

**Additional Site Investigation and
Groundwater Monitoring Work Plan**

Former Flying J Travel Plaza #680
122000 N Browns Gulch Rd
Butte, Silver Bow County, Montana
MTDEQ FID No. 47-09893. Release ID No. 3374

Prepared for:

Donnie McCurry
Project Manager
Montana Department of Environmental Quality
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Prepared by:



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March 31, 2026

Project No. 25-14-117



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March 31, 2026

Project No. 25-14-117

Mr. Donnie McCurry
Project Manager
Montana Department of Environmental Quality
1520 E 6th Avenue
Helena, Montana 59601

Re: *Additional Site Investigation and Groundwater Monitoring Work Plan, Former Flying J Travel Plaza #680, 122000 N Browns Gulch Rd, Butte, Silver Bow County, Montana. MTDEQ FID No. 47-09893. Release ID No. 3374*

Dear Mr. McCurry:

Broadbent & Associates, Inc. is pleased to submit this *Additional Site Investigation and Groundwater Monitoring Work Plan* which was prepared to evaluate the presence of residual subsurface impacts of hydrocarbon mass associated with the Former Flying J Travel Plaza #680 located at 122000 N Browns Gulch Rd, Butte, Silver Bow County, Montana. Site investigation activities were requested by the Montana Division of Environmental Quality. Site investigation activities proposed herein include installation of three (3) soil borings surrounding the former UST basin.

Please do not hesitate to contact us directly at (801) 505-9251 if you should have questions or require additional information.

Sincerely,
BROADBENT & ASSOCIATES, INC.

A handwritten signature in black ink, appearing to read 'Aric C. Morton'.

Aric C. Morton, PG
Principal Geologist

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1.0 INTRODUCTION

Broadbent & Associates, Inc. (Broadbent) is pleased to provide this *Additional Site Investigation and Groundwater Monitoring Work Plan (Work Plan)* to assist with evaluating potential residual hydrocarbon impacts associated with the Former Flying J Travel Plaza #680 located at 122000 N Browns Gulch Road in Butte, Silver Bow County, Montana (Site or FJ#680). Activities documented in this Work Plan were requested to be conducted by the Montana Department of Environmental Quality (MTDEQ). Site investigation actions will include installation of three (3) soil borings around the former dispenser islands and UST basin and one (1) round of groundwater sampling for the monitoring wells associated with Work Plan #34813.

The Site currently operates seven (7) underground storage tanks (USTs) installed in April 2012, consisting of four 30,000-gallon diesel tanks, two 8,000-gallon diesel tanks, and one 15,000-gallon gasoline tank. The active UST system is owned and operated by Rocker 3 Town Pump LLC (Town Pump), while environmental liability associated with DEQ Event ID 3374 remains with Pilot Travel Centers LLC (Pilot).

The following scope of work is to be undertaken as part of this Work Plan:

1. Advance three (3) soil borings around the former UST basin and dispenser island on the west side of the property within the gravel parking area.
2. Collect soil samples from the three (3) borings during advancement.
3. Analyze select soil and groundwater samples for Volatile Petroleum Hydrocarbons (VPH) and Extractable Petroleum Hydrocarbons (EPH) by a State certified laboratory.
4. Perform one (1) round of groundwater sampling for the monitoring wells associated with Work Plan #34813.
5. Submit a limited subsurface investigation and groundwater sampling report that includes the following information:
 - a. A comprehensive data table with groundwater analytical results and depths to groundwater (historic and current).
 - b. A comprehensive data table with soil analytical results including sampling dates and sampling depths.
 - c. Laboratory reports and chain-of-custody documentation.
 - d. A groundwater gradient map depicting the groundwater flow direction.
 - e. A figure depicting Site groundwater monitoring wells and other relevant Site features.

1.1 Site Background and General Assumptions

Five (5) petroleum release events have been reported at the Site, with the primary ongoing case identified as Event ID 3374. Petroleum hydrocarbons were first identified in groundwater in 1989 during closure-in-place of former USTs, with impacts detected at approximately 50 feet bgs and migration generally to the east, south, and southwest. Multiple investigations and remedial actions have since been completed, including installation of numerous monitoring wells, operation of vapor extraction and accelerated remediation systems, chemical oxidation pilot testing and injections, and removal of the UST system in 2011, followed by replacement Site monitoring wells in 2019. Environmental oversight has transitioned through several consulting firms, and groundwater monitoring remains ongoing to support evaluation of remedial options.

