DEQ
Montana Department of Environmental Quality

Air, Energy & Mining Division

SBM MONTANA LLC

EXPLORATION LICENSE NO. 00857

Amendment No. 2

RAINBOW BLOCK

SILVER BOW COUNTY, MT

February 13, 2026
DRAFT Environmental Assessment

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PROJECT OVERVIEW

COMPANY NAME:	SBM Montana LLC
EA DATE:	February 13, 2026
PROJECT:	Rainbow Block
PERMIT/LICENSE:	Exploration License No. 00857
AMENDMENT #:	Amendment 2

Location

(46.03165°, -112.52317°) County: Silver Bow
PROPERTY OWNERSHIP: FEDERAL ☐ STATE ☐ PRIVATE ☒

Compliance with the Montana Environmental Policy Act

Under the Montana Environmental Policy Act (MEPA), Montana agencies are required to prepare an environmental review for state actions that may have an impact on the Montana environment. The proposed action is considered to be a state action that may have an impact on the Montana environment and therefore, the Department of Environmental Quality (DEQ) must prepare an environmental review. This Environmental Assessment (EA) will examine the proposed action and

alternatives to the proposed action and disclose potential impacts that may result from the proposed and alternative actions. DEQ will determine the need for additional environmental review based on consideration of the criteria set forth in Administrative Rules of Montana (ARM) 17.4.608. DEQ may not withhold, deny, or impose conditions on the permit based on the information contained in this Environmental Assessment. § 75-1-201(4), Montana Code Annotated (MCA).

Proposed Action

DEQ would approve Amendment 2 (AMD2) to Exploration License No. 00857 (Exploration License) for SBM Montana (SBM or Applicant) – Rainbow Block Project, if DEQ has determined that SBM has met the criteria set forth in 82-4-332, MCA. If approved, the license to conduct exploration activities would be granted for a period of one year, at which time, SBM could renew the Exploration License annually.

Purpose and Need

DEQ's purpose and need in conducting this environmental review is to act upon SBM's application for an Exploration License Amendment to conduct mineral exploration activities in compliance with the Metal Mine Reclamation Act (MMRA) (Sections 82-4-301, *et seq*., MCA). On October 20, 2025, SBM submitted a complete application for an Exploration License Amendment. Pursuant to 82-4-332(2), MCA, the application was complete and acceptable on that date.

The Applicant's purpose and need, as expressed to DEQ, is to assess the commercial potential of an ore deposit through surface and underground exploration on private lands located in Walkerville and Butte, Silver Bow County, Montana.

Surface drilling operations would include the construction of up to 7 new drill pads with internal sumps, averaging approximately 80 feet long by 60 feet wide, to a depth of up to 2 feet, and a maximum size of 125 feet long by 100 feet wide, to a depth of 2 feet. The internal sumps would be approximately 15 feet long by 30 feet wide and up to 8 feet maximum depth. From these pads, the operator proposes to drill 4-10 holes per pad for a total of up to 53 drill holes, with a maximum drill depth not to exceed 7,000 feet. Proposed surface drilling totals up to 102,000 feet, which would be the total depth of all drill holes in AMD2 combined.

Underground operations would include the excavation of one new portal, or the opening into an underground mine tunnel (or adit), called the Rainbow Decline, with a surface opening 16 feet tall by 15 feet wide. In order to construct the portal into the current site topography, a pad area must be created around the underground mine entrance. The proposed pad would measure approximately 200 feet long by 165 feet wide, with an excavated depth of up to 34 feet. The application includes drifting (development of access tunnel) to provide underground access and an exploration platform to further define the mineral resource via underground drilling and bulk sampling. An estimated 6,000 feet of underground excavation would occur laterally from the mine portal, eventually connecting with the existing Lexington Mine shaft at the "400-foot level", or approximately 400 feet below the ground surface. The removed material would be stored in 5 waste rock stockpiles with a cumulative volume of up to 150,000 cubic yards. Up to 10,000 tons of ore would be stockpiled for bulk testing.

In support of the operation, the Applicant proposes that approximately 596 feet of new access roads, up to 20 feet wide and 2 feet deep, would be constructed and 2,628 feet of overland travel (driving over a preexisting, undeveloped off-road surface), up to 20 feet wide, would be used. One equipment laydown

area is proposed to be constructed into the current site topography, approximately 100 feet long by 72 feet wide, with an excavation depth of up to 15 feet. If necessary, one slash pile containing vegetation removed during disturbance activities with approximate dimensions of 30 feet long by 30 feet wide, with a height of up to 15 feet is proposed. The slash pile would store vegetation until it would be repurposed for reclamation purposes, and materials not suited for reclamation would be hauled off-site to the local landfill. The Applicant does not anticipate burning any slash.

Up to approximately 11.95 acres of total disturbance is proposed, all of which would be on ground previously disturbed by exploration or previous hard rock mining activities. The application provided an area of 9.44 acres, but DEQ calculations determined the total surface disturbance value provided by the applicant to be incorrect. DEQ has reviewed all surface features described in the application, which add up to a total of 11.95 acres. Unless proposed for further modification by the Applicant, the review conducted through this EA will evaluate a total disturbance area of 11.95 acres.

The Applicant proposes that the exploration work be completed no later than December 31, 2029, and the concurrent reclamation work be completed no later than December 31, 2031.

Table 1: Summary of Activities Proposed in Application

Summary of Proposed Activities in Application	
General Overview	SBM (Applicant) proposes surface and underground exploration activities on private lands located in Sections 6 and 7 of Township 3 North, Range 7 West and Sections 1 and 12 of Township 3 North, Range 8 West, in Walkerville and Butte, in Silver Bow County, Montana. The project is not located within sage grouse habitat. Surface drilling operations would include constructing up to 7 new drill pads with internal sumps, with maximum dimensions of 125 feet long by 100 feet wide, excavated to a depth of up to 2 feet. Each pad would feature a drill sump approximately 15 feet long by 30 feet wide, with a maximum depth of 8 feet. From these pads, the operator plans to drill between 4 and 10 holes per pad, for a total of up to 53 drill holes, with a maximum depth not to exceed 7,000 feet. The total proposed surface drilling would add up to a cumulative length of 102,000 feet. Underground operations would involve excavating one new portal, the Rainbow Decline, with a portal entrance of up to 16 feet high by 15 feet wide, and a portal pad 200 feet by 165 feet wide, and up to 34 feet deep into the face of the hillside. The application includes drifting (development of access tunnel) to provide underground access and an exploration platform to further define the mineral resource. This would include drilling and blasting to remove rock and develop the access drift. An estimated 6,000 feet of underground excavation would be performed laterally from the mine portal, with the removed material stored in 5 waste rock stockpiles totaling up to 150,000 cubic yards. Exploratory drilling would occur from underground but details about the number or dimensions of these holes are not provided by SBM, as it may not be possible to determine these details in advance until the geologic conditions can be viewed and assessed from underground. Additionally, up to 10,000 tons of ore would be stockpiled for bulk testing. The Applicant proposes to calculate, conduct, and report monthly pile volume surface surveys and in-situ underground blasted volume surveys to comply with the 10,000-ton ore limit. Additionally, the monthly bulk sampling reports would include information like bucket counts and additional volumetric surveys to account for the quantity of material leaving site for metallurgical testing. To support the operation, the Applicant proposes constructing approximately 596 feet of new access roads, up to 20 feet wide and 2 feet deep, and 2,628 feet of overland travel routes, also up to 20 feet wide, to be used. Three culverts up to 40 feet long and 18 inches in diameter are proposed to support road construction. One equipment laydown area, about 100 feet long by 72 feet wide and up to 15 feet deep, is also planned. If needed, a slash pile may be created from the vegetation removed during disturbance activities, roughly 30 feet long by 30 feet wide, with a height of up to 15 feet. No other surface disturbances are proposed. The project would disturb up to approximately 11.95 acres of land, all of which has been previously disturbed by exploration or previous hard rock mining activities. Roads and overland disturbance are included in the 11.95 acres of total surface disturbance;

	existing roads would be used where practicable to minimize new disturbance. Total disturbed acreage under AMD2 is in addition to, but largely overlapping with, areas analyzed under the existing Butte Blackjack Exploration License EA for Exploration License No. 00857 (AMD1). The Applicant proposes that the exploration work be completed no later than December 31, 2029, and the reclamation work be completed no later than December 31, 2031. Final reclamation of all surface disturbances must be completed no later than two years following the conclusion of exploration activities unless otherwise incorporated into an Operating Permit.
Proposed Dimensions	
Drill pads (#)	7
Drill pad dimensions (xyz)	Average of 80 feet x 60 feet x 2 feet Maximum of 125 feet x 100 feet x 2 feet'
Internal Drill Sumps (#)	7
Internal Drill Sump dimensions (xyz)	15 feet x 30 feet x 8 feet
Drill Holes (#)	Up to a maximum of 53 holes from the surface. Underground drilling sufficient enough to support decline development (blasting and excavating) and further mineral resource definition.
Maximum Drill Hole Depth	7,000 feet below ground level
Cumulative Surface Drill Hole Depth	102,000 feet
Waste Rock Stockpile (#)	5
Waste Rock Stockpile Capacity	Variable (see Figure 2) cumulative volume of up to 150,000 cubic yards
Laydown Area (#)	1
Laydown Area dimensions (xyz)	100 feet x 72 feet x 15 feet
New Roads	596 feet x 20 feet x 2 feet
Overland Travel	2,628 feet x 20 feet x 1 foot

Slash Pile (#)	1
Slash Pile dimensions (xyz)	30 feet x 30 feet x 15 feet
Portal (#)	1
Maximum Portal Pad Dimensions (xyz)	200 feet x 165 feet x 34 feet
Maximum Portal Opening Dimensions (xy)	16 feet x 15 feet
Total new surface disturbance	**11.95 acres**
Specific Proposed Activities	
Duration and timing	The Applicant proposes that the exploration work be completed no later than December 31, 2029, and the reclamation work be completed no later than December 31, 2031. Work hours are proposed to be up to 24 hours per day (2, 12-hour shifts), up to 7 days per week, except that drilling within 300 feet of a residence would be limited to a single 12-hour day shift. Final reclamation of all surface disturbances must be completed no later than 2 years following the conclusion of exploration activities.
Equipment	Exploration and Reclamation operations would be completed with the following equipment, or similar: • 5 – Drill Rigs (Boart Longyear LF-90 or LF-230) • 2 – 4,000-gallon water trucks (Peterbilt 597) • 2 - Fuel and lube trucks (Kenworth T370) • 2 – Excavators (Cat 350P) • 1 – Bulldozer (Cat D6) • 2 – Backhoes (Cat 424) • 4 – Haul trucks (Cat 745) • 3 – Skid steers (272D3) • 4 – ATV/UTVs (Polaris PXD-FS-D) • 4 – Generators (Generac MLG8k) • 8 – Personal Vehicles (Ford/Dodge Crew Cab 4x4) • 4 – Light towers (Wacker Newson LTT6) • Underground drilling and development equipment similar to the fleet analyzed under AMD 1 (Authorized October 4, 2021)?
Location and analysis area	**Location:** 46.03165°, -112.52317° **Distance from the nearest town/city:** On private lands located in Sections 6 and 7 of Township 3 North, Range 7 West, in Walkerville, Montana and on private lands located

	in Sections 1 and 12 of Township 3 North, Range 8 West in Butte, Montana. Walkerville is a separate municipality in Silver Bow County, but it shares a postal zip code with the City of Butte, which is located directly to the south. The term Butte-Silver Bow (BSB) is designated for the sole governmental entity that was created through consolidating the governments of Butte and Silver Bow County in 1977. **Analysis Area:** The area being analyzed for this environmental review includes the immediate project area, immediate downstream water sources, neighboring lands surrounding the analysis area, and the surrounding Superfund context within a reasonable distance for each resource considered. Refer to Location Map and any other maps below.
Personnel on-site	• 1 – Project Manager • 3 – Geologists • 2 – Mining Engineer • 8 – Surface drillers/helpers/foreman • 16- Mining Team/ Portal Construction Team • 4 – Maintenance crew • 1 – Safety & Environmental Compliance
Structures	• 6 – Connex/containers (up to 40 feet) • 6 – Trailers (up to 30 feet) • 4 – Portable toilets • 4 – Water pumps (Honda WB30X or similar) • 1 – Fuel tank (500-gallon) • 10 – Small fuel containers (5-gallon) • 1 – Water tank (1,000-gallon) • 500 feet of 2” diameter water lines
Project water source	The Applicant proposes that project water would be supplied from existing municipal water sources on the Missoula and Badger sites as well as a mid-point hydrant on Summer St, listed below: • Missoula Office; 46.02505, -112.54179 • Summer St/Seraph Pt; 46.02834, -112.52878 • Badger/Chief Joseph Decline; 46.02914, -112.52512 The Applicant would use a Zurn Wilkins Model 375XL Backflow Preventer (BFP) with integrated relief valve or similar, as well as a hydrant mounted water meter that has an integrated relief valve installed to prevent contamination of local water supply in accordance with the BSB Water Department. Additionally, a backflow preventer and open-air transfer methods would be employed when filling water trucks on the surface for use in drilling fluids or as dust mitigation. SBM estimates that up to 15,000 gallons per day may be used during drilling operations and applied to roads as needed as a dust suppressant.
Supplemental lighting	The Applicant proposes that supplemental lighting would be used from 6:00 p.m. to 6:00 a.m., adjusted seasonally as necessary. The Applicant proposes the use of the following best management practices to mitigate light pollution: • Directional/downward-facing lights • Light shrouds or shields

Air quality	The Applicant proposes that all equipment would utilize factory emission controls. Water would be used as necessary on disturbance areas and access roads to mitigate fugitive dust and vehicles would travel at a reduced speed, and trips would be reduced as necessary. The Applicant does not anticipate burning slash, but if conducted, would be controlled. The Applicant is required to comply with the applicable local, county, state, and federal requirements pertaining to air quality.
Water quality	The Applicant has not proposed measures specifically addressing water quality within the *State of Montana Department of Environmental Quality – Application for Exploration License / Mineral Exploration License Supplemental Information (MELSI)* document. The MELSI document is part of the exploration license amendment application. The Applicant is required to comply with the applicable local, county, state, and federal requirements pertaining to water quality.
Erosion control and sediment transport	Surface disturbances associated with the proposed exploration activities have the potential to result in erosion of disturbed soil. Sediment and non-sediment contaminants have the potential to be transported offsite via stormwater. The Applicant proposes the use of the following best management practices to mitigate sediment transport from surface disturbances; • vegetated buffers • earthen berms • plastic pit liners • silt fencing • water diversions • secondary containment • spill prevention & spill response kits • mulch cover • surface roughening • straw wattles • sediment traps The Applicant is required to comply with the applicable local, county, state, and federal requirements pertaining to erosion control and sediment transport, including coverage under the MPDES General Permit for Storm Water Discharges Associated with Construction Activity (MTR100000). DEQ previously issued Authorization No. MTR109160 (Blackjack Project), which requires implementation of a project-specific Storm Water Pollution Prevention Plan (SWPPP). This authorization and SWPPP would be maintained and updated, or new coverage obtained if needed, to include the additional disturbances proposed under AMD2.
Solid waste	The Applicant proposes that any solid waste produced by the operation would be collected in two 8 cubic yard dumpsters and hauled to the Butte Silver Bow landfill as necessary. The Applicant is required to comply with the applicable local, county, state, and federal requirements pertaining to the disposal of solid waste material.
Cultural resources	The Applicant has not proposed any actions that would reduce any potential impacts to cultural resources. However, the Application states that if any resources are encountered, proper notifications would be made. The State Historic Preservation Office (SHPO) stated that there are a few previously recorded historic sites located within the proposed exploration boundary areas. These areas are also located within

	the Butte-Anaconda National Historic Landmark. Based on these previously recorded sites, the location within the NHL, and the ground disturbance required by this undertaking SHPO feels that this project has the potential to impact cultural properties. SHPO, therefore, recommends that a cultural resource inventory be conducted in order to determine whether or not sites exist and if they would be impacted. The Applicant is required to comply with all applicable local, county, state, and federal requirements pertaining to cultural resources.
Hazardous substances	The Applicant plans to transport petroleum products to exploration sites using 2 Kenworth T370 fuel and lube trucks, as necessary. One 100-gallon tank of gasoline and up to 10 5-gallon gasoline containers would be stored on site. All fuel storage or refueling would occur within areas of secondary containment to prevent spills. Spill kits would be available on site in case of unintentional releases of hazardous materials. In the event of a spill, all contaminated soil would be collected and properly disposed of. No more than 5,000 pounds of explosives (standard packaged stick and bulk explosives, as well as electronic detonators) would be on site at any one time. Explosives would be stored in an MSHA-approved surface magazine at the Badger Shaft Hoist House and managed by a licensed contractor to comply with MSHA and ATF requirements. The Applicant must adhere to all applicable local, county, state, and federal regulations concerning hazardous substances.
Reclamation Plans	**Concurrent reclamation:** The Applicant proposes that some ongoing or concurrent reclamation may occur once all proposed drill holes for an individual proposed pad are complete, or if the proposed drill hole yield is below expectation, the undrilled footage may be allocated to a different pad, and that one reclaimed. However, due to the limited work area, the concurrent reclamation would be sporadic. The Applicant may elect to wait and reclaim some drill sites until all proposed drilling is complete and the results have been evaluated. Disturbance around the portal areas otherwise not identified as having a beneficial use to the proposed action (i.e., storage, staging, etc.) would be regraded as necessary. No surface disturbances would be reclaimed and/or sealed until the exploration phase is complete or the Applicant no longer requires access. Any soil found to support vegetative growth would be salvaged, stockpiled and tarped on site in the immediate vicinity of the disturbances, then applied to disturbed lands during reclamation. All disturbances would be recontoured and seeded with a DEQ-approved seed mix. **End-of-season reclamation:** The Applicant proposes that, should the operations become dormant due to weather or other season-dependent circumstances, unreclaimed drill pads would be temporarily stabilized with erosion control measures and monitored per the requirements of Stormwater Pollution and Prevention Plan (SWPPP), No. MTR109160. Portals would be secured, equipment parked, and any stockpiles susceptible to erosion would be monitored and erosion control measures (discussed further in Section 1. Geology and Soil Quality, Stability, and Moisture) maintained as necessary. **Final reclamation:** The Applicant proposes that drilling fluids in surface sumps would be pumped into a water truck to be used at the next hole. The last drill sumps in use would be desiccated, and the plastic liners cut, folded and buried to encase drill cuttings before recontouring the drill pads to match adjacent undisturbed lands. All salvaged soil suitable for vegetation would be respread over the disturbed areas and

