

## Formal Task Assignment Document

### 2023 – 2025 SNOHOMISH COUNTY ON-CALL TASK ASSIGNMENT

Name of Project: Former Fire Pit, Big Gulch & Swamp Creek Environmental  
Project Number: Airport  
Discipline: Engineering Services  
Task No.: TA#2 Completion Date: 12/31/2025

The COUNTY desires to authorize services pursuant to the AGREEMENT entered into with **GeoEngineers, Inc.**, and executed on December 16, 2022, and identified as Agreement No. **OCC23/2-7.8(U)**, On-Call Consultant Services for **Environmental Site Assessment**.

All provisions in the AGREEMENT remain in effect except as expressly modified by this TASK ASSIGNMENT and are incorporated herein by reference.

### ATTACHED TO THIS TASK ASSIGNMENT

- Scope of Work
- Cost Estimate with Total Hours to Perform Work
- Items unique to the project not included in the AGREEMENT and which are to be reimbursed at cost with no markup.

Original Task Assignment Total: **\$247,478.31**  
Previous Task Amendment Total: **\$0.00**  
Current Task Amendment Total: **\$0.00**  
Total Task Assignment Not to Exceed: **\$247,478.31**

**No other payment shall be allowed unless a TASK ASSIGNMENT Amendment for changed Scope of Work has been signed and authorized before work is performed.**

All work under this TASK ASSIGNMENT shall be performed pursuant to the terms, conditions, specifications, and limitations contained in the AGREEMENT.

If you concur with this TASK ASSIGNMENT and agree to the items as stated above, please sign and date in the appropriate spaces below and return to the COUNTY for final action.

Tim L. Syverson Digitally signed by Tim L. Syverson  
Date: 2023.08.17 09:01:06 -07'00'  
\_\_\_\_\_  
Consultant Signature

Boungjaktha, Neepaporn Digitally signed by Boungjaktha, Neepaporn  
Date: 2023.09.27 14:31:10 -07'00'  
\_\_\_\_\_  
Approving Authority

\_\_\_\_\_  
Date

\_\_\_\_\_  
Date

<b>COUNCIL USE ONLY</b>	
Approved	<u>9/27/2023</u>
ECAF #	<u>2023-1006</u>
MOT/ORD	<u>Motion 23-381</u>

August 16, 2023

Paine Field/Snohomish County Airport  
3220–100th Street Southwest, Suite A  
Everett, Washington 98204-1303

Attention: Andrew Rardin

Subject: Scope and Fee Estimate  
GeoEngineers TA No. 2—Environmental Services: Former Fire Training Pit,  
Big Gulch Creek and Swamp Creek Sites  
Data Gaps Investigation and Technical and Regulatory Support  
Paine Field/Snohomish County Airport  
Everett, Washington  
File No. 5530-015-00

## **INTRODUCTION**

This document presents the environmental scope of services for additional investigation and sampling, data evaluation, reporting, and technical and regulatory support for the former Fire Training Pit (FTP), Big Gulch Creek, and Swamp Creek sites at Paine Field/Snohomish County (County) Airport (Paine Field) in Everett, Washington. The scope of services described in this document is based on discussions with Andrew Rardin, the Paine Field/Snohomish County Airport Environmental and Wildlife Manager, the available information regarding current soil and groundwater conditions at Paine Field, and our experience with the investigation and cleanup of other airport and industrial facilities under the Washington State Department of Ecology (Ecology) Model Toxics Control Act (MTCA) and its implementing regulations. Due to the applicable MTCA mandate for investigation and potentially other remedial actions, the three identified site locations will likely be managed by Ecology as one Site under Ecology’s formal program. The extent of the Site will be defined by Ecology following completion of investigation activities in all affected media.

The FTP site is located at Paine Field Airport near the northwest boundary of Taxi Lane K-6 (Figure 1). The FTP site was historically used as a firefighting training site for Paine Field and other local fire departments. Activities at the FTP included ignition of flammable materials including petroleum hydrocarbons which were extinguished using Aqueous Film Forming Foam (AFFF) containing per- and polyfluoroalkyl substances (PFAS). Prior investigations completed at the FTP Site between 1989 and 2006 identified total petroleum hydrocarbons (TPH) and lead in soil. Remedial actions were completed at the FTP in 2006 to address TPH and lead in soil at concentrations greater than the applicable Ecology MTCA cleanup levels (CULs) and the Site received a No Further Action (NFA) determination from Ecology in 2007.



