

December 5, 2019

Ms. Latysha Pankratz  
Montana Department of Environmental Quality  
P.O. Box 200901  
Helena, MT 59620-0901

Re: **Corrective Action Plan for Monitoring Well Installation & Semiannual Groundwater Monitoring** for  
Cenex Supply & Marketing Bulk Facility, Drummond, MT, Facility ID# 20-01449, Release# 1584, Work  
Plan# 33965.

Dear Ms. Pankratz:

Enclosed for your review is the **Corrective Action Plan for Monitoring Well Installation & Semiannual Groundwater Monitoring** for the Cenex Supply & Marketing Bulk Facility located at 229 East Front Street, Drummond, Montana.

Thank you for your time and consideration of this work plan. Please call or email me at [nolson@wcec.com](mailto:nolson@wcec.com), if you have any questions or concerns.

Sincerely,



Nathan Olson  
Project Manager, WCEC

Enc:

ec: Jerry Eide, CHS Inc., [Jerry.Eide@CHSInc.com](mailto:Jerry.Eide@CHSInc.com)  
Mark Lalum, CHS Inc. [Mark.Lalum@CHSInc.com](mailto:Mark.Lalum@CHSInc.com)

# Corrective Action Plan for Monitoring Well Installation & Semiannual Groundwater Monitoring

**Cenex Supply & Marketing**  
229 East Front Street  
Drummond, MT 59832  
Facility ID# 20-01449,  
Release# 1584, Work Plan# 33965

**Prepared for:**

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**Prepared by:**

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**December 5, 2019**  
**WCEC Project No. 94-865-70**

# WCEC

West Central Environmental Consultants, Inc.

Nationwide Services  
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Environmental



Emergency Response



Industrial Services

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## **1.0 Introduction**

This work plan has been prepared in response to a work plan request dated October 15, 2019 from the Montana Department of Environmental Quality (MTDEQ) which requires additional corrective action at the Cenex Supply & Marketing Bulk Facility (Facility# 56-13926, Release# 1584, Work Plan# 33965), located at 229 East Front Street, Drummond, Montana. A site location map is included as Figure 1.

### **1.1 Site Location**

Cenex Supply & Marketing Bulk Facility is located at 229 East Front Street, Drummond, Montana. A site location map is included as Figure 1 and a site details map is included as Figure 2. The Public Land Survey System (PLSS) description for the site is the SE/4, SE/4, NE/4 of Section 32, T11N, R12W. The approximate geographic coordinates are N 46.6661°, W -113.1440°. Township, range, and section information was obtained using the United States Geological Survey (USGS) Drummond, Montana 1:24,000 Quadrangle. The site is located within the Flint-Rock Creek Hydrologic Unit.

### **1.2 Geologic/ Hydrogeologic Setting**

The surficial geology in Drummond consists of Quaternary alluvium material from the Holocene period. Sediments consist of well to moderately sorted gravel, sand, and silt. This layer varies in depth from 0 to 35 feet thick. [Lonn et al., 2010]. The deposits under the site consist primarily of silty sand to a depth of approximately 11 feet. These deposits are underlain by gravel and cobble intermixed with silty sand to the maximum depth of quaternary alluvium deposits. The Clark Fork River is the nearest year-round stream to the facility, and it is located approximately 0.35 miles south of the facility.

## **2.0 Scope of Work**

The scope of the remedial activities requested by the MTDEQ consists of:

- Installation of up to three groundwater monitoring wells to define the extent and magnitude of the dissolved phase hydrocarbon impacts.
- Analyze soil samples for petroleum constituents as required by the Montana Tier 1 Risk-Based Corrective Action Guidance for Petroleum Release.
- Conduct one year of semiannual groundwater monitoring.
- Analyze groundwater samples for petroleum constituents as required by the Montana Tier 1 Risk-Based Corrective Action Guidance for Petroleum Releases and Intrinsic Biodegradation Indicators. Also analyze groundwater samples for led scavengers during the first groundwater monitoring event.
- Validate all laboratory analytical data using DEQ's Data Validation Summary Form (DSVF).
- Discuss ongoing WP tasks and results with DEQ's project manager. DEQ expects the RCP completion to be complex as it covers investigative, post-investigative, and cleanup information.
- Prepare and submit a Standardized Soil Boring and Monitoring Well Installation Report (Report AR-03). The Report is expected to include all the content outlined in the Report AR-03 format and the following:
  - A discussion that identifies the results of the completed WP;
  - A conclusion section that identifies data gaps that may exist following the completion of the WP which were also identified in the discussion section;
  - A recommendation section for future work to resolve the release which is supported by the discussion, conclusion(s) and the RCP;
  - Tabular presentation of cumulative groundwater data;
  - To-scale map(s) with groundwater gradient and iso-concentration contours, location of sampling points, former and existing tank systems, utilities, current on-site structures;
  - Append the laboratory reports; and
  - Append the DVSF and RCP.

