Olympus Technical Services, Inc.

March 3, 2020

Jay Shearer
Montana Department of Environmental Quality
1371 Rimtop Drive
Billings, MT 59105

Re: Soil Boring Installation and Groundwater Monitoring Corrective Action Work Plan
Former Small Dog Investments
5 South Broadway, Billings, MT
Facility ID No. 56-14111. Release No. 4310
Olympus Work Order No. A4273

Dear Jay:

Olympus Technical Services, Inc. (Olympus), on behalf of Randy and Janna Hafer, is submitting this groundwater monitoring work plan for the above-referenced facility. The Montana Department of Environmental Quality (DEQ) requested this work plan in correspondence dated July 13, 2019. The work plan was redeveloped after a Site visit between Olympus and DEQ in December 2019. The purpose of the work is to evaluate the status of the release through groundwater monitoring and a vapor survey.

Scope of Work

The scope of work consists of the following primary tasks:

Task 1: Work Plan Preparation
Task 2: Project Management
Task 3: Existing Well Assessment
Task 4: Soil Boring Advancement, Soil Sampling and Initial Monitoring Event
Task 5: Installation and Development of Monitoring Wells
Task 6: Semiannual Groundwater Sampling
Task 7: Soil Vapor Survey
Task 8: Laboratory Analysis and Sample Management
Task 9: Data Validation
Task 10: Reporting

Task 1 – Work Plan Preparation

DEQ requested a Standardized Generic Corrective Action Work Plan (WP) AC-07. Olympus prepared this AC-07 work plan detailing the scope of work and associated costs.

Task 2 – Project Management

This task includes project management for all tasks.

Task 3 – Existing Well Assessment

This task includes assessing the condition of the existing monitoring wells at the Site to evaluate their condition. During this assessment, Olympus will evaluate if any redevelopment, repair, or

replacement is required for the existing monitoring wells. Olympus proposes to use a combination of traditional well development techniques including purging, surging, and jetting, and a down hole camera to visually inspect the existing wells. This cost estimate assumes that 50-percent of all existing wells will require redevelopment.

Olympus will also inspect the crawl space of the adjacent building located at 2720 Minnesota Avenue. Olympus will communicate with the business owner for access.

Task 4 – Soil Boring Advancement, Soil Sampling and Initial Groundwater Monitoring

This task includes the drilling of up to fourteen additional soil borings at 11 locations which will be advanced using our Geoprobe ® 7822DT direct-push drill rig. Soil borings will be advanced to approximately 20 feet below ground surface (bgs) at eight of the locations. Three of these boring locations may include boring pairs if a secondary aquifer is encountered. One of the borings at each pair will be advanced to the perched water-bearing unit, and the other boring at each pair will be advanced to the deeper water-bearing unit, immediately adjacent to the shallower boring. Borings at the remaining three locations will be advanced to at least 5 feet bgs for the installation of soil vapor points, as described in Task 7. Proposed locations of borings are presented in Figure 1.

During the advancement of soil borings, soil samples will be collected on a continuous basis in five-foot disposable macrocores. Soils will be screened using a photo-ionization detector (PID) for volatile organic chemicals (VOCs) utilizing a headspace method. A scientist/engineer will be provided to logs for the borings using the Unified Soil Classification System (USCS) method. Up to two soil samples will be collected from each soil boring for laboratory analysis at the following intervals: 1) the water table interface, 2) the interval exhibiting the highest levels of contamination, or 3) the bottom of the boring. One additional 5-point composite sample may be collected from the vadose zone for all soil borings based on field observations. All soil samples will be placed in laboratory-supplied containers and immediately placed on ice after collection. The samples will be analyzed for Volatile Petroleum Hydrocarbons (VPH) by Massachusetts Method MA VPH, Extractable Petroleum Hydrocarbon (EPH) Screen concentration by Montana-modified Massachusetts Method MA EPH, and lead scavengers by Environmental Protection Agency (EPA) Method 8011 for 1,2-dibromoethane or ethylene dibromide (EDB) and EPA Method 8260b for 1,2-dichloroethane (DCA). If the EPH Screen results in a Total Extractable Hydrocarbon (TEH) concentration value greater than 200 milligrams per kilogram (mg/kg), then the sample will be fractionated for further analysis. The cost estimate assumes that 25-percent of all collected samples will require EPH fractionation analysis. All samples will be managed by chain-of-custody procedures and samples will be stored in coolers on ice for transport to Energy Labs in Billings, MT.

One equipment rinsate blank per drilling event will be collected from decontaminated soil sampling equipment during soil sampling activities to document that decontamination activities are adequate. Laboratory-supplied deionized water will be poured over decontaminated soil sampling equipment and collected into sample containers and analyzed for the same constituents as the parent samples.

This task also includes an initial monitoring event will include field measurement of static water levels and collection of groundwater samples from the four existing monitoring wells. Groundwater grab samples will be collected using low-flow well purge methods in general accordance with DEQ's Groundwater Sampling Guidance. Deviations to the guidance include collection of the samples using a peristaltic pump and polyethylene tubing rather than a bladder pump with Teflon tubing. Monitoring during purging will include field measurement of static and

pumping water levels, dissolved oxygen, pH, specific conductivity, temperature, turbidity, and oxidation-reduction potentials in each well.

Field QA/QC samples collected during this investigation will include field duplicates, equipment rinsate blanks, and trip blanks. The QA/QC samples will be containerized, preserved, and analyzed for the same constituents as the groundwater samples to meet DQOs. Field duplicate groundwater samples will be collected at a minimum frequency of 1 per 20 natural samples and will be submitted “blind” to the laboratory, identified as if they are normal environmental samples.

One equipment rinsate blank will be collected during the initial groundwater sampling event. Equipment rinsate blanks will be collected from the submersible groundwater pump after routine decontamination by pouring laboratory supplied deionized water through the pump and into laboratory supplied containers and analyzed for the same constituents as the parent samples.

Trip blanks will consist of de-ionized water prepared in the laboratory. One trip blank will accompany each cooler of groundwater samples. The trip blanks will be placed in the coolers by the laboratory, transported to the field by the sampling personnel, and returned to the laboratory with the field samples for analysis. One trip blank will be analyzed during each of the groundwater sampling events.