Subsequent investigations completed at the FTP Site by others in 2018, 2022, and 2023 identified PFAS in soil and groundwater.

The Big Gulch Creek and Swamp Creek sites are two stormwater drainage areas that receive stormwater from the Boeing Everett Modification Center (EMC) and Aviation Technical Services (ATS) Hangar 1 at the south end of Paine Field (Figure 1). The stormwater discharged to these two areas in the 1990s and 2000s included PFAS from historical releases of AFFF associated with the fire suppression system at the EMC and ATS Hangar 1 according to available records. The Big Gulch Creek site (Big Gulch Creek Drainage Sub-Basin 9) is located adjacent to and southwest of Falcon Drive and Navajo Road, south of the Boeing EMC; the Swamp Creek site (Swamp Creek Drainage Sub-Basin 8) is located south of the intersection of Minuteman Drive and Airport Road. Initial investigations completed by others at the Big Gulch Creek and Swamp Creek sites in 2022 to evaluate the potential presence of PFAS related to historical releases identified PFAS in soil at both Big Gulch Creek and Swamp Creek sites.

The available information and data indicate that additional assessment of soil and groundwater is needed for site characterization/regulatory compliance purposes. The scope of work presented below is to identify and evaluate data gaps for the FTP site following the work completed between 2018 and 2023, and to further evaluate the PFAS detected in soil during the initial investigations at the Big Gulch Creek and Swamp Creek sites. The proposed work would be conducted as an independent action that is the substantial equivalent of an Ecology supervised action pending Ecology issuance of a draft Agreed Order.

## SCOPE OF SERVICES

The tasks identified for this scope of services are as follows:

### Task 1. Data Gaps Work Plan and Project Planning

This task will consist of identifying the objectives of the scope of services, including identification of data gaps and investigation details, and project planning including the following.

1. Attend a project kickoff meeting/conference call with the Paine Field team, including counsel. Review available documentation related to the three sites.
2. Prepare a Data Gaps Work Plan which includes a PFAS-focused sampling and analysis plan (SAP), quality assurance project plan (QAPP), and site health and safety plan (HASP) prior to the start of fieldwork and submit to the Paine Field team for review and comment. PFAS-free sampling equipment, decontamination water, and day-of checklist for field staff will be enacted during this work.
3. Coordinate site access with Paine Field representatives.

### Task 2. Field Investigation and Laboratory Analysis

This task will consist of subsurface investigations including the collection of soil, groundwater, and/or surface water samples, as warranted, to address the objectives outlined in the data gaps work plan, at the FTP, Big Gulch Creek, and Swamp Creek sites including the following.



1. Prior to drilling at each site, conduct a site visit to assess current conditions and access for sampling, including monitoring well (if present) details, including the well depth, groundwater levels, and presence of surface water. The schedule for sampling will be dictated by site conditions including seasonal considerations.
2. Mark proposed exploration/sampling locations at each site, coordinate with Paine Field to mark known utilities and subsurface feature, and notify public utilities to mark utilities in the vicinity of the proposed exploration locations. Subcontract a private utility locating service to locate underground utilities at the proposed drilling and sampling locations at each site.

### Task 2A - FTP site

The following scope assumes that 12 field days (10-hour days) for two field personnel will be required to complete soil, groundwater, and surface water sampling, as warranted and accessible, for the FTP site. Proposed borings have been categorized in two tiers to allow for an analysis of the initial results before mobilizing to the site for the second set of proposed borings. The scope and assumptions for the Tier 1 and Tier 2 sampling events are described below. For discussion purposes, proposed drilling locations for the FTP Site are shown in Figure 2. Proposed drilling/sampling locations for the Big Gulch Creek and Swamp Creek sites will be selected based on site conditions and the pre-drilling utility locate.

