ENVIRONMENTAL PARTNERS INC

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Groundwater Monitoring Report

Former Meeker Cleaners Site
1301 West Meeker Street
Kent, Washington

Prepared For:

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December 18, 2019

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EPI Project Number: 65112.4

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1.0 INTRODUCTION

Environmental Partners, Inc. (EPI) is pleased to submit this *Groundwater Monitoring Report* for the Former Meeker Cleaners Site located at 1301 West Meeker Street, Kent, Washington (subject property). The general location of the subject property is indicated on Figure 1.

The Site is listed in the Washington State Department of Ecology (Ecology) facility/site database as Facility/Site ID No. 87719977. Concurrent with environmental investigations of the property in 2002, the Site was enrolled in Ecology's Voluntary Cleanup Program (VCP) and assigned VCP Site No. NW0879. The Site was terminated from the VCP in 2006. The Site was re-enrolled into the VCP in September 2017 and was assigned number NW3148. Ms. Jing Song is the Ecology-assigned project manager.

This groundwater report presents a comprehensive discussion of the quarterly groundwater monitoring events performed at the Site in July and October 2017, and January, April, July, and October 2018 and an evaluation of the data obtained during that annual sampling cycle. Groundwater analytical results are indicated on Figure 2. Additionally, the report details a single groundwater sampling event conducted in November 2019 to monitor current groundwater conditions at the subject property.

2.0 BACKGROUND

Dry-cleaning compounds (i.e., tetrachloroethene, also known as perchloroethylene [PCE], and related breakdown products) were identified in Site soils and groundwater following confirmed releases from the former dry cleaning operations located on the subject property. The majority of the dry-cleaning compounds were removed following a remedial excavation performed in 2002, with residual amounts remaining in soil at the bottom of the excavation area. In 2014, petroleum hydrocarbons were discovered at the Site during a subsequent groundwater sampling event. The petroleum hydrocarbons detected in groundwater during that event were diesel-range organics (DRO) and oil-range organics (ORO). A subsurface investigation performed in 2015 confirmed the presence of DRO and ORO impacts in soil and groundwater along with residual amounts of PCE in soil and related breakdown products in groundwater. The residual contaminants were removed during an interim remedial action performed in February 2017. As a result of the interim action, all Site soil is in compliance with Model Toxics Control Act (MTCA) cleanup standards.

Following the excavation described above, EPI installed three new monitoring wells on the subject property to assess the groundwater conditions with respect to petroleum hydrocarbons and chlorinated solvents. Details of the well installation and associated sampling activities were presented in EPI's *Remedial Investigation, Feasibility Study, and Cleanup Action Plan*, dated September 6, 2017.

3.0 OBJECTIVES

The general objectives of the work described herein were to monitor groundwater conditions and conduct groundwater sampling using standard methods and procedures accepted by Ecology. The groundwater sampling was conducted to determine whether the remedial actions described above were effective and if groundwater quality is in compliance with MTCA cleanup standards.

4.0 ANALYTICAL METHODS

The selection of appropriate analytical methods for groundwater monitoring at the subject property were determined in discussions with Mr. Charles San Juan of Ecology and EPI. The following analytical methods were determined to be appropriate for the contaminants of concern (COCs) at the subject property:

- Diesel- and oil-range organics (DRO and ORO) by Northwest Total Petroleum Hydrocarbons as Diesel Method (NWTPH-Dx); and

- Chlorinated volatile organic compounds (cVOCs) by U.S. Environmental Protection Agency (EPA) Method 8260C.

Additionally, a determination was made by Ecology and EPI to analyze groundwater for DRO and ORO using the NWTPH-Dx with Silica Gel Cleanup Method (NWTPH-Dx Gel).

The determination described above was made after groundwater samples using the standard NWTPH-Dx Method collected at the subject property appeared to be biased high due to the presence of polar, biologically generated (biogenic), non-petroleum hydrocarbons in the sample. Mr. Charles San Juan from the Department of Ecology recommended follow-up analysis of these samples using a silica gel cleanup, which removes the polar biogenic compounds from the sample by electrically attracting them to the silica gel, leaving only the non-polar petroleum hydrocarbons in the sample extract. Mr. San Juan and EPI agreed to this approach with the objective of monitoring representative groundwater conditions in the aquifer at the subject property.

5.0 METHODOLOGY

5.1 Groundwater Measurements

The depth to water was measured to the nearest 0.01 foot in each monitoring well relative to the northernmost point on the well casing. This measurement was subtracted from the surveyed elevation to establish a piezometric elevation for the water table. Water levels were measured in three wells during each monitoring event (MW-1, MW-2, and MW-3).

The piezometric elevation data indicate that groundwater migrates predominately toward the southwest with an average hydraulic gradient of approximately 0.01 foot/foot, as measured between monitoring wells MW-2 and MW-3. These piezometric conditions are consistent with previous findings at the subject property. A site representation with groundwater elevations and piezometric contours measured for each monitoring event is included as Figures 3, 4, and 5.

5.2 Groundwater Sampling and Analyses

After collection of water level data, each well was purged to ensure that the samples collected were representative of conditions within the aquifer and not within the well. Purging continued until field measurements of pH, dissolved oxygen (DO), oxidation-reduction potential (ORP), temperature, and

conductivity stabilized to within 10 percent of the prior measurement or until at least three wetted casing volumes had been removed. Purging was performed using a peristaltic pump and disposable tubing at each well. Purge water was placed into 55-gallon drum stored in the corner of the parking garage pending analytical results.

Wells were sampled using the same tubing and peristaltic pump used for purging. Sampling was conducted using low-flow sampling techniques to minimize sample volatilization and silt uptake. The groundwater samples were collected at a flow rate of less than 100 milliliters per minute and pumped directly into appropriate pre-labeled sample containers supplied by the laboratory.

All groundwater samples were submitted for the following analyses:

- DRO and ORO by NWTPH-Dx Methods (including silica gel cleanup); and
- cVOCs by EPA Method 8260C.

Additionally, groundwater samples were collected from MW-1 and MW-2 in November 2019 to monitor current groundwater conditions at the subject property and verify that the petroleum hydrocarbons were effectively remediated at the Site. Groundwater samples collected in November 2019 were submitted for the following confirmatory analysis:

- Benzene, toluene, ethylbenzene, and total xylenes (BTEX) using EPA Method 8021B;
- Fuel additives by EPA Method 8260;
- Total naphthalenes by EPA Method 8270 with selected ion measurement (SIM) for lower detection limits;
- Extractable petroleum hydrocarbons (EPH) and hexane by NWEPH Method; and
- Volatile petroleum hydrocarbons (VPH) by NWVPH Method.

Immediately upon collection, each sample container was labeled and placed in an iced cooler pending submittal to the analytical laboratory. All samples were handled and transported under standard Chain-of-Custody protocols.

6.0 ANALYTICAL RESULTS

Analytical results for the samples collected during each monitoring event are summarized in Table 1. Analytical results are indicated on Figure 2. Copies of the laboratory analytical reports are included in Attachment A.

The COCs in groundwater at the Site are DRO, ORO, and cVOCs. The groundwater cleanup levels (CULs) for the Site are consistent with MTCA Method A and Method B Cleanup Levels for Groundwater,

per Washington Administrative Code (WAC) 173-340-900. The analytical results for the COCs relative to the CULs are summarized below:

6.1 July 2017 Sampling Event

Groundwater measurements and samples were taken from all three wells as described above in Section 5.0 on July 12, 2017. The analytical results are described below:

- DRO were detected in all three groundwater samples analyzed by the NWTPH-Dx Method at concentrations ranging from 530 micrograms per liter (µg/L) to 700 µg/L, with the highest concentration detected in the sample from MW-1. The laboratory flagged all three results with an "x" qualifier indicating that the result does "*not resemble the fuel standard used for quantitation.*" Three of the detected concentrations were greater than the MTCA Method A groundwater CUL of 500 µg/L. DRO concentrations for the samples analyzed by the NWTPH-Dx Gel Method were less than the MTCA Method A groundwater CUL of 500 µg/L for all three wells.

- ORO were detected in all three groundwater samples analyzed by the NWTPH-Dx Method at concentrations ranging from 520 µg/L to 590 µg/L, with the highest concentration detected in MW-3. The laboratory flagged all three results with an "x" qualifier indicating that the result does "*not resemble the fuel standard used for quantitation*. Three of the detected concentrations were greater than the MTCA Method A groundwater CUL of 500 µg/L. ORO concentrations for the samples analyzed by the NWTPH-Dx Gel Method were less than the MTCA Method A groundwater CUL of 500 µg/L for all three wells.

- Acetone was detected at a concentration of 10 µg/L in the groundwater sample from MW-2, which is less than the MTCA Method B groundwater CUL of 72,000 µg/L.

- PCE, trichloroethene (TCE), cis-1-2-dichloroethene (cis-1,2-DCE), trans-1,2-dichloroethene (trans-1,2-DCE), and vinyl chloride concentrations in all three groundwater samples did not exceed the laboratory MDL.

6.2 October 2017 Sampling Event

Groundwater measurements and samples were taken from all three wells as described above in Section 5.0 on October 11, 2017. The analytical results are described below:

- DRO were detected in all three groundwater samples analyzed by the NWTPH-Dx Method at concentrations ranging from 580 µg/L to 1300 µg/L, with the highest concentration detected in the sample from MW-1. The laboratory flagged all three results with an "x" qualifier indicating that the result does "*not resemble the fuel standard used for quantitation.*" Three of the detected concentrations were greater than the MTCA Method A groundwater CUL of 500 µg/L. DRO concentrations for the samples analyzed by the NWTPH-Dx Gel Method were less than the laboratory MDL for all three wells.

- ORO were detected in all three groundwater samples analyzed by the NWTPH-Dx Method at concentrations ranging from 510 µg/L to 650 µg/L, with the highest concentration detected in MW-1. The laboratory flagged all three results with an "x" qualifier indicating that the result does "*not resemble the fuel standard used for quantitation*. Three of the detected concentrations were greater than the MTCA Method A groundwater CUL of 500 µg/L. ORO concentrations for the samples analyzed by the NWTPH-Dx Gel Method were less than the laboratory MDL for all three wells.

- cis-DCE was detected at a concentration of 6.6 µg/L in the groundwater sample from MW-2, which is less than the MTCA Method B groundwater CUL of 16 µg/L.

- Vinyl chloride was detected at a concentration of 0.61 µg/L in the groundwater sample from MW-2, which is greater than the MTCA Method A groundwater CUL of 0.2 µg/L.

- PCE, trichloroethene (TCE), cis-1-2-dichloroethene (cis-1,2-DCE), trans-1,2-dichloroethene (trans-1,2-DCE), and vinyl chloride concentrations in all three groundwater samples did not exceed the laboratory MDL.

6.3 January 2018 Sampling Event

Groundwater measurements and samples were taken from all three wells as described above in Section 5.0 on January 11, 2018. The analytical results are described below:

- DRO were detected in all three groundwater samples analyzed by the NWTPH-Dx Method at concentrations ranging from 150 µg/L to 570 µg/L, with the highest concentration detected in the sample from MW-2. The laboratory flagged all three results with an "x" qualifier indicating that the result does "*not resemble the fuel standard used for quantitation.*" One of the detected concentrations was greater than the MTCA Method A groundwater CUL of 500 µg/L. DRO concentrations for the samples analyzed by the NWTPH-Dx Gel Method were less than the laboratory MDL for all three wells.

- ORO were detected in one of the three groundwater samples analyzed by the NWTPH-Dx Method at a concentration of 950 µg/L (MW-2), which is greater than the MTCA Method A groundwater CUL of 500 µg/L. The laboratory flagged the result with an "x" qualifier indicating that the result does "*not resemble the fuel standard used for quantitation*. ORO concentrations for the samples analyzed by the NWTPH-Dx Gel Method did not exceed the laboratory MDL for any of the three wells.

- PCE, trichloroethene (TCE), cis-1-2-dichloroethene (cis-1,2-DCE), trans-1,2-dichloroethene (trans-1,2-DCE), and vinyl chloride concentrations in all three groundwater samples did not exceed the laboratory MDL.

6.4 April 2018 Sampling Event

Groundwater measurements and samples were taken from all three wells as described above in Section 5.0 on April 12, 2018. The analytical results are described below:

- DRO were detected in all three groundwater samples analyzed by the NWTPH-Dx Method at concentrations ranging from 180µg/L to 280 µg/L, with the highest concentration detected in the sample from MW-3. The laboratory flagged all three results with an "x" qualifier indicating that the result does "*not resemble the fuel standard used for quantitation.*" All three detected concentrations were less than the MTCA Method A groundwater CUL of 500 µg/L. DRO concentrations for the samples analyzed by the NWTPH-Dx Gel Method were less than the laboratory MDL for all three wells.

- ORO did not exceed the laboratory MDL in any of the groundwater samples analyzed by the NWTPH-Dx Method. ORO concentrations for the samples analyzed by the NWTPH-Dx Gel Method did not exceed the laboratory MDL for any of the three wells.

- PCE, TCE, cis-1,2-DCE, trans-1,2-DCE, and vinyl chloride concentrations in all three groundwater samples did not exceed the laboratory MDL.

6.5 July 2018 Sampling Event

Groundwater measurements and samples were taken from all three wells as described above in Section 5.0 on July 17, 2018. The analytical results are described below:

- DRO were detected in all three groundwater samples analyzed by the NWTPH-Dx Method at concentrations ranging from 110 µg/L to 810 µg/L, with the highest concentration detected in MW-2. The laboratory flagged all three results with an "x" qualifier indicating that the result does "*not resemble the fuel standard used for quantitation.*" One of the detected concentrations was greater than the MTCA Method A groundwater CUL of 500 µg/L. DRO concentrations for the samples analyzed by the NWTPH-Dx Gel Method were less than the laboratory MDL for all three wells.

- ORO were detected in two of the three groundwater samples analyzed by the NWTPH-Dx Method at concentrations of 380 µg/L and 810 µg/L, with the highest concentration detected in MW-2. The ORO concentration of 810 µg/L in the sample from MW-2 exceeded the MTCA Method A groundwater CUL of 500 µg/L. The laboratory flagged both detected results with an "x" qualifier indicating that the result does "*not resemble the fuel standard used for quantitation*. ORO concentrations for the samples analyzed by the NWTPH-Dx Gel Method did not exceed the laboratory MDL for any of the three wells.

