MT DEQ

Draft Environmental Assessment

Proposed Amendment 001 for Hard Rock Operating Permit No. 00022
Little Bear Construction, Inc.

Table of Contents

Hard Rock Mining Bureau
ENVIRONMENTAL ASSESSMENT

COMPANY NAME: Little Bear Construction Inc.
OPERATING PERMIT: Operating Permit #00022, Current Small Mine Exclusion Site (SMES) 46-117C
LOCATION: 1504 Drummond Frontage Road
S14, T11 N, R13 W
COUNTY: Granite County
PROPERTY OWNERSHIP: FEDERAL ___ STATE ___ PRIVATE _X_

COMPLIANCE WITH THE MONTANA ENVIRONMENTAL POLICY ACT

Under the Montana Environmental Policy Act (MEPA), Montana agencies are required to prepare an environmental impact statement for state actions significantly affecting the quality of the human environment. 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 preparation of an environmental impact statement based on consideration of the significance criteria set forth in Administrative Rules of Montana (ARM) 17.4.608.

PURPOSE AND NEED

DEQ's purpose and need in conducting this environmental review is to act on the application submitted by LBC to increase the area of disturbance covered by Operating Permit No. 00022, incorporating the area the was disturbed under SMES 46-117C. DEQ will determine whether the LBC's proposed amendment to Operating Permit No. 00022 complies with the Montana Metal Mine Reclamation Act (MMRA), Sections 82-4-301, *et seq*., MCA.

PROPOSED ACTION

Little Bear Construction, Inc. (LBC) is requesting an amendment to Operating Permit No. 00022 to increase permit area and permitted disturbance area at the currently permitted hard-rock mine (Bob Weaver Pit) near the town of Drummond in Granite County, Montana. The increased permit area and permitted disturbance area would include the area that was disturbed under SMES 46-117C.

LBC has applied for Amendment 001 to Operating Permit No. 00022 (which authorizes operation of the Bob Weaver Pit) to add permit and disturbance acres and to incorporate adjacent areas that were disturbed under SMES 46-117C and to bring the mining operation into compliance with the reclamation and bonding requirements of the MMRA. Approval of Amendment 001 would add approximately 30 years to the life of the mine.

Location:
The Bob Weaver Pit is approximately 4 miles east of Drummond, MT. The access road travels from Drummond Frontage Road, approximately 4 miles west along Interstate 90 to the junction of Lime Quarry Road, then northeast for aproximately1.5 miles to the quarry entrance.

FIGURE 1: LBC BOB WEAVER PIT LOCATION

Analysis Area:
The area being analyzed as part of this environmental review includes the immediate project area and the (SMES 46-117C) (Figure 1) as well as the neighboring lands surrounding the analysis area as reasonably appropriate for the impacts being considered.

LBC is applying for Amendment 001 to exclude the industrial site that is currently part of the operating permit, to incorporate the area that was disturbed under the SMES 46-117, and to add the access road from the point of departure with a public road to the mine site.

An industrial area located south of the landing area would be removed from Operating Permit No. 00022. The location of the industrial area is shown in yellow in Figure 2. The area being removed from the mine permit is not used for mining activities and will remain as an industrial site at the

end of mine life. On April 6, 2001 DEQ approved a revision request to Operating Permit No. 00022 (MR01-001) to allow industrial post mine land use for this part of the permit area. However, the permit boundary was not adjusted to exclude the industrial area at that time. DEQ does not hold a reclamation bond for disturbance in the industrial area.

The area that was disturbed under the SMES 46-117C shown outlined in orange in Figure 2. This area is over the disturbance limit of 5 acres and operating in conjunction with Operating Permit No. 00022. DEQ issued a violation letter to LBC in 2017 for both of those practices which are not allowed under a SMES. The changes proposed in LBC's Amendment 001 application are part of the corrective action for those violations.

Amendment 001 would also add the access road from the point of departure with a public road to the mine site to bring Operating Permit 00022 into compliance with the Administrative Rules of Montana 17.24.102 (9)(a) The access road is shown in yellow in Figure 3 as part of the proposed permit boundary.

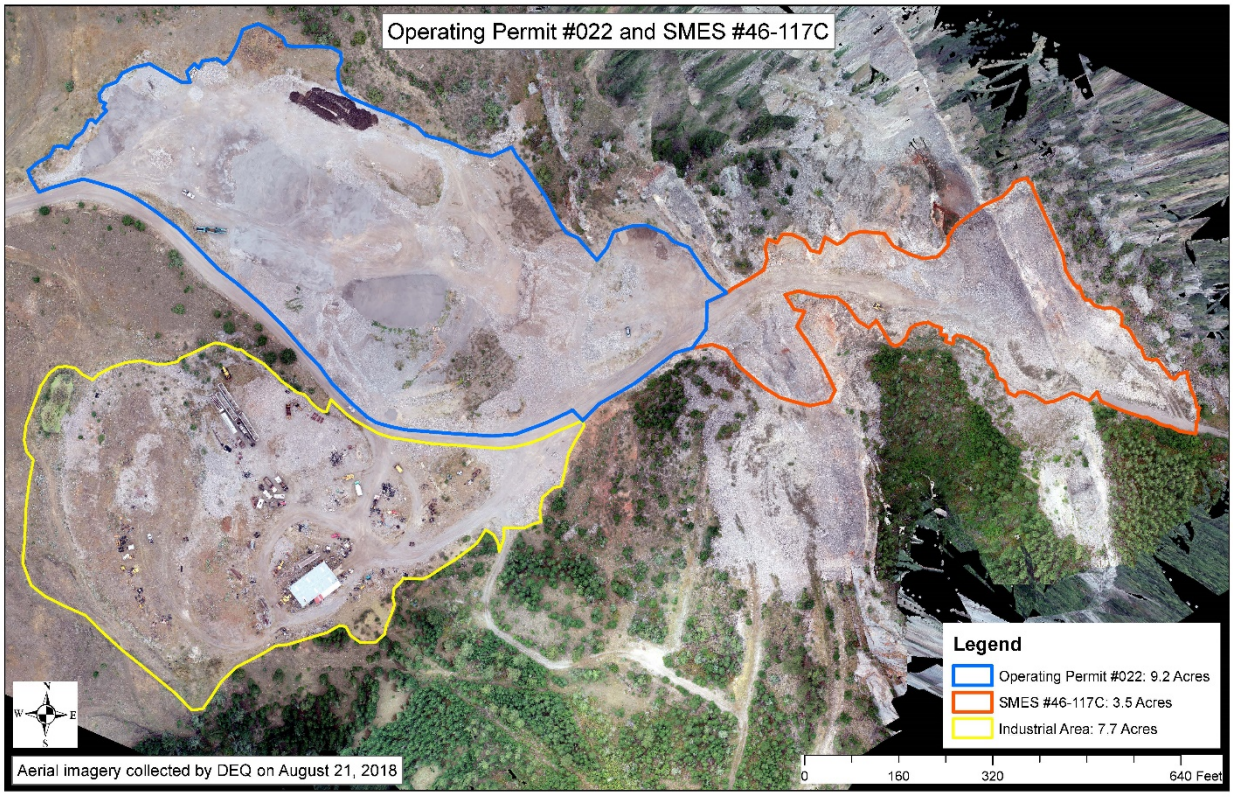

FIGURE 2: LOCATION OF INDUSTRIAL AREA AND AREA DISTURBED UNDER SMES 46-117C

Scope of Activity:
The proposed permit boundary would be 44.5 acres as shown in Figure 3 with a yellow outline. This includes the area that was disturbed under the SMES 46-117C (approximately 5 acres shown in the red outline), the area between the area that was disturbed under SMES 46-117C and the

