DEQ
Montana Department of Environmental Quality

Air, Energy & Mining Division

EL DORADO SAPPHIRE AND GOLD MINE LLC

EXPLORATION LICENSE NO. 00901

Amendment No. 1

EL DORADO BAR PROJECT
LEWIS AND CLARK COUNTY, MT

October 14, 2026
Draft Environmental Assessment

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PROJECT OVERVIEW

COMPANY NAME: El Dorado Sapphire and Gold Mine LLC
EA DATE: October 14, 2026
PROJECT: Lewis and Clark
PERMIT/LICENSE: Exploration License No. 00901
AMENDMENT #: Amendment 1 (AMD1)

Location

(46.736064°, -111.863372°) County: Lewis and Clark

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 human environment. The proposed action is considered to be a state action that may have an impact on the human 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 1 (AMD1) to Exploration License No. 00901 (Exploration License) for El Dorado Sapphire and Gold Mine LLC (Applicant) – El Dorado Bar Project, if DEQ has determined that the Applicant 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 the Applicant could renew the Exploration License annually.

Purpose and Need

DEQ's purpose and need in conducting this environmental review is to act upon the Applicant'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 July 1, 2026, the Applicant submitted a complete application for an Exploration License Amendment (AMD1). Pursuant to 82-4-332(2), MCA, the application was complete and acceptable.

The Applicant proposes this action to assess the commercial potential of an ore deposit using underground exploration methods on private land located in Lewis and Clark County, Montana, at the El Dorado Bar project site, approximately 28 miles northeast of Helena, Montana.

The Plan of Operations submitted on July 1, 2026, proposed a sonic drilling exploration program consisting of 52 drill holes, each drilled from a non-constructed drill pad area measuring approximately 25 feet by 15 feet. Each hole is proposed to a maximum depth of 80 feet below ground surface, for a combined total drilled depth of up to 4,160 feet. Access to each drill site would be situated within an actively farmed irrigated hay field and would be accessed using existing farm tracks and agricultural infrastructure, therefore no new roads are proposed. Approximately 17,360 feet of ten-foot-wide overland travel would be used to access each drill site. The applicant is proposing up to 4.43 acres of total new surface disturbance.

Start dates of the proposed exploration activities are contingent upon DEQs acceptance of the required reclamation bond and issuance of an Approval to Proceed Letter. Final reclamation of all exploration-related disturbances must be completed no later than two years following the conclusion of exploration activities unless otherwise incorporated into an Operating Permit.

Table 1: Summary of Activities Proposed in Application

Summary of Proposed Activities in Application	
General Overview	El Dorado Sapphire and Gold Mine LLC proposes underground exploration activities on private lands located in Sections 4 and 9, Township 11 North, Range 2 West, located in Lewis and Clark County, Montana, approximately 28 miles northeast of Helena, MT. The proposed action includes sonic drilling 52 drill holes, each drilled from a non-constructed drill pad area measuring approximately 25 feet by 15 feet. Each drill hole is proposed to a maximum depth of 80 feet below ground surface, for a combined total drilled depth of up to 4,160 feet. The Applicant has proposed up to 17,360 feet of overland travel, up to 10 feet wide, to access the drill sites. No new roads are proposed. The Applicant is proposing up to 4.43 acres of total new surface disturbance. Start dates of the proposed exploration activities are contingent upon DEQs acceptance of the required reclamation bond and issuance of an Approval to Proceed Letter. Final reclamation of all exploration-related 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 (#)	52
Drill pad dimensions (xy)	25 feet by 15 feet
Drill Holes (#)	52
Overland Travel (xy)	17,360 feet by 10 feet
Maximum Drill Hole Depth (z)	80 feet
Total Drill Hole Footage (z)	4,160 feet
Total new surface disturbance	**4.43 acres**
Specific Proposed Activities	
Duration and timing	Start dates of the proposed exploration activities are contingent upon DEQs acceptance of the required reclamation bond and issuance of an Approval to Proceed Letter. The Applicant proposes that once exploration operations are completed, initial reclamation operations would be completed within approximately 3-months.

	Work hours are estimated to be up to 12 hours per day (1 x 12-hour shift), up to 6 days per week. 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: • 1 – Sonic Drill Rig (GeoProbe Model 8150 LS) • 1 – Fuel/Water Truck (100-gallon fuel/200-gallon water) • 1 - Telehandler (SkyTrak 6042, approx. 6,000 lb) • 2 - 3/4-ton 4x4 Pickup Trucks (Ford F-250 or similar)
Location and analysis area	**Location:** 46.736064°, -111.863372° **Distance from the nearest town/city:** On private lands located in Sections 4 and 9, Township 11 North, Range 2 West, located in Lewis and Clark County, Montana, approximately 28 miles northeast of Helena, MT. **Analysis Area:** The area being analyzed for this environmental review includes the immediate project area, immediate downstream water sources, and neighboring lands surrounding the analysis area within a reasonable distance for the impacts being considered. Refer to the Location Map and any other maps below.
Personnel on-site	• 1 – Lead Driller • 2 - Drillers • 1 – Geologists/Manager • 1 – Project Oversight
Structures	• 1 - Portable toilets • 1 – 0.25 cubic yard trash can • 1 gallon of lubricants
Proposed action water source	The Applicant proposes to obtain water for drilling from an existing surface water take point on the Missouri River/Hauser Lake in Section 9, Township 11 North, Range 2 West, or any other legally available water source. The Applicant states that water would be supplied under the landowner's existing water rights and hauled to the drill sites using a Dodge 1-ton pickup equipped with a 200-gallon portable water tank. Approximately 150 gallons of water per day would be used to support sonic drilling and sample recovery, which may require up to one round trip per day to the drill site.
Air quality	The Applicant proposes that if fugitive dust is observed, water would be applied to roads, vehicles would travel at reduced speeds,

	traffic volume would be reduced, and all equipment would retain its factory emissions controls. The Applicant is required to comply with the applicable local, county, state, and federal requirements pertaining to air quality.
Supplemental Lighting	The Applicant proposes that operations occur only during daylight hours. No supplemental lighting sources are proposed.
Water quality	To minimize sediment transport from the drill pads, the Applicant has proposed the use of the following BMPs: straw wattles, silt fencing, and spill prevention and response kits. The Applicant is required to comply with the applicable local, county, state, and federal requirements pertaining to water quality.
Erosion control and sediment transport	To minimize sediment transport from the drill pads, the Applicant has proposed the use of the following BMPs: straw wattles and silt fencing. The Applicant is required to comply with the applicable local, county, state, and federal requirements pertaining to erosion control and sediment transport.
Solid waste	The Applicant proposes that any solid wastes produced by the operation would be stored in one 0.25-cubic-yard trash can and hauled off-site for disposal at the Lewis and Clark County Landfill in Helena, MT, 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 proposes that if any historic, cultural or archaeological resources are encountered, work would stop immediately, the discovery be left undisturbed, and the Applicant notify the Montana State Historic Preservation Office and the Montana DEQ. Should human remains be discovered, the Applicant proposes to cease all work and contact the Lewis and Clark County Coroner. The Applicant is required to comply with the applicable local, county, state, and federal requirements pertaining to cultural resources.
Hazardous substances	To minimize transport of hazardous materials from the drill pads, the Applicant has proposed the use of the following BMPs: spill kits with immediate response protocols to any release of hazardous substances and removal of contaminated material for proper disposal, regular equipment maintenance, secondary containment and daily hose and equipment inspections. The Applicant proposes: • 100 gallons of fuel would be transported in a pickup-mounted fuel tank to the drill pad on a daily basis.

