

April 22, 2022

Daniel Takami
Grand Island Resources, LLC
12567 West Cedar Dr
Lakewood, CO 80228

RE: Cross Gold Mine, Permit No. M-1977-410, Technical Revision No. 10 (TR-10), Adequacy Review No. 2

Mr. Takami:

The Division of Reclamation, Mining and Safety (DRMS) has completed its review of your adequacy response submitted on April 20, 2022 for Technical Revision No. 10 (TR-10). After reviewing the materials submitted, DRMS has identified the following adequacy item(s) that must be addressed before an approval of TR-10 can be issued:

- 1) DRMS has the following comments pertaining to Figure 1 – Water Management System:
 - a. The pipelines shown are said to be “bonded under AM2”. This is not entirely accurate. Please review the enclosed Exhibit E – Mining Plan Map approved in AM-2. Note there are some differences between the pipelines approved in AM-2 and the ones shown on this figure. While current plans may not involve the regular use of certain pipeline segments (e.g., pipeline from Pond 3c to Pond 2, pipeline from Pond 1 to Pond 2), if these pipelines will remain in place and potentially be used as overflow pipes, etc., then they should be included on this figure, and differentiated accordingly (e.g., as emergency overflow pipelines).
 - b. Please update this figure and the inset table to reflect the pipeline extension approved by DRMS on April 14, 2022 to divert flows from the existing pipeline conveying water from Pond 3c to Pond 1 into the Cross Mine. If this pipeline is not yet installed, this can be reflected on the figure as “proposed” or “to be installed”.
- 2) Please provide the requested narrative for the pipeline extension approved on April 14, 2022 describing the purpose of the pipeline, its operation, and its length.
- 3) In its response to Item #8(b), the operator states “spent filter bags are currently stored in totes in the water treatment conex” and “solids contained within the bags will be tested to determine their chemical composition prior to disposal”. Please clarify how many spent bags will be stored on site prior to needing to test the material and begin disposal. Additionally, please commit to providing DRMS the analytical results of the bag samples and a description of how the bags will be disposed of once this information is available.



- 4) In its response to Item #8(f), the operator described the capacity of the new water treatment system but did not provide a discussion of mine discharge rates throughout the year, as requested. Please provide this information.
- 5) In its response to Item #8(g), the operator states “the pilot system described above is fully operational and since the installation of continuous 24/7 treatment from December 15, 2021 to the current date”. This information seems to contradict what DRMS was told during its January 11, 2022 site inspection, during which, the operator indicated that continuous 24/7 treatment had just been initiated the day before the inspection, which would have been January 10, 2022. Please clarify and/or correct this discrepancy.
- 6) DRMS has the following comments pertaining to the bond estimate provided for operating and maintaining the water treatment system on an annual basis:
 - a. The line item for Filtration Media includes a total cost of \$6,240.00 for changing out the 8 bag filters once per week (at \$15.00 each). However, in its response to Item #8(a), the operator states “currently filter bags are being replaced twice per week”. Therefore, please revise the item to reflect changing out the bag filters twice per week.
 - b. The line item for Polishing Media includes a total cost of \$37,500.00 for changing out both polishing vessels every two years (at \$25,000.00 each). First, the operator’s total cost of \$37,500.00 is confusing based on the unit cost provided. Additionally, in its response to Item #8(c), the operator indicates the second polishing vessel may be used when the first vessel is not functioning properly or is in maintenance, and that both vessels will be used during higher flow events. This means both polishing vessels may be used during the year in order to meet discharge standards. Therefore, please revise this item to reflect the use of both polishing vessels annually (worst-case scenario).
 - c. Please clarify whether disposal costs for the filtration and polishing media are included in the total costs provided for each of these line items. If they are not, please incorporate them into these item costs or add a separate line item for disposal costs.
 - d. Please ensure this estimate includes costs for removing any additional pipeline (e.g., extended segment 6, segment 8) not already covered under the AM-2 bond estimate. These costs must cover all existing and proposed pipelines, including those segments used by the primary system and those used for secondary or emergency use.
- 7) DRMS does not understand the operator’s response to Item #20 pertaining to the quarterly reporting deadlines. First quarter sampling occurs during the months of January, February, and March, with the report due by May 1st. Second quarter sampling occurs during the months of April, May, and June, with the report due by August 1st ...and so on. If the operator were to begin sampling during the second quarter of 2022 (samples collected in May or June), the report would need to be submitted by August 1st. This report would be considered the first of five reports to help quantify baseline conditions. Please commit to collecting samples no less than 30 days apart and as evenly spaced out through the year as conditions allow.