existing permit area which is shown with a blue outline, and the area for the access road from the point of departure from the public road to the mine site is also shown in the yellow permit boundary outline in Figure 3. The landing area is shown in a pink outline in Figure 3 would not be reclaimed post-mining for use by the landowner. The proposed permit boundary would be adjusted to exclude an industrial area located south of the landing area.

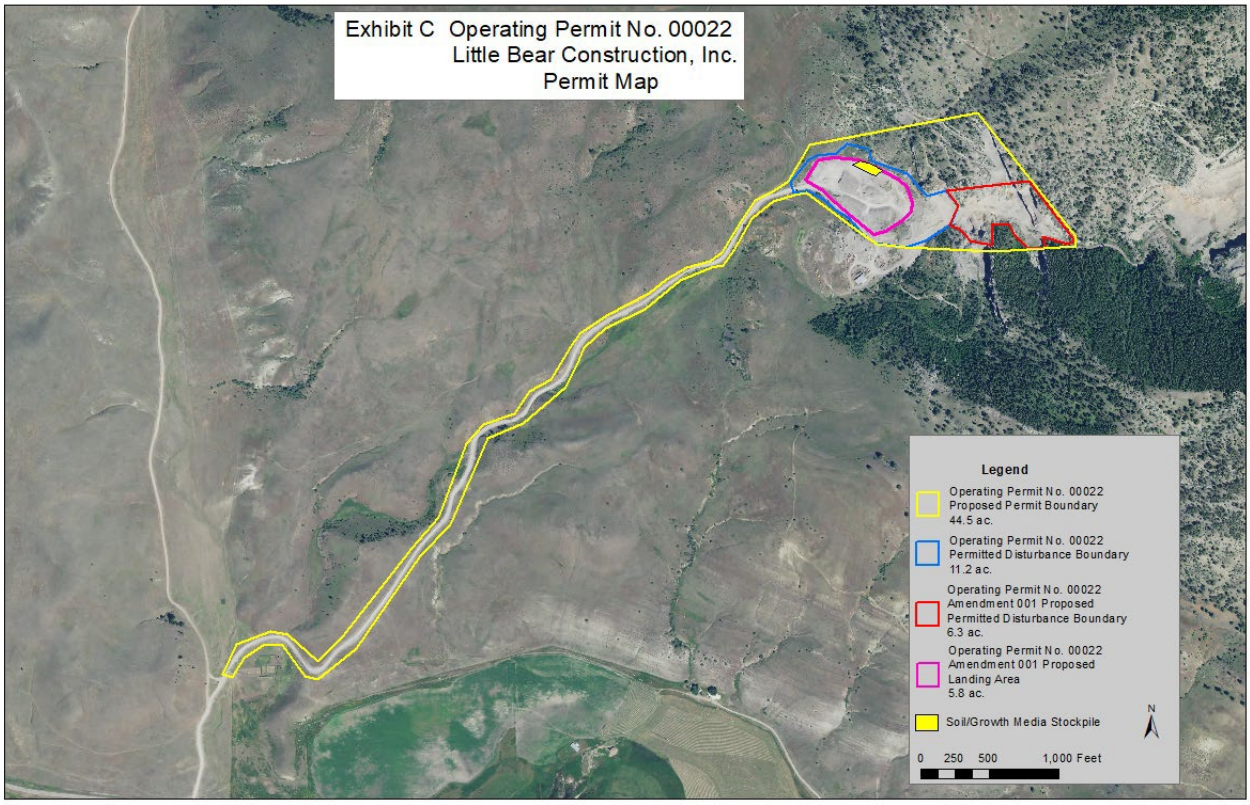

FIGURE 3: EXISTING AND PROPOSED PERMIT DISTURBANCE AREA

Activities at the proposed amended mine site would be a continuance of the current practice of mining and producing limestone. A road would be constructed between the current Operating Permit and SMES sites to bring them together as one site. Mining would be a continuation of removing previously exposed rock from the quarry area and hauling it to the landing area for sorting and processing. As needed, more rock resources would be exposed by removing the soil and overburden overlying the rock, and mining the rock anywhere from 0 – 60 feet deep.

Duration of Activity:
Mining activity typically operates from March through December of every year, with hours of expected operation Monday through Sunday during daylight hours. In an average year, 300 dump truck loads would be removed from the mine. The life of the mine would be extended by approximately 30 years.

Personnel and Equipment:

The quarry would have up to five people working on site. Equipment that would typically be found on site an excavator, a loader, a hydraulic rock hammer, a mobile screening plant, dump trucks, and a dozer. Blasting may be conducted as part of the quarry operations. A licensed driller/blaster would be hired to conduct the blasting.

Reclamation Plan:
The access roads and landing would be left post-mining for landowner use. The quarry floor and bench floors on the highwalls would be graded, spread with topsoil, and seeded. All reclaimed areas, except the highwalls, would be graded to match the surrounding terrain. All stockpiles would be graded to a 3:1 slope or less and seeded. Slopes would be left in a stable condition to prevent erosion and promote vegetative growth. Reclaimed slopes would be horizontally tracked or ripped to prevent erosion. Highwalls would be benched to ensure they are stable and structurally competent.

Soil stockpiles, sediment control structures, and any disturbance left in place greater than one year would be seeded and reseeded as necessary to control erosion. Little Bear Construction would grade soil piles to a slope of 3:1 or less if excessive erosion occurs on the soil stockpiles. All mine equipment, trailers and debris would be removed from the permit area post mining.

All soil material would be stripped 10 feet ahead of any disturbance. Soil would be salvaged and stockpiled separately from any overburden. Topsoil depths on site range from 1-3 inches across the area; an average soil depth of 3 inches is expected. Reclaimed mine areas would receive an average of 3 inches of topsoil. Salvaged soil would be used for reclamation post mine. Current soil volumes for use in reclamation are reported in the annual reports to the DEQ.