	reseeded with an adequate and approved seed mix. Any soil not suitable for vegetation would be moved and included in the waste rock stockpiles. If the Applicant determines that an adit is no longer needed, it would be reclaimed according to the Administrative Rules of Montana (ARM) 17.24.107(6) by backfilling the adit with 25 feet of waste rock or riprap that would not degrade any discharge water. The Applicant does not anticipate the adit to discharge water based on adit design and anticipated groundwater levels. The surrounding disturbed area would also be backfilled, regraded to match the adjacent lands, and reseeded with an adequate and approved seed mix. The Applicant proposes that mineralized rock (vein material) stockpiles would be either buried under at least 3 feet of non-mineralized development rock and reclaimed to the same standards as the development rock stockpiles, or be graded in place to prevent water accumulation and then suitably prepared, topsoiled, and seeded. Development rock stockpiles would be graded to a 3H:1V slope, blended into the surrounding topography, and then reseeded with an approved seed mix. The Applicant proposes that roads existing prior to exploration would be maintained for their continued use. Any new road would be ripped, recontoured, and reseeded, unless the Applicant, who is also the landowner, submits to DEQ a statement describing a legitimate post-mining land use for the roads. Should there be a shortage of suitable topsoil for reclamation, the Applicant proposes to bring in or produce and compost enough clean soil onsite to cover all surface disturbances. Areas that are re-soiled would be ripped (de-compacted or scarified) and seeded with an approved seed mix. **Weed control plan:** The Applicant proposes that all surface disturbances would be sprayed with herbicide to mitigate the spread of noxious weeds. Any existing noxious weeds growing on and along existing access roads and proposed disturbance areas would be sprayed and controlled as recommended by the Applicant's in-house licensed weed control expert, and or a local weed control contractor. **Structures to remain:** The Applicant, who is also the landowner, may submit to DEQ a statement describing a legitimate post-mining land use for any structures, including the portal, portal pad and surface-contoured stockpiles. The Applicant is required to comply with the applicable local, county, state, and federal requirements pertaining to reclamation plans.
Cumulative Impact Considerations	
General setting	The proposed exploration activities would occur entirely within an area already affected by more than a century of hard rock surface and underground mining (e.g., from ground disturbances; surface subsidence and groundwater dewatering from underground mining; waste rock and tailings surface deposition), as well as ongoing Superfund remedial work within the Butte Mine Flooding Operable Unit (BMFOU) and the Butte Priority Soils Operable Unit (BPSOU). When considered together with other

	actions in the area—including historical mine disturbance, current operations at a nearby active mine, and continued Superfund remediation and monitoring—the additional disturbance of up to 11.95 acres and temporary increases in noise, traffic, dust, and visual contrast from this project would incrementally contribute to cumulative impacts on soils, water quality, air quality, vegetation, wildlife use, aesthetics, and nearby residents. However, because the project is limited in scale and duration, it would occur entirely on previously disturbed private land, includes concurrent and final reclamation, and must comply with applicable regulatory controls, the incremental contribution to cumulative impacts is expected to be minor.
Overlapping Regulatory Considerations	The project footprint is located within the BMFOU and the BPSOU of the Silver Bow Creek/Butte Area Superfund Site. This area is subject to ongoing remedial actions, including operation of the mine-flooding dewatering and treatment system at the BMFOU and continued construction and improvement of mine-waste caps, stormwater controls, and residential soil cleanups under the BPSOU Consent Decree and associated boundary and source-area maps (https://www.co.silverbow.mt.us/DocumentCenter/View/17487/). Project activities would be coordinated with Environmental Protection Agency (EPA), DEQ, and Potentially Responsible Parties to ensure consistency with BMFOU and BPSOU remedial objectives and would be designed so they do not damage existing remedy components or interfere with the implementation or effectiveness of existing or planned remedies. Other regulatory considerations include: • Public Water Supply—supply protections associated with use of Butte–Silver Bow municipal hydrants • Butte-Silver Bow Excavations and dirt-moving protocols— for work within the BPSOU. • Local Zoning, including two-family residential (R2) and Conservation Open Space (OS-C)— districts applicable to portions of the project area, as described in Butte–Silver Bow Municipal Code Title 17 (e.g., Chapter 17.12 R-2 Two-Family Residence Zone and Chapter 17.21 OS-C Conservation Open Space Zoning District) and shown on the county's official zoning maps (https://www.arcgis.com/apps/View/index.html?appid=4ac12eed2b7041aa83cb08c067e7823d).
Past actions	Past actions in the analysis area include more than a century of underground and surface hard rock mining, waste rock and tailings deposition, and associated smelting and industrial activity in and around Walkerville and Butte, which left extensive disturbed ground and contaminated soils and groundwater within what are now the BMFOU and BPSOU of the Silver Bow Creek/Butte Area Superfund Site. Historical hard rock mining in the area was largely conducted by the former Anaconda Company and its successors until large-scale operations ceased in 1982. Open pit mining operations later resumed under new ownership in 1986. Since listing on the National Priority List (NPL), long-term remedial actions and cleanup programs have been implemented under Superfund decision documents and the BMFOU and BPSOU Consent Decrees to manage contaminated soils, mine wastes, and mine-flooding ground water. For information about the Superfund site history and Potentially Responsible Parties, refer to EPA's Fifth Five-Year Review Report for Silver Bow Creek/Butte Area Superfund Site (2021) at: https://semspub.epa.gov/work/08/100010834.pdf.

	More recently, DEQ approved the Butte Blackjack Exploration Project (Exploration License No. 00857, AMD1) in this same general area, and prior exploration and reclamation have contributed to the currently disturbed but partially reclaimed condition of the project site.
Present actions	Present actions in the analysis area include: • ongoing mining and ore-processing operations at the Continental Mine Complex and associated Yankee Doodle Tailings Storage Facility (Operating Permit No. 00030, Montana Resources LLC); • continued operation and optimization of the BMFOU mine-flooding dewatering and treatment system; and • active BPSOU remedial and reclamation projects such as the Butte Mine Waste Repository (see location in Figure 8), mine-waste capping, stormwater-management improvements, and residential soil cleanups.
Future actions	Future actions in the analysis area are expected to include continued implementation and potential expansion of Superfund remedial activities within the BMFOU and BPSOU being carried out under existing decision documents and consent decrees. Future Superfund remedial activities occurring in the area would not take place within the proposed 11.95 acres of disturbance from the proposed action. Mining and ore processing activities are expected to continue at the nearby Continental Mine Complex under the requirements of Operating Permit No. 00030, although this area is outside of the 11.95 acres of disturbance from the proposed action. Additionally, one future nearby road reconstruction project was identified (see location in Figure 9) and is expected to begin in 2031, the final year of reclamation associated with the proposed action.

Figure 1. Project Location Map (Figure 1 from SBM application, modified by DEQ). The boxes indicate the areas of focus depicted in the other following figures.

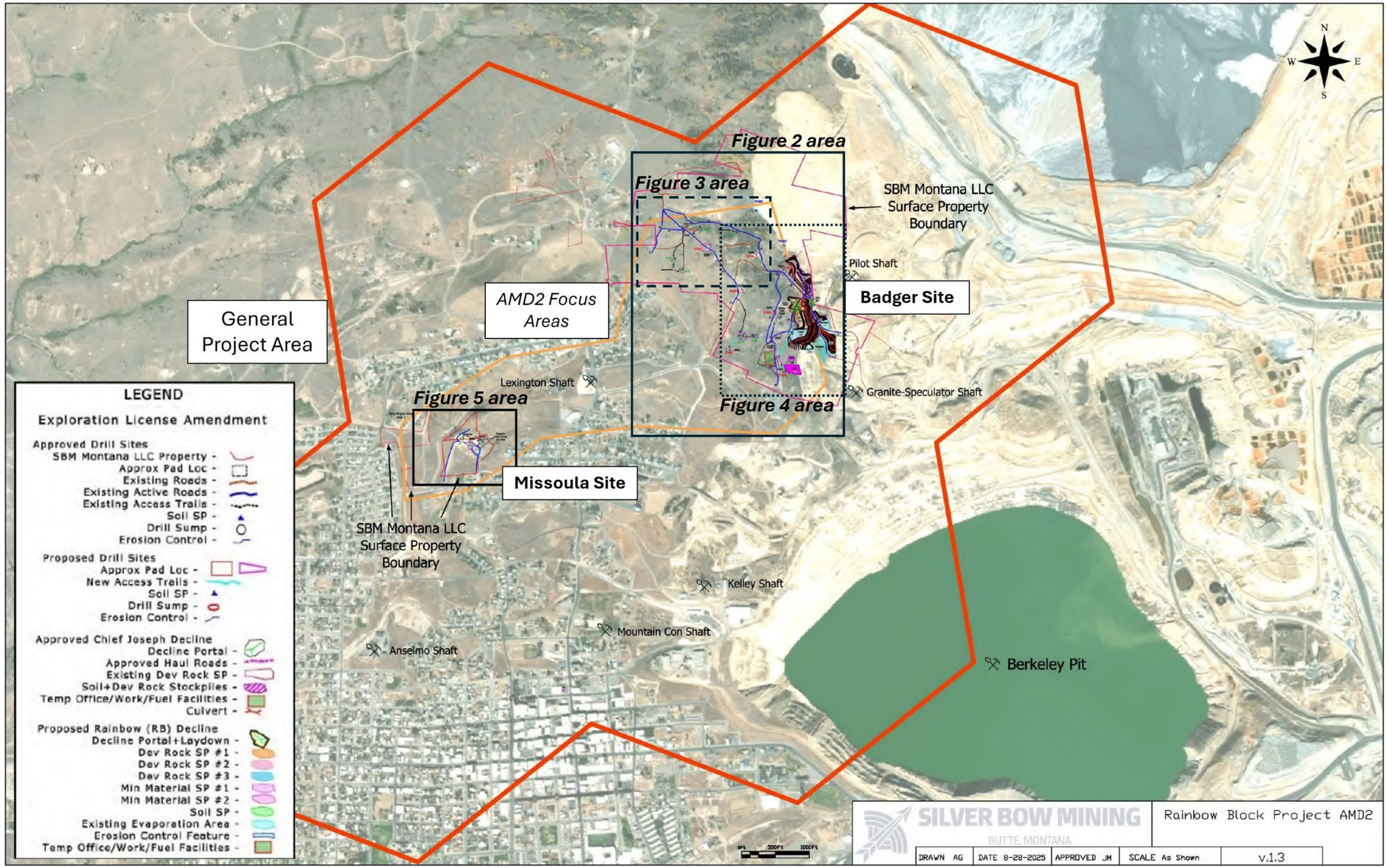


Figure 2: Overview of Proposed Exploration Activities- Badger Site (Full Area)

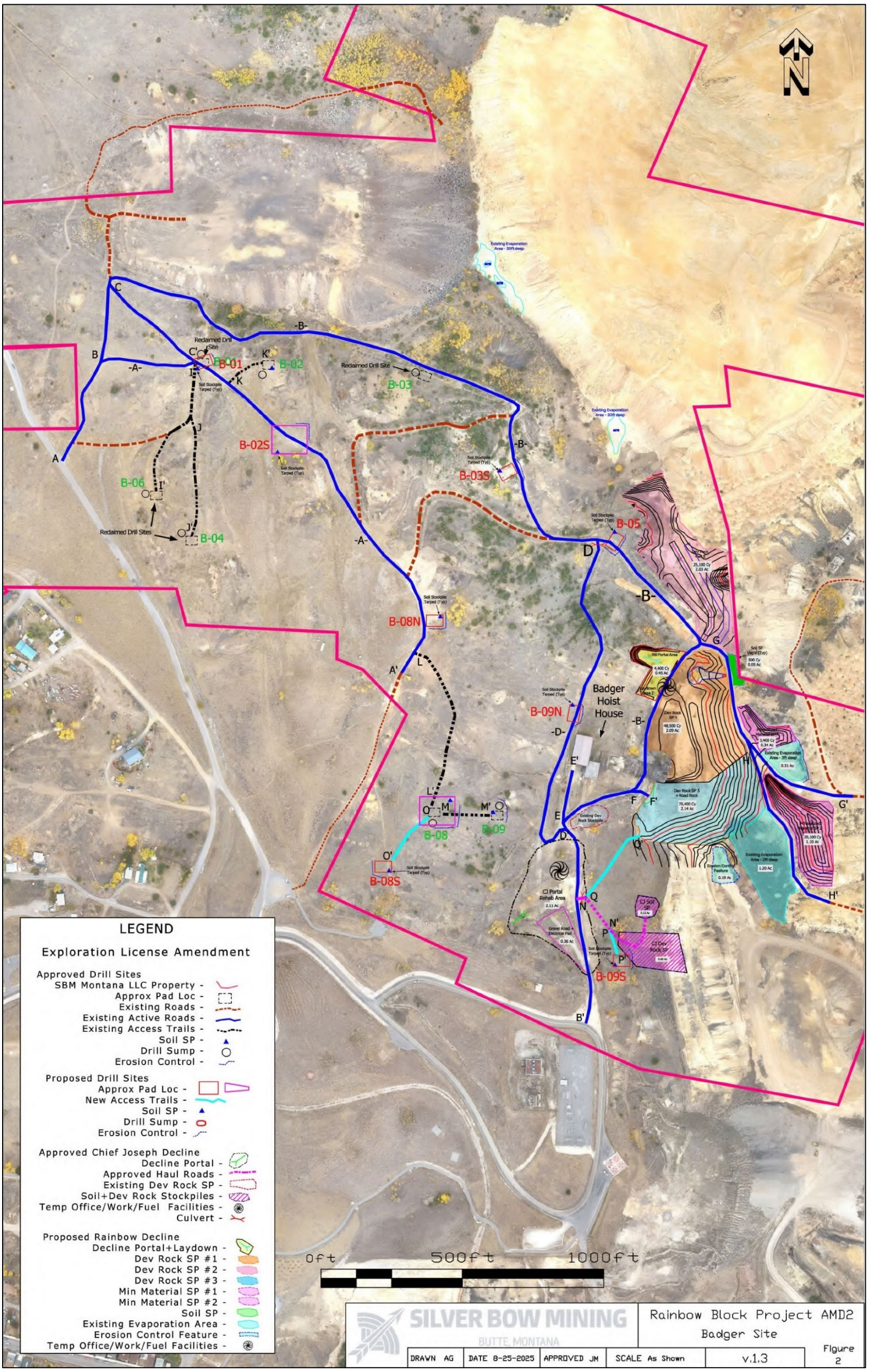


Figure 3. Overview of Proposed Exploration Activities- Badger Site (North Area)

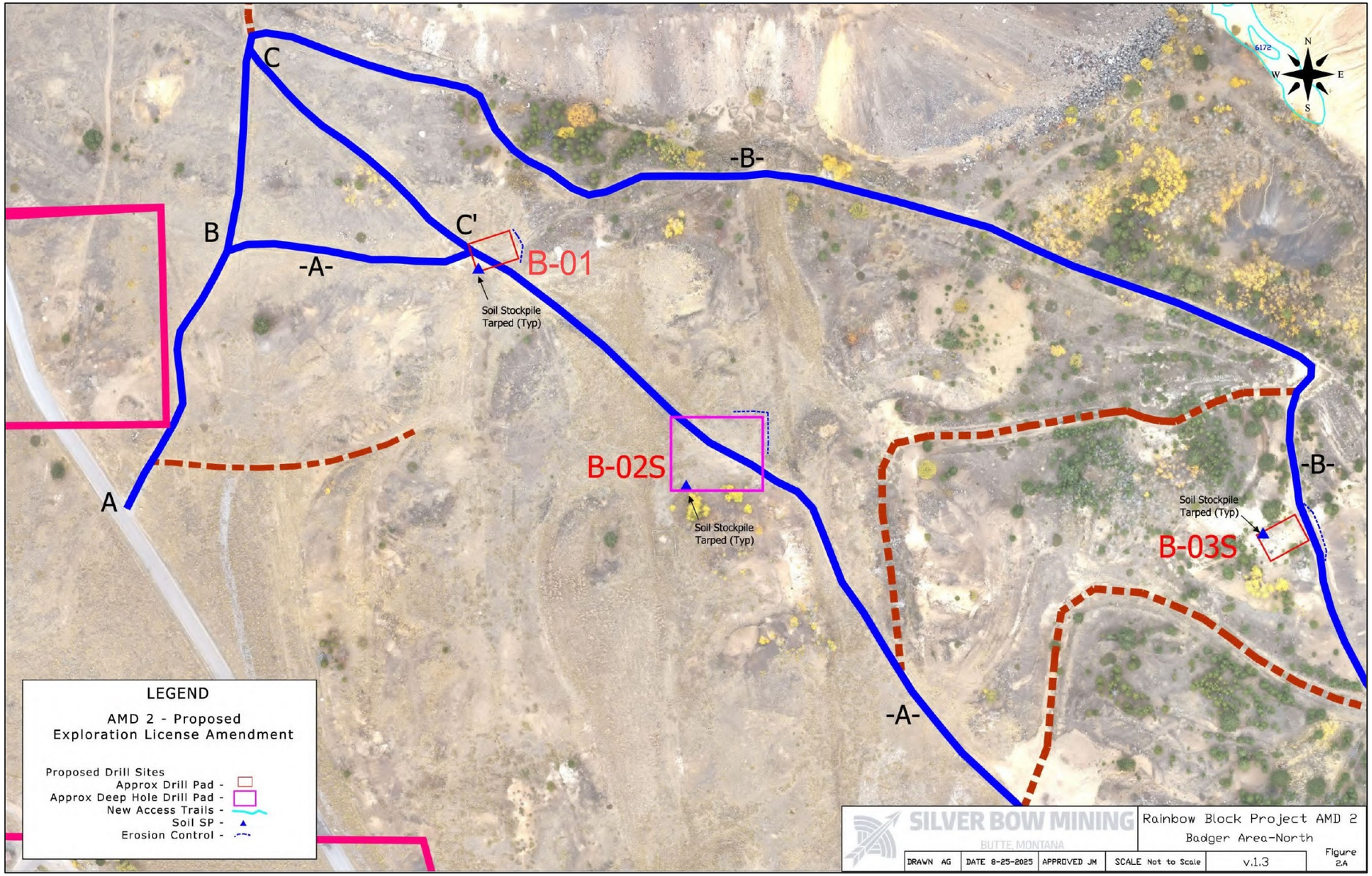


Figure 4. Overview of Proposed Exploration Activities- Badger Site (South Area)

