



Stantec Consulting Services Inc.
725 East Fireweed Lane Suite 200, Anchorage AK 99503-2245

February 4, 2021

Stantec Project Number: 185704923

Anastasia Duarte, REHS/RS
Retail Environmental Remediation Administrator, Pacific Division
Speedway LLC
18336 Aurora Avenue North, Suite 105, #65028
Shoreline, Washington 981330-9996

RE: ***2021 Corrective Action Work Plan***

Speedway Store 5314 (formerly Tesoro 2 Go Mart 76)
3600 East Palmer Wasilla Highway, Wasilla, Alaska
ADEC Facility ID #2986; ADEC File #2265.26.037

Dear Ms. Duarte:

This letter presents the proposed work plan tasks for the 2021 (calendar year) Corrective Action Plan (CAP) pertaining to the investigation and/or remediation of contamination at the above referenced site. This 2021 CAP will be presented at the annual work session with the Alaska Department of Environmental Conservation (ADEC), Speedway LLC and Stantec Consulting Services Inc. (Stantec). The work session is scheduled for February 4, 2021, and will be presented virtually by Stantec via Microsoft Teams app.

The following sections provide a summary of the work plan tasks that were completed under the ADEC approved 2020 CAP and the proposed work plan tasks for the 2021 CAP. Attached to this letter are the project site plans and analytical test results for samples collected during the completion of the tasks. The site plans and test results will be included in the presentation of the February 4 work session.

2020 Work Plan Tasks

- ***Task 1 – Groundwater Monitoring***
This task was partially completed in accordance with the approved 2020 CAP. Only two of the proposed four quarterly monitoring events were completed due to temporary shutdown of field work during the first two quarters of 2020 as a result of Covid-19.
- ***Task 2 – Complete Install of the RW 19-1 Recirculation Groundwater Treatment System***
This task was completed in accordance with the approved 2020 CAP.

- Task 3 – O&M Chemical Oxidation (Chemox) Treatment System

This task was partially completed in accordance with the approved 2020 CAP. Only two of the proposed three chemox injection events were completed due to temporary shutdown of field work as a result of Covid-19.

Proposed Work Plan Tasks for 2021

- Task 1 – Groundwater Monitoring

Quarterly monitoring of the groundwater wells and annual monitoring of several existing drinking water wells will be conducted. Sampling locations and analyses for the monitoring and drinking water wells are listed on the 2021 Work Plan Schedule below.

Work Plan Task		1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter
Task 1	Monitoring Wells: MW-1, MW-2, MW-3, and MW-4 including Remediation/Recirculation Well RW 19-1	V, G, D, S & I	V, G, D, S & I	V, G, D, S & I	V, G, D, P, S & I
	On-site Domestic Drinking Water Well				D & E
Task 2	O&M Recirculation Groundwater Treatment System	✓	✓	✓	✓
Task 3	Chemical Oxidation Treatment		✓	✓	✓

Key: AK – Alaska Test Method

D – Diesel range organics by AK102.

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, by EPA Test Method 8270D Selective Ion Monitoring (SIM).

- Task 2 – O&M Recirculation Groundwater Treatment System

Stantec will perform quarterly maintenance to check the operation of the recirculation groundwater remediation system. The 4-inch diameter remediation well (RW 19-1) will be operated on a continuous basis, operating 24 hours per day. In addition, the well will be used to deliver the chemox solution (proposed in Task 3). An iMonnit[®] sensor will monitor the electrical wires on the submersible well pump used in RW 19-1 and a sensor will monitor the water pressure on the water line to the injection wells, and a sensor will monitor the external temperature of the water line. The pump operation will be monitored

several times a day via a wireless broadband network (cellular internet) to ensure the pump is operating properly.

- Task 3 –Chemical Oxidation (Chemox) Treatment

Stantec will provide chemox treatment of the petroleum contaminated soil and groundwater into the three former bio-spargers vertical wells three times a year. The former bio-sparger wells are located beneath the store building in the footprint of the former UST (source of contamination). The injection of chemox will occur in the 2nd, 3rd and 4th quarters of the year. The first annual injection will occur in the spring of the year after the winter frost dissipates, and the second and third injection will take place several months later just prior to winter freeze-up. A minimum of 100 gallons of a prepared solution of the chemical oxidant Klozur One[®] (a chemical mixture consisting primarily of sodium persulfate) will be injected into each injection well. The chemox mixture for each well will consist of 110 pounds Klozur One[®] mixed with approximately 100 gallons of clear water. The on-site groundwater monitoring wells and the recirculation/remediation well will be sampled quarterly as outlined in Task 1 to assess treatment impact the groundwater table downgradient of the new injection wells. In addition, the wells will be sampled for sodium to check on the distribution/migration of the oxidant.