Four (4) additional releases (Event IDs 4566, 5246, 5301, and 6319) were associated with dispenser or UST overfills and surface diesel spills between 2007 and 2021. These events involved limited soil or surface impacts that were addressed through excavation, absorbent materials, fluid recovery, and bioremediation measures, with confirmation sampling demonstrating compliance with screening levels. Each of these four (4) events (Event IDs 4566, 5246, 5301, and 6319) received a No Further Action designation from DEQ.

Petroleum impacts in soil have been identified in five (5) localized areas associated with the historic UST and dispenser system, including portions of the UST basin, dispenser islands, and former fuel lines, with elevated benzene also detected near one (1) vapor extraction well. The dissolved-phase groundwater plume is centered around the former UST and dispenser areas and has affected multiple monitoring wells over time. LNAPL has been intermittently observed since 1998, most recently in several wells between 2021 and 2023, including a measurable thickness of diesel product in MW-06 in July 2023. Recent sampling indicates that benzene and total extractable hydrocarbons continue to exceed DEQ screening levels in select wells.

Details regarding prior remedial activities conducted by previous consultants, along with a comprehensive Site history, are documented in reports previously submitted to MTDEQ.

2.0 SITE INVESTIGATION ACTIVITIES

The purpose of this Work Plan is to facilitate investigation of potential residual hydrocarbon impacts around the former tank basin and dispenser islands. As previously stated, three (3) borings will be installed to facilitate collection of soil samples and are depicted in Figure 1. Additional details regarding subsurface sampling are provided below.

2.1 Permitting and Utility Clearance

Project setup activities will initially include contracting with a Montana licensed drilling contractor to conduct well installation activities. Broadbent will coordinate the drilling schedule, and the driller will obtain appropriate permits as required. Broadbent will mark the proposed drilling locations and ensure that the drilling contractor notifies Montana 811 of the pending work a minimum of five (5) days prior to initiating field investigation. Broadbent will contract with a private utility locating company as additional measures for subsurface utility clearance. Each borehole location will also be cleared to a depth of 6.5 feet bgs using a hand auger or air knife vacuum rig by the drilling contractor prior to borehole advancement. Finally, Broadbent will provide adequate notification of drilling activities to appropriate parties.

2.2 Health and Safety Plan Preparation

Before work is initiated, Broadbent will prepare a Site-specific Health and Safety Plan (HASP) for worker protection and hazard identification. The HASP is expected to include the following at a minimum:

- Site and task specific hazards;
- Information on chemicals to be in use (SDS);
- Directions and map to nearest hospital; and
- Contact information for utilities and Broadbent.

A copy of the HASP will be provided to the selected drilling contractor to inform them of potential hazards associated with the Site and emergency procedures.

2.3 Soil Boring

Three (3) soil borings are proposed to assist with assessment of residual hydrocarbon mass located underneath or near the former UST basin and dispenser canopy. During drilling activities, soil cuttings will be described by the on-Site Broadbent representative using the Universal Soil Classification System (USCS) in accordance with ASTM D 2488-93 *Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)*. Soil cuttings will be examined using visual and manual methods for parameters including odor, staining, color, grain size, and moisture content. Drill cuttings will be monitored with a photo-ionization detector (PID) and soil exhibiting impacts will be placed in labeled 55-gallon drums for offsite disposal. If soils exhibit no impacts, cuttings will be used to refill holes at the completion of the boring.

Depth to groundwater at the Site is between 50-55 ft below ground surface (bgs). Borings will be completed to a depth of about 60 ft bgs or until sufficient depth to obtain groundwater samples.

2.4 Soil and Groundwater Sampling

During boring installation activities, soil will be collected at approximate intervals of five (5) feet until groundwater is encountered. Samples will be delivered to an accredited laboratory for analysis. Soil will be continuously screened, where practicable, using a photoionization detector (PID) to identify potential impacts. Each sample will be collected in a California-modified split spoon sampler. Groundwater samples will be collected from each boring once advanced to a depth sufficient for sampling, typically about five feet below the groundwater table.

2.5 Laboratory Analysis

Collected soil and water samples will be submitted to Energy Laboratories in Helena, Montana. Energy Laboratories is a Montana State-certified environmental laboratory which will conduct the following analysis: Volatile Petroleum Hydrocarbons (VPH) by MA-VPH and Extractable Petroleum Hydrocarbons (EPH) by EPA Method SW8015B/MA-EPH. Select samples will be further analyzed for EPH fractions based on EPH concentrations exceeding the MTDEQ Risk Based Screening Levels (RBSL). Approximately three (3) soil samples and one groundwater sample per boring are proposed for submittal to Energy Laboratories for budgeting purposes. Additional samples may be considered for laboratory analysis based on field observations and/or MTDEQ requests.