- PCE, TCE, cis-1,2-DCE, trans-1,2-DCE, and vinyl chloride concentrations in all three groundwater samples did not exceed the laboratory MDL.

6.6 October 2018 Sampling Event

Groundwater measurements and samples were taken from all three wells as described above in Section 5.0 on October 31, 2018. The analytical results are described below:

- DRO were detected in all three groundwater samples analyzed by the NWTPH-Dx Method at concentrations ranging from 200 µg/L to 780 µg/L, with the highest concentration detected in MW-2. The laboratory flagged all three results with an "x" qualifier indicating that the result does "*not resemble the fuel standard used for quantitation.*" One of the detected concentrations exceeded the MTCA Method A groundwater CUL of 500 µg/L. DRO concentrations for the samples analyzed by the NWTPH-Dx Gel Method were less than the laboratory MDL for all three wells.

- ORO were detected in two of the three groundwater samples analyzed by the NWTPH-Dx Method at concentrations of 340 µg/L and 950 µg/L, with the highest concentration detected in MW-2. The ORO concentration of 950 µg/L in the sample from MW-2 exceeded the MTCA Method A groundwater CUL of 500 µg/L. The laboratory flagged the sample result with an "x" qualifier indicating that the result does "*not resemble the fuel standard used for quantitation*. ORO concentrations for the samples analyzed by the NWTPH-Dx Gel Method did not exceed the laboratory MDL for any of the three wells.

- cis-DCE was detected at a concentration of 1.1 µg/L in the groundwater sample from MW-2, which is less than the MTCA Method B groundwater CUL of 16 µg/L.

- PCE, TCE, trans-1,2-DCE, and vinyl chloride concentrations in all three groundwater samples did not exceed the laboratory MDL.

6.7 November 2019 Sampling Event

Groundwater measurements and samples were taken from wells MW-1 and MW-2 to assess current groundwater conditions at the Site. The samples were analyzed for BTEX, fuel additives, total naphthalenes, EPH and hexane, and VPH. No compound concentration exceeded the laboratory MDL in either groundwater sample. The laboratory analytical report is included in Attachment A.

7.0 CONCLUSIONS

The following conclusions are supported by the analytical results of the groundwater samples collected at the subject property.

- Groundwater at the subject property is currently in compliance with the MTCA Method A groundwater CULs for DRO and ORO. The previously reported exceedances of the MTCA Method A CULs are "false positives" related to the natural biological degradation of petroleum and the creation of non-petroleum biogenic hydrocarbons. After removal of the non-petroleum biogenic compounds from the groundwater samples collected during the four groundwater monitoring events in 2018 using the silica gel cleanup method, the

concentrations of DRO and ORO in the samples in all cases decreased to less than their respective MTCA Method A CULs. Additionally, these results were confirmed by performance of the EPH analysis.

- Groundwater at the subject property is currently in compliance with the MTCA Method A and B groundwater CULs for cVOCs.

- All concentrations for compounds analyzed during the November 2019 groundwater sampling event including BTEX, fuel additives, total naphthalenes, EPH, hexane, and VPH were less than the laboratory MDL and are in compliance with MTCA Method A groundwater CULs.

- Because all of the compounds mentioned above have not been detected in the groundwater samples collected from groundwater monitoring wells MW-1, MW-2, and MW-3 at concentrations exceeding the laboratory MDL or exceeding their respective MTCA Method A and B groundwater CULs for four consecutive quarters, with application of the silica gel cleanup method, no further action is required under MTCA. MJR respectfully requests a No Further Action (NFA) determination for the subject property from Ecology.

8.0 LIMITATIONS

To the extent that preparation of this *Groundwater Monitoring Report* has required the application of best professional judgment and the application of scientific principles, certain results of this work have been based on subjective interpretation. EPI makes no warranties express or implied, including and without limitation, warranties as to merchantability or fitness for a particular purpose. The information provided in this Groundwater Monitoring Report is not to be construed as legal advice.

This *Groundwater Monitoring Report* was prepared solely for MJR, and the contents herein may not be used or relied upon by any other person without the express written consent and authorization of EPI.

Table

Table 1
Groundwater Analytical Results
Groundwater Monitoring Report
Former Meeker Cleaners Site
1301 West Meeker Street, Kent, WA

Sample ID	Sample Date	Depth to Water (in feet)	Petroleum Hydrocarbons[a]				Selected Volatile Organic Compounds[b]					
			DRO	ORO	DRO (With Silica Gel Cleanup)	ORO (With Silica Gel Cleanup)	Acetone	Tetrachloro-ethene	Trichloro-ethene	cis-1,2-Dichloro-ethene	trans-1,2-Dichloro-ethene	Vinyl Chloride
MW-1	7/12/17	4.24	**700 x**	**520 x**	**270**	**470**	<10	<1	<1	<1	<1	<0.2
	10/11/17	6.81	**1,300 x**	**650 x**	<50	<250	<20	<1	<1	<1	<1	<0.2
	1/11/18	4.1	**150 x**	<250	<50	<250	--	<1	<1	<1	<1	<0.2
	4/12/18	3.92	**180 x**	<250	<50	<250	--	<1	<1	<1	<1	<0.2
	7/17/18	4.33	**460 x**	**380 x**	<50	<250	--	<1	<1	<1	<1	<0.2
	10/31/18	7.72	**200 x**	**340 x**	<50	<250	--	<1	<1	<1	<1	<0.2
MW-2	7/12/17	5.10	**570 x**	**520 x**	**91**	<250	**10**	<1	<1	<1	<1	<0.2
	10/11/17	7.76	**900x**	**510 x**	<50	<250	<20	<1	<1	**6.6**	<1	**0.61**
	1/11/18	4.49	**570 x**	**950 x**	<50	<250	--	<1	<1	<1	<1	<0.2
	4/12/18	4.83	**190 x**	<250	<50	<250	--	<1	<1	<1	<1	<0.2
	7/17/18	5.78	**810 x**	**810 x**	<50	<250	--	<1	<1	<1	<1	<0.2
	10/31/18	7.43	**780 x**	**950 x**	<50	<250	--	<1	<1	**1.1**	<1	<0.2
MW-3	7/12/17	5.64	**530 x**	**590 x**	<50	<250	<10	<1	<1	<1	<1	<0.2
	10/11/17	7.78	**580 x**	**630x**	<50	<250	<20	<1	<1	<1	<1	<0.2
	1/11/18	5.89	**150 x**	<250	<50	<250	--	<1	<1	<1	<1	<0.2
	4/12/18	5.51	**280 x**	<250	<50	<250	--	<1	<1	<1	<1	<0.2
	7/17/18	5.70	**110 x**	<250	<50	<250	--	<1	<1	<1	<1	<0.2
	10/31/18	6.34	**260 x**	<250	<50	<250	--	<1	<1	<1	<1	<0.2
MTCA Method A or B Cleanup Levels for Groundwater[c]			**500**	**500**	**500**	**500**	**72,000[d]**	**5**	**5**	**16[d]**	**160[d]**	**0.2**

Notes:

All results presented in micrograms per liter (µg/L).

Bold Bold results exceed the laboratory method detection limit.

Shaded results exceed the cleanup level.

a Analyzed by NWTPH-Dx.

b Analyzed by EPA Method 8260C.

c Model Toxics Control Act (MTCA) Method A Cleanup Levels for Groundwater, Table 720-1, Washington Administrative Code (WAC) 173-340-900.

d MTCA Method B Groundwater Cleanup Levels from Cleanup Levels and Risk Calculations (CLARC) database.

< Less than laboratory method detection limit.

-- Not analyzed.

Compounds:

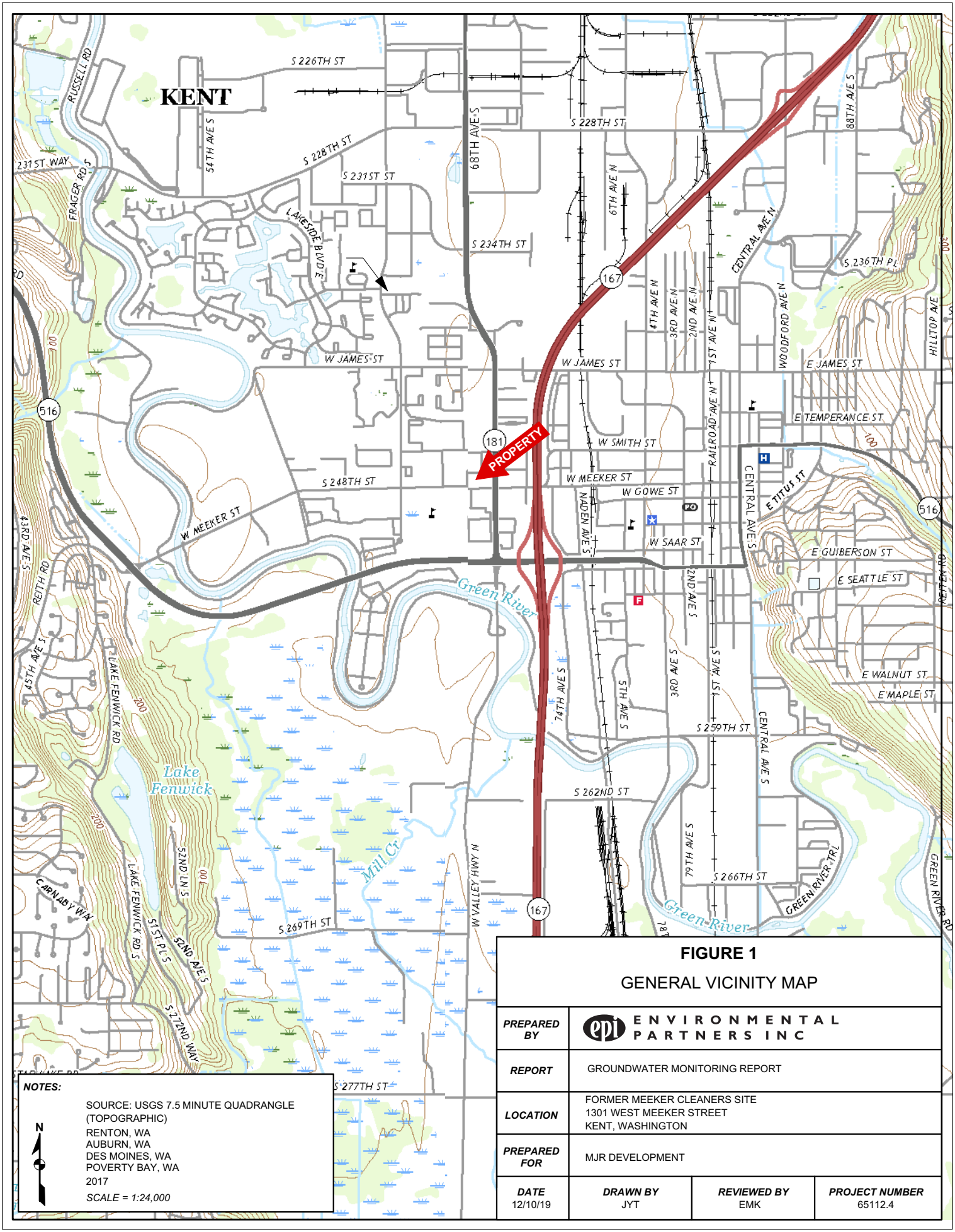
DRO Diesel-range organics

ORO Oil-range organics

Qualifier:

x The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

Figures



NOTES:

SOURCE: USGS 7.5 MINUTE QUADRANGLE (TOPOGRAPHIC)
RENTON, WA
AUBURN, WA
DES MOINES, WA
POVERTY BAY, WA
2017

SCALE = 1:24,000

N

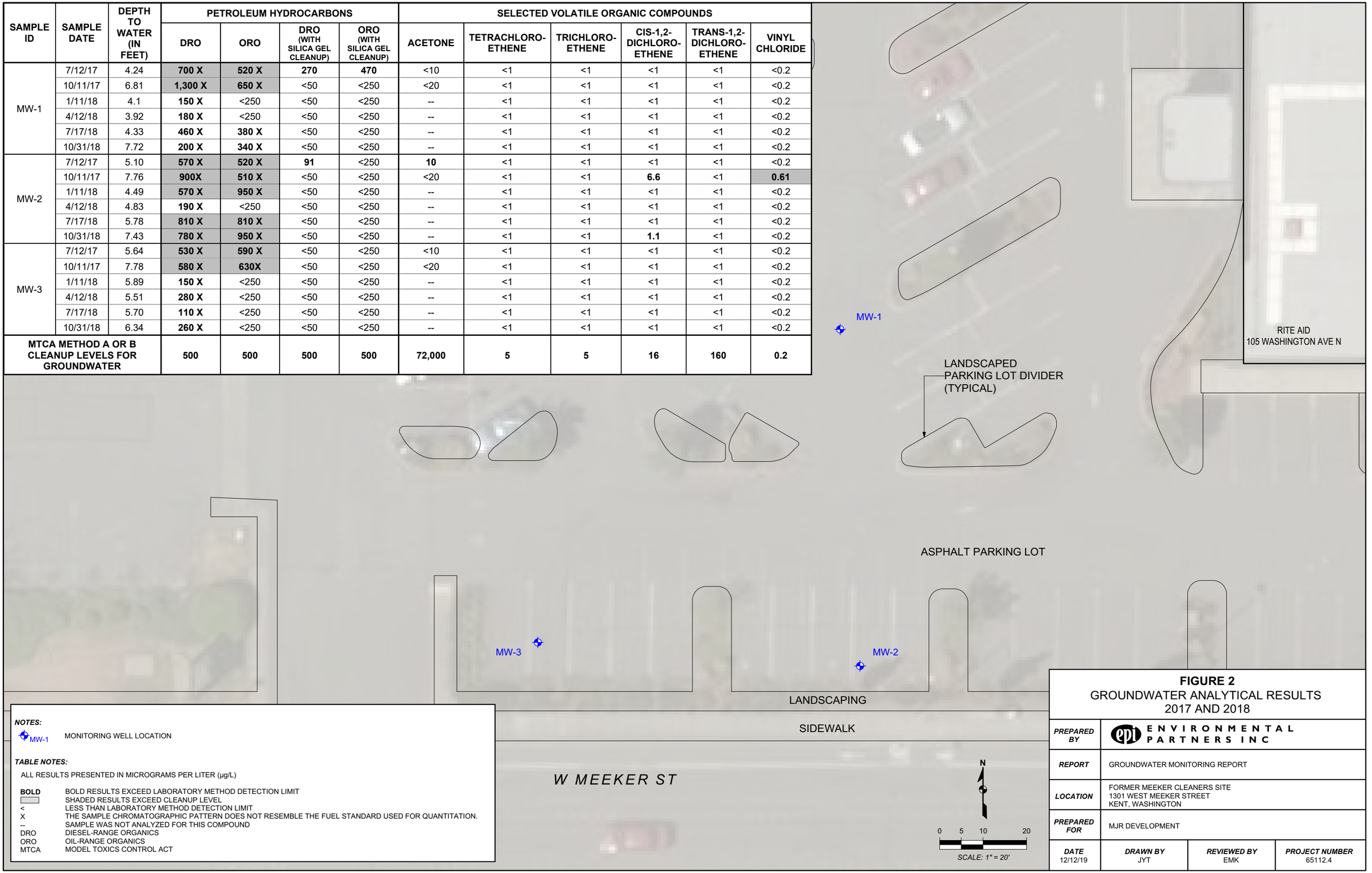
FIGURE 1

GENERAL VICINITY MAP

PREPARED BY	ENVIRONMENTAL PARTNERS INC
REPORT	GROUNDWATER MONITORING REPORT
LOCATION	FORMER MEEKER CLEANERS SITE 1301 WEST MEEKER STREET KENT, WASHINGTON
PREPARED FOR	MJR DEVELOPMENT