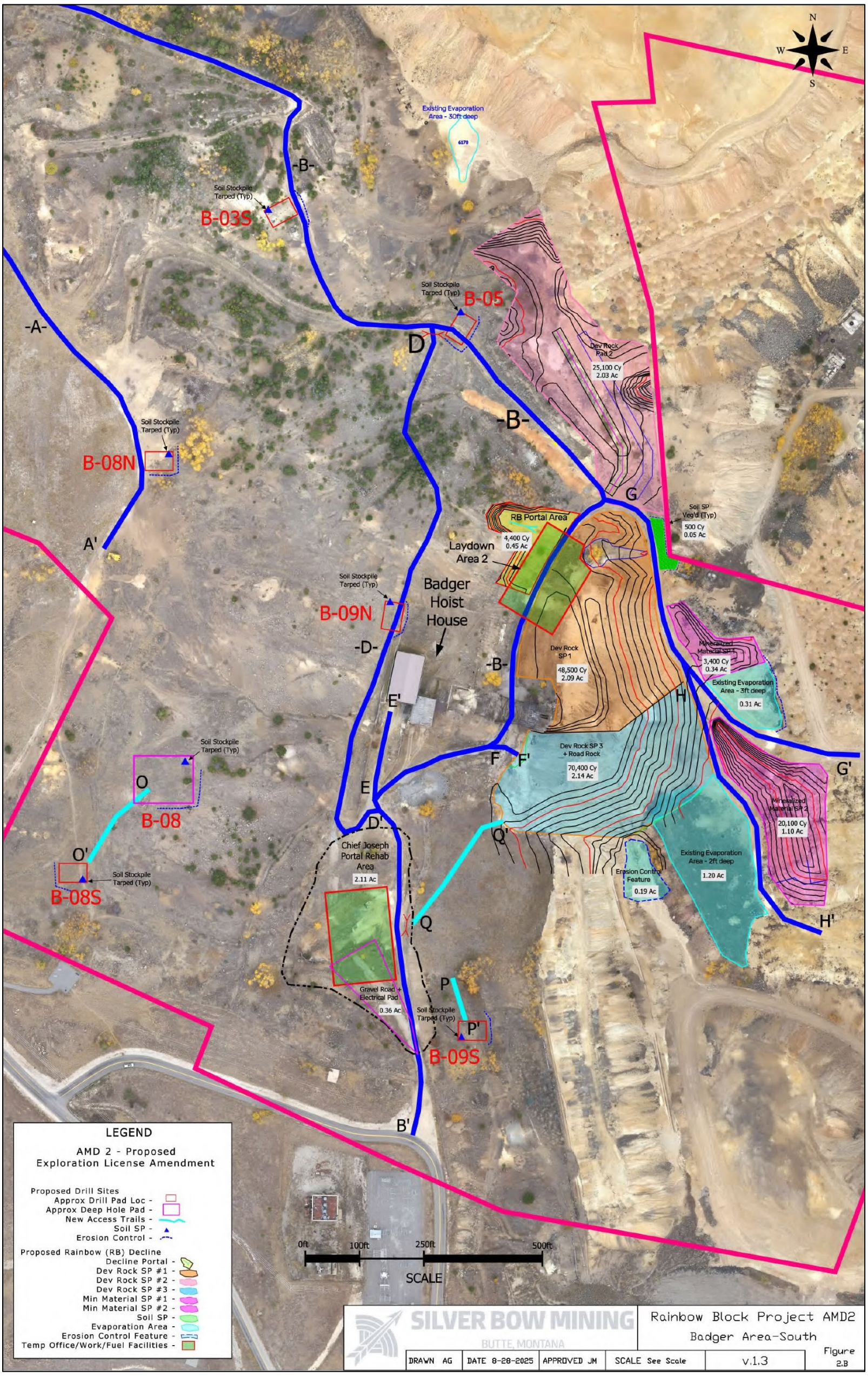
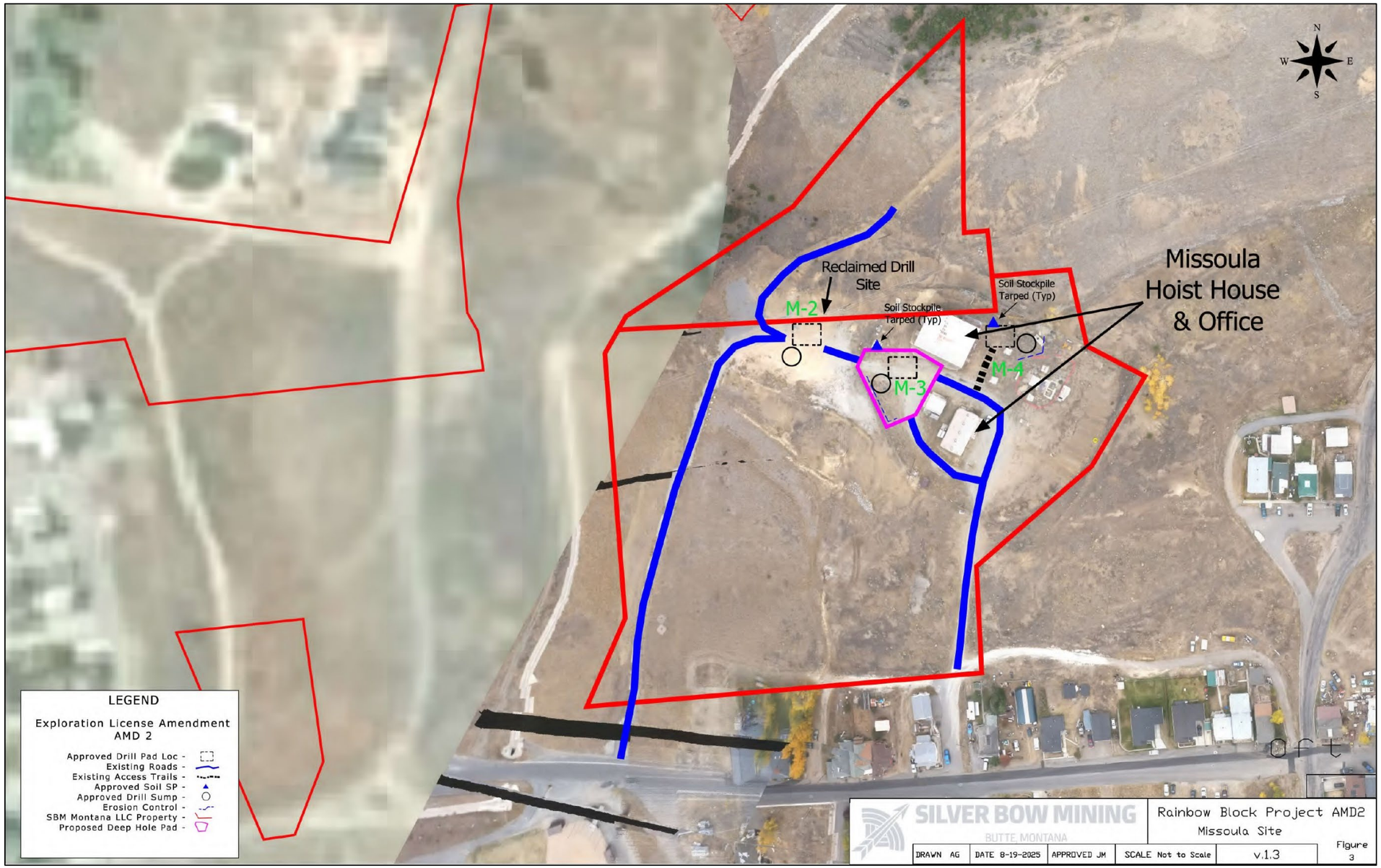


Figure 5. Overview of Proposed Exploration Activities- Missoula Site (Full Area)



SUMMARY OF POTENTIAL IMPACTS

The impact analysis will identify and estimate whether the impacts are direct or secondary impacts. Direct impacts occur at the same time and place as the action that causes the impact. Secondary impacts are a further impact to the Montana environment that may be stimulated, or induced by, or otherwise result from a direct impact of the action (ARM 17.4.603(18)). Where impacts would occur, the impacts will be described.

Cumulative impacts are the collective impacts on the Montana environment from the Proposed Action when considered in conjunction with other past and present actions related to the Proposed Action by location or generic type. Related future actions must also be considered when these actions are under concurrent consideration by any state agency through pre-impact statement studies, separate impact statement evaluation, or permit processing procedures. The projects identified in **Table 1** were analyzed as part of the cumulative impacts assessment for each resource.

1. Geology and Soil Quality, Stability, and Moisture

The areas of proposed exploration would be located entirely on private lands within the Butte Mining District in Butte and Walkerville, Montana (Figure 1). The proposed project would be located west, adjacent to existing, unreclaimed disturbance from historical mining in the area. Further east is the Continental Mine Complex, which is actively operated under Operating Permit No. 00030 by Montana Resources LLC.

Butte Mining District History and Geology

In more recent history, Washington Construction of Missoula, Montana, acquired some of the mining areas that were operated by the Anaconda Company and its successors, under the name of Montana Resources, Inc. and reopened the East Berkeley Pit (now “Continental Pit”) for copper and molybdenum production in 1986. In 1987 an Australian investor purchased a number of the historical Butte underground mines from Montana Resources Inc. under the corporate name New Butte Mining, with the intent to re-explore the Butte underground for silver and lead. New Butte Mining reopened the Lexington Tunnel between the Syndicate Pit and the Lexington shaft, and also opened a new adit on the Chief Joseph claim, west of the Badger shaft. In 1993, New Butte Mining ended its underground operations (Business Week 1984; Shovers 1988).

In 2021, Butte Blackjack Operating, LLC (now SBM Montana LLC) proposed to conduct exploration drilling and rehabilitate the Chief Joseph adit and intercept the Lexington shaft at the “350-foot” level for the purposes of further defining mineral resources under Exploration License No. 00857, AMD1. A final Environmental Assessment for AMD1 was issued on October 4, 2021, and authorization to proceed was determined by the DEQ after sufficient reclamation bond was posted on October 8, 2021. Since that time, SBM has conducted some exploration drilling under AMD1 at the Missoula and Badger Sites. The proposed action for AMD2 would include additional surface exploration drilling and the excavation of a new adit, the Rainbow Decline, for the purposes of further defining mineral resources. Surface drilling under AMD2 would occupy similar ground as what has already been disturbed under AMD1 (the Missoula Site and Badger Site), and additionally drill from 7 new locations within the pre-existing project area as described in Figures 1 through 5.

The area that is now the City of Butte rests on the southwestern side of a large mass of granite, or quartz monzonite, that extends from the Highland Mountains northward about 70 miles, nearly to Helena. This rock formation, called the Boulder Batholith, dates to the Cretaceous era, about 70 to 80 million years ago. The Butte portion of the batholith underwent several periods of intense cracking and fracturing, relatively close together in terms of geological time. First, part of the granite far below the surface (generally beneath the current site of the Berkeley pit) was broken by many small faults and cracks. Mineralizing solutions deposited copper and molybdenum in these veins in sulfur-bearing minerals like chalcopyrite and molybdenite. Several million years later, another period of faulting produced much larger fissures, thousands of feet long and deep, trending to the northwest or northeast. Mineral-laden water moved through these fissures and deposited copper, silver, gold, zinc, lead, manganese, cadmium, bismuth, selenium and other elements in the cracks and adjacent rock.

These deposits have distinctive patterns. In horizontal cross-section, i.e., as seen from above, the ore minerals are arranged in zones resembling concentric circles. The central core contains copper, primarily as chalcocite, enargite, bornite, and chalcopyrite. The intermediate area has decreasing copper values and increasing quantities of lead and zinc. In the outer zone, silver and manganese predominate. Seen in vertical cross-section, the deposits are dome- or cone-shaped, spreading wider at greater depths. Veins at the surface have been highly oxidized and produce mainly silver ores, with copper leached in some areas to depths of several hundred feet.

Later faulting and fracturing events complicated the geologic setting by breaking and offsetting the ore-bearing veins in several directions. As a result, a given vein may seem to end abruptly, but in fact has been displaced along a fault line and resumes some distance away. Other veins descend below the surface at different angles, or dips, and may run into each other at some depth. All these factors contributed to the mass of complex and costly litigation among Butte's mining barons over the locations of certain veins and ownership of claims (Johnson 1994) (DEQ, Abandoned Mine Lands).

Soil Types

Soil types in the project area consist primarily of:

- Typic Cryorthents, reclaimed area-Beeftrail, severely impacted complex, 4 to 30% slopes;
- Dumps, mine, not rated;
- Beeftrail-Minestope_Dinnen complex, 4 to 25% slopes, moderately impacted; Beeftrail-Branham-Minestope complex, 2 to 15% slopes; and
- Minestope, extremely boulder-Branham, extremely bouldery-Rock outcrop complex, 8 to 35% slopes.

These soils have a moderate or unrated (dump, mine) erosion hazard ratings for disturbances located on road or trail; and these soils have a moderate (Minestope, extremely bouldery-Branham, extremely bouldery-Rock outcrop complex, 8 to 35% slopes), to slight and unrated (dump, mine) erosion hazard ratings for disturbances located off-road or off-trail. Soil with a “moderate” erosion hazard rating indicates that erosion is likely and that erosion control measures may be needed, while soil with a “slight” erosion hazard rating indicates that erosion is unlikely under ordinary climatic conditions.

No unusual natural geologic hazards (such as active faults, landslides, or karst features) are present in the project area, and while disturbed mine-waste and soil materials are susceptible to erosion, they are not considered uniquely fragile or unusually unstable relative to other disturbed lands in the Butte and Walkerville area.

The Applicant has proposed that underground exploration operations would result in a portal opening 16 feet high and 15 feet wide, with a portal pad disturbance of up to 200 feet by 165 feet by 34 feet into the current slopes (see Figure 4), and generate multiple waste rock stockpiles totaling a cumulative waste rock capacity of up to 150,000 cubic yards. These stockpiles would have a horizontal surface expression of up to 8.50 acres.

Proposed surface drilling operations would include the construction of up to 7 new drill pads with internal sumps, approximately 125 feet long by 100 feet wide, to a depth of up to 2 feet, and including sumps approximately 15 feet long by 30 feet wide, and up to 8 feet maximum depth.

Additionally, the Applicant proposes that approximately 596 feet of new access roads, up to 20 feet wide and 2 feet deep, would be constructed and 2,628 feet of overland travel (driving over a preexisting, undeveloped off-road surface), up to 20 feet wide, would be used. Construction of one equipment laydown area is proposed, approximately 100 feet long by 72 feet wide, with a depth of up to 15 feet. A stockpile of ore for bulk testing would be staged within the laydown location or within 2 of the 5 waste rock stockpiles previously mentioned.

The Applicant must comply with the applicable local, county, state, and federal requirements for erosion control and sediment transport. The Applicant proposes the use of vegetated buffers, earthen berms, plastic pit liners, silt fencing, water diversions, secondary containment, spill prevention and spill response kits, mulch cover, surface roughening, straw wattles, and sediment traps as best management practices (BMPs) to mitigate erosion and sediment transport offsite. Additionally, the Applicant proposes to monitor stockpiles for erosion, and any pronounced erosion areas would be addressed with mulch application or other necessary control measures to mitigate degradation. The Applicant further proposes to stockpile and tarp any soil found to support vegetative growth, mitigate soil loss, and to apply to disturbed areas during reclamation after exploration activities are complete.

Superfund Context

The project area lies within the BMFOU and the BPSOU of the Silver Bow Creek/Butte Area Superfund Site, where historical underground and surface mining, waste rock and tailings deposition, and related industrial activities have extensively disturbed native geologic materials and soils, left widespread mine-waste deposits, and altered surface and subsurface drainage patterns.

Direct Impacts:

As described above, the predominant rock type to be encountered in the project area would be granite or quartz monzonite, with varying degrees of potentially metal-bearing mineralization. In addition to the removal of surficial rock from the excavation and construction of portal pad and laydown areas, the proposed action would result in the removal of approximately 150,000 cubic

yards of waste rock and up to 10,000 tons of mineralized rock (ore) from underground. Additional rock would be removed from the proposed drillholes (surface and underground) with the approximate dimensions described in Table 1, although the volume or mass of the resulting core samples or rock chips from drilling would be negligible compared to materials removed from surface excavations and underground development. Rock and soil would be displaced during the development of the proposed drill pad areas, sumps, laydown area, and new roads, with the approximate dimensions described in Table 1.

