

TECHNICAL MEMORANDUM

To: Estate of Irwin Jessen
c/o Jerome F. Eline II PS
1010 Esther Street
Vancouver, Washington 98660-3028

From: Guy Tanz, L.G. and Brad Berggren L.G.

Date: February 16, 2023

Subject: Long Term Compliance Groundwater Monitoring Summary
Battle Ground Plaza Mini Mart, 805 and 809 West Main Street
Battle Ground, Washington
(Site No. 9977600 / Cleanup Site ID 5509 / VCP Project No. SW1359)

INTRODUCTION

At the request of the Estate of Irwin Jessen, PNG Environmental, Inc. (PNG) has prepared this technical memorandum summarizing the long-term compliance groundwater monitoring event completed at the Battle Ground Plaza site (Figures 1 and 2). Groundwater monitoring was completed in accordance with a September 4, 2019 Washington Department of Ecology (Ecology) No Further Action (NFA) Opinion for the site. The NFA Opinion indicates that while further remedial action for the site is not necessary, off-site contamination remaining beneath West Main Street requires long-term compliance groundwater monitoring on a once every 18-month (i.e., every 1.5 year) frequency per Enclosure C of the NFA Opinion (Attachment A).

BACKGROUND

Significant reductions in site groundwater contamination were achieved from initial detection in 2001 to Battle Ground Plaza Mini-Mart property closure in 2019. Over the course of property cleanup activities target contaminants of concern (i.e., gasoline-range total petroleum hydrocarbons [TPH] and benzene, toluene, ethylbenzene, xylenes and naphthalene [BTEX-N] constituents) dropped to not-detect concentrations in the former on-site well network including MW-2, MW-3, MW-4, MW-5, MW-6, MW-12, and MW-15 (Figure 2). MW-12 is located on the Mini-Mart property in the primary source area and down-gradient (south) from the north property boundary at West Main Street (i.e., within 15 feet of north property boundary control density fill [CDF] wall). Monitoring wells MW-3 and MW-4 are located 70 feet (southwest) and 30 feet (southeast) from the north property boundary CDF wall respectively. In early 2015 monitoring wells MW-16, MW-17, and MW-18 were installed under permit within the City of Battle Ground right-of-way and north of the CDF wall to facilitate compliance groundwater monitoring of this off-site property.

While the Mini-Mart property has received a property-specific NFA, soil and groundwater contamination remains beneath the City of Battle Ground property. Consequently Ecology has required long-term compliance monitoring to verify groundwater quality conditions relating to the off-site property.

This technical memorandum summarizes the second long-term compliance monitoring event for the site since the property-specific NFA was received.

SUMMARY OF FIELD ACTIVITIES

Per Enclosure C of the Ecology NFA, the following activities were completed on February 6, 2023:

- Monitoring wells MW-2, MW-3, MW-4, MW-12, MW-16, MW-17, and MW-18 were measured for water levels to assess groundwater flow direction. Field sampling logs are located in Attachment B. A summary of current monitoring well network construction is included on Table 1.
- Monitoring wells MW-4, MW-12, MW-16, MW-17, and MW-18 were sampled for groundwater quality analysis. Laboratory analytical results are located in Attachment C.

RESULTS

The results of this compliance monitoring event are summarized below.

Water Level Monitoring

Groundwater elevation data collected from monitoring wells MW-2, MW-3, MW-4, MW-12, MW-16, MW-17, and MW-18 are included on Table 2. The well network is illustrated on Figure 2. Shallow zone groundwater at the site has been encountered between approximately 4 and 12 feet below ground surface (bgs) and interpreted to be a perched zone (GeoEngineers 2006). Based on GeoEngineer's prior work, another groundwater zone was also encountered between 24 to 29 feet bgs, and was referred to as deep zone groundwater. Groundwater flow between the shallow zone and deep zones was interpreted by GeoEngineers to be restricted by a Clay Unit between the shallow and deep zones, resulting in a likely shallow zone perched condition.

Since 2006, the interpreted shallow zone groundwater flow direction has been predominantly southerly. Flow interpretation is based on water level measurements as well as the primary direction of contaminant transport from prior soil excavation completed at the site. However, variability in groundwater levels has been observed over the years of monitoring in individual wells across the site. This variability suggests the perched shallow zone groundwater flow system is complex. In particular, historic variation in groundwater elevations are most likely affected by the prior soil removal events and associated placement of, (1) both more permeable backfill and less permeable CDF, (2) chemical oxidant injections, and (3) subtleties in the heterogeneous nature of the native site soils. As such, water levels and apparent gradients in proximity to individual wells, may not be representative of the predominant direction of groundwater flow and primary direction of observed contaminant transport in a southerly direction.

Groundwater flow for this monitoring event is illustrated in Figure 3. Consistent with prior monitoring events post site remediation, water levels are variable between wells with no discernable directional trend.

Groundwater Monitoring

GROUNDWATER SAMPLING

On February 6, 2023, water quality samples were collected from MW-4, MW-12, MW-16, MW-17, and MW-18. Low flow sampling methods were used to collect water samples. The pH, temperature, conductivity, dissolved oxygen content, and redox potential of the water was measured during the purging process to monitor for stabilization of these parameters (Table 3). Field sampling logs are located in Attachment B.

A representative sample of groundwater was obtained using the peristaltic pump operated at a slow-flow rate (i.e., flow rate less than 200 milliliters per minute [ml/min]). All groundwater samples were shipped with chain-of-custody documentation in sealed and chilled containers to Apex Laboratories (Tigard, Oregon) for analysis of target contaminants of concern including gasoline (TPH-G) by Northwest Method NW-TPH-G and BTEX-N by U. S. Environmental Protection Agency (EPA) Method 8260d.

The results of the groundwater quality monitoring are summarized on Table 4 and depicted on Figure 4. The laboratory report and chain of custody documentation is located in Attachment C.

GROUNDWATER MONITORING FINDINGS

Target contaminants were not detected above laboratory method reporting limits (MRLs) at on-site monitoring wells MW-4 or MW-12 (Table 4 and Figure 4). Laboratory MRLs are below Model Toxics Control Act (MTCA) Method A groundwater Cleanup Levels (CULs) established for the site.

Since the installation of off-site monitoring well MW-16 in February 2015, concentrations of groundwater target contaminants have fluctuated above and below MTCA cleanup levels. During this compliance monitoring event, the only contaminants detected in the three off-site wells (i.e., MW-16, MW-17, and MW-18) were at the MW-16 location. In October 2019, gasoline-range TPH was detected at MW-16 at a concentration of 820 micrograms per liter (ug/L), above the MTCA Method A CUL of 800 ug/L. However, the last two events dated August 2021 and February 2023 detected gasoline-range TPH in MW-16 at concentrations of 608 and 724 ug/L, both concentrations are below the MTCA Method A CUL. MW-17 and MW-18 are located at opposing ends of the low permeability CDF wall adjacent to groundwater contamination delineated in the off-site up-gradient area (Figure 4). Since installation of MW-17 and MW-18 in 2015, groundwater contamination has not been detected in either well above MTCA CULs.

Groundwater quality results at on-site monitoring wells MW-12 and MW-4, as well as off-site monitoring wells MW-17 and MW-18 indicate the low permeability native soil materials together with the low permeability CDF wall are restricting contaminant migration back onto the Battle Ground Plaza property as expected.

The next compliance groundwater monitoring event is scheduled for August 2024.

REFERENCES

GeoEngineers. 2006 (September 8). *Focused Feasibility Study (FFS)*.
GeoEngineers, Inc.

Washington Department of Ecology. 2019 (September 4). *No Further Action at a
Property Associated with a Site*. Washington Department of Ecology.

ATTACHMENTS

Tables

Table 1 – Well Construction Details
Table 2 – Groundwater Elevations
Table 3 – Groundwater Field Parameters by Well
Table 4 – Groundwater Analytical Results by Well

Figures

Figure 1 – Site Location Map
Figure 2 – Monitoring Well Network
Figure 3 – Groundwater Elevations – February 6, 2023
Figure 4 – Groundwater Analytical Results - Last Four Events

Attachments

Attachment A – Excerpts from Ecology No Further Action
Attachment B – Field Sampling Logs
Attachment C – Laboratory Analytical Data and Chain-of-Custody Documentation

c: Washington Department of Ecology



GUY HOMER TANZ

Guy H Tanz
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TABLES

Table 1
Well Construction Details
 Battle Ground Plaza Mini Mart
 Battle Ground, Washington

Well Identification	Ecology Number	Date of Installation	Installer	Installation Method	Construction Materials	Ground Surface Elevation (feet msl)	Well Casing Elevation (feet msl)	Well Diameter (inches)	Total Well Depth from TOC (feet)	Casing Stickup (feet)	Slot Size (inches)	Screen Length (feet)	Screened Interval Elevation (feet msl)
Former Battle Ground Plaza Property													
MW-2	BJR039	11/16/2016	Cascade Drilling	Push Probe	Slotted PVC	285.26	284.80	2	13.58	-0.46	0.020	10.0	281.22 - 271.22
MW-3	ALB945	09/23/2004	GeoTech Explorations	Push Probe?	Slotted PVC	284.14	283.72	1	13.94	-0.42	0.010	10.0	279.78 - 269.78
MW-4	ALB946	09/23/2004	GeoTech Explorations	Push Probe?	Slotted PVC	286.01	285.64	1	13.77	-0.37	0.010	10.0	281.87 - 271.87
MW-12	BBA898	03/16/2010	Cascade Drilling	Push Probe	Slotted PVC	285.03	284.82	2	14.41	-0.21	0.020	10.0	280.41 - 270.41
Off-Site Wells													
MW-16	BHL313	02/04/2015	Cascade Drilling	Push Probe	Slotted PVC	286.74	286.50	2	14.80	-0.24	0.020	10.0	281.70 - 271.70
MW-17	BAL323	10/20/2015	Cascade Drilling	Push Probe	Slotted PVC	286.01	285.72	2	15.50	-0.29	0.020	10.0	280.22 - 270.22
MW-18	BAL368	10/20/2015	Cascade Drilling	Push Probe	Slotted PVC	287.40	287.12	2	15.90	-0.28	0.020	10.0	281.22 - 271.22

Notes:
 msl = Mean sea level (NGVD 29 (47))
 PVC = Polyvinyl chloride
 TOC = Top of casing
 (MW-1 and MW-7 through MW-11 abandoned August 2009. MW-14s and MW-14i abandoned August 2014. MW-5, MW-6, MW-13, and MW-15 abandoned October 23, 2019.)

Table 2
Groundwater Elevations
 Battle Ground Plaza Mini Mart
 Battle Ground, Washington

Survey Data	Elevation of Top of Casing (feet msl) ^a						
	MW-2	MW-3	MW-4	MW-12	MW-16	MW-17	MW-18
03/30/2010	284.56	283.72	285.64	284.82	-	-	-
02/13/2015	-	-	-	-	286.50	-	-
10/30/2015	-	-	-	-	-	285.72	287.12
11/18/2016 ^b	284.80	-	-	-	-	-	-

Date Measured	Measured Water Level (feet btc)						
	MW-2	MW-3	MW-4	MW-12	MW-16	MW-17	MW-18
07/01/2010	5.94	3.44	8.22	3.96	-	-	-
01/28/2011	5.27	2.62	8.42	3.39	-	-	-
09/08/2011	9.21	5.63	11.41	6.38	-	-	-
12/08/2011	6.04	3.56	9.49	4.65	-	-	-
06/19/2012	5.82	3.70	8.34	4.03	-	-	-
09/14/2012	9.32	5.52	11.25	6.11	-	-	-
05/02/2013	6.70	3.76	9.92	4.63	-	-	-
05/21/2014	6.39	4.16	9.18	4.48	-	-	-
02/20/2015	6.16	3.55	8.88	4.23	9.83	-	-
05/05/2015	6.79	4.34	9.74	4.95	10.88	-	-
08/10/2015	10.13	5.54	12.40	6.74	13.62	-	-
11/03/2015	10.31	5.74	10.59	6.79	13.39	8.71	6.77
02/01/2016	5.95	3.25	8.02	3.95	7.82	5.01	5.68
05/03/2016	7.09	4.65	9.49	5.25	9.79	6.33	7.28
11/29/2016	4.62	4.49	8.46	4.69	8.64	5.07	5.72
03/01/2017	3.59	4.87	10.57	3.56	7.06	4.44	5.66
06/06/2017	5.06	4.60	8.43	5.05	8.71	6.17	6.79
09/05/2017	6.95	5.68	11.25	6.59	11.38	7.76	8.80
10/23/2019	5.64	5.05	10.96	5.68	9.41	5.88	6.80
08/10/2021	5.82	4.34	10.70	5.89	9.59	6.71	8.18
02/06/2023	4.40	4.68	10.76	4.43	7.28	5.23	6.46

