



COLORADO
Division of Reclamation,
Mining and Safety
Department of Natural Resources

September 12, 2023

Lori Smith
Cripple Creek & Victor Gold Mining Company
P.O. Box 191
Victor, CO 80860

Re: Third Adequacy Review, Revision No. TR-135, Cresson Project, Permit No. M-1980-244

Dear Ms. Smith:

On August 31, 2023, the Division received your responses to our August 23, 2023 second adequacy review (SAR) letter for the TR-135 Technical Revision application for the Cresson Project, File No. M-1980-244, regarding the VLF2, Phase 3 Stage A.1 Record of Construction Report. The following comments need to be addressed prior to the DRMS accepting the submitted report:

- 1) Document Control: Please address the following:
 - a. *Explain why separate, identically numbered specifications, both addressing overburden fill were necessary. The response was not adequate.* Even if it were important to divide the earthworks into two tasks as stated in the response, both the 8/12/21 and 8/27/21 had sections addressing overburden fill. Furthermore, the low compaction zone/overburden fill did not begin until 8/31/2021 (and the high compaction backfill was not initiated until 10/17/2021), at which times the 8/27/2021 specifications were completed and addressed overburden backfill. Why was the 8/12/2021 specification used, as stated in the response to Comment 1b, when the 8/27/2021 version was finalized and addressed overburden fill? (Note: if the 8/27/2021 version did not include overburden fill, being a separate task, then this explanation might make sense. As it is, it just adds to the level of confusion)
 - b. *Confirm whether the 8/12/21 or the 8/27/21 version of specification no. 02200 was used for overburden placement. **The response was adequate.***
 - c. *Retire the 8/12/2021 01400 and 02200 specifications or explain why they are still needed and renumber them following standard industry practice. The response requires additional clarification:*
 - i. How will these be numbered?
 - ii. How and when will the DRMS be notified?
 - d. *Commit to following standard industry practice for document control in the development and revision of future specifications. **The response was adequate.***



2) Undeclared Deviations:

A. Placing fill on snow:

- a) *Why were these deviations to the approved 02200 specifications not discussed in the Record of Construction Report as required?* **The addition of the deviation notice in the revised CQA Report was adequate.**
- b) *Provide an explanation as to why the approved specifications were not followed in these eight instances.* The response was not adequate. The response did not answer the question, rather it attempts to explain what was done instead of following the approved specifications. It is common practice while placing structural fill to NOT place fill on snow or ice as specified in the approved 02200 – Earthworks. Moreover, the response to Comment 2.A.a claims the SOP “clarified” the requirements for placing fill on snow. As the approved specification clearly directs fill material NOT be placed on snow or ice, any allowance to place fill on snow is NOT a clarification, but a modification to the specification. A “clarification” might be appropriate if the approved specifications indicated fill could be allowed to be placed on snow under limited circumstances, but that is NOT the case here. The placement of fill on snow is a revision to the approved specification. Standard Operating Procedures (SOP) are not the way to revise specifications. Furthermore, the Division would not and will not approve this type of specification change without a demonstration that it will not lead to potential detrimental or differential settling that may affect the liner system of an environmental protection facility (EPF). A demonstration similar to that provided for increasing the lift thickness from the previous two feet to the current approved five feet (see Comment 2.A.c below) is required. In addition, the review of the SOP and the multiple versions of specification 01400 and 02200 caused the Division to revisit the two different versions of Table 4 (test pad only in the original March submittal, and that in the June PAR response with 29 entries, not including the original test pad) and grain size distribution test curves in Appendix G-1, which only includes only one test result (Sample # SF-1-R). The Division noted Sample SF-1-R does not match any sample numbers reported in Table 4. The Division also noted that Table 4 reports the percent passing for 18 different particle sizes, but only two of the three sizes listed in the gradation specification for structural fill (the 8-inch sieve size is not listed in Table 4). The approved 02200 specification requires 40 to 100 percent of the sample size pass the 8-inch sieve. In all reported results, greater than 40 percent of the material passed the 4-inch sieve, thereby demonstrating at least 40 percent also passed the 8-inch sieve. However, if less than 40 percent was reported passing the 4-inch sieve, it would have been indeterminate if the sample met the approved specification. Please address the following:

- i.* Explain why the approved specifications were not followed (not what was done instead) and why structural fill was placed on as much as two inches of snow.
 - ii.* Explain why there were two completely different versions of Table 4 and why the test pad sample listed in the March version of Table 4 was not included in the June version of Table 4.
 - iii.* In order to facilitate faster reviews by the Division, commit to ensuring all 02200 specified grain sizes are listed in grain size summary tables.
 - iv.* Submit an updated App. G-1 with all 30 particle size distribution curves, including the test pad from the March submittal. If the lab used a different sample numbering system, explain how the sample numbers in Table 4 correlate with results in Appendix G-1.
- c) Provide a demonstration as to how these actions met the intent of the approved specifications. The response was not adequate.* A project decision was apparently made to ignore the approved the specification. No demonstration was provided in the response to prove the placement of structural fill on snow would not have a potential detrimental impact on the EPF functionality. The response offered an offhand reference to the snow being water and being a presumed small amount. There is also a mention of the “coarse” material being placed. Industry standards typically consider structural fill to be “coarse” if fines (those passing the #200 sieve) are less than 15 percent. The approved specification for structural fill allows up to 25 percent of the material to pass the #200 sieve. In addition, the specification allows the plasticity index to be as high as 30, suggesting a higher clay content in the material. The Division acknowledges all 29 Table 4 summaries (June version) have less than 15 percent fines and all the plasticity indices are either non-plastic or are at 8 or less. However, if the project is to rely on the “coarseness” of the structural fill with respect to placement on snow, the specification needs to be changed accordingly to reduce the fines allowed, and reduce the plasticity index, perhaps requiring the material to be non-plastic. As to the implied water argument, CC&V must demonstrate that the snow melted if that is part, or all of the basis for allowing fill to be placed on snow. Such a demonstration would have to consider heat and energy transfer from the compaction effort and ambient temperatures at a minimum. Please prove to the Division the practice of placing structural fill on two inches of snow or less will not have a potential detrimental impact on the EPF functionality.

B. Leak Detection Trench Grade. Please address the following:

- a) Why were the 359 feet of the leak detection system installed at a grade flatter than 2 percent not discussed in the Record of Construction Report deviations section as required? **The response was adequate.***

- b) *Provide an explanation as to why the 2 percent grade was not maintained.*
The response was adequate.
- c) *If bedrock prevented the proper installation of the leak detection trench, submit documentation demonstrating as much. The response requires additional clarification.* Based on the leak detection profile provided, it appears the depth of the trench is up to 100 feet (Sta. 5+50) with all but the first 50 feet being at least 10 feet below grade. The grade reference is the labeled "surface after mining completed 11/2/2021". This date is well after both the low and high compaction efforts were initiated in August and October of 2021 (as discussed above in Comment 1.a). While this profile suggests the trench base is in bedrock (assuming mining was completed to at least the top of bedrock), it also suggests an extremely deep trench was cut into bedrock for the trench. This raises one or two potential problems: 1) the trench design does not meet the design as presented in Detail A on IFC Drawing A420 being well below grade of the bedrock; and/or 2) if a trench was in fact cut to this depth, it does not seem likely the trench is in bedrock, therefore a 2% grade should have been feasible. Please provide additional clarification.

3) Location of Perforated CPeP: **The response was adequate.**

4) Overburden Fill Placement Task Training: **The response was adequate.**

Please contact me if you have any questions.

Sincerely,



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

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