2.6 Investigation-Derived Residuals Management

Residual solids and liquids generated during the Site investigation activities will be stored temporarily on-Site in appropriately labelled Department of Transportation (DOT) approved 55-gallon drums pending analytical results and profiling. Drummed wastes will be scheduled for transport to an appropriate facility for treatment or disposal following the receipt of the certified laboratory analytical reports for analyses run on their contents.

3.0 GROUNDWATER MONITORING EVENT

Broadbent will conduct one (1) groundwater monitoring and sampling event using 16 on-Site monitoring wells associated with Work Plan #34813, including MW-01, MW-02, MW-05R, MW-06R, MW-07, MW-12R, MW-13, MW-14R, MW-16, MW-17, MW-19, and MW-21 through MW-25. Depth to groundwater and the presence of LNAPL will be measured in each well prior to sampling using an

oil/water interface probe (OWIP). Monitoring wells containing a sufficient volume of groundwater and no measurable LNAPL will be purged and sampled. Monitoring wells suitable for sampling will be purged utilizing a submersible low-flow pump to remove three (3) well volumes or stable field parameters (pH, oxidation-reduction potential, conductivity, and temperature) are achieved.

Purged groundwater from wells will be containerized in 55-gallon drums and stored on-Site until enough is generated to warrant disposal. Disposal costs are not included in this Work Plan.

Groundwater samples will be collected in laboratory-provided containers using a low-flow submersible pump. Samples will be preserved on ice and submitted under chain-of-custody procedures to Energy Laboratories for analysis of the constituents described in Section 2.5.

Based on discussions with analytical laboratories, no specific laboratory methods were identified that can reliably differentiate red-dyed diesel from standard No. 2 diesel in environmental samples, as the dye does not produce a unique analytical fingerprint distinct from the base fuel. Additionally, laboratory analysis already dated the diesel and concluded they were of similar age. Additional inquiries were made to determine whether more comprehensive or specialized testing could further distinguish the fuels; however, limited feedback was received, indicating that alternative analytical methods are available beyond those already performed.

4.0 SITE INVESTIGATION AND GROUNDWATER MONITORING REPORT

Broadbent will prepare a report summarizing Site investigation and groundwater monitoring activities after receiving analytical data from the laboratory. The report will document fieldwork and laboratory analytical results and will include at a minimum the following information:

- Description of field activities associated with Site investigation drilling, sampling, and groundwater monitoring
- Lithologic logs
- Comprehensive soil and groundwater analytical data tables
- Site location map
- Site layout map
- Groundwater potentiometric surface map
- Groundwater analytical map
- Groundwater sampling data sheets
- Project-related photographs (if required)
- Laboratory analytical reports
- Discussion and recommendations

5.0 SCHEDULE & COST

Broadbent will make every reasonable effort to complete the field activities described in this Work Plan; however, scheduling may be affected by contractor availability. Boring advancement activities are estimated to require approximately five (5) days as stated by the driller. Groundwater monitoring and sampling are expected to require up to four (4) days based on previous sampling events. A summary report is anticipated to be submitted within 30-45 days

following receipt of the laboratory analytical results.

Anticipated costs associated with Work Plan activities are estimated at \$47,111.13. These costs were developed based on the Montana PST Fund Guidelines and with input from MTDEQ.