## **2.1 Monitoring Well Installation**

WCEC will install three monitoring wells at the locations depicted in Figure 2. Borings will be advanced to a total depth of 20 feet below ground surface (bgs). Wells will be completed with 0.010 slot PVC screen from 5 to 15 feet bgs and have solid schedule 40 casing from 0 to 5 feet bgs. WCEC will field screen soils using a MiniRae 3000 PID. WCEC will collect a soil sample from each boring at the groundwater interface for analytical analysis. These soil samples will be analyzed for volatile petroleum hydrocarbons (VPH) and extractable petroleum hydrocarbons (EPH) screen in accordance with Montana Tier 1 Risk-Based Corrective Action Guidance for Petroleum Releases. Monitoring wells will be completed with 8-inch flush mount monuments.

## **2.2 Groundwater Monitoring**

WCEC will conduct semiannual groundwater monitoring of monitoring wells MW1, MW2, MW3, MW5, MW6, and the three wells installed under this work plan. Depth to water measurements will be recorded from all site monitoring wells to provide potentiometric surface plot data, flow direction, and gradient. Purging will be conducted using a peristaltic pump prior to sampling. All site wells will be purged and sampled using the same methodology. Groundwater quality parameters (pH, DO, conductivity, temperature, salinity, ORP, and turbidity) will be obtained using a flow through cell attached to a peristaltic pump. All groundwater samples collected will be submitted for analysis of VPH and EPH screen. If the EPH screening limit of 200 µg/L is exceeded total extractable hydrocarbon (TEH) fraction analysis will be requested.

WCEC will discuss ongoing WP tasks and results with DEQ's project manager. WCEC will submit written agreed-upon work plan modifications in the event adjustments to the corrective action plan are needed.

## **2.3 Mapping and Surveying**

WCEC will resurvey all site wells in accordance with the MTDEQ Technical Guidance Document #2. WCEC will survey the top of casing on all monitoring wells at the facility to The Forth Order (0.10 feet times the square root of total distance of the level loop in miles) with a measurement precision of 0.01 feet. The latitude and longitude of all site wells will be surveyed using a Trimble Geo 7X GPS with 1-centimeter post processed accuracy. Site well casing elevations will be correlated to the North American Vertical Datum of 1988 (NAVD 88) using an onsite elevation control point. The location of new monitoring wells will be included on future site detail maps generated to scale and overlaid on a site orthophoto.

### **3.0 Report Preparation**

#### **3.1 Release Closure Plan**

WCEC will complete an RCP outlining basic information pertaining to the release, a conceptual site model, evaluation of cleanup alternatives, and assessment of future compliance monitoring. Any data gaps will be noted in the RCP and discussed in the text of the remedial activities report. The RCP will be included as an appendix of the remedial investigation report.

#### **3.2 Data Validation**

WCEC will complete the MTDEQ – Waste Management and Remediation Division Data Validation Summary Form (DVSF). WCEC will submit one trip blank and one field duplicate samples for analysis of relative percent difference (RPD) of groundwater laboratory results for each event. WCEC will collect duplicate samples from the newly installed monitoring well located closest to the former AST and will label it MW-D. The completed data validation form will be included as an appendix to the remedial activities report.

#### **3.3 Remedial Investigation Report**

WCEC will submit a Standardized Soil Boring and Monitoring Well Installation Report (Report AR-03) to the MTDEQ within 60 days of receipt of laboratory analytical results. The report will cover the monitoring well installation, groundwater monitoring, and site surveying conducted in 2020. The remedial activities report will include a brief site history, description of site location and geolithology, and a summary of all remedial actions conducted under corrective action plan 33965. WCEC will include cumulative tables for groundwater elevations, groundwater chemistry, and analytical results. Maps will be provided detailing the site location, former structures, petroleum dispensing equipment and associated piping, utilities, iso-concentration maps, and potentiometric surface plots for each sampling event. The location of all current and former site monitoring wells will be depicted on a site orthophoto. The complete laboratory analytical reports will be included as appendices of the remedial activities report.

