Water & Environmental
TECHNOLOGIES

June 26, 2020

Mr. Don Edmisten
Town Pump
PO Box 6000
Butte, Montana 59701

RE: Remedial Investigation Work Plan and Budget for the Petroleum Release at Northwest Petroleum Facility, 28 Dewey Blvd., Butte, Silver Bow County, Montana; Facility ID 56-14033, (TID 30689), Release 5388, Work Plan 34025

Dear Mr. Edmisten,

Water & Environmental Technologies (WET) is pleased to provide this Remedial Investigation Work Plan (WP) and cost estimate for environmental consulting services at the abovementioned facility, Northwest Petroleum Facility (Facility). This WP was prepared in response to a Montana Department of Environmental Quality (DEQ) Work Plan Request letter dated January 23, 2020 outlining the remedial investigation required to determine the extent and magnitude of petroleum impacts to soil and groundwater at and below the Facility, identify potential receptors of the contamination, and evaluate remediation strategies to bring the release to closure.

Background

The Facility is a transfer facility adjacent to a railroad spur where diesel #2 (diesel) is offloaded from rail tank cars to eight 25,000-gallon underground storage tanks (USTs). The diesel is then transferred to tanker trucks that distribute to fuel stations throughout Montana as needed (**Figure 1**). On December 24, 2019, camera surveillance showed a fuel release to the surface at the unmanned location and was shut down remotely upon discovery. An apparent mechanical failure caused a transfer pump to turn on which resulted in approximately 755 gallons of diesel to be released from two locations, a transfer pump and vertical tank vents. Town Pump and WET personnel were onsite immediately to collect and containerize approximately 200 gallons of spilled diesel using absorbent pads and booms and by containerizing snow saturated with diesel. The remainder of the release, approximately 550 gallons, entered the pea gravel (¾-inch minus) envelope that surrounds the eight USTs.

A hydrovac truck was mobilized to the Facility on December 26, 2019 to attempt to recover the product that had entered the pea gravel. At a depth of approximately 17.5 feet, the hydrovac truck encountered a geotextile liner at the base of the pea gravel UST basin; however, it was apparently too porous to contain an appreciable quantity of spilled product. Hydrovac operations resumed until groundwater was encountered at a depth of approximately 24.4 feet with minimal evidence of free product being present. Due to the sloughing nature of the pea gravel, a telescoping culvert consisting of sections of 18-inch, followed by 12-inch culvert was advanced concurrently with hydrovac tooling to prevent the borehole from collapsing. Because the telescoping culvert is not interfering with the Facility infrastructure and are perforated the bottom six inches, it was left in place and may be used as a sump for site remediation (**Figure 2**).

The excavated pea gravel taken from the sump location was stored on a tarp and a sample was collected to be

analyzed for Extractable Petroleum Hydrocarbons (EPH) Screen for disposal characterization. The EPH Screen result of 19 mg/kg was provided to the Butte-Silver Bow Landfill and the waste was accepted for disposal.

A groundwater sample was collected from the sump and was analyzed for Volatile Petroleum Hydrocarbons (VPH) and Extractable Petroleum Hydrocarbons (EPH). Sample results are given in **Table 1** (below) with the analytical results confirming the existence of petroleum impacts to groundwater at the Facility.

Table 1. Volatile and Extractable Petroleum Hydrocarbons in Groundwater Sample

		Volatile Petroleum Hydrocarbons (VPH)								Extractable Petroleum Hydrocarbons (EPH)			
Chemical		**Benzene**	**Toluene**	**Ethyl-benzene**	**Xylenes, Total**	**Naph-thalene**	**C9-C10 Aromatics**	**C5-C8 Aliphatics**	**C9-C12 Aliphatics**	**EPH Screen**	**C9-C18 Aliphatics**	**C19-C36 Aliphatics**	**C11-C22 Aromatics**
Groundwater Standard or RBSL (µg/L)		**5**	**1,000**	**700**	**10,000**	**100**	**1,100**	**650**	**1,400**	**1000***	**1,400**	**1,000**	**1,100**
Sample ID	**TP-Sump**	ND	**7**	**112**	**293**	**31**	**1,150**	**39**	**782**	**5,460**	**170**	ND	**338**

Notes:
Sample collection date/time: 12/31/19 15:00
Groundwater Standard or RBSL indicates Risked Based Screening Level, DEQ, May 2018
Bold indicates the analyte was detected
indicates the result exceeds an RBSL/EPH Screen
* Not an RBSL. EPH Screen values over 1,000 µg/L were further fractionated.

Purpose and Objectives of Investigation

The purpose of this investigation is to delineate the magnitude and extent of petroleum contamination, identify potential receptors of the contamination and evaluate remediation alternatives, if significant contamination is found.

Scope of Work

The scope of work specified in the DEQ Work Plan Request includes:

- Submit written agreed-upon work plan (WP) modifications as required to complete the WP objectives based on ongoing discussions with DEQ's project manager.
- Submit soil and groundwater samples to an analytical laboratory for the analysis of petroleum constituents required by the Montana Tier 1 Risk-Based Corrective Action (RBCA) Guidance for Petroleum Releases.
- Validate all laboratory analytical data using DEQ's Data Validation Summary Forms.
- Prepare and submit a Remedial Investigation Report detailing the results of the investigation. The RI report must have all the applicable format sections outlined in the RI Guidance document.
- Discuss a Release Closure Plan (RCP) and analytical results with DEQ's project manager.
- Submit WP and reports electronically following the Petroleum Tank Cleanup Section submittal requirements.

WET's proposed approach to complete the work in accordance with DEQ's letter request is detailed in the following paragraphs, with the exception of Work Plan Preparation.

Project Management

WET personnel will provide informal status reports to Town Pump and DEQ on an as-needed basis. Other duties associated with this task include scheduling field work and project reporting; environmental access permitting with the BNSF Railway; coordinating field activities with the Facility operators and

property owners; communicating with subcontractors and vendors; and monitoring the project budget and deliverables.

BNSF Coordination & Access Permitting

Up to four direct-push borings (see UVOST-LIF section below) may be advanced within the BNSF right-of-way to help define the extent of subsurface petroleum impacts, and BNSF requires an Environmental Access Permit Application and associated fees be submitted to access this area. Estimated labor fees for permit preparation and associated permit fees are listed in the project budget.

Private Utility Locates

In addition to conducting standard Montana 811 utility locates, WET will utilize Pathfinder Daylighting to locate and mark additional on-site utilities. The Pathfinder Daylighting bid is included as **Attachment B**.

Hydrovacing will then be utilized to verify the location of the private utility lines servicing the Facility, including Facility fuel infrastructure, utility lines servicing Propane Services Incorporated (PSI), utility lines servicing Builders First Source (East of Rowe Road), and MTS Freight (North of Dewey Boulevard) where borings are proposed. Hunter Brothers Construction will perform this work. Bids from Hunter Brothers and MP Environmental Services, Inc. are included as **Attachment C**. WET requested a bid from a third company, Badger Daylighting; however, this company did not respond to the bid request. An email documenting the request for bid is also included in **Attachment C**.

The locations of all utilities that are marked by 811/Pathfinder and/or daylighted by Hunter Brothers will be surveyed for horizontal location using Global Navigation Satellite System (GNSS) survey equipment by WET personnel. The survey data will be utilized to finalize the locations of LIF boreholes, confirmation borings, well borings, and will be displayed on site maps in the Remedial Investigation Report prepared for the Facility.

Drilling [Ultraviolet Optical Screening Tool (UVOST) – Laser Induced Fluorescence (LIF) Borings]

In order to delineate the extent and magnitude of the plume, up to 40 UVOST-LIF borings will be advanced to a depth of 30 feet (approximately 10 feet below the seasonally high static water elevation) on a 30-foot grid spacing based on the source and groundwater flow direction outward until the plume has been defined. LIF tooling, direct push drill rig, and operating technicians will be provided by West Central Environmental Consultants (WCEC). Once complete, up to 10 Membrane Interface Probe (MIP) borings will also be advanced to a depth of 30 feet in a single transect along the downgradient margins of the impacted area, as defined by the UVOST-LIF response.

The LIF services bids from WCEC Environmental Consultants and Cascade Technical Services are included as **Attachment D**. WET requested a third bid from NorthWind Site Services, LLC but did not receive a response to the bid request. An email documenting WET's solicitation of this bid is also provided in **Attachment D.**

Drilling (Confirmation Soil Borings)

WCEC will complete up to seven confirmation borings and associated soil samples following the UVOST-LIF and MIP investigations. Boring locations will be selected in the field based on LIF results, and samples will be collected from zones exhibiting various LIF responses to correlate LIF responses to petroleum constituent concentrations. Samples will be containerized in laboratory-supplied jars and analyzed for VPH, EPH, and lead scavengers 1,2-DCA and EDB.