Secondary Impacts:

The exploration project could result in soil disturbance and minor subsequent erosion of disturbed soil, and sediment could be transported offsite via storm water. Surface soil disturbance could allow for the establishment of weeds. Weed control during and after exploration activities is a requirement. Noxious weeds are further addressed in "Section 4. Vegetation Cover, Quantity, and Quality".

Cumulative Impacts:

Cumulatively, the proposed action would occur within a general area where historical underground and surface mining, waste-rock and tailings deposition, and ongoing BPSOU and BMFOU remedial construction have already disrupted native geologic materials and soils and altered slope and drainage conditions. The additional disturbance of up to 11.95 acres on previously disturbed ground, with application of erosion-control BMPs and reclamation, is expected to make only a minor, temporary contribution to these existing cumulative effects on soil stability and geologic conditions and would not measurably change long-term geologic or soil-stability characteristics in the project vicinity.

2. Water Quality, Quantity, and Distribution

Surface Water and Runoff:

There are two focus areas for exploration activities under the proposed action, shown as the Missoula Site and Badger Site in Figure 1. The analysis area for water resources includes these two sites and on-site drainage, along with offsite drainage pathways and potential groundwater and surface water resources that may occur beneath or downgradient from these sites (e.g., Berkeley Pit or Silver Bow Creek). The Missoula Site is located on the western part of the general project area, between the Lexington Mine and Anselmo Mine shafts. This site is on currently disturbed ground and occurs within a corridor of previously disturbed and remediated mine lands along Missoula Gulch, located in between established residential neighborhoods. The Badger Site is located on the eastern part of the general project area, further from the majority of residential neighborhoods, bordering the western edge of the active mine operations conducted by Montana Resources.

The Badger Site, which includes the Badger surface drilling sites, Chief Joseph portal, and proposed Rainbow Decline portal, are located at a topographic high point between 6,300 and 6,400 feet above mean sea level (amsl) (Figures 2, 3, and 4). The westernmost drill site is located at the Missoula Mine site, about 0.75 mile west of the Rainbow Decline at about 6,040 feet amsl, within the drill pads previously permitted under AMD1 (Figure 5). There is a topographic high point between the two sites in the vicinity of the Lexington Mine (6,217 feet amsl) and extending to the north of Walkerville. This topography creates a divide in surface drainage pathways, with

potential runoff flow generally moving from north to southwest around the Missoula Site and from north to southeast around the Badger Site.

The project area has a mean annual precipitation of approximately 13 inches (StreamStats, USGS). The nearest surface water bodies to the project area are human-made, the pond within the Yankee Doodle Tailings Storage Facility (embankment is approximately 2,500 feet upgradient from the Badger Site) and the Berkeley Pit (approximately 3,500 feet downgradient from the Badger Site), which are located within the boundary of the Montana Resources Operating Permit No. 00030 and the BMFOU (Figure 6).

Due to surface disturbance from previous mining (e.g., soil removal or burial, mine excavations, facility construction, waste rock and tailings deposition) and other development around Butte and Walkerville, the topography and the surface hydrologic flow patterns have been significantly altered from the natural pre-mining and pre-development flow patterns. As noted above, some areas of Butte and Walkerville that are immediately adjacent to the active mine operations at Montana Resources have potential runoff pathways that generally extend from north to southeast, ultimately flowing to the Berkeley Pit area.

The nearest perennial stream is Silver Bow Creek, located approximately 2 miles to the south and downgradient of the proposed Missoula Site. Within less than 1 mile to the north (upgradient) of the Badger and Missoula Sites, the topography changes north of Walkerville and the drainage pathways for any surface water or runoff (e.g., Bull Run Gulch, Oro Fino Gulch) are directed from east to west, disconnected from drainages to the south (described above).

The northern half of Butte, locally known as “Uptown,” is a dense residential and commercial area that occurs in between Silver Bow Creek and the proposed action areas. For the portions of Uptown Butte that are not immediately adjacent to the active mine operations at Montana Resources, the potential runoff pathways generally extend from north to south/southwest, ultimately flowing toward Silver Bow Creek. The area of Uptown Butte between the proposed Missoula Site and Silver Bow Creek contains a complex network of municipal storm water runoff controls to mitigate potential runoff and sediment from connecting with surface water. The storm water controls are maintained and managed by BSB within the context of BPSOU requirements. The National Wetland Inventory did not identify any natural wetlands or riparian areas within the Rainbow Block project area or the greater project area analyzed.

Groundwater:

Extensive and significant dewatering was required for many decades to allow extensive underground mining beneath Butte and Walkerville (e.g., the Mountain Con Mine reached a depth of approximately 5,300 feet from surface). With thousands of miles of vertical and horizontal underground workings, the mine voids have resulted in an aquifer system where groundwater flow is significantly more interconnected than what occurs within natural, undisturbed granite. With the cessation of underground mining after more than a century of activity, the bedrock groundwater level has increased significantly after the dewatering pumps in the Kelley Mine were shut off in 1982.

“After more than 120 years of mining (including both underground and open pit mining), smelting, and associated ore processing activities, the groundwater in certain areas has been

contaminated by heavy metals to the point where it cannot be used for beneficial use. This includes drinking water and irrigation wells in both the shallow (alluvial) and deep (bedrock) aquifers. Other mining related processes, including commercial plants that used organic materials to treat mine timbers for use in the underground mines, have impacted ground and surface water in these areas. In addition, the Old Landfill site has impacted the groundwater in the area where it was located. Although there are some areas where "pockets" of clean groundwater exist, controlled groundwater areas are necessary to protect public health and the environment." (BSB, Controlled Groundwater Area Fact Sheet, Undated). The Butte Alluvial and Bedrock Controlled Ground Water Area (BABCGWA) was established to restrict the use of groundwater and development of domestic or irrigation wells within the area and is controlled by the BSB Board of Health acting as the BSB Water Quality District office, the EPA, and DEQ, as ordered by the DNRC on October 30, 2009. Some existing wells in the area predate the establishment of the BABCGWA, so these are subject to monitoring and testing to ensure water quality is safe for human consumption, as outlined in BABCGWA requirements.

The Groundwater Information Center (GWIC) indicates that 21 well sites, 6 monitoring boreholes, and 6 mine shafts are located within Sections 6 and 7 of Township 3 North, Range 7 West and Sections 1 and 12 of Township 3 North, Range 8 West. Of the 27 well sites and boreholes, 15 are domestic, 10 are for monitoring, 1 is for research, and 1 is for stockwater. The nearest domestic well is located about 2,000 feet to the northwest (upgradient) of the Missoula drill site, outside the boundary of the BABCGWA.

Eight water sampling points associated with long-term monitoring for the BMFOU are located at historic mine shafts and within the Berkeley Pit, near the proposed action area: Pilot Butte, Granite Mountain, Kelley, Marget Ann, Lexington, Steward, Anselmo, and the Berkeley Pit (Figure 7). The monitoring point in the Granite Mountain shaft has been plugged and abandoned due to safety concerns, but the historical data from the shaft and new data from the analogous monitoring well named "GM-1" were used in this EA. The above-mentioned mine shafts and monitoring locations are located within a bedrock aquifer system and associated monitoring network known as the East Camp. As described later in this EA, a controlled groundwater area has been established to preclude the use of domestic supply wells in the East Camp and groundwater is not used as a source for the municipal water supply.

An isolated groundwater system and mining complex called the West Camp occurs in the southwest portion of Uptown Butte and it includes the Emma Mine, Travona Mine, and Ophir Mine. Groundwater in this area does not flow toward the Berkeley Pit and, rather it flows to the west/southwest, and it is currently being managed by a separate dewatering system under BPSOU requirements. Additional mines and isolated groundwater systems occur further to the west and north of the East Camp and West Camp, known as the Outer Camp. The proposed action does not include any activities located in the West Camp or Outer Camp areas, so only the East Camp will be discussed in detail in this EA.

Even after decades of groundwater recovery, the Berkeley Pit continues to be the hydrologic sink or low point within the East Camp bedrock aquifer (at 5,355 feet amsl) and groundwater flow within the system is ultimately directed to the pit. Groundwater has risen above the bottom of the Berkeley Pit surface, forming a pit lake that has grown to a volume of approximately 50 billion gallons (Gammons and Duaime, 2020). Since the commencement of the Berkeley Pit Discharge Pilot Project (Pilot Project) in late September 2019, increased pumping rates from the

Berkeley Pit have maintained steady East Camp Mine water levels between an elevation of approximately 5,355 feet (Berkeley Pit) to 5,380 (Pilot Butte) feet amsl. The Pilot Project is part of remedial activities at the BMFOU and is designed to comply with findings and requirements in applicable Superfund decision documents, and is intended to slow or halt the rise of water levels in the East Camp mines and the Berkeley Pit (EPA, Fifth Five-Year Review, 2021). East Camp water levels were maintained at steady elevations from 2019 through 2025 and the management and treatment methods that were investigated and demonstrated during the Pilot Project will continue to be implemented under the BMFOU remedy during active mine operations (MR and Atlantic Richfield, Pilot Project 2025 Annual Update, 2025).

Recent monitoring data in the mine shafts nearest to the Badger Site indicate that the groundwater elevation in this area ranges between approximately 5,370 feet amsl at well GM-1 (715 feet below surface), to 5,377 feet amsl at the Lexington Mine (840 feet below surface), and 5,380 feet amsl at the Pilot Butte Mine (677 feet below surface). The groundwater elevation near the Missoula Site must be inferred between the elevations measured at the Lexington Mine (above) and the Anselmo Mine (5,375 feet amsl, 407 feet below surface), which are located approximately 1 mile apart. (all data from MBMG, Butte Mine Flooding- November 2025 Month Report, 2025)

Proposed Action Water Source:

The Applicant proposes that project water would be sourced from existing municipal water supplies (hydrants) on the Missoula and Badger sites, as well as a mid-point hydrant on Summer Street (see Table 1 for coordinates). The Applicant would use a Zurn Wilkins Model 375XL Backflow Preventer (BFP) with integrated relief valve or similar, as well as a hydrant mounted water meter that has an integrated relief valve installed to avoid potential contamination of the local water supply in accordance with the BSB. Additionally, a backflow preventer and open-air transfer methods would be employed when filling water trucks on the surface for use in drilling fluids or as dust mitigation. Open-air transfer methods for filling water trucks would mean the water trucks would be filled from the hydrant (presumably with a hose) that is suspended above the tank or vessel, and with the ambient air serving as a gap between the two features. With this air gap water could not flow back up into the hose or contaminate the water supply via the hydrant. SBM estimates that up to 15,000 gallons per day may be used. Water would be transported to the drill sites by water trucks.

Figure 6. Overview of Superfund Boundaries, Active Mine Area, Controlled Groundwater Area, and Proposed Exploration Activities

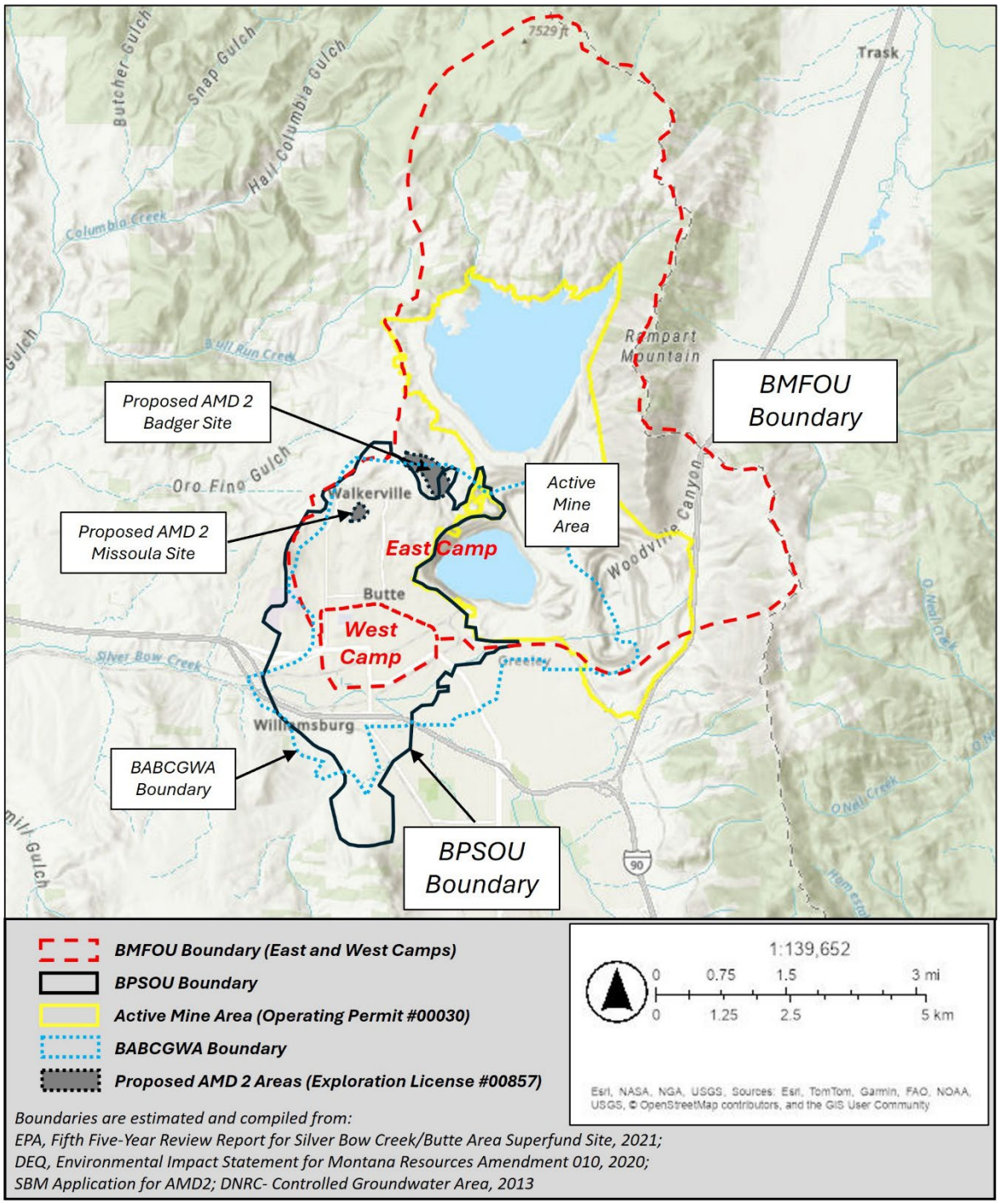
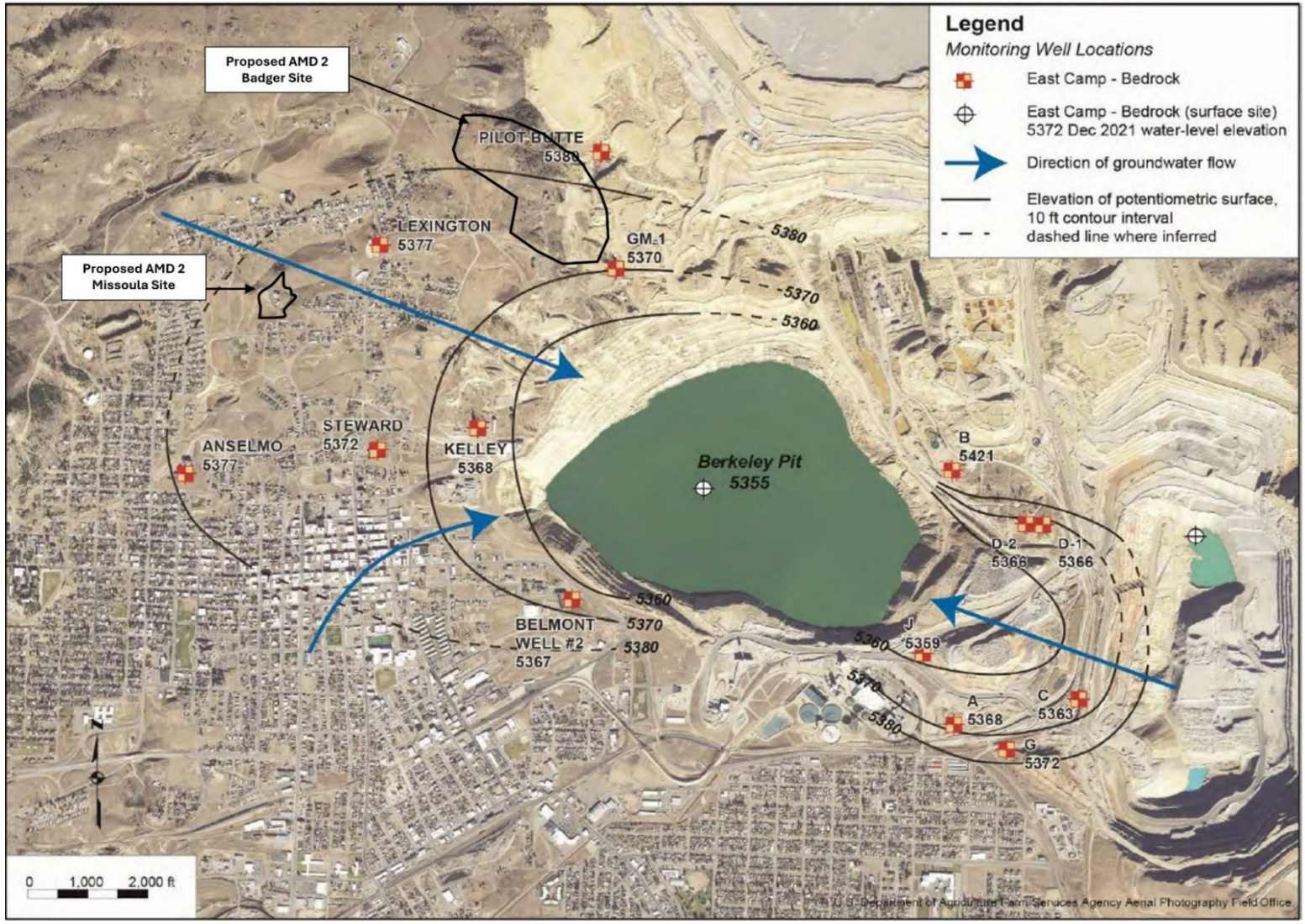


Figure 7. Monitoring Locations and Groundwater Flow in the East Camp Bedrock Aquifer System (From MBMG, 2022; Modified by DEQ). Groundwater elevations and contour lines based on December 2022 data, unless otherwise noted in figure.



