Olympus Technical Services, Inc.
Billings, MT ● Boise, ID ● Havre, MT ● Helena, MT

April 28, 2020

Mr. Donny McCurry
Montana DEQ
P.O. Box 200901,
Helena, MT 59620-0901David Keith

RE: Work Plan ID# 34039 for Remediation System and Groundwater Monitoring
Keith's Country Store, Great Falls, Montana
Facility ID# 07-01418, Release #3212, TID# 18394; Olympus WO# A1609

Dear Mr. Keith,

This work plan was developed by Olympus Technical Services, Inc. (Olympus) for corrective action at Keith's Country Store located at 1621 10th Avenue South in Great Falls, Montana. This work plan was prepared in response to a request by the Montana Department of Environmental Quality (DEQ), in a letter dated February 27, 2020, for additional corrective action to maintain and monitor remediation system operations and conduct groundwater monitoring. A Site location map is shown on Figure 1 and Site features are shown on Figure 2.

Scope of Work

SVE System at Rental Property

A soil vapor extraction (SVE) system installed at the former Tatarka property will be removed from service. SVE equipment, which includes a blower and electrical wiring system housed in a subterranean storage unit, will be dismantled and removed from the Site. The electrical system will be disconnected by a licensed electrician. The SVE wells will be abandoned by a licensed monitoring well contractor at a later date when all groundwater monitoring wells at the residential properties are abandoned, estimated to be within three years, based on plume stability.

H_2O_2 *Remediation System Operations and Monitoring*

A hydrogen peroxide (H_2O_2) injection system installed at the Site operates seasonally to remediate the dissolved petroleum groundwater plume. The system was shut down during the winter of 2019/2020. Olympus will perform a system check and repair system equipment as needed to restart operations. Monthly Site visits will be conducted to inspect the system equipment and change the H_2O_2 source drum. Pressure and water flow measurements will be recorded and the concentration of the H_2O_2 solution will be measured during monitoring events. Periodically, the system requires maintenance which may include cleaning and/or replacement of parts. Costs to operate the system for up to three years is included in the attached cost estimate. Olympus will make recommendations to DEQ to modify system operations as needed. Operations may be pulsed based on groundwater monitoring results.

Semi-annual Groundwater Monitoring

Groundwater sampling will be conducted semi-annually for up to three years to assess the effectiveness of remediation system operations and to monitor plume stability. Groundwater monitoring will include the collection of static water levels in select Site wells on an annual basis to assess groundwater mounding effects and variable groundwater flow directions resulting from

H_2O_2 solution injection. Static water levels will be measured using an electronic water level probe. Groundwater samples will be collected semi-annually from Site wells MW-4, MW-10, MW-15, and MW-16, and annually from well SDW-4, for VPH analyses. Olympus will make recommendations to DEQ to modify the sampling schedule as needed.

Groundwater samples will be collected following Olympus' standard operating procedures, which include purging, measurement of field parameters, and decontamination of sampling equipment. Groundwater samples will be collected into laboratory supplied sample containers using a low flow pump. Prior to sample collection, groundwater parameters will be measured which include dissolved oxygen, oxygen reduction potential (ORP), pH, specific conductivity, turbidity, and temperature. Groundwater parameter data will be listed on groundwater sample information forms provided with a summary report.

Quality assurance/quality control (QA/QC) procedures will be followed to ensure the provision of reliable, accurate, and defensible data. All field activities will be documented in the project field book. Samples will be collected into laboratory supplied jars, stored on ice, and submitted to Energy Laboratories, Inc. in Helena, Montana, by chain- of-custody procedure. QA/QC samples will be collected to verify the precision and accuracy of the laboratory generated data. One duplicate groundwater sample will be collected to test for precision related to sampling methods, and one equipment rinsate blank will be collected to test for unwanted contamination introduced in the field.

Nutrient Amendment to Groundwater

A nutrient amendment will be injected into the aquifer as needed to increase nitrogen and phosphorous concentrations to optimal levels for biodegradation of petroleum compounds. Groundwater samples will be collected from well MW-15 annually during groundwater monitoring events for laboratory confirmation of nitrogen and phosphorous concentrations in the groundwater.