1. Observe the hollow-stem auger (HSA) drilling of up to six Tier 1 borings for well installations to depths of approximately 20 to 50 feet below ground surface (bgs) (assume 5 days of HSA drilling activities) or based on soil conditions at the time of drilling. Install permanent 2-inch-diameter polyvinyl chloride (PVC) monitoring wells in the borings with 10-foot well screens at the base of the well above the Vashon Till unit. Develop the monitoring wells.
2. Observe the HSA drilling of four Tier 2 borings for well installations to depths of approximately 20 to 50 feet bgs (assume 2 days of HSA drilling activities) or based on soil conditions at the time of drilling. Install permanent 2-inch-diameter PVC monitoring wells in the borings with 10-foot well screens at the base of the well above the competent Vashon Till unit. Develop the monitoring wells.
3. Observe Geoprobe direct push rig drilling and sampling of up to two borings to approximately 20 to 40 feet bgs (assume 1 day) to evaluate and document the vertical extent of PFAS impacts in soil at the FTP Site.
4. Field screen soil samples from the borings for evidence of TPH and volatile organic compounds (VOCs) using visual, water sheen, and headspace vapor screening methods. Visually classify the samples in general accordance with ASTM International (ASTM) D2488 and prepare a log of each boring.
5. Submit selected soil samples for laboratory analysis. Up to four soil samples per boring will be collected and submitted for laboratory analysis of PFAS by Modified U.S. Environmental Protection Agency (EPA) Method 537.1 Isotope Dilution (29 analytes) on standard turnaround (typically 15 to 20 business days). Field sampling procedures will follow Ecology Guidance, Sampling for PFAS protocols (Ecology 2023). Laboratory reporting limits will be identified and presented in the QAPP as part of project planning.
6. Collect up to four surface water (if present) samples at the FTP site and submit the samples for laboratory analysis of PFAS by Modified EPA Method 537.1 Isotope Dilution (29 analytes) on a standard turnaround (typically 15 to 20 business days). Surface water samples will be collected concurrently with Site drilling activities.

7. Conduct semi-annual groundwater monitoring (two events) at the FTP site. Collect two rounds of groundwater samples from the six existing monitoring wells at the site and the six to 10 new wells installed as part of this current scope of services (12 to 16 total wells). The groundwater samples will be submitted for laboratory analysis of PFAS by Modified EPA Method 537.1 Isotope Dilution (29 analytes) on a standard turnaround (typically 15 to 20 business days). Groundwater sampling is assumed to be completed over 2 days for each sampling event (4 days total for groundwater sampling).

#### **Task 2B - Big Gulch and Swamp Creek sites**

The following scope assumes that 3 field days (10-hour days) for two field personnel will be required to complete soil, groundwater, and surface water sampling, as warranted and accessible, for the Big Gulch and Swamp Creek sites and oversee removal of investigation derived waste (IDW; purge water, decontamination rinse water, and soil spoils) generated during drilling activities at the FTP, Big Gulch, and Swamp Creek sites. The sampling locations will be discussed with the Paine Field team and selected based on field conditions and access considerations.

1. Observe Geoprobe direct push rig drilling and sampling of up to six borings to approximately 10 feet bgs (assume 2 days) to evaluate and document the vertical extent of PFAS impacts in soil at the Big Gulch and Swamp Creek sites. Samples will be collected using a hand auger if site conditions do not allow access for a drill rig. Up to three soil samples per boring will be collected and submitted for laboratory analysis of PFAS by Modified EPA Method 537.1 Isotope Dilution (29 analytes) on a standard turnaround (typically 15 to 20 business days).
2. Field screen soil samples from the borings for evidence of TPH and VOCs using visual, water sheen, and headspace vapor screening methods. Visually classify the samples in general accordance with ASTM D2488 and prepare a log of each boring.
3. Collect up to four surface water (if present) samples at the Big Gulch and Swamp Creek sites and submit the samples for laboratory analysis of PFAS by Modified EPA Method 537.1 Isotope Dilution (29 analytes) on a standard turnaround (typically 15 to 20 business days). Surface water samples will be collected concurrent with Site drilling activities.
4. Investigation-derived waste (IDW) generated during drilling and sampling at the FTP, Big Gulch and Swamp Creek sites will be drummed and temporarily stored on site. Our services include waste profiling for disposal, including additional laboratory analytical costs for analysis of selected soil and water samples, as required, subcontracted transport of drummed IDW, and off-site disposal at a permitted landfill or treatment facility approved by the County. The estimated costs for IDW disposal assume the waste will qualify for disposal at a Subtitle D landfill. This subtask assumes 1 day of field activities to oversee removal of drummed waste.