The Corrective Action Work Plan for the year 2021 will be implemented by Stantec on behalf of Speedway. Groundwater monitoring will be conducted to track migration and trends of contaminants that are present at the site. All sampling activities will be completed in accordance with ADEC's *Underground Storage Tanks Procedures Manual– Standard Sampling Procedures* (March 22, 2017). The methods that will be used for conducting a monitoring event, unless otherwise noted in the monitoring report, will include:

- The static water levels in the monitoring wells will be measured with respect to the top of each well casing. The elevation of the static water level will be based on an arbitrary datum established on-site during a vertical control survey that will be completed by Stantec on an annual basis. The survey will be performed during the summer after the seasonal frost layer thaws.
- The monitoring wells will be purged of a minimum of three well bore volumes prior to collecting the water samples. A new, disposable, Teflon[®] bailer will be used to sample each well. The first bail of water removed from each well will be examined for petroleum odor, sheen, and any other unique physical features.
- Water samples will be collected in laboratory-supplied sample containers. The samples will be delivered to an ADEC-approved laboratory in accordance with standard chain-of-custody procedures.
- Additional water samples will be collected from the monitoring wells after the well has been purged, as described above, and tested in the field for chemical and physical intrinsic parameters listed in the 2021 Work Plan Schedule shown above.



If you have any questions or need additional information concerning this 2021 Corrective Action Work Plan, please contact us at (907) 248-8883.

Regards,

STANTEC CONSULTING SERVICES INC.

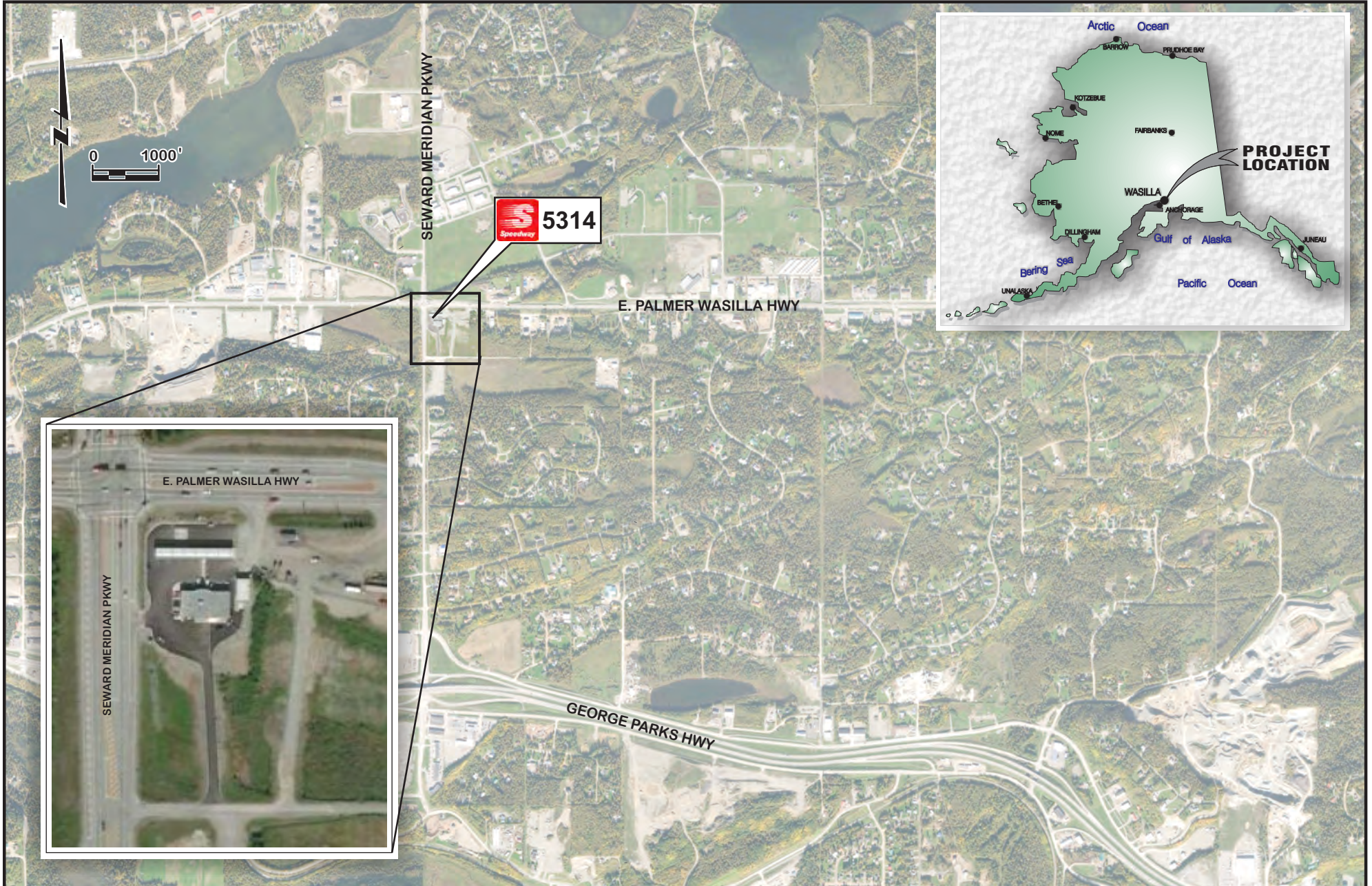
A handwritten signature in black ink, appearing to read "M. Zidek".

