

February 24, 2021

Daniel Pollock
Grand Island Resources, LLC
4415 Caribou Rd
P.O. Box 3395
Nederland, CO 80466

RE: Cross Gold Mine, Permit No. M-1977-410, 110(2) Hard Rock Permit Amendment Application (AM-02), Preliminary Adequacy Review

Mr. Pollock:

The Division of Reclamation, Mining and Safety (Division) has completed its preliminary adequacy review of your 110(2) Hard Rock Reclamation Permit Amendment Application (AM-02) submitted for the Cross Mine, which proposes the following revision(s):

Increase permit area by 1.04 acres for a total permit area of 9.99 acres, including addition of the Petosi Shaft and the Caribou 300 Level Portal. Also revise mining and reclamation plans to address the addition of a new road between the Cross Mine and the Caribou Mine, and updated ground support and reclamation plan for the Idaho Tunnel Portal at the Caribou Mine.

All comment and review periods for the application began on February 8, 2021, when the application was called complete for filing purposes. The decision date for the application is set for March 10, 2021.

The Division's review consisted of comparing the application content with specific requirements of the Mineral Rules and Regulations of the Colorado Mined Land Reclamation Board for Hard Rock, Metal, and Designated Mining Operations. The Division has identified adequacy items in the application requiring clarification or additional information. These items are identified below under their respective exhibit heading, and are numbered sequentially.

Exhibit B – Site Description (Rule 6.3.2):

- 1) Please provide a list of all permanent, man-made structures (e.g., roads, above or below ground utilities, fences, gates, bridges, buildings, wells, irrigation ditches, railroad tracks, cemeteries, communication antennas, water storage structures, discharge or conveyance structures, historic structures, graveled or paved parking areas) located on or within 200 feet of the proposed affected lands and identify the owner of each structure. This should include any structures owned by the operator as well as structures owned by other entities. Please ensure all structures located on or within 200 feet of the affected lands are identified on the Exhibit E Mining Plan Map.



- 2) Under section (c) of this Exhibit, the text states “A Jurisdictional Determination was approved by U.S. Army Corps of Engineers (USACE) on February 7, 2008, and the approval letter is provided in Attachment II.” However, the Division was unable to find this letter in the application. The Attachment II section includes only a document titled “Composite Rock Analysis”. Please provide a copy of the USACE determination letter.
- 3) Under section (c) of this Exhibit, the text states “No wetlands will be disturbed by the proposed activities until appropriate approvals are obtained from the USACE”. In this application, the operator is proposing to construct a new road (approximately 230 feet in length and 28 feet in width) on site to connect the Caribou Mine and the Cross Mine. It appears this road would be constructed across Coon Track Creek and the associated wetlands. Has the operator contacted the USACE to determine whether this new disturbance will require any additional approvals and/or permitting through their office?

Exhibit C – Mining Plan (Rule 6.3.3):