Date Measured	Groundwater Elevation (feet msl) ^a						
	MW-2	MW-3	MW-4	MW-12	MW-16	MW-17	MW-18
07/01/2010	278.62	280.28	277.42	280.86	-	-	-
01/28/2011	279.29	281.10	277.22	281.43	-	-	-
09/08/2011	275.35	278.09	274.23	278.44	-	-	-
12/08/2011	278.52	280.16	276.15	280.17	-	-	-
06/19/2012	278.74	280.02	277.30	280.79	-	-	-
09/14/2012	275.24	278.20	274.39	278.71	-	-	-
05/02/2013	277.86	279.96	275.72	280.19	-	-	-
05/21/2014	278.17	279.56	276.46	280.34	-	-	-
02/20/2015	278.40	280.17	276.76	280.59	276.67	-	-
05/05/2015	277.77	279.38	275.90	279.87	275.62	-	-
08/10/2015	274.43	278.18	273.24	278.08	272.88	-	-
11/03/2015	274.25	277.98	275.05	278.03	273.11	277.01	280.35
02/01/2016	278.61	280.47	277.62	280.87	278.68	280.71	281.44
05/03/2016	277.47	279.07	276.15	279.57	276.71	279.39	279.84
11/29/2016	280.18	279.23	277.18	280.13	277.86	280.65	281.40
03/01/2017	281.21	278.85	275.07	281.26	279.44	281.28	281.46
06/06/2017	279.74	279.12	277.21	279.77	277.79	279.55	280.33
09/05/2017	277.85	278.04	274.39	278.23	275.12	277.96	278.32
10/23/2019	279.16	278.67	274.68	279.14	277.09	279.84	280.32
08/10/2021	278.98	279.38	274.94	278.93	276.91	279.01	278.94
02/06/2023	280.40	279.04	274.88	280.39	279.22	280.49	280.66

Table 2
Groundwater Elevations
Battle Ground Plaza Mini Mart
Battle Ground, Washington

Notes:

^a Vertical Datum: NGVD 29(47)

^b MW-2 abandoned, reinstalled, and resurveyed October/November 2016.

btc - Below top of casing

msl = Mean sea level

Table 3
Groundwater Field Parameters by Well
 Battle Ground Plaza Mini Mart
 Battle Ground, Washington

Sample Location	Date	TPH-G ug/L	pH (units)	Temp. (°F)	Conductivity (ms/cm)	DO (mg/L)	Redox Potential (mv)	
On-Site Wells								
MW-2	11/02/2010	487	5.8	64	0.350	1.42	-7.0	
	02/23/2011	557	6.0	54	0.330	-	-11	
	04/27/2011	241	6.0	54	0.320	2.20	3.0	
	09/08/2011	100 U	6.1	66	0.358	0.970	-15	
	12/08/2011	661	6.0	61	0.389	0.230	-34	
	03/21/2012	291	6.2	53	0.360	0.390	55	
	06/20/2012	826	6.8	59	0.374	0.920	45	
	09/17/2012	334	6.0	65	0.348	1.98	44	
	02/01/2013	252	6.3	58	0.375	0.690	31	
	05/02/2013	438	6.7	60	0.363	0.530	0.30	
	05/21/2014	982	7.0	57	0.358	0.340	-103	
	02/20/2015	688	7.0	56	0.366	0.360	76	
	05/05/2015	551	7.3	57	0.331	0.260	63	
	08/10/2015	100 U	6.6	70	0.229	0.190	1.0	
	11/03/2015	113	6.7	64	0.312	0.170	107	
	02/01/2016	761	7.5	54	0.355	0.320	-129	
	05/03/2016	790	6.2	60	0.471	0.410	45	
	11/29/2016	100 U	7.2	59	0.202	2.50	162	
	03/01/2017	100 U	6.7	53	0.427	0.300	308	
	06/06/2017	100 U	7.2	66	0.361	0.310	54	
09/05/2017	100 U	7.2	76	0.605	0.490	115		
MW-3	11/02/2010	100 U	5.6	65	0.140	2.19	202	
	02/23/2011	100 U	5.8	52	0.140	-	124	
	09/08/2011	100 U	6.0	67	0.190	1.96	101	
	12/08/2011	100 U	5.8	60	0.182	0.840	80	
	03/21/2012	100 U	6.0	51	0.169	2.13	139	
	06/19/2012	100 U	6.3	60	0.175	0.370	104	
	05/21/2014	100 U	6.8	59	0.197	0.500	-36	
	02/20/2015	100 U	7.0	57	0.272	0.350	26	
	05/05/2015	100 U	7.1	60	0.211	0.260	39	
	08/10/2015	100 U	6.4	72	0.169	0.240	-5.0	
	11/03/2015	100 U	6.6	66	0.166	0.190	45	
	02/01/2016	100 U	7.3	55	0.172	0.340	-30	
	05/03/2016	100 U	6.0	62	0.252	0.350	101	
	11/29/2016	100 U	6.4	63	0.181	0.280	113	
	03/01/2017	100 U	6.7	56	0.214	0.250	304	
	06/06/2017	100 U	6.0	67	0.218	0.290	14	
	09/05/2017	100 U	5.9	71	0.204	0.180	111	
	MW-4	11/02/2010	100 U	5.4	64	0.140	2.77	218
		02/23/2011	100 U	5.7	53	0.130	-	150
		09/08/2011	100 U	5.9	64	0.186	2.46	145
12/08/2011		100 U	5.7	61	0.176	2.61	112	
03/21/2012		100 U	6.2	54	0.180	2.25	149	
06/19/2012		100 U	6.5	59	0.171	0.350	99	
05/21/2014		100 U	6.5	58	0.170	0.630	40	
02/20/2015		100 U	6.6	60	0.182	0.740	25	
05/05/2015		100 U	6.8	59	0.183	2.29	57	

Table 3
Groundwater Field Parameters by Well
 Battle Ground Plaza Mini Mart
 Battle Ground, Washington

Sample Location	Date	TPH-G ug/L	pH (units)	Temp. (°F)	Conductivity (ms/cm)	DO (mg/L)	Redox Potential (mv)
MW-4 (cont'd)	08/10/2015	100 U	6.5	70	0.187	3.11	70
	11/04/2015	100 U	6.4	64	0.178	1.76	102
	02/01/2016	100 U	7.3	56	0.185	0.770	-12
	05/03/2016	100 U	5.7	65	0.274	0.830	185
	11/29/2016	100 U	6.2	61	0.179	1.91	147
	03/01/2017	100 U	6.8	55	0.243	2.33	305
	06/06/2017	100 U	5.3	64	0.226	1.17	92
	09/05/2017	100 U	6.0	71	0.236	2.50	100
	10/23/2019	100 U	8.2	62	0.207	1.71	-5.1
	08/10/2021	100 U	7.3	66	0.177	0.36	-12
	02/06/2023	100 U	6.8	54	0.161	0.43	65
MW-12	11/02/2010	100 U	6.5	65	0.410	2.39	118
	02/23/2011	100 U	6.5	53	0.390	-	87
	09/08/2011	100 U	6.8	65	0.518	0.830	68
	12/08/2011	100 U	6.7	61	0.557	0.390	78
	03/21/2012	100 U	6.8	54	0.522	0.500	132
	06/19/2012	100 U	7.0	59	0.508	0.300	72
	05/21/2014	100 U	7.5	61	0.420	0.150	-8.0
	02/20/2015	100 U	7.4	59	0.383	0.750	4.0
	05/05/2015	100 U	7.6	61	0.379	0.240	-1.0
	08/10/2015	100 U	7.5	70	0.430	0.290	-124
	11/03/2015	100 U	7.5	65	0.444	0.150	95
	02/01/2016	100 U	7.9	55	0.349	1.08	27
	05/04/2016	100 U	7.1	60	0.416	0.450	-17
	11/29/2016	100 U	7.2	62	0.348	1.26	186
	03/01/2017	100 U	7.7	53	0.297	2.08	382
	06/06/2017	100 U	6.8	61	0.282	0.470	31
	09/05/2017	100 U	7.1	69	0.451	0.290	160
10/23/2019	100 U	8.4	61	0.290	0.450	-78	
08/10/2021	100 U	7.4	67	0.303	0.330	-37	
02/06/2023	100 U	7.0	56	0.203	2.66	26	
Off-Site Wells							
MW-16	02/23/2015	4,360	7.3	56	0.586	0.310	133
	05/05/2015	1,200	7.5	60	0.630	0.210	6.0
	08/10/2015	100 U	7.0	71	0.573	0.420	-73
	11/04/2015	100 U	6.9	64	0.523	0.360	137
	02/01/2016	5,130	7.8	56	0.721	0.190	-122
	05/03/2016	3,000	6.5	64	0.766	0.270	32
	11/29/2016	3,900	6.8	32	0.620	0.380	-10
	03/01/2017	3,700	6.9	32	0.795	0.440	301
	06/06/2017	6,210	6.5	32	0.721	0.380	-96
	09/05/2017	273	6.5	32	0.673	0.330	-28
	10/23/2019	820	8.3	61	0.498	0.440	-94
MW-99 (dup)	10/23/2019	801	8.3	61	0.498	0.440	-94
	08/10/2021	608	7.4	68	0.498	0.330	-50
MW-99 (dup)	08/10/2021	577	7.4	68	0.498	0.330	-50
	02/06/2023	724	7.1	55	0.399	0.330	16
MW-99 (dup)	02/06/2023	712	7.1	55	0.399	0.330	16

Table 3
Groundwater Field Parameters by Well
 Battle Ground Plaza Mini Mart
 Battle Ground, Washington

Sample Location	Date	TPH-G ug/L	pH (units)	Temp. (°F)	Conductivity (ms/cm)	DO (mg/L)	Redox Potential (mv)
MW-17	11/03/2015	100 U	6.5	61	0.140	1.72	140
	02/01/2016	100 U	7.1	52	0.197	0.540	7.0
	05/04/2016	100 U	6.2	58	0.249	0.360	53
	11/29/2016	100 U	6.5	32	0.135	3.71	159
	03/01/2017	100 U	6.7	32	0.183	3.82	326
	06/06/2017	100 U	6.1	32	0.168	0.970	122
	09/05/2017	100 U	6.0	32	0.182	0.350	151
	10/23/2019	100 U	8.0	58	0.116	0.740	-54
	08/10/2021	100 U	7.1	69	0.151	0.32	-23
	02/06/2023	100 U	6.8	54	0.102	2.80	66
MW-18	11/03/2015	388	6.9	63	0.180	0.210	70
	02/01/2016	100 U	7.5	55	0.188	0.180	1.0
	05/03/2016	354	6.2	64	0.269	0.350	162
	11/29/2016	431	6.7	32	0.170	0.370	76
	03/01/2017	100 U	7.1	32	0.241	0.430	281
	06/06/2017	229	7.7	32	0.326	2.11	16
	09/05/2017	100 U	6.5	32	0.238	0.220	-1.7
	10/23/2019	144	8.4	61	0.158	0.660	-7.8
	08/10/2021	100 U	7.2	67	0.164	0.330	-18
	02/06/2023	100 U	7.1	52	0.133	1.50	33

Notes:

Bold = Concentration exceeds MTCA Method A cleanup level for Unrestricted Land Use

DO = Dissolved oxygen

mg/L = Milligrams per Liter

ms/cm = Millisemens per Centimeter

mv = Millivolt

Total petroleum hydrocarbons as gasoline (TPH-G) analyzed by Method NW TPH-G

ug/L = Micrograms per Liter

Table 4
Groundwater Analytical Results by Well
 Battle Ground Plaza Mini Mart
 Battle Ground, Washington