Direct Impacts:

Surface Water and Runoff:

As explained above, the topographic divide between the Badger Site and Missoula Site results in different potential pathways for runoff. Precipitation and surface water would generally be expected to infiltrate into the shallow subsurface, and be retained within pore spaces in the unsaturated soil or vadose zone, and potentially utilized by vegetation. Given the thick sequence of unsaturated rock between the surface and groundwater table (approximately 400 to 840 feet below surface), the quantity of infiltrating precipitation and runoff that could reach such a depth is unlikely to measurably impact the aquifer elevation (being managed under BMFOU remedy) or influence water quality. As described in the following section, groundwater quality across the East Camp system has been previously degraded due to a long history of mining activities and acid rock drainage.

Surface water leaving either of the proposed action sites during a heavy storm could carry sediment from disturbed surfaces and soil. As discussed in the section below, sumps would be constructed at each drilling location to contain recirculated drilling fluid, with reported dimensions indicating an estimated capacity of no more than 3,600 ft^3 (approximately 27,000 gallons) in each sump. An inadvertent release of drilling fluid to the surface is not directly comparable to a fuel or water release. The drilling fluids would likely act as a thin mud or paste with decreased fluidity, and would likely be contained within the drill pad area by the stormwater and sediment controls. The Applicant proposes the use of BMPs as listed in the Geology and Soil Section to mitigate fugitive sediment transport and maintain surface water quality.

In the event of a large precipitation event, any runoff from the Badger Site that escapes onsite mitigation measures would flow offsite and toward the Berkeley Pit area, similar to the runoff sourced from other mining and residential areas along the western edge of the active mine operations at Montana Resources. This capture of potential flow from outside the active mine area is a component of the remedies for BMFOU and BPSOU. It is likely there would be no measurable impact to the water quality or elevation of the Berkeley Pit lake from this potential inflow. In the event of a large precipitation event, any runoff from the Missoula Site that escapes onsite mitigation measures would flow offsite and would likely travel through the existing municipal storm water control system that occurs along the 2-mile pathway toward Silver Bow Creek. It is unlikely that any of the runoff would reach the creek, which is the sole perennial stream or natural water body downgradient from the proposed action area. The municipal storm water controls include gutters, drains, and catch basins, which are maintained and managed by BSB within the context of BPSOU requirements.

Groundwater:

Surface elevations at the Badger Site range from 6,300 to 6,400 feet amsl, while the Missoula Site is at a surface elevation of 6,040 feet amsl. The Applicant proposes drilling to a maximum depth of 7,000 feet from surface. Except for potentially shallow drillholes (e.g., 600-1,000 feet) that do not extend deep enough to encounter groundwater at approximately 5,370 to 5,380 feet amsl, it is expected that groundwater would be encountered during drilling operations. However, the hydrologic setting (i.e., the distance between groundwater and the surface, in a very

transmissive unconfined aquifer) indicates that artesian flow would not be expected to occur from the drillholes.

Groundwater in the exploration area, and more generally the East Camp mines area, typically flows from northwest to southeast toward the Berkeley Pit (Figure 7). As explained earlier in this section, the Berkeley Pit is actively pumped to maintain the lowest elevation in the bedrock aquifer to prevent outward flow from the pit . In other words, the pit lake is maintained below the Protective Water Level (5,410 feet amsl), which was established 50 feet below the level at which the Berkeley Pit would no longer be a hydrologic sink and groundwater would flow outward from the pit through the subsurface.

The quality of East Camp groundwater is heavily impacted by thousands of miles of historical underground workings within sulfide-bearing minerals which can oxidize, producing acid rock drainage and releasing metals. For example, water quality data from 2017 indicate:

- Groundwater quality in the Pilot Butte Mine near the proposed Badger Site has a pH of 5.52, sulfate concentrations >2,300 mg/L, and metal concentrations in exceedance of water quality standards (e.g., arsenic at 1,000 µg/L versus a DEQ-7 human health standard of 10 µg/L; zinc at 20,200 µg/L versus a DEQ-7 human health standard of 2,000 µg/L).
- Groundwater quality in the Anselmo Mine near the proposed Missoula Site has a pH of 6.06, sulfate concentrations >1,000 mg/L, and metal concentrations in exceedance of water quality standards (e.g., arsenic at 211 µg/L versus a DEQ-7 human health standard of 10 µg/L; zinc at 7,630 µg/L versus a DEQ-7 human health standard of 2,000 µg/L). (all data from 2017, reported in Gammons and Duaime, 2020)

Proposed drilling would occur within the deep saturated granite without requiring mine dewatering or pumping groundwater to the surface out of the drillholes. As discussed below, sumps would be constructed at each surface drilling location to contain recirculated drilling fluid, with reported dimensions indicating an estimated capacity of no more than 3,600 cubic feet (approximately 27,000 gallons) in each sump. Each sump would likely contain fine sediment produced by drilling and the drilling fluid would consist primarily of the fresh water sourced from the municipal water supply and any drilling fluid additives proposed, including: polymer, foam, mud, lost circulation material, and rod lube.

Under the proposed drilling activity, it would be necessary to use water or some type of drilling fluid to cool the bit, to lubricate the advancing hole, and to remove cuttings from the bit face up to the surface. Current practice in the drilling industry is to use one or more types of synthetic polymer or mud products to increase the viscosity of water. The proposed drilling fluids are classified as synthetic based drilling muds, because the polymer component is often made from synthetic organic compounds like esters, ethers, or olefin isomers. Compared to traditional water- or oil-based fluids, the synthetic polymers provide high drilling efficiency, while exhibiting low toxicity and they degrade to environmentally benign products (Burke and Veil, 1995). These regulated, commercially-supplied additives are non-toxic and biodegradable, and are unlikely to compromise the water quality of groundwater potentially encountered during drilling.

Drill sumps containing drilling fluid would be pumped dry, and the drilling fluids would be transported and repurposed for continuous use at the next planned drill sump location. The last

drill sumps in use would be desiccated and the plastic liners cut, folder, and buried to encase drill cuttings before recontouring the drill pads to match adjacent undisturbed lands.

The Rainbow Decline would extend approximately 6,000 feet laterally from the proposed portal and connect with the "400-foot level" of the Lexington Mine, approximately 400 feet below the surface at an elevation of 5,817 feet amsl. This means that the proposed underground access tunnel ("drift") and the connection to the existing Lexington Mine would occur approximately 440 feet above the groundwater table and it would not be necessary to establish dewatering systems to keep the proposed or historical workings dry and accessible. This also means that groundwater would be far below the surface elevation of the proposed Rainbow Decline portal, so groundwater discharge or outflow from the portal would not occur. Exploratory drilling would occur from underground but details about the number or dimensions of these holes are not provided by the Applicant, as it may not be possible to determine these details in advance until the geologic conditions can be viewed and assessed from underground.

Underground exploratory drilling would use drill sumps and corresponding fluids, similar to surface operations but smaller in scale due to the restrictions of the underground access space. The proposed underground drilling operations would be performed at 400 feet below the ground surface, which is approximately 440 feet above the anticipated groundwater table (about 840 feet from surface). Should a drillhole encounter perched meteoric water above the bedrock aquifer, it would be allowed to drain into the drilling sump and associated underground access. Significant perched meteoric water is not expected. In the unlikely event that more perched groundwater is encountered than can be safely managed in the underground sumps and access, the Applicant has proposed that the drillhole would be pressure-grouted closed. Similar to surface drilling, any underground drillholes that extend below an elevation of 5,370 to 5,380 feet amsl would be expected to encounter groundwater. Any drilling fluids that would be left underground would not be expected to flow within the underground workings, but instead the fluids would either desiccate or infiltrate into the unsaturated bedrock vadose zone.

All exploration drill holes would be required to be reclaimed in accordance with the Administrative Rules of Montana (ARM) 17.24.106, which includes plugging with bentonite or a similar compound from the bottom of the hole to within five to ten feet of the surface, and with cement from the top of the bentonite to the surface. The proposed surface and underground drilling activity, and the resulting drillholes prior to plugging, are unlikely to influence the elevation (managed under BMFOU remedy) or the quality of East Camp groundwater, which has already been heavily impacted by historical mining and acid rock drainage. Due to the thick sequence of unsaturated bedrock between the surface and groundwater table (approximately 400 to 840 feet below surface), in the unlikely event that any fluids from surface or underground drilling sumps may infiltrate through the unsaturated rock, the fluids would not reach groundwater or significantly affect the groundwater elevation (being managed under BMFOU remedy) or water quality.

Proposed Action Water Source:

The proposed activities are not anticipated to impact the quantity or quality of groundwater in the area or impact other water users due to the limited extent and duration of proposed work.

To avoid potential contamination of the local water supply, the Applicant would use a Zurn Wilkins Model 375XL BFP with integrated relief valve backflow preventer or similar, as well as a water meter from BSB that has an integrated relief valve installed. These additional features would create physical barriers or mechanisms that prevent backflow into the hydrant that could contaminate the local water supply. Open-air transfer methods for drill water would also be utilized, meaning that any tank or water truck would be filled from the hydrant (presumably with a hose) that is suspended above the tank or vessel, and with the ambient air serving as a gap between the two features, water could not flow back up into the hose or contaminate the water supply via the hydrant. Water would be transported to the drill sites by water trucks.

SBM estimates that up to 15,000 gallons per day may be used, which would represent a new demand for the municipal system, but this volume would be a minor and insignificant incremental increase to existing demands as described: “The water sources serving Butte-Silver Bow are (1) The Big Hole River / South Fork Reservoir, (2) Moulton Reservoir, and (3) Basin Creek Reservoir System. These are all surface water sources that, in 2022, supplied 12,698 homes and businesses with 2.41 billion gallons of potable water, with a peak day of 13.64 million gallons. Water from each source can be diverted and utilized at any location within the community“ (BSB, 2022).

Secondary Impacts:

No secondary impacts on water quality, quantity, and distribution would be expected from the proposed action.

Cumulative Impacts:

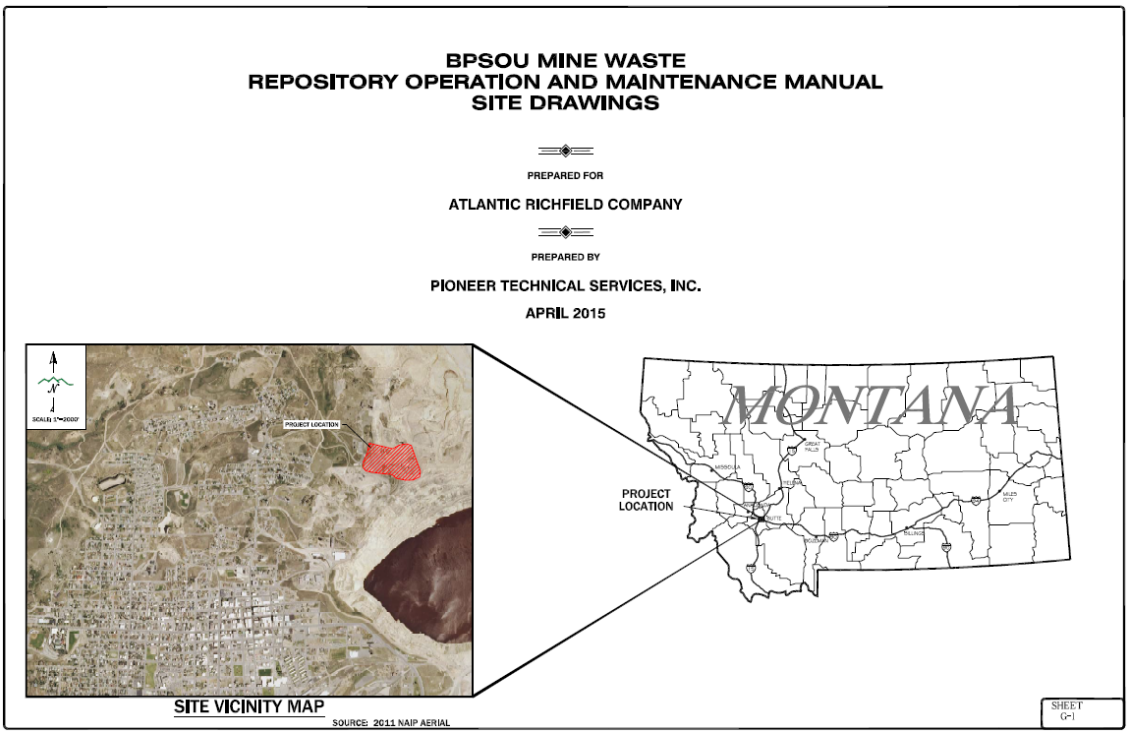
Cumulatively, the proposed action could add a small, temporary increment of sediment loading to a watershed already affected by historical mining, existing operations at the Montana Resources Continental Pit and Yankee Doodle Tailings Storage Facility, and ongoing BMFOU and BPSOU remedial actions and stormwater-management projects. Because the project would disturb only up to approximately 11.95 acres on previously disturbed ground, implement erosion and sediment-control BMPs and drill-hole reclamation, use municipal water rather than new withdrawals, and operate within the existing Superfund and storm water-permit framework, its contribution to cumulative impacts on surface water and groundwater quality is expected to be minor and not significant.

3. Air Quality

Anaconda Pintler Wilderness is the closest Class 1 Airshed to the project site, located 31 miles southwest. The project area lies within the Butte PM10 attainment area for particulate matter up to 10 micrometers in diameter (PM10), which includes inhalable particles such as dust, wildfire smoke, and pollen. Butte was designated a PM10 attainment area on July 26, 2021, and is currently managed under a Limited Maintenance Plan and corresponding State Implementation Plan (SIP). (Federal Register, 2021). The project area, specifically the proposed Badger site, is near the Butte Mine Waste Repository, which is located south of the Badger site and north-west of the Berkeley Pit. The repository can generate dust during haul-truck traffic, unloading of mine waste, and backfilling and regrading of repository areas. The repository is maintained under the BPSOU Final 2015 Butte Mine Waste Repository Operations and Maintenance Manual. Potential fugitive dust may also be currently generated by active mine operations at Montana Resources,

although the management and mitigation methods for the roads, processing facilities, and tailings storage facility are conducted in accordance with the requirements of their Montana Air Quality Permit #1749-13.

Figure 8. Butte Mine Waste Repository Location.



The Applicant proposes implementing the following BMPs to minimize the impacts on air quality: application of water to roads, reduced speed while traveling, reduced traffic volume, maintaining factory emissions controls on all equipment and vehicles, and controlled slash burning.

The Applicant is required to obtain any other necessary permits related to air quality as required by state, local and federal law. The Montana Department of Environmental Quality, Air Quality Section, may require the Applicant to obtain permits prior to controlled slash burning. The Applicant may be required to obtain an open burn permit from Silver Bow County.

Direct Impacts:

Dust particulates could be produced or become airborne during exploration and reclamation operations while traveling along existing roads to and from the project area, constructing new roads within the project area, and while traveling along exploration roads within the project area. Mechanized equipment would produce some exhaust fumes. However, with BMPs and permit requirements in place, residual direct impacts to air quality would consist of short-term increases in dust and exhaust near active work areas, which are not expected to result in a violation of applicable air-quality standards. The operator would be expected to maintain compliance with Montana's law regarding the need to take reasonable precautions to control airborne particulate matter.

Although the proposed action could result in fugitive dust and equipment exhaust, it would not be expected to impact the Anaconda Pintler Wilderness Class 1 Airshed due to the small scale of activity and distance between the Proposed Action and the airshed, nor would the Limited Maintenance Plan in Butte or surrounding areas be impacted with implementation of BMPs.

Secondary Impacts:

No secondary impacts to air quality would be expected from the proposed action.

Cumulative Impacts:

Cumulatively, project-related dust and exhaust would add to existing potential emissions from ongoing mining and ore-processing activities at the Montana Resources Continental Pit and Yankee Doodle Tailings Storage Facility, area traffic, residential and commercial combustion sources, and dust and equipment use associated with ongoing BPSOU remedial activities (e.g., work at the Butte Mine Waste Repository). Given the small scale and limited duration of the proposed action, as well as BMPs in place, the incremental contribution of project emissions to these cumulative air-quality impacts in the Butte PM10 attainment/Limited Maintenance Plan area is expected to be minor and would not interfere with maintaining compliance with applicable air-quality standards.

4. Vegetation Cover, Quantity, and Quality

Land use type and vegetative cover in the greater project area mapped using the Montana Natural Heritage Program (MTNHP) varies and is dominantly classified as quarries, strip mines, and gravel pits (26%, 817 acres), Rocky Mountain Subalpine-Upper Montane Grassland (22%, 693 acres), other roads (18%, 563 acres), Rocky Mountain lower montane foothill, valley grassland (9%, 299 acres), developed, open space (6%, 183 acres), open water (6%, 181 acres), low intensity residential (5%, 176 acres), montane sagebrush stepp (4%, 139 acres), commercial/industrial (3%, 90 acres), and high intensity residential land use (1%, 41 acres) (MTNHP, 2026).