LBC would seed all disturbances with 12 lbs. per acre of pure live seed using the following species proportions:

Seed	Lbs. PLS/acre
Gulf Annual Ryegrass	3.0
Luna Pubescent Wheatgrass	2.95
Hycrested Crested Wheatgrass	2.40
Bromar Mountain Brome	1.82
Quatro Sheeps Fescue	1.83
TOTAL	**12**

TABLE 1: SEED MIX

Seed will be drilled or broadcast into the reclaimed soils. Seed broadcast on slopes of 3:1 or steeper will be tracked into the ground by a dozer to reduce erosion potential. Where harrowing, tracking, or other incorporation means are not possible, the pounds per acre rate would be doubled. Little Bear Construction would commit to seeding and harrowing/tracking of all disturbed areas within two years of finished use. LBC would retain seed tags and submit copies of the seed tags to DEQ with its annual progress reports.

Reclaimed areas would be evaluated for any weed infestations. Several different strategies could be used to effectively control any weed infestations. Integrated Pest Management strategies that

may be used on State and County listed noxious weed species can include herbicide applications, grazing, cutting, burning and bio-controls.

All reclamation would be monitored annually for success. Reclaimed areas which do not reestablish at least 15% vegetation canopy cover within 2 years of seeding would be reevaluated for reseeding, additional soil application, or soil amendments. One or all three treatments would be applied, if necessary. Areas which do not show adequate growth may be sampled for soil amendment requirements.

SUMMARY OF POTENTIAL PHYSICAL AND BIOLOGICAL IMPACTS:

The impact analysis will identify and analyze direct and secondary impacts of the proposed operation. 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 analysis will estimate the duration and intensity of the impact. The duration is quantified as follows:

- Short-term: Short-term impacts are defined as those impacts that would not last longer than the life of the project, including final reclamation.
- Long-term: Long-term impacts are impacts that would remain or occur following project completion.

The intensity of the impacts is measured using the following:

- No impact: There would be no change from current conditions.
- Negligible: An adverse or beneficial effect would occur but would be at the lowest levels of detection.
- Minor: The effect would be noticeable but would be relatively small and would not affect the function or integrity of the resource.
- Moderate: The effect would be easily identifiable and would change the function or integrity of the resource.
- Major: The effect would alter the resource.

1. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE

Are soils present which are fragile, erosive, susceptible to compaction, or unstable? Are there unusual or unstable geologic features? Are there special reclamation considerations?

The area's geology is within the Montana Fold and Thrust Belt, and area of complex faulting and folding in western Montana formed by continental plate collisions on the west coast of North America that began in the late Cretaceous period. In addition, the Drummond area falls within a structural zone called the Lewis and Clark Line. The Lewis and Clark Line is a lineament that bisects the Montana Fold and Thrust Belt, with thrust sheets experiencing different rotational movements north of the line than the thrust sheets to the south. The Lewis and Clark Line is characterized by broad anticlines and synclines, which have allowed the Mississippian Madison limestones to be exposed at the surface in places. The quarry area contains exposures of the Mississippian-age Madison Group, Permian through Mississippian Phosphoria-Quarant-Amsden Formations undivided, Jurassic Morrison and Swift (Ellis) undivided, the Lower Cretaceous

Kootenai Formation, and Tertiary Andesite/basalt.

The climate for the proposed permit area is dry and relatively sunny with a mean annual precipitation of 22.5 inches (USGS StreamStats, 2021). Whitecow gravelly complex (soil ID 488F) makes up the majority of the soil in the proposed permit disturbance area, while Whitecow gravelly loam (soil ID 88F) is the remainder of the proposed permit disturbance area soil (Figure 3). Typical profiles for the quarry soils are found in Table 2.

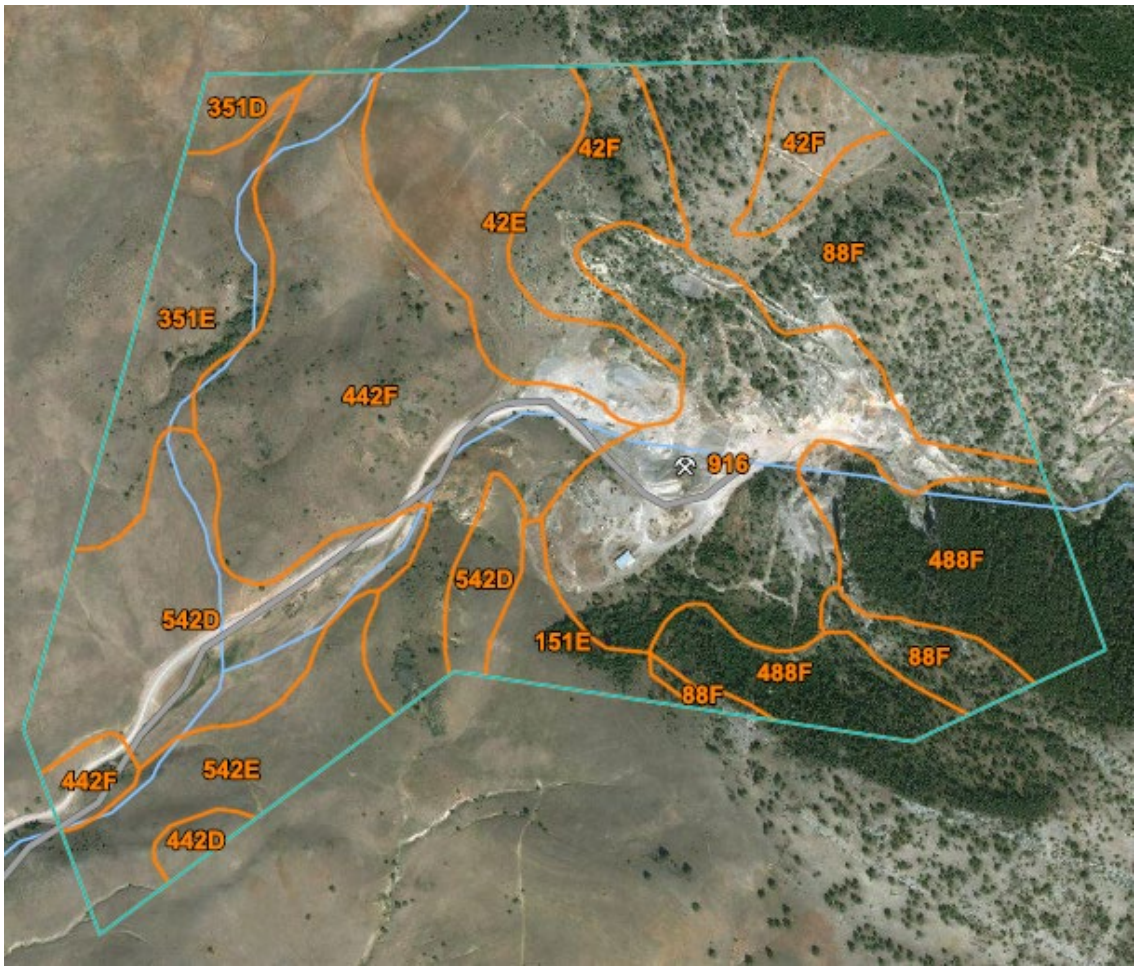

FIGURE 4: SOIL PROFILE OF THE LBC BOB WEAVER PIT

Soil Horizon	Whitecow gravelly loam (88F and488F)	Braziel-Tolbert gravelly loams (88F)	Windham gravelly loam (42E)
A	0-4 inches, Gravelly Loam	0-8 inches, Gravelly Loam	0-7 inches, Gravelly Loam
Bk1	4-34 inches, Very Gravelly Loam	8-17 inches, Very Gravelly Loam	7-21 inches, Very Gravelly Loam
Bk2	34-60 inches, Extremely Gravelly Loam	17-43 inches, Extremely Gravelly Loam	21-32 inches, Very Gravelly Loam