DATE	DRAWN BY	REVIEWED BY	PROJECT NUMBER
12/10/19	JYT	EMK	65112.4

SAMPLE ID	SAMPLE DATE	DEPTH TO WATER (IN FEET)	PETROLEUM HYDROCARBONS				SELECTED VOLATILE ORGANIC COMPOUNDS					
			DRO	ORO	DRO (WITH SILICA GEL CLEANUP)	ORO (WITH SILICA GEL CLEANUP)	ACETONE	TETRACHLORO-ETHENE	TRICHLORO-ETHENE	CIS-1,2-DICHLORO-ETHENE	TRANS-1,2-DICHLORO-ETHENE	VINYL CHLORIDE
MW-1	7/12/17	4.24	**700 X**	**520 X**	**270**	**470**	<10	<1	<1	<1	<1	<0.2
	10/11/17	6.81	**1,300 X**	**650 X**	<50	<250	<20	<1	<1	<1	<1	<0.2
	1/11/18	4.1	**150 X**	<250	<50	<250	--	<1	<1	<1	<1	<0.2
	4/12/18	3.92	**180 X**	<250	<50	<250	--	<1	<1	<1	<1	<0.2
	7/17/18	4.33	**460 X**	**380 X**	<50	<250	--	<1	<1	<1	<1	<0.2
	10/31/18	7.72	**200 X**	**340 X**	<50	<250	--	<1	<1	<1	<1	<0.2
MW-2	7/12/17	5.10	**570 X**	**520 X**	**91**	<250	**10**	<1	<1	<1	<1	<0.2
	10/11/17	7.76	**900X**	**510 X**	<50	<250	<20	<1	<1	**6.6**	<1	**0.61**
	1/11/18	4.49	**570 X**	**950 X**	<50	<250	--	<1	<1	<1	<1	<0.2
	4/12/18	4.83	**190 X**	<250	<50	<250	--	<1	<1	<1	<1	<0.2
	7/17/18	5.78	**810 X**	**810 X**	<50	<250	--	<1	<1	<1	<1	<0.2
	10/31/18	7.43	**780 X**	**950 X**	<50	<250	--	<1	<1	**1.1**	<1	<0.2
MW-3	7/12/17	5.64	**530 X**	**590 X**	<50	<250	<10	<1	<1	<1	<1	<0.2
	10/11/17	7.78	**580 X**	**630X**	<50	<250	<20	<1	<1	<1	<1	<0.2
	1/11/18	5.89	**150 X**	<250	<50	<250	--	<1	<1	<1	<1	<0.2
	4/12/18	5.51	**280 X**	<250	<50	<250	--	<1	<1	<1	<1	<0.2
	7/17/18	5.70	**110 X**	<250	<50	<250	--	<1	<1	<1	<1	<0.2
	10/31/18	6.34	**260 X**	<250	<50	<250	--	<1	<1	<1	<1	<0.2
MTCA METHOD A OR B CLEANUP LEVELS FOR GROUNDWATER			**500**	**500**	**500**	**500**	**72,000**	**5**	**5**	**16**	**160**	**0.2**



NOTES:

MW-1 MONITORING WELL LOCATION

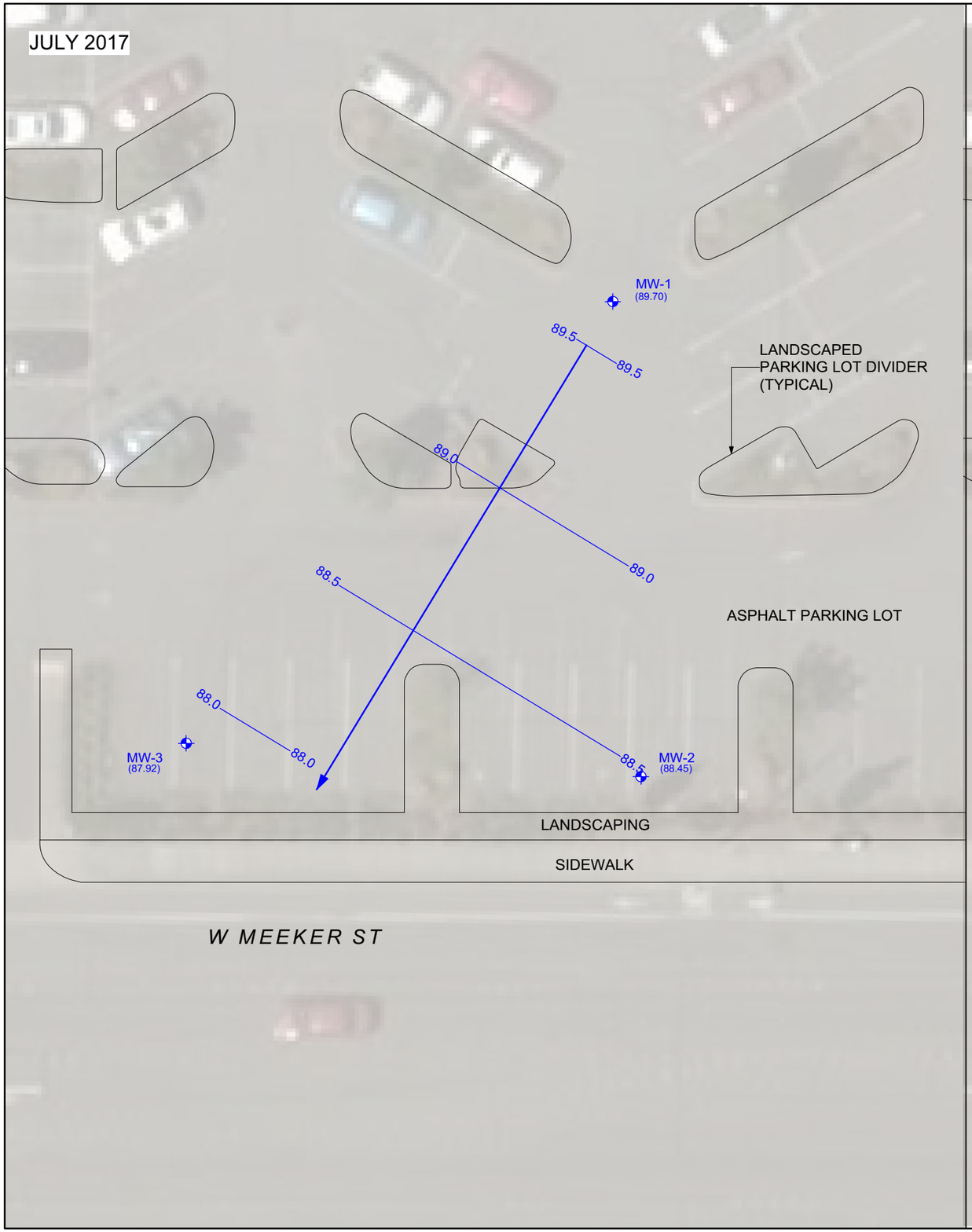
TABLE NOTES:

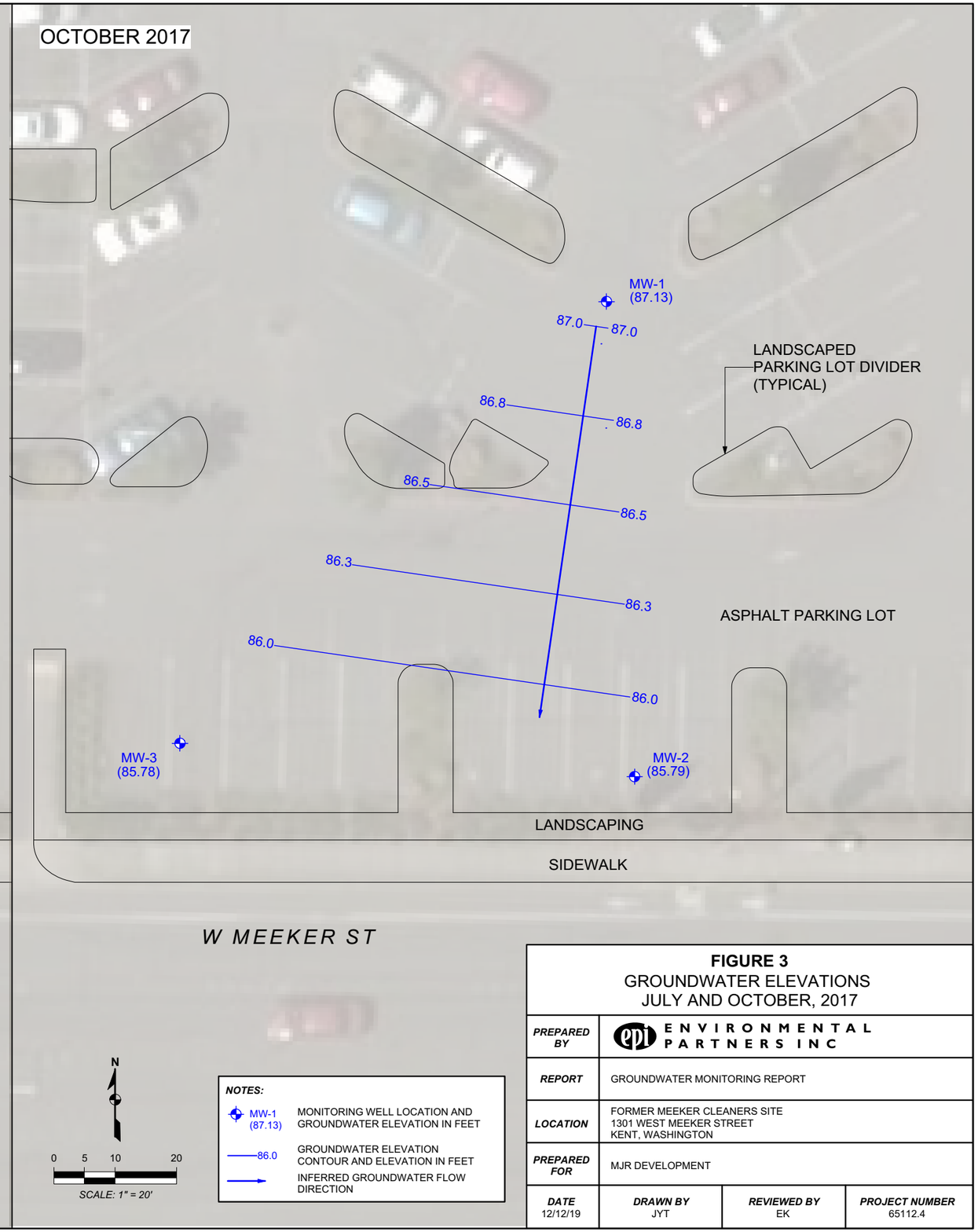
ALL RESULTS PRESENTED IN MICROGRAMS PER LITER (µg/L)

BOLD	BOLD RESULTS EXCEED LABORATORY METHOD DETECTION LIMIT
▭	SHADED RESULTS EXCEED CLEANUP LEVEL
<	LESS THAN LABORATORY METHOD DETECTION LIMIT
X	THE SAMPLE CHROMATOGRAPHIC PATTERN DOES NOT RESEMBLE THE FUEL STANDARD USED FOR QUANTITATION.
--	SAMPLE WAS NOT ANALYZED FOR THIS COMPOUND
DRO	DIESEL-RANGE ORGANICS
ORO	OIL-RANGE ORGANICS
MTCA	MODEL TOXICS CONTROL ACT

FIGURE 2
GROUNDWATER ANALYTICAL RESULTS
2017 AND 2018

PREPARED BY	epi ENVIRONMENTAL PARTNERS INC		
REPORT	GROUNDWATER MONITORING REPORT		
LOCATION	FORMER MEEKER CLEANERS SITE 1301 WEST MEEKER STREET KENT, WASHINGTON		
PREPARED FOR	MJR DEVELOPMENT		
DATE 12/12/19	***DRAWN BY*** JYT	***REVIEWED BY*** EMK	***PROJECT NUMBER*** 65112.4



