

July 2, 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-113) Second Adequacy Review**

Dear Mr. Schaffner:

The Division of Reclamation, Mining and Safety (DRMS) received your responses to our April 26 2019 Preliminary Adequacy Review (PAR) letter for Technical Revision (TR-113) addressing the following:

Leach Cell Study

The decision date for TR-113 is currently July 12, 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 CC&V's responses to the Division's PAR:

- 1) Figures and Maps: The response is considered adequate. [*Note: for future reference a scale is inappropriate for an isometric drawing as was included with the revised Figure 3*]
- 2) Liner: The response is adequate.
- 3) Stacking: The response is adequate.
- 4) Solution Application: The response is adequate.
- 5) Geotechnical Stability: The response is adequate. The PAR specifically requested the slope stability analysis account for "reduced friction on the wet liner surface." The 1996 letter from Golder Associates (Appendix A to Memo EG19-08) indicates the testing was performed in accordance with ASTM Standard Test Method D5321, not allowing the sample to consolidate completely under normal load, thereby not allowing the excess pore water pressures to dissipate. However, many of the test samples involved soil liner fill (SLF, essentially a clay)



next to the geomembrane in the test sample. It would seem excess pore pressure and water would be more likely on the SLF side of the test sample and not on the coarser drain cover fill (DCF) side of the sample. Please provide a more explicit discussion of how a reduced friction angle (with respect to a dry interface between the geomembrane and ore to be placed in the test cell) was selected to account for process solution on top of the geomembrane in this slope stability analysis.

- 6) Implementation Schedule: The response is not adequate. The response narrative implies the study could continue after two years. Informal telephone discussions with CC&V personnel agreed on a commitment to a two year limit to begin reclamation. Please provide a written commitment to terminate the test cell and begin reclamation within two years of DRMS approval of TR-113.
- 7) Financial Warranty: The response is not adequate. The response requires clarification as to where the liner will be disposed verses where the ore will be moved to. Please be aware the DRMS is concerned with large amounts of liner being disposed of on the VLF interfering with the effectiveness of rinsing the VLF as currently approved in the reclamation plan. As such, we will not allow the test cell liner to be disposed of or buried on the VLF. We require haul distances for both liner disposal and ore relocation.
- 8) Figure 2: The response is not adequate. The response indicates the volume of the berm surrounding the test cell is not included in the test cell ore volume discussed in Comment #7. Please provide specific reclamation plans for the test cell berm, including volume and haul or push distances.

Additional Comment

- 9) Memo EG19-08: The third bullet under Section 1.0 Test Cell Layout states: "...in the case of failure, everything would be contained within the confines of VLF-1 as a contingency." No deformation analysis was provided to support this statement. Please remove the statement or provide such an analysis to support the statement.

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
Elliott Russell, DRMS
Patrick Lennberg, DRMS
Amy Eschberger, DRMS
DRMS file
Justin Raglin, CC&V
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