Sample Location	Sample Number	Sample Date	Gasoline	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene
On-Site Wells								
MW-4	100330-203	03/30/2010	100 U	0.25 U	0.50 U	0.50 U	3.0 U	-
	100701-213	07/01/2010	100 U	0.25 U	0.50 U	0.50 U	1.5 U	-
	101102-223	11/02/2010	100 U	0.25 U	1.0 U	0.50 U	1.5 U	-
	110223-233	02/23/2011	100 U	0.25 U	0.50 U	0.50 U	1.5 U	-
	110908-253	09/08/2011	100 U	0.25 U	1.0 U	0.50 U	1.5 U	-
	111208-263	12/08/2011	100 U	0.25 U	1.0 U	0.50 U	1.5 U	-
	120321-273	03/21/2012	100 U	0.25 U	1.0 U	0.50 U	1.5 U	-
	120619-283	06/19/2012	100 U	0.25 U	1.0 U	0.50 U	1.5 U	-
	MW-4	05/22/2014	100 U	0.25 U	1.0 U	0.50 U	1.5 U	-
	MW-4	02/20/2015	100 U	0.25 U	1.0 U	0.50 U	1.5 U	2.0 U
	MW-4	05/05/2015	100 U	0.25 U	1.0 U	0.50 U	1.5 U	2.0 U
	MW-4	08/11/2015	100 U	0.25 U	1.0 U	0.50 U	1.5 U	2.0 U
	MW-4	11/04/2016	100 U	0.20 U	1.0 U	0.50 U	1.5 U	2.0 U
	MW-4	02/01/2016	100 U	0.20 U	1.0 U	0.50 U	1.5 U	2.0 U
	MW-4	05/03/2016	100 U	0.20 U	1.0 U	0.50 U	1.5 U	2.0 U
	MW-4	11/30/2016	100 U	0.20 U	1.0 U	0.50 U	1.5 U	2.0 U
	MW-4	03/02/2017	100 U	0.20 U	1.0 U	0.50 U	1.5 U	2.0 U
	MW-4	06/06/2017	100 U	0.20 U	1.0 U	0.50 U	1.5 U	2.0 U
	MW-4	09/06/2017	100 U	0.20 U	1.0 U	0.50 U	1.5 U	2.0 U
	MW-4	10/23/2019	100 U	0.20 U	1.0 U	0.50 U	1.5 U	2.0 U
	MW-4	08/10/2021	100 U	0.20 U	1.0 U	0.50 U	1.5 U	4.0 U
	MW-4	02/06/2023	100 U	0.20 U	1.0 U	0.50 U	1.5 U	2.0 U
MW-12	100330-201	03/30/2010	100 U	0.25 U	0.50 U	0.50 U	3.0 U	-
	100701-211	07/01/2010	100 U	0.25 U	0.50 U	0.50 U	1.5 U	-
	101102-221	11/02/2010	100 U	0.25 U	1.0 U	0.50 U	1.5 U	-
	110223-231	02/23/2011	100 U	0.25 U	0.50 U	0.50 U	1.5 U	-
	110908-251	09/08/2011	100 U	0.25 U	1.0 U	0.50 U	1.5 U	-
	111208-261	12/08/2011	100 U	0.25 U	1.0 U	0.50 U	1.5 U	-
	120321-271	03/22/2012	100 U	0.25 U	1.0 U	0.50 U	1.5 U	-
	120619-281	06/19/2012	100 U	0.25 U	1.0 U	0.50 U	1.5 U	-
	MW-12	05/21/2014	100 U	0.25 U	1.0 U	0.50 U	1.5 U	-
	MW-12	02/20/2015	100 U	0.25 U	1.0 U	0.50 U	1.5 U	2.0 U
	MW-12	05/05/2015	100 U	0.25 U	1.0 U	0.50 U	1.5 U	2.0 U
	MW-12	08/10/2015	100 U	0.25 U	1.0 U	0.50 U	1.5 U	2.0 U
	MW-12	11/03/2015	100 U	0.20 U	1.0 U	0.50 U	1.5 U	2.0 U
	MW-12	02/01/2016	100 U	0.20 U	1.0 U	0.50 U	1.5 U	2.0 U
	MW-12	05/03/2016	100 U	0.20 U	1.0 U	0.50 U	1.5 U	2.0 U
	MW-12	11/29/2016	100 U	0.20 U	1.0 U	0.50 U	1.5 U	2.0 U
	MW-12	03/01/2017	100 U	0.20 U	1.0 U	0.50 U	1.5 U	2.0 U
	MW-12	06/06/2017	100 U	0.20 U	1.0 U	0.50 U	1.5 U	2.0 U
	MW-12	09/05/2017	100 U	0.20 U	1.0 U	0.50 U	1.5 U	2.0 U
	MW-12	10/23/2019	100 U	0.20 U	1.0 U	0.50 U	1.5 U	2.0 U
	MW-12	08/10/2021	100 U	0.20 U	1.0 U	0.50 U	1.5 U	4.0 U
	MW-12	02/06/2023	100 U	0.20 U	1.0 U	0.50 U	1.5 U	2.0 U
Off-Site Wells								
MW-16	MW-16	02/23/2015	4,360	22	1.0 U	169	132	10
	MW-16	05/05/2015	1,200	2.9	1.0 U	58	6.5	7.4
	MW-16	08/11/2015	100 U	0.25 U	1.0 U	0.56	1.5 U	2.0 U
	MW-16	11/04/2015	100 U	0.20 U	1.0 U	0.50 U	1.5 U	2.0 U
	MW-16	02/01/2016	5,130	17	10 U	577	105	49
	MW-16	05/03/2016	300	5.1	1.0 U	173	2.8	16
	MW-16	11/29/2016	3,900	9.8	1.0 U	310	28	98
	MW-16	03/01/2017	3,700	6.1	1.0 U	342	8.2	47
	MW-99 (dup)	03/01/2017	3,200	5.9	1.0 U	348	7.0	40

Table 4
Groundwater Analytical Results by Well
 Battle Ground Plaza Mini Mart
 Battle Ground, Washington

Sample Location	Sample Number	Sample Date	Gasoline	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene
MW-16 (cont'd)	MW-16	06/06/2017	6,210	7.1	5.0 U	889	13	85
	MW-99 (dup)	06/06/2017	6,170	7.1	5.0 U	897	14	87
	MW-16	09/05/2017	273	0.41	1.0 U	20	1.5 U	2.0 U
	MW-99 (dup)	09/05/2017	273	0.40	1.0 U	18	1.5 U	2.0 U
	MW-16	10/23/2019	820	0.70	1.0 U	2.8	1.5 U	2.9
	MW-99 (dup)	10/23/2019	801	0.65	1.0 U	2.9	1.5 U	3.2
	MW-16	08/10/2021	608	0.23	1.0 U	1.2	1.5 U	4.0 U
	MW-99 (dup)	08/10/2021	577	0.23	1.0 U	1.1	1.5 U	4.0 U
	MW-16	02/06/2023	724	0.30	1.0 U	1.3	1.5 U	3.2
	MW-99 (dup)	02/06/2023	712	0.25	1.0 U	1.4	1.5 U	3.3
MW-17	MW-17	11/03/2015	100 U	0.20 U	1.0 U	0.50 U	1.5 U	2.0 U
	MW-17	02/01/2016	100 U	0.20 U	1.0 U	0.50 U	1.5 U	2.0 U
	MW-17	05/04/2016	100 U	0.20 U	1.0 U	0.50 U	1.5 U	2.0 U
	MW-17	11/29/2016	100 U	0.20 U	1.0 U	0.50 U	1.5 U	2.0 U
	MW-17	03/01/2017	100 U	0.20 U	1.0 U	0.50 U	1.5 U	2.0 U
	MW-17	06/06/2017	100 U	0.20 U	1.0 U	0.50 U	1.5 U	2.0 U
	MW-17	09/05/2017	100 U	0.20 U	1.0 U	0.50 U	1.5 U	2.0 U
	MW-17	10/23/2019	100 U	0.20 U	1.0 U	0.50 U	1.5 U	2.0 U
	MW-17	08/10/2021	100 U	0.20 U	1.0 U	0.50 U	1.5 U	4.0 U
	MW-17	02/06/2023	100 U	0.20 U	1.0 U	0.50 U	1.5 U	2.0 U
MW-18	MW-18	11/03/2015	388	0.20 U	1.0 U	0.50 U	1.5 U	2.0 U
	MW-18	02/01/2016	100 U	0.20 U	1.0 U	0.50 U	1.5 U	2.0 U
	MW-18	05/03/2016	354	0.20 U	1.0 U	0.50 U	1.5 U	2.0 U
	MW-18	11/29/2016	431	0.20 U	1.0 U	0.50 U	1.5 U	2.0 U
	MW-18	03/01/2017	100 U	0.20 U	1.0 U	0.50 U	1.5 U	2.0 U
	MW-18	06/06/2017	229	0.20 U	1.0 U	0.50 U	1.5 U	2.0 U
	MW-18	09/05/2017	286	0.20 U	1.0 U	0.50 U	1.5 U	2.0 U
	MW-18	10/23/2019	144	0.20 U	1.0 U	0.50 U	1.5 U	2.0 U
	MW-18	08/10/2021	100 U	0.20 U	1.0 U	0.50 U	1.5 U	4.0 U
	MW-18	02/06/2023	100 U	0.20 U	1.0 U	0.50 U	1.5 U	2.0 U
MTCA Method A Cleanup Levels ^a			800	5	1,000	700	1,000	160

Notes:

Bold = Concentration exceeds Method A Cleanup Level for Unrestricted Land Use

^a Washington Model Toxics Control Act (MTCA) Method A Cleanup Levels for Groundwater (Table 720-1) (October 12, 2007)

- = Not sampled for this parameter or not applicable

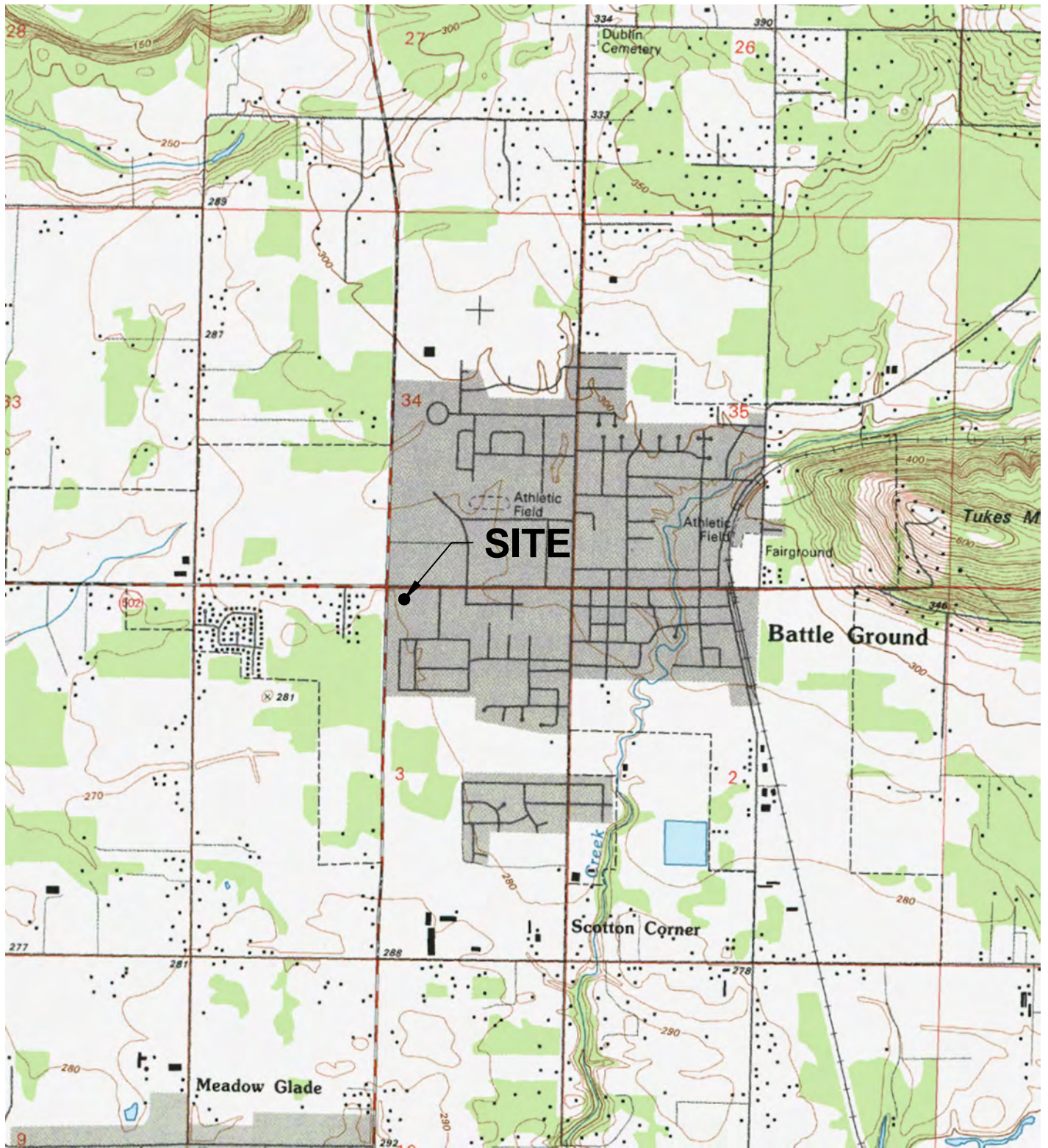
Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) analyzed by U.S. Environmental Protection Agency (EPA) Method 8260B/C

Total petroleum hydrocarbons as gasoline (TPH-G) analyzed by Method NW TPH-G

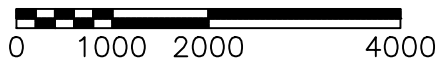
U = not detected above concentration indicated

ug/L = Micrograms per Liter

FIGURES



APPROXIMATE SCALE IN FEET



NOTE: USGS, BATTLE GROUND QUADRANGLE
WASHINGTON-CLARK CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)

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PNG ENVIRONMENTAL, INC.

6665 SW Hampton St., Ste. 101 Tigard, OR 97223
TEL (503) 620-2387
FAX (503) 620-2977

DATE: 9-27-17
FILE NAME: 1191-01
DRAWN BY: JJT
APPROVED BY: SV


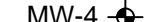





BATTLE GROUND PLAZA MINI MART
805/809 WEST MAIN ST.
BATTLE GROUND, WA.

