



April 15, 2019

Mr. Donnie McCurry  
MDEQ Petroleum Tank Cleanup Section  
P.O. Box 200901  
Helena, MT 59620-0901

RE: Semiannual Groundwater Monitoring Work Plan (CAP MR-01)  
Petroleum Release - Former Elmer's Restaurant, 1600 Fox Farm Road, Great Falls, MT  
Facility ID 07-03053, Release #4355; Work Plan ID 33830

Dear Mr. McCurry,

In accordance with the Montana DEQ (MDEQ) request letter dated April 12, 2019, Big Sky Civil & Environmental, Inc. (BSCE) has prepared this Semiannual Groundwater Monitoring Work Plan for the subject property. Groundwater monitoring will be performed semiannually for one year, a total of two (2) monitoring events, to be completed during seasonal-low and seasonal-high groundwater levels.

#### Purpose and Objectives

Groundwater monitoring onsite will be completed so as to assess success and rates of natural attenuation. Additionally, a release closure plan (RCP) will be completed for the purpose of evaluating additional remedial work that may be required to fully resolve the release and move the site toward closure.

#### Proposed Work

BSCE proposes to conduct groundwater monitoring/reporting at the subject release site as defined herein.

- First, the condition of all existing onsite groundwater monitoring wells will be assessed. Well depth measurements will be recorded and compared with the installation depth. Well redevelopment will be completed prior to monitoring events (if required), and repairs will be completed if practical and as deemed necessary.
- Groundwater monitoring will be completed on existing onsite monitoring wells: MW-1R, MW-2R, MW-3, MW-4, MW-6, MW-10, MW-11, and M-7 (Exxon). Water level measurements will be recorded from all onsite monitoring wells, which includes all wells listed in the preceding sentence, plus MW-5, MW-7, MW8, and MW-9. See Figure 1 attached.
- Prior to sampling, wells will be purged and field parameters will be collected (dissolved oxygen, pH, temperature, conductivity and oxygen reduction potential). Groundwater samples will be submitted to TestAmerica in Tacoma WA for VPH and EPH screen analysis, with fractionation if the EPH screen exceeds 1,000 ppb. Additionally, groundwater samples from wells MW-1R, MW-3 and MW-6 will be analyzed for lead scavengers (EPA method 8260B and EPA method 8011).
- Results of the fieldwork will be discussed with MDEQ and WP modifications will be submitted as necessary to complete work plan objectives.

- After completion of groundwater monitoring and analytical testing, one Standardized Groundwater Monitoring Report (MR-01) will be prepared and submitted to MDEQ. At a minimum the report will include the following: exhibits depicting the location of site features, utilities, existing monitoring wells, and former tank basins/components (if known); analytical data in tabular format, lab reports, data validation, Release Closure Plan, data interpretations, conclusions, and recommendations for additional work – if deemed necessary – to resolve the release and achieve site closure.
- Reports and supporting documentation will be submitted following DEQ submittal requirements.
- Standardized MDEQ report formats will be used for all documents.

All sampling and groundwater monitoring will be completed in strict accordance with BSCE's standard QA/QC procedures. The following procedures will be used during sample collection to provide quality assurance and quality control (QA/QC), to minimize loss of volatiles, and to maintain the suitability of samples for analysis. Sample collection and analytical procedures were consistent with SW-846: *Test Methods for Evaluating Solid Waste*, November 1986, and updates published by the U.S. EPA. QA/QC methods used are defined below:

- All sample containers/preservatives will be supplied by a state-certified laboratory. Analyses will be performed by a state-certified laboratory.
- All samples will be handled in a manner which minimizes the loss of organic compounds to volatilization and biodegradation.
- All samples for analyses will be placed in a cooler on ice (at a temperature of 4° C) immediately following collection.
- Chain-of-custody procedures will be utilized during sampling and delivery.
- Documentation of the sampling and QA/QC procedures including notes will be available for DEQ inspection. These notes will document the procedures for sampling and all other routine activities, along with field notes describing the sequence of activities that took place during the corrective action cleanup and the following monitoring well construction and sampling.

Please feel free to contact us with any questions or concerns you may have.

Respectfully,

**Big Sky Civil & Environmental, Inc.**

  
Joseph N. Murphy, P.E.