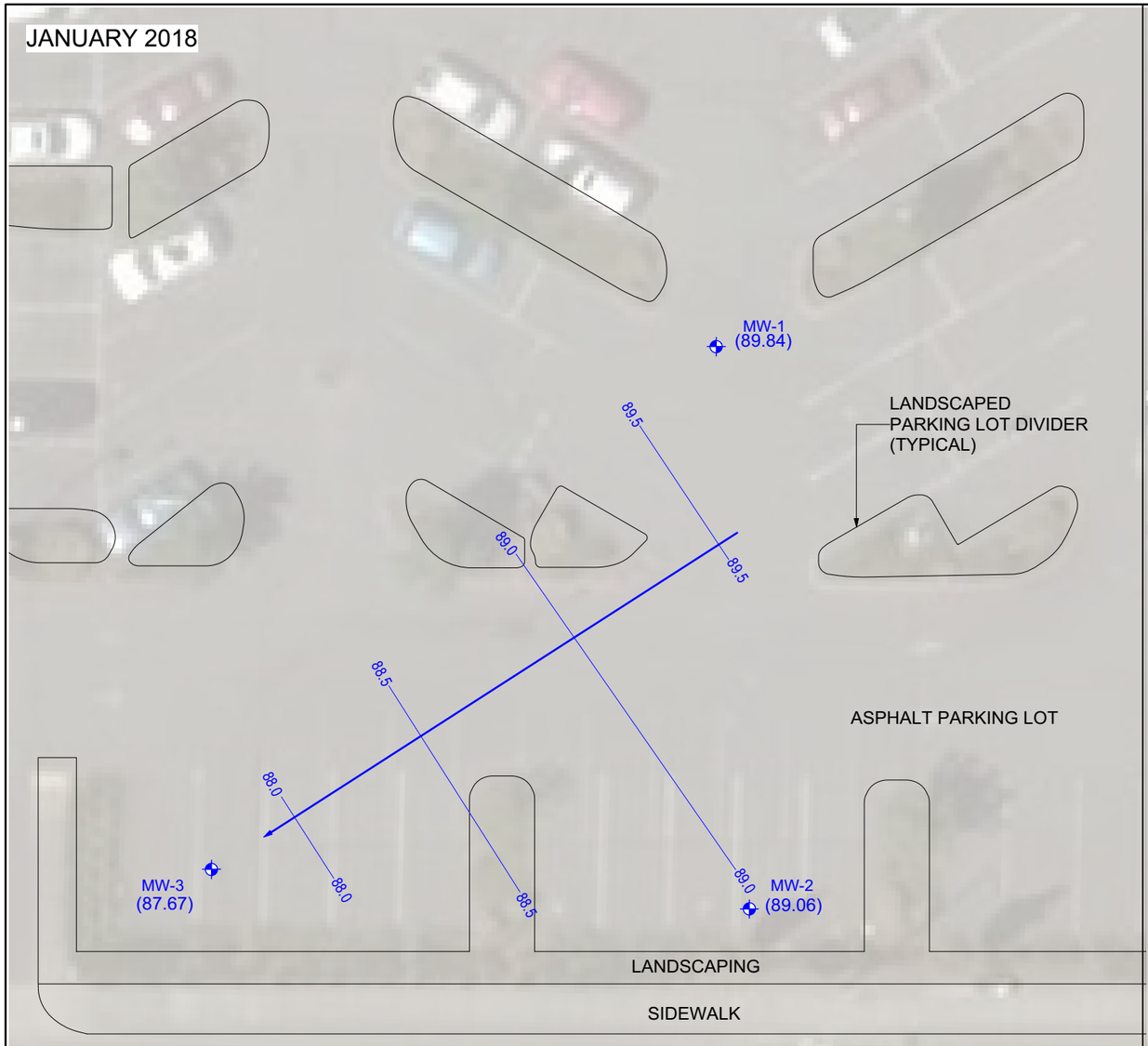


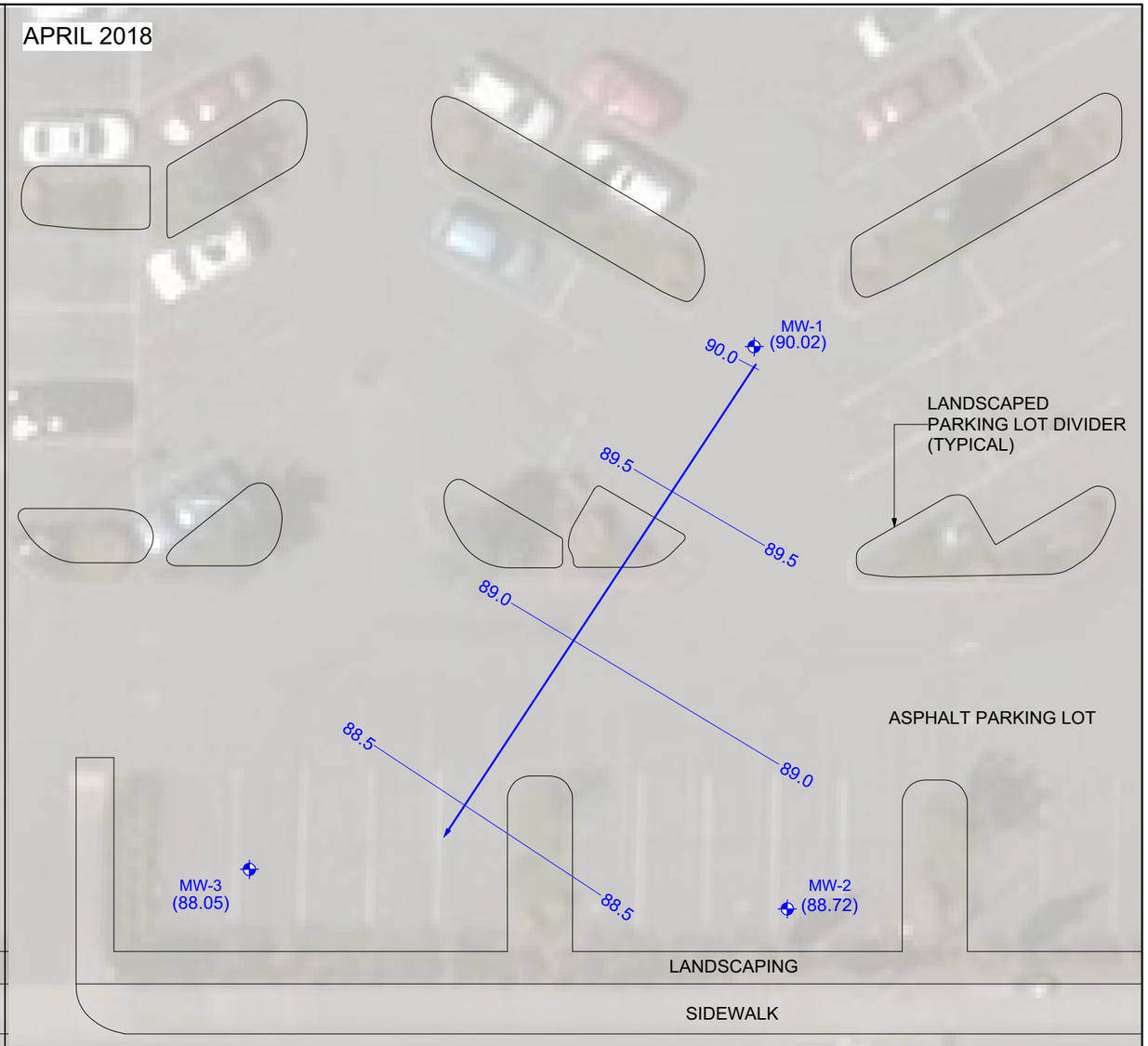
NOTES:

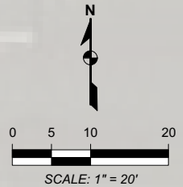
- MW-1 (87.13) — MONITORING WELL LOCATION AND GROUNDWATER ELEVATION IN FEET
- 86.0 — GROUNDWATER ELEVATION CONTOUR AND ELEVATION IN FEET
- INFERRED GROUNDWATER FLOW DIRECTION

FIGURE 3
GROUNDWATER ELEVATIONS
JULY AND OCTOBER, 2017

PREPARED BY	ENVIRONMENTAL PARTNERS INC		
REPORT	GROUNDWATER MONITORING REPORT		
LOCATION	FORMER MEEKER CLEANERS SITE 1301 WEST MEEKER STREET KENT, WASHINGTON		
PREPARED FOR	MJR DEVELOPMENT		
DATE 12/12/19	***DRAWN BY*** JYT	***REVIEWED BY*** EK	***PROJECT NUMBER*** 65112.4







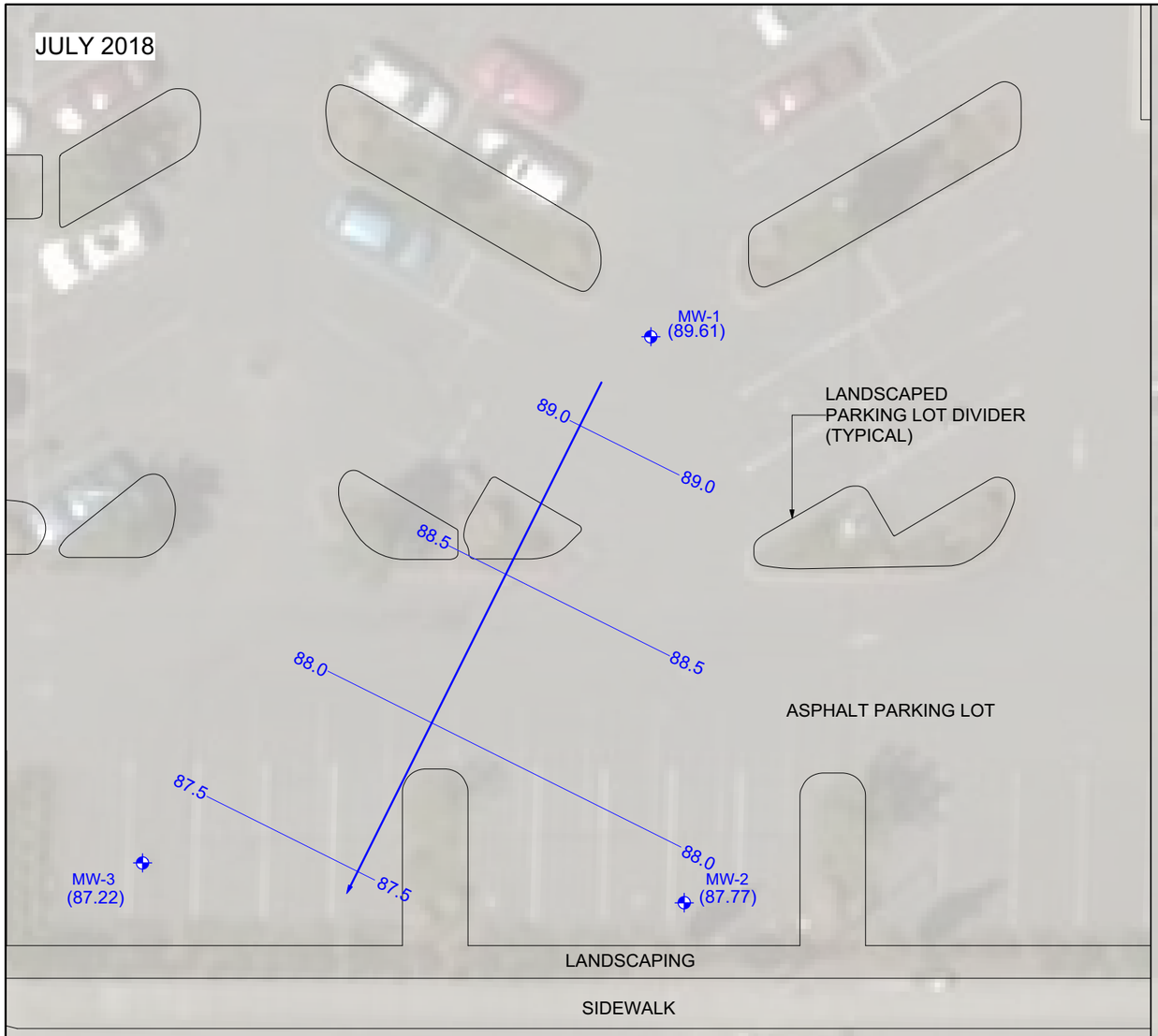
NOTES:

- MW-1 (90.02) — MONITORING WELL LOCATION AND GROUNDWATER ELEVATION IN FEET
- 88.5 — GROUNDWATER ELEVATION CONTOUR AND ELEVATION IN FEET
- INFERRED GROUNDWATER FLOW DIRECTION

FIGURE 4
GROUNDWATER ELEVATIONS
JANUARY AND APRIL 2018

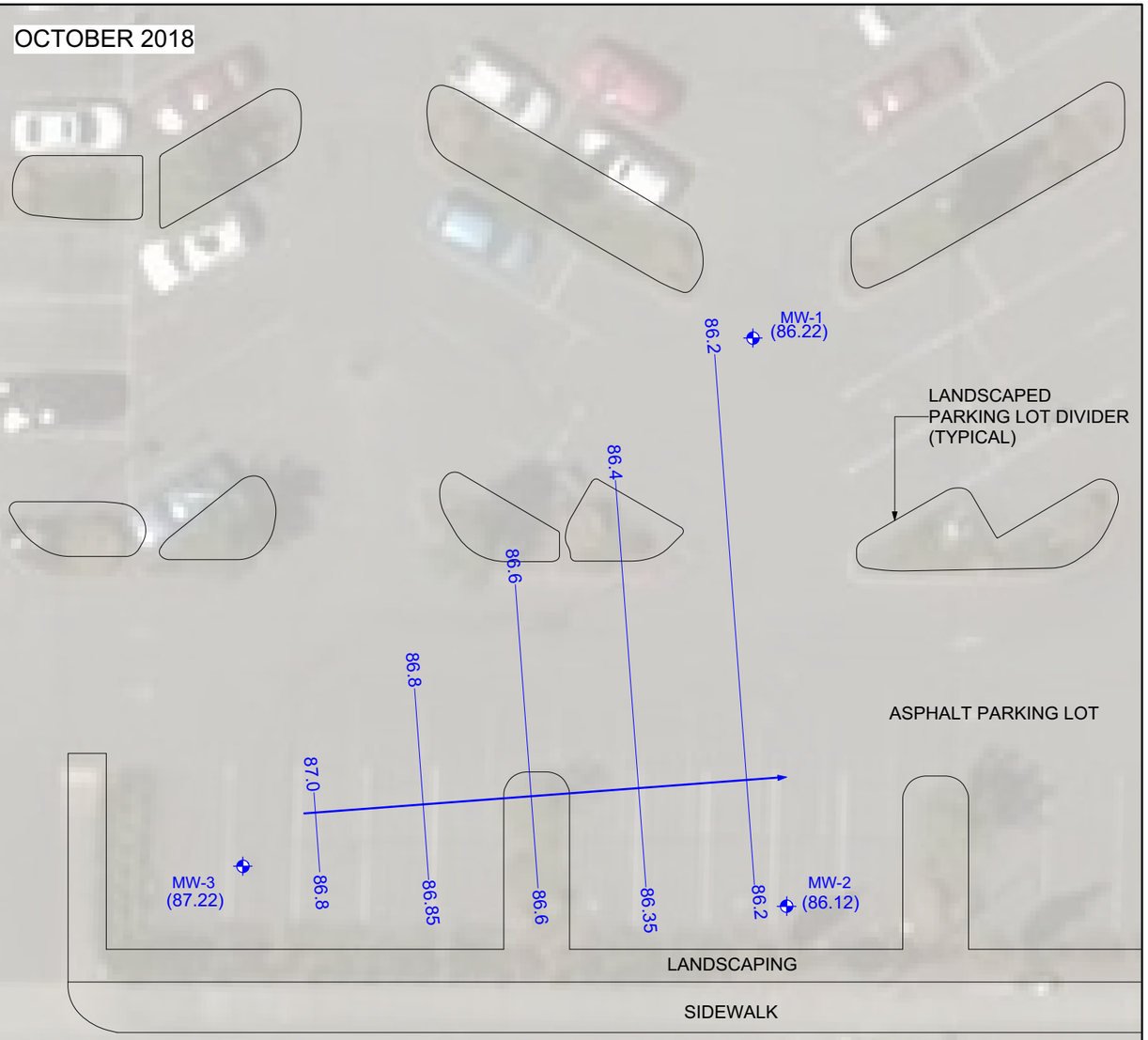
PREPARED BY	ENVIRONMENTAL PARTNERS INC		
REPORT	GROUNDWATER MONITORING REPORT		
LOCATION	FORMER MEEKER CLEANERS SITE 1301 WEST MEEKER STREET KENT, WASHINGTON		
PREPARED FOR	MJR DEVELOPMENT		
DATE 12/12/19	***DRAWN BY*** JYT	***REVIEWED BY*** EK	***PROJECT NUMBER*** 65112.4