- 4) Please describe the Potosi Shaft and Caribou 300 Level Portal mine openings. Are these mine openings currently secured/covered? What are their approximate dimensions? Will any work need to be done to rehabilitate/improve these mine openings for use by the operation?
- 5) Please describe how the proposed Potosi Shaft site and Caribou 300 Level Portal site will be utilized by the operation. What types of surface disturbance are anticipated in these areas? Will any materials be brought to the surface from these mine openings? If so, where will this material be stockpiled? Will there be any equipment storage in these areas? Please ensure all proposed disturbances are shown on the Exhibit E Mining Plan Map, including any anticipated equipment or stockpile storage areas.
- 6) Please describe how the proposed Potosi Shaft site and Caribou 300 Level Portal site will be accessed by the operation. Will any new roads need to be constructed to access these sites? According to the maps submitted, the Potosi Shaft site is located approximately 120 feet north of Caribou Road/County Road 128, and the Caribou 300 Level Portal site is located directly off of an unidentified road. Please ensure all existing and proposed access roads are labeled on the Exhibit E Mining Plan Map.
- 7) Under section (1)(f) of this Exhibit, the text discusses only two existing waste rock stockpiles, the historic waste rock stockpile at the Caribou Mine and the newer waste rock stockpile at the Cross Mine which was created from development of the Cross Mine Decline. However, during recent inspections of the site, the Division has observed what appears to be a waste rock stockpile located just southeast of the Cross Mine warehouse (near the explosives storage area). Please confirm if this additional stockpile is in fact waste rock, describe the location from which it was derived, provide an estimated volume, and state whether the operation has any plans to continue utilizing this area as a stockpile area. Please ensure this stockpile area is identified on the Exhibit E Mining Plan Map, and the reclamation of this area is addressed in the Exhibit D Reclamation Plan.
- 8) It is not clear in this application if the operator is proposing to recommence with mining activities in the Caribou Mine. It is the Division’s understanding the Caribou Mine has never been mined under this permit, and the workings are currently flooded beneath the Idaho Tunnel level, which will require de-watering prior to re-entry. If the operator is proposing in this application to mine the Caribou Mine,

please provide a mining plan for this mine, including a mine pool dewatering plan. Are the existing ponds and water infrastructure sufficient for the anticipated mine pool dewatering activities? Please ensure the mining plan addresses the handling and storage of mined ore and waste rock material from this mine. Does the operation intend to place additional waste rock from this mine onto the existing waste rock stockpile area? If so, how will this material be placed to provide for a stable configuration? Where will ore derived from this mine be temporarily stockpiled on site? Does the operator expect ore and waste rock material derived from the Caribou Mine to differ in geochemistry than the ore and waste rock material derived from the Cross Mine? Could material derived from the Caribou Mine cause acid rock drainage? Will explosives be used in the Caribou Mine? Please ensure all proposed mine features (e.g., ore and waste rock stockpile areas, topsoil stockpile areas, mine openings, equipment storage areas, oil/fuel storage areas, explosives storage areas, water storage and conveyance structures, access roads, offices, scale, scale house) for the Caribou Mine are shown on the Exhibit E Mining Plan Map.

- 9) Under section (1)(n) of this Exhibit, the text states “secondary commodities are construction aggregate resulting from waste rock”. Please describe where the construction aggregate will be stored on site. Will this material be processed on site in any way (e.g., screening, crushing, washing)? If so, where will this activity take place? Please ensure any proposed stockpiling or processing areas are shown on the Exhibit E Mining Plan Map.

Exhibit D – Reclamation Plan (Rule 6.3.4):

- 10) While the application includes an Exhibit E Reclamation Plan Map (Map 12) showing a cross-section of the Idaho Tunnel, a reclamation plan is not provided in this Exhibit for the tunnel. Please provide a detailed reclamation plan for the Idaho Tunnel which addresses the disturbed slope above the tunnel and final closure of the portal. Please ensure this plan correlates with the Exhibit E Reclamation Plan Map. The proposed final closure plan for the portal must account for the mine drainage. Please be advised, a final closure plan must be included in this application for any draining mine openings so the Division can ensure the financial warranty is adequate to reclaim the site in the event the state had to take over reclamation liability. If the operator wishes to modify the closure plan at a later date, this can be done through submittal of a subsequent revision.
- 11) Please provide a detailed reclamation plan for the other proposed expansion areas adjacent to the current permit area. For example, how will the area added near the oil shed at the Caribou Mine be reclaimed? Will it be ripped, regraded, retopsoiled and/or revegetated? Will there be any disturbance in the expansion area near Pond 2 or the expansion area near Ponds 3 A-C which will require reclamation?
- 12) Please provide a detailed reclamation plan for the proposed Potosi Shaft site and Caribou 300 Level Portal site. Will there be any surface disturbance in these areas which will require ripping, regrading, retopsoiling, and/or revegetation for reclamation? Will there be any equipment or structures in these areas that will require demolition and/or removal for reclamation? What is the final closure plan for these two mine openings?
- 13) Please provide an estimated total acreage of compacted land (e.g., roads, equipment storage areas, stockpiling areas, parking areas, areas underlying structures to be demolished) which will require ripping for reclamation.

- 14) Please provide an estimated total acreage of disturbed land which will require retopsoiling and revegetation for reclamation.
- 15) Where will any salvaged topsoil be stored for reclamation? Please ensure all existing and proposed topsoil stockpile locations are shown on the Exhibit E Mining Plan Map.
- 16) Will any growth medium need to be imported to the site for reclamation? If so, please provide an estimated volume of imported growth medium.
- 17) Under section (1)(c)(i) of this Exhibit, the text states “most of the plant growth medium available for revegetation will come from soils located uphill, directly south of the surface facilities” and “the topsoil removal area will then be regraded, prepared for seeding, and seeded and mulched”. Will this topsoil borrow area be located within the permit area? Please be advised, any land disturbed in support of the operation, including topsoil borrow areas, must be included in the permit area. Please ensure the approximate location of any topsoil borrow areas is shown on the Exhibit E Mining Plan Map, and the reclamation of these areas are shown on the Exhibit E Reclamation Plan Map.
- 18) Please provide a comprehensive list of all structures proposed to remain in the permit area for reclamation (e.g., buildings, snow sheds, roads, gates, fences, bridges, stormwater structures, ponds, pipelines, wells, graveled or paved parking areas, septic tank/leach fields). For any structures proposed to remain, please provide demonstration that leaving these structures after mining is consistent with the approved post-mining land use of forestry with limited residential use, and is compliant with local land use and zoning laws. This demonstration may include correspondence from Boulder County acknowledging/accepting these structures will remain for reclamation.
- 19) Please provide a comprehensive list of all structures which will require demolition and/or removal for reclamation. For any structures proposed to be demolished and/or removed, please provide a description of the structure including its approximate dimensions and volume of material to be demolished/removed. Additionally, please state whether the demolished/removed materials will be disposed of on site or off site. For materials to be disposed of on site, please describe the anticipated disposal location(s) and be sure to show these location(s) on the Exhibit E Reclamation Plan Map. For materials to be disposed of offsite, please specify the anticipated disposal location or provide an approximate distance to the disposal location.
- 20) Please describe how all ponds on site, including Ponds 1, 2, 3A, 3B, and 3C, will be reclaimed for reclamation. This plan should include the approximate dimensions of each pond, an approximate volume of water (in gallons) and fines (in cubic yards) to be removed from each pond prior to reclamation, the approximate dimensions of liner to be removed from each pond, the disposal location for any removed liner, the approximate volume of material required to backfill each pond, the anticipated location(s) from which the backfill material will be derived, a description of any grading work required in the backfill areas, and an estimated acreage for each backfill area requiring retopsoiling and revegetation.
- 21) Please describe how all waste rock stockpiles on site will be reclaimed. What is the proposed final slope gradient (horizontal:vertical) for any stockpiles proposed to remain for reclamation? Will these

stockpiles be retopsoiled and revegetated for reclamation? If so, please be sure to include these acreages in the total acreage requiring retopsoiling and revegetation requested in Item #15 above. Additionally, please be sure reclamation of these stockpiles is shown on the Exhibit E Reclamation Plan Map, including proposed final slope gradients and areas to be revegetated. Please be advised, the operator's proposal to leave waste rock stockpiles as-is (unreclaimed) for potential future use by Boulder County or the U.S. Forest Service is not consistent with the approved post-mining land use for the site or with the reclamation performance standards of Rule 3.1, which require reclamation on all affected lands.

- 22) Please provide a list of all mine openings at the site, including ones located in the current permit area and in the proposed expansion areas. Please specify which of the mine openings are anticipated to be used by the operation. Please describe how each mine opening is currently sealed/secured, and how each opening will be permanently sealed for reclamation. For any draining mine openings at the site, please provide a final closure plan which addresses the drainage, as mentioned above. Please be sure all mine openings are labeled on the Exhibit E Mining Plan Map, and the proposed reclamation of these openings is shown on the Exhibit E Reclamation Plan Map.
- 23) Please confirm the seed mix shown in Table 20-5 under section 3.1.10(1) in this Exhibit is proposed for revegetating all disturbed lands on site. The previously approved revegetation plan included planting Aspen and Engelmann Spruce trees at 10 trees per acre for each species. However, the revised revegetation plan does not include tree planting. Please explain how this change to the revegetation plan is consistent with the approved post-mining land use of forestry.
- 24) Please provide a detailed estimate of the costs to reclaim the site in accordance with the proposed reclamation plan. Please ensure this estimate includes all reclamation tasks, including: demolition and/or removal of structures, disposal of demolished structures, dewatering/pumping activities required for reclamation, ripping, backfilling, grading, topsoil importation (if needed), topsoil application, revegetation (seeding/planting, mulching, fertilizing), closure of mine openings, and mobilization/demobilization of equipment (from the nearest population center known to have the required equipment available). Please provide estimated volumes (in cubic yards), push or haul distances (in feet), final grades (as horizontal:vertical), acreages, and type and number of equipment to be used (e.g., 2 Cat D8 dozers or equivalent) for each reclamation task. This information is necessary in order for the Division to calculate the required financial warranty for the site.

Exhibit E – Maps (Rule 6.3.5):

- 25) Please ensure all maps submitted in this Exhibit include “Exhibit E” and “Mining Plan Map” or “Reclamation Plan Map” in the map title. Given the distance between the main mine site and the proposed Potosi Shaft site and Caribou 300 Level Portal site, please ensure at least one Mining Plan Map and one Reclamation Plan Map is provided for each of these affected areas.
- 26) Please ensure the Mining Plan Map(s) show all information required by Rule 6.3.5(2), including:
 - a. Outline and label the permit boundary;

- b. Label the names of owners of record of the surface of the affected area and of the land within 200 feet of the affected area, identify the owner of the substance to be mined, and the type of structure and owners of record of any permanent or man-made structures located within 200 feet of the affected area;
 - c. Outline and label all major surface features to be used in connection with the proposed operation such as: existing and proposed roads, pit boundary, topsoil stockpiles, overburden stockpiles, product stockpiles, waste rock stockpiles, equipment storage areas, parking areas, explosives storage areas, oil/fuel storage areas, buildings, processing areas, mine openings, ponds, impoundments, dewatering pumps, diversions, tail or waste disposal areas, and water monitoring locations;
 - d. Indicate the direction that mineral extraction will proceed (or for underground mines, specify the mine openings which will be utilized for mining);
 - e. Note the location of any significant, valuable, and permanent man-made structures located within 200 feet of the affected area. (A narrative description must be provided in Exhibit B – Site Description); and
 - f. Outline and label existing disturbance within and/or adjacent to the permit boundary (e.g., previously mined areas, roads, or excavations resulting from utility construction). Re-disturbance of previously disturbed areas by the proposed mining operation must be included in the permit area and addressed in Exhibit D – Reclamation Plan.
- 27) Please show the approximate location of the road proposed to be constructed between the Cross Mine and the Caribou Mine on the Mining Plan Map for the main mine site.
- 28) Please ensure the Reclamation Plan Map(s) show all information required by Rule 6.3.5(3), including:
- a. Show the gradient of all reclaimed slopes (horizontal:vertical) sufficient to describe the post mining topography;
 - b. Indicate where vegetation will not be established and the general area(s) for shrub or tree planting;
 - c. If ponds are part of the Reclamation Plan, outline the final shore configuration of the ponds and shallow areas if the future land use is for wildlife;
 - d. State the average thickness of replaced overburden by reclamation area or phase;
 - e. State the average thickness of replaced topsoil by reclamation area or phase;
 - f. Indicate how each mine opening will be reclaimed (e.g., hydraulic bulkhead, locked gate); and
 - g. Label all structures or features to remain for reclamation.