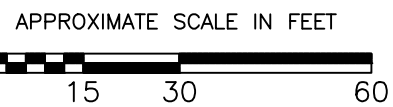
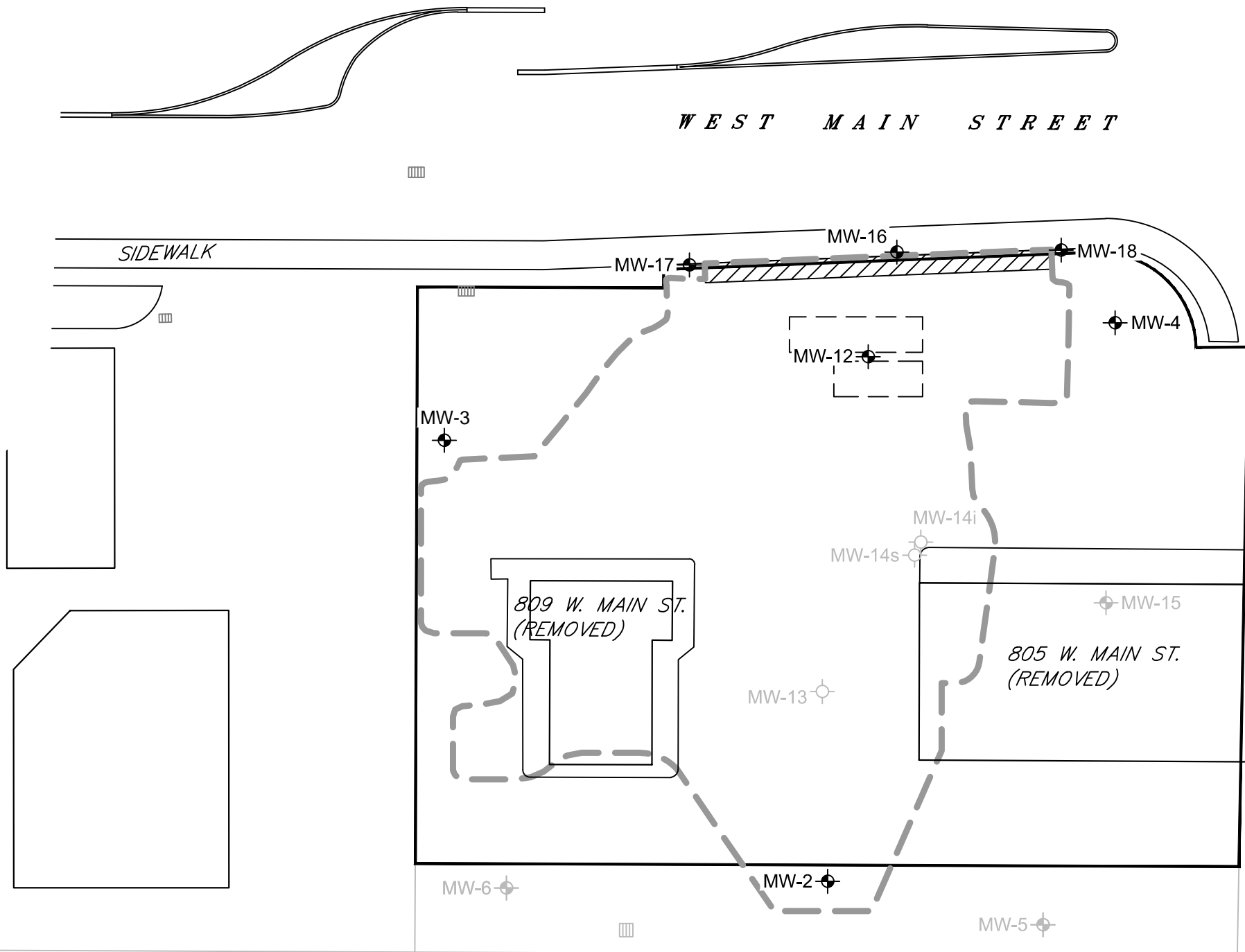
SITE LOCATION MAP

Project No. 1191-01
Figure No.

1

LEGEND


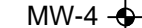



-  Property Boundary
-  MW-4 Monitoring Well
-  MW-5 Abandoned Monitoring Well per Ecology 2019 NFA
-  MW-13 Abandoned as part of previous soil removals
-  Control Density Fill Restoration
-  Final Excavation Limit
-  2009 Removed Tank



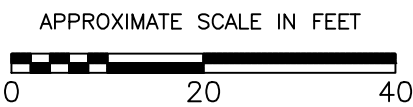
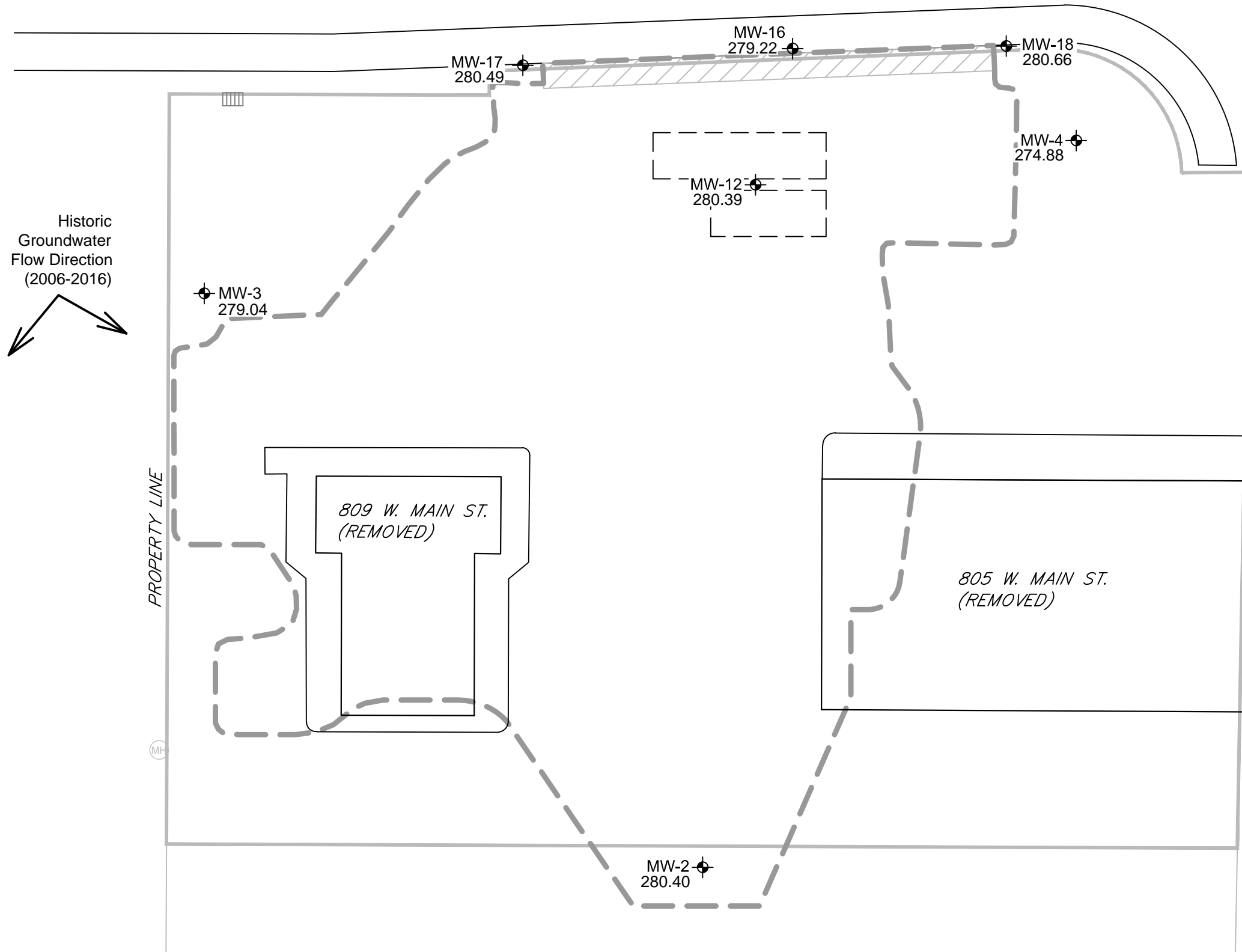
<p>PNG ENVIRONMENTAL, INC. 6665 SW Hampton St., Ste. 101 Tigard, OR 97223 TEL (503) 620-2387 FAX (503) 620-2977</p>	<p>DATE: 10-15-19 FILE NAME: 1191-01 DRAWN BY: JJT APPROVED BY: GT</p>	<p>BATTLE GROUND PLAZA MINI MART 805/809 WEST MAIN ST. BATTLE GROUND, WA.</p>	<p>MONITORING WELL NETWORK</p>	<p>Project No. 1191-01</p>
				<p>Figure No. 2</p>

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LEGEND

-  Property Boundary
-  MW-4 Monitoring Well
-  2015 Area of Soil Removal and Control Density Fill Restoration
-  Final Excavation Limit
- 279.04 Groundwater Elevation (feet MSL)
-  Approximate Groundwater Flow Direction

WEST MAIN STREET



PNG ENVIRONMENTAL, INC.

6665 SW Hampton St., Ste. 101 Tigard, OR 97223
 TEL (503) 620-2387 FAX (503) 620-2977

DATE: 2-15-23
 FILE NAME: 1191-01
 DRAWN BY: JJT
 APPROVED BY: GT

BATTLE GROUND PLAZA MINI MART
 805/809 WEST MAIN ST.
 BATTLE GROUND, WA.


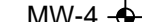
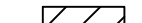

GROUNDWATER ELEVATIONS
 FEBRUARY 6, 2023

Project No.
1191-01

Figure No.
3

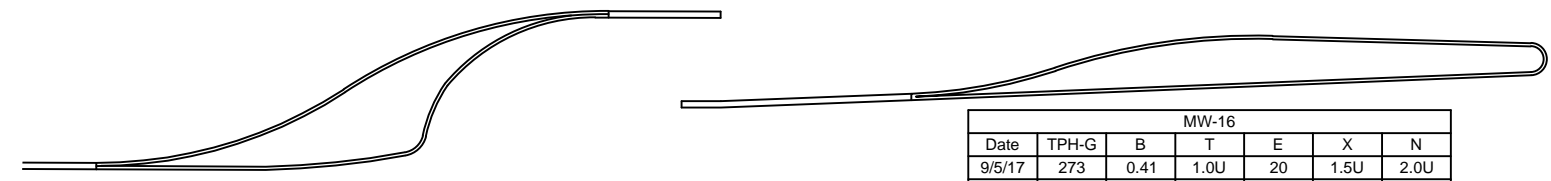
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LEGEND

-  Property Boundary
-  MW-4 Monitoring Well
-  Control Density Fill Restoration
-  Final Excavation Limit
- TPH-G = Gasoline Concentration (ug/L)
- B = Benzene Concentration (ug/L)
- T = Toluene Concentration (ug/L)
- E = Ethylbenzene Concentration (ug/L)
- X = Xylenes Concentration (ug/L)
- N = Naphthalene Concentration (ug/L)

Note:
 MTCA Method A Cleanup Levels for Unrestricted Land Use:
 TPH-G = 800 ug/L
 Benzene = 5 ug/L
 Toluene = 1,000 ug/L
 Ethylbenzene = 700 ug/L
 Xylenes = 1,000 ug/L
 Naphthalene = 160 ug/L

WEST MAIN STREET



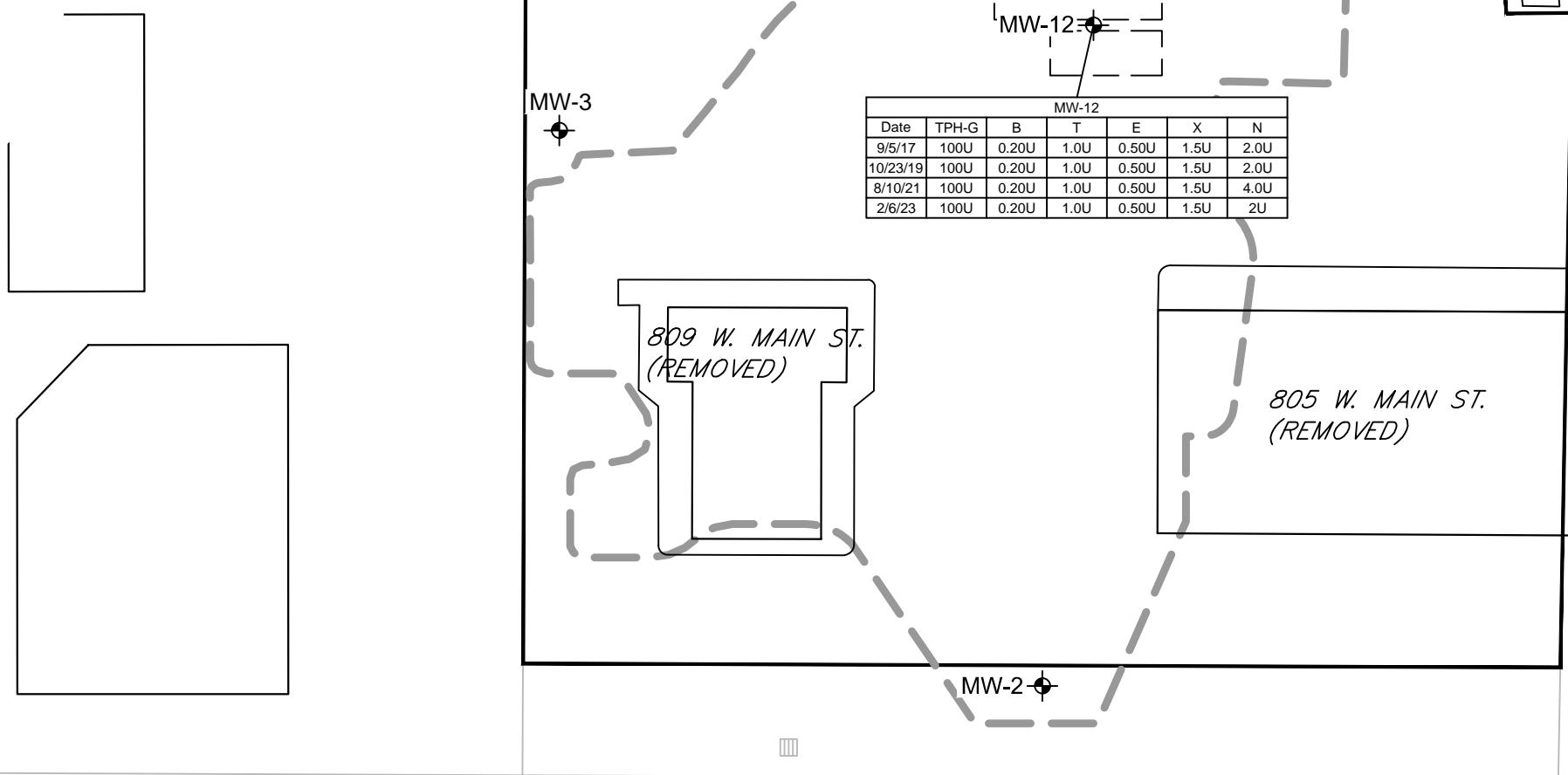
MW-16						
Date	TPH-G	B	T	E	X	N
9/5/17	273	0.41	1.0U	20	1.5U	2.0U
10/23/19	820	0.70	1.0U	2.83	1.5U	2.88
8/10/21	608	0.23	1.0U	1.23	1.5U	4.0U
2/6/23	724	0.30	1.0U	1.29	1.5U	3.22