JULY 2018

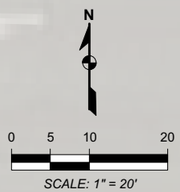


W MEEKER ST

OCTOBER 2018



W MEEKER ST



NOTES:

- MW-1 (86.22) — MONITORING WELL LOCATION AND GROUNDWATER ELEVATION IN FEET
- 86.3 — GROUNDWATER ELEVATION CONTOUR AND ELEVATION IN FEET
- INFERRED GROUNDWATER FLOW DIRECTION

FIGURE 5
GROUNDWATER ELEVATIONS
JULY AND OCTOBER 2018

PREPARED BY	ENVIRONMENTAL PARTNERS INC		
REPORT	GROUNDWATER MONITORING REPORT		
LOCATION	FORMER MEEKER CLEANERS SITE 1301 WEST MEEKER STREET KENT, WASHINGTON		
PREPARED FOR	MJR DEVELOPMENT		
DATE 12/12/19	***DRAWN BY*** JYT	***REVIEWED BY*** EK	***PROJECT NUMBER*** 65112.4

Attachment A
Laboratory Analytical Reports

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

January 19, 2018

Eric Koltes, Project Manager
Environmental Partners, Inc.
1180 NW Maple St, Suite 310
Issaquah, WA 98027

RE: 65112, F&BI 801149

Dear Mr Koltes:

Included are the results from the testing of material submitted on January 12, 2018 from the 65112, F&BI 801149 project. There are 11 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Cynthia Moon
EPI0119R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on January 12, 2018 by Friedman & Bruya, Inc. from the Environmental Partners 65112, F&BI 801149 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Environmental Partners
801149 -01	MW-1
801149 -02	MW-3
801149 -03	MW-2
801149 -04	Trip Blank

All quality control requirements were acceptable.

Date of Report: 01/19/18
Date Received: 01/12/18
Project: 65112, F&BI 801149
Date Extracted: 01/12/18
Date Analyzed: 01/16/18

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx
Sample Extracts Passed Through a Silica Gel Column Prior to Analysis
Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 51-134)
MW-1 801149-01	<50	<250	102
MW-3 801149-02	<50	<250	108
MW-2 801149-03	<50	<250	111
Method Blank 08-097 MB	<50	<250	92

Date of Report: 01/19/18
Date Received: 01/12/18
Project: 65112, F&BI 801149
Date Extracted: 01/12/18
Date Analyzed: 01/12/18

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 41-152)
MW-1 801149-01	150 x	<250	104
MW-3 801149-02	150 x	<250	102
MW-2 801149-03	570 x	950 x	103
Method Blank 08-097 MB2	<50	<250	103

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-1	Client:	Environmental Partners
Date Received:	01/12/18	Project:	65112, F&BI 801149
Date Extracted:	01/12/18	Lab ID:	801149-01
Date Analyzed:	01/12/18	Data File:	011221.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	100	63	127
4-Bromofluorobenzene	98	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-3	Client:	Environmental Partners
Date Received:	01/12/18	Project:	65112, F&BI 801149
Date Extracted:	01/12/18	Lab ID:	801149-02
Date Analyzed:	01/12/18	Data File:	011222.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	99	63	127
4-Bromofluorobenzene	98	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-2	Client:	Environmental Partners
Date Received:	01/12/18	Project:	65112, F&BI 801149
Date Extracted:	01/12/18	Lab ID:	801149-03
Date Analyzed:	01/12/18	Data File:	011223.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	100	63	127
4-Bromofluorobenzene	99	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Environmental Partners
Date Received:	Not Applicable	Project:	65112, F&BI 801149
Date Extracted:	01/12/18	Lab ID:	08-077 mb
Date Analyzed:	01/12/18	Data File:	011210.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	99	63	127
4-Bromofluorobenzene	98	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

Date of Report: 01/19/18
Date Received: 01/12/18
Project: 65112, F&BI 801149

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample Silica Gel

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	88	88	58-134	0

Date of Report: 01/19/18
Date Received: 01/12/18
Project: 65112, F&BI 801149

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	76	88	61-133	15

Date of Report: 01/19/18
Date Received: 01/12/18
Project: 65112, F&BI 801149

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 801149-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Vinyl chloride	ug/L (ppb)	50	<0.2	100	36-166
Chloroethane	ug/L (ppb)	50	<1	108	46-160
1,1-Dichloroethene	ug/L (ppb)	50	<1	105	60-136
Methylene chloride	ug/L (ppb)	50	<5	100	67-132
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	102	72-129
1,1-Dichloroethane	ug/L (ppb)	50	<1	104	70-128
cis-1,2-Dichloroethene	ug/L (ppb)	50	<1	100	71-127
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	103	69-133
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	107	60-146
Trichloroethene	ug/L (ppb)	50	<1	101	66-135
Tetrachloroethene	ug/L (ppb)	50	<1	98	10-226

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Vinyl chloride	ug/L (ppb)	50	104	104	50-154	0
Chloroethane	ug/L (ppb)	50	105	109	58-146	4
1,1-Dichloroethene	ug/L (ppb)	50	103	108	67-136	5
Methylene chloride	ug/L (ppb)	50	101	102	39-148	1
trans-1,2-Dichloroethene	ug/L (ppb)	50	102	103	68-128	1
1,1-Dichloroethane	ug/L (ppb)	50	106	104	79-121	2
cis-1,2-Dichloroethene	ug/L (ppb)	50	101	100	80-123	1
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	104	104	73-132	0
1,1,1-Trichloroethane	ug/L (ppb)	50	109	110	83-130	1
Trichloroethene	ug/L (ppb)	50	102	103	80-120	1
Tetrachloroethene	ug/L (ppb)	50	98	98	76-121	0

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

801149

SAMPLE CHAIN OF CUSTODY

ME 01-12-18 VW3/E04

Page # 1 of 1

Report To Eric Koltes

Company Environmental Partners Inc

Address 1180 NW Maple St

City, State, ZIP Issaquah, WA

Phone ____ Email ____

SAMPLERS (signature) M.D. McBryan [signature]

PROJECT NAME 65112

PO #

REMARKS

INVOICE TO

TURNAROUND TIME
☒ Standard Turnaround
☐ RUSH ____
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Archive Samples
☐ Other ____

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM	Silica Gel Dx				Notes
MW-1	01 A-D	1/11/18	812	Water	4		X			X			X				
MW-3	02	↓	832	↓	4		X			X			X				
MW-2	03		956		4		X			X			X				
Trip Blank	04 AB	—	—	water	2												* added at lab (NP) 01/12/18

Samples received at 3 °C

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	[signature]	Elizabeth Webber-Bruya	EPI	1/12/18	0630
Received by:	[signature]	Michael Erdahl	F&Bru	↓	↓
Relinquished by:					
Received by:					

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

April 23, 2018

Betsy Wing, Project Manager
Environmental Partners, Inc.
1180 NW Maple St, Suite 310
Issaquah, WA 98027

RE: Former Meeker Cleaners 65112.4, F&BI 804231

Dear Ms Wing:

Included are the results from the testing of material submitted on April 13, 2018 from the Former Meeker Cleaners 65112.4, F&BI 804231 project. There are 11 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Cynthia Moon
EPI0423R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on April 13, 2018 by Friedman & Bruya, Inc. from the Environmental Partners Former Meeker Cleaners 65112.4, F&BI 804231 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Environmental Partners
804231-01	MW-1
804231-02	MW-2
804231-03	MW-3

All quality control requirements were acceptable.

Date of Report: 04/23/18
Date Received: 04/13/18
Project: Former Meeker Cleaners 65112.4, F&BI 804231
Date Extracted: 04/18/18
Date Analyzed: 04/18/18

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx
Sample Extracts Passed Through a Silica Gel Column Prior to Analysis
Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 47-140)
MW-1 804231-01	<50	<250	110
MW-2 804231-02	<50	<250	99
MW-3 804231-03	<50	<250	111
Method Blank 08-830 MB	<50	<250	98

Date of Report: 04/23/18
Date Received: 04/13/18
Project: Former Meeker Cleaners 65112.4, F&BI 804231
Date Extracted: 04/18/18
Date Analyzed: 04/18/18

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 51-134)
MW-1 804231-01	180 x	<250	96
MW-2 804231-02	190 x	<250	87
MW-3 804231-03	280 x	<250	95
Method Blank 08-830 MB	<50	<250	90

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-1	Client:	Environmental Partners
Date Received:	04/13/18	Project:	Former Meeker Cleaners 65112.4
Date Extracted:	04/13/18	Lab ID:	804231-01
Date Analyzed:	04/14/18	Data File:	041356.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	100	63	127
4-Bromofluorobenzene	102	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-2	Client:	Environmental Partners
Date Received:	04/13/18	Project:	Former Meeker Cleaners 65112.4
Date Extracted:	04/13/18	Lab ID:	804231-02
Date Analyzed:	04/14/18	Data File:	041357.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	98	63	127
4-Bromofluorobenzene	101	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-3	Client:	Environmental Partners
Date Received:	04/13/18	Project:	Former Meeker Cleaners 65112.4
Date Extracted:	04/13/18	Lab ID:	804231-03
Date Analyzed:	04/14/18	Data File:	041358.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	57	121
Toluene-d8	99	63	127
4-Bromofluorobenzene	100	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Environmental Partners
Date Received:	Not Applicable	Project:	Former Meeker Cleaners 65112.4
Date Extracted:	04/13/18	Lab ID:	08-0798 mb
Date Analyzed:	04/13/18	Data File:	041316.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	57	121
Toluene-d8	105	63	127
4-Bromofluorobenzene	100	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	5.7 lc
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

Date of Report: 04/23/18
Date Received: 04/13/18
Project: Former Meeker Cleaners 65112.4, F&BI 804231

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample Silica Gel

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	91	99	61-133	8

Date of Report: 04/23/18
Date Received: 04/13/18
Project: Former Meeker Cleaners 65112.4, F&BI 804231

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	84	96	58-134	13

Date of Report: 04/23/18
Date Received: 04/13/18
Project: Former Meeker Cleaners 65112.4, F&BI 804231

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 804232-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Vinyl chloride	ug/L (ppb)	50	<0.2	106	36-166
Chloroethane	ug/L (ppb)	50	<1	95	46-160
1,1-Dichloroethene	ug/L (ppb)	50	<1	100	60-136
Methylene chloride	ug/L (ppb)	50	<5	102	67-132
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	100	72-129
1,1-Dichloroethane	ug/L (ppb)	50	<1	101	70-128
cis-1,2-Dichloroethene	ug/L (ppb)	50	<1	101	71-127
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	97	69-133
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	103	60-146
Trichloroethene	ug/L (ppb)	50	<1	100	66-135
Tetrachloroethene	ug/L (ppb)	50	<1	105	10-226

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Vinyl chloride	ug/L (ppb)	50	120	118	50-154	2
Chloroethane	ug/L (ppb)	50	96	95	58-146	1
1,1-Dichloroethene	ug/L (ppb)	50	110	109	67-136	1
Methylene chloride	ug/L (ppb)	50	104	102	39-148	2
trans-1,2-Dichloroethene	ug/L (ppb)	50	111	108	68-128	3
1,1-Dichloroethane	ug/L (ppb)	50	111	108	79-121	3
cis-1,2-Dichloroethene	ug/L (ppb)	50	113	112	80-123	1
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	102	101	73-132	1
1,1,1-Trichloroethane	ug/L (ppb)	50	108	105	83-130	3
Trichloroethene	ug/L (ppb)	50	105	103	80-120	2
Tetrachloroethene	ug/L (ppb)	50	105	105	76-121	0

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

804231

SAMPLE CHAIN OF CUSTODY

ME 04-13-18

AO4 / VW2

Page # 1 of 1

Report To Betsy Wing; Eric Koltes
Company Environmental Partners, Inc.
Address 1180 NW Maple St, Suite 310
City, State, ZIP Issaquah, WA 98027
Phone (425)395-0010 Email betsyw@epi-wa.com
erick@epi-wa.com

SAMPLERS (signature) Betsy Wing

PROJECT NAME Former Merker Cleaners

PO # 65112.4

REMARKS

INVOICE TO EPI

TURNAROUND TIME
☒ Standard Turnaround
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Archive Samples
☐ Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM	cVOCs-8260	Silica Gel Cx			Notes
MW-1	01A-D	4/12/18	0820	H_2O	4		X						X	X			
MW-2	02	4/12/18	0915	H_2O	4		X						X	X			
MW-3	03	4/12/18	0955	H_2O	4		X						X	X			
																	Samples received at 3 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: Betsy Wing	Betsy Wing	EPI	4/13/18	6:15
Received by: Michael E Ball	Michael E Ball	FBR	↓	↓
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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July 27, 2018

Eric Koltes, Project Manager
Environmental Partners, Inc.
1180 NW Maple St, Suite 310
Issaquah, WA 98027

RE: Former Meeker Cleaners 65112.4, F&BI 807317

Dear Mr Koltes:

Included are the results from the testing of material submitted on July 18, 2018 from the Former Meeker Cleaners 65112.4, F&BI 807317 project. There are 11 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Cynthia Moon, Betsy Wing
EPI0727R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on July 18, 2018 by Friedman & Bruya, Inc. from the Environmental Partners Former Meeker Cleaners 65112.4, F&BI 807317 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Environmental Partners
807317 -01	MW-3
807317 -02	MW-2
807317 -03	MW-1

Several compounds in the 8260C laboratory control sample exceeded the acceptance criteria. The analytes were not detected in the sample, therefore the data were acceptable.