Michael A. Zidek, PMP
Project Manager

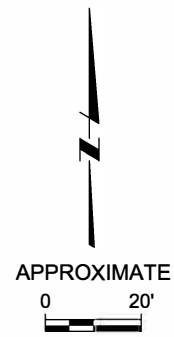
A handwritten signature in black ink, appearing to read "Bob E. Gilfilian".

Bob Gilfilian, P.E.
Project Technical Lead

Attachments: Vicinity Map and Site Plan
Analytical Test Results (historical tables)



E. PALMER WASILLA HWY



APPROXIMATE LOCATION OF PROPERTY LINE
3600 PALMER-WASILLA HWY

WATER SUPPLY WELL LOCATION

UNDERGROUND STORAGE TANK

CANOPY

FUEL DISPENSER (TYP)

SEPTIC SYSTEM

MW-1

RW1

CAR WASH

TESORO
2 GO MART #76

RW2

F-UST

UNDERGROUND PIPING

REMEDIAION WELL ACCESS POINT

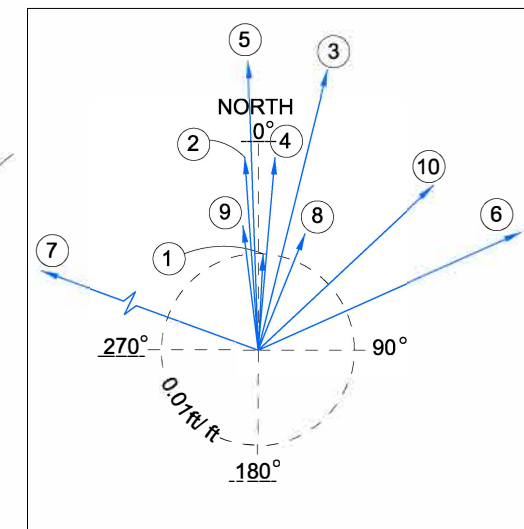
RW19-1

MW-4

MW-2

MW-3

CAMERON ACRES
BLOCK 1
LOT 7



GROUNDWATER FLOW SUMMARY

DATE	BEARING	GRADIENT (ft/ft)
1 SEP. 1, 2017	3°	0.01
2 FEB. 15, 2018	356°	0.02
3 JUNE 29, 2018	14°	0.03
4 SEP. 11, 2018	5°	0.02
5 OCT. 26, 2018	358°	0.03
6 FEB. 25, 2019	66°	0.03
7 APRIL 25, 2019	290°	0.04
8 JULY 25, 2019	22°	0.013
9 OCT. 18, 2019	353°	0.013
10 AUG. 11, 2020	47°	0.025