TABLE 2: TYPICAL SOIL PROFILES

Direct Impacts:
At the mining and processing site, soil horizons would be disrupted. Salvaged overburden and/or soil would be replaced after mining and then contoured to match the surrounding topography as much as possible. The area would then be seeded. Slopes would be left in a stable condition to prevent erosion and promote vegetation growth. Erosion control would be accomplished using a variety of BMPs as needed, including sediment basins, diversion ditches, berms, and seeding.

No fragile soils are present at the site. Rock faces left post-mining would be left stable and structurally competent to withstand geologic and climactic conditions without significant failure that would threaten the environment. Surface soil disturbance could allow for the establishment of weeds. Weed control would be required to control the spread of noxious weeds. Impacts to the geology, soil quality, stability and moisture would be short-term and minor and therefore would not be significant.

Secondary Impacts:
Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated, or induced by, or otherwise result from a direct impact of the action. No secondary impacts to the geology and soil quality, stability and moisture would be expected.

2. WATER QUALITY, QUANTITY, AND DISTRIBUTION

Are important surface or groundwater resources present? Is there potential for violation of ambient water quality standards, drinking water maximum contaminant levels, or degradation of water quality?

Groundwater

There are no residential wells near the proposed permit area (Figure 4). The closest well is about a 1/2 mile away. The static water level of the well, GWIC #217487, is reported as 5 feet below ground surface. The well is located at a much lower elevation to the quarry site, more than 300 feet lower per Google Earth elevation measurement. Because LBC would develop the quarry to only a depth of approximately 50-60 feet below surface, it is not expected to impact GWIC #217487.

A developed spring is located adjacent to the access road to the quarry area. Water from this spring feeds a stock tank through a pipe. The floor of the quarry and landing areas are covered with small to medium sized gravel and fine-grained crushed limestone. Most of the storm water that falls within the permit boundary would infiltrate into this gravel layer which acts as a filter for removing sediment. It is possible that some storm water could leave the permit boundary adjacent to the access road. However, a basin on the upgradient side of the access road would contain any runoff and filter sediment from infiltrating water before it resurfaces near the developed spring. Based on the location of the developed spring, adjacent wells, topography, and elevation of the site, and depth to groundwater, no significant groundwater sources would be expected to be encountered during the life of the mine.

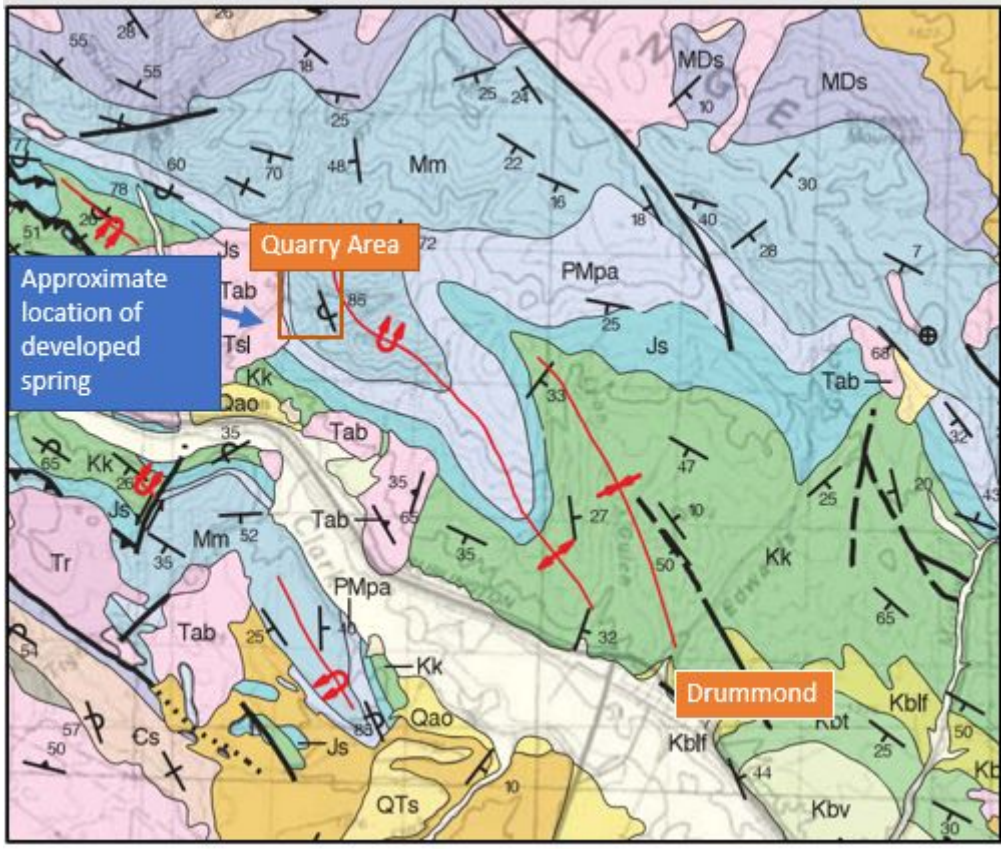

FIGURE 5: DEVELOPED SPRING ADJACENT TO THE PROPOSED PROJECT AREA

Direct Impacts:
There would be no acid rock drainage associated with the waste rock or overburden and no other source of objectionable discharge to groundwater. No water would be used for processing or during the mine operation, except what would be used for dust control. The applicant would be bound to all applicable state and federal rules regarding water quality and quantity. Precipitation and project water would infiltrate into porous gravel in the landing area a quarry floor. Groundwater would not be impacted by sediment due to the depth to water. There is some potential for impacts from diesel spills due to fueling equipment and leaks of hydraulic fluid or motor oil from mine equipment. Impacts to water quality, quantity, and distribution would be short-term and minor and would not be significant as a result of the proposed operations.

Secondary Impacts:
Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated, or induced by, or otherwise result from a direct impact of the action. No secondary impacts to groundwater quality, quantity, or distribution would be expected.

