMB detection in MW16-2 is an order of magnitude below GCL. Other affected samples were non-detections.

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

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

Yes☐ No☐ N/A☒ Comments:

Not included.

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

Yes☐ No☐ N/A☒ Comments:

Not included.

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

Yes☐ No☐ N/A☒ Comments:

Not included.

iv. Data quality or usability affected?

Comments:

No affected samples.

L1493952

Laboratory Report Date:

5/14/2022

CS Site Name:

Speedway 5325 (Former T2GM #52)

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:

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:

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

Comments:

No affected samples.

v. Data quality or usability affected?

Comments:

No affected samples.

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:

L1493952

Laboratory Report Date:

5/14/2022

CS Site Name:

Speedway 5325 (Former T2GM #52)

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:

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

Comments:

No.

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

Yes☐ No☐ N/A☒ Comments:

All disposable equipment.

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

Yes☐ No☐ N/A☒ Comments:

All disposable equipment.

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

Comments:

None.

iii. Data quality or usability affected?

Comments:

No.

L1493952

Laboratory Report Date:

5/14/2022

CS Site Name:

Speedway 5325 (Former T2GM #52)

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

   a. Defined and appropriate?

      Yes☒ No☐ N/A☐ Comments: