



January 17, 2024

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

Re: Adequacy Review, Revision No. TR140, Cresson Project, Permit No. M-1980-244

Dear Ms. Smith:

On November 15, 2023, the Division received the TR140 Technical Revision application for the Cresson Project, File No. M-1980-244, regarding the VLF2, Phase 3 Stage A.2 Record of Construction Report. Pursuant to Rule 7.3.1(5), no chemicals used in the extractive metallurgical process or toxic or acid-forming materials shall be placed in constructed facilities until the Board or Office accepts the certification of the facility, or phase thereof, that precedes placement. Please note, on December 21, 2023, following your request on the same date, the Division allowed the placement of ore on the Stage A.2 area with the understanding that this material will not be leached until TR140 is accepted and that this placed material will be removed in the event the Division's review identifies discrepancies that require remediation. The following comments need to be addressed prior to the DRMS accepting the submitted report:

Record of Construction Report

1. Table of Contents: The list of Record of Construction Drawings is incomplete. Sheets 7a, 7b, 8a and 8b are not listed. These four drawings are point tables for the survey drawings Sheet 7 and Sheet 8, respectively. Please add the missing drawings to the Table of Contents in the report.
2. Table of Contents: The list of tables is incorrect. Table 4 – Fill Temperature Monitoring Summary is not on the list and there are two Table 4's included in the report. Additionally, the Low Volume Solution Collection Fill is listed as Table 8. This table is missing from the report. Please revise the table numbering and update the Table of Contents in the report.
3. Section 2.1. Structural Fill/High Compaction Backfill: On page 4, the report states, "Approximately 336,623 cubic yards of Run of Mine material was placed as SF/HCBF within the limits of VLF2 Phase 3 Stage A.2 area." No material specification is listed for the HCBF on Table 1. HCBF and SF are reported separately on Table 2 and in Appendix G, indicating these are different materials with different specs.
4. Section 2.1. Structural Fill/High Compaction Backfill: The specs in Table 1 state the material passing the 8-inch sieve for SF should be 40-100 percent. Tables 4 and 5 do not list a grain size distribution for the 8-inch sieve. Please add the 8-inch sieve results to Tables 4 & 5 for HCBF and SF. Note, based on the reported percent passing the 4-inch sieve, the samples are within spec for SF material.



Record of Construction Drawings

5. Project Deviations: The third bullet states the pathway for the leak detection trench is flatter than two percent for various reasons (one being constructed in high compaction backfill), and that further explanation can be found on Figures 5 and 6. Figures 5 and 6 are devoid of any explanation: there are no drawing notes, no slopes on the profile portions, no indication of any of the various reasons stated in the project deviations for not maintaining the two percent grade in the approved specifications. Neither is there a discussion on what the minimum constructed leak detection pipe slope is. Please provide an explanation of where segments not meeting the approved specification are and why these segments deviated from specifications (see comments on Figures 5 and 6 below). *Note, construction through placed high compaction (structural fill/two-foot maximum size) is not an acceptable reason for deviating from the specification as rocks this size should be easily moved with the equipment on hand.*
6. All JHL Constructors survey drawings – Pursuant to Rule 1.6(A)(4) from the State Board of Licensure for Architects, Professional Engineers, and Professional Land Surveyors (4 CCR 730-1); for drawings that are not issued final, the status is to be stated on the drawing (e.g., “Preliminary”, “For Review”). The title block on all the JHL Constructors drawings have a “Issued for” space that is left blank on all 12 drawings. Please either remove the “Issued for” label or fill the space with the intended status on each of the drawings.
7. Leak Detection Trench 1 As-Built Exhibit – The point table lists 22 survey points. Point No. 21 is not shown on the plan view. As such, it cannot be determined from the information on the drawing where it lies on the trench alignment. Point No. 17 at the presumed downgradient end of the trench is described in the table as “MH 1 TOPCNTR” and is almost six feet higher in elevation than the nearest upgradient survey Point No. 16, thereby making it impossible to determine the pipe gradient from the information provided on the drawing. Finally, two of the survey points are more than 100 feet from the nearest survey point (100-foot spacing was agreed to in TRs 122, 123 and 125). Please address the following:
 - a. Add survey Point No. 21 to the plan view,
 - b. Provide top of pipe elevations for all survey points related to the leak detection system,
 - c. Describe why the 100-foot maximum survey segment for the pipe was not adhered to as agreed (see attached Table 1).
 - d. Provide a technical explanation for the sub-nominal (0.00% - between survey points 18 and 19) LDS pipe slope (see attached Table 1).
8. Leak Detection Trench 2 As-Built Exhibit – The point table lists 27 survey points. Point No. 201 at the presumed downgradient end of the trench is described in the table as “CNTL” and is almost six feet higher in elevation than the nearest upgradient survey Point No. 202, thereby making it impossible to determine the pipe gradient from the information provided on the drawing. Eleven of the survey points are more than 100 feet from the nearest survey point (100-foot spacing was agreed to in TRs 122, 123 and 125). Finally, there are two large, deep depressions in the topography within the red-shaded area in the SE corner of the drawing: one approximately 300 feet east of survey Point No. 221 (*actually, a group of small depressions here*) and the other approximately 250 east of survey Point No. 218. The drawing does not provide a basis for the topography to explain why there are significant depressions. Please address the following:
 - a. Provide top of pipe elevations for all survey points related to the leak detection system,
 - b. Describe why the 100-foot maximum survey segment for the pipe was not adhered to as agreed (see attached Table 2).