Drilling (Groundwater Monitoring Well Installation)

There are no known monitoring wells at the Facility; however, the telescoping culvert that was installed during the hydrovacing in late December was surveyed for top of casing elevation, and groundwater levels have been measured. In addition to this location, up to five more monitoring wells are proposed at and near the Facility. The proposed monitoring wells will be located upgradient, downgradient, and cross gradient of the release area and will be used to confirm the groundwater flow direction and hydraulic gradient, and define the extent of potential free phase and/or dissolved phase impacts to groundwater (**Figure 2**).

Monitoring wells will be installed by O'Keefe Drilling using a truck-mounted hollow-stem auger drill rig and will be constructed with two-inch diameter, schedule 40 polyvinyl chloride (pvc) well casing and 0.010-inch factory slotted well screen. The total depth and screened interval of each well will be selected in the field and based on depth to groundwater, depth of apparent soil impacts, and lithology encountered during drilling. The bid from O'Keefe Drilling is included as **Attachment E**, along with documentation of two additional requests for bids. AK Drilling did not have the required drill rig (auger) and Parsons Drilling did not respond to the bid request.

One soil sample will be collected from the zone exhibiting the greatest apparent impact at each monitoring well boring location using soil field screening techniques that include PID, visual, olfactory, and sheen test. If no zones exhibit apparent petroleum impacts, the soil sample will be collected from the vadose zone/groundwater interface. Samples will be collected in laboratory-supplied jars and analyzed for VPH, EPH, and lead scavengers 1,2-DCA and EDB.

Field Work

The Field Work task includes WET labor and equipment associated with sampling and oversight of all phases of field activities with the exception of Groundwater Monitoring. These include Private Utility Locates, LIF Drilling, Confirmation Soil Borings, Monitoring Well Drilling, and Receptor Survey. Equipment under this task includes soil sample supplies, field screening instruments, and other field meters.

Groundwater Monitoring

Groundwater monitoring will be conducted using low-flow purge and sample procedures semiannually for one year to coincide with seasonal low and high groundwater conditions. Groundwater field parameters (temperature, pH, conductivity, dissolved oxygen, and oxidation reduction potential) will be measured during purging. Once parameters stabilize, a groundwater sample will be collected in laboratory-supplied bottles and analyzed for VPH, EPH, and lead scavengers 1,2-DCA and EDB.

Surveying

Monitoring well locations elevations will be surveyed for horizontal and vertical control using GNSS survey equipment measured to 0.01-foot accuracy by a Professional Land Surveyor.

Receptor Survey

WET will complete an updated receptor survey that includes identification of potential receptors and migration pathways within 1,500 feet of the property (north to Hobson Avenue) including structures,

water supply wells, and underground utility corridors. Results of the receptor survey will be discussed in the report section below.

Project Reporting

Upon completion of investigation activities and sampling, and within 60-days of receipt of analytical results, WET will prepare and submit a Standardized Remedial Investigation Report. This report will include a discussion of drilling activities, validated analytical results from soil sampling and groundwater monitoring, and recommendations for resolving the release (Release Closure Plan). The report will include figures showing the project location, UVOST-LIF limits, and groundwater monitoring well locations. The report will also contain laboratory analytical reports and summary tables, photographs documenting field activities, monitoring well logs, and other applicable documentation.

Cost and Schedule

Work effort levels have been estimated using best professional judgement and typical scenarios related to work of this type. The estimated cost for WET to complete this project is $130,109.90. A detailed cost estimate is provided as **Attachment A**.

The cost estimate includes the caveat that invoiced lab costs will reflect the actual number of samples required to delineate impacts.

If you have any questions or concerns regarding this workplan, please contact me at bhenne@waterenvtech.com by phone at (406) 565-6567.

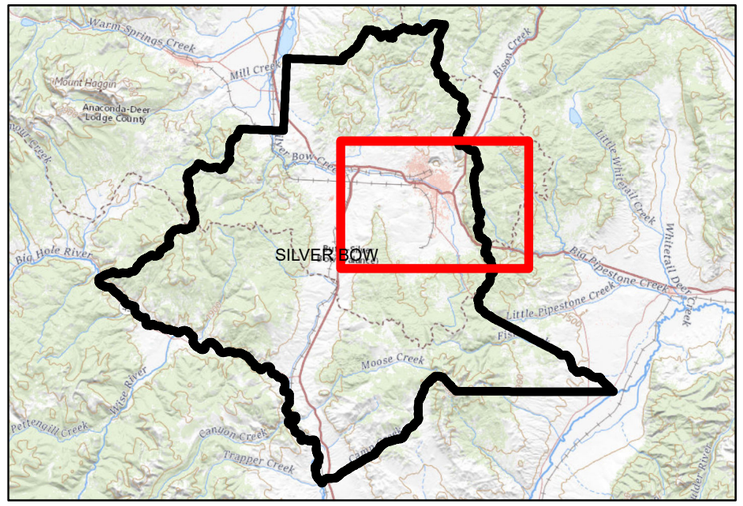
Sincerely,

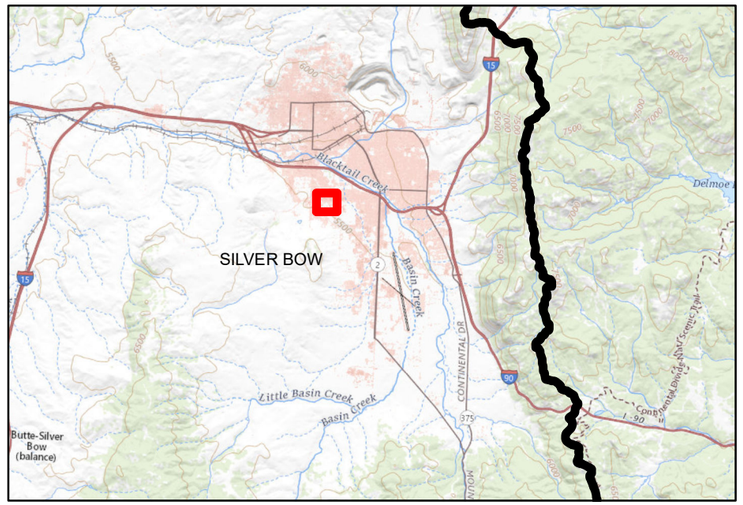
Bill Henne, PE, CFM
Senior Engineer

Figures: Figure 1. Site Location
Figure 2. Proposed Boring Location Map

Attachments: Attachment A. Project Cost Estimate
Attachment B. Pathfinder Daylighting Bid
Attachment C. Hydrovac Bids and email documenting third bid request
Attachment D. UVOST-LIF Bids and email documenting third bid request
Attachment E. Confirmation Soil Borings and Monitoring Well Installation Bids and emails documenting other bid requests

Figures





N
W E
S

Feet
0 100 200 400

Legend

Tank Basin Boundary

Water & Environmental TECHNOLOGIES

Site Location - Aerial

28 Dewey Blvd. T3N, R8W, S25

Job#: TownPumpM16

Date: 6/19/2020

FIGURE 1

Path: M:\TownPumpM16\Figure1-SiteLocationAerial.mxd, Author: ceggensperger

N 7.5° W

N 42.5° E

N 17.5° E

BNSF Area:
7600 ft²

Approximate
Location
of Release

Legend

- Approximate Location of Release
- Groundwater Flow Direction
- 25° Deviation from Groundwater Flow Direction
- Area within BNSF Right-of-Way

N
W E
S

Feet

0 80 160

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Proposed Boring Location Map

Silver Bow County, MT

Job #: TOWNPUMPM16

Date: 6/12/2020

FIGURE 2

Path: M:\TownPumpM16\PlumeMap.mxd, Author: ceggensperger

Attachment A. Project Cost Estimate

Water & Environmental TECHNOLOGIES

Project Cost Estimate
26-Jun-20

Northwest Petroleum Facility
28 Dewey Boulevard
Facility ID 56-14033, Release 5388,
Work Plan 34025