Groundwater samples will be analyzed for VPH, EPH Screen concentration, and lead scavengers EDB and DCA. If the EPH Screen results in a TEH concentration value greater than 1,000 micrograms per liter (µg/L), then the sample will be fractionated for further analysis. Groundwater samples collected from Site wells will also be analyzed for intrinsic biological indicators (IBIs), which include sulfates, nitrates/nitrites, dissolved ferrous iron and manganese, and methane. Dissolved metal samples will be filtered in the field during sample collection. All samples will be managed by chain-of-custody procedures and samples will be stored in coolers on ice for transport to Energy Labs in Billings, MT.

Task 5 – Monitoring Well Installation and Development

This task includes the installation and completion of single zone monitoring wells at six boring locations (Figure 1). This task may include the installation and completion of boring pairs as collocated, dual-water zone monitoring wells at three of the boring locations, based on field observations during boring advancement. If dual-water zone monitoring wells are required, a subcontracted hollow-stem auger drilling rig may be required and is not reflected in the attached cost estimate.

The screened interval for each monitoring well will be determined in the field based on observations of the water table in each soil boring. The monitoring wells will be constructed with 2-inch diameter, Schedule 40 threaded and flush-jointed polyvinyl chloride (PVC) casing, consisting of pre-packed PVC screens with 0.020-inch slots and riser pipe to the surface.

Bentonite will be puddled around the PVC casing while driving the wells to the desired depths. About 1/2 foot of 10-20 mesh silica sand filter material will be placed at the bottom of the borehole to serve as a firm footing. The annulus of the screens will be backfilled with 10-20 mesh silica sand pack that will extend a minimum of 1 foot above the well screen and overlain by bentonite pellets to create an impermeable annular seal. Bentonite will be used as backfill above the bentonite to within two feet of land surface. The surface will be sealed with concrete in the annular space surrounding the well, creating a concrete surface pad with a diameter of

about 3-feet. The flush mount monument will be embedded in the surface pad. The finished pad will be sloped so that drainage flows away from the protective casing and off the pad.

Following installation of the monitoring wells, an initial survey of the monitoring wells following DEQ specifications with an accuracy of plus or minus 0.1 foot horizontally and plus or minus 0.01 foot vertically will be completed by a licensed surveyor or professional engineer registered in the State of Montana. The vertical control datum used to determine the elevation of the well will be the North American Vertical Datum of 1988 (NAVD 88), which will be referenced to a nearby United States Geological Survey (USGS), or equivalent, benchmark.

Task 6 – Semiannual Groundwater Monitoring

Semiannual groundwater monitoring will be performed at periods of high and low groundwater, in the spring and fall, respectively. We anticipate conducting the biannual groundwater monitoring events in May 2020 and October 2020. Groundwater samples will be collected using low-flow well purge methods in general accordance with DEQ's Groundwater Sampling Guidance. Deviations from the guidance include use of a peristaltic pump rather than a bladder pump and use of polyethylene tubing rather than Teflon tubing. Monitoring during purging will include field measurement of static and pumping water levels, dissolved oxygen, pH, specific conductivity, temperature, turbidity, and oxidation-reduction potentials in each well.

Field QA/QC samples collected during this investigation will include field duplicates, equipment rinsate blanks, and trip blanks. The QA/QC samples will be containerized, preserved, and analyzed for the same constituents as the groundwater samples to meet DQOs. Field duplicate groundwater samples will be collected at a minimum frequency of 1 per 20 natural samples and will be submitted "blind" to the laboratory, identified as if they are normal environmental samples.

One equipment rinsate blank will be collected during each of the groundwater sampling events. Equipment rinsate blanks will be collected from the submersible groundwater pump after routine decontamination by pouring laboratory supplied deionized water through the pump and into laboratory supplied containers and analyzed for the same constituents as the parent samples.

Trip blanks will consist of de-ionized water prepared in the laboratory. One trip blank will accompany each cooler of groundwater samples. The trip blanks will be placed in the coolers by the laboratory, transported to the field by the sampling personnel, and returned to the laboratory with the field samples for analysis. One trip blank will be analyzed during each of the groundwater sampling events.

Groundwater samples will be analyzed for VPH, EPH Screen concentration, and lead scavengers for EDB and DCA. If the EPH Screen results in a TEH concentration value greater than 1,000 µg/L, then the sample will be fractionated for further analysis. Groundwater samples collected from Site wells will also be analyzed for IBIs, which include sulfates, nitrates/nitrites, dissolved ferrous iron and manganese, and methane. Dissolved metal samples will be filtered in the field during sample collection. All samples will be managed by chain-of-custody procedures and samples will be stored in coolers on ice for transport to Energy Labs in Billings, MT.

Task 7 – Soil Vapor Survey

A vapor survey will be conducted at the adjacent building, currently operated as High Plains Architects, located at 2720 Minnesota Ave. In addition to the investigative soil borings in Task 3, three additional borings will be advanced and completed as soil vapor points using our Geoprobe direct-push drill rig. The locations of the soil vapor points will be placed outside of the adjacent building's western wall edge, as close to the building as possible and outside of the extent of the building's footing (Figure 1).

The soil vapor points will be constructed as near-slab points by installing a vapor probe as close to the structure foundation as possible but no more than 10 lateral feet from the structure with 2-inch diameter, PVC casing and completed at depths greater than 5 feet bgs, and approximately two feet above the vapor contaminant source. A 1/8- to 1/4-inch outer-diameter tube with a perforated tip will be inserted to the desired depth inside of the 2-inch casing. The bore hole will be filled with 10/20 silica sand around the perforated tip and then sealed with bentonite. The surface will be sealed with concrete in the annular space surrounding the well, creating a concrete surface pad with a diameter of about 3-feet. A flush mount monument will be embedded in the surface pad. The finished pad will be sloped so that drainage flows away from the protective casing and off the pad. Once the vapor probe is installed, a minimum of three volumes of air will be purged through the probe and associated tubing at a maximum rate of 200 milliliters per minute (mL/min). The soil vapor samples will be collected in laboratory-supplied 6-liter Summa canisters as a grab sample.