MW-18						
Date	TPH-G	B	T	E	X	N
9/5/17	286	0.20U	1.0U	0.50U	1.5U	2.0U
10/23/19	144	0.20U	1.0U	0.50U	1.5U	2.0U
8/10/21	100U	0.20U	1.0U	0.50U	1.5U	4.0U
2/6/23	100U	0.20U	1.0U	0.50U	1.5U	2U

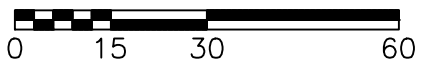
MW-17						
Date	TPH-G	B	T	E	X	N
9/5/17	100U	0.20U	1.0U	0.50U	1.5U	2.0U
10/23/19	100U	0.20U	1.0U	0.50U	1.5U	2.0U
8/10/21	100U	0.20U	1.0U	0.50U	1.5U	4.0U
2/6/23	100U	0.20U	1.0U	0.50U	1.5U	2U

MW-4						
Date	TPH-G	B	T	E	X	N
9/6/17	100U	0.20U	1.0U	0.50U	1.5U	2.0U
10/23/19	100U	0.20U	1.0U	0.50U	1.5U	2.0U
8/10/21	100U	0.20U	1.0U	0.50U	1.5U	4.0U
2/6/23	100U	0.20U	1.0U	0.50U	1.5U	2U

MW-12						
Date	TPH-G	B	T	E	X	N
9/5/17	100U	0.20U	1.0U	0.50U	1.5U	2.0U
10/23/19	100U	0.20U	1.0U	0.50U	1.5U	2.0U
8/10/21	100U	0.20U	1.0U	0.50U	1.5U	4.0U
2/6/23	100U	0.20U	1.0U	0.50U	1.5U	2U



APPROXIMATE SCALE IN FEET



PNG ENVIRONMENTAL, INC. 6665 SW Hampton St., Ste. 101 Tigard, OR 97223 TEL (503) 620-2387 FAX (503) 620-2977	DATE: 2-15-23 FILE NAME: 1191-01 DRAWN BY: JJT APPROVED BY: GT	BATTLE GROUND PLAZA MINI MART 805/809 WEST MAIN ST. BATTLE GROUND, WA.	GROUNDWATER ANALYTICAL RESULTS LAST FOUR EVENTS	Project No. 1191-01 Figure No. 4
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Attachment A
Excerpts From Ecology No Further Action



Electronic Copy

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

PO Box 47775 • Olympia, Washington 98504-7775 • 360-407-6300
Call 711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

September 4, 2019

Linda Anderson
P.O. Box 821669
Vancouver, WA 98682-0038

Re: No Further Action at a Property associated with a Site:

- **Site Name:** Battle Ground Mini Mart 805
- **Site Address:** 813 W Main St, Battle Ground, Clark County, WA 98604
- **Facility/Site No.:** 9977600
- **Cleanup Site ID:** 5509
- **VCP Project No.:** SW1359

Dear Linda Anderson:

The Washington State Department of Ecology (Ecology) received your request for an opinion on your cleanup of the Property associated with the Battle Ground Mini Mart 805 facility (Site). This letter provides our opinion. We are providing this opinion under the authority of the Model Toxics Control Act (MTCA)¹, chapter 70.105D RCW.

-Issues Presented and Opinion

1. Is further remedial action necessary at the Property to clean up contamination associated with the Site?

NO. Ecology has determined that no further remedial action is necessary at the Property to clean up contamination associated with the Site.

2. Is further remedial action still necessary elsewhere at the Site?

YES. Ecology has determined that further remedial action is still necessary elsewhere at the Site.

This opinion is based on an analysis of whether the remedial action meets the substantive requirements of MTCA, chapter 70.105D RCW, and implementing regulations, chapter 173-340 WAC (collectively "substantive requirements of MTCA"). The analysis is provided below.

¹ <https://fortress.wa.gov/ecy/publications/SummaryPages/9406.html>

Enclosure C

Long-term Groundwater Monitoring Plan

specifically, in-place management is protective of human health and the environment. Over the course of 19 groundwater monitoring events since 2010, target COCs have not been detected at compliance monitoring well MW-12 located 15 feet down-gradient from this area or at more distal monitoring wells MW-3 and MW-4. These results indicate residual groundwater contamination is not migrating back onto the Mini Mart property. In addition, upon completion of the north boundary soil removal, the area of remaining contaminated soil is located behind a 4 foot wide, 12 foot deep, and 84 foot long CDF wall. These residual soils are also beneath an asphalt concrete street and concrete sidewalk limiting accessibility. Lastly, the bulk of residual contaminated soil is located at a depth of eight feet bgs, well below existing underground utilities within the area.

Elements that support the City of Battle Ground property closure per the Site Closure Plan are described in detail below and include:

- 1) Long term compliance groundwater monitoring.
- 2) Memorandum of understanding with the City of Battle Ground.
- 3) Financial assurance.
- 4) Periodic regulatory review.

6.3.1 Long Term Compliance Groundwater Monitoring

To verify that the residual off-site soil contamination does not pose a risk of recontamination to the adjacent Mini Mart property, Ecology requested implementation of long term compliance groundwater monitoring.

Per the 2015 Site Closure Plan, the compliance groundwater monitoring well network will consist of MW-2, MW-3, MW-4, MW-12, MW-16, MW-17, and MW-18 (Figure 14). MW-5, MW-6, MW-13, and MW-15 will be abandoned in accordance with Ecology rules. The network will be monitored once every eighteen months until MTCA closure is attained. The monitoring data collected is summarized by well as follows:

Monitoring Wells MW-2, MW-3, MW-4, MW-12, MW-16, MW-17, and MW-18 will be measured for water levels to determine groundwater flow. Wells MW-4, MW-12, MW-16, MW-17, and MW-18 will be sampled for groundwater quality including gasoline-range TPH, BTEX, and Naphthalene.

6.3.2 Memorandum of Understanding

The property owner has signed a memorandum of understanding (MOU) with the City of Battle Ground. The MOU documents that both parties agree to elements of the 2015 Site Closure Plan. In addition, the MOU documents those specifics warranting consideration by both parties including long term groundwater compliance monitoring and financial assurance (by funds held within a remediation trust described below) until completion of the MTCA cleanup. The MOU is included in Appendix X.

6.3.3 Financial Assurance

At which time Ecology provides an opinion indicating the site has attained closure, the Mini Mart property owner will fund a remediation trust to facilitate future anticipated monitoring activities on the Battle Ground property. The trust was included as a component to the MOU signed with the City of Battle Ground. The trust will be managed by a third party law firm.

At the completion of long-term groundwater monitoring, and the compliance well network has been properly abandoned, the remaining funds within the trust will transfer to the City of Battle Ground. The trust is included as part of the MOU (Appendix X).

6.3.4 Regulatory Review

Periodic review of the compliance groundwater monitoring results will be required by Ecology. At a minimum, Ecology will review the site every five years to ensure the continued protection of human health and the environment. Ecology will also review monitoring results to determine if the off-site property meets the substantive requirements of a full MTCA Method A cleanup.

Attachment B
Field Sampling Logs

GROUNDWATER SAMPLE COLLECTION FORM

PNG Environmental, Inc.

Well ID no: <u>MW-4</u>	Project name: <u>Battle Ground Plaza</u>
Sample no: <u>MW-4</u>	Project no: <u>1191</u>
Date: <u>2/6/2023</u> Sample Time: <u>1036</u>	Collector: <u>JMG</u>

Well Information

Monument condition Good / Needs repair

Well cap condition Good / Locked / Replaced / Needs replacement

Headspace reading Not measured / ppm Odor Y N

Elevation mark Yes / Added / Other Well diameter = 2-inch / 4-inch / 6-inch / Other 1"

Purge Data

Total well depth 13.77 ft Top of screen 3.77 ft bgs

Depth to product _____ ft Water above screen Y N

Depth to water 10.76 ft Pump/Tubing Intake Depth _____ ft bgs

Casing volume 3.01 ft H₂O X 0.04 gpf = _____ X 3 = _____

Casing volumes (GPF) 3/4"=0.02 1"=0.04 2"=0.16 4"=0.65 6"=1.47

Purge Method

Pump type Peristaltic / Submersible / Bladder / Pneumatic / Other

Purge tubing New LDPE / New Teflon / Other _____

Purge start time 0814 Purge stop time _____ Purge rate 4 100 mL/min

Refill Timer Setting _____ Discharge Timer Setting _____ Pressure Setting 100 psi

Field Parameters

Meter used QED YSI / Hanna / Other

Gallons/min	Temp (°F)	Conductivity (mS/cm)	DO (mg/L)	pH St units	Turbidity (NTU)	ORP mV	Comments
<u>250</u>	<u>54.0</u>	<u>0.264</u>	<u>0.72</u>	<u>6.80</u>	<u>0.2145</u>	<u>60.1</u>	<u>Clear</u>
<u>500</u>	<u>53.8</u>	<u>0.207</u>	<u>0.49</u>	<u>6.79</u>	<u>0.1781</u>	<u>65.5</u>	<u>"</u>
<u>750</u>	<u>54.4</u>	<u>0.192</u>	<u>0.43</u>	<u>6.77</u>	<u>0.1638</u>	<u>64.3</u>	<u>"</u>
<u>1000</u>	<u>54.4</u>	<u>0.167</u>	<u>0.40</u>	<u>6.78</u>	<u>0.1423</u>	<u>61.7</u>	<u>"</u>
<u>1250</u>	<u>54.2</u>	<u>0.161</u>	<u>0.43</u>	<u>6.77</u>	<u>0.1378</u>	<u>65.0</u>	

Ferrous Iron (mg/L): _____ Total / Dissolved

Sample Containers

Number	Type	Preservative	Filtered
<u>3</u>	<input checked="" type="checkbox"/> VOA / Amber / Poly	<input checked="" type="checkbox"/> HCL / None / Nitric / Sulfuric / Other	Y / N
	VOA / Amber / Poly	HCL / None / Nitric / Sulfuric / Other	Y / N
	VOA / Amber / Poly	HCL / None / Nitric / Sulfuric / Other	Y / N
	VOA / Amber / Poly	HCL / None / Nitric / Sulfuric / Other	Y / N
	VOA / Amber / Poly	HCL / None / Nitric / Sulfuric / Other	Y / N

Comments: 0827 purged 1300 mL → dry; allow R-L
1036 3 VOA collected dry again - ok

Sampler's Signature _____ Date: 2/6/2023

GROUNDWATER SAMPLE COLLECTION FORM

PNG Environmental, Inc.