All other quality control requirements were acceptable.

Date of Report: 07/27/18
Date Received: 07/18/18
Project: Former Meeker Cleaners 65112.4, F&BI 807317
Date Extracted: 07/18/18
Date Analyzed: 07/19/18

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx
Sample Extracts Passed Through a Silica Gel Column Prior to Analysis
Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 41-152)
MW-3 807317-01	<50	<250	98
MW-2 807317-02	<50	<250	96
MW-1 807317-03	<50	<250	94
Method Blank 08-1565 MB2	<50	<250	95

Date of Report: 07/27/18
Date Received: 07/18/18
Project: Former Meeker Cleaners 65112.4, F&BI 807317
Date Extracted: 07/18/18
Date Analyzed: 07/18/18

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 51-134)
MW-3 807317-01	110 x	<250	86
MW-2 807317-02	810 x	810 x	94
MW-1 807317-03	460 x	380 x	93
Method Blank 08-1565 MB2	<50	<250	81

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-3	Client:	Environmental Partners
Date Received:	07/18/18	Project:	Former Meeker Cleaners 65112.4
Date Extracted:	07/20/18	Lab ID:	807317-01
Date Analyzed:	07/20/18	Data File:	072037.D
Matrix:	Water	Instrument:	GCMS#4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	57	121
Toluene-d8	103	63	127
4-Bromofluorobenzene	84	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-2	Client:	Environmental Partners
Date Received:	07/18/18	Project:	Former Meeker Cleaners 65112.4
Date Extracted:	07/20/18	Lab ID:	807317-02
Date Analyzed:	07/21/18	Data File:	072038.D
Matrix:	Water	Instrument:	GCMS#4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	57	121
Toluene-d8	100	63	127
4-Bromofluorobenzene	84	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-1	Client:	Environmental Partners
Date Received:	07/18/18	Project:	Former Meeker Cleaners 65112.4
Date Extracted:	07/20/18	Lab ID:	807317-03
Date Analyzed:	07/21/18	Data File:	072039.D
Matrix:	Water	Instrument:	GCMS#4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	57	121
Toluene-d8	102	63	127
4-Bromofluorobenzene	83	60	133

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Environmental Partners
Date Received:	Not Applicable	Project:	Former Meeker Cleaners 65112.4
Date Extracted:	07/20/18	Lab ID:	08-1583 mb
Date Analyzed:	07/20/18	Data File:	072017.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	85	117
Toluene-d8	92	91	108
4-Bromofluorobenzene	97	76	126

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

Date of Report: 07/27/18
Date Received: 07/18/18
Project: Former Meeker Cleaners 65112.4, F&BI 807317

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample Silica Gel

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	80	76	63-142	5

Date of Report: 07/27/18
Date Received: 07/18/18
Project: Former Meeker Cleaners 65112.4, F&BI 807317

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	76	72	63-142	5

Date of Report: 07/27/18
Date Received: 07/18/18
Project: Former Meeker Cleaners 65112.4, F&BI 807317

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 807371-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Vinyl chloride	ug/L (ppb)	50	<0.2	113	61-139
Chloroethane	ug/L (ppb)	50	<1	108	55-149
1,1-Dichloroethene	ug/L (ppb)	50	<1	112	71-123
Methylene chloride	ug/L (ppb)	50	<5	107	61-126
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	106	72-122
1,1-Dichloroethane	ug/L (ppb)	50	<1	103	79-113
cis-1,2-Dichloroethene	ug/L (ppb)	50	<1	102	63-126
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	98	70-119
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	111	75-121
Trichloroethene	ug/L (ppb)	50	<1	102	73-122
Tetrachloroethene	ug/L (ppb)	50	<1	99	72-113

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Vinyl chloride	ug/L (ppb)	50	131 vo	112	70-128	16
Chloroethane	ug/L (ppb)	50	124	107	66-149	15
1,1-Dichloroethene	ug/L (ppb)	50	114	109	75-119	4
Methylene chloride	ug/L (ppb)	50	114	107	63-132	6
trans-1,2-Dichloroethene	ug/L (ppb)	50	103	105	76-118	2
1,1-Dichloroethane	ug/L (ppb)	50	103	102	77-119	1
cis-1,2-Dichloroethene	ug/L (ppb)	50	102	100	76-119	2
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	96	97	78-114	1
1,1,1-Trichloroethane	ug/L (ppb)	50	117 vo	109	80-116	7
Trichloroethene	ug/L (ppb)	50	97	101	72-119	4
Tetrachloroethene	ug/L (ppb)	50	100	99	78-109	1

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

807317

SAMPLE CHAIN OF CUSTODY

ME 07-18-18

VWD/COS

Page # 1 of 1

Report To Eric Koltes; Betsy Wing

Company EPI

Address 1180 NW Maple St. Suite 310

City, State, ZIP Issaquah, WA 98027

Phone (425) 395-0010 Email ejick@epi-wa.com betsyw@epi-wa.com

SAMPLERS (signature) Betsy Wing

PROJECT NAME: Former Meeker Cleaners

PO # 60112.4

REMARKS

INVOICE TO: EPI

TURNAROUND TIME
- [X] Standard Turnaround
- [ ] RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- [X] Dispose after 30 days
- [ ] Archive Samples
- [ ] Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM	cVOCs-8260	Silica Gel			Notes
						ANALYSES REQUESTED											
MW-3	01-A-D	7/17/18		H_2O	4		X						X	X			
MW-2	02	7/17/18		H_2O	4		X						X	X			
MW-1	03	7/17/18		H_2O	4		X						X	X			

Samples received at 4 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: Betsy Wing	Betsy Wing	EPI	7/18/18	0635
Received by:	Michael Eckhardt	F&B	↓	↓
Relinquished by:				
Received by:				

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3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

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fbi@isomedia.com
www.friedmanandbruya.com

November 12, 2018

Eric Koltes, Project Manager
Environmental Partners, Inc.
1180 NW Maple St, Suite 310
Issaquah, WA 98027

RE: 65112.4, F&BI 811001

Dear Mr Koltes:

Included are the results from the testing of material submitted on November 1, 2018 from the 65112.4, F&BI 811001 project. There are 11 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Cynthia Moon, Betsy Wing
EPI1112R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on November 1, 2018 by Friedman & Bruya, Inc. from the Environmental Partners 65112.4, F&BI 811001 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Environmental Partners
811001 -01	MW-3
811001 -02	MW-2
811001 -03	MW-1

All quality control requirements were acceptable.

Date of Report: 11/12/18
Date Received: 11/01/18
Project: 65112.4, F&BI 811001
Date Extracted: 11/01/18
Date Analyzed: 11/09/18

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx
Sample Extracts Passed Through a Silica Gel Column Prior to Analysis
Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 47-140)
MW-3 811001-01	<50	<250	108
MW-2 811001-02	<50	<250	102
MW-1 811001-03	<50	<250	99
Method Blank 08-2471 MB	<50	<250	98

Date of Report: 11/12/18
Date Received: 11/01/18
Project: 65112.4, F&BI 811001
Date Extracted: 11/01/18
Date Analyzed: 11/01/18

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 51-134)
MW-3 811001-01	260 x	<250	85
MW-2 811001-02	780 x	950 x	89
MW-1 811001-03	200 x	340 x	83
Method Blank 08-2471 MB	<50	<250	91

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-3	Client:	Environmental Partners
Date Received:	11/01/18	Project:	65112.4, F&BI 811001
Date Extracted:	11/02/18	Lab ID:	811001-01
Date Analyzed:	11/02/18	Data File:	110232.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	100	50	150

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-2	Client:	Environmental Partners
Date Received:	11/01/18	Project:	65112.4, F&BI 811001
Date Extracted:	11/02/18	Lab ID:	811001-02
Date Analyzed:	11/02/18	Data File:	110233.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	1.1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-1	Client:	Environmental Partners
Date Received:	11/01/18	Project:	65112.4, F&BI 811001
Date Extracted:	11/02/18	Lab ID:	811001-03
Date Analyzed:	11/02/18	Data File:	110234.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Environmental Partners
Date Received:	Not Applicable	Project:	65112.4, F&BI 811001
Date Extracted:	11/02/18	Lab ID:	08-2475 mb
Date Analyzed:	11/02/18	Data File:	110211.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	97	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

Date of Report: 11/12/18
Date Received: 11/01/18
Project: 65112.4, F&BI 811001

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample Silica Gel

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	88	88	61-133	0

Date of Report: 11/12/18
Date Received: 11/01/18
Project: 65112.4, F&BI 811001

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	80	80	58-134	0

Date of Report: 11/12/18
Date Received: 11/01/18
Project: 65112.4, F&BI 811001

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 811001-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Vinyl chloride	ug/L (ppb)	50	<0.2	120	61-139
Chloroethane	ug/L (ppb)	50	<1	111	55-149
1,1-Dichloroethene	ug/L (ppb)	50	<1	108	71-123
Methylene chloride	ug/L (ppb)	50	<5	104	61-126
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	108	72-122
1,1-Dichloroethane	ug/L (ppb)	50	<1	103	79-113
cis-1,2-Dichloroethene	ug/L (ppb)	50	<1	107	63-126
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	94	70-119
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	101	75-121
Trichloroethene	ug/L (ppb)	50	<1	94	73-122
Tetrachloroethene	ug/L (ppb)	50	<1	102	72-113

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Vinyl chloride	ug/L (ppb)	50	101	98	70-128	3
Chloroethane	ug/L (ppb)	50	96	93	66-149	3
1,1-Dichloroethene	ug/L (ppb)	50	99	98	75-119	1
Methylene chloride	ug/L (ppb)	50	103	98	63-132	5
trans-1,2-Dichloroethene	ug/L (ppb)	50	98	97	76-118	1
1,1-Dichloroethane	ug/L (ppb)	50	94	95	77-119	1
cis-1,2-Dichloroethene	ug/L (ppb)	50	97	97	76-119	0
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	88	90	78-114	2
1,1,1-Trichloroethane	ug/L (ppb)	50	93	91	80-116	2
Trichloroethene	ug/L (ppb)	50	88	89	72-119	1
Tetrachloroethene	ug/L (ppb)	50	95	97	78-109	2

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

811001

SAMPLE CHAIN OF CUSTODY

ME 11-01-18

403/VW2

Page # 1 of 1

Report To: Eric Kotts / Betsy Wing
Company: EPI
Address: 1180 NW Maple St, Suite 310
City, State, ZIP: Issaquah, WA 98027
Phone: 425-395-0010 Email: betsyw@epi-wa.com, erick@epi-wa.com

SAMPLERS (signature): [signature]

PROJECT NAME: 65112.4

PO #:

REMARKS:

INVOICE TO: EPI

TURNAROUND TIME
- [x] Standard Turnaround
- [ ] RUSH

Rush charges authorized by:

SAMPLE DISPOSAL
- [x] Dispose after 30 days
- [ ] Archive Samples
- [ ] Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM	cVOCs				Notes
MW-3	01 A-D	10/31/18	1008	water	4		X						X				Dx with
MW-2	02	10/31/18	1103	water	4		X						X				silica gel
MW-1	03	10/31/18	1150	water	4		X						X				and without
																	silica gel.

Samples received at 4 °C

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	[signature]	Marvin Esparza	EPI	10/31/18	0655
Received by:	[signature]	Michael Erdahl	FEBn	11/1/18	6
Relinquished by:					
Received by:					

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

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fbi@isomedia.com
www.friedmanandbruya.com

December 2, 2019

Eric Koltes, Project Manager
Environmental Partners, Inc.
1180 NW Maple St, Suite 310
Issaquah, WA 98027

RE: 65112-Meeker, F&BI 911337

Dear Mr Koltes:

Included are the results from the testing of material submitted on November 21, 2019 from the 65112-Meeker, F&BI 911337 project. There are 10 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Cynthia Moon
EPI1202R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on November 21, 2019 by Friedman & Bruya, Inc. from the Environmental Partners 65112-Meeker, F&BI 911337project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Environmental Partners
911337 -01	MW-2
911337 -02	MW-1

The samples were sent to Fremont Analytical for EPH and VPH analyses. The report is enclosed.

All quality control requirements were acceptable.