Release Closure Plan

A standardized Release Closure Plan (RCP) will be developed for the Site using standard DEQ format. The RCP includes abbreviated Site history and release information, conceptual model of Site conditions, extent and magnitude of petroleum impacts, identification of potential exposure routes and receptors, comparison of cleanup alternatives, and estimated costs and time to achieve cleanup goals

Corrective Action Reports

Site work results will be presented in Standardized Generic Applications Reports (Report_AR_07) following the second semi-annual event each year. Each report will present data collected during two semi-annual groundwater monitoring events and remediation system maintenance and operations monitoring throughout the year. The reports will include Site maps, tabulated analytical data, and a compilation of historical data. Potentiometric maps will be presented that show the effects of remediation system operations on groundwater elevations, groundwater flow direction, and hydraulic gradient. Conclusions will be included regarding the effectiveness of remedial efforts and recommendations will be made for modification to system operations and groundwater monitoring as needed.

Cost Estimate

A cost estimate for the above scope of work is attached to this work plan and includes project oversight and labor costs for remediation system maintenance and operations monitoring,

groundwater monitoring, and RCP and report development. Olympus will invoice groundwater monitoring on a unit cost basis and all other tasks on a time and material basis, not to exceed the attached cost estimate without prior approval from Keith's Country Store and the DEQ. A unit cost worksheet for groundwater monitoring is attached to this work plan. Groundwater monitoring events will be conducted concurrent with remediation system monitoring and mobilization costs will be split with other project work conducted concurrently in the Great Falls area when possible.