Well ID no: MW-12	Project name: Battle Ground Plaza
Sample no: MW-12	Project no: 1191
Date: 2/6/2023 Sample Time: 0928	Collector: JMG

Well Information

Monument condition: Good / Needs repair

Well cap condition: Good / Locked / Replaced / Needs replacement

Headspace reading: Not measured / ppm Odor Y N

Elevation mark: Yes / Added / Other Well diameter: 2-inch 4-inch / 6-inch / Other

Purge Data

Total well depth: 14.41 ft Top of screen: 4.41 ft bgs

Depth to product: _____ ft Water above screen: Y N

Depth to water: 4.43 ft Pump/Tubing Intake Depth: _____ ft bgs

Casing volume: 9.98 ft H₂O X 0.16 gpf = _____ X 3 = _____

Casing volumes (GPF): 3/4"=0.02 1"=0.04 2"=0.16 4"=0.65 6"=1.47

Purge Method

Pump type: Peristaltic / Submersible / Bladder / Pneumatic / Other

Purge tubing: New LDPE / New Teflon / Other

Purge start time: 0906 Purge stop time: 0925 Purge rate: ≈ 100 ml/min

Refill Timer Setting: _____ Discharge Timer Setting: _____ Pressure Setting: _____

Field Parameters

Meter used: QED <u>YSI</u> / Hanna / Other							
Gallons (ml)	Temp (°F)	Conductivity (mS/cm)	DO (mg/L)	pH St units	Turbidity (NTU)	ORP mV	Comments
250	56.8	0.190	3.49	6.85	0.1580	32.6	Clear
500	54.5	0.192	3.33	6.88	0.1644	29.5	"
750	53.5	0.192	2.97	6.91	0.1658	28.1	"
1000	53.9	0.192	3.01	6.93	0.1651	27.9	"
1250	55.0	0.194	2.90	6.94	0.1651	27.7	"
1500	55.5	0.200	2.81	6.95	0.1654	26.7	"
1750	55.6	0.201	2.74	6.94	0.1690	27.1	"
2000	55.5	0.203	2.66	6.97	0.1710	26.3	"

Ferrous Iron (mg/L): _____ Total / Dissolved

Sample Containers

Number	Type	Preservative	Filtered
3	<u>VOA</u> / Amber / Poly	<u>HCL</u> / None / Nitric / Sulfuric / Other	Y / N
	VOA / Amber / Poly	HCL / None / Nitric / Sulfuric / Other	Y / N
	VOA / Amber / Poly	HCL / None / Nitric / Sulfuric / Other	Y / N
	VOA / Amber / Poly	HCL / None / Nitric / Sulfuric / Other	Y / N
	VOA / Amber / Poly	HCL / None / Nitric / Sulfuric / Other	Y / N

Comments:

Sampler's Signature: _____ Date: 2/6/2023

GROUNDWATER SAMPLE COLLECTION FORM

PNG Environmental, Inc.

Well ID no: MW-16 MW-99 DUP Project name: Battle Ground Plaza
 Sample no: MW-16 & MW-99 Project no: 1191
 Date: 2/6/2023 Sample Time: 0955/0957 Collector: JMG

Well Information

Monument condition: Good / Needs repair _____
 Well cap condition: Good / ~~Locked~~ / Replaced / Needs replacement
 Headspace reading: Not measured / _____ ppm Odor Y/N
 Elevation mark: Yes / Added / Other _____ Well diameter: 2-inch / 4-inch / 6-inch / Other _____

Purge Data

Total well depth: 14.80 ft Top of screen: 4.8 ft bgs
 Depth to product: _____ ft Water above screen: Y/N
 Depth to water: 7.28 ft Pump/Tubing Intake Depth: _____ ft bgs
 Casing volume: 7.52 ft H₂O X 0.16 gpf = _____ X 3 = _____
 Casing volumes (GPF): 3/4"=0.02 1"=0.04 2"=0.16 4"=0.65 6"=1.47

Purge Method

Pump type: Peristaltic / Submersible / Bladder / Pneumatic / Other
 Purge tubing: New LDPE / New Teflon / Other _____
 Purge start time: 0933 Purge stop time: 0953 Purge rate: 100 gal/min
 Refill Timer Setting: _____ Discharge Timer Setting: _____ Pressure Setting: _____

Field Parameters

Meter used: QED YSI / Hanna / Other

Gallons (ml)	Temp (°F)	Conductivity (mS/cm)	DO (mg/L)	pH St units	Turbidity (NTU)	ORP mV	Comments
250	56.3	0.396	0.55	7.02	0.3308	17.6	Clear
500	52.9	0.399	0.60	7.04	0.3387	15.9	"
750	53.5	0.392	0.37	7.07	0.3393	15.5	"
1000	53.9	0.395	0.34	7.07	0.3397	15.3	"
1250	54.2	0.397	0.32	7.08	0.3406	15.3	"
1500	54.3	0.399	0.31	7.08	0.3412	15.1	"
1750	54.4	0.399	0.31	7.09	0.3412	15.7	"
2000	54.5	0.399	0.33	7.10	0.3406	16.2	"

Ferrous Iron (mg/L): _____ Total / Dissolved

Sample Containers

Number	Type	Preservative	Filtered
6	<u>VOA</u> / Amber / Poly	<u>HCL</u> / None / Nitric / Sulfuric / Other	Y / N
	VOA / Amber / Poly	HCL / None / Nitric / Sulfuric / Other	Y / N
	VOA / Amber / Poly	HCL / None / Nitric / Sulfuric / Other	Y / N
	VOA / Amber / Poly	HCL / None / Nitric / Sulfuric / Other	Y / N
	VOA / Amber / Poly	HCL / None / Nitric / Sulfuric / Other	Y / N

Comments: _____

Sampler's Signature: _____ Date: 2/6/2023

GROUNDWATER SAMPLE COLLECTION FORM

PNG Environmental, Inc.

Well ID no: MW-17	Project name: Battle Ground Plaza
Sample no: MW-17	Project no: 1191
Date: 2/6/2023 Sample Time: 0858	Collector: JMG

Well Information

Monument condition: ~~Good~~ Needs repair _____
 Well cap condition: ~~Good~~ Locked / Replaced / Needs replacement _____
 Headspace reading: ~~Not measured~~ / _____ ppm Odor Y N
 Elevation mark: ~~Yes~~ Added / Other _____ Well diameter: 2-inch 4-inch / 6-inch / Other

Purge Data

Total well depth: 15.50 ft Top of screen: 5.5 ft bgs
 Depth to product: _____ ft Water above screen: N
 Depth to water: 5.23 ft Pump/Tubing Intake Depth: _____ ft bgs
 Casing volume: 10.27 ft H₂O X 0.16 gpf = _____ X 3 = _____
 Casing volumes (GPF): 3/4"=0.02 1"=0.04 2"=0.16 4"=0.65 6"=1.47

Purge Method

Pump type: Peristaltic Submersible / Bladder / Pneumatic / Other
 Purge tubing: New LDPE / New Teflon / Other _____
 Purge start time: 0836 Purge stop time: 0855 Purge rate: 100 gpm
 Refill Timer Setting: _____ Discharge Timer Setting: _____ Pressure Setting: _____

Field Parameters

Meter used: QED / YSI / Hanna / Other							
Gallons/mL	Temp (°) F	Conductivity (mS/cm)	DO (mg/L)	pH St units	Turbidity (NTU)	ORP mV	Comments
250	53.9	0.104	3.32	6.80	0.0910	64.5	Clear
500	52.7	0.103	3.01	6.80	0.0903	66.1	"
750	52.3	0.102	2.93	6.80	0.0903	66.0	"
1000	52.4	0.103	2.89	6.80	0.0903	65.7	"
1250	52.2	0.102	2.84	6.80	0.0897	65.9	"
1500	52.4	0.102	2.79	6.80	0.0897	66.1	"
1750	54.2	0.102	2.77	6.80	0.0897	65.1	"
2000	53.6	0.102	2.80	6.80	0.0897	65.8	"

Ferrous Iron (mg/L): _____ Total / Dissolved

Sample Containers

Number	Type	Preservative	Filtered
3	VOA / Amber / Poly	HCL / None / Nitric / Sulfuric / Other	Y / N
	VOA / Amber / Poly	HCL / None / Nitric / Sulfuric / Other	Y / N
	VOA / Amber / Poly	HCL / None / Nitric / Sulfuric / Other	Y / N
	VOA / Amber / Poly	HCL / None / Nitric / Sulfuric / Other	Y / N
	VOA / Amber / Poly	HCL / None / Nitric / Sulfuric / Other	Y / N

Comments: _____

Sampler's Signature: _____ Date: 2/6/2023

GROUNDWATER SAMPLE COLLECTION FORM

PNG Environmental, Inc.

Well ID no:	MW-18	Project name:	Battle Ground Plaza
Sample no:	MW-18	Project no:	1191
Date:	2/6/2023	Sample Time:	1024
		Collector:	JMG

Well Information

Monument condition: Good / Needs repair _____

Well cap condition: Good / Locked / Replaced / Needs replacement

Headspace reading: Not measured / _____ ppm Odor: Y / N

Elevation mark: Yes / Added / Other Well diameter: 2-inch / 4-inch / 6-inch / Other

Purge Data

Total well depth: 15.90 ft Top of screen: 5.9 ft bgs

Depth to product: _____ ft Water above screen: Y / N

Depth to water: 6.46 ft Pump/Tubing Intake Depth: _____ ft bgs

Casing volume: 9.44 ft H₂O X 0.16 gpf = _____ X 3 = _____

Casing volumes (GPF): 3/4"=0.02 1"=0.04 2"=0.16 4"=0.65 6"=1.47

Purge Method

Pump type: Peristaltic / Submersible / Bladder / Pneumatic / Other

Purge tubing: New LDPE / New Teflon / Other _____

Purge start time: 1002 Purge stop time: 1021 Purge rate: 100 ml/min

Refill Timer Setting: _____ Discharge Timer Setting: _____ Pressure Setting: _____

Field Parameters

Meter used: QED YSI / Hanna / Other

Gallons (ml)	Temp (°F)	Conductivity (mS/cm)	DO (mg/L)	pH St units	Turbidity (NTU)	ORP mV	Comments
250	54.2	0.149	1.99	7.16	0.1274	32.1	Clear
500	53.7	0.144	1.72	7.14	0.1241	30.1	"
750	53.4	0.135	1.60	7.13	0.1170	31.7	"
1000	53.8	0.136	1.62	7.12	0.1177	31.2	"
1250	54.0	0.137	1.61	7.12	0.1177	32.1	"
1500	52.6	0.136	1.57	7.11	0.1177	32.7	"
1750	52.6	0.137	1.54	7.11	0.1170	33.3	"
2000	52.3	0.133	1.50	7.12	0.1170	33.4	"

Ferrous Iron (mg/L): _____ Total / Dissolved

Sample Containers

Number	Type	Preservative	Filtered
3	<u>VOA</u> / Amber / Poly	<u>HCL</u> / None / Nitric / Sulfuric / Other	Y / N
	VOA / Amber / Poly	HCL / None / Nitric / Sulfuric / Other	Y / N
	VOA / Amber / Poly	HCL / None / Nitric / Sulfuric / Other	Y / N
	VOA / Amber / Poly	HCL / None / Nitric / Sulfuric / Other	Y / N
	VOA / Amber / Poly	HCL / None / Nitric / Sulfuric / Other	Y / N

Comments: _____

Sampler's Signature: _____ Date: 2/6/2023

Attachment C
Laboratory Analytical Data and
Chain-of Custody Documentation



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Tuesday, February 14, 2023

Guy Tanz
PNG Environmental, INC
6665 SW Hampton Street Suite 101
Tigard, OR 97223

RE: A3B0240 - Battle Ground Mini Mart - 1191

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A3B0240, which was received by the laboratory on 2/7/2023 at 7:30:00AM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of sample receipt, unless prior arrangements have been made.

Cooler Receipt Information

(See Cooler Receipt Form for details)

Default Cooler 1.8 degC

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.

All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.



Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Philip Nerenberg

Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

PNG Environmental, INC 6665 SW Hampton Street Suite 101 Tigard, OR 97223	Project: <u>Battle Ground Mini Mart</u> Project Number: 1191 Project Manager: Guy Tanz	Report ID: A3B0240 - 02 14 23 1702
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ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-020623	A3B0240-01	Water	02/06/23 08:00	02/07/23 07:30
MW-4	A3B0240-02	Water	02/06/23 10:36	02/07/23 07:30
MW-12	A3B0240-03	Water	02/06/23 09:28	02/07/23 07:30
MW-16	A3B0240-04	Water	02/06/23 09:55	02/07/23 07:30
MW-17	A3B0240-05	Water	02/06/23 08:58	02/07/23 07:30
MW-18	A3B0240-06	Water	02/06/23 10:24	02/07/23 07:30
MW-99	A3B0240-07	Water	02/06/23 09:57	02/07/23 07:30

Apex Laboratories

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

PNG Environmental, INC 6665 SW Hampton Street Suite 101 Tigard, OR 97223	Project: Battle Ground Mini Mart Project Number: 1191 Project Manager: Guy Tanz	Report ID: A3B0240 - 02 14 23 1702
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ANALYTICAL SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-4 (A3B0240-02)			Matrix: Water			Batch: 23B0289		
Gasoline Range Organics	ND	---	0.100	mg/L	1	02/08/23 12:11	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 95 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>02/08/23 12:11</i>	<i>NWTPH-Gx (MS)</i>
<i>1,4-Difluorobenzene (Sur)</i>		<i>106 %</i>		<i>50-150 %</i>		<i>1</i>	<i>02/08/23 12:11</i>	<i>NWTPH-Gx (MS)</i>
MW-12 (A3B0240-03)			Matrix: Water			Batch: 23B0289		
Gasoline Range Organics	ND	---	0.100	mg/L	1	02/08/23 12:55	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 97 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>02/08/23 12:55</i>	<i>NWTPH-Gx (MS)</i>
<i>1,4-Difluorobenzene (Sur)</i>		<i>107 %</i>		<i>50-150 %</i>		<i>1</i>	<i>02/08/23 12:55</i>	<i>NWTPH-Gx (MS)</i>
MW-16 (A3B0240-04)			Matrix: Water			Batch: 23B0289		
Gasoline Range Organics	0.724	---	0.100	mg/L	1	02/08/23 13:17	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 103 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>02/08/23 13:17</i>	<i>NWTPH-Gx (MS)</i>
<i>1,4-Difluorobenzene (Sur)</i>		<i>107 %</i>		<i>50-150 %</i>		<i>1</i>	<i>02/08/23 13:17</i>	<i>NWTPH-Gx (MS)</i>
MW-17 (A3B0240-05)			Matrix: Water			Batch: 23B0289		
Gasoline Range Organics	ND	---	0.100	mg/L	1	02/08/23 13:39	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 96 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>02/08/23 13:39</i>	<i>NWTPH-Gx (MS)</i>
<i>1,4-Difluorobenzene (Sur)</i>		<i>106 %</i>		<i>50-150 %</i>		<i>1</i>	<i>02/08/23 13:39</i>	<i>NWTPH-Gx (MS)</i>
MW-18 (A3B0240-06)			Matrix: Water			Batch: 23B0289		
Gasoline Range Organics	ND	---	0.100	mg/L	1	02/08/23 14:01	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 100 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>02/08/23 14:01</i>	<i>NWTPH-Gx (MS)</i>
<i>1,4-Difluorobenzene (Sur)</i>		<i>107 %</i>		<i>50-150 %</i>		<i>1</i>	<i>02/08/23 14:01</i>	<i>NWTPH-Gx (MS)</i>
MW-99 (A3B0240-07)			Matrix: Water			Batch: 23B0289		
Gasoline Range Organics	0.712	---	0.100	mg/L	1	02/08/23 14:23	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 103 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>02/08/23 14:23</i>	<i>NWTPH-Gx (MS)</i>
<i>1,4-Difluorobenzene (Sur)</i>		<i>107 %</i>		<i>50-150 %</i>		<i>1</i>	<i>02/08/23 14:23</i>	<i>NWTPH-Gx (MS)</i>

Apex Laboratories

Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

PNG Environmental, INC 6665 SW Hampton Street Suite 101 Tigard, OR 97223	Project: Battle Ground Mini Mart Project Number: 1191 Project Manager: Guy Tanz	Report ID: A3B0240 - 02 14 23 1702
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ANALYTICAL SAMPLE RESULTS

BTEX+N Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
TB-020623 (A3B0240-01)			Matrix: Water			Batch: 23B0289		
Benzene	ND	---	0.200	ug/L	1	02/08/23 11:49	EPA 8260D	
Toluene	ND	---	1.00	ug/L	1	02/08/23 11:49	EPA 8260D	
Ethylbenzene	ND	---	0.500	ug/L	1	02/08/23 11:49	EPA 8260D	
Xylenes, total	ND	---	1.50	ug/L	1	02/08/23 11:49	EPA 8260D	
Naphthalene	ND	---	2.00	ug/L	1	02/08/23 11:49	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 92 %</i>		<i>Limits: 80-120 %</i>		<i>1</i>	<i>02/08/23 11:49</i>	<i>EPA 8260D</i>
<i>Toluene-d8 (Surr)</i>		<i>108 %</i>		<i>80-120 %</i>		<i>1</i>	<i>02/08/23 11:49</i>	<i>EPA 8260D</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>98 %</i>		<i>80-120 %</i>		<i>1</i>	<i>02/08/23 11:49</i>	<i>EPA 8260D</i>
MW-4 (A3B0240-02)			Matrix: Water			Batch: 23B0289		
Benzene	ND	---	0.200	ug/L	1	02/08/23 12:11	EPA 8260D	
Toluene	ND	---	1.00	ug/L	1	02/08/23 12:11	EPA 8260D	
Ethylbenzene	ND	---	0.500	ug/L	1	02/08/23 12:11	EPA 8260D	
Xylenes, total	ND	---	1.50	ug/L	1	02/08/23 12:11	EPA 8260D	
Naphthalene	ND	---	2.00	ug/L	1	02/08/23 12:11	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 93 %</i>		<i>Limits: 80-120 %</i>		<i>1</i>	<i>02/08/23 12:11</i>	<i>EPA 8260D</i>
<i>Toluene-d8 (Surr)</i>		<i>107 %</i>		<i>80-120 %</i>		<i>1</i>	<i>02/08/23 12:11</i>	<i>EPA 8260D</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>99 %</i>		<i>80-120 %</i>		<i>1</i>	<i>02/08/23 12:11</i>	<i>EPA 8260D</i>
MW-12 (A3B0240-03)			Matrix: Water			Batch: 23B0289		
Benzene	ND	---	0.200	ug/L	1	02/08/23 12:55	EPA 8260D	
Toluene	ND	---	1.00	ug/L	1	02/08/23 12:55	EPA 8260D	
Ethylbenzene	ND	---	0.500	ug/L	1	02/08/23 12:55	EPA 8260D	
Xylenes, total	ND	---	1.50	ug/L	1	02/08/23 12:55	EPA 8260D	
Naphthalene	ND	---	2.00	ug/L	1	02/08/23 12:55	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 91 %</i>		<i>Limits: 80-120 %</i>		<i>1</i>	<i>02/08/23 12:55</i>	<i>EPA 8260D</i>
<i>Toluene-d8 (Surr)</i>		<i>106 %</i>		<i>80-120 %</i>		<i>1</i>	<i>02/08/23 12:55</i>	<i>EPA 8260D</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>102 %</i>		<i>80-120 %</i>		<i>1</i>	<i>02/08/23 12:55</i>	<i>EPA 8260D</i>
MW-16 (A3B0240-04)			Matrix: Water			Batch: 23B0289		
Benzene	0.300	---	0.200	ug/L	1	02/08/23 13:17	EPA 8260D	
Toluene	ND	---	1.00	ug/L	1	02/08/23 13:17	EPA 8260D	
Ethylbenzene	1.29	---	0.500	ug/L	1	02/08/23 13:17	EPA 8260D	
Xylenes, total	ND	---	1.50	ug/L	1	02/08/23 13:17	EPA 8260D	

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Philip Nerenberg

Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

PNG Environmental, INC 6665 SW Hampton Street Suite 101 Tigard, OR 97223	Project: Battle Ground Mini Mart Project Number: 1191 Project Manager: Guy Tanz	Report ID: A3B0240 - 02 14 23 1702
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ANALYTICAL SAMPLE RESULTS

BTEX+N Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW-16 (A3B0240-04)			Matrix: Water			Batch: 23B0289		
Naphthalene	3.22	---	2.00	ug/L	1	02/08/23 13:17	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 92 %</i>		<i>Limits: 80-120 %</i>		<i>1</i>	<i>02/08/23 13:17</i>	<i>EPA 8260D</i>
<i>Toluene-d8 (Surr)</i>		<i>104 %</i>		<i>80-120 %</i>		<i>1</i>	<i>02/08/23 13:17</i>	<i>EPA 8260D</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>98 %</i>		<i>80-120 %</i>		<i>1</i>	<i>02/08/23 13:17</i>	<i>EPA 8260D</i>
MW-17 (A3B0240-05)			Matrix: Water			Batch: 23B0289		
Benzene	ND	---	0.200	ug/L	1	02/08/23 13:39	EPA 8260D	
Toluene	ND	---	1.00	ug/L	1	02/08/23 13:39	EPA 8260D	
Ethylbenzene	ND	---	0.500	ug/L	1	02/08/23 13:39	EPA 8260D	
Xylenes, total	ND	---	1.50	ug/L	1	02/08/23 13:39	EPA 8260D	
Naphthalene	ND	---	2.00	ug/L	1	02/08/23 13:39	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 94 %</i>		<i>Limits: 80-120 %</i>		<i>1</i>	<i>02/08/23 13:39</i>	<i>EPA 8260D</i>
<i>Toluene-d8 (Surr)</i>		<i>108 %</i>		<i>80-120 %</i>		<i>1</i>	<i>02/08/23 13:39</i>	<i>EPA 8260D</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>98 %</i>		<i>80-120 %</i>		<i>1</i>	<i>02/08/23 13:39</i>	<i>EPA 8260D</i>
MW-18 (A3B0240-06)			Matrix: Water			Batch: 23B0289		
Benzene	ND	---	0.200	ug/L	1	02/08/23 14:01	EPA 8260D	
Toluene	ND	---	1.00	ug/L	1	02/08/23 14:01	EPA 8260D	
Ethylbenzene	ND	---	0.500	ug/L	1	02/08/23 14:01	EPA 8260D	
Xylenes, total	ND	---	1.50	ug/L	1	02/08/23 14:01	EPA 8260D	
Naphthalene	ND	---	2.00	ug/L	1	02/08/23 14:01	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 96 %</i>		<i>Limits: 80-120 %</i>		<i>1</i>	<i>02/08/23 14:01</i>	<i>EPA 8260D</i>
<i>Toluene-d8 (Surr)</i>		<i>106 %</i>		<i>80-120 %</i>		<i>1</i>	<i>02/08/23 14:01</i>	<i>EPA 8260D</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>99 %</i>		<i>80-120 %</i>		<i>1</i>	<i>02/08/23 14:01</i>	<i>EPA 8260D</i>
MW-99 (A3B0240-07)			Matrix: Water			Batch: 23B0289		
Benzene	0.250	---	0.200	ug/L	1	02/08/23 14:23	EPA 8260D	
Toluene	ND	---	1.00	ug/L	1	02/08/23 14:23	EPA 8260D	
Ethylbenzene	1.42	---	0.500	ug/L	1	02/08/23 14:23	EPA 8260D	
Xylenes, total	ND	---	1.50	ug/L	1	02/08/23 14:23	EPA 8260D	
Naphthalene	3.31	---	2.00	ug/L	1	02/08/23 14:23	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 95 %</i>		<i>Limits: 80-120 %</i>		<i>1</i>	<i>02/08/23 14:23</i>	<i>EPA 8260D</i>
<i>Toluene-d8 (Surr)</i>		<i>104 %</i>		<i>80-120 %</i>		<i>1</i>	<i>02/08/23 14:23</i>	<i>EPA 8260D</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>95 %</i>		<i>80-120 %</i>		<i>1</i>	<i>02/08/23 14:23</i>	<i>EPA 8260D</i>

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

PNG Environmental, INC 6665 SW Hampton Street Suite 101 Tigard, OR 97223	Project: Battle Ground Mini Mart Project Number: 1191 Project Manager: Guy Tanz	Report ID: A3B0240 - 02 14 23 1702
---	--	---

QUALITY CONTROL (QC) SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23B0289 - EPA 5030C						Water						
Blank (23B0289-BLK1)			Prepared: 02/08/23 08:49 Analyzed: 02/08/23 11:26									
<u>NWTPH-Gx (MS)</u>												
Gasoline Range Organics	ND	---	0.100	mg/L	1	---	---	---	---	---	---	
<i>Surr: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 96 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>1,4-Difluorobenzene (Sur)</i>		<i>107 %</i>		<i>50-150 %</i>		<i>"</i>						
LCS (23B0289-BS2)			Prepared: 02/08/23 08:49 Analyzed: 02/08/23 10:51									
<u>NWTPH-Gx (MS)</u>												
Gasoline Range Organics	0.591	---	0.100	mg/L	1	0.500	---	118	80-120%	---	---	
<i>Surr: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 100 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>1,4-Difluorobenzene (Sur)</i>		<i>106 %</i>		<i>50-150 %</i>		<i>"</i>						
Duplicate (23B0289-DUP1)			Prepared: 02/08/23 11:00 Analyzed: 02/08/23 12:33									
<u>QC Source Sample: MW-4 (A3B0240-02)</u>												
<u>NWTPH-Gx (MS)</u>												
Gasoline Range Organics	ND	---	0.100	mg/L	1	---	ND	---	---	---	30%	
<i>Surr: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 98 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>1,4-Difluorobenzene (Sur)</i>		<i>108 %</i>		<i>50-150 %</i>		<i>"</i>						
Duplicate (23B0289-DUP2)			Prepared: 02/08/23 11:00 Analyzed: 02/08/23 14:46									
<u>QC Source Sample: MW-99 (A3B0240-07)</u>												
<u>NWTPH-Gx (MS)</u>												
Gasoline Range Organics	0.742	---	0.100	mg/L	1	---	0.712	---	---	4	30%	
<i>Surr: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 104 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>1,4-Difluorobenzene (Sur)</i>		<i>108 %</i>		<i>50-150 %</i>		<i>"</i>						

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ANALYTICAL REPORT

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503-718-2323
ORELAP ID: OR100062