Surface Water

The permitted disturbance would be located about one mile away, and over 500 feet above, the Clark Fork river, across Interstate 90. There are geologic structures like porous gravel, coarse rock

composed of rounded pebbles and cobbles with sand and silt matrix in the disturbance area that would absorb runoff. Runoff from most areas within the quarry site would drain into areas where the land surface is composed of coarse rock. A large natural catchment basin exists around the quarry. Runoff entering this area would penetrate the subsurface and slowly drain away, providing for deposition of any transported sediment within and around the quarry.

Direct Impacts:
Rainfall in the area is limited and averages 22 inches per year. BMPs would control storm water runoff and reduce opportunity for sediment and/or spilled petroleum products from leaving the permitted disturbance area. Storm water associated with the project would be managed with sediment basins and other BMPs. Any surface water that may leave the quarry or landing area during a heavy storm event could carry sediment from disturbed soils. Storm water runoff would infiltrate in a basin upgradient of the access road adjacent to the landing area. This basin was created by fill used for the access road and the natural topography. Impacts to surface water would be short-term and minor and would not be significant.

Secondary Impacts:
Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated, or induced by, or otherwise result from a direct impact of the action. No secondary impacts to surface water quality, quantity, or distribution would be expected.

3. AIR QUALITY

Would pollutants or particulate be produced? Is the operation influenced by air quality regulations or zones (Class I airshed)?

Dust particulates would be produced or become airborne during operations. Fugitive dust from mining, loading, or hauling would be controlled by watering as needed. The quantity of water used for dust control would be dependent on environmental conditions such as rainfall, wind, time of year, and overall surface conditions.

The operator would be expected to maintain compliance with Montana laws regarding the need to take reasonable precautions to control airborne particulate matter according to the ARM 17.8.308. Gaseous products of combustion (oxides of nitrogen and carbon monoxide) would result from this operation, specifically from gas and diesel fuel-fired equipment.

Direct Impacts:
There would be some exhaust fumes and dust produced by the on-site equipment and mine activity. Dust control would be employed to meet particulate emission requirements. The level of gaseous emissions from the site would be minimal due to the small number of fuel-fired equipment in use at the site. Impacts to air quality would be short-term and minor and would not be significant as a result of the proposed operations.

Secondary Impacts:
Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated, or induced by, or otherwise result from a direct impact of the action. No secondary impacts to air quality would be expected.

4. VEGETATION COVER, QUANTITY AND QUALITY

Would vegetative communities be significantly impacted? Are any rare plants or cover types present?

The vegetation growing in the permit and surrounding areas is mostly Rocky Mountain Lower Montane, Foothill, and Valley Grassland type, along with Rocky Mountain Dry-Mesic Montane Mixed Conifer Forest and Montane Sagebrush Steppe. Rocky Mountain Lower Montane, Foothill, and Valley Grassland is dominated by Rough Fescue (*Festuca campestris*) and Idaho Fescue (*Festcua Idahoensis*) as co-dominant species. Bluebunch and Western Wheatgrass are also commonly found with this type of ecosystem. The Douglas Fir (*Pseudotsuga menziesii*) is the dominant conifer occurring in Rocky Mountain Dry-Mesic Montane Mixed Conifer Forest, co-occurring with seral western larch (*Larix occidentalis*), grand fir (*Abies grandis*), ponderosa pine (*Pinus ponderosa*), and lodgepole pine (*Pinus contorta*) in environments west of the Continental Divide. Montana Sagebrush Steppe is composed mainly of mountain big sagebrush (*Artemisia tridentata ssp. vaseyana*), along with occurrences of other bush species: silver sagebrush (*Artemisia cana ssp. viscidula*), subalpine big sagebrush (*Artemisia tridentata ssp. spiciformis*), three tip sagebrush (*Artemisia tripartita ssp. tripartita*) and antelope bitterbrush (*Purshia tridentata*) (MTNHP, 2019).

A search of the Montana Natural Heritage Program (MTNHP) identified the Keeled Bladderpod (*Physaria carinata*) as a species of concern (SOC) that has occurred in or near the proposed disturbance area. Additionally, potential habitat for 16 vascular plant SOC exists in the area of interest. Leafy Spurge, Spotted Knapweed, Dalmation Toadflax, Common Hound's-tongue, Canada Thistle, Common Tansy, and Cheatgrass, all noxious weeds, have been observed near the proposed mine site (MTNHP, 2019).

<u>*Direct Impacts:*</u>
Any surface disturbances would be reclaimed and seeded with an appropriate seed mix (see Table 1). Land disturbance at the site may result in propagation of noxious weeds (Table 3). The project area would be subject to the Granite County Weed Management Control Plan and to the 2017 Montana Noxious Weed Management Plan. Impacts to vegetative cover, quantity or quality resulting from this project would be short-term and minor and would not be significant (Table 3).

<u>*Secondary Impacts:*</u>
Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated, or induced by, or otherwise result from a direct impact of the action. No secondary impacts to vegetation cover, quantity and quality would be expected.

5. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS

Is there substantial use of the area by important wildlife, birds or fish?

The area surrounding the disturbance area has habitat for deer, antelope, elk, bears, and other commonly observed area wildlife.

<u>*Direct Impacts:*</u>
Impacts to wildlife and birds would potentially include temporary displacement of the animals,

although habitat found within the project area is common throughout the larger ecosystem. Animals most likely have been previously displaced by the existing disturbance in the operating permit and SMES areas. Any displaced animals could find other suitable habitat nearby and return to the project area shortly after the project conclusion. Impacts to terrestrial and avian life and habitat would be short-term and minor and would not be significant. There are no aquatic habitats in the proposed permit area, so no impact on aquatic life would be expected.

Secondary Impacts:
Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated, or induced by, or otherwise result from a direct impact of the action. No secondary impacts to terrestrial, avian, or aquatic life or habitats that could be stimulated or induced by the direct impacts analyzed above would be expected.

6. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENNVIRONMENTAL RESOURCES

Are any federally listed threatened or endangered species or identified habitat present? Any wetlands? Species of special concern?

A search of the MTNHP identified potential habitat for 87 mammal, reptile, invertebrate, bird, and amphibian SOC, potential SOC, sensitive, or threatened species in or near the proposed disturbance area. Terrestrial and avian SOC that have been observed near the proposed permit area include Great Blue Heron, Golden Eagle, Wolverine, Canada Lynx, Grizzly Bear, Peregrine Falcon, Fisher, and Lyrate Mountain snail. Additionally, the Bald Eagle, a species of special concern, and the Rufous Hummingbird, a potential species of concern, have been observed near the proposed permit area. Habitat for these species is common and not unique to the permit area.

No wetlands have been identified in the proposed permit area.

Direct Impacts:
Impacts would potentially include temporary displacement of animals (Table 3). Habitat within the project area, however, is common throughout the larger ecosystem and any animals displaced could find other nearby suitable habitat and return to the project area shortly after the project conclusion. Most animals have already been displaced by the existing disturbance at the site. Impacts to unique, endangered, fragile or limited environmental resources would be short-term and minor and would not be significant (Table 3).