	• 1 gallon of grease or other lubricants would be stored on the fuel/service truck. The Applicant must adhere to all applicable local, county, state, and federal regulations concerning hazardous substances.
Reclamation Plans	**Concurrent Reclamation:** The Applicant proposes that, as drilling is completed, each borehole would be abandoned in accordance with ARM 17.24.106 and applicable DEQ requirements, using approved plugging or backfilling methods for shallow placer exploration. The project is planned as a single season. No end-of-season reclamation for multiple operating seasons is proposed. **Final Reclamation:** Final reclamation would include returning disturbed ground to present agricultural field conditions after drilling operations conclude. **Weed Control Plan:** The Applicant proposes that all equipment would be washed and inspected before entering or leaving the site to limit movement of soil, debris or weed seeds. After reclamation, the field would be inspected up to three times per year, and if noxious weeds are found, they would be sprayed with herbicide or physically removed. **Structures to Remain**: The Applicant proposes that no new project-related disturbance or structures would remain unreclaimed after completion of the proposed action.
Cumulative Impact Considerations	
General setting	The project area features forest and woodland, grassland, shrubland, human use (agriculture), and open water. Many roads and previously mined and reclaimed areas associated with mining activities and agriculture are present within the analyzed area.
Past actions	Past actions in the area include periodic mining of placer deposits from 1865 to the present. More recently, several Small Miner Exclusions (SMES) were operated within the greater project area, including SMES Nos. 05-251, 05-255, and 05-271. These SMEs are now closed. No other Exploration Licenses or Operating Permits were operated within the greater project area.
Present actions	**Mining:** No other Exploration Licenses or Operating Permits are active within the greater project area. Two Small Miner Exclusions are located within the greater project area, including SMES No. 05-280 and SMES No. 05-166B.

	Other: Many pre-existing access roads are present on public and private lands. Local traffic exists on the existing public and private roads, including Favorite Gulch Road and Huotari Lane.
Related future actions	The Applicant may submit additional applications to amend Exploration License No. 00901, which DEQ would review pursuant to the MMRA, and rules adopted under the MMRA at that time. Any subsequent approvals would undergo a separate environmental review under MEPA.

Figure 1: General Project Location Map

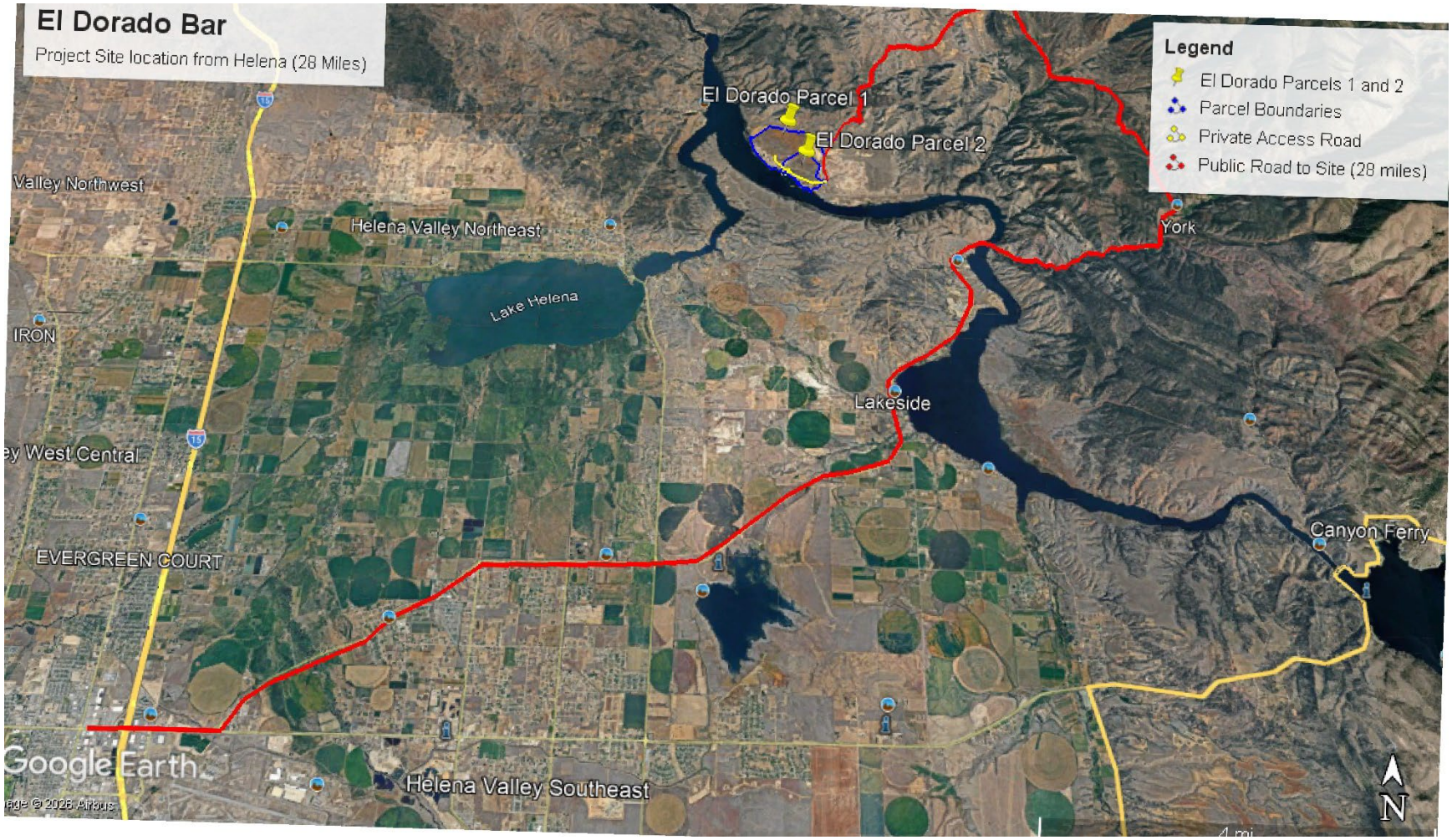

Figure 2: Map of Proposed Exploration Activities (Drill Pads)