Olympus will inspect the crawl space of the adjacent building. One soil vapor grab sample may be collected with a laboratory-supplied 6-liter Summa canister. in the northwest corner of the crawl space (near the former tank basin) depending on access to the crawl space.

A minimum of one duplicate sample per 20 samples per sample type will be collected for quality assurance and quality control. A duplicate sample will include two Summa canisters connected to one controller via a specially designed splitter provided by the laboratory. Balloon-grade helium will be used as a gaseous tracer for leak detection. A leak check will be performed prior to sample collection at each vapor point using a shroud placed around the surface seal of the sampling probe and tubing and filled with a minimum of a 20 percent helium gas. The gas will be measured in the field with a helium gas meter. The soil vapor probe tubing will be then be purged while beneath the helium-filled shroud. Helium gas readings will be recorded either directly from the sample tubing immediately following the purge, or from the purged soil vapor collected in a tedlar bag. If helium gas concentrations collected from the purge vapor or directly from the sample tubing show helium concentrations to be less than 10 percent of the helium concentration in the shroud, then the surface soil vapor probe seal may be considered valid in the field and the soil vapor samples collected.

The soil vapor samples will be analyzed for volatile organic compounds (VOCs) by EPA Method 8260 and Air-Phase Petroleum Hydrocarbons (APH) by EPA Method TO-15. Samples will be shipped back to the laboratory in the boxes in which they were originally sent and managed by following the proper chain of custody procedures.

Task 8 – Laboratory Analysis and Sample Management

All samples collected will be analyzed for petroleum constituents as required by the Montana Tier 1 Risk-Based Corrective Action (RBCA) Guidance for Petroleum Releases. Samples collected will include those from the existing well assessment, soil borings, both the low and high groundwater sampling events, and the soil vapor points. Soil and groundwater samples will

be analyzed for VPH by Method MA VPH, EPH Screen by Montana-modified Method MA EPH, and lead scavengers by EPA Method 8011 for EDB and EPA Method 8260 for DCA. EPH fractionation will be performed on soil samples exhibiting an EPH Screen concentration exceeding 200 mg/kg and groundwater samples exhibiting an EPH Screen concentration exceeding 1,000 µg/L. Groundwater samples collected from Site wells will also be analyzed for IBIs, which include sulfates by EPA Method E300.0, nitrates/nitrites as Nitrogen and low nitrate by EPA Method E353.2, dissolved ferrous iron by EPA Method E200.7, dissolved manganese by EPA Method E200.7/E200.8, and methane. Dissolved metal samples will be filtered in the field during sample collection. Soil vapor samples will be analyzed for VOCs by EPA Method 8260 and APH by EPA Method TO-15.

Task 9 – Data Validation

Olympus will review and validate the laboratory analytical data, using DEQ's Data Validation Guide and Checklist (DEQ January 2018) to evaluate whether the data are adequate for their intended use.

Task 10 – Reporting

Olympus will prepare a Release Closure Plan (RCP) using the online RCP format. The project results will then be documented in a Standardized Generic Report (AC-07) detailing the results of the work and analysis. The report will include a site map with groundwater potentiometric data, current and historical ground water level and analytical data presented in a tabulated format, updated facility maps, the RCP and laboratory analytical reports, and recommendations for further work required to resolve the Release. The report will be submitted within approximately four weeks of receipt of the groundwater analytical results. Reports will be prepared by a staff scientist with review by a project scientist and senior project scientist.

Cost

The cost to complete the scope of work outlined above is estimated at $86,490.39 as detailed on the attached cost schedule. The cost estimate is based on the following assumptions:

- The borings will be advanced through a permeable surface cover that will not require patching;
- The underlying stratigraphy is suitable for the use of direct push technology;
- Well installation may be performed with our Geoprobe ® 7822DT drill rig; and,
- Project management and field work conducted to collect IBI samples will be invoiced on a time and materials basis. The Petroleum Tank Release Compensation Board (PTRCB) unit cost rate for sample collection is insufficient to cover the extra labor required to collect IBI samples, so estimated field work labor to complete that task is listed on the attached cost estimate. IBI sample collection includes labeling, filling, preserving, and handling additional sample bottles for the analyses of eight IBI analytes and filtering the dissolved metal samples in the field. Additional labor hours are included in the attached cost estimate to cover sampling for IBIs. Olympus respectfully requests that PTRCB approve sufficient labor hours to collect IBI samples.