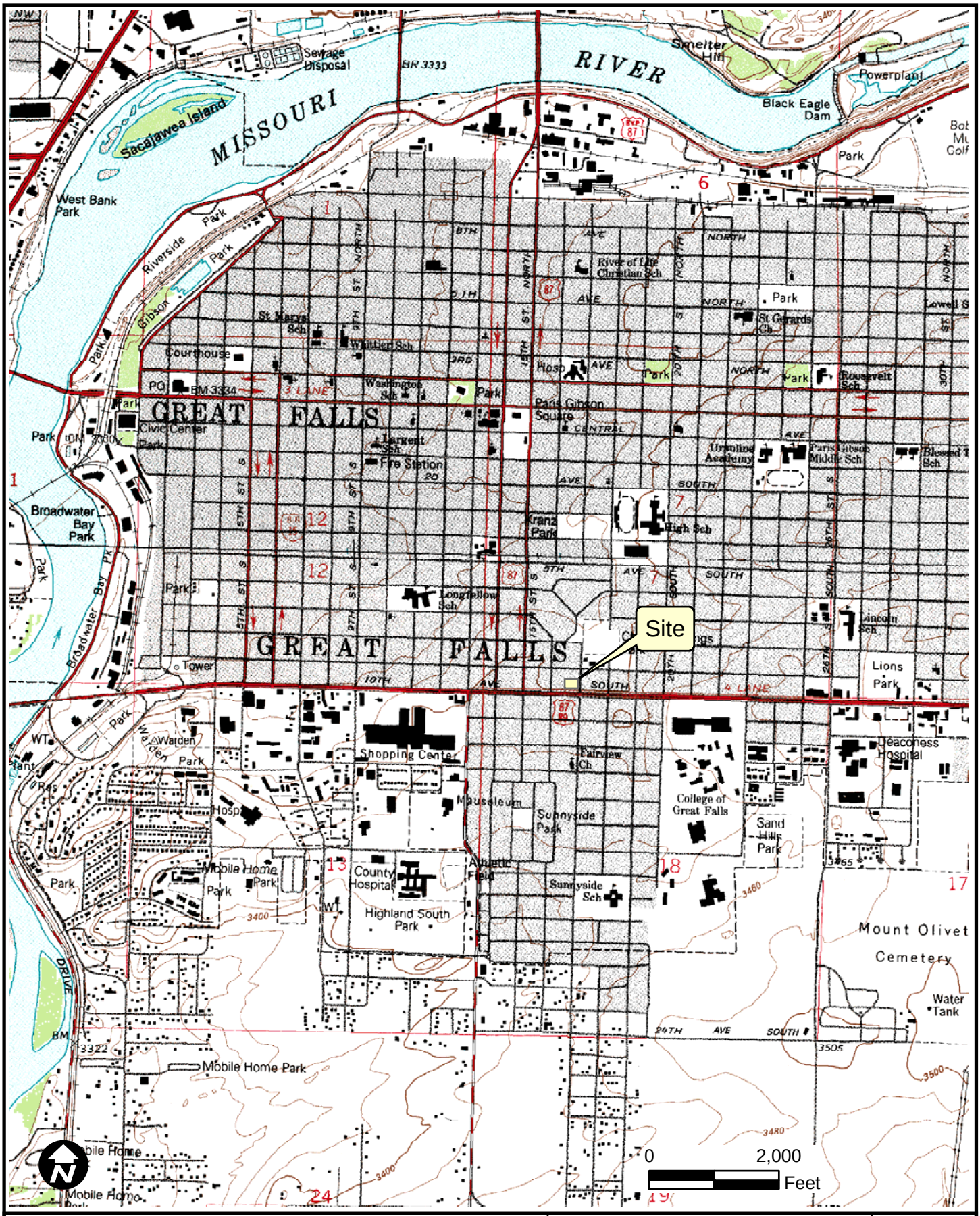
Schedule

Site work will commence following DEQ approval of this work plan and the obligation of funds by the Petroleum Tank Release Compensation Board for the scope of work. Please contact me or Alan Stine at 406-443-3087 should you have any questions regarding the work plan or the project.

Sincerely,

Janell Foley
Project Manager

Attachments: Figures 1, 2; Cost Estimate; Unit Cost Worksheet
cc: Mr. David Keith, Keith's Country Store, 1621 10th Avenue South, Great Falls, Montana 59405



Olympus Technical Services, Inc.	SITE LOCATION MAP KEITH'S COUNTRY STORE 1621 10TH AVENUE SOUTH GREAT FALLS, MONTANA	FIGURE 1

NINTH AVENUE SOUTH

MW-14 MW-13 MW-12

SDW-9 SDW-6 SDW-3

SIETZ PROPERTY

BURCHAM PROPERTY

TATARKA PROPERTY

FENCE

SDW-5 SDW-2

SDW-8

SVE SYSTEM

SDW-4

SDW-1

SDW-7

(ABANDONED)

GARAGE COVERED PARKING GARAGE GARAGE

GHB-51S

OH POWER

Man Hole (3378.36)

NINTH AVENUE SOUTH ALLEY

SEWER GAS

GP-5/TC-5

MW-11

GHB-56S

GP-6/TC-6

GHB-48S GHB-49S

GHB-50S

Man Hole (3375.67)

GHB-52S

GHB-44S

MW-10

SUBTERRANEAN STORAGE UNITS

GHB-58S

GHB-9S

GP-1/TC-1

MW-15

GP-2/TC-2

MW-9

MW-5

SHED

MW-4

MW-16

KEITH'S COUNTRY STORE

UST UST UST

MW-8

16th STREET SOUTH

17th STREET SOUTH

MW-2

MW-3

GP-3/TC-3

GP-4/TC-4

PUMP ISLANDS

MW-7

TACO TREAT

MW-6

MW-1

TENTH AVENUE SOUTH

N

0 20 40

SCALE IN FEET

LEGEND

MW-4 MONITORING WELL

SDW-2 SMALL DIAMETER MONITORING WELL

GHB-9S MAXIM TECHNOLOGIES MONITORING WELL

GP-2/TC-2 GEOPROBE BORING

UTILITIES

OVERHEAD POWER LINE

SANITARY SEWER LINE

WATER SERVICE LINE

NATURAL GAS LINE

Olympus Technical Services, Inc.