TASK DESCRIPTION	PRICE	UNITS	QTY	PRICE
TASK 1. Project Management				
Senior Engineer	$135.00	HOUR	80	$10,800.00
		TASK 1 SUBTOTAL:		**$10,800.00**
TASK 2. Work Plan Preparation (RI WP)				
Senior Engineer	$135.00	HOUR	20	$2,700.00
Staff Engineer/Hydrogeologist	$108.00	HOUR	8	$864.00
GIS Specialist	$97.00	HOUR	4	$388.00
		TASK 2 SUBTOTAL:		**$3,952.00**
TASK 3. BNSF Coordination & Access Permitting				
Senior Engineer	$135.00	HOUR	4	$540.00
Staff Engineer/Hydrogeologist	$108.00	HOUR	16	$1,728.00
BNSF Fees (JLL & TRC)	$7,400.00	LS	1	$7,400.00
		TASK 3 SUBTOTAL:		**$9,668.00**
TASK 4. Mob/Demob (Estimated 35 rount-trips)				
Senior Engineer	$135.00	HOUR	7	$945.00
Staff Engineer/Hydrogeologist	$108.00	HOUR	10.5	$1,134.00
Technician II	$87.00	HOUR	0.5	$43.50
Mileage	$0.575	MILE	238	$136.85
		TASK 4 SUBTOTAL:		**$2,259.35**
TASK 5. Private Utility Locates				
Staff Engineer/Hydrogeologist (survey work)	$108.00	HOUR	7	$756.00
GNSS Survey Equipment	$125.00	HOUR	8	$1,000.00
Standard Survey Equipment	$10.50	HOUR	8	$84.00
Pathfinder Daylighting	$2,500.00	LS	1	$2,500.00
Subcontractor Markup	$175.00	LS	1	$175.00
Hunter Brothers Construction	$9,500.00	LS	1	$9,500.00
Subcontractor Markup	$665.00	LS	1	$665.00
		TASK 5 SUBTOTAL:		**$14,680.00**
TASK 6. Drilling (UVOST-LIF & MIP Borings)				
WCEC Environmental Consultants	$40,805.00	LS	1	$40,805.00
Subcontractor Markup	$2,856.35	LS	1	$2,856.35
		TASK 6 SUBTOTAL:		**$43,661.35**
TASK 7. Drilling (Confirmation Soil Borings & Monitoring Well Installation)				
O'Keefe Drilling	$10,160.00	LS	1	$10,160.00
Subcontractor Markup	$711.20	LS	1	$711.20
		TASK 7 SUBTOTAL:		**$10,871.20**

TASK 8. Field Work (Oversight, Receptor Survey, and Sample Collection)				
Senior Engineer	$135.00	HOUR	7	$945.00
Staff Engineer	$108.00	HOUR	120	$12,960.00
PID	$15.00	HOUR	72	$1,080.00
Oil/water interface Probe	$10.00	HOUR	72	$720.00
		TASK 8 SUBTOTAL:		**$15,705.00**
TASK 9. Surveying				
Professional Land Surveyor	$95.00	HOUR	2	$190.00
Staff Engineer/Hydrogeologist (survey work)	$108.00	HOUR	2	$216.00
Technician II	$87.00	HOUR	2	$174.00
GNSS Survey Equipment	$125.00	HOUR	2	$250.00
Standard Survey Equipment	$10.50	HOUR	2	$21.00
		TASK 9 SUBTOTAL:		**$851.00**
TASK 10. Groundwater Monitoring (5 Wells, 2 Events)				
Staff Engineer	$108.00	HOUR	14	$1,512.00
YSI Combo Meter w/ Flow Through Cell	$10.00	HOUR	10	$100.00
Purge pump	$8.00	HOUR	10	$80.00
Oil/water interface Probe	$10.00	HOUR	10	$100.00
Tubing - Polyethylene	$0.75	FOOT	300	$225.00
		TASK 10 SUBTOTAL:		**$2,017.00**
Task 11. Laboratory Analysis *				
VPH (Soil)	$120.00	SAMPLE	12	$1,440.00
EPH Screen (Soil)	$75.00	SAMPLE	12	$900.00
EPH Fractions w/o PAHs (Soil)	$150.00	SAMPLE	12	$1,800.00
1,2-DCA (Soil)	$75.00	SAMPLE	12	$900.00
EDB (Soil)	$75.00	SAMPLE	12	$900.00
VPH (Water)	$120.00	SAMPLE	10	$1,200.00
EPH Screen (Water)	$75.00	SAMPLE	10	$750.00
EPH Fractions w/o PAHs (Water)	$150.00	SAMPLE	10	$1,500.00
1,2-DCA (Water)	$75.00	SAMPLE	10	$750.00
EDB (Water)	$75.00	SAMPLE	10	$750.00
PTRCB Sampling Fee	$10.00	SAMPLE	22	$220.00
		TASK 11 SUBTOTAL:		**$11,110.00**
Task 12. Project Reporting (Report RIR-01, Data Validation, RCP)				
Senior Engineer	$135.00	HOUR	14	$1,890.00
Staff Engineer	$108.00	HOUR	20	$2,160.00
GIS Specialist	$97.00	HOUR	5	$485.00
		TASK 12 SUBTOTAL:		**$4,535.00**
TOTAL COST :				**$130,109.90**

Notes:

* Invoiced lab costs will reflect actual number of samples necessary to delineate soil and groundwater impacts at the Facility.

Attachment B. Pathfinder Daylighting Bid

Hello Bill,

Let's just go with the $2500.00 we should be able to make it work.

Thanks,

Cory Lean
PFL
406-490-7334

On Monday, June 8, 2020, 01:02:29 PM MDT, Bill Henne <bhenne@waterenvtech.com> wrote:

Hey Cory,

The limit is $2,500 before it must go out to bid.

Good meeting up with you and when/if I ever hear back from DEQ, I'll let you know what she has to say about the mobile homes.

Thanks Cory!

-bill

Water & Environmental TECHNOLOGIES

Bill Henne, PE, CFM

Senior Hydrogeological Engineer

C: (406) 565-6567

O: (406) 782-5220

waterenvtech.com

Attachment C. Hydrovac Bids and email documenting third bid request

6846

Hunter Brothers Construction

P.O. BOX 3119
BUTTE, MT 59702-3119
PHONE 494-7776
FAX 494-3558

Proposal

PROPOSAL SUBMITTED TO:	DESCRIPTION OF JOB
WET Enviormental	Job Town Pump Dewey Bulk Storage
Bill Henny	Address
	City State
	Phone Date

We Hereby Submit specifications and estimates for Hydro vac Approximently 20 holes - approximently (5'-7' deep)

use Cuttings - mix Cutting Soil or gravel for BackFill at Wet direction.

Skid Steer for Backfill.

We Hereby Propose to furnish labor and materials complete in accordance with the above specifications, for the sum of $ 9,500 00

With payment to be made as follows: 30 days appon Completion of work

All material is guaranteed to be as specified. All work is to be completed in a workmanlike manner according to standard practices. Any alteration or deviation from above specifications involving extra costs will be executed only pon written orders, and will become an extra charge over and above the estimate. All agreements contingent upon strikes, accidents or delays beyond our control. Owner to carry fire, tornado and other necessary insurance. Our workers are fully covered by workmen's compensation insurance.

Authorized Signature Rob Hunter

Note: This proposal may be withdrawn by us if not accepted within 30 days.

Acceptance of Proposal — The above prices, specifications and conditions are satisfactory and are hereby accepted. You are authorized to do the work as specified. Payment will be made as outlined above.

Signature

Date Accepted 200609

Signature

Project Estimate

MP ENVIRONMENTAL SERVICES, INC.

Customer: WET	**DATE: 6/2/2020**
Project:Butte Cleanup	**Quoted By: Tim Malson**

Personnel

Personnel	QTY	UOM	QTY	Unit Price	Total
Operator	1				Included in Hydrovac
Tech	1				Included in Hydrovac
					$ -
					$ -
					$ -
				Personnel Daily Total	

Equipment

Equipment	QTY	UOM	QTY	Unit Price	Total
Hydrovac	1	hr	10	$225.00	$ 2,250.00
Support pickup	1	day	1	$150.00	$ 150.00
Skid Steer	1	day	1	$150.00	$ 150.00
					$ -
					$ -
					$ -
					$ -
				Equipment Daily Total	**$ 2,550.00**
				Personnel & Equipment Daily Total	**$ 2,550.00**
				Estimated Project Days	**5**
				Personnel and Equipment Estimated Total	**$ 12,750.00**

Mobilization / Demobilization

Mobilization / Demobilization	
Mob / Demob Total	**$1,750.00**

Other

ITEM	QTY	UOM	QTY	Unit Price	Total
Per Diem	2	day	5	$ 150.00	$ 1,500.00
PPE	2	day	5	$ 75.00	$ 750.00
Flex Hose	1	total	1	$ 300.00	$ 300.00
Concrete Saw	1	total	1	$ 500.00	$ 500.00
					$ -
				Other Total	**$ 3,050.00**

Estimated Project Total	**$ 17,550.00**

Project Estimate

Services and Equipment Requested:	**HYDROVAC Estimated 20 holes in Butte Mt.**

Project Notes:

Estimate Notes:

* Estimate is valid for sixty (60) days from date above
* Work performed Monday-Friday. Additional costs for weekends/holidays.
* Four hour minimum applicable to all service calls
* All work completed out of original work scope will be billed to customer at time and material rate. Change order rates will be provided upon customer request.
* Estimates are based on our best information and actual time may vary.
* Project quotations without a job walk may result in equipment changes to improve performance. These changes will be billed at a time and material rate. Approved equipment change rates will be provided upon customer request.
* Administrative pre-project planning that exceeds 2 hours will be billed at $50.00 per hour.
* Equipment decontamination will be charges on a time and material basis.
* This is a budgetary estimate only.