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	MW-2	Client:	Environmental Partners
Date Received:	11/21/19	Project:	65112-Meeker, F&BI 911337
Date Extracted:	11/21/19	Lab ID:	911337-01 1/2
Date Analyzed:	11/22/19	Data File:	112205.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	96	31	160
Benzo(a)anthracene-d12	101	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.4
2-Methylnaphthalene	<0.4
1-Methylnaphthalene	<0.4

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	MW-1	Client:	Environmental Partners
Date Received:	11/21/19	Project:	65112-Meeker, F&BI 911337
Date Extracted:	11/21/19	Lab ID:	911337-02 1/2
Date Analyzed:	11/22/19	Data File:	112206.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	97	31	160
Benzo(a)anthracene-d12	102	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.4
2-Methylnaphthalene	<0.4
1-Methylnaphthalene	<0.4

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	Method Blank	Client:	Environmental Partners
Date Received:	Not Applicable	Project:	65112-Meeker, F&BI 911337
Date Extracted:	11/21/19	Lab ID:	09-2860 mb2
Date Analyzed:	11/21/19	Data File:	112114.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	101	31	160
Benzo(a)anthracene-d12	98	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.2
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-2	Client:	Environmental Partners
Date Received:	11/21/19	Project:	65112-Meeker, F&BI 911337
Date Extracted:	11/22/19	Lab ID:	911337-01
Date Analyzed:	11/22/19	Data File:	112228.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	94	63	127
4-Bromofluorobenzene	96	60	133

Compounds:	Concentration ug/L (ppb)
Hexane	<1
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<1
Benzene	<0.35
Toluene	<1
1,2-Dibromoethane (EDB)	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Naphthalene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-1	Client:	Environmental Partners
Date Received:	11/21/19	Project:	65112-Meeker, F&BI 911337
Date Extracted:	11/22/19	Lab ID:	911337-02
Date Analyzed:	11/22/19	Data File:	112229.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	57	121
Toluene-d8	95	63	127
4-Bromofluorobenzene	95	60	133

Compounds:	Concentration ug/L (ppb)
Hexane	<1
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<1
Benzene	<0.35
Toluene	<1
1,2-Dibromoethane (EDB)	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Naphthalene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Environmental Partners
Date Received:	Not Applicable	Project:	65112-Meeker, F&BI 911337
Date Extracted:	11/22/19	Lab ID:	09-2839 mb
Date Analyzed:	11/22/19	Data File:	112212.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	57	121
Toluene-d8	93	63	127
4-Bromofluorobenzene	98	60	133

Compounds:	Concentration ug/L (ppb)
Hexane	<1
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<1
Benzene	<0.35
Toluene	<1
1,2-Dibromoethane (EDB)	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Naphthalene	<1

Date of Report: 12/02/19
Date Received: 11/21/19
Project: 65112-Meeker, F&BI 911337

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR PAHS BY EPA METHOD 8270D SIM

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	1	74	77	57-114	4
2-Methylnaphthalene	ug/L (ppb)	1	75	79	63-122	5
1-Methylnaphthalene	ug/L (ppb)	1	76	80	65-122	5

Date of Report: 12/02/19
Date Received: 11/21/19
Project: 65112-Meeker, F&BI 911337

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 911337-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Hexane	ug/L (ppb)	50	<1	95	52-150
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	<1	94	74-127
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	88	48-149
Benzene	ug/L (ppb)	50	<0.35	87	76-125
Toluene	ug/L (ppb)	50	<1	98	76-122
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	<1	91	69-134
Ethylbenzene	ug/L (ppb)	50	<1	97	69-135
m,p-Xylene	ug/L (ppb)	100	<2	98	69-135
o-Xylene	ug/L (ppb)	50	<1	99	60-140
Naphthalene	ug/L (ppb)	50	<1	95	44-164

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Hexane	ug/L (ppb)	50	95	102	57-137	7
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	92	100	64-147	8
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	86	92	73-132	7
Benzene	ug/L (ppb)	50	85	92	69-134	8
Toluene	ug/L (ppb)	50	97	105	72-122	8
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	92	99	82-115	7
Ethylbenzene	ug/L (ppb)	50	95	104	77-124	9
m,p-Xylene	ug/L (ppb)	100	96	105	81-112	9
o-Xylene	ug/L (ppb)	50	96	106	81-121	10
Naphthalene	ug/L (ppb)	50	92	103	64-133	11

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
3012 16th Ave. W.
Seattle, WA 98119

RE: 911337
Work Order Number: 1911320

November 26, 2019

Attention Michael Erdahl:

Fremont Analytical, Inc. received 2 sample(s) on 11/21/2019 for the analyses presented in the following report.

Extractable Petroleum Hydrocarbons by NWEPH
Volatile Petroleum Hydrocarbons by NWVPH

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

Date: *11/26/2019*

CLIENT: Friedman & Bruya
Project: 911337
Work Order: 1911320

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1911320-001	MW-2	11/21/2019 12:00 PM	11/21/2019 4:27 PM
1911320-002	MW-1	11/21/2019 12:50 PM	11/21/2019 4:27 PM

Case Narrative

WO#: **1911320**
Date: **11/26/2019**

CLIENT: Friedman & Bruya
Project: 911337

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **1911320**
Date Reported: **11/26/2019**

Client: Friedman & Bruya
Collection Date: 11/21/2019 12:00:00 PM
Project: 911337
Lab ID: 1911320-001
Matrix: Water
Client Sample ID: MW-2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Extractable Petroleum Hydrocarbons by NWEPH				Batch ID: 26592		Analyst: DW
Aliphatic Hydrocarbon (C10-C12)	ND	20.2		µg/L	1	11/25/2019 8:57:00 PM
Aliphatic Hydrocarbon (C12-C16)	ND	20.2		µg/L	1	11/25/2019 8:57:00 PM
Aliphatic Hydrocarbon (C16-C21)	ND	20.2		µg/L	1	11/25/2019 8:57:00 PM
Aliphatic Hydrocarbon (C21-C34)	ND	20.2		µg/L	1	11/25/2019 8:57:00 PM
Aliphatic Hydrocarbon (C8-C10)	ND	40.4	*	µg/L	1	11/25/2019 8:57:00 PM
Aromatic Hydrocarbon (C10-C12)	ND	20.2		µg/L	1	11/22/2019 7:30:00 PM
Aromatic Hydrocarbon (C12-C16)	ND	20.2		µg/L	1	11/22/2019 7:30:00 PM
Aromatic Hydrocarbon (C16-C21)	ND	20.2		µg/L	1	11/22/2019 7:30:00 PM
Aromatic Hydrocarbon (C21-C34)	ND	20.2		µg/L	1	11/22/2019 7:30:00 PM
Aromatic Hydrocarbon (C8-C10)	ND	20.2	*	µg/L	1	11/22/2019 7:30:00 PM
Surr: 1-Chlorooctadecane	59.7	60 - 140	S	%Rec	1	11/25/2019 8:57:00 PM
Surr: o-Terphenyl	53.8	60 - 140	S	%Rec	1	11/22/2019 7:30:00 PM

NOTES:
* - Flagged value is not within established control limits.
S - Outlying surrogate recovery(ies) observed.

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 26618		Analyst: CR
Aliphatic Hydrocarbon (C5-C6)	ND	40.0		µg/L	1	11/25/2019 1:57:38 PM
Aliphatic Hydrocarbon (C6-C8)	ND	20.0		µg/L	1	11/25/2019 1:57:38 PM
Aliphatic Hydrocarbon (C8-C10)	ND	20.0		µg/L	1	11/25/2019 1:57:38 PM
Aliphatic Hydrocarbon (C10-C12)	ND	20.0		µg/L	1	11/25/2019 1:57:38 PM
Aromatic Hydrocarbon (C8-C10)	ND	50.0		µg/L	1	11/25/2019 1:57:38 PM
Aromatic Hydrocarbon (C10-C12)	ND	20.0		µg/L	1	11/25/2019 1:57:38 PM
Aromatic Hydrocarbon (C12-C13)	ND	20.0		µg/L	1	11/25/2019 1:57:38 PM
Benzene	ND	20.0		µg/L	1	11/25/2019 1:57:38 PM
Toluene	ND	20.0		µg/L	1	11/25/2019 1:57:38 PM
Ethylbenzene	ND	20.0		µg/L	1	11/25/2019 1:57:38 PM
m,p-Xylene	ND	40.0		µg/L	1	11/25/2019 1:57:38 PM
o-Xylene	ND	20.0		µg/L	1	11/25/2019 1:57:38 PM
Naphthalene	ND	20.0		µg/L	1	11/25/2019 1:57:38 PM
Methyl tert-butyl ether (MTBE)	ND	20.0	Q*	µg/L	1	11/25/2019 1:57:38 PM
Surr: 1,4-Difluorobenzene	98.3	65 - 140		%Rec	1	11/25/2019 1:57:38 PM
Surr: Bromofluorobenzene	103	65 - 140		%Rec	1	11/25/2019 1:57:38 PM

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria
* - Flagged value is not within established control limits.

Analytical Report

Work Order: **1911320**
Date Reported: **11/26/2019**

Client: Friedman & Bruya
Collection Date: 11/21/2019 12:50:00 PM
Project: 911337
Lab ID: 1911320-002
Matrix: Water
Client Sample ID: MW-1

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Extractable Petroleum Hydrocarbons by NWEPH				Batch ID: 26592		Analyst: DW
Aliphatic Hydrocarbon (C10-C12)	ND	20.3		µg/L	1	11/25/2019 9:40:00 PM
Aliphatic Hydrocarbon (C12-C16)	ND	20.3		µg/L	1	11/25/2019 9:40:00 PM
Aliphatic Hydrocarbon (C16-C21)	ND	20.3		µg/L	1	11/25/2019 9:40:00 PM
Aliphatic Hydrocarbon (C21-C34)	ND	20.3		µg/L	1	11/25/2019 9:40:00 PM
Aliphatic Hydrocarbon (C8-C10)	ND	40.6	*	µg/L	1	11/25/2019 9:40:00 PM
Aromatic Hydrocarbon (C10-C12)	ND	20.3		µg/L	1	11/22/2019 8:14:00 PM
Aromatic Hydrocarbon (C12-C16)	ND	20.3		µg/L	1	11/22/2019 8:14:00 PM
Aromatic Hydrocarbon (C16-C21)	ND	20.3		µg/L	1	11/22/2019 8:14:00 PM
Aromatic Hydrocarbon (C21-C34)	ND	20.3		µg/L	1	11/22/2019 8:14:00 PM
Aromatic Hydrocarbon (C8-C10)	ND	20.3	*	µg/L	1	11/22/2019 8:14:00 PM
Surr: 1-Chlorooctadecane	47.0	60 - 140	S	%Rec	1	11/25/2019 9:40:00 PM
Surr: o-Terphenyl	53.2	60 - 140	S	%Rec	1	11/22/2019 8:14:00 PM

NOTES:
* - Flagged value is not within established control limits.
S - Outlying surrogate recovery(ies) observed.

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 26618		Analyst: CR
Aliphatic Hydrocarbon (C5-C6)	ND	40.0		µg/L	1	11/25/2019 2:38:49 PM
Aliphatic Hydrocarbon (C6-C8)	ND	20.0		µg/L	1	11/25/2019 2:38:49 PM
Aliphatic Hydrocarbon (C8-C10)	ND	20.0		µg/L	1	11/25/2019 2:38:49 PM
Aliphatic Hydrocarbon (C10-C12)	ND	20.0		µg/L	1	11/25/2019 2:38:49 PM
Aromatic Hydrocarbon (C8-C10)	ND	50.0		µg/L	1	11/25/2019 2:38:49 PM
Aromatic Hydrocarbon (C10-C12)	ND	20.0		µg/L	1	11/25/2019 2:38:49 PM
Aromatic Hydrocarbon (C12-C13)	ND	20.0		µg/L	1	11/25/2019 2:38:49 PM
Benzene	ND	20.0		µg/L	1	11/25/2019 2:38:49 PM
Toluene	ND	20.0		µg/L	1	11/25/2019 2:38:49 PM
Ethylbenzene	ND	20.0		µg/L	1	11/25/2019 2:38:49 PM
m,p-Xylene	ND	40.0		µg/L	1	11/25/2019 2:38:49 PM
o-Xylene	ND	20.0		µg/L	1	11/25/2019 2:38:49 PM
Naphthalene	ND	20.0		µg/L	1	11/25/2019 2:38:49 PM
Methyl tert-butyl ether (MTBE)	ND	20.0	Q*	µg/L	1	11/25/2019 2:38:49 PM
Surr: 1,4-Difluorobenzene	98.2	65 - 140		%Rec	1	11/25/2019 2:38:49 PM
Surr: Bromofluorobenzene	101	65 - 140		%Rec	1	11/25/2019 2:38:49 PM

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria
* - Flagged value is not within established control limits.

Work Order: 1911320
CLIENT: Friedman & Bruya
Project: 911337

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **MB-26592** SampType: **MBLK** Units: **µg/L** Prep Date: **11/21/2019** RunNo: **55578**
Client ID: **MBLKW** Batch ID: **26592** Analysis Date: **11/22/2019** SeqNo: **1106186**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C10-C12)	ND	20.1		0	0						
Aromatic Hydrocarbon (C12-C16)	ND	20.1		0	0						
Aromatic Hydrocarbon (C16-C21)	ND	20.1		0	0						
Aromatic Hydrocarbon (C21-C34)	ND	20.1		0	0						
Aromatic Hydrocarbon (C8-C10)	ND	20.1		0	0						*
Surr: o-Terphenyl	1,280		2,010		63.9	60	140				

NOTES:
* - Flagged value is not within established control limits.

Sample ID: **LCS-26592** SampType: **LCS** Units: **µg/L** Prep Date: **11/21/2019** RunNo: **55578**
Client ID: **LCSW** Batch ID: **26592** Analysis Date: **11/22/2019** SeqNo: **1106184**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C10-C12)	1,460	19.7	2,463	0	59.4	70	130				S
Aromatic Hydrocarbon (C12-C16)	1,520	19.7	2,463	0	61.5	70	130				S
Aromatic Hydrocarbon (C16-C21)	1,780	19.7	2,463	0	72.5	70	130				
Aromatic Hydrocarbon (C21-C34)	1,770	19.7	2,463	0	71.9	70	130				
Aromatic Hydrocarbon (C8-C10)	1,790	19.7	4,925	0	36.3	70	130				S
Surr: o-Terphenyl	1,160		1,970		58.9	60	140				S

NOTES:
S - Outlying spike recovery observed (low bias). A duplicate analysis was conducted and recovered within range.
S - Outlying spike recovery observed for Aromatic Hydrocarbon (C8-C10). A duplicate analysis was conducted with similiar results. Samples will be qualified with an *.

Sample ID: **LCSD-26592** SampType: **LCSD** Units: **µg/L** Prep Date: **11/21/2019** RunNo: **55578**
Client ID: **LCSW02** Batch ID: **26592** Analysis Date: **11/22/2019** SeqNo: **1106185**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C10-C12)	1,820	20.0	2,501	0	72.7	70	130	1,463	21.6	20	R
Aromatic Hydrocarbon (C12-C16)	1,920	20.0	2,501	0	76.7	70	130	1,515	23.5	20	R
Aromatic Hydrocarbon (C16-C21)	2,080	20.0	2,501	0	83.1	70	130	1,785	15.2	20	
Aromatic Hydrocarbon (C21-C34)	2,020	20.0	2,501	0	80.8	70	130	1,772	13.1	20	
Aromatic Hydrocarbon (C8-C10)	2,180	20.0	5,001	0	43.7	70	130	1,788	19.9	20	S

Work Order: 1911320
CLIENT: Friedman & Bruya
Project: 911337

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **LCSD-26592** SampType: **LCSD** Units: **µg/L** Prep Date: **11/21/2019** RunNo: **55578**
Client ID: **LCSW02** Batch ID: **26592** Analysis Date: **11/22/2019** SeqNo: **1106185**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: o-Terphenyl	1,450		2,000		72.6	60	140		0		

NOTES:
S - Outlying spike recovery observed for Aromatic Hydrocarbon (C8-C10). A duplicate analysis was conducted with similiar results. Samples will be qualified with an *.
R - High RPD observed, spike recovery is within range.