- 8) DRMS has the following comments pertaining to Attachment A – Permit Discharge Limitations, Outfall 001A:
 - a. Please add a footnote to this table defining the terms “TR” and “PD”.
- 9) DRMS has the following comments pertaining to Attachment D – Surface Water Monitoring Plan:
 - a. Under the Analytical Parameters section, please update the table provided to include the limitations for each analyte which samples will be compared to. Additionally, please include the CDPHE discharge permit number in this section.
 - b. The Sample Collection Protocols section is incomplete. Please complete this section, including a reference to collecting QA/QC samples.
- 10) DRMS has the following comments pertaining to Attachment F – Groundwater, Effluent and Surface Water Locations map:
 - a. Please identify the proposed compliance monitoring well on this figure.
 - b. Please provide a description of the two proposed “effluent” sampling locations, and an explanation of how these locations were chosen to be representative of the Cross and Caribou mine water prior to treatment. It appears there is substantial distance between the proposed sampling location inside each mine and the mine’s discharge to the surface, along which, additional inputs to the effluent may occur.
 - c. The proposed downstream surface water sampling location does not appear to be located on property owned by the operator (based on the property ownership map provided in Attachment D). Does the operator have legal access to this area for sampling the creek?
- 11) DRMS has the following comments pertaining to Attachment G – Standard Operating Procedure – Groundwater, Surface Water and Effluent Sample Collection and QA/QC:
 - a. Under the Duplicate Samples section, the operator states that one duplicate sample will be collected for every two primary samples. Please clarify that at least one duplicate sample will be collected for each media sampled (groundwater, effluent, and surface water), for a total of 3 duplicate samples to be collected per sampling event, based on the proposed 3 groundwater sample locations, 2 effluent sample locations, and 2 surface water sample locations.
- 12) The operator’s response to Item #23(c) did not address DRMS’s question regarding how the operation intends to collect the required baseline groundwater data in a manner that ensures groundwater quality at the site is not impacted by site activities in any way during this monitoring period. Additionally, in its response to Item #8(a), the operator mentions plans to return to mining in the coming months. Please note, recommencing with mining activities at the site during the baseline sampling period will invalidate the baseline data, as mining constitutes a disturbance to the site hydrology that will alter any baseline conditions. The plan to recommence with mining operations is also not consistent with the discussion DRMS had with the operator on April 7, 2022.

Please affirm the operator will not commence with active mining operations until such time as baseline sampling has concluded and DRMS has approved numeric protection limits.

- 13) In its response to Items #25 and #26, the operator refers to Attachment H, which is inconsistent with the materials provided. The potentiometric maps and conceptual cross sections were provided in Attachment E. Please be sure all references to attachments are accurate.

This completes the Division's 2nd adequacy review of the materials submitted for TR-10. The decision date for TR-10 is set for **April 28, 2022**. Please be advised, the Board Order issued for Violation No. MV-2021-017 requires this revision to be approved no later than the current decision date. Therefore, the Division will be unable to approve any extensions beyond that date.