By Signing below, you are giving MP Environmental Services, Inc. authorization to proceed with the listed project

Print:		**Title:**	
Signature:		**Date**	

MP Environmental would like to thank you for the opportunity to assist your company with our services. We look forward to providing you the highest quality of service and safety.

MP Environmental Services, Inc. 3748 Green Acres Dr. Billings, MT 59101
Office (406) 652-5497 Fax (406) 656-2509

Bill Henne

From: Bill Henne
Sent: Saturday, May 30, 2020 9:39 AM
To: Mark Gunderson
Subject: Hydrovacing bid request
Attachments: TownPumpM16_Hydrovac_BidRequest_200605.pdf; 28_Dewey_Blvd_FacilityLayout_R04.pdf

Good morning,

WET encourages Badger Daylighting to bid on the hydrovacing to take place at the Northwest Petroleum Facility, Butte, Montana. If selected, once WET receives approval and funds, field work will be scheduled for late summer 2020.

If you have any questions and/or need anything further, please do not hesitate to let me know!

-bill

Water & Environmental TECHNOLOGIES

Bill Henne, PE, CFM
Senior Hydrogeological Engineer
C: (406) 565-6567
O: (406) 782-5220
waterenvtech.com

Attachment D. UVOST-LIF Bids and email documenting third bid request

WCEC
ENVIRONMENTAL CONSULTANTS

Missoula, Montana Office
1030 South Ave. West | Missoula, MT | 59801
406.549.8487 | www.wcec.com | Fax 406.549.8490

Estimated Cost Summary
UVOST & MIP Investigation & Data Analysis
Northwest Petroleum Facility, 28 Dewey Boulevard, Butte, MT

6.5.20

TASK	Unit Cost	Units	Total Cost
Project Coordination & Correspondence			
Senior Project Manager	$150.00	6	$900.00
	Sub Total		**$900.00**
UVOST & MIP Subsurface Investigation & Soil Confirmation Borings			
GeoProbe w/ Operator (per day)	$1,750.00	5.5	$9,625.00
UVOST-LIF & MIP Unit w/ Operator (per day)	$2,750.00	5	$13,750.00
Mobilization - Truck, Drill Rig, Trailer	$3.00	240	$720.00
Mobilization - LIF Unit w/Operator	$3.00	240	$720.00
Abandonment/Restoration (per foot)	$0.25	800	$200.00
GPS - Trimble RTK Survey	$231.00	1	$231.00
Per Diem	$30.50	12	$366.00
Lodging (will be charged at actual cost)	$105.00	10	$1,050.00
	Sub Total		**$26,662.00**
On-Site Investigation & Data Interpretation - Technical Analyst			
Mobilization	$2.75	240	$660.00
Scientist / Data Analyst	$115.00	60	$6,900.00
Per Diem	$30.50	6	$183.00
Lodging (will be charged at actual cost)	$105.00	5	$525.00
	Sub Total		**$8,268.00**
Project Reporting			
UVOST Field Data Report Package	$500.00	1	$500.00
Senior Scientist - Data Interpretation, Report Review	$150.00	3	$450.00
Staff Scientist / Data Modeler - Subsurface Mapping / 2D & 3D Modeling	$115.00	35	$4,025.00
Advanced Waveform Analysis (if necessary for plume separation)	$2,000.00	0	$0.00
	Sub Total		**$4,975.00**
	Total Cost		**$40,805.00**

1) Estimated costs are based on the requested scope of services / investigation

2) Completion of additional scope will be charged at the above rates on a time and materials basis

3) Advanced Waveform Analysis may be recommended based on site specific observations

Account Name	Water & Environmental Technologies	Bid Date	6/2/2020
Address	,	Quote Number	00054697
		Quote Revision Date	6/2/2020 7:54 AM
Contact Name	Bill Henne		
Email	bhenne@waterenvtech.com	Opportunity Name	Water & Environmental Technologies - Butte MO - OIP - MIP/MiHPT - 00144752
Phone	(406) 782-5220		
Bill To Account Number	1WATENV701	Work Site	Butte, MT 59701

Cascade Rep Contact Information

Prepared By	Brad Carlson	Email	wcarlson@cascade-env.com

Scope of Work

This proposal includes the following scope of work:

Mobilize/demobilize one track-mounted Geoprobe 78-series (or similar DPT rig) with an operator and a Membrane Interface Probe – Hydraulic Profiling (MIHPT) system with a technician to the project site in Butte, Montana.

Advance MIHPT or investigation borings at up to 10 locations, attempting target depths of up to 30 feet bgs. In addition to the MIHPT Cascade will advance 40 OIP borings attempting target depths of 30 feet bgs. Cascade will also collect continuous soil samples from 8 locations.

Cascade estimates that the MIHPT, OIP and sampling work will require 12, 10-hr days to complete. Contingencies for field conditions such as complicated or difficult geologic conditions, inclement weather, and complications due to site access and mobility are not included in this productivity estimate and may increase the total number of days required to complete the scope of work.

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Data deliverables for these services include plots in PDF format of MIHPT data at each of the locations, including separate charts of electrical conductivity; Electron Capture Detector (ECD); Halogenated Specific Detector (XSD); Photoionization Detector (PID); Flame Ionization Detector (FID); HPT back pressure; HPT flow rate; and the estimated hydraulic conductivity (K). In addition to the PDF investigation logs, the raw data files will be transferred to the client electronically and can be viewed and edited using Geoprobe's DI Viewer software.

A written summary of field activities, data collected, quality assurance / quality control (QA/QC) results, and any deviations from the Standard Operating Procedure will be provided in a final report following the completion of the project.

Sampling tools will be decontaminated with Alconox and water between investigation locations and, if utilized, tubing and acetate liners will be discarded after use. Please advise prior to project mobilization whether the construction/removal of a decontamination pad and the collection of rinsate is required or if DOT-rated steel drums will be used to collect wastes. These services can be provided at additional cost.

All investigation-derived wastes will be sampled, characterized, classified, or otherwise managed by others.

Locations will be abandoned during the program by [placing bentonite chips in the boreholes.

All permitting, including notifications to public one-call clearinghouses, will be completed by others.

Cascade's Standard Data Visualization Package is described in the attachments to this proposal. For a flat fee, Cascade will build a three-dimensional model of the data collected during this mobilization and assist your project team in understanding the results and preparing visual aids for your reporting and presentation needs. This service is an excellent way to leverage your HRSC data in ways that allow you to make more confident site management decisions and construct more persuasive and compelling communications with other stakeholders. Please contact our Site Characterization Director, Jason Flattery for more information (jflattery@cascade-env.com; 617-447-0757).

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Product Description	Quantity	Unit	Sales Price	Optional	Subtotal
Mobilization/Demobilization	1.00	Each	$9,600.00	☐	$9,600.00
2 Person Crew Per Diem (includes weekend)	14.00	Day	$520.00	☐	$7,280.00
MiHpt/OIP/DPT Rig w/Operators, 8 Hour Day	10.00	Day	$4,200.00	☐	$42,000.00
MiHpt Project Setup	1.00	Lump Sum	$750.00	☐	$750.00
MiHpt Report	1.00	Lump Sum	$500.00	☐	$500.00
MiHpt Logging	1,500.00	Feet	$2.50	☐	$3,750.00
Borehole Abandonment	1,740.00	Feet	$1.25	☐	$2,175.00
Standard Data Visualization Package	1.00	Lump Sum	$3,400.00	☐	$3,400.00
7822, 2 Man Crew for Soil Sampling	2.00	Day	$1,950.00	☐	$3,900.00
Macrocore Soil Sample	48.00	Each	$12.00	☐	$576.00

Pre-Tax Total	$73,931.00
Tax Percentage	0.0000%
Taxes	$0.00
Quote Total	$73,931.00

This quote is based on information provided by you and is valid for 45 days from the bid date. Your firm is responsible for 1) Obtaining any site specific permits, 2) Locating and clearly marking underground installations or utilities, 3) Furnishing dig Alert numbers at least three working days prior to scheduled start date and proof of private locating services, 4) Obtaining access to site with no overhead wires within 20' of the holes. On-site soil disposal, unless Cascade expressly assumes responsibility in writing.Cascade shall not be responsible for damages to underground improvements not clearly and accurately marked.