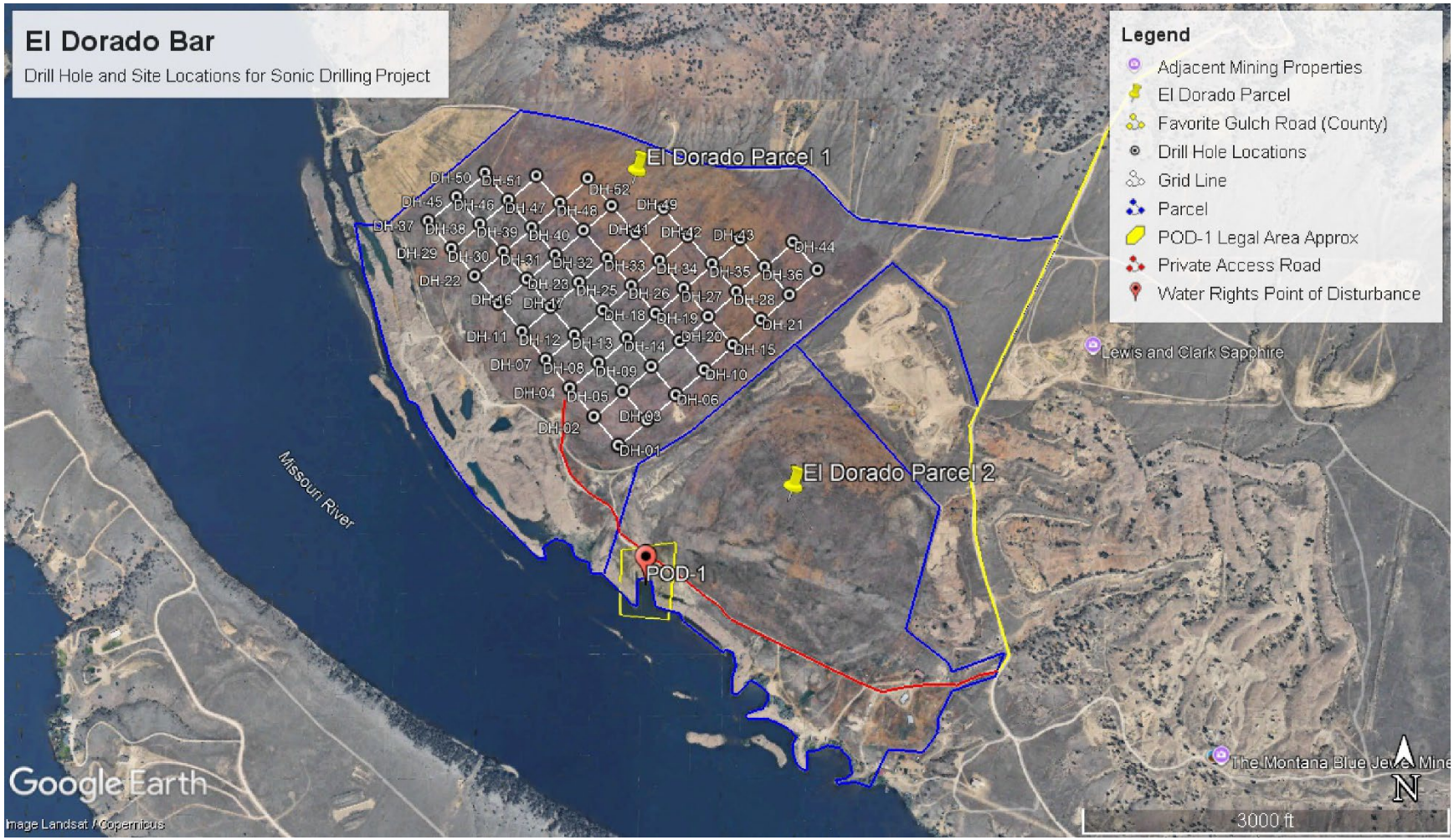

Figure 3: Map of Proposed Exploration Activities (Overland Travel)

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 human 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 human environment within the borders of Montana of the Proposed Action when considered in conjunction with other past and present actions related to the Proposed Action by location and 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 proposed actions 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 proposed exploration area would be located on private lands approximately 28 miles northeast of Helena, in Lewis and Clark County, Montana. The proposed drilling program would investigate alluvial gravels overlying bedrock at the El Dorado Bar project site. Most proposed drill locations are within an existing cultivated hay field, with several locations in surrounding grassy areas. The project is near historic Missouri River placer deposits, also described as the Canyon Ferry district, where gold- and sapphire-bearing gravels have been explored and mined since the 1860s. The historical district includes terraces bordering the Missouri River from the vicinity of Canyon Ferry downstream for approximately 10 to 12 miles, together with associated placer deposits in tributary gulches (Pardee and Schrader, 1933; McClernan, 1983).

Missouri River Placer District

The regional bedrock of the Big Belt Mountains forms an anticline complicated by numerous folds, high-angle faults, predominantly normal faults, and large-displacement thrust faults. Exposed sedimentary units include the Newland Limestone, Greyson Shale, Spokane Shale, Empire Shale, and Helena Dolomite of the Precambrian Belt Supergroup, as well as Paleozoic sedimentary rocks. Remnants of Tertiary gravel deposits occur throughout the region, and Quaternary stream and wind-deposited sediments are also present (McClernan, 1983).

Gold-bearing gravels along the Missouri River were derived from nearby tributary streams and accumulated in terraces during an interglacial stage of the Pleistocene. These deposits were historically worked using surface placer methods and underground drifting beneath the overburden. Gold in the El Dorado Bar gravels was probably derived from lode deposits exposed in gulches along the western side of the Big Belt Mountains (Pardee and Schrader, 1933; McClernan, 1983).

Placer mining at El Dorado Bar began as early as the spring of 1865 and recovered both gold and sapphires. Historical operations included sluicing, hydraulic mining, and dredging. The Perry-Schroeder Mining Company placed an electric connected-bucket dredge into operation in 1938. Reported gold production reached 6,884 ounces in 1942 and 6,909 ounces in 1943. The dredge

also recovered sapphires, primarily for industrial use, with reported production totaling approximately 58,000 troy ounces of sapphires from 1938 through 1944 (Lyden, 1948; Zeihen, 1987).

Soil Types

The mapped area of interest encompasses approximately 548.8 acres. Of this area, 389.6 acres (71.0 percent) have a slight erosion hazard rating for disturbances located off-road or off-trail. Map units with a slight rating include Chinook sandy loam, 2 to 8 percent slopes (192.6 acres); Kalsted-Chinook sandy loams, 2 to 8 percent slopes (152.4 acres); Thess-Scravo complex, 0 to 2 percent slopes (6.7 acres); and Crago-Musselshell gravelly loams, 4 to 35 percent slopes (37.8 acres). Soils with a slight erosion hazard rating indicate that erosion is unlikely under ordinary climatic conditions. The project area also consists of approximately 3.6 acres (0.7 percent) of soils that have a moderate off-road/off-trail erosion hazard rating. These map units include Lithic Ustochrepts, mountain slopes (0.3 acres), and Typic Argiborolls and Typic Ustochrepts, alluvial fans (3.4 acres). Soil with a moderate erosion hazard rating indicates that some erosion is likely and that erosion-control measures may be needed (USDA Natural Resources Conservation Service, 2026).