Exhibit F – List of Other Permits and Licenses Required (Rule 6.3.6):

- 29) The list provided in this Exhibit includes a “Storm Water Discharge Permit # COR 040242” under the Division of Reclamation, Mining and Safety. However, the Division does not issue stormwater discharge permits. These permits are issued by the Colorado Department of Public Health and Environment (CDPHE), Water Quality Control Division (WQCD). Please correct this error.
- 30) Has the operator contacted Boulder County and the U.S. Army Corps of Engineers to determine whether any approvals or permits are required from their office for constructing the proposed road across Coon Track Creek and the associated wetlands?
- 31) Has the operator contacted the Division of Water Resources to determine whether a Substitute Water Supply Plan or any other permits/approvals are required from their office for the ponds on site or for any proposed dewatering activities?

Exhibit G – Source of Legal Right to Enter (Rule 6.3.7):

- 32) This Exhibit includes a “Right to Enter Property Under Recorded Agreements” and a Right to Redeem and Re-Acquire Agreement” for Calais and Calais Resources Colorado, Inc. However, this permit was transferred from Calais Resources Colorado, Inc. to Grand Island Resources, LLC on October 16, 2020. Therefore, please provide documentation of Grand Island Resources, LLC’s legal right to enter the affected lands to conduct mining and reclamation for all owners of record of the surface and mineral rights of the affected lands. This may include a copy of a lease, deed, abstract of title, a current tax receipt, or a signed statement by the landowner(s) and acknowledged by a Notary Public stating that Grand Island Resources, LLC has the legal right to enter to conduct mining and reclamation. Please ensure the documentation provided pertains to all affected lands, including the main mine site, the Potosi Shaft site, and the Caribou 300 Level Portal site.

Exhibit L – Permanent Man-Made Structures (Rule 6.3.12):

- 33) The operator recently provided updated structure agreements for all permanent, man-made structures located on or within 200 feet of the current permit area (with the Succession of Operators application approved on October 16, 2020). Therefore, all structures located within 200 feet of the four proposed expansion areas adjacent to the current permit boundary are most likely accounted for. However, having not yet inspected the proposed expansion areas located away from the main permit area (Potosi Shaft and Caribou 300 Level Portal sites), it is not clear whether there are additional structures located on or within 200 feet of these proposed affected lands. Please list all permanent, man-made structures located on or within 200 feet of the proposed affected lands (e.g., roads, above or below ground utilities, fences, gates, bridges, buildings, wells, irrigation ditches, railroad tracks, cemeteries, communication antennas, water storage structures, discharge or conveyance structures, historic structures, graveled or paved parking areas) and identify the owner(s) of each structure. According to the maps submitted with this application, there is an unidentified road located just north of the Caribou 300 Level Portal. Please be sure to include this structure in the requested list and identify its owner(s).

For all structures not owned by Grand Island Resources, LLC, the operator must provide a notarized agreement with the person(s) having an interest in the structure that the operator is to provide compensation for any damage to the structure. Where such an agreement cannot be reached, the operator shall provide an appropriate engineering evaluation that demonstrates that such structure shall not be damaged by activities occurring at the mining operation. Where such a structure is a utility, the operator may supply a notarized letter, on utility letterhead, from the owner(s) of the utility that the mining and reclamation activities, as proposed, will have “no negative effect” on their utility.

Geotechnical Stability Exhibit (Rule 6.5):

- 34) In this Exhibit, the operator refers to Technical Revision No. 7 (TR-7; approved on December 3, 2020) for geotechnical stability information. However, TR-7 did not provide a stability analysis which adequately demonstrates the slope above the Idaho Tunnel meets the stability requirements of the Mined Land Reclamation Board (MLRB). In fact, the Division’s approval of TR-7 included a stipulation that this information be submitted in a subsequent revision once the Idaho Tunnel has been sufficiently stabilized to allow the necessary information to be collected and analyzed. Therefore, pursuant to Rule 6.5(2), please provide an engineering stability analysis for the configuration of the slope above the Idaho Tunnel portal as it will occur during operations and for reclamation. This analysis must adequately demonstrate the proposed slope configuration meets the stability requirements of the MLRB (Section 30 of the Policies of the MLRB).

Additional Items:

- 35) The application includes an Exhibit M with a Water Sampling and Analysis Plan that is primarily focused on monitoring associated with the discharge permit held under the CDPHE, WQCD. The Division appreciates the operator providing this information in the application. However, this plan does not meet the requirements of Rules 3.1.6 or 3.1.7 for a water monitoring program. Please be advised, a surface and groundwater monitoring plan that meets the requirements of the Act and Rules must be submitted and approved by the Division prior to mining activities recommencing at the site. The operator must demonstrate the proposed monitoring plan is sufficient to ensure disturbances to the prevailing hydrologic balance of the affected land and of the surrounding area and to the quantity or quality of water in surface and groundwater systems both during and after the mining operation and during reclamation will be minimized, in accordance with Rule 3.1.6. The proposed monitoring plan must address all applicable requirements of Rule 3.1.7, including but not limited to, the requirements for establishing permit conditions or numeric protection levels as described in Rule 3.1.7(2), (3), and/or (4), the requirements for establishing one or more points of compliance as described in Rule 3.1.7(6), and the groundwater monitoring requirements of Rule 3.1.7(7)(b). Please be advised, ambient groundwater quality data sufficient to characterize potentially impacted groundwater quality must be provided with the proposed groundwater monitoring plan. Per Rule 1.1(6), ambient groundwater quality for mining operations permitted prior to January 31, 1994 (such as this site), shall mean the quality of the groundwater at the mine site as of January 31, 1994.

If the operator is not yet prepared to submit a water monitoring plan that meets these requirements, please commit to submitting this plan in a subsequent revision prior to mining.

- 36) The application includes an Exhibit called "Rule 1.6.2(1)(e)" which provides a list of all property owners within 200 feet of the affected lands to be noticed in accordance with Rule 1.6.2(1)(e). This Rule requires the operator to mail or personally serve a copy of the newspaper notice provided for in Rule 1.6.2(1)(d) immediately after the first publication to all owners of record of the surface and mineral rights of the affected land, and to the owners of record of all land surface within 200 feet of the boundary of the affected lands. The Division noticed the list provided does not include Mark Phillips, which is the surface owner within 200 feet of the southeastern permit boundary. Please ensure all owners within 200 feet of the existing affected lands and proposed affected lands are noticed in accordance with Rule 1.6.2(1)(e).

This concludes the Division's preliminary adequacy review of AM-02. Please ensure the Division sufficient time to complete its review process by responding to these adequacy items no later than one week prior to the decision date, by **March 3, 2021**. If additional time is needed to respond, you must submit an extension request to our office prior to the decision date.

Please remember that, pursuant to Rule 1.6.2(1)(c), any changes or additions to the application on file in our office must also be reflected in the public review copy which was placed with the local County Clerk and Recorder. Pursuant to Rule 6.4.18, you must provide our office with an affidavit or receipt indicating the date this was done.

If you have any questions, you may contact me by telephone at 303-866-3567, ext. 8129, or by email at amy.eschberger@state.co.us.

Sincerely,



Amy Eschberger
Environmental Protection Specialist

Cc: Richard Mittasch, Grand Island Resources, LLC
Michael Cunningham, DRMS