#### **Task 3. Data Evaluation and Reporting**

1. Review, tabulate, and interpret the field and laboratory data. Discuss preliminary results with Paine Field team.
2. Conduct PFAS forensics analysis using the groundwater and soil chemical analytical data.
3. Develop a conceptual site model (CSM) using data analysis and drilling logs.



4. Prepare draft and final Data Gaps Report. Provide electronic copy of the draft report for review by Paine Field. Assume one round of comments and revisions. Provide electronic and hard copies of final report.

#### **Task 4. Regulatory Support and Consultation**

1. Support Paine Field team, including counsel, during site characterization, regulatory compliance strategy, agency communications/negotiations. Attend meetings and/or conference calls as requested with Paine Field team, and with the regulatory agency (Ecology), as appropriate.

#### **Task 5. Meetings/Communication and Project Coordination**

1. Provide environmental technical or regulatory consulting support or input to Paine Field related to project planning and implementation. Attend meetings and/or conference calls with the project team, as requested, to facilitate project work.
2. Perform project management, administration, budget tracking, and invoicing.

### **SCHEDULE, TERMS AND BUDGET**

We will work with the Paine Field project team to identify a schedule for planning and implementation of data gaps investigation that meets your needs. The schedule and level of effort for implementation of additional work to complete the site characterization, and associated regulatory elements will be determined based on discussions with the Paine Field project team including counsel.

Our estimated fee for the scope of services outlined above is **\$247,478.31**, as detailed in the attached Table 1.

Our services will be provided, and our charges invoiced, in accordance with the terms described in our 2023-2025 On-Call Consultant Services Agreement (Number OCC23/2-7.8[U]) with Snohomish County that forms a part of this proposal. We understand that the work will be completed under our existing Task Assignment for the site.

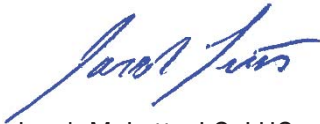
There are no intended third-party beneficiaries arising from the services described in this proposal and no party other than the party executing this proposal shall have the right to legally rely on the product of our services without prior written permission of GeoEngineers.

This proposal is valid for a period of 60 days commencing from the first date listed above and subject to renegotiation by GeoEngineers, Inc., after the expiration date.



We appreciate the opportunity to assist you with this project. Please call if you have any questions regarding this proposal.

Sincerely,  
GeoEngineers, Inc.