If bedrock, cobbles, flowing sands or other adverse or unsafe drilling conditions are encountered, drilling may continue on a time and materials basis or be terminated at the discretion of Cascade. Additional costs may apply if scope is significantly changed. Prices assume standard labor rates and no work hour restrictions. Proposal is subject to final review of terms and conditions.

_____
Signature of Client/ Owner Authorized Representative

_____
Signature of Authorized Cascade Representative

_____
Name & Title of Authorized Representative and Company

_____
Name & Title of Authorized Cascade Representative

_____
Date

_____
Date

Cascade provides management of investigation derived waste. Call us today for information on a full range of additional options to meet your drilling needs.

CASCADE TECHNICAL SERVICES, LLC ("Cascade")
TERMS AND CONDITIONS

Quote No: _____

ACCEPTANCE & CONSIDERATION& TERM: By authorizing Cascade Technical Services, LLC (Cascade) to commence work, Client agrees to these terms and conditions and Cascade agrees to perform work and/or extend credit in exchange.

PAYMENT & INTEREST: Invoices will be submitted by Cascade once a month with payment due from Client within 30 days of the invoice date. Interest at the rate of 1½% per month (18% per annum) will be charged on the principal amount owing after the due date.

ATTORNEYS' FEES & COSTS: The prevailing party shall be entitled to recover all of its costs, fees and expenses incurred in any dispute regarding collecting the balance due, enforcing the terms and conditions, or pertaining to Cascade's work. Such fees and expenses shall include attorneys' fees, recording fees, and title report fees whether or not legal proceedings are instituted, and if instituted, shall include all other costs, fees expenses and, including without limitation, court costs and expert witness fees incurred in the trial/arbitration, appellate proceedings, and post-judgment.

DISCLAIMER OF WARRANTY: Cascade will exercise reasonable skill and judgment in performing its work. All express or implied guarantees, representations and warranties, including, without limitation, any implied warranty of merchantability, fitness for a particular purpose, whether written or oral, are hereby excluded and are expressly disclaimed by Cascade. Cascade does not warrant any specific results of any kind. To the extent an implied guarantee, representation, or warranty, cannot be excluded, CASCADE'S LIABILITY, IF ANY, IS LIMITED TO THE AMOUNT PAID BY CLIENT TO CASCADE, AND SHALL IN NO EVENT EXCEED THAT AMOUNT.

LIMITATION OF LIABILITY: Cascade shall not be liable to Client or any other party for damages of any type, including, but not limited to, indirect, consequential, incidental, special, or punitive damages, whether arising out of contract, negligence, tort, warranty, strict liability or any other legal theory. CASCADE'S LIABILITY, IF ANY, IS LIMITED TO THE AMOUNT PAID BY CLIENT TO CASCADE,AND SHALL IN NO EVENT EXCEED THAT AMOUNT.

NOTICE OF CLAIM: Any and all claims related to or arising from Cascade's work shall be made in writing to Cascade within one (1) year after Cascade's completion of its work. Any subsequent claims are waived.

DELAYS/CONDITIONS BEYOND CASCADE'S CONTROL: Cascade shall not be liable for delays in performance beyond Cascade's control, including, but not limited to, acts of third parties, inability to obtain permits, fire, earthquake, flood, windstorm or other natural disasters, labor stoppages, lockouts, strikes or other differences with employees, war, riot, embargoes, or stoppages created by any government agency or authority. Cascade's liability, if any, is limited as provided in the limitation of liability provision.

JOB SITE SAFETY: Cascade is not responsible for providing safety monitoring for the site on behalf of Client or any other trade on site. If Cascade observes that safety monitoring is not being performed in strict compliance with the site-specific health and safety plan, applicable federal, state or local laws, and/or as contractually required, Cascade may cease operations and go on standby until safety monitoring is resumed. Cascade shall be entitled to an equitable adjustment in its contract price, including standby time, and for time to perform its work.

INFORMATION: Client has superior knowledge of the job site, site history, access routes to the job site, known or suspected contaminants, surface and subsurface conditions, etc. The Client is obligated to advise Cascade of all or any conditions that may affect Cascade's work. Client agrees to provide Cascade with such specifications, plans, site history information, reports, studies or other information on surface and subsurface conditions as will be reasonably required by Cascade for safe, proper and timely performance of its work. Client shall locate all underground utilities and structures. Client shall obtain all necessary permits and rights-of-way and indemnify, defend, and hold Cascade harmless for its failure to do so and for claims of trespass or damage to property, including underground utilities or structures, which arise out of the performance of Cascade's work.

DISPOSAL: Cascade is not, and has no authority to act as a generator, operator, treater, storer, transporter or disposer of hazardous waste, substances, pollutants or contaminants found or identified at the site. Cascade shall have no responsibility for the transportation, storage, treatment or disposition of contaminated or potentially contaminated waste materials of any kind which are directly or indirectly generated from Cascade's performance of work, other than hazardous wastes, substances, pollutants or contaminants brought to the work site by Cascade. Client or its agents shall be responsible for the disposal of any such waste materials.

CHANGED CONDITIONS: The discovery of any hazardous waste, substance, pollutant, contaminant, underground obstruction, condition or utilities on or under the job site which were not brought to the attention of Cascade prior to Cascade commencing work, and which create health and safety risks, or requires Cascade to perform work outside the original scope or beyond its capabilities, will constitute a materially different site condition entitling Cascade to immediately terminate its work (and to receive payment for all work performed up to and including the date of termination). If Cascade elects to continue its work, it is entitled to receive an equitable adjustment in its contract price, including standby time, and for time to perform its work.

REMEDIATION TERMS: Cascade is not responsible for the remediation design and bears no responsibility for the remediation results or impact to existing conditions. Notwithstanding anything contained herewithin this agreement to the contrary, Client indemnifies, holds harmless and shall defend Cascade and its affiliates, directors, officers, employees, agents and Subcontractors against any claims or actions, including third party claims or actions, arising from any remediation design, results or impact to existing conditions.

INDEMNIFICATION: Client agrees to indemnify, defend, and hold Cascade and its agents harmless from and against any and all claims, demands, causes of action (including third party claims for contribution or indemnification), liability and costs (including attorneys' fees and other costs of defense) which result from (i) any release or threatened release of any substance (whether hazard or not); (ii) any claim that Cascade, or any of its subcontractors was a "generator" or "transporter" of hazardous waste or an "operator" of the job site (as such terms are used or defined under local, state or federal laws or regulations); or (iii) any negligent or wrongful act or omission of Client or others under Client's control, except the duty to indemnify, defend, and hold harmless shall not apply to the extent any demand or cause of action results solely from Cascade's negligence or willful misconduct.

INCORPORATION CLAUSE: All work performed by Cascade is subject to these terms and conditions. All terms and conditions contained in Cascade's bids, proposals, and invoices, as now exist and as may be modified, are expressly incorporated herein by this reference and made a part of the terms and conditions.

INTEGRATION: The terms and conditions stated herein constitute the entire understanding of the parties relating to Cascade's work. All previous proposals, offers, and other communications relative to the work, oral or written, are hereby superseded. Any additional or conflicting provision(s) contained in any purchase order, acknowledgment, contract, or other form of the Client is hereby expressly objected to by Cascade and shall not modify these terms and conditions.

APPLICABLE LAW/JURISDICTION & VENUE: Any lawsuit to collect the balance due, enforce the terms and conditions, or that pertains to Cascade's work shall be governed by the laws of the State of Washington, USA. Client agrees that if a lawsuit or action is necessary that it shall be brought in Superior Court for King County, Washington. In the event that such lawsuit or action includes enforcement of a real property lien, such action shall be brought in the county and state in which the real property is located.

SEVERABILITY: If any of these terms and conditions are determined to be invalid or unenforceable, such determination shall not affect the validity and enforceability of the remaining terms and conditions.

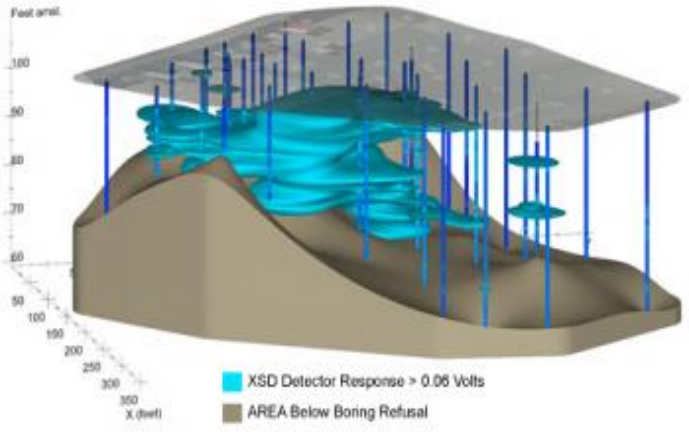
_____
Signature of Client/ Owner Authorized Representative

_____
Name & Title of Authorized Representative and Company

_____
Date

MEMBRANE INTERFACE & HYDRAULIC PROFILING TOOL

The probe detects volatile contaminants with the Membrane Interface Probe (MIP), measures soil electrical conductivity with a standard (MIP) dipole array, and measures HPT injection pressure using the same down-hole transducer as the Geoprobe® stand-alone HPT system. In post-processing the log data with Geoprobe® DI Viewer software, the user is able to estimate hydraulic conductivity and water table elevation, as well as prepare graphical outputs of the log data.