- c. Provide a technical explanation for the sub-nominal (0.49% - between survey points 221 and 222) LDS pipe slope (see attached Table 2).
 - d. Explain why there are significant depressions shown in the topography.
9. Drain Cover Fill Isopach Drawings 1 and 2 – Both drawings have an “Elevations Table” showing the color of the shading for each of three “Elevation” ranges. These are not elevations. Elevations are based on a common vertical datum. These are thicknesses. Correct the error on both drawings and resubmit them.
10. Figures 5 and 6 – The third bullet under the Project Deviations section states further explanation can be found on Figures 5 and 6. There are no drawing notes, slopes or any other means of providing any kind of an explanation for anything related to the deviations included in the third bullet on either figure. Both figures should include the pipe slope between each survey point and identify what ground conditions prevented adherence to the approved specifications where those conditions exist. In addition, Figure 5 is missing survey point 21 (which is included in the point table on ROC Sheet 3. Furthermore, despite survey point 17 being described on ROC Sheet 3 as “MH 1 TOPCNTR” and being approximately six feet higher than survey Point No. 16, the profile on Figure 5 suggests there is a top of pipe survey point at Point No. 17 (presumably STA 0+00 on Figure 5). Please clarify the source of the elevation in the profile on Figure 5 at STA 0+00 and update and revise Figures 5 and 6 accordingly.

Table 2 - Earthworks Testing Summary and Frequency

11. 338,623 CY of Structural Fill HCBF is listed on Table 2 whereas Section 2.1 of the ROC Reports lists 336623 CY of Run of Mine was placed as Structural Fill HCBF. Please explain this discrepancy and revise the table/report accordingly.

Table 7 - CQA Earthworks Testing Summary – Soil Liner Fill

12. The Maximum Dry Density for sample SLF-27-C does not match the Compaction Test Report data sheet in Appendix G.4. Please correct the value in the table.
13. The Permeability for sample SLF-47-C does not match the Flexible Wall Hydraulic Conductivity data sheet in Appendix G.4. Please correct the value in the table.
14. Soil Liner Fill samples SLF-48-C and SLF-49-C on Table 7 are identified as samples SLF-48-R and SLF-49-R, respectively, within Appendix G.5. Please explain this discrepancy.

Table 8 - CQA Earthworks Testing Summary - Drain Cover Fill (Crushed Ore)

15. The USCS classification for DCFO-1-R does not match the Atterberg Limits data sheet in Appendix G.4. Please correct the value in the table. Additionally, the Plasticity Index for this sample is shown as 4 on the data sheet, and NP on Table 7. Table 1 states the spec for plasticity for DCF-Crushed Ore is non-plastic. Is a value of 4 still non-plastic per ASTM D4318 or is this sample slightly plastic?
16. The USCS classification for DCFO-5-R does not match the Atterberg Limits data sheet in Appendix G.4.