  
Paxton Ellis, E.I.

encl. Cost estimate  
Site Map

cc: Mr. Brett Haverlandt  
Former Elmer's Restaurant  
500 Country Club Boulevard  
Great Falls, MT 59404

**FIELDWORK/SAMPLING COST ESTIMATE**

<b>Task</b>	<b>Cost</b>	<b>Unit</b>	<b>Number of Units</b>	<b>Total Cost</b>
<b>Senior Engineer<sup>(1)</sup></b>	\$ 145.00	/hr	3	\$ 435.00
<b>Project Engineer<sup>(1)</sup></b>	\$ 131.50	/hr	8	\$ 1,052.00
<b>Sr. Engineering Tech<sup>(1)</sup></b>	\$ 101.00	/hr	10	\$ 1,010.00
<b><u>Mobilization/Demobilization</u></b>				
Mobilization/Demobilization <sup>(2)</sup>	\$ 9.00	/mile	60	\$ 540.00
<b><u>Groundwater Monitoring</u></b>				
Monitoring well assessment, Well depth measurements	\$ 101.00	/hr	7	\$ 707.00
Oil/Water Interface probe - Well depth measurements	\$ 12.00	/hr	3	\$ 36.00
Re-development, and repairs (if necessary)	\$ 101.00	/hr	4	\$ 404.00
Peristaltic pump - well re-development (if necessary)	\$ 10.50	/hr	4	\$ 42.00
Tubing - well re-development (if necessary)	\$ 1.05	/ft	80	\$ 84.00
Water Level Measurements <sup>(3)</sup>	\$ 42.25	/well	8	\$ 338.00
GW Monitoring/Purging/Sampling	\$ 186.00	/well	16	\$ 2,976.00
<b><u>Report Preparation &amp; Additional Project Management</u></b>				
Groundwater Monitoring WP (CAP MR-01)	\$ 625.00	/report	1	\$ 625.00
Semi-annual Groundwater Monitoring Report (MR-01)	\$ 1,815.00	/report	1	\$ 1,815.00
Release Closure Plan (RCP)	\$ 131.50	/hr	15	\$ 1,972.50
Data Validation - Two rounds of GWM	\$ 131.50	/hr	4	\$ 526.00
	<b>Estimated Project Expenses</b>			<b>\$ 12,562.50</b>
<b><u>Laboratory Analysis - 16 water samples (2 rounds of 8 wells)</u></b>				
Volatile Petroleum Hydrocarbons (VPH)	\$ 125.00	/sample	16	\$ 2,000.00
EPH Screen	\$ 80.00	/sample	16	\$ 1,280.00
EPH Fractionation <sup>(4)</sup> (assume 1/3 of samples)	\$ 190.00	/sample	6	\$ 1,140.00
EPA Method 8260B (1,2-dichloroethane)	\$ 110.00	/sample	6	\$ 660.00
EPA Method 8011 (ethylene dibromide (EDB))	\$ 85.00	/sample	6	\$ 510.00
PTRCB sampling fee	\$ 10.00	/sample	16	\$ 160.00
Misc. Costs (billed at cost if necessary)				\$ -
	<b>Estimate of Per Diem &amp; Lab</b>			<b>\$ 5,750.00</b>
	<b>Estimated Total Project Cost</b>			<b>\$ 18,312.50</b>

(1) Project Management (scheduling, DEQ/client correspondence, Health and safety meetings, etc.)

(2) RT - round trip; 1 RT well assessment, 1 RT well redevelopment, 2 RT GWM (including shipping of samples); the \$9.00/mi rate reflects time to load/unload sampling equipment and other prep for site work

(3) WLM for 4 site wells (they will not be sampled) for two rounds of monitoring

(4) EPH Fractionation will be completed if EPH Screen results exceed screening level

**bsc&e**  
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PROFESSIONAL SEAL  
 BY: NSB  
 DATE: 5/29/17

OWNER:  
 BRETT HAVERLANDT

PROJECT NAME:  
 FORMER ELMER'S RESTAURANT DEQ FACILITY  
 ID#0703053  
 RELEASE #4355

SHEET TITLE:  
 SITE PLAN  
 2017

DRAWING INFORMATION:  
 OFFICE PROJECT NUMBER:  
 OWNER FILE NUMBER:  
 CADD FILE NAME:  
 ASSOCIATED PROJECTS:

FIGURE:  
 1

□ - WLM  
 ○ - THIS EVENT  
 GWM