High Resolution Site Characterization Model

MiHPT Probe

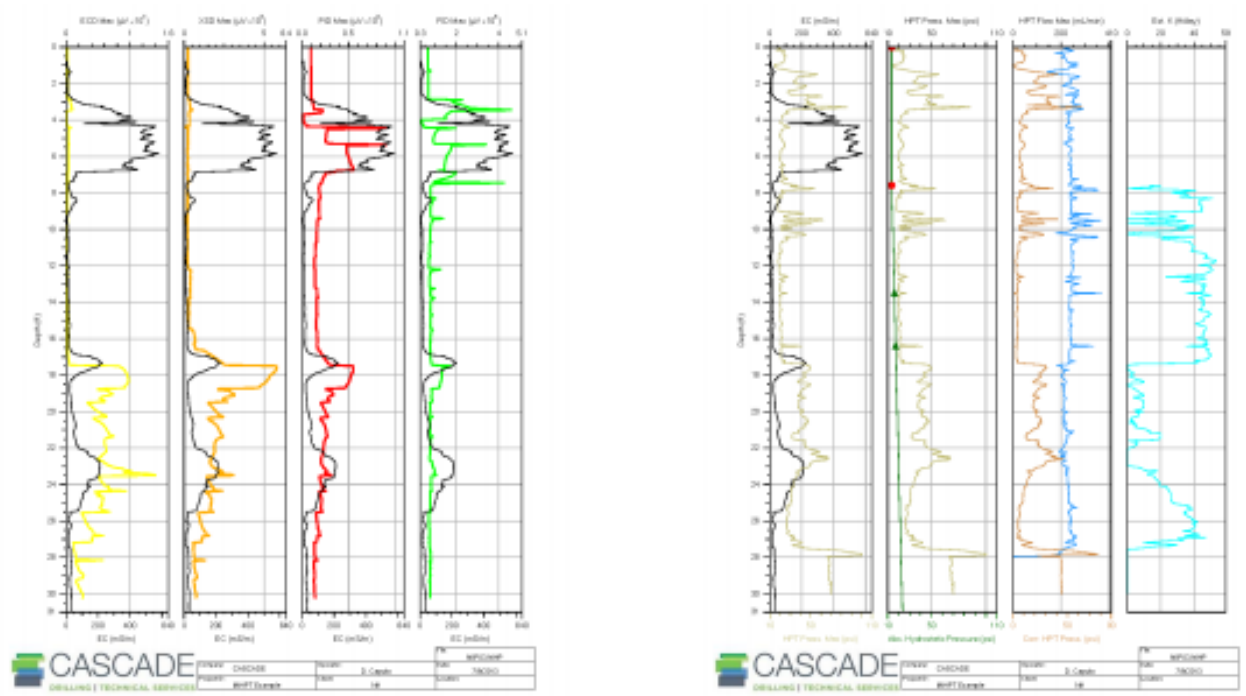
BENEFITS OF THE MiHPT

The MiHPT system combines the Volatile Organic Compound (VOC) profiling of the MIP system and the hydraulic conductivity profiling of the HPT system in one tool. Collecting these data sets in a single boring provides a complete picture of subsurface conditions. Because this tool provides a high-resolution picture of VOC mass in relation to lithology, as defined by both electrical conductivity and hydraulic conductivity, the MiHPT system is an ideal tool when developing an in-situ remediation plane.

HOW DOES THE MiHPT WORK?

The MIP is a HRSC system that produces quantitative vertical profiles of VOC concentrations in relation to lithology. Borings are advanced to develop visual representations of site contamination, typically presented as transects, 3D models and interactive maps. This system provides real-time information to allow users the ability to make real time field based decisions.

The MIP system operates by heating the soil and groundwater adjacent to the probe to 120 degrees Celsius to volatize VOCs in the immediate vicinity of the MIP membrane. The volatized VOCs diffuse across the membrane into a closed, inert gas loop that carries the vapors to a series of detectors housed at the surface. Each detector produces a continuous profile (plotted with respect to depth) to indicate the presence of various VOC compounds. One of the key parameters for successful in-situ remediation is the hydraulic conductivity of target intervals. The HPT system is designed to evaluate the hydraulic behavior of unconsolidated materials by injecting clean water into the subsurface and recording changes is the associated pressure. The HPT system records these changes in pressure and calculates the associated hydraulic conductivity. Both of which are plotted in vertical profiles with respect to depth.



MiHPT Log, Page 1 and Page 2

The HPT system operates by injecting water into the subsurface at a flow rate (usually less than 300 mL/min). The injection pressure provides an indication of the hydraulic properties of the soil. A relatively low pressure response indicates a relatively high porosity; conversely, a relatively high pressure response indicates a relatively low porosity. During post boring processing, the changes in pressure and flow are utilized to calculate an estimated hydraulic conductivity. Additionally, an electric conductivity dipole is integrated into the HPT probe to interpret the lithology of the subsurface.

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OIP OVERVIEW

OPTICAL IMAGE PROFILER (OIP)

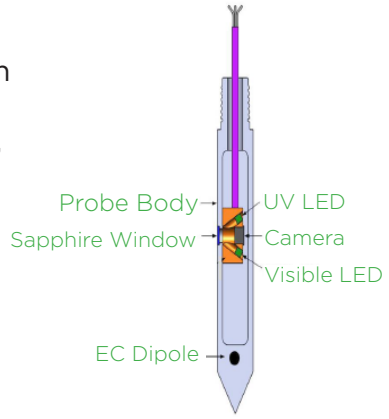
OIP is a direct push system that produces semi-quantitative vertical profiles of fuel-related non-aqueous phase liquid (NAPL) in the subsurface. Multiple vertical profiles, or borings, may be advanced to develop more complex visual representations of NAPL distribution, such as transects, three dimensional models, and interactive maps. This system provides real-time information which allows users to make timely decisions during the mobilization of equipment.

OIP SYSTEM OVERVIEW

The OIP system has been developed by Geoprobe® for the detection of NAPL hydrocarbon fuels, oils, and tars present in the soil. NAPL may be detected as layers, ganglia, blebs or droplets of product in the formation matrix. The OIP probe includes an electrical conductivity (EC) array to measure bulk formation EC as the probe is advanced at a rate of 2 to 4ft/min. The OIP probe and logging system can quickly provide easily interpreted logs of percent area of fluorescence (%AF) along with images of fuel fluorescence with depth. The %AF logs and images are used to indicate the presence of NAPL and the EC logs may help define lithology.

OIP-UV Probe

The OIP-UV probe uses an UV light emitting diode (LED) with maximum intensity at 275 nanometers (nm). The UV light from the LED passes through the sapphire window and onto the soil. If fuels (gasoline, diesel, etc.) are present in the soil the contained PAHs will absorb the UV light and emit fluorescence, often in the visible range. The camera captures the image of the visible fuel fluorescence. The captured image is then analyzed to determine the number of pixels in (LNAPL).



OIP-UV Probe

OIP-G Probe

The OIP-G probe uses a green laser diode light source with maximum intensity at 520nm. The green light passes through the sapphire window and onto the soil. If coal tars, creosote or any heavy fuels or oils are present in the soil the contained PAHs will absorb the green light and emit fluorescence, typically in the orange to red wavelength range. An optical filter on the camera excludes any reflected green light from the light source. The orange to red wavelength fluorescence passes through the optical filter and the camera captures an image of the fluorescence. The captured image is then analyzed by the software to determine the number of pixels in the image that indicate fluorescence typical of heavy NAPL fuels, oils, and tars.