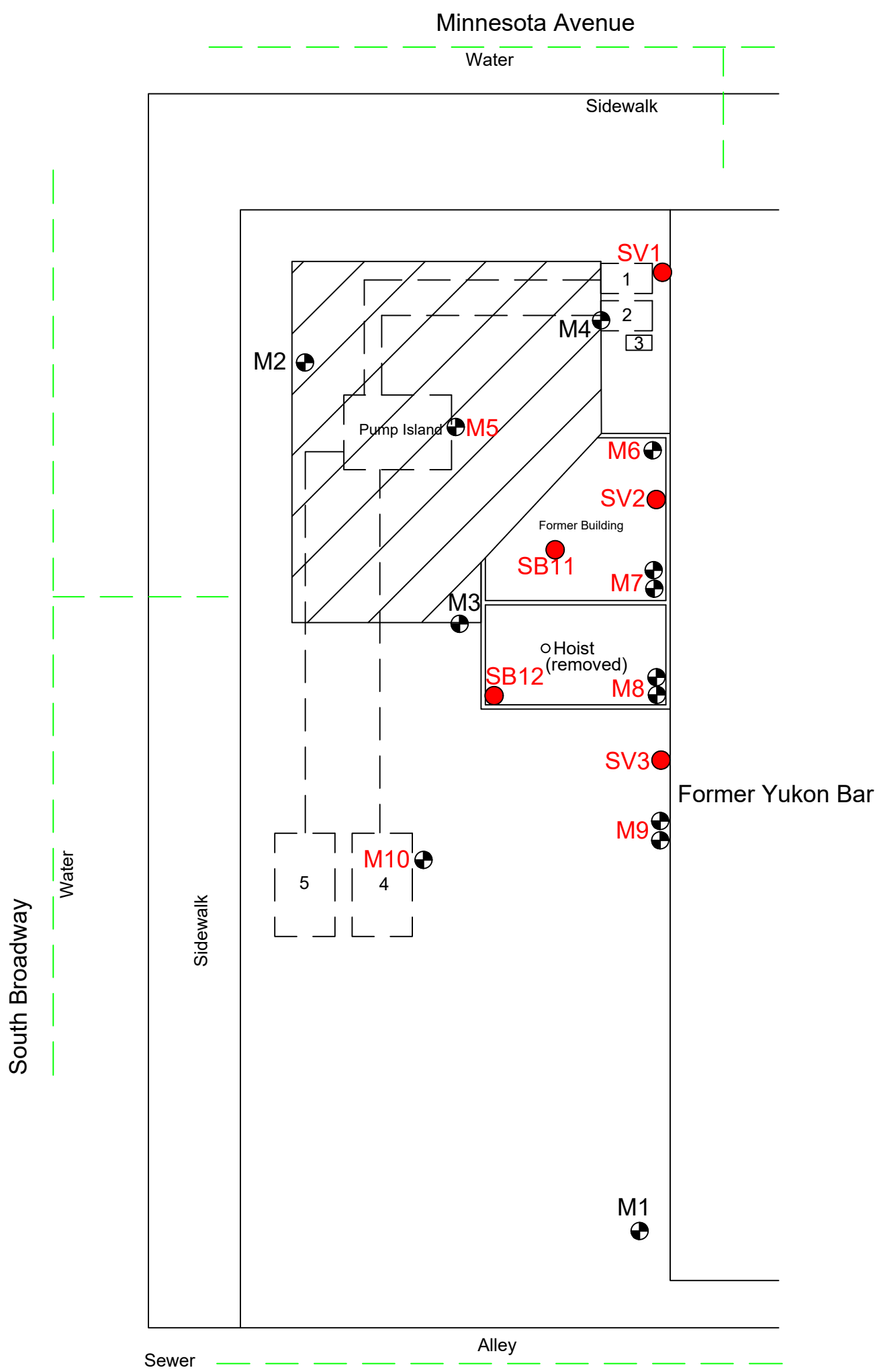
Please contact me if you have any questions regarding this plan.

Sincerely,

Spenser O. E. Kuhn, PG
Project Geologist

Attachments: Figure 1: Proposed Boring Locations
Work Plan Cost Estimate
Soil Boring/Monitoring Well Installation Unit Cost Work Sheet
Groundwater Monitoring Unit Cost Work Sheet

cc: Randy and Janna Hafer, PO Box 2203, Billings, MT 59103
Alan Stine, Olympus, 765 Colleen Street, Helena, MT 59601



LEGEND

M1 — Monitoring Well #1

4 — Removed UST

SV1 — Proposed Soil Vapor Location

SB10 — Proposed Boring Location

M5 — Proposed Well Location

Excavated Area November 2006

N

0 15

SCALE IN FEET

Olympus Technical Services, Inc.	Former Small Dog Investments 5 South Broadway Billings, MT	Proposed Boring Locations	FIGURE 1

DESIGN:	DRAWN: SK	CHECKED: BP	APPROVED:	DATE: 02/20/20	JOB NO: A4273	SCALE: as shown	FILENAME: 4273map.dwg

Olympus Technical Services, Inc. Cost Estimate **Date:** 3/3/2020

Client: DEQ/Small Dog
Project Name: Former Small Dog Investments Facility
Olympus Project/Proposal No.: A4273
AC-07 Work Plan - All Tasks ***ODC** 7%

Work Plan	**Quantity**	**Unit**	**Rate**	**Cost**
AC-07 Soil Boring Installation WP	1	Total	$1,974.00	$1,974.00
			Reporting Subtotal	$1,974.00

Project Management	**Quantity**	**Unit**	**Rate**	**Cost**
Labor	1	Total	$4,080.00	$4,080.00
			Project Management Subtotal	$4,080.00

Existing Well Assessment	**Quantity**	**Unit**	**Rate**	**Cost**
Mobilization	1	Total	$149.86	$149.86
Labor	1	Total	$544.00	$544.00
Well Redevelopment	1	Total	$400.00	$400.00
			Site Walk Subtotal	$1,093.86

Drilling (per ft) & Sampling	**Quantity**	**Unit**	**Rate**	**Cost**
Mobilization	1	Total	$837.44	$837.44
Project Geologist	1	Total	$2,652.00	$2,652.00
Drums	1	Total	$640.00	$640.00
Soil Borings (per ft)	310	Total	$13.62	$4,222.20
Private Utility Locates	1	Total	$500.00 *	$535.00
IDW Disposal	1	Total	$1,500.00 *	$1,605.00
			Drilling Subtotal	$10,491.64

Well Install/Development (per ft)	**Quantity**	**Unit**	**Rate**	**Cost**
Project Geologist (Licensed MWC)	1	Total	$1,632.00	$1,632.00
Well Install (per ft)	210	Ft	$31.64	$6,644.40
Well Development	1	Total	$1,800.00	$1,800.00
Well Survey	1	Total	$800.00 *	$856.00
			Well Installation/Development Subtotal	$10,932.40

Groundwater Monitoring	**Quantity**	**Unit**	**Rate**	**Cost**
Mobilization	1	Total	$467.44	$467.44
Initial and Biannual Sampling and Gauging	1	Total	$6,324.00	$6,324.00
Labor (IBI Sampling)	1	Total	$3,502.00	$3,502.00
Equipment (IBI Sampling Filters)	1	Total	$816.00	$816.00
			Groundwater Sampling Subtotal	$11,109.44

Soil Vapor Survey	**Quantity**	**Unit**	**Rate**	**Cost**
Project Geologist	8	Hour	$136.00	$1,088.00
Soil Vapor Point Install (per ft)	15	Ft	$70.87	$1,063.05
			Soil Vapor Survey Subtotal	$2,151.05

Laboratory Analysis	**Quantity**	**Unit**	**Rate**	**Cost**
Existing Wells	1	Total	$1,715.00	$1,715.00
Soil Analysis	1	Total	$7,495.00	$7,495.00
Groundwater Analysis	1	Total	#########	$10,585.00
IBI Analysis	1	Total	$8,280.00	$8,280.00
Vapor Analysis	1	Total	$1,110.00	$1,110.00
			Laboratory Analysis Subtotal	$29,185.00

Data Validation	**Quantity**	**Unit**	**Rate**	**Cost**
Data Validation	1	Total	$1,360.00	$1,360.00
			Data Validation Subtotal	$1,360.00

Reporting	**Quantity**	**Unit**	**Rate**	**Cost**
AC-07 Reporting	1	Total	$8,502.00	$8,502.00
RCP	1	Total	$5,611.00	$5,611.00
			Reporting Subtotal	$14,113.00

Comments/Notes:
1. All tasks for AC-07 Work Plan
2.
3.
4.
5.