MW-1

Benzene	0.00262
Toluene	U (0.001)
Ethylbenzene	U (0.001)
Xylenes	U (0.003)
GRO	U (0.1)
DRO	U (0.808)
Sodium	35.8
GW Elev	73.28

MW-2

Benzene	0.0599
Toluene	0.0107
Ethylbenzene	0.0759
Xylenes	0.465
GRO	0.921
DRO	0.553
Sodium	33.2
GW Elev	74.50

RW19-1

Benzene	0.00126
Toluene	U (0.001)
Ethylbenzene	U (0.001)
Xylenes	0.000489
GRO	U (0.1)
DRO	U (0.848)
Sodium	28.8
GW Elev	TBD

RW19-1 (Duplicate)

Benzene	0.00120
Toluene	U (0.001)
Ethylbenzene	U (0.001)
Xylenes	0.000302
GRO	U (0.1)
DRO	U (0.840)
Sodium	28.9
GW Elev	TBD

MW-3

Benzene	0.737
Toluene	1.05
Ethylbenzene	2.99
Xylenes	17.0
GRO	32.8
DRO	4.89
Sodium	52.4
GW Elev	75.60

MW-4

Benzene	0.054
Toluene	U (0.001)
Ethylbenzene	0.000455
Xylenes	0.00933
GRO	0.0840
DRO	U (0.800)
Sodium	58.4
GW Elev	75.75

LEGEND:

- F-UST FORMER UNDERGROUND STORAGE TANK
- ▲ MONITORING WELL LOCATION
- REMEDIATION WELL LOCATION
- DRO DIESEL RANGE ORGANICS
- GRO GASOLINE RANGE ORGANICS
- H SAMPLE WAS PREPPED OR ANALYZED BEYOND THE SPECIFIED HOLDING TIME
- RW REMEDIATION WELL
- U UNDETECTED ABOVE PRACTICAL QUANTITATION LIMITS SHOWN IN PARENTHESES
- W DRINKING WATER WELL

NOTES:

1. RESULTS SHOWN ARE FOR WELLS SAMPLED ON AUGUST 11, 2020.
2. RESULTS ARE IN MILLIGRAMS PER LITER
3. BOLD/ RED TEXT INDICATES CONTAMINANT CONCENTRATIONS ABOVE CLEANUP LEVELS FOR THIS SITE



2021 CORRECTIVE ACTION PLAN
FOR SPEEDWAY STORE 5314
(FORMERLY TESORO 2 GO MART #76)

SITE PLAN
WITH AUGUST 2020
GROUNDWATER ANALYTICAL
RESULTS

FIGURE

2

185704923.
100.100

Tables of Historical Monitoring Data

Monitoring Well MW-1

Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	GRO (mg/L)	DRO (mg/L)	GW Elev (feet)
06-Nov-14	0.027	U (0.0005)	U (0.0005)	U (0.0015)	0.067	0.36	76.15
25-Feb-15	0.0013	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.41)	76.16
10-Jun-15	U (0.002)	U (0.002)	U (0.003)	U (0.002)	U (0.060)	0.50	76.59
02-Sep-15	0.0011	U (0.001)	U (0.001)	U (0.003)	U (0.1)	U (0.40)	76.36
12-Nov-15	0.029	U (0.002)	U (0.003)	U (0.002)	0.14	U (0.21)	78.14
20-Jan-16	0.071	U (0.002)	U (0.003)	U (0.002)	0.18	0.22	77.57
09-May-16	0.026	U (0.001)	U (0.001)	U (0.003)	0.1	U (0.45)	77.70
13-Oct-16	0.053	U (0.001)	U (0.001)	U (0.003)	0.84	0.36	77.53
09-Dec-16	0.027	U (0.002)	U (0.002)	U (0.003)	0.067	0.67	76.74
08-Feb-17	0.010	U (0.002)	U (0.003)	U (0.002)	0.057	0.27	76.14
24-Apr-17	0.0096	U (0.002)	U (0.003)	U (0.003)	U (0.001)	U (0.0003)	77.39
01-Sep-17	0.0068	U (0.002)	U (0.003)	U (0.002)	U (1.0)	0.250	78.61
15-Feb-18	0.012	U (0.002)	U (0.003)	U (0.003)	U (1.0)	U (0.13)	77.07
29-Jun-18	0.026	U (0.002)	U (0.003)	U (0.003)	U (0.25) H	0.30	76.34
11-Sep-18	0.01	U (0.001)	U (0.001)	U (0.002)	U (0.15)	U (0.27)	76.80
26-Oct-18	0.015	U (0.002)	U (0.003)	U (0.003)	U (0.25)	0.31	76.94
25-Feb-19	0.0037	U (0.002)	U (0.003)	U (0.003)	U (0.25)	0.19	76.59
25-Apr-19	U (0.003)	U (0.002)	U (0.003)	U (0.003)	U (0.25)	U (0.27)	77.94
25-Jul-19	0.0071	U (0.002)	U (0.003)	U (0.003)	U (0.25)	0.27	76.78
18-Oct-19	U (0.003)	U (0.002)	U (0.003)	U (0.003)	U (0.25)	0.16	75.68
11-Aug-20	0.00262	U (0.001)	U (0.001)	U (0.003)	U (0.1)	U (0.808)	73.28
12-Oct-20	0.00548	U (0.001)	U (0.001)	U (0.002)	0.0110 J	0.369 J	72.86
GCLs	0.0046	1.1	0.015	0.19	2.2	1.5	NA