The remaining 155.5 acres (28.3 percent) are classified as null or not rated for this erosion-hazard interpretation. These areas include Dumps, mine (127.2 acres), and Water (28.4 acres). No unusual or unstable geologic features are present, and no fragile or distinctly erosive, unstable soils are present.

The analysis area for geology and soils in the project area and immediately surrounding landscape in Lewis and Clark County, Montana (Table 1). The Applicant must comply with the applicable local, county, state, and federal requirements for erosion control and sediment transport. The Applicant proposes to minimize surface disturbance by using existing access roads and agricultural infrastructure, operating the sonic drill rig directly on existing ground with little or no surface preparation, and avoiding construction of drill pads, sumps, and new roads as best management practices (BMPs) to minimize erosion and sediment transport offsite.

Direct Impacts:

The proposed action would result in localized soil disturbance associated with up to 17,360 feet of 10-foot-wide overland travel and 52 non-constructed surface drill sites with approximate dimensions of 25 feet by 15 feet. The total new surface disturbance would be approximately 4.43 acres.

Maximum drill depths of any hole would not exceed 80 feet, with a combined total footage of no more than 4,160 feet. The applicant estimates that 104 cubic feet of subsurface materials would be removed during drilling for testing.

Secondary Impacts:

The proposed action could result in soil disturbance and minor subsequent erosion of disturbed soil, and sediment could be transported offsite via stormwater. 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:

Cumulative impacts to soil stability from the proposed action, including increased potential for soil erosion and area instability, could impact soil stability from previous historic mining activities in the project area. The additional disturbance of up to 4.43 acres, some on previously disturbed ground, with application of erosion-control BMPs and reclamation, is expected to make only a minor, short-term contribution to the cumulative effects on soil stability and geologic conditions and would not measurably change long-term geologic or soil stability characteristics in the project area vicinity.

2. Water Quality, Quantity, and Distribution

Surface Water and Runoff:

The El Dorado Bar project area is located within a 16,028-square-mile Upper Missouri River watershed. The watershed receives a mean annual precipitation of 21.51 inches (StreamStats, 2026). The closest proposed surface disturbance (overland travel route) is approximately 750 feet upgradient of Hauser Lake.

The area is adjacent to four wetland and riparian system types. Palustrine systems consist of semipermanently flooded, diked/impounded aquatic-bed wetlands (4 acres). Riparian systems consist of lentic scrub-shrub habitat (2 acres). Riverine systems consist of temporarily flooded, intermittent streambed (1 acre). Lacustrine systems (432 acres) comprise permanently flooded, diked/impounded limnetic unconsolidated bottom (418 acres) and seasonally flooded, diked/impounded littoral unconsolidated shore (14 acres) (MTNHP, 2026). No disturbance of mapped wetland or riparian systems are proposed.

Groundwater: Drill Site Areas

Groundwater would likely be encountered during drilling operations. The lowest drill pad (DH-37) elevation and highest drill pad (DH-44) elevation proposed are approximately 3,675 amsl and 3,775 amsl, respectively. The deepest proposed drill hole may reach up to 80 feet below the ground's surface, or as deep as 3,595 amsl, which would intercept the interpreted groundwater level. The Applicant has proposed to comply with ARM 17.24.106 regarding scenarios where drilling operations would interact with the groundwater table, but if the groundwater is intercepted, the Applicant must comply with the drill hole plugging rules detailed in ARM 17.24.106 to maintain compliance.

The Applicant would collect solid waste in an approximately 0.25-cubic-yard garbage can, remove it daily, and dispose of it at the Lewis and Clark County Landfill in Helena, Montana. Spill kits would be kept with the drill rig and service truck to absorb mechanically spilled petroleum products. The Applicant would conduct daily hose and equipment checks, address potential spills immediately and remove contaminated materials for proper disposal. Following drilling and reclamation, no equipment or other items from the drilling project would remain on site.

Groundwater: Water Supply Area

Water necessary for drilling operations would be sourced from an existing agricultural irrigation surface water diversion point from the Missouri River (Hauser Lake), in Section 9, Township 11 North, Range 2 West. Water would be supplied under water rights associated with the property and its principal. Proof of water right ownership is not a requirement under MMRA for obtaining an exploration license. However, an exploration license requires that the Applicant conduct exploration activities in compliance with all applicable state and federal laws, including Montana water rights law administered by the Department of Natural Resources and Conservation (DNRC). Approximately 150 gallons of water per day would be transported from the diversion point to the drill locations in a pickup-mounted, 200-gallon portable water tank. Water would be used to cool and lubricate the drill bit, clean the bit-rock interface to optimize cutting performance, and to carry drill cuttings out of the hole. Wet drilling also suppresses dust for safer working conditions for drilling personnel. No disturbance is proposed in the water supply area.

Direct Impacts:

Surface Water and 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. Infiltrating runoff is not expected to reach the groundwater table in sufficient quantity to impact the aquifer or influence water quality beyond baseline conditions.

However, stormwater leaving the sites during heavy storms could carry sediment from the disturbed soils and non-sediment contaminants from drilling operations. To comply with ARM 17.24.105, the Applicant must confine drilling fluids as well as waste cuttings from drilling operations to the drill site by the use of storage tanks or sumps or dispose of the fluids or waste in accordance with an approved plan. In the event that an inadvertent release of drilling fluid to the surface took place, it would be a violation of ARM 17.24.105 and a violation would be issued to the Applicant, following the regular compliance structure. Practically, the drilling fluids would be handled similarly to a fuel or water release. The drilling fluids would likely act as a thin mud or paste with increased viscosity (i.e., decreased fluidity), and would likely be contained within the drill pad area by the stormwater and sediment controls described in the Surface Water and Runoff section above. The Applicant also proposes the use of erosion control BMPs to minimize sediment transport off-site and maintain surface water quality, including water diversions, straw wattles, and silt fence.

Groundwater:

The drilling and plugging processes are not expected to affect the groundwater quantity or quality or disturb other water users in the greater project area. The Applicant proposes drilling to a maximum depth of 80 feet from the surface. Except for potentially shallow drillholes, 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 transmissive

unconfined aquifer) indicates that artesian flow would not be expected to occur from the drillholes, eliminating the potential impacts from uncontrolled flow of groundwater and groundwater-containing drilling fluids coming back up to the surface.

All exploration drill holes would be reclaimed in accordance with ARM 17.24.106. Unless DEQ grants an exception, the rule requires a cement plug in the upper five to ten feet of each hole and, where the groundwater conditions specified in ARM 17.24.106(2) apply, bentonite or a similar compound from the bottom of the hole to the cement plug. Under ARM 17.24.106(3)(a), DEQ may grant an exception for shallow placer holes drilled using a churn or percussion drill, or similar equipment, in alluvium where the holes would be obliterated as the drill stem is withdrawn, leaving no evidence of the hole. The proposed surface drilling activity, and the resulting drill holes prior to plugging, are unlikely to influence the elevation or the quality of groundwater.