SITE FEATURES AND THE LOCATIONS OF MONITORING WELLS AND THE SVE SYSTEM

FIGURE 2

Drawn:	Checked:	Date: MAY 2007	Job No: A1609	KEITH'S COUNTRY STORE 1621 10TH AVENUE SOUTH GREAT FALLS, MONTANA
Design:	Approved:	Scale: AS SHOWN	File: A1609SITE.DWG	

COST ESTIMATE AND UNIT COST WORKSHEET

765 Colleen Street ● Helena, MT 59601
(406) 443-3087 ● Fax (406) 443-0232

Keith's Country Store, 1621 10th Ave. South, Great Falls, MT
Facility ID# 07-01418, Release# 3212
Corrective Action Work Plan #34039: Remediation System O&M and Groundwater Monitoring
Work Plan Date: April 28, 2020

Task 1. Work Plan Development (AC-07)	Quant.	Rate	Total
Labor:			
Sr. Project Scientist	0.5	$150.00	$75.00
PE/Geologist/Scientist	8	$136.00	$1,088.00
		Total Task 1:	**$1,163.00**

Task 2. Project Management	Quant.	Rate	Total
Labor:			
Sr. Project Scientist	2	$150.00	$300.00
PE/Geologist/Scientist	60	$136.00	$8,160.00
		Total Task 2:	**$8,460.00**

Task 3. Mobilization/Demobilization	Quant.	Rate	Total
Labor:			
PE/Geologist/Scientist	14	$136.00	$1,904.00
		Subtotal Labor:	$1,904.00
Equipment and Materials:			
Mileage	800	$0.630	$504.00
		Subtotal E&M:	$504.00
		Subtotal Mob:	**$2,408.00**
		Cost/Mile:	**$3.01**
Field Tech III	126	$103.00	$12,978.00
		Subtotal Labor:	$12,978.00
Equipment and Materials:			
Mileage	7200	$0.630	$4,536.00
		Subtotal E&M:	$4,536.00
		Subtotal Mob:	**$17,514.00**
		Cost/Mile:	**$2.43**
		Total Task 3:	**$19,922.00**

Task 4. Remediation System O&M	Quant.	Rate	Total
Labor:			
PE/Geologist/Scientist	4	$136.00	$544.00
Tech III	80	$103.00	$8,240.00
		Total Task 4:	**$8,784.00**

Task 5. Equipment and Materials	Quant.	Rate	Total
H2O2 Drums Solution	18	$650.00	$11,700.00
H2O2 Test Kit	2	$50.00	$100.00
Msc Maintenance/Repair/Nutrient Supplies	1	$1,000.00	$1,000.00
Skid Steer	1	$280.00	$280.00
Equipment Trailer	1	$85.00	$85.00
Transfer Pump	3	$50.00	$150.00
Msc Shipping Equipment/Supplies	1	$200.00	$200.00
		Total Task 5:	**$13,515.00**

Task 6. Lodging and Per Diem Meals	Quant.	Rate	Total
Lodging	6	$100.00	$600.00
Meals	12	$30.50	$366.00
Meals	30	$8.50	$255.00
		Total Task 6:	**$1,221.00**

Task 7. Estimated Utility Costs	Quant.	Rate	Total
(electric and water for remediation systems operations)	1	$10,000.00	$10,000.00
		Total Task 7:	**$10,000.00**

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Task 8. Semi-Annual Monitoring	Quant.	Rate	Total
(MW-2, MW-3, MW-5, MW-7, MW-8, MW-9, MW-11)			
PTRCB Unit Cost Monitoring Rate	21	$42.25	$887.25
		Total Task 8:	**$887.25**

Task 9. Semi-Annual Groundwater Sampling	Quant.	Rate	Total
(sem-annual MW-4, MW-10, MW-15, MW-16; annual SDW-4)			
PTRCB Unit Cost Semi-annual Sampling	36	$186.00	$6,696.00
PTRCB Unit Cost Annual Sampling	3	$186.00	$558.00
		Total Task 9:	**$7,254.00**