Appendix G - Laboratory Test Results

17. Appendix G.1 - Owner Placed Structural Fill: To be consistent with the other lab testing results, please show the Spec % in the Test Results box below the graph for the seven HCBF samples.
18. Appendix G.3 - Select Structural Fill Laboratory Test Results: Table 2 indicates Atterberg limits were performed on two SSF samples. Only one sample is reported on Table 6 and only one laboratory test page is included in Appendix G.3. Please correct Table 2 or include the data on Table 6 and in Appendix G.3.
19. Appendix G.4 - Soil Liner Fill Laboratory Test Results: The Compaction Test Report for SLF-23-C is missing. The page in its place is labeled SLF-30-C. Please submit the correct lab testing page.
20. Appendix G.5 - Soil Liner Fill Laboratory Test Results: Test Results for both Moisture/Density and Permeability are missing for Sample SLF-23-C although the results are presented in Table 7. Please submit these two sheets for SLF-23-C.

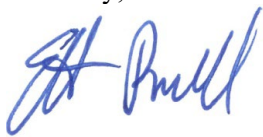
APPENDIX I - 80-mil Geomembrane Installation Summaries

21. Appendix I.2.1 - Geomembrane Fusion Trial Seam Summary, Provide the missing data from the table, the speed for TF-199 and the ambient air temperature for TF-87.

This concludes the Division's Adequacy Review of TR140. This letter shall not be interpreted to mean that there are no other technical deficiencies in your request as other issues may arise when additional information is supplied. **The current decision date deadline for TR140 has been extended to January 24, 2024.** 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.

If you have any questions or need further information, please contact me at (303) 866-3567 x8132.

Sincerely,



Elliott R. Russell
Environmental Protection Specialist

Attachments: Table 1 - LDT1 Summary
Table 2 - LDT2 Summary

cc: Katie Blake, CC&V
Johnna Gonzalez, CC&V
Michael Cunningham, DRMS
Tim Cazier, DRMS
Patrick Lennberg, DRMS
Nikie Gagnon, DRMS

Table 1 Leak Detection Trench 1

Leak Detection Trench 1 As-Built (SHEET 3)

Ground Order of Points	Drawing Data					Calculated Results				
	POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION	NORTHING Δ (ft)	EASTING Δ (ft)	Distance (ft)	Elev. Δ (ft)	Slope (ft/ft)
1	1	58892.4	35778.4	10028.84	PIPET					
2	2	58894.5	35862.7	10027.02	PIPET	2.1	84.276	84.3	-1.83	-2.17%
3	3	58893.3	35960.0	10025.03	PIPET	-1.2	97.298	97.3	-1.99	-2.04%
4	4	58947.7	35963.2	10023.06	PIPET	54.4	3.28	54.5	-1.96	-3.60%
5	5	59041.3	35976.7	10021.42	PIPET	93.6	13.44	94.6	-1.65	-1.74%
6	18	59053.5	36038.6	10019.99	PIPET	12.2	61.971	63.2	-1.43	-2.27%
7	6	59054.4	36106.6	10018.74	PIPET	1.0	67.928	67.9	-1.25	-1.84%
8	7	59062.4	36190.3	10016.11	PIPET	8.0	83.736	84.1	-2.63	-3.12%
9	8	59090.9	36199.3	10015.45	PIPET	28.5	9.022	29.8	-0.66	-2.21%
10	9	59146.0	36150.8	10013.75	PIPET	55.1	-48.552	73.4	-1.70	-2.32%
11	10	59230.4	36087.1	10012.15	PIPET	84.4	-63.711	105.7	-1.60	-1.51%
12	19	59296.5	36063.0	10010.54	PIPET	66.2	-24.051	70.4	-1.60	-2.28%
13	11	59335.0	36050.1	10009.97	PIPET	38.4	-12.883	40.5	-0.57	-1.40%
14	12	59415.4	36030.9	10008.06	PIPET	80.4	-19.237	82.7	-1.91	-2.31%
15	13	59508.0	35991.2	10005.87	PIPET	92.6	-39.66	100.8	-2.19	-2.17%
16	20	59564.8	35935.0	10004.57	PIPET	56.8	-56.272	80.0	-1.30	-1.63%
17	14	59591.1	35904.3	10003.50	PIPET	26.3	-30.702	40.4	-1.07	-2.64%
18	22	59625.5	35862.2	10000.89	PIPET	34.4	-42.08	54.3	-2.61	-4.80%
19	15	59666.2	35814.2	10000.89	PIPET	40.7	-48.008	62.9	0.00	0.00%
20	16	59725.5	35747.7	9999.90	PIPET	59.3	-66.477	89.1	-0.99	-1.12%
21	17	59773.5	35718.8	10005.41	MH 1 TOPCNTR	47.9	-28.854	56.0	5.52	9.86%
??	21	59625.5	35862.2	10000.89	PIPET					
								1431.9	-23.43	-1.64%