Subtotal	$86,490.39
Contingency	$0.00
GRAND TOTAL	$86,490.39

Olympus Technical Services, Inc. Cost Estimate **Date:** 3/3/2020

Client: DEQ/Small Dog
Project Name: Former Small Dog Investments Facility
Olympus Project/Proposal No.: AP4273

Task 1: Work Plan Preparation ***ODC*** 7%

AC-07 Workplan Labor	**Quantity**	**Unit**	**Rate**	**Cost**
Principal	2	Hr	$171.00	$342.00
Project Geologist/Engineer/Scientist	12	Hr	$136.00	$1,632.00
			AC-07 WP Subtotal	$1,974.00

Comments/Notes:

1. Work Plan Preparation
2.
3.
4.
5.

Subtotal	$1,974.00
Contingency	$0.00
GRAND TOTAL	$1,974.00

Olympus Technical Services, Inc. Cost Estimate **Date:** 3/3/2020

Client: DEQ/Small Dog
Project Name: Former Small Dog Investments Facility
Olympus Project/Proposal No.: AP4273

Task 2: Project Management ***ODC*** 7%

Project Management	**Quantity**	**Unit**	**Rate**	**Cost**
Project Geologist	30	Hour	$136.00	$4,080.00
			Mobilization Subtotal	$4,080.00

Comments/Notes:
1. Project Management for All Tasks
2.
3.
4.
5.

Subtotal	$4,080.00
Contingency	$0.00
GRAND TOTAL	$4,080.00

Olympus Technical Services, Inc. Cost Estimate **Date:** 3/3/2020

Client: DEQ/Small Dog
Project Name: Former Small Dog Investments Facility
Olympus Project/Proposal No.: AP4273
Task 3: Site Walk & Existing Well Assessment ***ODC*** 7%

Mobilization	**Quantity**	**Unit**	**Rate**	**Cost**
Project Geologist	1	Hour	$136.00	$136.00
Mileage (Project Geologist)	22	Mile	$0.63	$13.86
			Mobilization Subtotal	$149.86

Labor	**Quantity**	**Unit**	**Rate**	**Cost**
Project Geologist	4	Hour	$136.00	$544.00
			Site Walk Subtotal	$544.00

Well Redevelopment	**Quantity**	**Unit**	**Rate**	**Cost**
Well Redevelopment (per well)	2	Each	$200.00	$400.00
			Well Development Subtotal	$400.00

Comments/Notes:
1. Mob to site
2. Perform site walk; locate and obsv. condition of existing MWs
3. Gauging, grab samples, redevelop wells if needed
4. Demob
5. Site research

Subtotal	$1,093.86
Contingency	$0.00
GRAND TOTAL	$1,093.86

Olympus Technical Services, Inc. Cost Estimate **Date:** 3/3/2020

Client: DEQ/Small Dog
Project Name: Former Small Dog Investments Facility
Olympus Project/Proposal No.: AP4273
Task 4. Soil Boring Advancement and Sampling ***ODC*** 7%

Mobilization	**Quantity**	**Unit**	**Rate**		**Cost**
Mileage (Drill Crew)	88	Mile	$4.25		$374.00
Project Geologist	3	Hour	$136.00		$408.00
Mileage (Project Geologist)	88	Mile	$0.63		$55.44
			Mobilization Subtotal		$837.44
Drilling & Labor	**Quantity**	**Unit**	**Rate**		**Cost**
Project Geologist	19.5	Hour	$136.00		$2,652.00
			Drilling Subtotal		$2,652.00
Drilling Supplies & Equipment	**Quantity**	**Unit**	**Rate**		**Cost**
Drums (disposal)	4	Drum	$160.00		$640.00
			Drilling Supplies Subtotal		$640.00
Soil Borings (per ft)	**Quantity**	**Unit**	**Rate**		**Cost**
Labor, Supplies, and Equipment	310	Ft	$13.62		$4,222.20
			Soil Borings (per ft) Subtotal		$4,222.20
Other Direct Costs	**Quantity**	**Unit**	**Rate**		**Cost**
Utility locator	1	LS	$500.00	*	$500.00
Landfill Disposal	1	LS	$1,500	*	$1,500.00
ODC markup (7%)	2000.00		7%		$140.00
			ODC Subtotal		$2,140.00

Comments/Notes:
1. Mobilization of 2-man drilling crew, PG & Geoprobe
2. Advance 11 soil borings to appx. 20 ft bgs
3. Advance 3 borings to appx. 5 ft bgs for soil vapor points
4. Soil & GW Sampling and Restore Surface condition
5. Demobilization

Subtotal	$10,491.64
Contingency	$0.00
GRAND TOTAL	$10,491.64

Olympus Technical Services, Inc. Cost Estimate **Date:** 3/3/2020

Client: DEQ/Small Dog
Project Name: Former Small Dog Investments Facility
Olympus Project/Proposal No.: AP4273
Task 5. Monitoring Well Installation and Development ***ODC*** 7%

Labor	**Quantity**	**Unit**	**Rate**	**Cost**
Project Geologist (Licensed MWC)	12	Hour	$136.00	$1,632.00
			Well Installation/Development Subtotal	$1,632.00

Well Installation (per ft)	**Quantity**	**Unit**	**Rate**	**Cost**
Labor and Well Supplies	210	Ft	$31.64	$6,644.40
			Well Installation (per ft) Subtotal	$6,644.40

Well Development	**Quantity**	**Unit**	**Rate**	**Cost**
Well Development (per well)	9	Each	$200.00	$1,800.00
			Well Development Subtotal	$1,800.00

Survey	**Quantity**	**Unit**	**Rate**	**Cost**
Well Survey	1	LS	$800.00 *	$800.00
ODC markup (7%)	800.00		7%	$56.00
			Survey Subtotal	$856.00

Comments/Notes:
1. Install 11, 2-inch diam. Monitoring wells
2. Install surface seal
3. Develop wells
4. Demobilization
5.