#### **3.4 Reporting**

A Standardized Soil Boring and Monitoring Well Installation Report (Report AR-03) will be generated within 60 days of receipt of final analytical results from the second semiannual sampling event. All of the content outlined in the AR-03 report format will be included in the report. WCEC will also identify any data gaps that may exist and a discussion of additional corrective actions that would be required to address these issues. WCEC will provided maps depicting groundwater flow direction, gradient, iso-concentration maps, and maps depicting current and former structures and utilities. Report appendices will include laboratory reports, DVSF, and an RCP.

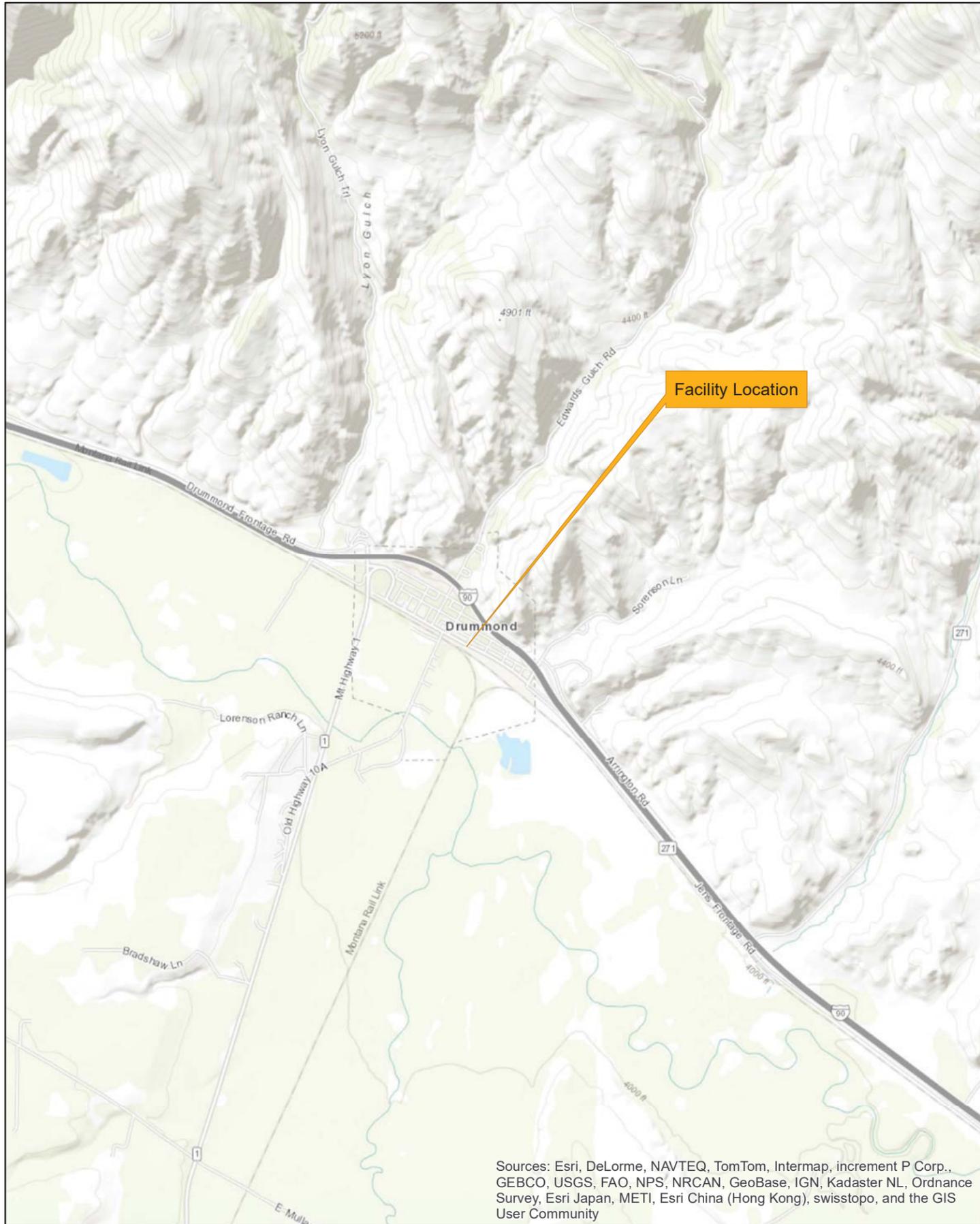
## **4.0 Timeline and Costs**

The attached estimated cost sheet in Appendix A covers the anticipated costs to complete the scope of work required by the MTDEQ in the work plan request dated October 15, 2019. The scope of work outlined in this work plan is tentatively scheduled to begin in spring 2020 pending work plan approval by the MTDEQ and obligation of funds by the Montana PTRCB.