100.8	= Out of spec value	21	= not shown on plan view
17	= not top of pipe, resulting in possible error		

Table 2 Leak Detection Trench 2

Leak Detection Trench 2 As-Built (SHEET 4)

Ground Order of Points	Drawing Data					Calculated Results				
	POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION	NORTHING Δ (ft)	EASTING Δ (ft)	Distance (ft)	Elev. Δ (ft)	Slope (ft/ft)
27	222	57579.0	36868.7	10195.43	PIPET					
26	221	57665.5	36883.7	10195.00	PIPET	86.5	15.064	87.8	-0.43	-0.49%
25	220	57768.7	36916.9	10191.67	PIPET	103.2	33.228	108.4	-3.33	-3.07%
24	219	57852.9	36957.0	10189.95	PIPET	84.1	40.053	93.2	-1.72	-1.85%
23	218	57960.6	36947.0	10188.03	PIPET	107.8	-10.022	108.3	-1.93	-1.78%
22	217	57997.6	36863.7	10185.73	PIPET	36.9	-83.297	91.1	-2.30	-2.52%
21	216	57972.3	36781.3	10184.35	PIPET	-25.3	-82.409	86.2	-1.38	-1.60%
20	215	57959.5	36679.9	10182.23	PIPET	-12.7	-101.353	102.1	-2.13	-2.08%
19	214	58034.8	36600.1	10180.14	PIPET	75.2	-79.827	109.7	-2.08	-1.90%
18	213	58117.2	36548.2	10178.20	PIPET	82.5	-51.909	97.4	-1.95	-2.00%
17	212	58210.7	36491.0	10176.03	PIPET	93.5	-57.193	109.6	-2.17	-1.98%
16	211	58286.6	36421.7	10173.61	PIPET	75.9	-69.303	102.8	-2.42	-2.35%
15	210	58366.2	36409.0	10171.94	PIPET	79.6	-12.725	80.6	-1.67	-2.07%
14	227	58469.3	36391.9	10170.04	PIPET	103.1	-17.108	104.5	-1.90	-1.82%
13	226	58556.0	36355.0	10167.69	PIPET	86.7	-36.841	94.2	-2.35	-2.49%
12	225	58641.1	36405.4	10165.60	PIPET	85.1	50.358	98.9	-2.10	-2.12%
11	224	58669.3	36493.7	10163.73	PIPET	28.2	88.313	92.7	-1.86	-2.01%
10	223	58696.8	36599.4	10161.59	PIPET	27.5	105.699	109.2	-2.14	-1.96%
9	209	58729.3	36702.9	10159.31	PIPET	32.5	103.469	108.5	-2.28	-2.11%
8	208	58752.1	36790.0	10157.55	PIPET	22.8	87.149	90.1	-1.76	-1.96%
7	207	58737.1	36875.7	10156.10	PIPET	-15.0	85.677	87.0	-1.44	-1.66%
6	206	58764.2	36980.9	10154.00	PIPET	27.1	105.214	108.7	-2.10	-1.94%
5	205	58851.1	37012.5	10150.99	PIPET	86.9	31.644	92.5	-3.01	-3.26%
4	204	58935.2	36984.8	10149.08	PIPET	84.1	-27.762	88.5	-1.90	-2.15%
3	203	59034.6	36952.4	10147.21	PIPET	99.4	-32.374	104.5	-1.88	-1.80%
2	202	59102.5	36919.3	10145.42	PIPET	67.9	-33.12	75.6	-1.79	-2.37%
1	201	59191.7	36897.4	10151.01	CNTL	89.2	-21.848	91.9	5.60	6.09%
								2524.0	-44.42	-1.76%

100.8 = Out of spec value

CNTL = undefined description