A search of MTNHP identified potential habitat for 11 vascular plant Species of Concern (SOC) and 4 Potential Species of Concern (PSOC). The USFS Species of Conservation Concern in Forests search identified 2 vascular plant SOC. The BLM has not classified any potential vascular plant as sensitive or threatened.

Noxious weeds have been observed in the greater project area, including: spotted knapweed, dalmatian toadflax, hoary False-alyssum, oxeye daisy, whitetop, and leafy spurge (MTNHP, 2025).

Direct Impacts:

The vegetation cover as described above would be removed or disturbed within the approximately 11.95 acres of surface disturbance proposed. Exploration activities that would affect the vegetation cover, quantity, and quality include the grubbing or scraping and removal of vegetative cover to develop drill pads, drill sumps, new access roads, the portal, and other project disturbances related to exploration activities.

Secondary Impacts:

New land disturbance at the site may result in the propagation of noxious weeds. Any surface disturbances would be monitored by in-house licensed weed control expert and/or a local weed control contactor, and controlled by herbicidal spray, hand pulling, or mowing. The project area would be subject to the 2017 Montana Noxious Weed Management Plan and any additional measures required by the Silver Bow County Weed Control Board. Weed control is a condition of an exploration license, and the Applicant would be required to mitigate the spread of noxious weeds.

Cumulative Impacts:

Cumulatively, the proposed action would add only a small, temporary increment of vegetation disturbance within an area already substantially affected by historical mining, existing facilities, and ongoing BPSOU/BMFOU remedial activities, and reclaimed areas are expected to re-establish cover comparable to surrounding disturbed lands.

5. Terrestrial, Avian, and Aquatic Life and Habitats

Common wildlife, such as birds, mammals, amphibians, and invertebrates, may utilize the project area and may be temporarily displaced while machinery and equipment are operating. Native species such as Cassin's finch, greater Short-horned lizard, evening grosbeak, Lewis's woodpecker, and veery have been observed in the greater project area (MTNHP, 2026). The project area is located near an urban area with historical and ongoing mining disturbance, and the proposed disturbance would occur entirely on previously disturbed lands. Displaced wildlife could find other suitable habitats in the surrounding undeveloped and partially reclaimed areas and return to the project area after the project conclusion.

Direct Impacts:

Impacts on terrestrial, avian, and aquatic life and habitats may include increased ambient noise levels from the drilling equipment and temporary displacement to developed and undeveloped lands in the project area. Noise level impacts are further discussed in "Section 8. Aesthetics." The project area is already heavily influenced by adjacent urban development and historical mining disturbance, and proposed surface disturbance would occur entirely on previously disturbed lands, so wildlife displacement is expected to be minor and temporary.

Secondary Impacts:

No secondary impacts to terrestrial, avian, and aquatic life and habitats stimulated or induced by the direct impacts analyzed above would be expected, because effects would be minor, temporary, and confined to already disturbed lands in the immediate project area.

Cumulative Impacts:

Cumulatively, the proposed action would add a small, short-term increment of habitat disturbance and displacement for terrestrial and avian species within a landscape already heavily altered by historical and ongoing mining, urban development, and Superfund remedial construction. Reclaimed areas are expected to provide habitat conditions similar to other disturbed but vegetated lands in the vicinity.

6. Unique, Endangered, Fragile, or Limited Environmental Resources

A search of the MTNHP identified potential habitats for 28 bird, invertebrate, amphibian, reptile, and mammal SOC, and 13 PSOC (MTNHP, 2026). Habitat for these species is common and not unique to the project area. Great blue heron, Brewer's sparrow, grizzly bear, and bat roosts (non-cave) could occur in or near the project area. Habitat within the project area is common throughout the larger ecosystem, and any displaced animal could find other suitable habitats in the surrounding developed or undeveloped area and return to the project area after the project's conclusion.

Direct Impacts:

Impacts to unique, endangered, fragile, or limited environmental resources could include increased ambient noise levels from drilling operations and temporary displacement in the project area. Impacts to noise levels are further discussed in "Section 8. Aesthetics." The project is not proposing to disturb wetlands or riparian habitat.

Secondary Impacts:

No secondary impacts to unique, endangered, fragile, or limited environmental resources that could be stimulated or induced by the direct impacts analyzed above would be expected.

Cumulative Impacts:

Cumulative impacts on unique, endangered, fragile, or limited environmental resources from the proposed action could add to existing impacts from commercial/industrial and high intensity residential land use activities, and historical and active mining use in the area.

7. Historical and Archaeological Sites

The Montana Cultural Resource Database under SHPO indicates that there are inventoried and historical sites within all Sections of the greater project area, except Section 11, Township 3 North, 8 West, which does not have inventoried areas presently known to SHPO.

The State Historic Preservation Office (SHPO) stated that there are a few previously recorded historic sites located within the proposed exploration boundary areas. These areas are also located within the Butte-Anaconda National Historic Landmark. A total of 84 Historic Properties are located within or near the project area. Historic Properties are sites that are eligible for or potentially eligible for listing on the National Register of Historic Places (NRHP). Sixty-eight sites are listed as Undetermined, 8 are listed as Unresolved for NRHP eligibility, 5 are listed as Eligible to the NRHP, 1 is listed on the NRHP, 1 is listed as a National Historic Landmark (the same NHL is in each Section analyzed), and 1 site is listed as Ineligible to the NRHP.

Based on these previously recorded sites, the location within the NHL, and the ground disturbance required by this undertaking SHPO feels that this project has the potential to impact cultural properties. SHPO, therefore, recommends that a cultural resource inventory be conducted in order to determine whether or not sites exist and if they would be impacted.

The proposed action is occurring on private land and would be the property of the Applicant.

Direct Impacts:

Unidentified cultural or historic resources could be disturbed by exploration activities. If any structures are within the disturbance area, and are over fifty years old, SHPO recommends that they be recorded, and a determination of their eligibility be made prior to any disturbance taking place.

Secondary Impacts:

No secondary impacts on historical or archaeological sites would be expected from the proposed action.

Cumulative Impacts:

No cumulative impacts on historical and archaeological resources would be expected from the proposed action.

8. Aesthetics

The proposed activities would occur on private lands. The Missoula drill site would occupy the drill pad used in AMD1, located North of Missoula Avenue and Center Street, east of 5th street, south of Transit Street, and west of North B Street and North Montana Street. The Badger drill sites would be located north of Badger Rd, East of Seraph Point, East of N Main Street, on private lands. The Rainbow Decline portal and associated waste rock stockpiles portal would also be located in the same area as the Badger drill sites. These disturbances would be located near urban residential areas and visible from various places in the surrounding neighborhoods in Walkerville and Butte, MT.

At the end of exploration and reclamation activities, the waste rock stockpiles would remain as permanent features in their planned locations as currently proposed. The applicant proposes to cover all surface disturbances with compost and soil to revegetate with a DEQ-approved seed mix. Additionally, the applicant, who is also the landowner, may submit to DEQ a statement describing a legitimate post-mining land use for any structures, including the surface contoured stockpiles, for them to remain after the proposed action.

The Applicant proposes to perform day shift drilling activities of up to 12 hours when the drilling is located within 300 feet of a residential area. Exploration activities farther than 300 feet from a residential area would be performed during 2, 12-hour shifts, for 24-hours a day, 7 days a week.

Four Wacker Neuson LTT6 LED portable light towers would be used as supplemental lighting from 6:00 PM to 6:00 AM, with some seasonal variation to account for changes in available daylight during operations. Light pollution controls proposed include downward facing lights, light shrouds/shields, and directional lighting.

Portable light towers are widely used on a variety of construction sites. The primary advantages of portable lights are their ability to be positioned at different sections within and across the work zone. The mounting heights typically range from six feet to a fully extended 30 feet and the light pole is usually rotatable 360 degrees. Other lighting systems used that could be used during operations would be lights on headlights from equipment and trucks (Nafakh, Davila, Zhang, et. al, 2022).

Light impacts can be described in several forms. These forms of light impacts are described as spill light, glare, and sky glow. Spill light or stray light is the amount of light that leaves a specific site. Spill light can be controlled by taking measurement of vertical illuminance at the property boundary line or the edge of the road allowance (Nafakh, Davila, Zhang, et. al, 2022). Glare is the light that shines horizontally. Sky glow is a term that refers to the increased sky brightness caused by electric light scattering into the atmosphere, most notably from outdoor lighting in urban areas (Nafakh, Davila, Zhang, et. al, 2022).

The Operator's Manual for this type of portable light tower is dated July 2024. Page 86 of the manual states the light coverage from this portable light tower would be the following: Coverage at 0.5 ft-c (foot-candles) or more: 32,172 ft^2 (2,990 m^2 or 0.7 acres) (Wacker Neuson, 2024).

Reclamation is proposed to be completed concurrently with the exploration drilling and would be required within 2 years of the end of the proposed project.

Direct Impacts:

The proposed project could be visible to or heard by the populated surrounding area and to receptors located at observation points that are unobstructed by topography or forested vegetation. Aesthetic impacts from exploration and reclamation activities would include views of heavy equipment like drill rigs, excavations, waste rock stockpiles, passenger vehicles, and miscellaneous equipment related to drilling, transporting core, and transporting ore. Noise associated with the project could be heard where sound related to the project has not been fully diminished by distance or another sound-dampening feature. Sources of sound could include the use of explosives, heavy equipment operation, construction activities, and transport related to the Proposed Action. Final reclamation would be required within 2 years of completion of the project.

Secondary Impacts:

No secondary impacts to area aesthetics would be expected from the proposed work.

Cumulative Impacts:

Cumulatively, the proposed action would add a short-term increment of visible equipment, waste-rock stockpiles, lighting, and noise within a landscape already characterized by large-scale open-pit mining, mine-waste features, Superfund remedial construction, and nearby urban development. These visual and noise effects are expected to be minor and temporary, with final reclamation required within two years after exploration concludes.

9. Demands on Environmental Resources of Land, Water, Air, or Energy

Project water would be supplied from existing municipal water supplies (hydrants) on the Missoula and Badger sites, as well as a mid-point hydrant on Summer Street (see Table 1 for coordinates). SBM estimates that up to 15,000 gallons per day from the Butte Silver Bow public water supply would be used. "The current water sources serving BSB are (1) the Big Hole River/South Fork Reservoir, (2) Moulton Reservoir, and (3) Basin Creek Reservoir System. These are all surface water sources that, in 2022, supplied 12,698 homes and businesses with 2.41 billion gallons of potable water, with a peak day of 13.64 million gallons. Water from each source

can be diverted and utilized at any location within the community (BSB, 2022)" (BSB, 2022). No other local land, water, air, or energy resources would be used as part of this project.

Direct Impacts:

The proposed project would consume up to 15,000 gallons of water resources per day, a resource that is not limited in the surrounding area, during exploration activities for drilling and dust suppression.

Secondary Impacts:

No secondary impacts to environmental resources of land, water, air, or energy would be expected.

Cumulative Impacts:

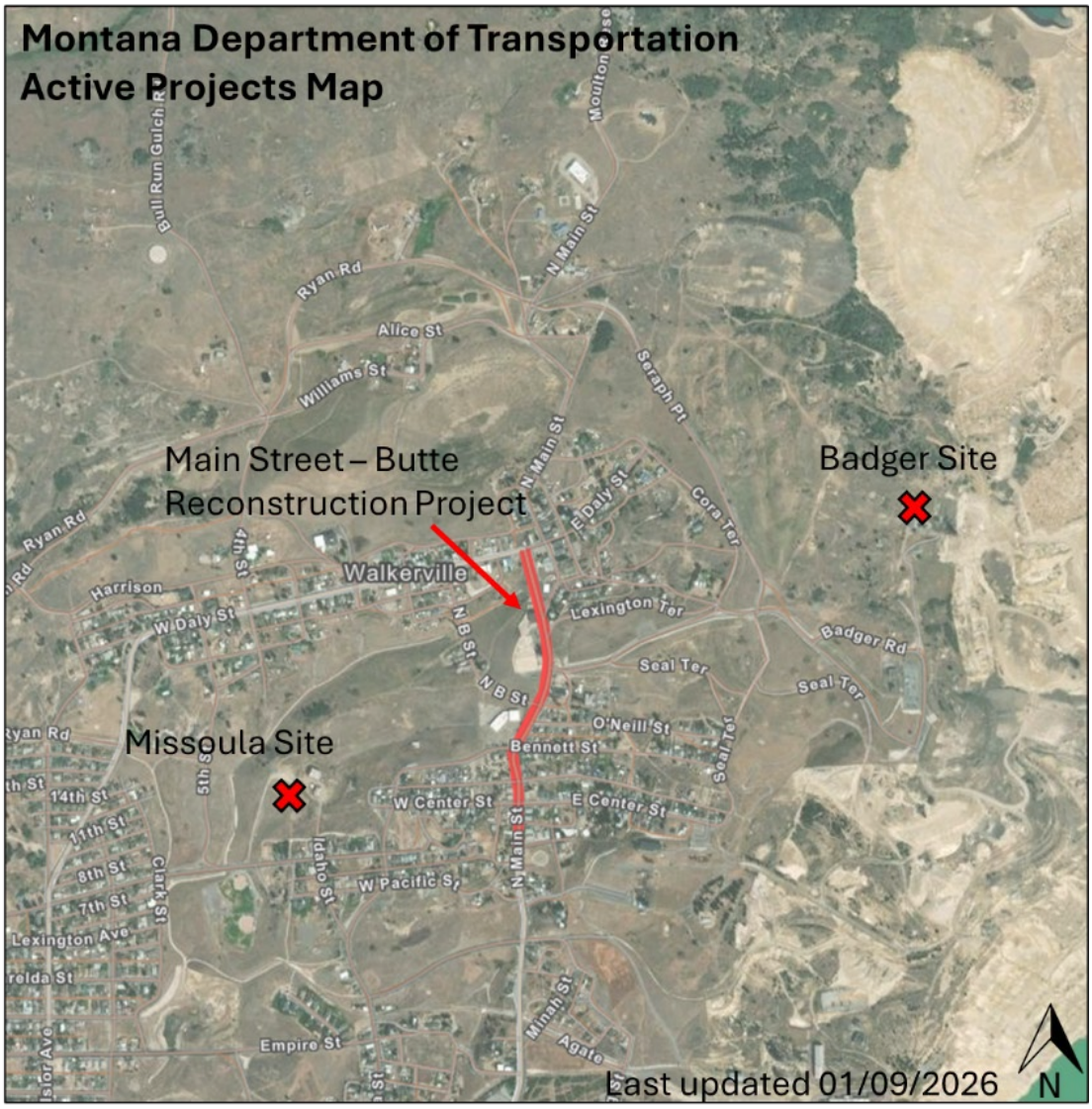
Cumulatively, the proposed action's use of up to 15,000 gallons per day of municipal water would add a small increment to existing demands described above on the Butte–Silver Bow public water system and to water use associated with historical and active mining and other development in the area, and is not expected to measurably affect overall water availability or system capacity. Cumulatively, the proposed action's use of up to 15,000 gallons per day of municipal water would add a small increment to existing demands described above on the Butte–Silver Bow public water system and to water use associated with historical and active mining and other development in the area, and is not expected to measurably affect overall water availability or system capacity. No additional cumulative impacts on the environmental resources of land, air or energy are expected from the proposed action.

10. Impacts on Other Environmental Resources

DEQ reviewed available information from the Montana Department of Natural Resources and Conservation, Montana Department of Environmental Quality, Montana Department of Transportation (MDT), the City-County of Butte–Silver Bow (BSB), the U.S. Bureau of Land Management, and the U.S. Forest Service to identify other projects or activities that would rely on or be directly affected by the specific lands, facilities, or resources used by the proposed project.

One MDT reconstruction project was identified near the proposed project area. Main Street – Butte (Project 10714000) is anticipated in calendar year 2031 and would consist of reconstruction of the roadway (without added capacity), curb and gutter, sidewalks, and ADA upgrades from Daly Street to Mullin Street. However, DEQ does not anticipate that the roadway project would experience direct interference or resource conflicts from the proposed action because roadway work is not expected to begin until 2031— the final year of reclamation associated with the proposed action.

Figure 9. Montana Department of Transportation reconstruction project location.



Direct Impacts:

No nearby activities or projects were identified that would be affected by the proposed project. No direct impacts on other environmental resources would be expected from the proposed action.

Secondary Impacts:

No secondary impacts on other environmental resources would be expected from the proposed action.

Cumulative Impacts:

No cumulative impacts to other environmental resources would be expected from the proposed action.

11. Human Health and Safety

The Applicant would be required to adhere to all applicable state and federal safety laws. Industrial work such as the work proposed by the Applicant is inherently dangerous. The Occupational Safety and Health Administration (OSHA) has developed rules and guidelines to reduce the risks associated with this type of labor. The project would occur on private land with no access to the general public.

Direct Impacts:

Direct impacts to human health and safety to the Applicant's exploration staff could occur from this proposed action, however compliance with OSHA standards would substantially reduce risk. The respiration of exhaust fumes and the ingestion of dust generated by equipment during exploration operations and reclamation would be minimized with proper personal protection equipment. The significance assessment is presented in Table 2.

Secondary Impacts:

No secondary impacts on human health and safety would be expected because of the proposed work.

Cumulative Impacts:

No cumulative impacts on human health and safety would be expected from the proposed action.

12. Industrial, Commercial, and Agricultural Activities and Production

The proposed exploration activities would occur on land that has been previously occupied and disturbed by mining activities.

Direct Impacts:

The proposed project would not displace or directly affect any industrial, commercial, or agricultural activities in the area. The proposed action would add to the impacts of mining-related disturbance in the greater project area. However, all disturbance related to this project would be reclaimed at the conclusion of the exploration, with final reclamation required within 2 years of completion of the project.