## List of Figures

Figure 1: Site Location Maps

Figure 2: Site Details Map



Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, and the GIS User Community



PROJECT # 94-865-70	<b>Site Location Maps</b>	<b>WCEC</b> ENVIRONMENTAL CONSULTANTS
DATE: 11/21/19		
DRAWN BY: NGO	<b>Cenex Supply &amp; Marketing Bulk Facility, 229 East Front Street, Drummond, MT</b>	<b>FIGURE 1</b>
ORTHO PHOTO DATE: 07/10/2011		



## **Appendix A**

### Estimated Costs

**Estimated Costs for**  
**Corrective Action Plan #33965**  
Cenex Supply & Marketing, Drummond, MT  
Facility ID# 20-01449, Release# 1584, Work Plan ID# 33965

TASK	Unit Cost	Units	Total Cost
<b>Project Management</b>			
Project Manager - Coordination	\$130.00	12	\$1,560.00
<b>Sub Total</b>			<b>\$1,560.00</b>
<b>Monitoring Well Installation</b>			
<b>Mobilization</b>			
Vehicle Mileage	\$0.63	220	\$138.60
A01014 Staff Scientist	\$110.00	4	\$440.00
A01050 Tech III	\$90.00	4	\$360.00
A01051 Tech III (premobilize)	\$90.00	2	\$180.00
<b>Sub Total</b>			<b>\$1,118.60</b>
<b>Monitoring Well Installation &amp; Well Development</b>			
A01014 Staff Scientist	\$110.00	15	\$1,650.00
A01050 Tech III	\$90.00	15	\$1,350.00
<b>Sub Total</b>			<b>\$3,000.00</b>
<b>Monitoring Well Installation &amp; Development Equipment</b>			
M00300 PID	\$84.15	1	\$84.15
S03100 Sample Gloves	\$0.75	20	\$15.00
Deionized Water	\$1.50	10	\$15.00
M02000 Water Level Meter	\$52.80	1	\$52.80
Rediflow Pump	\$115.80	1	\$115.80
<b>Sub Total</b>			<b>\$282.75</b>
<b>GeoProbe &amp; Operator (Soil Boring/Monitoring Well Installation)</b>			
Drill Rig w/Operator Mob/Demobilize	\$3.50	590	\$2,065.00
Well drilling (per foot)	\$26.00	60	\$1,560.00
Well Construction (per foot)	\$28.00	60	\$1,680.00
Flush Mount Monument with Concrete	\$90.00	3	\$270.00
Lodging (2 people, 2 nights)	\$140.00	4	\$560.00
Per Diem (2 people, 3 days)	\$30.50	6	\$183.00
<b>Sub Total</b>			<b>\$6,318.00</b>
<b>Professional Labor - Mapping, Surveying, CAD</b>			
A01014 Staff Scientist	\$110.00	3	\$330.00
A01050 Tech III	\$90.00	3	\$270.00
A01009 Drafter CAD - differential correction of survey data	\$90.00	2	\$180.00
E02350 GPS Trimble RTK	\$231.00	1	\$231.00
E02100 Survey Equipment	\$165.00	1	\$165.00
<b>Sub Total</b>			<b>\$1,176.00</b>
<b>Water Disposal - Nash Enterprises</b>			
A01050 Tech III (1.5 hr. per event 3 events)	\$90.00	4.5	\$405.00
Disposal minimum fee based on small expected quantity	\$75.00	2	\$150.00
Disposal per unit over 75 gallons (well development - new wells)	\$1.00	90	\$90.00
Trailer (daily rate)	\$30.00	1	\$30.00
<b>Sub Total</b>			<b>\$675.00</b>
<b>Analytical - Soil Samples</b>			
VPH - Soil Samples	\$125.00	3	\$375.00
EPH Screen - Soil Samples	\$60.00	3	\$180.00
EPH Fractions - Soil Samples	\$140.00	3	\$420.00
Sample Handling Fees	\$10.00	3	\$30.00
<b>Sub Total</b>			<b>\$1,005.00</b>
<b>Report Preparation - MW Installation, VI Investigation, Groundwater Monitoring</b>			
RPT_RIR-02 Report Preparation - RPT_RIR-02	\$3,010.00	1	\$3,010.00
Prepare Release Closure Plan	\$130.00	4	\$520.00
DEQ Data Validation (soil, air, tap, & groundwater analytical results)	\$130.00	6	\$780.00
<b>Sub Total</b>			<b>\$4,310.00</b>
<b>Per Diem</b>			
Per Diem (Food)	\$30.50	4	\$122.00
<b>Sub Total</b>			<b>\$122.00</b>
<b>PTRCB Groundwater Unit Cost Work Sheet</b>			
Groundwater Unit Cost Form	\$16,451.60	1	\$16,451.60
<b>Sub Total</b>			<b>\$16,451.60</b>
<b>Total Cost</b>			<b>\$35,343.95</b>