Secondary Impacts:
Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated, or induced by, or otherwise result from a direct impact of the action. 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.

7. HISTORICAL AND ARCHAEOLOGICAL SITES

Are any historical, archaeological or paleontological resources present?

The proposed mine site is entirely located on private land. The Montana Cultural Resource Database under the State Historic Preservation Office (SHPO) indicates that no inventoried historical sites, archaeological, or paleontological resources are present within the proposed permit area. Furthermore, due to the existing disturbance, SHPO states that there is a low likelihood that cultural resources would be found in the area and did not recommend a cultural resource inventory.

Direct Impacts:
Impacts to historical, archaeological, or paleontological resources are not likely to occur.

Secondary Impacts:
Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated, or induced by, or otherwise result from a direct impact of the action. No secondary impacts to historical and archaeological sites would be expected.

8. AESTHETICS

Is the proposed operation on a prominent topographic feature? Would it be visible from populated or scenic areas? Would there be excessive noise or light?

The proposed mine site would be located on private land. The site is remote, with very low population density in the nearby area. The disturbances associated with the active quarry are primarily hidden from view by the natural topography to receptors on Interstate 90 and are completely hidden from view to receptors in Rattler Gulch.

Noise at the site would come from equipment and haul trucks. Blasting would be rare on site. The hours of operation would coincide with farming and ranching activities in the area. All equipment would be operated with appropriate mufflers in accordance with MCA 61-9-403 and 61-9-435.

Direct Impacts:
The impacts from noise are minor due to the proposed use of equipment and the hours of operation and the distance of the proposed activities from public roads and private residences. The nearest home is approximately 0.7 miles from the quarry and separated from the quarry by a ridge of elevated land. Impacts to aesthetics would be short-term and minor and would not be significant.

Secondary Impacts:
Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated, or induced by, or otherwise result from a direct impact of the action. There would be no secondary impacts to the sites as there are few residences in the area.

9. DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR OR ENERGY

Would the proposed operation use resources that are limited in the area? Are there other activities nearby that would affect the project?

Current mining operations at the site use diesel fuel power for equipment and the mobile generators

which power the crushing and screening equipment. Fuel for onsite equipment would be brought to the mine on an as needed basis by a fuel truck. Water needed for dust suppression would be brought to the mine on an as need basis by a water truck. The source of dust suppression water would vary. No water is needed for current operations beyond dust suppression. The proposed permit operations would not expand any use of resources that are limited in the area.

Direct Impacts:
Any impacts on the demand on environmental resources of land, water, air or energy would be short-term and minor and would therefore not be significant as a result of the proposed operations.

Secondary Impacts:
Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated or induced by, or otherwise result from a direct impact of the action. No secondary impacts to environmental resources of land, water, air or energy would be expected.

10. IMPACTS ON OTHER ENVIRONMENTAL RESOURCES

Are there other activities nearby that would affect the proposed operation?

DEQ searched the following websites or databases for nearby activities that may affect the project, however, no other projects were identified:

- Montana Department of Natural Resource and Conservation
- Montana Department of Environmental Quality
- Montana Department of Transportation
- Granite County
- United States Department of Interior Bureau of Land Management
- United States Forest Service

Aside from the current quarry operations, the surrounding land is used for agricultural, residential, and recreational purposes.

Direct Impacts:
Impacts on other environmental resources are not likely to occur as a result of the proposed operations.

Secondary Impacts:
Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated or induced by, or otherwise result from a direct impact of the action. No secondary impacts to other environmental resources would be expected as a result of the proposed work.

11. HUMAN HEALTH AND SAFETY

Would this proposed operation add to health and safety risks in the area?

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 Mine Safety and Health Administration (MSHA) has developed rules and guidelines to reduce the risks associated with this type of labor.

The Bob Weaver Pit is located on private land that accessed through a locked gate. The proposed mine area is separated from surrounding property by fences, locked gates and posted no trespassing signs at various locations. The land surrounding the proposed permit boundary to the north and east is owned by the United States Department of Interior, Bureau of Land Management (BLM). There is no public access to the site from BLM property.

Direct Impacts:
No impacts to public health and safety would result from the proposed action. However, short-term and minor impacts on worker human health and safety would be involved during mining operations.

Secondary Impacts:
Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated or induced by, or otherwise result from a direct impact of the action. No secondary impacts to human health and safety would be expected as a result of the proposed work.

12. INDUSTRIAL, COMMERCIAL AND AGRICULTURAL ACTIVITIES AND PRODUCTION

Would the proposed operation add to or alter these activities?

Direct Impacts:
As noted in the cumulative impacts analysis below, this project would add to the impacts of mining in the greater project area. However, all disturbance related to this project would be reclaimed at the conclusion of the project. Part of the proposed expansion area is currently disturbed and was operated under a SMES. Impacts on the industrial, commercial, and agricultural activities and production in the area would be minor and short-term and would not be significant.

Secondary Impacts:
Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated or induced by, or otherwise result from a direct impact of the action. No secondary impacts to industrial, commercial and agricultural activities and production would be expected as a result of the proposed quarry operation.

13. QUANTITY AND DISTRIBUTION OF EMPLOYMENT

Would the proposed operation create, move or eliminate jobs? If so, what is the estimated number?

The site is currently operating under Operating Permit No. 00022 and SMES 46-117C. The workforce is not expected to either increase or decrease as a result of the proposed permitting action. Denial of the amendment application could result in the loss of up to five jobs for those currently employed at the site.

Direct Impacts:
All activities would be conducted by current employees. No additional work force is anticipated. If market conditions fluctuate, the work force may marginally increase or decrease. No lasting positive or negative impacts to employment would be expected from this project.

Secondary Impacts:
Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated, or induced by, or otherwise result from a direct impact of the action. No secondary impacts to quantity and distribution of employment would be expected because of the proposed work.

14. LOCAL AND STATE TAX BASE AND TAX REVENUES

Would the proposed operation create or eliminate tax revenue?

The sale of construction aggregate creates local jobs, providing tax revenue to the state and/or the federal government. The landowner may receive royalties from the operation.

Direct Impacts:
The production and work force would not be anticipated to increase from the existing operations to the proposed permit operations, and no change in tax revenues would be anticipated. Expansion of the site under Amendment 001 would result in short-term, minor impacts to the local and state tax base and tax revenues and would not be significant. Denial of the operating permit would result in loss of jobs and subsequently loss of tax revenue.

Secondary Impacts:
Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated, or induced by, or otherwise result from a direct impact of the action. Minor beneficial secondary impacts to local and state tax base and tax revenues would be expected as a result of the proposed work.

15. DEMAND FOR GOVERNMENT SERVICES

Would substantial traffic be added to existing roads? Would other services (fire protection, police, schools, etc.) be needed?

The site is on private land and operations would be a continuance of current activities. The private access road to the site, Lime Quarry Road, is located near the junction of Rattler Gulch Road, a County Road, and the Drummond Frontage Road, a secondary state highway. An average of 300 dump truck loads of rock product per year would be removed from the mine.