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,

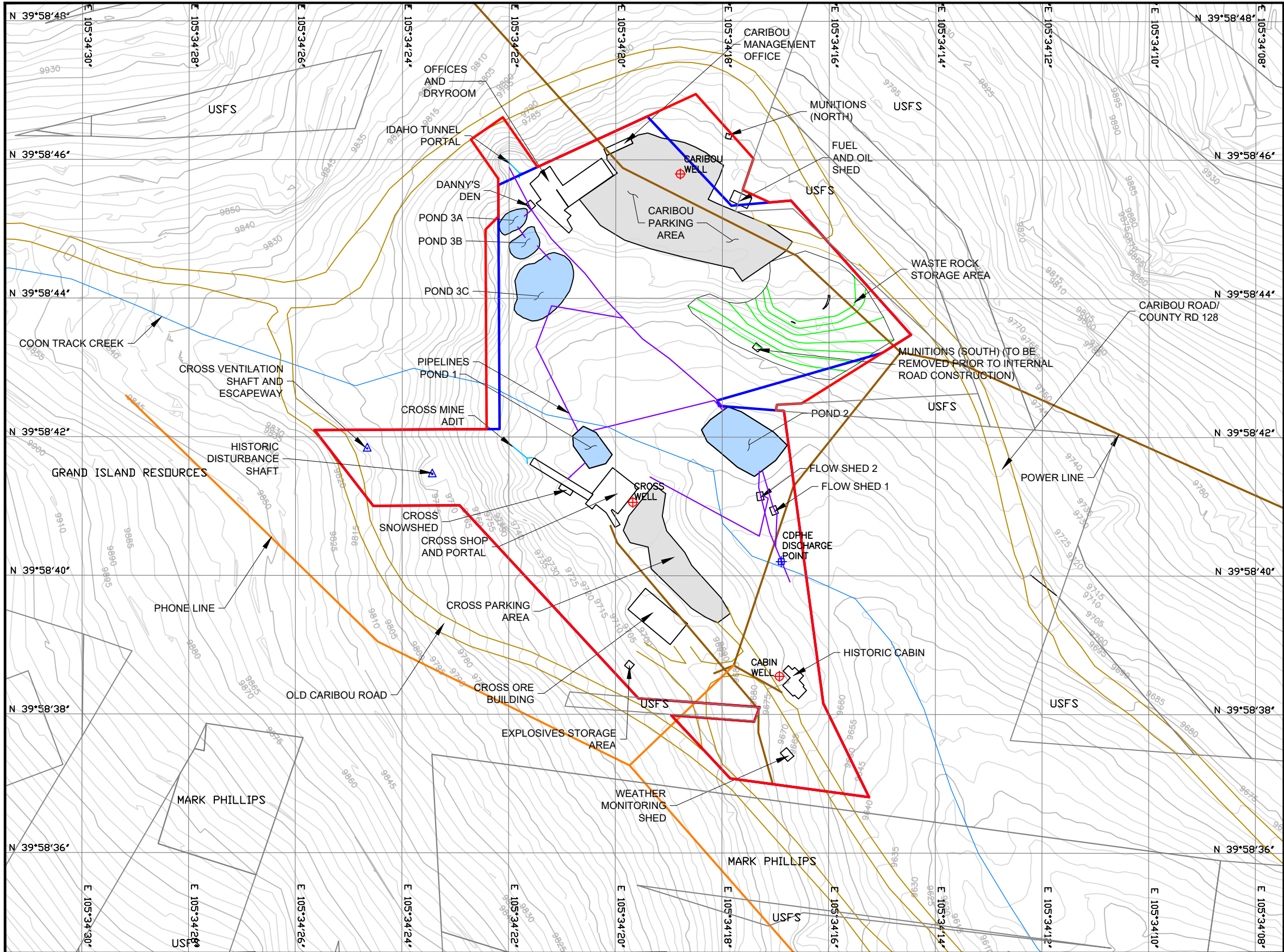


Amy Eschberger
Environmental Protection Specialist

Encl: Exhibit E – Mining Plan Map, approved in AM-2

Cc: Richard Mittasch, Grand Island Resources, LLC
Patrick Lennberg, DRMS
Jared Ebert, DRMS
Michael Cunningham, DRMS

LOCATION: Z:\Projects\21-1306 Cross and Caribou Permitting\ACAD\21-1306_Cross and Caribou_20220201.dwg DATE: 2/1/2022 2:33 PM PLOT SCALE = 1:4,587 PLOTTED BY: SOPHIE SWANSON

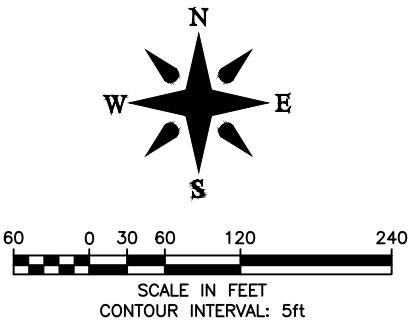


LEGEND

- EXISTING 5ft TOPOGRAPHY CONTOURS (REF. 1)
- SITE GRADING CUT AND FILL SURFACES, RESPECTIVELY
- SITE FACILITIES
 - PROPOSED PERMIT BOUNDARY (9.6 ACRES)
 - CURRENT PERMIT BOUNDARY (8.95 ACRES)
 - POWER LINE (OWNED BY XCEL ENERGY)
 - PHONE LINE (OWNED BY CENTURY LINK/AT&T)
 - PIPELINES
 - NATURAL DRAINAGES
 - EXISTING ROADS
 - MINE PORTAL
 - MINE SHAFT
 - WELL
 - GROUNDWATER WELL
 - DISCHARGE
 - CHPHE DISCHARGE POINT

NOTES

- THIS MAP IS A VISUAL REPRESENTATION OF LEGAL DESCRIPTIONS AND SURVEYED SITE FEATURES.
- MAP DISPLAYS SURFACE FEATURES ONLY.
- COUNTY ROAD 128/CARIBOU ROAD IS OWNED BY BOULDER COUNTY. USFS 505 IS OWNED BY THE UNITED STATES FOREST SERVICE.



Rev	Description	By	Date
7	PROPOSED ROAD DESIGN RECEIVED OCTOBER 2021		
6	WETLAND/PLANT SPECIES RECEIVED NOVEMBER 2021		
5	MINE FEATURES RECEIVED NOVEMBER 2021		
4	EXISTING ROADS RECEIVED APRIL 2021		
3	POND BOUNDARIES RECEIVED NOVEMBER 2021		
2	SITE FACILITIES RECEIVED NOVEMBER 2021		
1	TOPO RECEIVED NOVEMBER 2021		
	REFERENCE		

Rev	Description	By	Date
4	REVISED PER ADEQUACY REVIEW 4 COMMENTS	GRE	02/01/2022
3	REVISED PER ADEQUACY REVIEW 3 COMMENTS	GRE	01/21/2022
2	SUBMITTED TO DRMS	GRE	11/22/2021
1	REVISED PER CLIENT'S COMMENTS	GRE	11/19/2021
0	ISSUED TO CLIENT FOR REVIEW	GRE	11/12/2021

Scale: As Shown
Designed by: --
Drawn by: GRE
Checked by: GIR
Approved by: GIR



EXHIBIT E - CROSS AND CARIBOU MINES MINING PLAN MAP: CROSS MINE AND CARIBOU MINE				4 REVISION
Project:	CROSS AND CARIBOU MINE - AM 2 APPLICATION	Project No.:	21-1306	MAP 02
Location:	NETHERLAND, COLORADO, USA	Date:	FEB. 2022	