Task 10. Laboratory Analyses	Quantity	Rate	Total
Groundwater - VPH	39	$125.00	$4,875.00
Groundwater - Nutrients	3	$200.00	$600.00
Sample Fee	39	$10.00	$390.00
		Total Task 10:	**$5,865.00**

Task 11. RCP Development	Quant.	Rate	Total
Labor:			
Sr. Project Scientist	1	$150.00	$150.00
Project Scientist	24	$136.00	$3,264.00
		Total Task 11:	**$3,414.00**

Task 12. Three Annual Corrective Action Reports (AR-07)	Quant.	Rate	Total
Labor:			
Sr. Project Scientist	3	$150.00	$450.00
PE/Geologist/Scientist	120	$136.00	$16,320.00
		Total Task 12:	**$16,770.00**

Task 13. Subcontractors	Quantity	Rate	Total
AT Klemons (electrical disconnect)	1	$500.00	$500.00
7% ODC	1	$0.07	$35.00
		Total Task 13:	**$535.00**

	Total Project:	**$97,790.25**

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

Contractor Information

Company Name: Olympus Technical Services, Inc.
Address: 765 Colleen St.
City, State, Zip: Helena, MT 59601
Cost Estimator: Janell Foley
Phone: 406-443-3087

Signature: Janell K Foley (Digitally signed by Janell K Foley, DN: cn=Janell K Foley, o, ou, email=jfoley@olytech.com, c=US, Date: 2020.04.28 12:52:36 -06'00')
Date: 04/28/2020

Project Information

Site Name: Keith's Country Store
Address: 1621 10th Avenue South
City: Great Falls
Facility ID#: 07-01418
Release #: 3212
WP ID#: 34039

Monitoring Well Details

Total Number of Wells at Site: 25
Number of Water Level Measurements Only [2]: 7
Number of Wells to be Monitored/Sampled [3]: 5
Well Casing Diameter (inches): 2
Average Depth to Groundwater (ft): 15
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: May 2020

- ☐ Quarterly # of events
- ☑ Semi-annual # of events: 6
- ☐ Annual # of events
- ☐ Other # of events (specify)

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			$0.00
Project Management	/hr		$0.00
Mobilization/Demobilization (1)	$2.43 /mile	1,200	$2,916.00
Field Work			
Water Level Measurements (2)	$42.25 /well	21	$887.25
Well Monitoring/Purging/Sampling (3)	$186.00 /well	39	$7,254.00
Other Service (please specify)			$0.00
Other Service (please specify)			$0.00
Lodging & Per Diem (Lodging – actual only)			
Lodging: # of people 1	$100.00 /person per day	6	$600.00
Food: # of people 1 ($30.50 max a day allowed)	$30.50 /person per day	6	$183.00
(Breakfast $7.50, Lunch $8.50, Dinner $14.50)			
Laboratory Analysis (4)			
Volatile Petroleum Hydrocarbons (VPH)	$125.00 /sample	39	$4,875.00
Extractable Petroleum Hydrocarbons (EPH)			
EPH "screen"	/sample		$0.00
EPH "fractions"	/sample		$0.00
BTEX/MTBE/Naphthalene only-method:	/sample		$0.00
Polyaromatic Hydrocarbons (PAHs)	/sample		$0.00
PTRCB sampling fee ($10.00 allowed) (5)	$10.00 /sample	39	$390.00
Other (please specify) Nutrients	$100.00 /sample	3	$300.00
Other (please specify)	/sample		$0.00
Report Preparation (6)			
Quarterly	/report		$0.00
Semi-annual	/report		$0.00
Annual	/report		$0.00
Other (Please specify)			$0.00
Monitoring & Sampling Total:			$17,405.25

Additional Conditions/Comments/Costs:

Groundwater monitoring will be conducted concurrent with remediation system maintenance and operations monitoring, when possible. All tasks associated with WPID 34039 are listed in the attached cost estimate, which include costs for PM, mobilization, remediation system O&M, E&M, Subcontractors, utility costs, RCP, and AC-07 WP, AR-07 reports.

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