Subtotal	$10,932.40
Contingency	$0.00
GRAND TOTAL	$10,932.40

Olympus Technical Services, Inc. Cost Estimate **Date:** 3/3/2020

Client: DEQ/Small Dog
Project Name: Former Small Dog Investments Facility
Olympus Project/Proposal No.: AP4273
Task 6. Initial and Biannual Groundwater Monitoring ***ODC*** 7%

Mobilization	**Quantity**	**Unit**	**Rate**	**Cost**
Technican III	4	Hour	$103.00	$412.00
Mileage (Technician III)	88	Mile	$0.63	$55.44
			Mobilization Subtotal	$467.44

Initial and Biannual Events	**Quantity**	**Unit**	**Rate**	**Cost**
Groundwater Monitoring	34	Well	$186.00	$6,324.00
			Groundwater Monitoring Subtotal	$6,324.00

Collection of Intrinsic Bio Indicators	**Quantity**	**Unit**	**Rate**	**Cost**
Technician III	34	Hr	$103.00	$3,502.00
Sample Filters	34	Each	$24.00	$816.00
			Collection of IBIs Subtotal	$4,318.00

Comments/Notes:
1. Mobilization/demob and sample management
2. Initial Sampling Event (1 event during drilling x 4 wells)
3. Low/High Sampling (2 days each event, 2 events x 15 wells)
4. 3 QA/QC Samples x 2 events
5. Collection of IBIs

Subtotal		$11,109.44
Contingency	0.0%	$0.00
GRAND TOTAL		$11,109.44

Olympus Technical Services, Inc. Cost Estimate **Date:** 3/3/2020

Client: DEQ/Small Dog
Project Name: Former Small Dog Investments Facility
Olympus Project/Proposal No.: AP4273

Task 7. Soil Vapor Survey ***ODC*** 7%

Labor	**Quantity**	**Unit**	**Rate**	**Cost**
Project Geologist	8	Hour	$136.00	$1,088.00
			Labor Subtotal	$1,088.00

Soil Vapor Point Installation (per ft)	**Quantity**	**Unit**	**Rate**	**Cost**
Labor and Supplies (Subtotal)	15	Ft	$70.87	$1,063.05
	Soil Vapor Point Installation Subtotal (per ft)			$1,063.05

Comments/Notes:

1. Install 3 Soil Vapor Points, manholes, and surface seal
2. Purge Vapor Points
3. Sample Vapor Points
4.
5.

Subtotal	$2,151.05
Contingency	$0.00
GRAND TOTAL	$2,151.05

Olympus Technical Services, Inc. Cost Estimate **Date:** 3/3/2020

Client: DEQ/Small Dog
Project Name: Former Small Dog Investments Facility
Olympus Project/Proposal No.: AP4273
Task 8. Laboratory Analysis and Sample Management ***ODC*** 7%

Laboratory Analysis - Existing Wells	**Quantity**	**Unit**	**Rate**	**Cost**
VPH	8	Each	$120.00	$960.00
EPH Screen	7	Each	$75.00	$525.00
EPH Fractionation	2	Each	$75.00	$150.00
Sample Fee	8	Each	$10.00	$80.00
			Laboratory Analysis Subtotal	$1,715.00

Laboratory Analysis - Soil	**Quantity**	**Unit**	**Rate**	**Cost**
VPH	34	Each	$120.00	$4,080.00
EPH Screen	33	Each	$75.00	$2,475.00
EPH Fractionation	8	Each	$75.00	$600.00
Sample Fee	34	Each	$10.00	$340.00
			Laboratory Analysis Subtotal	$7,495.00

Laboratory Analysis - Groundwater	**Quantity**	**Unit**	**Rate**	**Cost**
VPH	37	Each	$120.00	$4,440.00
EPH Screen	36	Each	$75.00	$2,700.00
EPH Fractionation	9	Each	$75.00	$675.00
Lead Scavengers	16	Each	$150.00	$2,400.00
Sample Fee	37	Each	$10.00	$370.00
			Laboratory Analysis Subtotal	$10,585.00

Laboratory Analysis - IBls	**Quantity**	**Unit**	**Rate**	**Cost**
Sulfate	36	Each	$10.00	$360.00
Nitrate+Nitrite as Nitrogen	36	Each	$50.00	$1,800.00
Low Nitrate	36	Each	$50.00	$1,800.00
Methane	36	Each	$50.00	$1,800.00
Low Level Manganese	36	Each	$25.00	$900.00
Dissolved Ferrous Iron	36	Each	$10.00	$360.00
Metals Digestion	36	Each	$25.00	$900.00
Sample Fee	36	Each	$10.00	$360.00
			Laboratory Analysis Subtotal	$8,280.00

Laboratory Analysis - Vapor	**Quantity**	**Unit**	**Rate**	**Cost**
VOCs (TO-15) & APH	3	Each	$220.00	$660.00
Cannister Rental	3	Each	$85.00	$255.00
Flow Controller Rental	3	Each	$20.00	$60.00
Sample Fee	3	Each	$10.00	$30.00
Shipping	3	Each	$35.00	$105.00
			Laboratory Analysis Subtotal	$1,110.00

Comments/Notes:

1. 1 Soil Event, 3 samples x 15 borings + 4 QA/QC Smpls
2. 3 GW Events (Initial-4 wells, Low/High 15 wells x 2 events)
3. 3 QA/QC Samples each x 3 GW events
4. 3 Vapor samples x 1 Event
5. Deliver Samples and Sample Analysis

Subtotal	$29,185.00
Contingency	$0.00
GRAND TOTAL	$29,185.00

Olympus Technical Services, Inc. Cost Estimate **Date:** 3/3/2020

Client: DEQ/Small Dog
Project Name: Former Small Dog Investments Facility
Olympus Project/Proposal No.: AP4273

Task 9. Data Validation ***ODC*** 7%

Data Validation	**Quantity**	**Unit**	**Rate**	**Cost**
Project Scientist	10	Hour	$136.00	$1,360.00
			Data Validation Subtotal	$1,360.00

Comments/Notes:
1. Using DEQ data validation form
2.
3.
4.
5.