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

### Contractor Information

Company Name:   
 Address:   
 City, State, Zip:   
 Cost Estimator:  Phone:

Signature:   
 Date:

### Project Information

Site Name:  Facility ID#   
 Address:  Release #   
 City:  WP ID#

### Monitoring Well Details

Total Number of Wells at Site   
 Number of Water Level Measurements Only <sup>(2)</sup>   
 Number of Wells to be Monitored/Sampled <sup>(3)</sup>   
 Well Casing Diameter (inches)   
 Average Depth to Groundwater (ft)   
 Average Depth of Wells (ft)

### Well Purging Method

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

### Monitoring/Sampling Interval

Estimated Start Date:   
 Quarterly # of events   
 Semi-annual # of events   
 Annual # of events   
 Other # of events  (specify)

### Other Services

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

### Cost Estimate Explanation:

- <sup>(1)</sup> 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.
- <sup>(2)</sup> 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.
- <sup>(3)</sup> 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.
- <sup>(4)</sup> 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.
- <sup>(5)</sup> 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.
- <sup>(6)</sup> 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
<b>Work Plan Preparation</b>	\$965.00	1	\$965.00
<b>Project Management</b>	\$130.00 /hr	6	\$780.00
<b>Mobilization/Demobilization</b> <sup>(1)</sup>	\$3.08 /mile	220	\$677.60
<b>Field Work</b>			
Water Level Measurements <sup>(2)</sup>	\$42.25 /well	2	\$84.50
Well Monitoring/Purging/Sampling <sup>(3)</sup>	\$186.00 /well	16	\$2,976.00
Other Service (please specify) <input type="text"/>	<input type="text"/>	<input type="text"/>	\$0.00
Other Service (please specify) <input type="text"/>	<input type="text"/>	<input type="text"/>	\$0.00
<b>Lodging &amp; Per Diem</b> (Lodging – actual only)			
Lodging: # of people <input type="text" value="0"/>	\$0.00 /person per day	0	\$0.00
Food: # of people <input type="text" value="2"/> (\$23.00 max a day allowed)	\$30.50 /person per day	1	\$61.00
<b>Laboratory Analysis</b> <sup>(4)</sup>			
Volatile Petroleum Hydrocarbons (VPH)	\$125.00 /sample	20	\$2,500.00
Extractable Petroleum Hydrocarbons (EPH)			
EPH “screen”	\$75.00 /sample	20	\$1,500.00
EPH “fractions”	\$140.00 /sample	20	\$2,800.00
BTEX/MTBE/Naphthalene only-method:	<input type="text"/> /sample	<input type="text"/>	\$0.00
Polyaromatic Hydrocarbons (PAHs)	<input type="text"/> /sample	<input type="text"/>	\$0.00
PTRCB sampling fee (\$10.00 allowed) <sup>(5)</sup>	\$10.00 /sample	16	\$160.00
Other (please specify) <input type="text" value="Intrinsic Biodegradation indicators"/>	\$130.00 /sample	16	\$2,080.00
Other (please specify) <input type="text" value="Lead scavengers (first event)"/>	\$110.00 /sample	8	\$880.00
<b>Report Preparation</b> <sup>(6)</sup>			
Quarterly	<input type="text"/> /report	<input type="text"/>	\$0.00
Semi-annual	<input type="text"/> /report	<input type="text"/>	\$0.00
Annual	<input type="text"/> /report	<input type="text"/>	\$0.00
Other (Please specify) <input type="text" value="Included on attached sheet"/>	<input type="text"/>	<input type="text"/>	\$0.00
<b>Monitoring &amp; Sampling Total:</b>			<b>\$15,464.10</b>

**Additional Conditions/Comments/Costs:**

Additional cost included on attached cost estimate sheet

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