Direct Impacts:
The site is currently in operation as a permitted mine site. No increase in employment or production is anticipated from this proposed action. All traffic related to the mine operation, including heavy equipment and semi-truck traffic would use the Drummond Frontage Road and may cause minor, short-term impacts to the road surface or to traffic patterns.

Secondary Impacts:
Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated, or induced by, or otherwise result from a direct impact of the

action. No secondary impacts to the demand for government would be expected because of the proposed work.

16. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS

Are there State, County, City, USFS, BLM, Tribal, etc. zoning or management plans in effect?

The site is on private land which has been used in the past for mining, grazing, and wildlife habitat. The mine operations would be subject to the Granite County Weed Management Control Plan and to the 2017 Montana Noxious Weed Management Plan. There are no known zoning or other restrictions in place.

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 because of this project.

Secondary Impacts:
Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated, or induced by, or otherwise result from a direct impact of the action. No secondary impacts to the locally-adopted environmental plans and goals would be expected as a result of the proposed work.

17. ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES

Are wilderness or recreational areas nearby or accessed through this tract? Is there recreational potential within the tract?

The site is located on private property and there are no recreational or wilderness areas in the proposed permit boundaries. Public land managed by the US Bureau of Land Management is adjacent to the site. The Bob Weaver Pit is located on private land that accessed through a locked gate. The proposed mine area is separated from surrounding property by fences, locked gates, and posted no trespassing signs at various locations. The land surrounding the proposed permit boundary to the north and east is owned by the United States Department of Interior, Bureau of Land Management (BLM). There is no public access to the site from BLM property. There would be no impacts to current access to recreational or wilderness areas.

Direct Impacts:
No direct impacts to access to recreational and wilderness activities would be expected from the proposed operation. Impacts to the quality of recreational activities would be short-term and minor and would not be significant.

Secondary Impacts:
Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated, or induced by, or otherwise result from a direct impact of the

action. No secondary impacts to access and quality of recreational and wilderness activities would be expected as a result of the proposed work.

18. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING

Would the proposed operation add to the population and require additional housing?

As noted above in "Section 13, Quantity and Distribution of Employment," the mine site would not be expected to add to or decrease the local population.

Direct Impacts:
No direct impacts to density and distribution of population and housing would be expected from the proposed operation.

Secondary Impacts:
Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated, or induced by, or otherwise result from a direct impact of the action. No secondary impacts to density and distribution of population and housing would be expected as a result of the proposed work.

19. SOCIAL STRUCTURES AND MORES

Is some disruption of native or traditional lifestyles or communities possible?

Direct Impacts:
The proposed operation would occur entirely on private land. No disruption of native or traditional lifestyles would be expected.

Secondary Impacts:
Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated or induced by, or otherwise result from a direct impact of the action. No secondary impacts to social structures and mores would not be expected as a result of the proposed work.

20. CULTURAL UNIQUENESS AND DIVERSITY

Would the action cause a shift in some unique quality of the area?

Direct Impacts:
There are no unique qualities that would be affected by the proposed operations. The site has previously provided wildlife habitat and would be reclaimed after mine operations cease. No impacts to cultural uniqueness and diversity would be expected from this project.

Secondary Impacts:
Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated, or induced by, or otherwise result from a direct impact of the action. No secondary impacts to cultural uniqueness and diversity would be expected as a result of the proposed work.

21. PRIVATE PROPERTY IMPACTS

Are we regulating the use of private property under a regulatory statute adopted pursuant to the police power of the state? (Property management, grants of financial assistance, and the exercise of the power of eminent domain are not within this category.) If not, no further analysis is required. Does the proposed regulatory action restrict the use of the regulated person's private property? If not, no further analysis is required. Does the agency have legal discretion to impose or not impose the proposed restriction or discretion as to how the restriction would be imposed? If not, no further analysis is required. If so, the agency must determine if there are alternatives that would reduce, minimize or eliminate the restriction on the use of private property, and analyze such alternatives.

The proposed project is located on private land owned by the applicant. DEQ's issuance of an amendment to Operating Permit No. 00022 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 to demonstrate compliance with those requirements or have been agreed to by the applicant. Therefore, DEQ's issuance of the operating permit would not have private property taking or damaging implications.

22. OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES

Due to the nature of the proposed activities, and the limited operations, no further direct or secondary impacts are anticipated from these proposed activities.

ALTERNATIVES CONSIDERED

In addition to the proposed actions, DEQ also considered a no action alternative. Under the no action alternative, DEQ would deny the approval of Amendment 001 for Operating Permit No. 00022. LBC would lack the authority to continue to quarry rock on the property beyond what is allowed under their current operating permit and would not be able to operate in the area covered by SMES 46-117C. Any potential impacts that would be authorized under Amendment 001 would not occur.

PUBLIC INVOLVEMENT

Public involvement for this proposed action consisted of internal and external efforts to identify substantive issues and/or concerns related to the proposed operation. Notice of the application for an amendment to Operating Permit No. 00022 was published June 2, 2020. Public involvement is ongoing and includes a public comment period which will end on May 18, 2021.

Internal review of the environmental assessment document was completed by DEQ staff. The internal review included queries to the following websites/ databases/ personnel:

- Montana Department of Environmental Quality (DEQ)
- Montana Cadastral Mapping Program
- USDA NRCS Soil Survey
- Montana Natural Heritage Program (MTNHP)
- Montana State Historic Preservation Office (SHPO)

- Montana Department of Natural Resource and Conservation (DNRC)
- Montana Department of Transportation
- United States Department of Interior Bureau of Land Management (BLM)
- United States Forest Service (USFS)
- Lewis and Clark County
- US Geological Society – Stream Stats
- Montana Groundwater Information Center (GWIC)
- Montana Bureau of Mines and Geology (MBMG)

RESPONSE TO PUBLIC COMMENTS

Public involvement for this proposed action will include a 30-day public comment period. The public will be notified of the opportunity to comment on the Draft EA through a DEQ-issued press release and posting on DEQ's website. Substantive public comments received will be addressed by DEQ in the final EA.

OTHER GOVERNMENTAL AGENCIES WITH JURSIDICTION

The proposed project would be fully located on private land. All applicable state and federal rules must be adhered to, which, at some level, may also include other state, federal, or tribal agency jurisdiction.

CUMULATIVE EFFECTS

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 preimpact statement studies, separate impact statement evaluation, or permit processing procedures.

This environmental review analyzes the proposed project submitted by the applicant. Impacts from the proposed operation would be temporary, reclaimed at the conclusion of the project, and would not contribute to long-term cumulative effects of mining in the area. DEQ identified other mining projects in the area.

DEQ regulated projects located near the proposed project site include:

- A Hard Rock Mining Operating Permit site located within 5 miles of the proposed permit boundary. Two Exploration License sites, associated with the Operating Permit site, are also located near the proposed project site.
- An Opencut Mine site located within 5 miles of the proposed permit boundary.