Proposed Action Water Source:

The proposed activities at the water source include the withdrawal of up to 150 gallons of water per day and filling a pickup-mounted water tank to convey water from the source location to the drilling project area. Any water potentially spilled during transfer of fresh water from the municipal water source to the transport truck would have similar impacts to surface water runoff from a stormwater producing event, as described above. The transfer of water would be controlled by piping and valving at the water source. The withdrawal of up to 150 gallons of water per day from the Missouri River (Hauser Lake) water source would represent similar demand for the well from other existing public and private uses and the aquifer that it accesses. The Applicant is required to comply with the applicable local, county, state, and federal requirements pertaining to water quality.

Secondary Impacts:

Stormwater impacting the sites during a precipitation event would generally be expected to infiltrate into the subsurface; however, stormwater leaving the sites could carry sediment from the disturbed soils and non-sediment contaminants from drilling operations. The Applicant proposes the use of silt fencing, straw wattles, and spill prevention response kits as BMPs to minimize erosion and transport of sediment and non-sediment contaminants off-site.

Cumulative Impacts:

Cumulatively, the proposed exploration drilling would add a limited, temporary disturbance to an area already used for agriculture and near existing mining properties. Most of the 52 proposed drill locations would be within a recently active, cultivated center-pivot hay field, with a few in surrounding grassy areas. The Applicant would use existing access routes, construct no new roads, and operate the drill rig on the existing ground surface with little or no site preparation. No drill sumps or ponds are proposed. Water use is estimated at approximately 150 gallons per day, supplied under the property owner's existing water rights from a Missouri River (Hauser Lake) diversion and transported to the drill rig in a pickup-mounted tank. The Applicant would keep spill kits with the drill rig and service truck, conduct daily hose and equipment checks, promptly address potential spills, remove contaminated materials for proper disposal,

and abandon boreholes in accordance with ARM 17.24.106 and applicable DEQ requirements. Because the proposed action would utilize the above-referenced plan design elements and associated BMPs, the cumulative impacts on surface water and groundwater quality are expected to be minor and not significant.

3. Air Quality

The Gates of the Mountains Wilderness is the closest Class 1 Airshed to the project area, approximately 5.5 miles due north. The immediate area complies with the National Ambient Air Quality Standards.

The Applicant proposes to minimize impacts to air quality by reducing speed while traveling, reducing traffic volume, applying water to roads and maintaining factory emissions controls on all equipment and vehicles. The Applicant is required to obtain any other necessary permits related to air quality as required by state, local, and federal law.

Direct Impacts:

Dust particulates would be produced or become airborne during exploration and reclamation operations. Mechanized equipment would produce some exhaust fumes. Dust would also be produced while traveling along existing roads to and from the project area. 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 Lewis and Clark Reservation Class 1 Airshed due to the small scale of activity and distance between the proposed action and the airshed, in conjunction with implementation of BMPs.

Secondary Impacts:

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

Cumulative Impacts:

No cumulative impacts on air quality would be expected from the proposed action. Cumulative impacts to air quality from the proposed action could add to impacts from existing traffic in the greater project area in the use of public and private roads in the vicinity of the proposed action.

4. Vegetation Cover, Quantity, and Quality

Approximately 1,918 acres surrounding the greater project area were mapped using the Montana Natural Heritage Program (MTNHP, 2026). The land cover primarily consists of forest and woodland, shrubland, open water, and human land use, with smaller areas of grassland, wetland and riparian systems, sparse and barren land, and recently disturbed or modified land use systems.

Forest and woodland: Approximately 520.7 acres (27.1%), comprising Rocky Mountain ponderosa pine forest and woodland (511.8 acres; 26.7%); Great Plains mesic forest and woodland (7.1 acres; 0.4%); Rocky Mountain Douglas-fir forest (1.1 acres; 0.1%); and foothills limber pine–juniper woodland (0.7 acres; <0.1%).

Shrubland: Approximately 492.6 acres (25.7%), comprising basin and Wyoming big (threetip) sagebrush shrubland (455.0 acres; 23.7%); lowland–montane shrubland (30.8 acres; 1.6%); and Gardner's saltbush–bird's-foot sage dwarf-shrubland (6.8 acres; 0.4%).

Open water: Approximately 437.2 acres (22.8%), consisting entirely of open water classified in the 2025 land-cover dataset.

Human land use: Approximately 344.4 acres (18.0%), comprising irrigated agriculture (264.9 acres; 13.8%); other roads (49.7 acres; 2.6%); dryland cultivated crops (18.2 acres; 0.9%); developed vegetation (5.3 acres; 0.3%); dryland pasture/hay (3.8 acres; 0.2%); and low- and medium-intensity development (2.5 acres; 0.1%).

Grassland: Approximately 85.7 acres (4.5%), comprising Great Plains dry mixedgrass prairie (75.4 acres; 3.9%); Rocky Mountain low-elevation dry grassland (8.5 acres; 0.4%); and Great Plains sand prairie (1.8 acres; 0.1%).

Wetland and riparian: Approximately 29.7 acres (1.5%), comprising montane–subalpine riparian forest (12.0 acres; 0.6%); greasewood shrubland (10.2 acres; 0.5%); Arid West freshwater marsh and wet meadow (5.3 acres; 0.3%); Great Plains floodplain forest (1.1 acres; 0.1%); and Great Plains wet meadow, marsh, and shrub swamp (1.1 acres; 0.1%).

Sparse and barren: Approximately 6.1 acres (0.3%), comprising Rocky Mountain cliffs, scree, and rock outcrops (5.4 acres; 0.3%) and Great Plains sparsely vegetated badlands (0.7 acres; <0.1%).

Recently disturbed or modified: Approximately 1.5 acres (0.1%), consisting entirely of introduced upland herbaceous vegetation.

A search of the MTNHP in the project identified vascular plant habitats and potential habitats for 19 Species of Concern (SOC) and 5 Species of Potential Concern (SOPC). The USFS Species of Conservation Concern in Forests search identified 3 vascular plant SOC and 2 SOPC. The BLM has classified zero vascular plants as sensitive and zero as threatened.

Direct Impacts:

Vegetation within the approximately 4.43-acre combined footprint of temporary drilling work areas and overland travel routes could be locally disturbed by equipment placement and vehicle travel; however, this footprint does not represent an area of proposed vegetation removal. Most of the 52 drill locations would be within a recently active, cultivated center-pivot hay field, with a few in surrounding grassy areas. The Applicant proposes to operate the sonic drill rig directly on the existing ground surface with little or no surface preparation. No drill pad construction, drill sumps, or new roads are proposed. Potential vegetation impacts would therefore primarily

involve trampling or localized disturbance associated with drilling and travel between holes, rather than grubbing, scraping, or clearing vegetation to construct exploration facilities. Following drilling and reclamation, the Applicant proposes to return the site to its agricultural condition, with no excessive mounding or ground disturbance at the drill-hole locations.