Tables of Historical Monitoring Data

Monitoring Well MW-2

Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	GRO (mg/L)	DRO (mg/L)	GW Elev (feet)
06-Nov-14	0.067	0.026	0.016	0.130	0.68	0.19	77.95
25-Feb-15	0.022	0.0045	0.0034	0.020	0.130	U (0.41)	77.03
10-Jun-15	U (0.002)	U (0.002)	U (0.003)	1.8	6.1	1.1	76.67
02-Sep-15	0.089	0.056	0.065	1.4	U (10)	1.8	76.48
12-Nov-15	0.091	0.11	0.13	0.179	22	1.8	78.61
20-Jan-16	0.520	1.5	0.83	5.1	NL	1.6	78.28
09-May-16	0.41	0.37	0.35	2.8	U (10)	0.95	78.25
13-Oct-16	0.42	0.63	0.48	2.62	9.2	0.98	78.74
09-Dec-16	0.57	0.17	0.50	1.01	11	1.7	77.07
08-Feb-17	0.053	U (0.002)	0.02	0.096	0.58	0.20	77.32
24-Apr-17	0.036	0.012	0.035	0.66	2.6	0.94	78.01
01-Sep-17	0.083	0.026	0.450	2.330	9.7	1.3	79.31
15-Feb-18	0.067	0.02	0.14	0.97	U (10)	0.98	79.08
29-Jun-18	0.17	0.25	0.59	3.3	6.0 H	1.2	78.34
11-Sep-18	0.094	0.13	0.18	1.08	4.8	0.74	78.88
26-Oct-18	0.17	0.28	0.48	3.01	11	1.0	79.40
25-Feb-19	0.092	0.22	0.18	1.41	5.4	1.2	75.96
25-Apr-19	0.051	0.13	U (0.003)	1.28	3.6	0.93	79.50
25-Jul-19	0.079	0.13	0.2	1.47	5.4	0.89	77.72
18-Oct-19	0.025	0.0065	0.022	0.101	0.74	0.24	77.05
11-Aug-20	0.0599	0.0107	0.0759	0.465	0.921	0.553	74.50
12-Oct-20	0.16	U (0.001)	0.0455	0.168	0.755	0.409	74.55
GCLs	0.0046	1.1	0.015	0.19	2.2	1.5	NA