No other DNRC, BLM, or USFS regulated projects were identified in the project vicinity. DEQ considered all impacts related to this project and secondary impacts that may result. Cumulative impacts related to this project are identified in the Table 2. Cumulative impacts related to this project would not be significant.

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 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 would occur if the proposed action occurs; or conversely, reasonable assurance in keeping with the potential severity of an impact that the impact would 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 because 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.

TABLE 1: SUMMARY OF POTENTIAL IMPACTS THAT COULD RESULT FROM AMENDMENT 001 TO OPERATING PERMIT #00022

Potential Impact	Affected Resource and Section Reference	Severity[1], Extent[2], Duration[3], Frequency[4], Uniqueness and Fragility (U/F)	Probability[5] impact will occur	Cumulative Impacts	Measures to reduce impact as proposed by applicant	Significance (yes/no)
Erosion of disturbed soil	Soil 1. Geology	**S**-high: All proposed disturbance area could be susceptible to erosion. **E**-medium: Total permitted surface disturbance would increase by 6.3 acres. **D**-Until disturbed land is fully reclaimed, including additional growing seasons for vegetation re-establishment. **F**-During occasional storm events. **U/F**-Not unique or particularly fragile.	Possible	Erosion would add to cumulative impacts associated with potential erosion on existing roads and mined surfaces.	LBC, would manage erosion control using sediment control structures and a variety of Best Management Practices (BMPs), including ditches, berms, and seeding.	No
Weed propagation associated with surface disturbance	Soil & Vegetation 1. Geology 4. Vegetation	**S**-high: All disturbed surfaces would be susceptible to weed propagation. **E**-medium: Total permitted surface disturbance would increase by 6.3 acres. Land in the immediate project area that would also be susceptible to weed propagation as a result of weeds growing at the mine site would be approximately 15 acres. **D**- Until disturbed land is fully reclaimed, including additional growing seasons for vegetation re-establishment. **F**-Twice: After excavation and after reclamation. **U/F**-Not unique or particularly fragile.	Possible	Weed propagation from this project would add to any other area weeds that already exist within and near the proposed project area.	Weed control would be a requirement of the operating permit. The project would be subject to the Granite County Weed Management Control Plan and the 2017 Montana Noxious Weed Management Plan. LBC would be expected to follow the approved reclamation plan.	No

Potential Impact	Affected Resource and Section Reference	Severity[1], Extent[2], Duration[3], Frequency[4], Uniqueness and Fragility (U/F)	Probability[5] impact will occur	Cumulative Impacts	Measures to reduce impact as proposed by applicant	Significance (yes/no)
Dust and equipment exhaust	Air 3. Air Quality	**S**-medium: Dust and other particulate would be generated during construction/reclamation, crushing, and driving on/off site. Engines would produce some exhaust fumes. **E**-medium: Dust and exhaust fumes would be generated in proximity of moving/working equipment. **D**- Until mining operations cease, and disturbed land is graded and soiled. **F**-Daily: During mining and initial reclamation operations. **U/F**-Not unique or particularly fragile.	Certain	Dust and exhaust would add to the cumulative impacts from other vehicles/engines operating in the area, and to potential natural wildfire smoke moving through the area.	Dust suppression would be provided by the mine site's water truck as necessary. OEM exhaust controls would be utilized on mechanized equipment.	No
Displacement of fragile resource (Species of Concern)	6. Unique, endangered, fragile, or limited resources	**S**-low: Total permitted surface disturbance would increase by 6.3 acres. The surrounding area includes suitable habitat. **E**-low: Total permitted surface disturbance would increase by 6.3 acres. **D**- Until disturbed land is fully reclaimed, including additional growing seasons for vegetation re-establishment. **F**-During mining activity, which is expected to occur during every day, daylight shifts for life of mine, and reclamation operations. **U/F**-Unique.	Probable	Displacement of Species of Concern as a result of this project would add to the cumulative impacts associated with the adjacent agricultural land, residential development, and recreational areas.	None	No

1. Severity describes the concentration 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.

SUMMARY

The severity, duration, geographic extent, and frequency of the occurrence of the impacts associated with the proposed activities would be limited. LBC is proposing to increase permitted disturbance area by 6.3 acres, incorporating the mining activity associated with SMES 46-117C into Operating Permit No. 00022. The proposed amendment would be a continuance of current limestone mining activities at the site.

DEQ has not identified any significant impacts associated with the proposed activities for any environmental resource. Approving Amendment 001 to Operating Permit No. 00022 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 another operating permit application, DEQ is not committed to issuing those authorizations. DEQ would conduct an environmental review for any subsequent authorizations sought by the applicant that require environmental review. DEQ would make a permitting decision based on the criteria set forth in the MMRA. Approving Amendment 001 for Operating Permit No. 00022 does not set a precedent for DEQ's review of other applications for operating permits, including the level of environmental review. The level of environmental review decision is made based on a case-specific consideration of the criteria set forth in ARM 17.4.608.

Finally, DEQ does not believe that the proposed activities by the applicant have any growth-inducing or growth-inhibiting aspects or conflict with any local, state, or federal laws, requirements, or formal plans.

Based on a consideration of the criteria set forth in ARM 17.4.608, the proposed activities are not predicted to significantly impact the quality of the human environment. Therefore, DEQ believes that preparation of an environmental impact statement is not required.

Environmental Review Prepared By:
Millie Olsen, Environmental Science Specialist
Betsy Hovda, Environmental Science Specialist
Hard Rock Mining Program

Environmental Assessment Reviewed by:
Herb Rolfes, Operating Permit Section Supervisor
Hard Rock Mining Bureau, DEQ

Approved By:

Dan Walsh 04/13/2021

Signature Date
Dan Walsh, Bureau Chief
Hard Rock Mining Bureau, DEQ

CITATIONS

Landreth, J.O., *High-calcium limestone deposit in the Rattler Gulch area, Granite County, Montana*, Montana Bureau of Mines and Geology Special Publication 44, 1968

Lonn, J.D., McDonald, C., Sears, J.W., and Smith, L.N. *Geologic Map of the Missoula East 30' x 60' Quadrangle, Western Montana.* Montana Bureau of Mines and Geology, Open File MBMG 593, 2010.

McCarthy, P.M., Sando, Roy, Sando, S.K., and Dutton, D.M. *Methods for estimating streamflow characteristics at ungauged sites in western Montana based on data through water year 2009: U.S. Geological Survey Scientific Investigations Report 2015–5019*. 2016. Accessed [02/16/2021].

Montana Natural Heritage Program. Environmental Summary Report. Custom Field Guide. Summarized by: 011N013W014 (Buffered PLSS Section). Retrieved on 9/12/2019.

Web Soil Survey. https://websoilsurvey.sc.egov.usda.gov/. Accessed [02/17/2021].