Secondary Impacts:

Equipment movement and localized surface disturbance could contribute to the introduction or spread of noxious weeds. To minimize seed transmission, the Applicant proposes to wash and inspect equipment before arrival at the site and before removal, reducing the transfer of soils and debris. Following reclamation, the Applicant would inspect the field associated with the project two to three times annually and spray or remove identified noxious weeds. The Applicant proposes to return the site to its agricultural condition following drilling and reclamation. The project area would be subject to the 2017 Montana Noxious Weed Management Plan and any additional measures required by the Lewis and Clark County Weed Control Board. Weed control is a condition of an exploration license, and the Applicant would be required to minimize the spread of noxious weeds.

Cumulative Impacts:

Cumulative impacts on vegetation cover, quantity, and quality from the proposed action could add to existing impacts from agricultural use and other active and historical mining operations within the project area. Reclaimed areas are expected to re-establish cover comparable to surrounding disturbed lands or be returned to active hay production.

5. Terrestrial, Avian, and Aquatic Life and Habitats

The proposed action has the potential to temporarily impact 4.43 acres of terrestrial, avian and/or aquatic habitat and temporarily displace species occurring within the proposed disturbance area. Common wildlife, such as amphibians, birds, fish, invertebrates, mammals, and reptiles, may utilize the project area and may be temporarily displaced while machinery and equipment are operating. Displaced wildlife is expected to find other suitable habitats in the surrounding undeveloped area and return to the project area following completion of exploration and reclamation activities. See further discussion regarding the greater sage-grouse in “Section 6. Unique, Endangered, Fragile or Limited Environmental Resources”.

Direct Impacts:

Impacts on terrestrial, avian, and aquatic life and habitats may include increased ambient noise levels from the drilling equipment and temporary displacement in the project area. Impacts to noise levels are further discussed in “Section 8. Aesthetics.”

The Applicant proposes daytime operations only and does not propose nighttime activities or supplemental lighting. Therefore, impacts on terrestrial, avian, and aquatic life associated with additional nighttime illumination or light glare are not anticipated under the proposed action.

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.

Cumulative Impacts:

Cumulative impacts to terrestrial, avian, and aquatic life and habitats from the proposed action could add to existing impacts from agricultural or active or historical mining operations in the area.

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

No area within the greater project area is considered General Habitat for sage grouse (BLM, 2026). The BLM has not identified any areas within the greater project area as General Habitat Management Areas.

A search of MTNHP in the project area identified bird, invertebrate, fish, amphibian and mammal habitats and potential habitats for 53 SOC, 12 SOPC and 2 Species of Special Status (SSS). The USFS Species of Conservation Concern in Forests search identified 11 species as sensitive. The BLM has classified 32 species as sensitive and 5 as threatened. Habitat for these species is common and not unique to the project area. Habitat for all other species within the project area is common throughout the larger ecosystem, and any displaced animal could find other suitable habitats in the surrounding undeveloped area and return to the project area after the proposed action's conclusion.

Direct Impacts:

Impacts to other 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 proposed action 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 other unique, endangered, fragile, or limited environmental resources from the proposed action could add to existing impacts from previous agricultural or active and historic mining operations in the project area's immediate vicinity.

7. Historical and Archaeological Sites

The Montana Cultural Resource Database under the State Historic Preservation Office (SHPO) indicates that there are inventoried historical sites within the greater project area. The proposed exploration activities are located on private lands, primarily within a field that has been farmed for many years. The Applicant states that this previous agricultural use reduces the likelihood of encountering cultural or archaeological resources. SHPO recommends that any structure over fifty years of age be considered historic and potentially eligible for listing on the National Register of Historic Places, and that any such sites be recorded, and that determination of their eligibility be made prior to any disturbance taking place.

If historical or archaeological resources are encountered, the Applicant would stop work immediately, notify the Montana State Historic Preservation Office (SHPO) and the Montana Department of Environmental Quality (DEQ), and conduct no further work until approved by the agencies involved. If human remains are discovered, the Applicant would notify the Lewis and Clark County Coroner and cease work until approval is obtained. The Applicant is required to comply with the applicable local, county, state, and federal requirements pertaining to cultural resources.

Direct Impacts:

Unidentified cultural or historic resources could be disturbed by exploration activities. No direct impacts on historical or archaeological sites would be expected from the proposed action.

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. Portions of the project area are located adjacent to public county and private roads throughout the greater project area; however, the area is sparsely populated. The project area would be visible to the public traveling along local county roads. There would be no permanent change to the topography or the viewshed. Noise associated with the proposed action may be heard where sound related to the proposed action has not been fully diminished by distance or another sound-dampening feature.

The Applicant proposes to perform daylight operations only in a single 12-hour shift per day. No portable light plants would be deployed at the project area.

Direct Impacts:

The proposed action would be temporarily visible to or heard by the sparsely populated surrounding area and to receptors located at observation points that are unobstructed by topography or forested vegetation. The sites would be visible from portions of county roads in the vicinity of the drill sites and other disturbances. Aesthetic impacts from exploration and reclamation activities would include views of heavy equipment like the drill rig, passenger vehicles, and miscellaneous equipment related to drilling and reclamation. Noise associated with the proposed action could be heard where sound related to the proposed action has not been fully diminished by distance or another sound-dampening feature. Sources of noise could include the operation of heavy equipment, construction activities, and travel. Final reclamation would be required within 2 years of completion of the proposed action.

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, construction activity and noise in the project area, within a landscape affected by travel and previous agricultural and active and historical mining activities. These visual and noise effects are expected to be minor and temporary, with final reclamation required within 2 years after exploration concludes.

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

Water necessary for drilling operations would be sourced from an existing agricultural irrigation surface water diversion point from the Missouri River (Hauser Lake), in Section 9, Township 11 North, Range 2 West. Approximately 150 gallons of water per day would be transported from the diversion point to the drill locations in a pickup-mounted, 200-gallon portable water tank, which would require a single round trip per drilling day. No other local land, water, air, or energy resources would be used as part of this proposed action.

Direct Impacts:

The proposed action would consume up to 150 gallons of water resources per day during drilling activities. No direct impacts on land, air or energy are expected from this proposed action.

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 150 gallons of water per day of well water would add a small increment to existing demands on the Missouri River water system, and is not expected to measurably affect overall water availability or water 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 searched the following websites or databases for nearby activities that may affect the proposed action; however, no other projects were identified:

- Montana Department of Natural Resources and Conservation (DNRC)
- Montana Department of Environmental Quality (DEQ)
- Montana Department of Transportation (MDT)
- Lewis and Clark County
- United States Department of Interior, Bureau of Land Management (BLM)
- United States Forest Service (USFS)

Direct Impacts:

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 proposed action would occur on private land, and no members of the public may be in the project area during exploration and reclamation operations.

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 inhalation of exhaust fumes and the ingestion of dust generated by equipment during exploration operations and reclamation would be minimized with proper personal protective equipment. Increases in operation-related traffic would likely occur. The daily traffic that would be leaving the site could vary greatly.

