



Public Works Department

March 31, 2025

Patrick Lennberg
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Division of Reclamation, Mining and Safety
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Subject: Cross Gold Mine, M1977-410 Public Comments

Dear Mr. Lennberg:

Boulder County Public Works (Public Works) appreciates the opportunity to perform a cursory review of the materials submitted by Grand Island Resources (GIR) for the Cross Gold Mine, M1977-410. If the project moves forward, a comprehensive evaluation will be performed as part of the Boulder County land use planning review process.

Public Works' initial comments are broken into broad concerns and specific areas of concern.

Items within the Division of Reclamation, Mining and Safety (DRMS) application which are of general concern include:

1. The Caribou and Cross Mines have an extensive history of non-compliance with their Colorado Discharge Permit System (CDPS) permit, CO-0032751. The records demonstrate frequent compliance advisories and enforcement by the Water Quality Control Division (WQCD) dating back to 1982. Enforcement actions were taken in 1994, 1996, 1997, 1998, 1999, 2004, 2021 and 2024.
2. The last two compliance advisories (2024) were in response to the facility not having a certified Operator of Responsible Charge (ORC). It is unclear if this issue has been resolved. The submitted documents do not provide information on the ORC or sufficiently describe how the facility will meet CDPS permit effluent requirements. The submitted documents imply the water quality meets discharge requirements without treatment; however, historical data does not appear to support this claim.
3. The submitted fourth quarterly 2024 report titled "Mined Land Reclamation Board, Board Order file No. M-1977-410, MV-2021-017" (Order) prepared by Grand Island Resources LLC (GIR) references the Notice of Violation (MV-2021-017) brought before the Board by the Division of Reclamation, Mining & Safety (DRMS) on December 15, 2021, where the board concluded that "the Operator was in violation of sections 34-32-116(7)(g), C.R.S. and Rule 3.1.6(1) for its failures to minimize disturbances to the prevailing hydrologic balance of the

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affected land and of the surrounding areas and to the quality of water in surface systems during the mining operation and during reclamation.” The Operator was ordered to Cease and Desist any further activities underground, except for those activities approved by DRMS, in writing, as necessary “to comply with the conditions of the Order, protect water quality, prevent damage to off-site areas, complete reclamation, or to protect public health and safety until all the corrective actions have been resolved to the satisfaction of the Division”.

4. The mine operator has not been allowed to actively mine since 2021. There is insufficient detail in the submittal to ensure that mine discharge will meet the water quality standards of Coon Track Creek if active mining operations occur.
5. Statements within the application imply that there are no anticipated impacts on groundwater or surface water quality. However, data provided in the permit application package indicate exceedances have already been measured for Alpha particle activity, iron, manganese, copper, and zinc. Exceedances for copper are of particular concern due to the potential for impact to fish populations who are particularly sensitive to this mineral. A resumption of mining activities seems likely to increase these impacts.
6. There is a potential for damage to mine water drainage infrastructure (like the incident in December 2019 during attempts to stabilize the Idaho Tunnel Portal) which could result in uncontrolled discharges of mine drainage water to the ground or to other mine tunnels where the discharge may result in an uncontrolled release. According to a technical memorandum, dated 5/7/2020, by Dave Hallman, P.E. to GIR (DRMS file 12-16-24 M1977410 (17)), in the 2019 incident, a section of the tunnel’s roof collapsed and crushed the pipe carrying the flow of mine water and contributed to an approximately 65 cubic yard void above the tunnel’s opening and in the embankment of County Road 128 (Caribou Road).
7. The submittal does not appear to address the potential for sediment runoff from aggregate piles and/or from the new mine access road to Coon Track Creek.
8. Drilling and blasting can introduce water to drainage systems. The submittal should include an evaluation of the surface and groundwater quantities and water quality due to the proposed mining activities.
9. The identified potential for mining activities requested under this permit may continue for up to 50 years. The submitted materials do not evaluate the long-term effects mining activities may have on the community and watershed.
10. Hundreds of thousands of dollars have been spent evaluating water quality treatment systems to address elevated heavy metals in the legacy discharge of nearby active mines. The costs for constructing and operating these systems are estimated to be over \$10 million over a 10-year operating period. Once minerals are exposed through mining, it is assumed that the impacts on the water quality will be more significant than they are in an inactive mine. The submittal does not address the assumed higher concentrations of heavy metals once it becomes active. More information is needed on the water treatment and monitoring requirements.

More specific areas of concern are detailed as follows:

1. Surface water quality monitoring referenced in the application is inadequate to characterize existing water quality conditions. The most recent round only showed attempted sampling at two locations, (a single upgradient location [2022-01], and one downgradient location [2022-02]). Due to lack of flow, no samples were collected at either location during the December 2024 sampling round. More data is required as the

mine is in a watershed that impacts a significant area within Boulder County. Review of additional surface water data is necessary prior to mining activity recommencement, to understand future mining impacts.

2. Hydrology data provided in January 2025 suggests a groundwater flow direction from northeast to southwest. The compliance well (Cabin Well) is located at the southeastern corner of the property, making it insufficient to fully characterize groundwater quality impacts from mining.
3. The proximity of an identified groundwater seep to the equipment fueling area, creates a potential for fuel spills to encounter stormwater or expressed seep water.
4. Statements in the reclamation plan indicate that no post-reclamation groundwater or surface water monitoring is anticipated. This, combined with past requests from GIR to reduce analyte lists, reduce the frequency of sampling, and to reduce the number of sampling locations, raises the concern that groundwater and surface water quality are not priorities. There is also concern of an ongoing pattern of future requests to reduce or eliminate the water quality monitoring program initially required by the permit. Due to the nature of the hydrology in the area, impacts from mining activities might not be immediately apparent. Thus, reductions in the water quality monitoring program based on initial data may miss longer term issues.
5. Stormwater quality permitting requirements within Boulder County typically require temporary stabilization measures of disturbed areas to be implemented within 14 days of final grades or construction inactivity. Therefore, the reclamation plan will not meet requirements as there are statements indicating that revegetation would likely not begin until year two of reclamation activities.
6. Public Works believes that using a standardized reclamation cost estimator approved for use in Nevada over a decade ago is not an applicable comparison to a high-altitude project located in Colorado in 2025. In addition, it is further obscured as the Reclamation Cost Estimation Summary Sheet footnotes are incomplete in the review files.
7. Based on Public Works' years of experience, estimates of the effort, time length, and cost for revegetation of a site located more than 9000 ft above mean sea level (AMSL) have been underestimated.
8. Through Boulder County's stormwater permitting experience, the assumed methods of stabilization and revegetation for this site may not work or meet permitting requirements. As an example, drill seeding tends to be more successful than broadcast seeding or hydroseeding at these elevations.

Additionally, if the project moves forward to the Boulder County land use planning review process, the following minimum requirements will be imposed on the mine operator:

- Provision of a drainage report describing the runoff and proposed detention and water quality measures per the Boulder County Storm Drainage Criteria Manual,
- Provision of more information for water treatment and monitoring,
- Provision of a groundwater plan that addresses impacts caused by mining operations (drilling and blasting) to address surface and groundwater quantity and quality, and
- Obtain a Boulder County stormwater quality permit.

This letter is intended to present Public Works' comments relative to DRMS **Cross Gold Mine submittal M1977-410**. Please contact me directly if you have any questions.

Sincerely,



David C. Webster, P.E.
County Engineer

c: Jenn Keyes, CPESC, CESSWI, Stormwater Quality Coordinator, Public Works
Robin Higham, P.E., Stormwater and Wastewater Engineer