Secondary Impacts:

No secondary impacts to industrial, commercial, and agricultural activities and production in the area would be expected from the proposed action.

Cumulative Impacts:

Cumulatively, the project would make only a small, temporary addition to the extensive historical and ongoing mining-related disturbance and production in the Butte/Walkerville area, and no additional cumulative impacts on industrial, commercial, and agricultural activities and production in the area are expected from the proposed action.

13. Quantity and Distribution of Employment

Existing employees would likely be utilized for this operation, but the Application did not state whether additional employees would be hired or not. It is not anticipated that this project would create, move, or eliminate jobs.

Direct Impacts:

Direct impacts on quantity and distribution of employment would not likely result from this project. The project plan calls for several limited-duration contracted and otherwise employed people at the site. No lasting positive or negative impacts to employment would be expected from this project.

Secondary Impacts:

No secondary impacts to quantity and distribution of employment would be expected from the proposed action.

Cumulative Impacts:

No cumulative impacts on the quantity and distribution of employment would be expected from the proposed action.

14. Local and State Tax Base and Tax Revenues

The proposed action would have a limited increase in tax revenue related primarily to payroll taxes from the project and the purchase of some local goods and services.

Direct Impacts:

Some limited benefit to the local and state economy could result from this project through wages, withholding taxes, and local spending by workers and the company. However, due to the short-term nature of the exploration project, only minimal tax revenue from income, property, or gross receipts is expected.

Secondary Impacts:

No secondary impacts to local and state tax base and tax revenues would be expected from the proposed action.

Cumulative Impacts:

The project would provide only a small, temporary addition to the existing local and state tax base associated with ongoing mining and other economic activity in the Butte/Walkerville area, and no notable cumulative impacts on local or state tax revenues are expected from the proposed action.

15. Demand for Government Services

The proposed activities would add a minimal amount of traffic to existing roads in the immediate project area. The proposed action would use up to 15,000 gallons of water per day from the BSB public water supply, supplied from existing hydrants located on the Missoula and Badger sites, as well as a mid-point hydrant on Summer Street (see Table 1 for coordinates). The increased traffic

and use of water would occur during the life of the exploration project, including during reclamation.

Fire protection would likely be provided by the BSB Fire Department or the Centerville Volunteer Fire Department, both of which would be located under 1 mile from the project areas. The Butte Sheriff's Department would likely provide some law enforcement presence throughout Butte, including around the project area. Emergency Medical Services would be based at St. James Hospital, located approximately 1 mile to the southwest of the project area.
All operations would be subject to local, seasonal restrictions as they apply.

Direct Impacts:

The proposed project would be located on private land. No direct impacts to the demand for government services would be expected from the proposed action. Impacts would not be expected on the demand for government services.

Secondary Impacts:

No secondary impacts to the demand for government services would be expected from the proposed action.

Cumulative Impacts:

No cumulative impacts to demand on government services would be expected from the proposed action.

16. Locally Adopted Environmental Plans and Goals

The proposed activities would occur on private lands. The project area would be subject to any plans or rules set forth by Silver Bow County Weed Control Board and the 2017 Montana Noxious Weed Management Plan. The location of the proposed project falls within the Silver Bow Creek Butte Area Superfund site, specifically the BMFOU and the BPSOU. Some proposed disturbance may fall within the Granite Mountain Memorial Interpretive Area (GMMIA). The GMMIA is managed by BPSOU and BSB, and is subject to various reclamation and enhancements in keeping with its historical character.

Drilling depth would intercept the controlled groundwater aquifers contained within the Butte Alluvial and Bedrock Controlled Ground Water Area (BABCGWA), which have restrictions regarding the use of groundwater and development of domestic or irrigation wells within the project area, and is controlled by the BSB Board of Health acting as the BSB Water Quality District office, the EPA, and DEQ, as ordered by the DNRC on October 30, 2009.

> "After more than 120 years of mining (including both underground and open pit mining), smelting, and associated ore processing activities, the groundwater in certain areas has been contaminated by heavy metals to the point where it cannot be used for beneficial use. This includes drinking water and irrigation wells in both the shallow (alluvial) and deep (bedrock) aquifers. Other mining related processes, including commercial plants that used organic materials to treat mine timbers for use in the underground mines, have impacted ground and surface water in these areas. In addition, the Old Landfill site has impacted the groundwater in the area where it was

> located. Although there are some areas where "pockets" of clean groundwater exist, controlled groundwater areas are necessary to protect public health and the environment." (BSB, Controlled Groundwater Area Fact Sheet, Undated)

The proposed project may fall under the regulatory purview of BSB related to the use of water sourced from the public water supply and the BSB excavations and dirt moving protocols. Portions of the proposed project may be subject to considerations for areas that are zoned as two-family residential (R2) and conservation open space (OS-C). Additionally, the proposed project may require a permit from DEQ for stormwater discharges associated with exploration activities.

The proposed project may be subject to additional regulatory oversight and operating conditions at federal, state, county, and/or local levels including, but not limited to, authorizations related to air quality, water quality, and excavation and disposal of soils.

Direct Impacts:

DEQ is not aware of any other locally-adopted environmental plans or goals that would impact this proposed project or the project area. Impacts from or to locally-adopted environmental plans and goals would not be expected as a result of this project. The proposed exploration activities would occur on private lands.

Secondary Impacts:

No secondary impacts from or to locally adopted environmental plans and goals would be expected because of the proposed work.

Cumulative Impacts:

No cumulative impacts from or to locally adopted environmental plans and goals would be expected from the proposed action.

17. Access to and Quality of Recreational and Wilderness Activities

The proposed exploration activities would occur on private lands. There are no designated wilderness areas and no recreational opportunities for the general public in the project area.

Direct Impacts:

Due to the lack of any wilderness area or recreational opportunities, no impact to access and quality of recreational opportunities would be expected from this project.

Secondary Impacts:

No secondary impacts to the access and quality of recreational opportunities would be expected from the proposed action.

Cumulative Impacts:

No cumulative impacts to the access or quality of recreational opportunities would be expected from the proposed action.

18. Density and Distribution of Population and Housing

Butte is a city in Silver Bow County, MT, and had a population of approximately 33,462 people as of the 2020 census conducted by the United States Census Bureau. Walkerville is a town and suburb of Butte, and had a population of approximately 639 as of the 2020 census.

Direct Impacts:

Due to the short-term project duration and the temporary nature of the activity, no impact to population density and housing would be expected from this project.

Secondary Impacts:

No secondary impacts to population density and housing would be expected from the proposed action.

Cumulative Impacts:

No cumulative impacts to population density and housing would be expected from the proposed action.

19. Social Structures and Mores

The proposed exploration activities would occur entirely on private land in an area that has been subject to active mining for over 160 years. The surrounding Walkerville/Butte neighborhoods already contain a mix of residential, commercial, and mining-related uses, and the proposed short-term exploration would be consistent with this existing character. Due to the short-term project duration and location on previously disturbed land, it is not anticipated that this project would disrupt native or traditional lifestyles or communities.

Direct Impacts:

No direct impacts on social structures and mores would be expected from the proposed action.

Secondary Impacts:

No secondary impacts on social structures and mores would be expected from the proposed action.

Cumulative Impacts:

No cumulative impacts to social structures and mores would be expected from the proposed action.

20. Cultural Uniqueness and Diversity

The proposed activities would be conducted in an area that has been affected by historical and recent mining activities, and the surrounding Walkerville/Butte neighborhoods already contain a mix of residential, commercial, and mining-related uses. Given the project's small scale, short duration, and location on previously disturbed private land, it is not expected to alter the cultural character, uniqueness, or diversity of the affected communities.

Direct Impacts:

It is not anticipated that this project would cause a shift in some unique quality of the area. No direct impacts to cultural uniqueness and diversity would be expected from the proposed action.

Secondary Impacts:

No secondary impacts to cultural uniqueness and diversity would be expected from the proposed action.

Cumulative Impacts:

No cumulative impacts to cultural uniqueness and diversity would be expected from the proposed action.

21. Private Property Impacts

The proposed project would take place on private lands. DEQ's approval of AMD2 to Exploration License No. 00857, with conditions, would affect the Applicant's real property. DEQ has determined, however, that the permit conditions are reasonably necessary to ensure compliance with applicable requirements under the Metal Mine Reclamation Act and demonstrate compliance with those requirements or have been agreed to by the Applicant. Further, if the application is complete, DEQ must take action on the permit pursuant to ARM 17.24.119. DEQ, therefore, does not have discretion to take alternative action that would have less impact on private property. Therefore, DEQ's approval of Amendment 2 to License No. 00857 would not have private property-taking or damaging implications.

Montana's Private Property Assessment Act, Section 2-10-101, et seq., MCA establishes an orderly and consistent internal management process for state agencies to evaluate their proposed actions under the "Takings Clauses" of the United States and Montana Constitutions, as those clauses are interpreted and applied by the United States and Montana Supreme Courts.

Section 2-10-104, MCA required Montana's Attorney General to develop guidelines, including a checklist, to assist state agencies in identifying and evaluating proposed agency actions that may result in the taking or damaging of private property. In turn, Section 2-10-105(1) and (2), MCA set out a process for each State Agency to evaluate whether a State action may result in an unconstitutional taking of private property. Those provisions direct that:

A. Each state agency shall assign a qualified person or persons in the state agency the duty and authority to ensure that the state agency complies with this part. Each state agency action with taking or damaging implications must be submitted to that person or persons for review and completion of an impact assessment. The state agency may not take the action unless the review and impact assessment have been completed, except that the action with taking or damaging implications may be taken before the review and impact assessment are completed if necessary to avoid an immediate threat to public health or safety.

B. Using the attorney general's guidelines and checklist, the person shall prepare a taking or damaging impact assessment for each state agency action with taking or damaging implications that includes an analysis of at least the following:

i. the likelihood that a state or federal court would hold that the action is a taking or damaging;

ii. alternatives to the action that would fulfill the agency's statutory obligations and at the same time reduce the risk for a taking or damaging; and

iii. the estimated cost of any financial compensation by the state agency to one or more persons that might be caused by the action and the source for payment of the compensation.

DEQ has utilized the Montana Attorney General's Checklist and analytical Flowchart revised in January 2011 to evaluate the legal impact to property rights resulting from the proposed action. These flowchart questions have been applied by DEQ to the proposed project area, which takes place on private land owned by the Applicant, as follows:

- Does the action pertain to land or water management or environmental regulation affecting private real property or water rights? Answer: Yes.
- Does the action result in either a permanent or indefinite physical occupation of private property? Answer: No.
- Does the action deprive the owner of all economically beneficial use of the property? Answer: No.
- Does the action require a property owner to dedicate a portion of property or to grant an easement? Answer: No.
- Does the action deny a fundamental attribute of ownership? Answer: No.
- Does the action have a severe impact on the value of the property? Answer: No.
- Does the action damage the property by causing some physical disturbance with respect to the property in excess of that sustained by the public generally? Answer: No.

Given the results from the legal flowchart questions, DEQ has determined that the permit conditions are reasonably necessary to ensure and demonstrate compliance with applicable requirements of the Metal Mine Reclamation Act, Section 82-4-301, *et seq.*, MCA, and have been sought by the Applicant. Therefore, no taking or damaging of private property rights will occur because of DEQ's approval of the Permit Application.

22. Other Appropriate Social and Economic Circumstances

Given the project's limited scale and duration, location on previously disturbed private land, and lack of permanent facilities or population changes, no other appropriate social or economic circumstances beyond those described in this EA are anticipated.

23. Greenhouse Gas Analysis

When greenhouse gases (GHGs) are emitted by any source, they become well-mixed globally due to their long lifetimes in the atmosphere (i.e., tens of years for methane to thousands of years for carbon dioxide) and atmospheric mixing, primarily driven by differential heating and synoptic-scale weather patterns, which distribute the gases throughout the planet, leading to a relatively uniform concentration of these gases across the globe. In general, GHG emissions from sources that are not considered a fossil-fuel activity, as defined by § 75-1-220, MCA, contribute

to an overall negligible increase of GHG concentrations in the global atmosphere, not local airsheds, causing a marginal global greenhouse effect (i.e., solar energy trapped in the earth's atmosphere from GHGs, resulting in higher average surface temperatures). Localized industrial source GHG emissions do not have direct impacts on climate, public health and associated impacts to the environment on a local or statewide scale.

DEQ is required to evaluate GHG emissions for statutorily defined fossil fuel activities. 2025 Mont. Laws ch. 348, § 1. However, this exploration activity is excluded from the definition of fossil fuel activities and therefore a GHG assessment is not mandatory. Id., § 4(7)(b)(iii). Instead, to determine if a GHG assessment is needed, DEQ applies the normal MEPA standard of whether GHG emission impacts are potentially significant because of a proposed action, in this case exploration activities. ARM 17.4.609(3)(d)–(e).

DEQ concludes that the authorization of exploration activities pursuant to 82-4-332, MCA, would likely have negligible effect on increased GHG entering the atmosphere, and therefore any additional assessment of GHG is not necessary for purposes of this EA.

PROPOSED ACTION ALTERNATIVES

Pursuant to ARM 17.4.609, when an applicant proposes an action with the potential to have an impact on the Montana environment, the associated EA must include a description of reasonable alternatives. For the purposes of MEPA, and the minimum requirements of ARMs 17.4.607 and 17.4.609 for EAs, the alternatives analysis must include the "no action" alternative. The "no action" alternative represents the baseline condition in which the proposed activity does not occur. However, if the applicant demonstrates compliance with all applicable rules and regulations required for approval, the "no action" alternative would not be appropriate. Rather, the "no action" alternative forms the baseline from which the impacts of the proposed action can be measured. Pursuant to section 75-1-201(4)(a), MCA, DEQ "may not withhold, deny, or impose conditions on any permit or other authority to act based on" an environmental assessment. Therefore, if an application meets all the requirements for permit approval, DEQ cannot require any alternative to the project as described in the permit application, including a "no action" alternative.

No Action Alternative:

In addition to the proposed action, DEQ also considered the "no action" alternative. The "no action" alternative would deny the approval of the proposed Exploration License No. 00857. The Applicant would lack the authority to explore minerals on private or publicly owned lands. Any potential impacts authorized under exploration License No. 00857 would not occur. However, DEQ does not consider the "no action" alternative appropriate because the Applicant has demonstrated compliance with all applicable rules and regulations as required for approval. The no-action alternative forms the baseline from which the proposed action's impacts can be measured.

CONSULTATION

DEQ engaged in internal and external efforts to identify substantive issues and/or concerns related to the proposed project. Internal scoping consisted of internal review of the environmental assessment document by DEQ staff.

External scoping efforts also included queries to the following websites/ databases/ personnel:

- Montana State Historic Preservation Office (SHPO)
- Montana Department of Natural Resource and Conservation (DNRC)
- Montana Department of Environmental Quality (DEQ)
- Montana Department of Transportation (MDT)
- City-County of Butte-Silver Bow
- US Geological Society – Stream Stats (USGS)
- Montana Natural Heritage Program (MTNHP)
- Montana Cadastral Mapping Program
- Montana Groundwater Information Center (GWIC)
- Montana Bureau of Mines and Geology (MBMG)
- United States Environmental Protection Agency (EPA)
- United States Department of Interior, Bureau of Land Management (BLM)
- United States Forest Service (USFS)
- United State Environmental Protection Agency (EPA)

PUBLIC INVOLVEMENT

Under MEPA, an agency is responsible for providing opportunities for public review consistent with the seriousness and complexity of the environmental issues associated with the proposed action and the level of public interest. For purposes of this proposed action, the method of accomplishing public review include publishing a news release or legal notice to announce the availability of an EA, summarizing its content and soliciting public comment, and distributing copies of the draft EA for review and comment. Any public comment received for this EA will be summarized below:

OTHER GOVERNMENTAL AGENCIES WITH JURISDICTION

The proposed project would be located on private lands. All applicable state and federal rules must be adhered to, which, at some level, may also include other state, federal, or tribal agency jurisdiction. Specific applicable rules and regulations were summarized in Table 1.

The location of the proposed project falls within the Silver Bow Creek/Butte Area Superfund site, specifically the Butte Mine Flooding Operable Unit (BMFOU) and the Butte Priority Soils Operable Unit (BPSOU). The proposed project may fall under the regulatory purview of BSB related to the use of water sourced from the public water supply and the BSB excavations and dirt moving protocols. Portions of the proposed project may be subject to considerations for areas that are zoned as two-family residential (R2) and conservation open space (OS-C). Additionally, the proposed project may be required to acquire a permit for stormwater discharges associated with exploration activities from DEQ.

Drilling depth would intercept the controlled groundwater aquifers contained within the Butte Alluvial and Bedrock Controlled Ground Water Area (BABCGWA), which have restrictions regarding the use of groundwater and development of domestic or irrigation wells within the project area, and is controlled by the BSB Board of Health acting as the Butte Silver Bow Water Quality District office, the USEPA, and DEQ.

The proposed project may be subject to additional regulatory oversight and operating conditions at federal, state, county, and/or local levels including, but not limited to, authorizations related to air quality, water quality, and excavation and disposal of soils.

This EA examines the application for an amendment to an existing Exploration License submitted to, and determined complete by, DEQ's Field Service's and Technology Section (FS&T). FS&T has determined the application for an Exploration License to be complete pursuant to 82-4-332, MCA. The proposed activities examined in this EA do not necessarily meet operational or regulatory requirements beyond those set forth in the MMRA.