Secondary Impacts:

Fugitive dust that leaves the project area and is not dispersed by air movement could be deposited near the project area, which could cause irritation with varying degrees of severity to receptors who come into contact with that dust. ARM 17.8.308 would require the Applicant to take reasonable precautions to control airborne particulate matter.

Dust impacts from the proposed action would be minimized by implementing wet drilling and applying water to travel/working surfaces.

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

No other industrial, commercial, and agricultural activities are known to occur in the project area.

Direct Impacts:

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

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:

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

13. Quantity and Distribution of Employment

It is not anticipated that this proposed action would create, move, or eliminate jobs.

Direct Impacts:

Direct impacts on quantity and distribution of employment would not likely result from this proposed action. The proposed action 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 proposed action.

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 to payroll taxes from the proposed action.

Direct Impacts:

Some positive, yet limited, benefit to the local and state economy could result from this proposed action. However, due to the nature of the action, minimal tax revenue from income, the purchase of local goods and services, or expenses would be expected from this proposed action. The significance assessment is presented in Table 2.

Secondary Impacts:

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

Cumulative Impacts:

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

15. Demand for Government Services

It is not anticipated that substantial traffic or services would be necessary as part of this proposed action. The proposed action would be located on private lands using private, county, and public access roads. Site access would rely on existing roads and private access roads to drill pad locations. All operations would be subject to local, seasonal restrictions as they apply.

Direct Impacts:

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 on demand for 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 Lewis and Clark County, and the 2017 Montana Noxious Weed Management Plan.

Direct Impacts:

DEQ is not aware of any other locally-adopted environmental plans or goals that would impact this proposed action or the project area. Impacts from or to locally-adopted environmental plans and goals would not be expected as a result of this proposed action. 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 recreational opportunities for the general public near the project area, although there are no maintained formal access points to recreational opportunities on lands within or adjacent to the project area.

Direct Impacts:

The proposed action would occur on private lands. No impacts to the access of recreational activities are expected. A commonly desired quality of public lands used by recreationists is the isolation and distance from human activity. The quality of recreational activities within the immediately surrounding lands could be impacted similarly in scale, quality, and duration as the impacts described in Section 8. “Aesthetics”.

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

Lewis and Clark County had a population of approximately 75,331 people as of the census conducted by the United States Census Bureau in 2020.

Direct Impacts:

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

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

It is not anticipated that this proposed action 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

It is not anticipated that this proposed action would cause a shift in some unique quality of the area.

Direct Impacts:

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 action would take place on private lands. DEQ's approval of AMD1 to Exploration License No. 00901, with conditions, would not 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 an amendment to License No. 00901 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

Due to the nature of the proposed exploration activities and the limited project duration, no further direct or secondary impacts would be anticipated from this proposed action.

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

In addition to the proposed action, DEQ also considered the "no action" alternative. The "no action" alternative would deny the approval of the proposed Amendment 1 to Exploration License No. 00901. The Applicant would lack the authority to explore minerals on private lands. Any potential impacts authorized under Amendment 1 to Exploration License No. 00901 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 action. Internal scoping consisted of an 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 Resources and Conservation (DNRC)
- Montana Department of Environmental Quality (DEQ)
- Montana Department of Transportation (MDT)
- Lewis and Clark County
- 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)

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 includes 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.

The Draft EA will be posted to the DEQ website for public comment on October 15, 2026. The Final EA will be available on the DEQ website.

OTHER GOVERNMENTAL AGENCIES WITH JURISDICTION

The proposed action 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.

This environmental review analyzes the proposed action submitted by the Applicant. Any impacts from the action would be short-term and would be fully reclaimed at the conclusion of the proposed action, and thus, would not contribute to the long-term cumulative effects of mining in the area. No other DNRC, BLM, or USFS-regulated projects were identified in the immediate project vicinity.

NEED FOR FURTHER ANALYSIS AND SIGNIFICANCE OF POTENTIAL IMPACTS

When determining whether the preparation of an environmental impact statement is needed, DEQ is required to consider 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.

The severity, duration, geographic extent, and frequency of the occurrence of the impacts associated with the proposed exploration activities would be limited. The applicant proposes this action to assess the commercial potential of an ore deposit through exploration drilling. The plan includes non-constructed surface drill sites and associated overland access roads to support the drilling program.

As described in this EA, the proposed action would authorize surface and underground exploration activities that would disturb up to approximately 4.43 acres on private lands in Lewis and Clark County, Montana. Exploration activities would use a single sonic drilling rig operated up to 12 hours per day, six days per week. The proposed action does not authorize mine development, ore processing, tailings facilities, waste-rock facilities, or long-term infrastructure.

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 low to moderate in intensity, localized in extent, and short-term in duration. Applicable BMPs are described throughout the EA in applicable resource sections and Tables 1 and 2.

BMPs to minimize erosion, sediment movement, and water resource impacts include: use existing access routes, construct no new roads, operate the drill rig on the existing ground surface with little or no site preparation, use silt fencing and straw wattle, and use spill prevention and response kits. The Applicant would inspect the field associated with the project two to three times annually and spray or remove identified noxious weeds. The Applicant proposes to return the site to its agricultural condition following drilling and reclamation.

BMPs to minimize impacts on air quality include requiring all vehicles to travel at reduced speeds, reducing traffic volume, the application of water to roads, and maintaining factory emissions controls on all equipment and vehicles.

Further, reclamation of disturbed lands to comparable utility and stability as adjacent undisturbed land would minimize impacts to wildlife and habitats.

Geology/soils, water, and air resources would experience small, temporary increments of additional disturbance and emissions with an area already substantially affected by previous agriculture and active and historical mining activities. Reclamation is required within two years after exploration is complete. The proposed action would use an existing water source (up to 150 gallons per day) rather than construct new groundwater withdrawals and would plug exploration drill holes in accordance with ARM 17.24.106.