Jacob M. Letts, LG, LHG  
Project Manager



Tim L. Syverson, LHG  
Associate

KRA:JML:TLS:atk:mIs

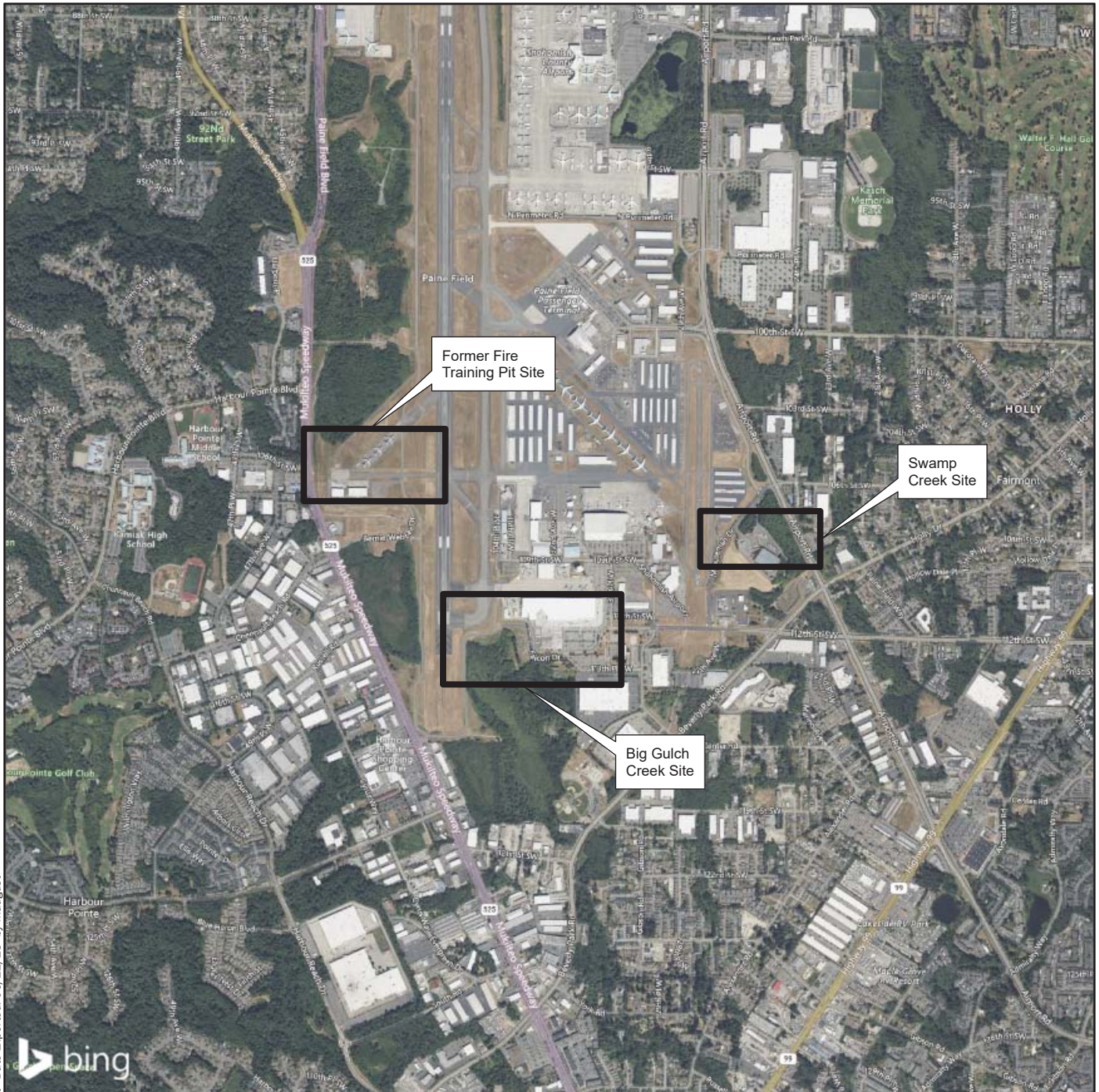
Attachment:

Table 1. Cost Estimate

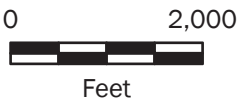
Figure 1. Vicinity Map

Figure 2. FTP Site—Proposed Exploration Locations





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**Vicinity Map**

**Paine Field - South Basins Data Gaps Investigation  
Paine Field, Washington**



**Figure 1**

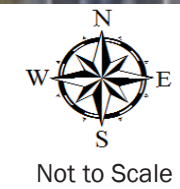
Source(s): Bing Maps  
 Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet  
**Disclaimer:** This figure was created for a specific purpose and project. Any use of this figure for any other project or purpose shall be at the user's sole risk and without liability to GeoEngineers. The locations of features shown may be approximate. GeoEngineers makes no warranty or representation as to the accuracy, completeness, or suitability of the figure, or data contained therein. The file containing this figure is a copy of a master document, the original of which is retained by GeoEngineers and is the official document of record.





**Legend**

- Existing MW
- Tier 1 MW
- Tier 2 MW
- ▲ Surface Water
- Geoprobe



**Notes:**

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Data Source:

**FTP Site – Proposed Exploration Locations**

Former FTP Site  
Paine Field, Snohomish County, Washington



**Figure 2**

**Table 1**

**GeoEngineers Fee Estimate**

Former Fire Training Pit, Big Gulch Creek and Swamp Creek Sites - Environmental Services Proposal  
Snohomish County Airports - Paine Field