NEED FOR FURTHER ANALYSIS AND SIGNIFICANCE OF POTENTIAL IMPACTS

Under MEPA, DEQ must determine whether the proposed action is likely to significantly affect the quality of Montana's environment and therefore require preparation of an environmental impact statement (EIS). DEQ has prepared this EA to evaluate the potential direct, secondary, and cumulative impacts of the proposed amendment to Exploration License No. 00857 and to determine whether additional environmental review is needed, consistent with ARM 17.4.601 through 17.4.608. In making this determination, DEQ considered the seven significance criteria set forth in ARM 17.4.608, which are as follows:

1. The severity, duration, geographic extent, and frequency of the occurrence of the impact;
2. The probability that the impact will occur if the proposed action occurs; or conversely, reasonable assurance in keeping with the potential severity of an impact that the impact will not occur;
3. Growth-inducing or growth-inhibiting aspects of the impact, including the relationship or contribution of the impact to cumulative impacts;
4. The quantity and quality of each environmental resource or value that would be affected, including the uniqueness and fragility of those resources and values;
5. The importance to the state and to society of each environmental resource or value that would be affected;
6. Any precedent that would be set as a result of an impact of the proposed action that would commit the department to future actions with significant impacts or a decision in principle about such future actions; and
7. Potential conflict with local, state, or federal laws, requirements, or formal plans.

As described in this EA, the proposed action would authorize additional surface and underground exploration activities that would disturb up to approximately 11.95 acres, all on private lands that have been previously disturbed by historical mining or exploration, within the Butte Mine Flooding Operable Unit (BMFOU) and Butte Priority Soils Operable Unit (BPSOU) of the Silver Bow Creek/Butte Area Superfund Site. In applying ARM 17.4.608, DEQ considered the unique characteristics of this environment, including the BMFOU and BPSOU Superfund operable units and the Butte PM10 attainment/Limited Maintenance Plan area, and evaluated cumulative impacts in light of existing and future mining, remedial actions, and urban development in the analysis area. The project would occur in a setting already heavily influenced by more than a century of hard-rock mining, mine-waste placement, and ongoing Superfund remedial actions, and would be subject to overlapping regulatory controls, including the BMFOU and BPSOU remedies, the Butte Alluvial and Bedrock Controlled Ground Water Area, the Butte PM10 attainment area Limited Maintenance Plan and SIP, local excavation and dirt-moving protocols, zoning, and storm water and air-quality requirements.

The EA analysis indicates that, with implementation of applicable BMPs and compliance with applicable federal, state, and local requirements, the remaining impacts on Montana's environment of the proposed action would be minor to moderate in intensity, localized in extent, and short term in duration. Applicable BMPs are described briefly below, as well as throughout the EA in applicable resource sections and Tables 1 and 2.

BMPs to mitigate erosion, sediment movement, and water resource impacts include: specific drill depth requirements, the use of vegetated buffers, earthen berms, plastic pit liners, silt fencing, water diversions, secondary containment, spill prevention & spill response kits, mulch cover, surface roughening, straw wattles, and sediment traps. Additionally, where possible, soil would be salvaged and replaced during reclamation, then seeded with an adequate and approved seed mix. Weed control would be implemented consistent with County requirements.

BMPs to mitigate impacts to air quality include: retaining factory-installed emissions equipment and controls, controlled slash burning (if applicable), application of water to roads, reduced speed while traveling, and reduced traffic volume.

Further, reclamation of disturbed lands to comparable utility and stability as adjacent undisturbed land would mitigate impacts to wildlife and habitats. Earthen berms would minimize impacts to viewsheds (e.g., mobile equipment, topography changes, stockpiles, and light spill) and dampen noise produced from exploration activities to nearby receptors.

Geology/soils, water, and air resources would experience only small, temporary increments of additional disturbance and emissions within an area already substantially affected by historic and ongoing mining and remedial construction, and reclamation is required within two years after exploration is complete unless disturbances are incorporated into a valid operating permit. The project would use municipal water (up to 15,000 gallons per day) rather than new groundwater withdrawals, would not require mine-dewatering systems, and would plug exploration drill holes in accordance with ARM 17.24.106.

For social and economic resources, the EA concludes that the project would have only limited, short-term positive effects on local employment and tax revenues, would not displace existing industrial, commercial, or agricultural activities, and would be generally consistent with the long-standing mixed mining and residential character of the Butte/Walkerville area. The limited impacts on employment, tax base, housing, neighborhood character, and demand for government services are not expected to result in substantial growth-inducing or growth-inhibiting effects or conflicts with locally adopted plans, goals, or regulations under ARM 17.4.608. The EA also finds that the project would not result in substantial changes to social structures, cultural uniqueness and diversity, or private property impacts, and would not conflict with local, state, or federal laws, requirements, or formal plans.

Approval of the proposed action does not set any precedent that commits DEQ to future actions with significant impacts or a decision in principle about such future actions. If the Applicant submits additional license, amendment, or operating-permit applications to conduct further mining or exploration, DEQ would conduct a separate permitting and environmental review process and make a permitting decision based on the criteria set forth in the MMRA and applicable MEPA requirements. Issuance of this amendment does not predetermine the level of environmental review for any future proposals; that determination would be made on a case-specific basis using the criteria in ARM 17.4.608.

Based on consideration of the criteria set forth in ARM 17.4.608, and the analysis presented in this EA and summarized in Table 2, DEQ has determined that the proposed action, amendment to Exploration License No. 00857, is not expected to significantly impact the quality of Montana's environment. Preparation of an EA is therefore the appropriate level of environmental review under MEPA, and an EIS is not required for this action.

Table 2: Assessment of Significance (ARM 17.4.608)

Affected Resource and Section Reference	Potential Impact	Severity[1], Extent[2], Duration[3], Frequency[4], Uniqueness and Fragility (U/F)	Probability impact will occur[5]	Cumulative impacts	Measures to reduce impact as proposed by Applicant	Significance (yes/no)
1. Geology and Soil Quality, Stability, and Moisture	A. Displacement/excavation of rock and soil B. Erosion of disturbed soil	**A. Severity-High:** Of the 11.95 acres of ground that would be disturbed, all disturbance aside from overland travel would result in the displacement movement of rock and soil. Excavation of the Rainbow Decline would remove bedrock and would result in waste rock stockpiles at the surface. **Extent-Small:** Total surface area susceptible to displacement would be 11.95 acres. **Duration- Short to Long Term:** Up to 2 years after completion or abandonment of exploration activities plus growing seasons. Waste rock stockpiles would remain, although reclaimed as described in Table 1. **Frequency:** Daily. **Unique/Fragile:** Not unique or particularly fragile. **B. Severity-Low:** Of the 11.95 acres of ground that would be disturbed, all disturbance would be susceptible to erosion. **Extent-Small:** Total surface disturbance susceptible to erosion would be 11.95 acres. **Duration- Short Term:** Up to 2 years after completion or abandonment of exploration activities plus growing seasons. **Frequency:** During occasional storm events. **Unique/Fragile:** Not unique or particularly fragile.	A. Certain B. Possible	Erosion could add to cumulative impacts associated with potential erosion on existing roads, mined surfaces, and other historical disturbances in the proposed project area.	The Applicant proposes the use of; • vegetated buffers, • earthen berms, • plastic pit liners, • silt fencing, • water diversions, • secondary containment, • spill prevention & spill response kits, • mulch cover, • surface roughening, • straw wattles, • and sediment traps as best management practices (BMPs) to mitigate erosion and sediment transport off-site. - Reclamation and seeding would be performed immediately after the conclusion of exploration operations.	No
2. Water Quality, Quantity, and Distribution	erosion of disturbed soil into waterways, and intercepting the groundwater table	**Severity-Low:** Of the 11.95 acres of ground that would be disturbed, all disturbance would be susceptible to erosion. The average depth for the proposed 53 drill holes is 1,915, which would intercept the water table at approximately 5,380 amsl. **Extent-Small:** Total surface disturbance susceptible to erosion would be 11.95 acres. 53 drill holes are proposed.	Possible	Erosion could add to cumulative impacts associated with potential erosion on existing roads, mined surfaces, and other historical disturbances in the proposed project area.	The Applicant proposes the use of the above BMPs to mitigate erosion and sediment transport off-site. - Drilling to depths below 5,370 to 5,380 feet amsl would encounter the groundwater table. The Applicant is required to reclaim drill holes in accordance with ARM 17.24.106 - Reclamation and seeding would be performed immediately after the conclusion of exploration operations.	No

Affected Resource and Section Reference	Potential Impact	Severity[1], Extent[2], Duration[3], Frequency[4], Uniqueness and Fragility (U/F)	Probability impact will occur[5]	Cumulative impacts	Measures to reduce impact as proposed by Applicant	Significance (yes/no)
		Duration- Short Term: Up to 2 years after completion or abandonment of exploration activities plus growing seasons. **Frequency:** During occasional storm events and during drilling operations below the expected groundwater table at approximately 5,380 amsl. **Unique/Fragile:** Not unique or particularly fragile.				
3. Air Quality	erosion of disturbed soil/windblown emissions, e.g., equipment exhaust	**Severity-Low:** Dust and other particulates would be generated during exploration operations and while driving on and off-site. Mechanized equipment would produce exhaust fumes. **Extent-Small:** Dust and exhaust fumes would be generated near moving/working equipment. **Duration- Short Term:** Up to 2 years after completion or abandonment of exploration activities plus growing seasons. **Frequency-Daily:** During exploration and reclamation operations. **Unique/Fragile:** Not unique or particularly fragile.	Certain	Dust and exhaust generated from this project would temporarily add to the cumulative impacts from the other vehicles and engines operating in the area and to potential natural wildfire smoke moving through the area.	The Applicant proposes the use of; • application of water to roads, • reduced speed while traveling, • reduced traffic volume, • maintaining factory emissions controls on all equipment and vehicles, • and controlled slash burning as BMPs to minimize the impacts to air quality.	No
4. Vegetation Cover, Quantity, and Quality	A. Displacement of vegetation B. Weed propagation associated with surface disturbance	**Severity-Medium:** The 11.95 acres of disturbance would be subject to the propagation of weeds. **Extent-Small:** Total surface disturbance susceptible to the propagation of weeds would be 11.95 acres. **Duration-Short Term:** Up to 2 years after completion or abandonment of exploration activities plus growing seasons. **Frequency-Twice:** after exploration and after reclamation activities. **Unique/Fragile:** Not unique or particularly fragile.	A. Certain B. Probable	Weed propagation generated from this project would temporarily add to the cumulative impacts in other areas where weeds already exist within and near the proposed project area.	- Any ground disturbed by exploration activities would be seeded with an approved seed mix. - Weed control measures proposed by the Applicant include • herbicidal spray application, • hand pulling, • and mowing.	No
5. Terrestrial, Avian, and Aquatic Life and Habitats	displacement of animals	**Severity-Low:** 11.95 acres of disturbance would cause temporary animal displacement from the project area. **Extent-Small:** Any displaced animal could find other suitable habitats nearby and return to the project area shortly after the project's conclusion. **Duration-Short Term:** Reclamation would be required within 2 years after completion or	Possible	Displacement of animals generated from this project could temporarily add to the cumulative impacts of commercial/industrial and high intensity residential development, and	None	No

Affected Resource and Section Reference	Potential Impact	Severity[1], Extent[2], Duration[3], Frequency[4], Uniqueness and Fragility (U/F)	Probability impact will occur[5]	Cumulative impacts	Measures to reduce impact as proposed by Applicant	Significance (yes/no)
		abandonment of exploration activities plus growing seasons. **Frequency-Daily**: During exploration and reclamation activities. **Unique/Fragile:** Not unique or particularly fragile.		historical and active mining use in the area.		
6. Unique, Endangered, Fragile, or Limited Environmental Resources	displacement of unique or endangered animals	**Severity-Low:** 11.95 acres of disturbance would cause temporary displacement of unique and endangered animals from the project area. **Extent-Small:** Any displaced animal could find other suitable habitats nearby and return to the project area shortly after the project's conclusion. **Duration-Short Term:** Reclamation would be required within 2 years after completion or abandonment of exploration activities plus growing seasons. **Frequency-Daily:** During exploration and reclamation activities. **Unique/Fragile:** Not unique or particularly fragile.	Possible	Displacement of unique or endangered animals generated from this project could temporarily add to the cumulative impacts of commercial/industrial and high intensity residential development, and historical and active mining use in the area.	None	No
7. Historical and Archaeological Sites	Impacts to historical and archaeological sites	**Severity-Low:** Some disturbance associated with the proposed project could impact existing historical and archeological resources. **Extent-Small:** The presence of historical and archeological resources would be minimal within the project area proposed to be disturbed. **Duration-Long Term:** Any disturbance to archaeological sites would be permanent. **Frequency -Daily:** During exploration and reclamation activities. **Unique/Fragile:** Not unique or particularly fragile.	Probable	Impacts to historical and archaeological sites could add to the cumulative impacts of commercial/industrial and high intensity residential development, and historical and active mining use in the area.	None	No
8. Aesthetics	Project visibility and noise	**Severity-Medium:** The project would be visible to and heard by the public in the immediate vicinity in Walkerville and Butte, and anyone traveling through the area. **Extent-Small:** Exploration operations would be visible to receptors from observation points unobstructed by topography or urban development. Noise may be heard by receptors located in an area where sound related to the	Certain	Impacts to area aesthetics generated from this project could temporarily add to the cumulative impacts associated with high intensity residential development, and	The following BMPs are proposed to mitigate light pollution: • downward facing lights, • light shrouds/shields, • And directional lighting	No

Affected Resource and Section Reference	Potential Impact	Severity[1], Extent[2], Duration[3], Frequency[4], Uniqueness and Fragility (U/F)	Probability impact will occur[5]	Cumulative impacts	Measures to reduce impact as proposed by Applicant	Significance (yes/no)
		project has not been fully diminished by distance or another sound-dampening feature. **Duration-Short to Long term:** Reclamation would be required within 2 years after completion or abandonment of exploration activities plus growing seasons. Waste rock stockpiles would be reclaimed but remain, changing the local topography on private lands. **Frequency- Daily:** During exploration and reclamation activities. **Unique/Fragile:** Not unique or particularly fragile.		historical and active mining use in the area.		
9. Demands on Environmental Resources of Land, Water, Air, or Energy	Water usage	**Severity-Low:** The project would utilize approximately 15,000-gallons of water per day during exploration operations. **Extent-Small:** The water would be sourced from pre-existing Butte-Silver Bow municipal hydrants. **Duration-Short Term:** Water would be consumed during drilling operations and as a dust control measure for roads and surfaces. **Frequency- Daily:** During exploration and reclamation activities. **Unique/Fragile**-Not unique or particularly fragile.	Unlikely	N/A	None	No
10. Impacts on Other Environmental Resources	No direct impacts on other identified environmental resources or projects that rely on the same lands or facilities are anticipated.	N/A	N/A	N/A	None	No
11. Human Health and Safety	Possible respiration or ingestion of dust	**Severity-Low:** Only exploration staff would be in the immediate vicinity during exploration operations. **Extent-Small:** Within the immediate area of operating equipment. **Duration-Short Term:** Respiration of exhaust fumes and the ingestion of dust produced by heavy equipment would only be during exploration or reclamation activities. Reclamation would be required within 2 years after completion or abandonment of exploration activities, plus growing seasons. **Frequency- Daily:** During exploration and reclamation activities.	Unlikely	N/A	None	No

Affected Resource and Section Reference	Potential Impact	Severity[1], Extent[2], Duration[3], Frequency[4], Uniqueness and Fragility (U/F)	Probability impact will occur[5]	Cumulative impacts	Measures to reduce impact as proposed by Applicant	Significance (yes/no)
		Unique/Fragile- Not unique or particularly fragile.				
12. Industrial, Commercial, and Agricultural Activities and Production	No anticipated impacts	N/A	N/A	N/A	N/A	No
13. Quantity and Distribution of Employment	No anticipated impacts	N/A	N/A	N/A	N/A	No
14. Local and State Tax Base and Tax Revenues	No anticipated impacts	N/A	N/A	N/A	N/A	No
15. Demand for Government Services	Increased traffic and use of public water supply	**Severity-Low:** Traffic would increase on a small number of public roads within the greater project area, and water used would be a small percentage of the water used each day from the BSB public water supply. **Extent-Small:** Increased traffic would only occur on some roads near the proposed project area. **Duration-Short Term:** Reclamation would be required within 2 years after completion or abandonment of exploration activities plus growing seasons. **Frequency- Daily:** During exploration and reclamation activities. **Unique/Fragile**- Not unique or particularly fragile.	Certain	Impacts to the demand for government services would add to the cumulative impacts from other nearby traffic and use of the public water supply.	None	No
16. Locally Adopted Environmental Plans and Goals	No anticipated impacts	N/A	N/A	N/A	N/A	No
17. Access to and Quality of Recreational and Wilderness Activities	No anticipated impacts	N/A	N/A	N/A	N/A	No
18. Density and Distribution of Population and Housing	No anticipated impacts	N/A	N/A	N/A	N/A	No
19. Social Structures and Mores	No anticipated impacts	N/A	N/A	N/A	N/A	No

Affected Resource and Section Reference	Potential Impact	Severity[1], Extent[2], Duration[3], Frequency[4], Uniqueness and Fragility (U/F)	Probability impact will occur[5]	Cumulative impacts	Measures to reduce impact as proposed by Applicant	Significance (yes/no)
20. Cultural Uniqueness and Diversity	No anticipated impacts	N/A	N/A	N/A	N/A	No

1. Severity describes the density at which the impact may occur. Levels used are low, medium, high.
2. Extent describes the land area over which the impact may occur. Levels used are small, medium, and large.
3. Duration describes the time period over which the impact may occur. Descriptors used are discrete time increments (day, month, year, and season).
4. Frequency describes how often the impact may occur.
5. Probability describes how likely it is that the impact may occur without mitigation. Levels used are: impossible, unlikely, possible, probable, certain

APPEND PUBLIC COMMENTS SUMMARY PAGE(S)

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