PNG Environmental, INC 6665 SW Hampton Street Suite 101 Tigard, OR 97223	Project: Battle Ground Mini Mart Project Number: 1191 Project Manager: Guy Tanz	Report ID: A3B0240 - 02 14 23 1702
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QUALITY CONTROL (QC) SAMPLE RESULTS

BTEX+N Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23B0289 - EPA 5030C						Water						
Blank (23B0289-BLK1)			Prepared: 02/08/23 08:49 Analyzed: 02/08/23 11:26									
<u>EPA 8260D</u>												
Benzene	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Toluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Ethylbenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Xylenes, total	ND	---	1.50	ug/L	1	---	---	---	---	---	---	
Naphthalene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 94 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>Toluene-d8 (Surr)</i>		<i>107 %</i>		<i>80-120 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>101 %</i>		<i>80-120 %</i>		<i>"</i>						
LCS (23B0289-BS1)						Prepared: 02/08/23 08:49 Analyzed: 02/08/23 10:13						
<u>EPA 8260D</u>												
Benzene	19.7	---	0.200	ug/L	1	20.0	---	99	80-120%	---	---	
Toluene	20.8	---	1.00	ug/L	1	20.0	---	104	80-120%	---	---	
Ethylbenzene	21.4	---	0.500	ug/L	1	20.0	---	107	80-120%	---	---	
Xylenes, total	64.5	---	1.50	ug/L	1	60.0	---	107	80-120%	---	---	
Naphthalene	18.0	---	2.00	ug/L	1	20.0	---	90	80-120%	---	---	
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 93 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>Toluene-d8 (Surr)</i>		<i>104 %</i>		<i>80-120 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>90 %</i>		<i>80-120 %</i>		<i>"</i>						
Duplicate (23B0289-DUP1)						Prepared: 02/08/23 11:00 Analyzed: 02/08/23 12:33						
<u>QC Source Sample: MW-4 (A3B0240-02)</u>												
<u>EPA 8260D</u>												
Benzene	ND	---	0.200	ug/L	1	---	ND	---	---	---	30%	
Toluene	ND	---	1.00	ug/L	1	---	0.500	---	---	---	30%	Q-05
Ethylbenzene	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	Q-05
Xylenes, total	ND	---	1.50	ug/L	1	---	0.900	---	---	---	30%	
Naphthalene	ND	---	2.00	ug/L	1	---	ND	---	---	---	30%	
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 92 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>Toluene-d8 (Surr)</i>		<i>104 %</i>		<i>80-120 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>98 %</i>		<i>80-120 %</i>		<i>"</i>						

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Philip Nerenberg

Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
 Tigard, OR 97223
 503-718-2323
 ORELAP ID: OR100062

PNG Environmental, INC	Project: Battle Ground Mini Mart	
6665 SW Hampton Street Suite 101	Project Number: 1191	Report ID:
Tigard, OR 97223	Project Manager: Guy Tanz	A3B0240 - 02 14 23 1702

QUALITY CONTROL (QC) SAMPLE RESULTS

BTEX+N Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23B0289 - EPA 5030C						Water						
Duplicate (23B0289-DUP2)			Prepared: 02/08/23 11:00 Analyzed: 02/08/23 14:46									
QC Source Sample: MW-99 (A3B0240-07)												
EPA 8260D												
Benzene	0.290	---	0.200	ug/L	1	---	0.250	---	---	15	30%	
Toluene	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Ethylbenzene	1.57	---	0.500	ug/L	1	---	1.42	---	---	10	30%	
Xylenes, total	ND	---	1.50	ug/L	1	---	ND	---	---	---	30%	
Naphthalene	3.52	---	2.00	ug/L	1	---	3.31	---	---	6	30%	
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 95 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>Toluene-d8 (Surr)</i>		<i>104 %</i>		<i>80-120 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>98 %</i>		<i>80-120 %</i>		<i>"</i>						

Matrix Spike (23B0289-MS1)			Prepared: 02/08/23 11:00 Analyzed: 02/08/23 15:30									
QC Source Sample: Non-SDG (A3B0237-01)												
EPA 8260D												
Benzene	20.8	---	0.200	ug/L	1	20.0	ND	104	79-120%	---	---	
Toluene	21.1	---	1.00	ug/L	1	20.0	ND	106	80-121%	---	---	
Ethylbenzene	22.0	---	0.500	ug/L	1	20.0	ND	110	79-121%	---	---	
Xylenes, total	65.4	---	1.50	ug/L	1	60.0	ND	109	79-121%	---	---	
Naphthalene	19.4	---	2.00	ug/L	1	20.0	ND	97	61-128%	---	---	
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 93 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>Toluene-d8 (Surr)</i>		<i>102 %</i>		<i>80-120 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>91 %</i>		<i>80-120 %</i>		<i>"</i>						

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ANALYTICAL REPORT

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503-718-2323
ORELAP ID: OR100062

PNG Environmental, INC 6665 SW Hampton Street Suite 101 Tigard, OR 97223	Project: Battle Ground Mini Mart Project Number: 1191 Project Manager: Guy Tanz	Report ID: A3B0240 - 02 14 23 1702
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SAMPLE PREPARATION INFORMATION

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Prep: EPA 5030C					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
<u>Batch: 23B0289</u>							
A3B0240-02	Water	NWTPH-Gx (MS)	02/06/23 10:36	02/08/23 11:00	5mL/5mL	5mL/5mL	1.00
A3B0240-03	Water	NWTPH-Gx (MS)	02/06/23 09:28	02/08/23 11:00	5mL/5mL	5mL/5mL	1.00
A3B0240-04	Water	NWTPH-Gx (MS)	02/06/23 09:55	02/08/23 11:00	5mL/5mL	5mL/5mL	1.00
A3B0240-05	Water	NWTPH-Gx (MS)	02/06/23 08:58	02/08/23 11:00	5mL/5mL	5mL/5mL	1.00
A3B0240-06	Water	NWTPH-Gx (MS)	02/06/23 10:24	02/08/23 11:00	5mL/5mL	5mL/5mL	1.00
A3B0240-07	Water	NWTPH-Gx (MS)	02/06/23 09:57	02/08/23 11:00	5mL/5mL	5mL/5mL	1.00

BTEX+N Compounds by EPA 8260D

Prep: EPA 5030C					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
<u>Batch: 23B0289</u>							
A3B0240-01	Water	EPA 8260D	02/06/23 08:00	02/08/23 11:00	5mL/5mL	5mL/5mL	1.00
A3B0240-02	Water	EPA 8260D	02/06/23 10:36	02/08/23 11:00	5mL/5mL	5mL/5mL	1.00
A3B0240-03	Water	EPA 8260D	02/06/23 09:28	02/08/23 11:00	5mL/5mL	5mL/5mL	1.00
A3B0240-04	Water	EPA 8260D	02/06/23 09:55	02/08/23 11:00	5mL/5mL	5mL/5mL	1.00
A3B0240-05	Water	EPA 8260D	02/06/23 08:58	02/08/23 11:00	5mL/5mL	5mL/5mL	1.00
A3B0240-06	Water	EPA 8260D	02/06/23 10:24	02/08/23 11:00	5mL/5mL	5mL/5mL	1.00
A3B0240-07	Water	EPA 8260D	02/06/23 09:57	02/08/23 11:00	5mL/5mL	5mL/5mL	1.00

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Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

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503-718-2323
ORELAP ID: OR100062

PNG Environmental, INC 6665 SW Hampton Street Suite 101 Tigard, OR 97223	Project: Battle Ground Mini Mart Project Number: 1191 Project Manager: Guy Tanz	Report ID: A3B0240 - 02 14 23 1702
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QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

Apex Laboratories

Q-05 Analyses are not controlled on RPD values from sample and duplicate concentrations that are below 5 times the reporting level.

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ORELAP ID: OR100062

PNG Environmental, INC 6665 SW Hampton Street Suite 101 Tigard, OR 97223	Project: <u>Battle Ground Mini Mart</u> Project Number: 1191 Project Manager: Guy Tanz	Report ID: A3B0240 - 02 14 23 1702
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REPORTING NOTES AND CONVENTIONS:

Abbreviations:

- DET Analyte DETECTED at or above the detection or reporting limit.
- ND Analyte NOT DETECTED at or above the detection or reporting limit.
- NR Result Not Reported
- RPD Relative Percent Difference. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

Detection Limits: Limit of Detection (LOD)

Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ).
If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

- Basis: Results for soil samples are generally reported on a 100% dry weight basis.
The Result Basis is listed following the units as " dry", " wet", or " " (blank) designation.
- " dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")
See Percent Solids section for details of dry weight analysis.
- " wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.
- " " Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) may not be included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

- " --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
- " *** " Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to 1/2 the Reporting Limit (RL).
-For Blank hits falling between 1/2 the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.
-For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.
For further details, please request a copy of this document.



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Table with 3 columns: Client (PNG Environmental, INC), Project (Battle Ground Mini Mart), and Report ID (A3B0240 - 02 14 23 1702)

REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks (Cont.):

Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.

'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level.

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Handwritten signature of Philip Nerenberg

Philip Nerenberg, Lab Director



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LABORATORY ACCREDITATION INFORMATION

ORELAP Certification ID: OR100062 (Primary Accreditation) - EPA ID: OR01039

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

Apex Laboratories

Table with 6 columns: Matrix, Analysis, TNI_ID, Analyte, TNI_ID, Accreditation. Content: All reported analytes are included in Apex Laboratories' current ORELAP scope.

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation. Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provided by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

Philip Nerenberg (signature)

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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ORELAP ID: OR100062

PNG Environmental, INC 6665 SW Hampton Street Suite 101 Tigard, OR 97223	Project: Battle Ground Mini Mart Project Number: 1191 Project Manager: Guy Tanz	Report ID: A3B0240 - 02 14 23 1702
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APEX LABS
6700 SW Sandburg St., Tigard, OR 97223 Ph: 503-718-2323

CHAIN OF CUSTODY

Lab # **A3B0240** COC 1 of 1

Company: PNG Environmental	Project Mgr: Guy Tanz	Project Name: Battle Ground	Project #: 1191	
Address: 6665 SW Hampton Street Tigard, OR 97223	Phone: _____	Email: guy.tanz@pngenv.com	PO #: 1191	
Sampled by: Jay Grizik				
Site Location: _____				
State: WA	County: _____			
SAMPLE ID	DATE	TIME	MATRIX	# OF CONTAINERS
TB-020023	09/06/2023	09:28	W	1
MW-4	10/26	09:29	W	3
MW-12	10/26	09:55	W	1
MW-16	10/26	09:58	W	1
MW-17	10/26	10:24	W	1
MW-18	10/26	10:57	W	1
MW-19	10/26	10:57	W	1

Standard Turn Around Time (TAT) = 10 Business Days

TAT Requested (circle): 1 Day 2 Day 3 Day 5 Day Standard Other: _____

SPECIAL INSTRUCTIONS:

<p>RELINQUISHED BY:</p> <p>Signature: <i>[Signature]</i> Date: 2/7/23</p> <p>Printed Name: Jay Grizik Time: 07:30</p> <p>Company: Apex</p>	<p>RECEIVED BY:</p> <p>Signature: <i>[Signature]</i> Date: _____</p> <p>Printed Name: _____ Time: _____</p> <p>Company: _____</p>
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SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY: _____ Date: _____

Signature: _____ Printed Name: _____ Time: _____

Company: _____

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director



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PNG Environmental, INC 6665 SW Hampton Street Suite 101 Tigard, OR 97223	Project: Battle Ground Mini Mart Project Number: 1191 Project Manager: Guy Tanz	Report ID: A3B0240 - 02 14 23 1702
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APEX LABS COOLER RECEIPT FORM

Client: PNG Environmental Element WO#: A3 B0240

Project/Project #: Battle Ground # 1191

Delivery Info:
 Date/time received: 2/2/23 @ 0730 By: Kim
 Delivered by: Apex Client ESS FedEx UPS Radio Morgan SDS Evergreen Other

Cooler Inspection Date/time inspected: 2/2/23 @ 0730 By: Kim
 Chain of Custody included? Yes No
 Signed/dated by client? Yes No

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	<u>1.8</u>						
Custody seals? (Y/N)	<u>N</u>						
Received on ice? (Y/N)	<u>Y</u>						
Temp. blanks? (Y/N)	<u>Y</u>						
Ice type: (Gel/Real/Other)	<u>Real</u>						
Condition (In/Out):	<u>In</u>						

Cooler out of temp? (Y/N) Possible reason why: _____
 Green dots applied to out of temperature samples? Yes/No No
 Out of temperature samples form initiated? Yes/No No

Sample Inspection: Date/time inspected: 2/2/23 @ 11:33 By: RHP
 All samples intact? Yes No Comments: _____

Bottle labels/COCs agree? Yes No Comments: _____

COC/container discrepancies form initiated? Yes No

Containers/volumes received appropriate for analysis? Yes No Comments: _____

Do VOA vials have visible headspace? Yes No NA
 Comments: 313 sed for MW-4, 313 sed for MW-18

Water samples: pH checked: Yes No NA pH appropriate? Yes No NA
 Comments: IB # 3237

Additional information: _____

Labeled by: RHP Witness: KAM Cooler Inspected by: b

Form Y-003 R-00