Staff	Title/ Max rate from Snohomish County Fee Schedule	Task 1 - Data Gaps Work Plan/Project Planning	Task 2 - Field Investigation and Chemical Analysis	Task 3 - Data Evaluation and Reporting	Task 4 - Regulatory Support and Consultation	Task 5 - Meetings/Communi- cation	Total Staff Hours/Direct Salary Cost (DSC)
Tim Syverson	Associate	8.0	1.0	10.0	30.0	12.0	61.0
	\$225.00 ✓	\$1,800.00	\$225.00	\$2,250.00	\$6,750.00	\$2,700.00	\$13,725
Sue Bator	Associate	4.0	1.0	20.0	0.0	8.0	33.0
	\$225.00 ✓	\$900.00	\$225.00	\$4,500.00	\$0.00	\$1,800.00	\$7,425
Jacob Letts	Senior Engineer/Scientist 1	50.0	20.0	60.0	30.0	20.0	180.0
	\$195.00 ✓	\$9,750.00	\$3,900.00	\$11,700.00	\$5,850.00	\$3,900.00	\$35,100
Katy Atakturk	Project Engineer/Scientist 1	30.0	75.0	30.0	0.0	8.0	143.0
	\$158.17 ✓	\$4,745.10	\$11,862.75	\$4,745.10	\$0.00	\$1,265.36	\$22,618
TBD	Engineer 3	0.0	75.0	0.0	0.0	0.0	75.0
	\$148.16 ✓	\$0.00	\$11,112.00	\$0.00	\$0.00	\$0.00	\$11,112
TBD	CAD Technician	20.0	0.0	80.0	0.0	0.0	100.0
	\$118.11 ✓	\$2,362.20	\$0.00	\$9,448.80	\$0.00	\$0.00	\$11,811
Carly Hendricks	Administrator 2	5.0	0.0	20.0	0.0	0.0	25.0
	\$125.00 ✓	\$625.00	\$0.00	\$2,500.00	\$0.00	\$0.00	\$3,125
Tina Remley	Administrator 2	10.0	0.0	0.0	0.0	10.0	20.0
	\$125.00 ✓	\$1,250.00	\$0.00	\$0.00	\$0.00	\$1,250.00	\$2,500
TOTAL HOURS BY TASK:		97.0	97.0	190.0	60.0	58.0	637.0
PROPOSED TOTAL LABOR FOR TASKS:		\$21,432.30	\$27,324.75	\$35,143.90	\$12,600.00	\$10,915.36	\$107,416.31
REIMBURSABLES	UNIT	RATE	UNITS				Total Units and Cost
<b>TRAVEL</b>							
Vehicle Mileage	Mile	\$0.655 ✓	0.0	400.0	0.0	0.0	400.0
			\$0.00	\$262.00	\$0.00	\$0.00	\$262.00
Vehicle Usage (per Day)	Day	\$60.00 ✓	0.0	13.0	0.0	0.0	13.0
			\$0.00	\$780.00	\$0.00	\$0.00	\$780.00
<b>FIELD EQUIPMENT</b>							
Soil Field Screening Equipment	Day	\$15.00 ✓	0.0	10.0	0.0	0.0	10.0
			\$0.00	\$150.00	\$0.00	\$0.00	\$150.00
Soil Sampling Kit	Day	\$15.00 ✓	0.0	10.0	0.0	0.0	10.0
			\$0.00	\$150.00	\$0.00	\$0.00	\$150.00
Groundwater/Surface Water Sampling Kit	Day	\$15.00 ✓	0.0	8.0	0.0	0.0	8.0
			\$0.00	\$120.00	\$0.00	\$0.00	\$120.00
PID	Day	\$100.00 ✓	0.0	10.0	0.0	0.0	10.0
			\$0.00	\$1,000.00	\$0.00	\$0.00	\$1,000.00
<b>Vendors</b>							
Analytical Laboratory	Lump Sum	\$48,000.00	\$0.00	\$48,000.00	\$0.00	\$0.00	\$48,000.00
Private Locator		\$3,000.00	\$0.00	\$3,000.00	\$0.00	\$0.00	\$3,000.00
Driller		\$65,000.00	\$0.00	\$65,000.00	\$0.00	\$0.00	\$65,000.00
Investigation Derived Waste Disposal		\$16,000.00	\$0.00	\$16,000.00	\$0.00	\$0.00	\$16,000.00
Sampling Equipment		\$1,600.00	\$0.00	\$1,600.00	\$0.00	\$0.00	\$1,600.00
Surveying		\$4,000.00	\$0.00	\$4,000.00	\$0.00	\$0.00	\$4,000.00
SUBTOTAL VENDORS:		\$0.00	\$137,600.00 ✓	\$0.00	\$0.00	\$0.00	\$137,600.00
PROPOSED TOTAL REIMBURSABLES FOR TASKS:		\$0.00	\$140,062.00	\$0.00	\$0.00	\$0.00	\$140,062.00
PROPOSED TOTAL FOR TASKS:		\$21,432.30	\$167,386.75 ✓	\$35,143.90	\$12,600.00	\$10,915.36	\$247,478.31 ✓

**CONTRACT COMPLIANT**  
 Initial gll Date 8/16/23