



COLORADO

Division of Reclamation,  
Mining and Safety

Department of Natural Resources

1313 Sherman Street, Room 215  
Denver, CO 80203

October 29, 2018

Mr. Mike Schaffner  
Cripple Creek & Victor Gold Mining Company  
P.O. Box 191  
Victor, CO 80860

**Re: Project, Permit No. M-1980-244;  
Technical Revision (TR-108) Preliminary Adequacy Review**

Dear Mr. Schaffner:

The Division of Reclamation, Mining and Safety (Division) received a request for a Technical Revision (TR-108) addressing the following:

*Arequa Gulch Phase I Sump Implementation*

The submittal was called complete for the purpose of filing on September 25, 2018. **The decision date for TR-108 was extended on October 22 to November 21, 2018.** Please be advised that if you are unable to satisfactorily address any concerns identified in this review before the decision date, **it will be your responsibility to request an extension of the review period.** If there are outstanding issues that have not been adequately addressed prior to the end of the review period, and no extension has been requested, the Division may deny this Technical Revision (TR).

The following comments are based on the Division's review of the request for TR-108:

- 1) Figures and maps: The provided figures and map (Figure 2) have very small font and are more or less landscape format, but printed as portrait format. These figures are part of the public record and need to be reasonably legible. Simply switching the orientation of these figures from portrait to landscape might be sufficient. Also, note the map requires: an acceptable map scale not larger than 1 inch = 50 feet nor smaller than 1 inch = 660 feet; a scale; appropriate legend; map title; date and a north arrow pursuant to Rule 6.2.1(2)(e) and C.R.S. 34-32-112(4)(d). Please provide revised figures and map.
- 2) Wildlife Protection: The top of page 2 commits to fencing and netting the haul truck bed to deter wildlife from accessing the ponded solution in the truck sump. There is no discussion of fencing or netting the proposed adjacent infiltration sumps. The Division is aware CC&V has reached agreement with Colorado Parks and Wildlife (CPW) regarding wildlife fencing. However, we are unaware of any specific agreements related to netting to deter birds from the exposed process solution. Please provide the following, and note CPW is copied on this letter:



- a. A commitment to use the previously agreed upon specifications for the wildlife fencing.
  - b. Documented consultation with CPW for appropriate netting on the truck sump.
  - c. A commitment to fence and net the infiltration sump or rationale as why it is not needed.
- 3) Ore/lime mixture: The second paragraph on page 2 discusses transporting lime/ore from the truck bed sump to both the valley leach facilities (VLFs). The Division has the following questions and concerns:
  - a. As the lime/ore mixture is intended to increase the pH of the VLFs and will be transported between different facilities, please provide some narrative to address the following:
    - i. the toxicity and potential environmental impacts of the lime/ore mixture,
    - ii. the anticipated volume of the lime/ore material,
    - iii. if the truck transfer of this material will occur off lined areas, and
    - iv. as the Division understands the Arequa Gulch VLF is already at maximum build-out, where would this material be placed on the AGVLF?
- 4) Attachment 1: Memo EG18-14
  - a. The Division assumes this material will be a essentially a slime. Despite the title of Attachment 1 (Memo EG18-14) of the TR request being “Lime Mixing Tank and Solution Sump Location Geotechnical Evaluation”, no discussion was provided for potential impacts to geotechnical stability of the VLFs with the introduction of this material to the VLFs. Please address the impacts on slope stability, including impacts from the presumably mounded groundwater from the infiltration sump.
  - b. There appears to be some discontinuity of the various “sumps” between the TR-108 request letter and the Attachment 1 Memo: the letter uses “truck sump” and “infiltration sump”; whereas the EG18-14 uses “mixing tank” and “solution sump”, “main sump”, “secondary sump”; or just “sump”. As this TR is part of the public record, the Division requires consistent nomenclature in this submittal to provide clarification for terms used for non-conventional uses. Please be consistent with the various sumps for clarity.
- 5) Hydrology: The fifth paragraph of the Attachment 1 Memo uses the following phrase: “...the footprint of the percolating solution should grow in depth...”. Footprint is generally interpreted to be a horizontal area, whereas depth is usually meant to describe a vertical dimension. Is this a way of saying mounding is expected, or is there some other concept intended to be described here?
- 6) Infiltration impacts: Please address the following:
  - a. How are the main and secondary sumps to be monitored, as alluded to by the third bullet on the bottom of page 1 of the Attachment 1 Memo with “In the event of any overflow to the secondary sump”. Your response should include monitoring frequency and criteria for shut down. For example: must flow be observed on the surface between the sumps, or if water is observed in the secondary sump as a result of subsurface flow?

- b. In the event of “shut down” of this system, how is it bypassed and how long would a shut down take?
- c. How will the potential mounding from the infiltration sump(s) affect the water levels in the Phase II PSSA pumps and more importantly the Phase II Piezo pipe used to determine where the water level in Phase II is with respect to the 80 percent maximum storage elevation which requires notice to the Division?

If you have any questions or need further information, please contact me at (303)866-3567 x8169.

Sincerely,



Timothy A. Cazier, P.E.  
Environmental Protection Specialist

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