Subtotal	$1,360.00
Contingency	$0.00
GRAND TOTAL	$1,360.00

Olympus Technical Services, Inc. Cost Estimate **Date:** 3/3/2020

Client: DEQ/Small Dog
Project Name: Former Small Dog Investments Facility
Olympus Project/Proposal No.: AP4273

Task 10. Reporting ***ODC*** 7%

AC-07 Reporting	**Quantity**	**Unit**	**Rate**	**Cost**
Principal	2	Hr	$171.00	$342.00
Project Geologist	60	Hr	$136.00	$8,160.00
			Reporting Subtotal	$8,502.00
Release Closure Plan				
Principal	1	Hr	$171.00	$171.00
Project Geologist	40	Hr	$136.00	$5,440.00
				$5,611.00

Comments/Notes:

1. Reporting
2. First time RCP for site with history dating back to 2006
3.
4.
5.

Subtotal	$14,113.00
Contingency	$0.00
GRAND TOTAL	$14,113.00

Petroleum Tank Release Compensation Board
Soil Boring/Monitoring Well Installation Unit Cost Worksheet

Contractor Information

Company Name: Olympus Technical Services

Address: 6809 King Avenue West, Unit F

City, State, Zip: Billings, MT, 59106

Cost Estimator: Spenser Kuhn Phone: 406-245-3554

Signature: Spenser O E Kuhn Digitally signed by Spenser O E Kuhn DN: C=US, O=Olympus Technical Services, CN=Spenser O E Kuhn, E=skuhn@olytech.com Reason: I am the author of this document Location: Billings, MT Date: 2020-03-03 11:16:56 Foxit PhantomPDF Version: 9.7.0 Date: 3/3/20

Project Information and Specifications

Site Name: Former Small Dog Investments

Address: 5 South Broadway

City: Billings, MT

Facility ID # 56-14111

Release # 4310

WP ID # 33874

Type of Drilling Equipment

- ☐ Hollow-Stem Augers
- ☐ Air Rotary
- ☑ Direct Push
- ☐ Other (please specify)

Monitoring Well Specifications

Number of Wells 9

Surface: Concrete: ☐ Asphalt: ☑ Barren: ☑

Depth (per well) 20

Estimated Depth to Groundwater (ft) 12

Boring Diameter (inches) 4.25

Casing Diameter and type (inches) 2

Surface Completion: Flush Mount ☑ Aboveground ☐

Soil Boring

Number of Borings 14

Boring Diameter (inches) 4.25

Depth (per boring - ft)

Surface: Concrete: ☐ Asphalt: ☑ Barren: ☑

Soil Disposal: Onsite: ☐ Stockpile: ☐ Drums: ☑

Abandonment: Bentonite: ☑ Soil Cuttings: ☐

Soil Sampling

- ☑ Continuous Soil Sampling
- ☐ Interval Soil Sampling (specify interval)
- ☑ No Sampling

Cost Estimate Explanation:

(1) Mobilization/Demobilization: Includes all costs and mileage to transport equipment, materials, and personnel to and from the site location. More than one mobilization event of either the drilling rig or support vehicle will require justification and pre-approval by the DEQ-PTCS and Board staffs. This item should be estimated on a per mile unit rate.

(2) Soil Boring Installation: Includes all costs (labor, equipment, and materials) to drill, collect soil samples and abandon soil borings, as well as decontaminate equipment. Drilling costs should be estimated using a per foot unit rate. Unit cost should include handling of contaminated soil by stockpiling or placing in drums. Assume level "C" personal protective equipment.

(3) Monitoring Well Installation: Includes all costs (labor, equipment, and materials) to drill, collect soil samples, and complete monitoring well to specifications and according to Montana Well Drillers Board rules, as well as decontaminate equipment. Drilling costs should be estimated using a per foot unit rate. Unit cost should include handling of contaminated soil by stockpiling or placing in drums. Assume level "C" personal protective equipment.

(4) Drilling Standy: Drilling standby should be estimated on an hourly basis. Prior approval and justification for accumulating standby time is needed prior to billing.

(5) Well Development: Includes all costs (labor, equipment, and materials) to develop monitoring wells. This task should be estimated using a per well unit rate.

(6) Monitoring Well Abandonment: Includes all costs (labor, equipment, and materials) to properly abandon a well location according to the Montana Well Drillers Board rules. Abandonment costs should be estimated using a per well unit rate.

Soil Boring/Monitoring Well Installation Unit Cost Worksheet

TASK	UNIT COST	NUMBER OF UNITS	TOTAL COST
Mobilization/Demobilization (1)			
Mobilization/Demobilization: Drilling Rig	$4.25 /mile	88	$ $374.00
Mobilization/Demobilization: Support Vehicle	$5.27 /mile	88	$ $463.76
Soil Boring Installation (2)			
Drilling (0'-50' range per boring)	$13.62 /foot	310	$ $4,222.20
Drilling (50'-100' range per boring)	/foot		$ $0.00
Other (please specify) Utility Locates	$535.00	1	$ $535.00
Monitoring Well Installation (3)			
Drilling (0'-50' range per well)	$31.64 /foot	210	$ $6,644.40
Drilling (50'-100' range per well)	/foot		$ $0.00
Other (please specify) Soil Vapor Points (per ft)	$70.87	15	$ $1,063.05
Drilling Standby (4)			
-prior approval needed	/hour		$ $0.00
Well Development (5)			
Well Development	$200.00 /well	11	$ $2,200.00
Monitoring Well Abandonment (6)			
Abandonment	/well		$ $0.00
Lodging may only be paid at actual costs when documented by receipts.			
Per Diem			
Lodging: (number of individuals) 0	/person per day		$0.00
Food: (number of individuals) 0	/person per day		$0.00
Maximum Daily Per Diem allowed $30.50			
(Breakfast $7.50, Lunch $8.50, Dinner $14.50)		**TOTAL PROJECT EXPENSE**	$ $15,502.41