OIP-G Probe

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TECHNICAL SERVICES | OIP OVERVIEW

DATA COLLECTION

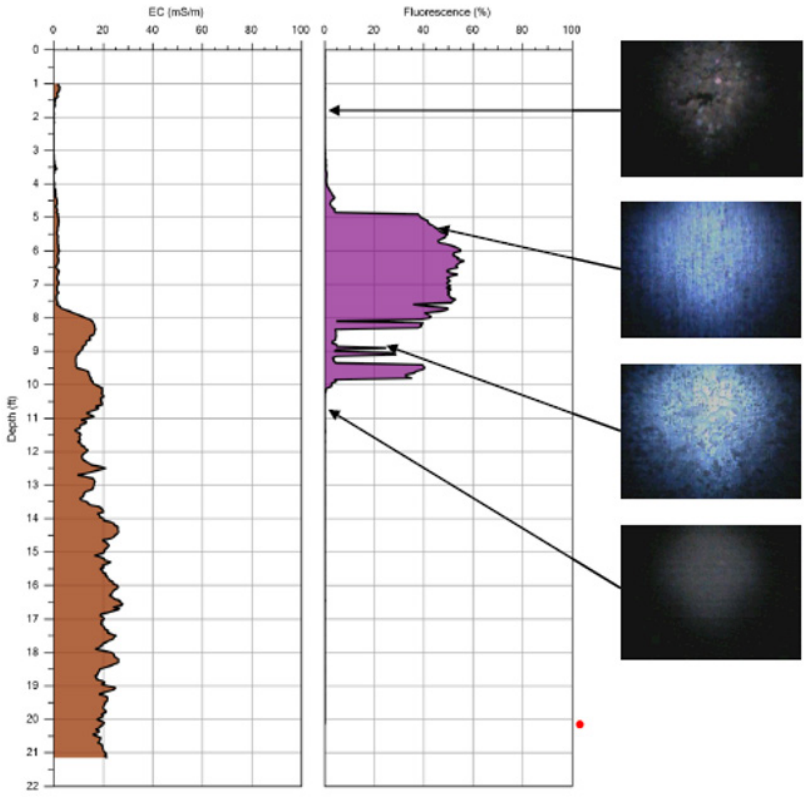
An EC array is built into the OIP probe. This allows the user to collect bulk formation EC data for lithologic interpretation. In general, the higher the EC value, the smaller the grain size, and vice versa. However, other factors can affect EC, such as mineralogy, pore water chemistry (brines, extreme pH, seawater) as well as metallic objects in the soil. Targeted core samples should be collected to confirm lithologic interpretations based on EC logs.

Data is collected and viewed in real time through the DI Acquisition software. The field instrument collects the EC, probe rate, diagnostic parameters, and depth, while the optical interface collects the fluorescence images. The field instrument and optical interface send the collected data to the computer, which stores, analyzes and displays the collected data with depth through the DI Acquisition software.

Prior to the advancement of each boring, the background %RE is collected with the clean sapphire window exposed to ambient conditions. The background %RE defines background noise from the system, notifying the operator if there are any problems with the system. Contaminant concentrations, along with other hydro-geologic conditions, can vary significantly over very short distances. Investigation techniques that do not account for this large degree of spatial variability are likely to fail in developing an adequate understanding of the problem at hand.

BENEFITS OF OIP

- **Real-time data**—allows for "on-the-fly" guidance of the next bore-hole location, leading to better bounding of source term
- **No IDW**—true in-situ information without investigation derived waste, carryover, or handling and storage of samples
- **Fast**—production rates of 200 to 400 feet per day (typical direct push conditions)
- **Flexible**—percussion (i.e. Geoprobe®)
- **High data density**—one inch/ data point



Example of a common OIP Log

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3-D DATA INTERPOLATION AND VISUALIZATION SERVICES

Cascade Technical Services (Cascade) provides advanced data interpolation and three-dimensional (3-D) visualization services for each of our high resolution site characterization (HRSC) field methods. By their nature, HRSC tools generate multiple, near-continuous data streams from ground surface to boring termination. Maximizing the value of these HRSC data for your project requires use of software-based data interpolation and visualization. Often our clients partner with us to use these tools in two important post-field phases: in assisting them to understand the data themselves, and in helping them convey the narrative within the data onward to their client.

TURNING DATA INTO VALUE

Ultimately, any investment in an HRSC field program must be justified by the value of the desired outcome: a better understanding of contaminant distribution near potential receptors, a higher degree of source area knowledge for remediation design, etc. Cascade uses 3-D data interpolation methods such as “kriging” to not only create models of contaminant mass and hydrostratigraphy, but also to assess the quality of the data set itself. This advanced level of geostatistics provides information on data confidence, which we use to answer questions like, “Where is data confidence low and contaminant impact predicted to be high?” Or more simply, “Where is my site under-characterized?” Cascade uses industry standard geospatial technologies including CTech Development Corp’s Earth Volumetric Studio (EVS) and ESRI’s ArcGIS suite of products, as well as the latest in data science methodology using Python programming language.

Figure 1: Interactive Cross-Section Tool - Depicting 3-D shells in profile view.

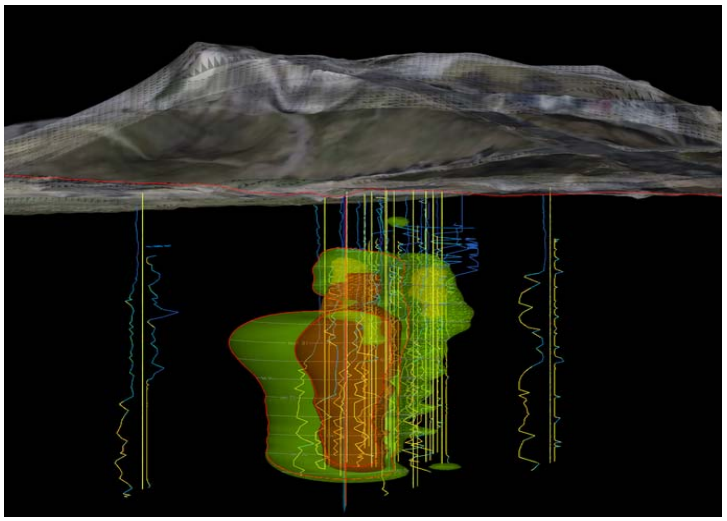
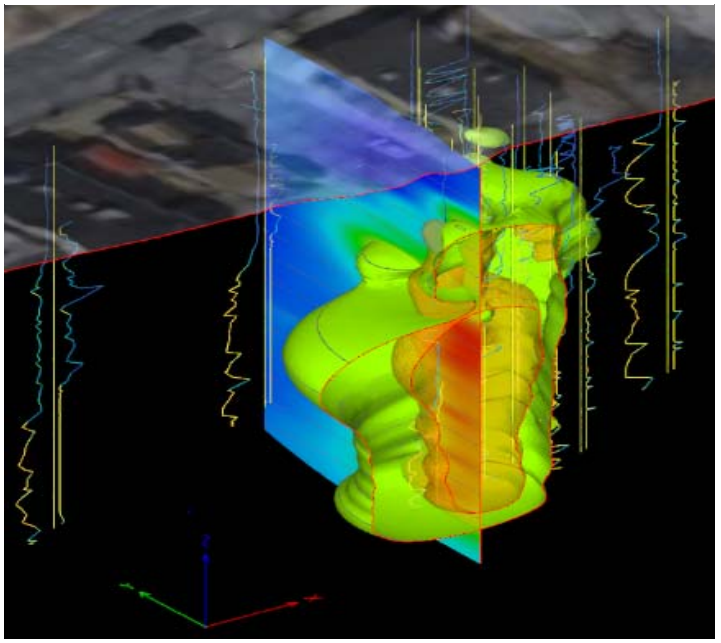


Figure 2: Interactive Cross-Section Tool - Oblique view.



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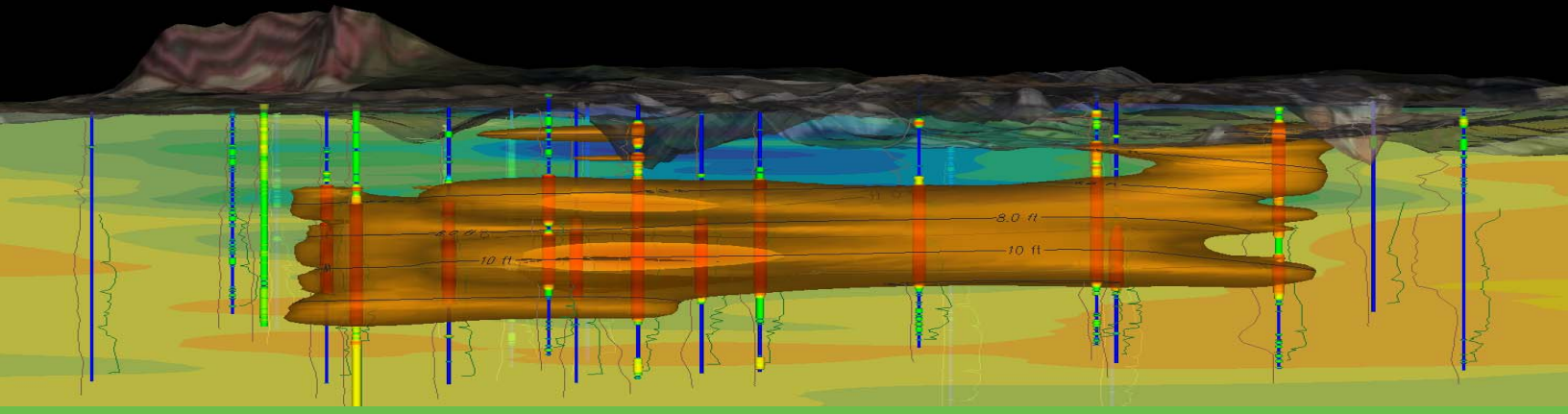