For social and economic resources, the EA concludes that the proposed action 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 agriculture and mining character of the project 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 proposed action 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 exploration or mining, 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, DEQ has determined that the proposed action, AMD1 to Exploration License No. 00901, 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, and drilling. B. Erosion of disturbed soil and weed propagation	**A. Severity-Low:** Of the 4.43 acres of ground that would be disturbed, all disturbance results in the displacement and movement of rock and soil. Drill cuttings and samples would be removed. **Extent-Small:** Total surface area susceptible to displacement would be 4.43 acres. Up to 104 cubic feet of samples would be removed. **Duration- Short Term:** Up to 2 years after completion or abandonment of exploration activities plus growing seasons. **Frequency:** Daily **Unique/Fragile:** Not unique or particularly fragile. **B. Severity-Low:** Of the 4.43 acres of ground that would be disturbed, all disturbance would be susceptible to erosion and propagation of weeds. **Extent-Small:** Total surface disturbance susceptible to erosion and weed propagation would be 4.43 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 and from previous agriculture and mining activities within the proposed project area.	The Applicant proposes the use of; • silt fence • straw wattles • Spill prevention/response kits as best management practices (BMPs) to minimize erosion and sediment transport off-site. - Reclamation and seeding would be performed immediately after the conclusion of exploration operations. Weed control is further discussed in “Section 4. Vegetation Cover, Quantity, and Quality”.	No
2. Water Quality, Quantity, and Distribution	Erosion of disturbed soil into waterways, intercepting the groundwater table in the project area, and 150 gallons per day withdrawal at the proposed action water source.	**Severity-Low:** Of the 4.43 acres of ground that would be disturbed, all disturbance would be susceptible to erosion. The maximum depth proposed is 80 feet from the surface, which would intercept the water table. Up to 150 gallons per day would be consumed during drilling operations. **Extent-Small:** Total surface disturbance susceptible to erosion would be 4.43 acres. **Duration- Short Term:** Up to 2 years after completion or abandonment of exploration activities plus growing seasons and during drilling activities. **Frequency:** During occasional storm events and during general drilling operations. **Unique/Fragile:** Not unique or particularly fragile.	Possible	Erosion could add to cumulative impacts associated with potential erosion on existing roads and from previous agriculture and mining activities within the project area. Proposed water withdrawals at the proposed action water source could add to the cumulative impacts to the aquifer by nearby water users.	The Applicant proposes the use of the above BMPs to minimize erosion and sediment transport off-site. -Drilling could intercept 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
3. Air Quality	Erosion of disturbed soil/windblown emissions, e.g., equipment exhaust	**Severity-High:** 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 proposed action would temporarily add to the cumulative impacts from the other vehicles and engines operating in the area and to general recreational activities in the greater project area in the use of public lands near the proposed action.	The Applicant proposes the use of; • reduced speed while traveling • reduced traffic volume • application of water to roads	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)
					• maintaining factory emissions controls on all equipment and vehicles as BMPs to minimize the impacts to air quality.	
4. Vegetation Cover, Quantity, and Quality	A. Displacement of vegetation B. Weed propagation associated with surface disturbance	**Severity-Low:** The 4.43 acres of disturbance would be subject to the displacement of vegetation and the potential to propagate weeds. **Extent-Small:** Total surface disturbance subject to the displacement of vegetation and the potential to propagate weeds would be 4.43 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	The displacement of vegetation would add to cumulative impacts from previous agriculture and mining activities within the project area. Weed propagation generated from the proposed action would temporarily add to the cumulative impacts in other areas where weeds already exist within and near the proposed action area.	The Applicant proposes the use of; • washing and inspecting equipment prior to arrival and departure from the site to minimize the transmission of noxious weeds. - Any ground disturbed by exploration activities would be returned to agricultural production and seeded as necessary.	No
5. Terrestrial, Avian, and Aquatic Life and Habitats	Increased ambient noise and the displacement of animals	**Severity-Low:** 4.43 acres of disturbance and associated activities would cause temporary animal displacement from the project area. **Extent-Small:** Increased ambient noise would impact animals where sound has not been obstructed by topography or forested vegetation. Any displaced animal could find other suitable habitats nearby and return to the project area shortly after the proposed action'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.	Probable	No cumulative impacts to terrestrial, Avian, and Aquatic Life and Habitats would be expected.	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)
6. Unique, Endangered, Fragile, or Limited Environmental Resources	Displacement of unique or endangered animals	**Severity-Low:** 4.43 acres of disturbance would cause temporary animal displacement from the project area. **Extent-Small:** Increased ambient noise would impact animals where sound has not been obstructed by topography or forested vegetation. Any displaced animal could find other suitable habitats nearby and return to the project area shortly after the proposed action'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	No cumulative impacts to unique, endangered, fragile, or limited environmental resources would be expected.	None	No
7. Historical and Archaeological Sites	No anticipated impacts	N/A	N/A	N/A	N/A	No
8. Aesthetics	Proposed action visibility and noise	**Severity-Medium:** Receptors would view heavy equipment, equipment related to drilling, and equipment transportation. Receptors would hear noise from sources including operation of heavy equipment, construction, and travel. **Extent-Small:** The noise and visual impacts would be visible to receptors from observation points unobstructed by topography or forested lands. Noise may be heard by receptors located in an area where sound related to the proposed action has not been fully diminished. **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 area aesthetics generated from this proposed action could temporarily add to the cumulative impacts associated with travel and previous exploration activities conducted in the area.	None	No
9. Demands on Environmental Resources of Land, Water, Air, or Energy	Water usage	**Severity-Low:** The proposed action would utilize up to 150 gallons of water per day during exploration operations. **Extent-Small:** The water would be sourced from a pre-existing water supply. **Duration-Short Term:** Water would be consumed during drilling operations and would return to the agricultural irrigation supply upon the conclusion of operations. **Frequency- Daily:** During exploration and reclamation activities. **Unique/Fragile**-Not unique or particularly fragile.	Certain	Consumption of up to 150 gallons of water per day could temporarily add to the cumulative impacts associated with other water use in the area.	None	No
10. Impacts on Other Environmental Resources	No anticipated impacts	N/A	N/A	N/A	N/A	No
11. Human Health and Safety	Possible inhalation, ingestion, or contact with dust	**Severity-Low:** Only exploration staff would be in the immediate vicinity during exploration activities. **Extent-Small:** Within the immediate area of operating equipment.	Unlikely	No cumulative impacts on human health and safety would be expected from the proposed action.	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)
		Duration-Short Term: Respiration of exhaust fumes and the ingestion of dust produced by heavy equipment would only occur 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. **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	Wages, withheld taxes, and local spending	**Severity-Low:** Workers and the companies participating in the proposed action. **Extent-Small:** The limited scale of the proposed action would only employ a small number of individuals. **Duration-Short Term:** Workers and the company would only have the opportunity to collect wages, withhold taxes, and spend locally related to the proposed action during operations and 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.	N/A	The proposed action would provide only a small, temporary addition to the existing local and state tax base associated with other economic activity in the greater project area.	None	No
15. Demand for Government Services	Increased traffic	**Severity-Low:** Traffic would increase on a small number of public roads within the greater project area. **Extent-Small:** Increased traffic would occur along the local and public roads in the immediate vicinity of the project area. **Duration-Short Term:** Increased vehicle traffic would only occur during operations and 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	No cumulative impacts to demand on government services would be expected from the proposed action.	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	Project visibility and noise	**Severity-Medium:** Receptors would view heavy equipment, equipment related to drilling, and equipment transportation. Receptors would hear noise from sources including the operation of heavy equipment, construction, and travel. **Extent-Small:** The proposed action could generate impacts similar to those described in “Section 8. Aesthetics” to recreationists in the immediately surrounding BLM lands.	Certain	The proposed action would add impacts similar to those described in “Section 8. Aesthetics.” These visual and noise effects are expected to be minor and temporary, with final reclamation required within 2 years after exploration concludes.	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)
		Duration-Short Term: Project visibility and noise would only occur during operations and 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.				
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
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 and 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

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