Additional Conditions/Comments/Costs:

9 Monitoring Wells will be installed. 3 Soil Vapor Points will be installed.
Development of 9 monitoring wells and redevelopment of up to 2 existing wells.
Well Survey: $856.00
Drums: $640.00
Landfill Disposal: $1,500.00

If you require assistance, call 406-444-9710.
Submit completed form to:
Petroleum Tank Release Compensation Board
PO Box 200902, Helena MT 59620-0902

Petroleum Tank Release Compensation Board
Groundwater Monitoring and Sampling Unit Cost Worksheet

Contractor Information

Company Name: Olympus Technical Services
Address: 6809 King Avenue West, Unit F
City, State, Zip: Billings, MT, 59106
Cost Estimator: Spenser Kuhn
Phone: 406-245-3554

Signature: Spenser O E Kuhn Digitally signed by Spenser O E Kuhn DN: C=US, O=Olympus Technical Services, CN=Spenser O E Kuhn, E=skuhn@olytech.com Reason: I am the author of this document Location: Billings, MT Date: 2020-03-03 12:13:03 Foxit PhantomPDF Version: 9.7.0
Date: 3/3/20

Project Information

Site Name: Former Small Dog Investments
Address: 5 South Broadway
City: Billings, MT
Facility ID# 56-14111
Release # 4310
WP ID# 33874

Monitoring Well Details

Total Number of Wells at Site 15
Number of Water Level Measurements Only (2)
Number of Wells to be Monitored/Sampled (3) 34
Well Casing Diameter (inches) 2
Average Depth to Groundwater (ft) 12
Average Depth of Wells (ft) 20

Well Purging Method

- ☐ Hand Bailing
- ☑ Peristaltic Pump
- ☐ Submersible Pump
- ☐ Micropurge
- ☐ No Purge
- ☐ Other (please specify)

Monitoring/Sampling Interval

Estimated Start Date: 2/14/20

- ☐ Quarterly # of events
- ☐ Semi-annual # of events
- ☑ Annual # of events 2
- ☑ Other # of events 1 (specify) Existing Wells

Other Services

- ☐ Free Product Recovery
- ☑ Groundwater Well survey
- ☑ Wellhead retrofit/reconstruction
- ☐ Other (please specify)

Cost Estimate Explanation:

(1) Mobilization/Demobilization: Includes all costs and mileage to transport equipment, materials, and personnel to and from the site location. More than one mobilization event will require justification and pre-approval by the DEQ-PTCS and Board staffs. This item should be on a per mile unit rate.

(2) Water Level Measurements: Includes all costs (labor, equipment, materials, and well consumables) to measure groundwater depth, collect other groundwater information from well, and decontaminate equipment. The well monitoring costs should be on a per well basis and does not include purging and sampling of the well.

(3) Well Monitoring/Purging/Sampling: Includes all costs (labor, equipment, materials, and well consumables) to monitor (see above), purge, sample groundwater, decontaminate equipment, take water level measurements and handle disposal of contaminated purge water. The cost should be on a per well basis.

(4) Laboratory Analysis: Includes all laboratory costs for all wells, for duration of project. It is realized that some laboratory analyses will not be conducted for every event and that the well sampling frequency may change.

(5) PTRCB Sampling Fee: Includes all costs related to management of the sample including: sample container, cooler, packing, shipping, handling, sample preservation, and office related handling charges. The Sample is defined as the laboratory ID number on the laboratory invoice.

(6) Report Preparation and Project Management: Includes all costs (labor and materials) project management, report preparation, and report submittal, including all office related costs, per groundwater sampling event.

Groundwater Monitoring and Sampling Unit Cost Worksheet

Task	Unit Cost	Number of Units	Total Cost
Work Plan Preparation	$1,974.00	1	$1,974.00
Project Management	$136.00 /hr	30	$4,080.00
Mobilization/Demobilization (1)	$5.18 /mile	110	$569.80
Field Work			
Water Level Measurements (2)	/well		$0.00
Well Monitoring/Purging/Sampling (3)	$186.00 /well	34	$6,324.00
Other Service (please specify) Wellhead repair - if needed	$400.00	4	$1,600.00
Other Service (please specify) IBI parameter collection	$103.00	34	$3,502.00
Lodging & Per Diem (Lodging – actual only)			
Lodging: # of people 0	/person per day		$0.00
Food: # of people 0 ($30.50 max a day allowed)	/person per day		$0.00
(Breakfast $7.50, Lunch $8.50, Dinner $14.50)			
Laboratory Analysis (4)			
Volatile Petroleum Hydrocarbons (VPH)	$120.00 /sample	79	$9,480.00
Extractable Petroleum Hydrocarbons (EPH)			
EPH "screen"	$75.00 /sample	76	$5,700.00
EPH "fractions"	$75.00 /sample	19	$1,425.00
BTEX/MTBE/Naphthalene only-method:	/sample		$0.00
Polyaromatic Hydrocarbons (PAHs)	/sample		$0.00
PTRCB sampling fee ($10.00 allowed) (5)	$10.00 /sample	118	$1,180.00
Other (please specify) IBIs	$220.00 /sample	36	$7,920.00
Other (please specify) Lead Scavengers	$150.00 /sample	16	$2,400.00
Report Preparation (6)			
Quarterly	/report		$0.00
Semi-annual	/report		$0.00
Annual	/report		$0.00
Other (Please specify)			$0.00
Monitoring & Sampling Total:			$46,154.80

Additional Conditions/Comments/Costs:

Soil Vapor VOCs: $360.00/sample x 3 samples: $1,080.00
Materials - IBI In-line Field Filters: $24.00 unit cost x 34: $816.00

AC-07 Report estimate is provided in the detailed cost estimate.

If you require assistance, call 406-444-9710
Submit completed form to:
Petroleum Tank Release Compensation Board
PO Box 200902, Helena MT 59620-0902