



COLORADO

Division of Reclamation,
Mining and Safety

Department of Natural Resources

1313 Sherman Street, Room 215
Denver, CO 80203

March 7, 2019

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-111) Preliminary Adequacy Review**

Dear Mr. Schaffner:

The Division of Reclamation, Mining and Safety (DRMS) received a request for a Technical Revision (TR-111) addressing the following:

Cement Substitution on Valley Leach Facilities

The submittal was called complete for the purpose of filing on February 1, 2019. A request for a decision date extension was received via email on February 28, 2019. **The decision date for TR-111 was extended to March 29, 2019.** 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.

The following comments are based on the Division's review of the request for TR-111:

- 1) Potential for reduction in permeability: The DRMS is concerned about the potential to reduce permeability through the use of cement in that impermeable zones may form and impair rinsing of the VLFs leading to closure. The TR-111 request states "The proposed ratio of cement to ore (less than 0.7 percent) is significantly below the ideal cement agglomeration ratio". For the record and the purpose of comparison, please clarify what the ideal cement agglomeration ratio is, and the cement ratio that was to be used in the High Grade Mill tailings agglomeration process. (*DRMS acknowledges the cement agglomeration process was never fully implemented at CC&V*).
- 2) Potential for impact on VLF slope stability: When the DRMS approved placement of agglomerated mill tailings on the VLFs, CC&V committed to mixing agglomerated tailings (clarified in TR-103 as one part tailings to 9 parts crushed ore) prior to final placement on the VLF and not placing agglomerated tailings on the outslopes of the VLF. The TR-111 request

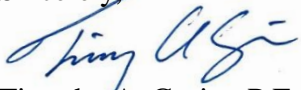


states “no anticipated impacts to the stability ... during operations or closure are anticipated. The proposed cement addition is intended for buffering capacity only.” Despite the intent to affect only the buffering capacity, please provide additional rationale as to why the geotechnical properties of the placed ore will not be altered with the substitution of cement.

- 3) Potential for cemented fines downward migration: The DRMS has had previous concerns related to fines from the HGM tailings migrating to the VLF liner and interfering with both drainage and puncturing of the liner for closure. Please address the potential for cement fines migrating to the liner and forming a “hard” barrier to interfere with puncturing the liner at closure.

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

ec: Michael Cunningham, DRMS
Amy Eschberger, DRMS
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