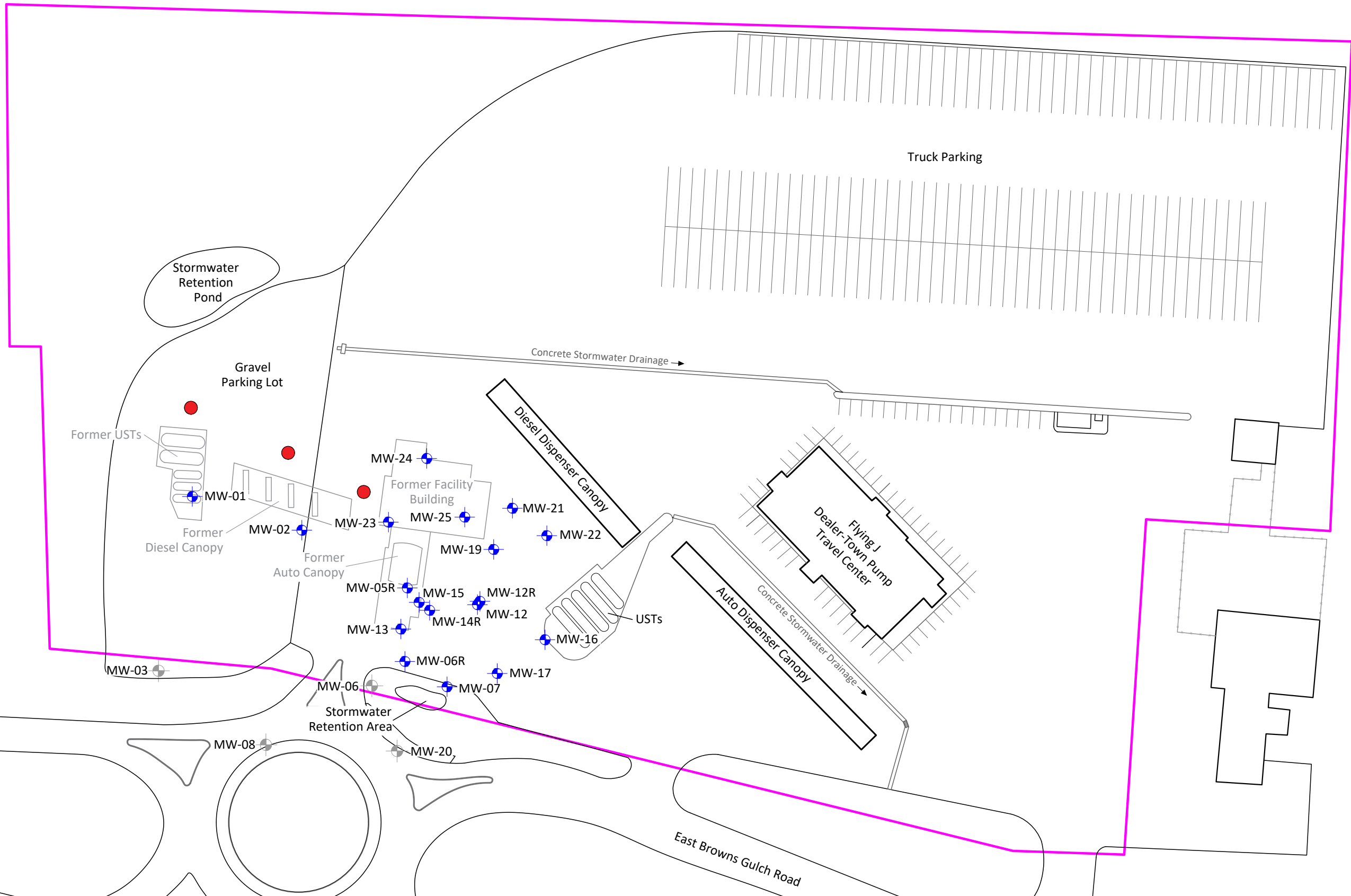
Preparations to conduct the proposed work will commence upon approval of this Work Plan. The total anticipated cost to complete project-related activities described herein is presented below. A detailed breakdown of costs is attached as Table 1.

Task 1: Work Plan	\$ 1,180.00
Task 2: Project Management	\$ 1,620.00
Task 3: Mobilization	\$ 280.00
Task 4: Soil Boring	\$ 25,339.50
Task 5: Groundwater Monitoring/Sampling Event	\$ 13,040.63
Task 6: Site Inv. & GWM Report Preparation	\$ 4,951.00
Cost Estimate	<u>\$ 47,111.13</u>





6.0 LIMITATIONS

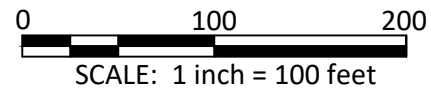
Discovery of hazardous conditions not reasonably anticipated or addressed in the scope of this associated Work Plan, which may impact Pilot, or other Site personnel associated with field work, may constitute a changed condition mandating re-negotiation of the scope of work described herein or termination of services. Broadbent will do its best to alert Pilot of matters which, in the opinion of Broadbent require immediate attention to protect public health, safety, and environment. Broadbent will make every effort to advise Pilot of matters which should be reported to government regulatory agencies. However, Pilot is solely responsible for reporting such matters, and Broadbent shall not be held liable in the event that the proper agency is not notified. Our services will be performed in accordance with generally accepted practice at the time work commences. Results and recommendations will be based on review of available documentation and written or verbal correspondence with appropriate regulatory agencies, laboratory results, observations of field personnel, and the points investigated. No warranty is expressed or implied.

FIGURES



LEGEND

-  Property Boundary (Approximate)
-  Monitoring Well Location
-  Abandoned Monitoring Well Location
-  Proposed Boring Location



Prepared by: AGH Reviewed by: JEH Date: 2/27/26

Site Plan
122000 North Browns Gulch Road
Butte, Montana

Project No. 25-14-117

Figure

1

APPENDICES

Appendix A
Cost Estimate