Sample ID: **MB-26592** SampType: **MBLK** Units: **µg/L** Prep Date: **11/21/2019** RunNo: **55578**
Client ID: **MBLKW** Batch ID: **26592** Analysis Date: **11/25/2019** SeqNo: **1106246**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C10-C12)	ND	20.1		0	0						
Aliphatic Hydrocarbon (C12-C16)	ND	20.1		0	0						
Aliphatic Hydrocarbon (C16-C21)	ND	20.1		0	0						
Aliphatic Hydrocarbon (C21-C34)	ND	20.1		0	0						
Aliphatic Hydrocarbon (C8-C10)	ND	40.2		0	0						*
Surr: 1-Chlorooctadecane	1,450		2,010		72.3	60	140				

NOTES:
* - Flagged value is not within established control limits.

Sample ID: **LCS-26592** SampType: **LCS** Units: **µg/L** Prep Date: **11/21/2019** RunNo: **55578**
Client ID: **LCSW** Batch ID: **26592** Analysis Date: **11/25/2019** SeqNo: **1106244**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C10-C12)	1,870	19.7	2,463	0	76.1	70	130				
Aliphatic Hydrocarbon (C12-C16)	2,180	19.7	2,463	0	88.7	70	130				
Aliphatic Hydrocarbon (C16-C21)	2,080	19.7	2,463	0	84.6	70	130				
Aliphatic Hydrocarbon (C21-C34)	2,010	19.7	2,463	0	81.6	70	130				
Aliphatic Hydrocarbon (C8-C10)	2,480	39.4	4,925	0	50.3	70	130				S
Surr: 1-Chlorooctadecane	1,420		1,970		72.3	60	140				

NOTES:
S - Outlying spike recovery observed (low bias). Samples will be qualified with a *.

Work Order: 1911320
CLIENT: Friedman & Bruya
Project: 911337

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **LCSD-26592** SampType: **LCSD** Units: **µg/L** Prep Date: **11/21/2019** RunNo: **55578**
Client ID: **LCSW02** Batch ID: **26592** Analysis Date: **11/25/2019** SeqNo: **1106245**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C10-C12)	1,930	20.0	2,501	0	77.2	70	130	1,874	2.99	20	
Aliphatic Hydrocarbon (C12-C16)	2,370	20.0	2,501	0	94.9	70	130	2,185	8.26	20	
Aliphatic Hydrocarbon (C16-C21)	2,290	20.0	2,501	0	91.6	70	130	2,084	9.43	20	
Aliphatic Hydrocarbon (C21-C34)	2,230	20.0	2,501	0	89.2	70	130	2,011	10.3	20	
Aliphatic Hydrocarbon (C8-C10)	2,500	40.0	5,001	0	50.0	70	130	2,476	1.00	20	S
Surr: 1-Chlorooctadecane	1,760		2,000		87.8	60	140		0		

NOTES:
S - Outlying spike recovery observed (low bias). Samples will be qualified with a *.

Work Order: 1911320
CLIENT: Friedman & Bruya
Project: 911337

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: **LCS-26618** SampType: **LCS** Units: **µg/L** Prep Date: **11/25/2019** RunNo: **55571**
Client ID: **LCSW** Batch ID: **26618** Analysis Date: **11/25/2019** SeqNo: **1106155**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	615	40.0	600.0	0	103	70	130				
Aliphatic Hydrocarbon (C6-C8)	211	20.0	200.0	0	105	70	130				
Aliphatic Hydrocarbon (C8-C10)	194	20.0	200.0	0	97.2	70	130				
Aliphatic Hydrocarbon (C10-C12)	201	20.0	200.0	0	100	70	130				
Aromatic Hydrocarbon (C8-C10)	846	50.0	800.0	0	106	70	130				
Aromatic Hydrocarbon (C10-C12)	218	20.0	200.0	0	109	70	130				
Aromatic Hydrocarbon (C12-C13)	197	20.0	200.0	0	98.7	70	130				B
Benzene	209	20.0	200.0	0	104	70	130				
Toluene	210	20.0	200.0	0	105	70	130				
Ethylbenzene	211	20.0	200.0	0	106	70	130				
m,p-Xylene	429	40.0	400.0	0	107	70	130				
o-Xylene	213	20.0	200.0	0	106	70	130				
Naphthalene	221	20.0	200.0	0	110	70	130				B
Methyl tert-butyl ether (MTBE)	ND	20.0	200.0	0	0	70	130				S
Surr: 1,4-Difluorobenzene	51.7		50.00		103	65	140				
Surr: Bromofluorobenzene	50.8		50.00		102	65	140				

NOTES:
S - Outlying spike recovery observed (low bias). Samples will be qualified with a *.

Sample ID: **LCSD-26618** SampType: **LCSD** Units: **µg/L** Prep Date: **11/25/2019** RunNo: **55571**
Client ID: **LCSW02** Batch ID: **26618** Analysis Date: **11/25/2019** SeqNo: **1106156**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	595	40.0	600.0	0	99.2	70	130	615.4	3.37	20	
Aliphatic Hydrocarbon (C6-C8)	199	20.0	200.0	0	99.6	70	130	210.8	5.66	20	
Aliphatic Hydrocarbon (C8-C10)	207	20.0	200.0	0	103	70	130	194.4	6.12	20	
Aliphatic Hydrocarbon (C10-C12)	206	20.0	200.0	0	103	70	130	200.6	2.70	20	
Aromatic Hydrocarbon (C8-C10)	794	50.0	800.0	0	99.2	70	130	846.3	6.38	20	
Aromatic Hydrocarbon (C10-C12)	216	20.0	200.0	0	108	70	130	218.3	1.22	20	
Aromatic Hydrocarbon (C12-C13)	200	20.0	200.0	0	100	70	130	197.5	1.42	20	B
Benzene	195	20.0	200.0	0	97.3	70	130	208.6	6.90	20	

Work Order: 1911320
CLIENT: Friedman & Bruya
Project: 911337

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: **LCSD-26618** SampType: **LCSD** Units: **µg/L** Prep Date: **11/25/2019** RunNo: **55571**
Client ID: **LCSW02** Batch ID: **26618** Analysis Date: **11/25/2019** SeqNo: **1106156**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Toluene	196	20.0	200.0	0	98.1	70	130	209.7	6.64	20	
Ethylbenzene	198	20.0	200.0	0	98.9	70	130	211.1	6.54	20	
m,p-Xylene	402	40.0	400.0	0	100	70	130	428.6	6.48	20	
o-Xylene	200	20.0	200.0	0	100	70	130	212.6	6.11	20	
Naphthalene	210	20.0	200.0	0	105	70	130	220.5	4.68	20	B
Methyl tert-butyl ether (MTBE)	ND	20.0	200.0	0	0	70	130	0		20	S
Surr: 1,4-Difluorobenzene	52.1		50.00		104	65	140		0		
Surr: Bromofluorobenzene	51.9		50.00		104	65	140		0		

NOTES:
S - Outlying spike recovery observed (low bias). Samples will be qualified with a *.

Sample ID: **MB-26618** SampType: **MBLK** Units: **µg/L** Prep Date: **11/25/2019** RunNo: **55571**
Client ID: **MBLKW** Batch ID: **26618** Analysis Date: **11/25/2019** SeqNo: **1106157**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	ND	40.0		0	0						
Aliphatic Hydrocarbon (C6-C8)	ND	20.0		0	0						
Aliphatic Hydrocarbon (C8-C10)	ND	20.0		0	0						
Aliphatic Hydrocarbon (C10-C12)	ND	20.0		0	0						
Aromatic Hydrocarbon (C8-C10)	ND	50.0		0	0						
Aromatic Hydrocarbon (C10-C12)	ND	20.0		0	0						
Aromatic Hydrocarbon (C12-C13)	55.6	20.0		0	0						
Benzene	ND	20.0		0	0						
Toluene	ND	20.0		0	0						
Ethylbenzene	ND	20.0		0	0						
m,p-Xylene	ND	40.0		0	0						
o-Xylene	ND	20.0		0	0						
Naphthalene	32.1	20.0		0	0						
Methyl tert-butyl ether (MTBE)	ND	20.0		0	0						Q*
Surr: 1,4-Difluorobenzene	49.0		50.00		98.0	65	140				
Surr: Bromofluorobenzene	51.2		50.00		102	65	140				

Work Order: 1911320
CLIENT: Friedman & Bruya
Project: 911337

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: **MB-26618** SampType: **MBLK** Units: **µg/L** Prep Date: **11/25/2019** RunNo: **55571**
Client ID: **MBLKW** Batch ID: **26618** Analysis Date: **11/25/2019** SeqNo: **1106157**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria
* - Flagged value is not within established control limits.

Sample ID: **1911320-002ADUP** SampType: **DUP** Units: **µg/L** Prep Date: **11/25/2019** RunNo: **55571**
Client ID: **MW-1** Batch ID: **26618** Analysis Date: **11/25/2019** SeqNo: **1106152**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	ND	40.0		0	0			0		25	
Aliphatic Hydrocarbon (C6-C8)	ND	20.0		0	0			0		25	
Aliphatic Hydrocarbon (C8-C10)	ND	20.0		0	0			0		25	
Aliphatic Hydrocarbon (C10-C12)	ND	20.0		0	0			0		25	
Aromatic Hydrocarbon (C8-C10)	ND	50.0		0	0			0		25	
Aromatic Hydrocarbon (C10-C12)	ND	20.0		0	0			0		25	
Aromatic Hydrocarbon (C12-C13)	ND	20.0		0	0			0		25	
Benzene	ND	20.0		0	0			0		25	
Toluene	ND	20.0		0	0			0		25	
Ethylbenzene	ND	20.0		0	0			0		25	
m,p-Xylene	ND	40.0		0	0			0		25	
o-Xylene	ND	20.0		0	0			0		25	
Naphthalene	ND	20.0		0	0			0		25	
Methyl tert-butyl ether (MTBE)	ND	20.0		0	0			0		25	Q*
Surr: 1,4-Difluorobenzene	49.5		50.00		99.0	65	140		0		
Surr: Bromofluorobenzene	50.6		50.00		101	65	140		0		

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria
* - Flagged value is not within established control limits.

Sample Log-In Check List

Client Name:	**FB**	Work Order Number:	**1911320**
Logged by:	**Clare Griggs**	Date Received:	**11/21/2019 4:27:00 PM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes	☑	No ☐	Not Present	☐
2.	How was the sample delivered?	FedEx				

Log In

3.	Coolers are present?	Yes	☑	No ☐	NA	☐
4.	Shipping container/cooler in good condition?	Yes	☑	No ☐		
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes	☐	No ☑	Not Required	☐
6.	Was an attempt made to cool the samples?	Yes	☑	No ☐	NA	☐
7.	Were all items received at a temperature of >0°C to 10.0°C *	Yes	☐	No ☑	NA	☐
		Refer to item information.				
8.	Sample(s) in proper container(s)?	Yes	☑	No ☐		
9.	Sufficient sample volume for indicated test(s)?	Yes	☑	No ☐		
10.	Are samples properly preserved?	Yes	☑	No ☐		
11.	Was preservative added to bottles?	Yes	☐	No ☑	NA	☐
12.	Is there headspace in the VOA vials?	Yes	☐	No ☐	NA	☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes	☑	No ☐		
14.	Does paperwork match bottle labels?	Yes	☑	No ☐		
15.	Are matrices correctly identified on Chain of Custody?	Yes	☑	No ☐		
16.	Is it clear what analyses were requested?	Yes	☑	No ☐		
17.	Were all holding times able to be met?	Yes	☑	No ☐		

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes	☐	No ☐	NA	☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

Item Information

Item #	Temp ºC
Cooler	11.1
Sample	3.1

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY 1911320

Send Report To Michael Erdahl
Company Friedman and Bruya, Inc.
Address 3012 16th Ave W
City, State, ZIP Seattle, WA 98119
Phone # (206) 285-8282 Fax # (206) 283-5044

SUBCONTRACTER Fremont

PROJECT NAME/NO. 911337

PO # A-486

REMARKS
Please Email Results

TURNAROUND TIME
☐ Standard (2 Weeks)
☒ RUSH 11/25/19
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	ANALYSES REQUESTED: Dioxins/Furans	EPH	VPH								Notes
MW-2		11/21/19	1200	H_2O	3		X	X								
MW-1		↓	1250	↓	3		X	X								

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	11/21/19	14:47
Received by:		Sara Becker-Mayer	FBI	11/21/19	1627
Relinquished by:					
Received by:					

911337

SAMPLE CHAIN OF CUSTODY

ME 11/21/19 UWI / BOH

Page # 1 of 1

Report To Eric Koltes
Company EPI
Address 11400 NW Maple St. Suite 310
City, State, ZIP Issaquah, WA, 98027
Phone 425-395-0010 Email erick@epi-wa.com
ramseym@epi-wa.com

SAMPLERS (*signature*) Ramsey Maudlin

PROJECT NAME	PO #
65112 - Mecker	65112

REMARKS
cc ramseym@epi-wa.com
RESULTS by
Project specific RLs? - Yes / (No)

INVOICE TO

TURNAROUND TIME
☐ Standard turnaround
☒ RUSH ~~results by 11-25-19~~
Rush charges authorized by:

11/27/19 TAT mt 11/27 ks ME

SAMPLE DISPOSAL
☐ Archive samples
☐ Other
(Default: Dispose after 30 days)

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	EPH	VPH	Naphthalenes		Notes
MW-2	01 A-G	11-21-19	1200	WATER	7			X					X	X	X		RUSH: by 11-25
MW-1	02 A-G	"	1230	"	"			X					X	X	X		RUSH: by 11-25
																	Samples received at 4 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: Ramsey Maudlin	Ramsey Maudlin	EPI	11-21-19	1420
Received by: Liz D. Webber	Liz Webber - Bruya	EPI	11/21/19	1420
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282