Tables of Historical Monitoring Data

Monitoring Well MW-3

Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	GRO (mg/L)	DRO (mg/L)	GW Elev (feet)
06-Nov-14	5.0	7.4	37	39	240	3.5	78.38
25-Feb-15	2.9	34	6.7	37	180	8.6	77.98
10-Jun-15	5.2	38	8.2	48	210	9.5	78.40
02-Sep-15	3.7	24	4.4	28	U (200)	5.1	77.88
12-Nov-15	1.3	2.1	0.21	1.69	87	3.6	78.92
20-Jan-16	3.8	13	4.2	25.3	120	4.1	78.50
09-May-16	2.1	21	2.2	33	69	1.5	78.43
13-Oct-16	1.2	4.2	2.9	14.6	46	2	78.75
09-Dec-16	0.17 (E)	NL	NL	0.54 (E)	100	3.3	77.80
08-Feb-17	39	99	53	103	98	3.9	77.61
24-Apr-17	2.5	14	5.2	28.9	U (200)	6.7	78.61
01-Sep-17	0.610	9.300	3.700	21.400	75	1.9	79.33
15-Feb-18	0.3	3.8	2.9	15.6	U (100)	1.3	79.03
29-Jun-18	0.28	1.1	1.7	8.2 H	23 H	1.1	78.78
11-Sep-18	0.29	0.53	1	5.6	14	0.91	79.13
26-Oct-18	0.32	0.36	0.89	4.3	15	0.93	79.40
25-Feb-19	0.95	0.69	2.3	11.4	U (1.3)	4.6	78.15
25-Apr-19	0.14	0.13	U (1.5)	U (1.5)	11	0.64	79.58
25-Jul-19	0.68	1.2	2.4	11.6	41	1.9	78.38
18-Oct-19	0.21	0.66	1.7	9.7	21	1.2	77.04
11-Aug-20	0.737	1.05	2.99	17	32.8	4.89	75.60
12-Oct-20	0.32	0.868	2.46	14.89	29.4	5.22	76.18
GCLs	0.0046	1.1	0.015	0.19	2.2	1.5	NA

Tables of Historical Monitoring Data

Monitoring Well MW-4

Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	GRO (mg/L)	DRO (mg/L)	GW Elev (feet)
06-Nov-14	0.940	1.9	0.3	1.5	13	0.45	77.81
25-Feb-15	3.7	6.6	0.56	2.7	29	1.0	76.85
10-Jun-15	1.1	2.3	0.54	2.7	14	1.0	76.60
02-Sep-15	0.026	U (0.001)	0.007	0.03	0.3	U (0.40)	77.31
12-Nov-15	NL	NL	NL	NL	U (0.050)	U (0.21)	78.99
20-Jan-16	0.0043	U (0.002)	U (0.003)	U (0.002)	NL	0.15	78.56
09-May-16	0.0092	U (0.001)	U (0.001)	U (0.003)	U (0.1)	U (0.42)	78.51
13-Oct-16	U (0.00020)	U (0.001)	U (0.001)	U (0.003)	U (0.1)	0.18	78.84
09-Dec-16	NL	NL	NL	NL	U (0.05)	0.18	77.93
08-Feb-17	0.017	U (0.002)	U (0.003)	U (0.002)	U (0.05)	0.18	78.81
24-Apr-17	0.012	U (0.002)	0.0049	U (0.003)	U (0.001)	U (0.0003)	78.8
01-Sep-17	0.550	U (0.050)	0.380	0.740	5.1	0.48	79.38
15-Feb-18	0.19	U (0.10)	0.26	0.438	3.3	0.29	79.14
29-Jun-18	0.09	U (0.002)	0.022	0.027	0.52	0.19	79.00
11-Sep-18	0.0086	U (0.001)	0.0052	0.0062	U (0.15)	U (0.28)	79.23
26-Oct-18	0.013	U (0.002)	0.0045	0.0089	U (0.25)	0.15	79.46
25-Feb-19	0.026	U (0.002)	0.0034	0.0089	U (0.25)	0.20	78.30
25-Apr-19	U (0.003)	U (0.002)	U (0.003)	U (0.003)	U (0.25)	U (0.27)	77.23
25-Jul-19	0.051	U (0.002)	U (0.003)	0.0078	U (0.25)	0.16	78.33
18-Oct-19	0.020	0.015	0.0059	0.0277	U (0.25)	U (0.12)	77.03
11-Aug-20	0.054	U (0.001)	0.000455	0.00933	0.084	U (0.800)	75.75
12-Oct-20	0.129	U (0.001)	0.00699	0.0264	0.313	U (0.800)	76.04
GCLs	0.0046	1.1	0.015	0.19	2.2	1.5	NA

Monitoring Well RW19-1

Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	GRO (mg/L)	DRO (mg/L)	GW Elev (feet)
11-Aug-20	0.001	U (0.001)	U (0.001)	0.000489	U (0.100)	U (0.848)	TBD
12-Oct-20	0.000609 J	U (0.001)	U (0.001)	U (0.002)	U (0.100)	U (0.800)	70.85
GCLs	0.0046	1.1	0.015	0.19	2.2	1.5	NA

TBD - to be determined

NA - Not applicable