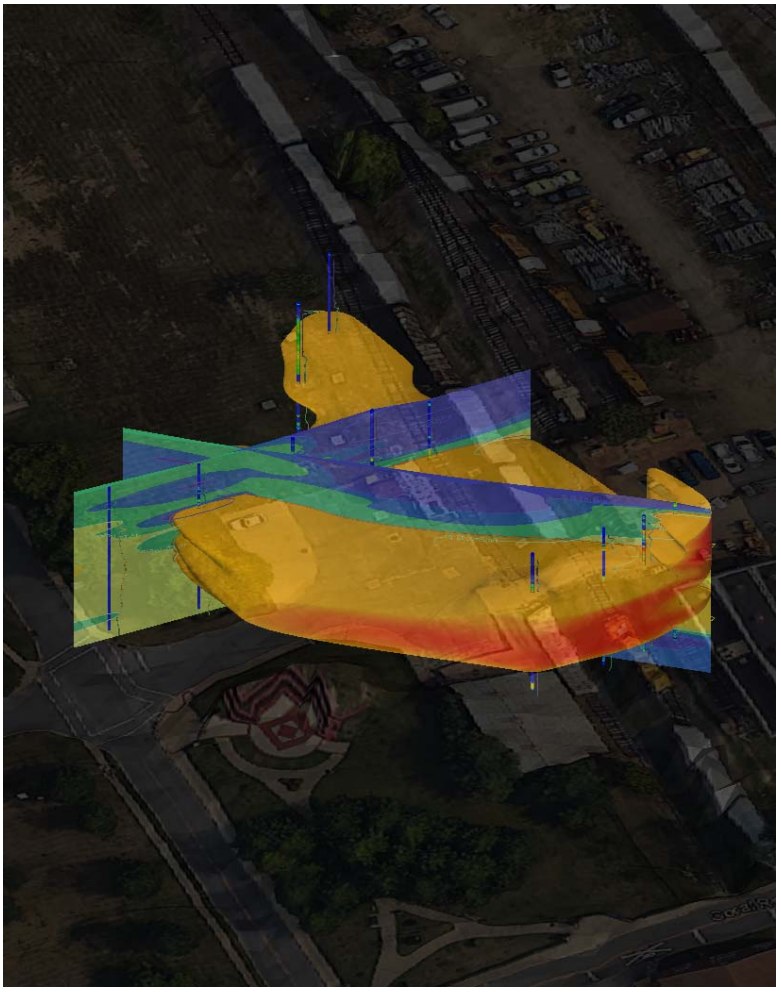
3-D DATA INTERPOLATION AND VISUALIZATION SERVICES

STANDARD DATA VISUALIZATION PACKAGE

Cascade converts raw data into actionable intelligence (e.g., updated conceptual site models, targeted remediation plans, etc.), through our Standard Data Visualization Package. This package includes the following components:

- A 3-D model created in EVS using the data collected during the current field program and incorporating publicly available aerial photos and ground surface elevation overlays.
- 3-D modeling of the contaminant impacts in EVS at up to three threshold values (e.g., a selected Membrane Interface Probe detector response greater than x, y, and z microvolts).
- Up to three fences within the EVS model showing a secondary data set (perhaps estimated hydraulic conductivity from the Hydraulic Profiling Tool, or electrical conductivity from an EC dipole). These fences might be oriented such that one is aligned with the plume axis and two run cross-gradient at different distances from the source area.
- The resulting visualizations can be output to CTech's free 4DIM viewer software, a 3-D PDF, or made available through an online modeling service. Cascade can integrate these visuals into your previously prepared CAD/GIS files for easy presentation to your clients and other stakeholders.

Figure 3: An example Standard Data Package output for an OIHPT project.



Details of this Standard Package will be defined prior to field work mobilization. Other data sets such as existing monitoring wells and corresponding data, and more advanced visualizations and data management tools (e.g., development of online mapping tools and data management support) can be added for an hourly rate negotiated based on the scope of the request. Please contact your Cascade Project Manager for more details.

Bill Henne

From: Bill Henne
Sent: Monday, June 1, 2020 9:10 AM
To: northwindgroup@northwindgrp.com
Subject: UVOST-LIF & MIP bid request
Attachments: 28_Dewey_Blvd_FacilityLayout_R04.pdf; TownPumpM16_UVOST-LIF_MIP_BidRequest_200605.pdf

Good morning,

WET encourages NorthWind Site Services, LLC to bid on the Ultraviolet Optical Screening Tool – Laser Induced Fluorescence and Membrane Interface Probe work to take place at the Northwest Petroleum Facility, Butte, Montana. If selected, and once approval and funds are secured, field work will be scheduled for mid to late summer 2020.

If you have any questions and/or need anything further, please do not hesitate to let me know!

-bill

Water & Environmental TECHNOLOGIES

Bill Henne, PE, CFM
Senior Hydrogeological Engineer
C: (406) 565-6567
O: (406) 782-5220
waterenvtech.com

Attachment E. Confirmation Soil Borings and Monitoring Well Installation Bids and emails documenting other bid requests

O'KEEFE DRILLING
Environmental

P.O. Box 3810 - Butte, MT 59702
Office: (406) 494-3310 Fax: (406) 494-3301
Email: info@okeefedrilling.com

Client:	Water and Environmental Technologies	Date:	02-Jun-20
Attention:	Bill Henne	Phone:	406-782-5220
Project:	Butte, MT	Fax:	
	28 Dewey Blvd		

PROJECT SPECIFICATIONS:

Type of Rig:	Mobile B-61 Auger	**Number of Wells:**	5
Location:	Butte, MT	**Expected Footage:**	35
Formation:	Sands/small gravels	**Screen Length:**	20
Sampling:	Yes	**Well Size:**	2
Decontamination:	Yes	**Screen Size:**	0.01
Other Details:	Flushmount		

Bid for Soil Boring/Monitor Well Installation

Unit Cost Worksheet

Task		Unit Cost		Number of Units	Total Cost
Soil Boring Installation					
8.25"	Drilling 0-50 ft range	$ 26.00	Per Foot	175	$ 4,550.00
Monitor Well Installation					
2"	Drilling 0-50 ft range	$ 30.00	Per Foot	175	$ 5,250.00
Drilling Standby & Safety Meeting					
	Prior Approval Needed	$ 180.00	Per Hour		$ -
Other:					
	Containerize Cuttings	$ 180.00	Per Hour	2	$ 360.00
	55 Gal Drums	$ 80.00	Each		$ -
		Total Project Expenses			**$ 10,160.00**

***Client is responsible for any line locates. Locate number can then me given to O'Keefe Drilling who then will request a ticket default.

****This bid is subject to change as warranted when the addition of prior unexpressed need for additional certifications, medical monitoring, sampling, containerization or other unforeseen change in the scope of work.

Bill Henne

From: Bill Henne
Sent: Saturday, May 30, 2020 9:59 AM
To: Sharon King
Subject: drilling bid request
Attachments: TownPumpM16_Drilling_BidRequest__200605.pdf; 28_Dewey_Blvd_FacilityLayout_R04.pdf

Good morning,

WET encourages AK Drilling to bid on the drilling of boreholes and installation of monitoring wells to take place at the Northwest Petroleum Facility, Butte, Montana. If selected, once WET receives approval and funds, field work will be scheduled for late summer 2020.

If you have any questions and/or need anything further, please do not hesitate to let me know!

-bill

Water & Environmental TECHNOLOGIES

Bill Henne, PE, CFM
Senior Hydrogeological Engineer
C: (406) 565-6567
O: (406) 782-5220
waterenvtech.com

Bill Henne

From: Bill Henne
Sent: Saturday, May 30, 2020 9:54 AM
To: parsonsdrilling63@yahoo.com
Subject: drilling bid request
Attachments: TownPumpM16_Drilling_BidRequest__200605.pdf; 28_Dewey_Blvd_FacilityLayout_R04.pdf

Good morning,

WET encourages Parsons Drilling to bid on the drilling of boreholes and installation of monitoring wells to take place at the Northwest Petroleum Facility, Butte, Montana. If selected, once WET receives approval and funds, field work will be scheduled for late summer 2020.

If you have any questions and/or need anything further, please do not hesitate to let me know!

-bill

Water & Environmental TECHNOLOGIES

Bill Henne, PE, CFM
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