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

February 6, 2024

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

Re: Third Adequacy Review, Revision No. TR-140, Cresson Project, Permit No. M-1980-244

Dear Ms. Smith:

On February 1, 2024, the Division received your responses to our January 26, 2024, second adequacy review letter for the TR-140 Technical Revision application for the Cresson Project, File No. M-1980-244, regarding the VLF2, Phase 3 Stage A.2 Record of Construction Report. The following comments related to the leak detection system record drawings need to be addressed prior to the Division accepting the submitted report:

1) General Quality Control: The response was adequate.
2) Leak Detection Survey Drawings: The response was not adequate.

   Part (C) of this comment was not addressed in the response. For reference, this is part (C):

   > *Given the additional bends shown on the survey drawings, the individual segments are longer than indicated in the table; resulting in flatter slopes than represented, or calculated by the Division and presented in our January 17th review letter.*

   In the last paragraph of the January 26th letter, Comment #2, the Division stated the following needed to be address with respect to part (C):

   > *All horizontal bends must be accounted for and each of those bends must have a top of pipe elevation to accurately assess the as-constructed grade at which these leak detection pipes were installed.*

   Please see the three examples in **Attachment A** depicting the unsupported horizontal bends presented in the Leak Detection Trench As-Built drawings. Based on the information received to date there is either additional survey data that has not been reported but supports the existence of the additional horizontal bends in the Record Drawings; or the Record Drawings do not reflect the as-constructed conditions of the

Leak Detection System (LDS) piping. Please explain the discrepancy and make the appropriate changes (either submit additional survey data and/or revise the record drawings) and resubmit to the Division.

3) Leak Detection Plan & Profile Drawings: The response was not adequate.

   The Division asked for the slope indicator labels to be moved to the profile view as is standard civil engineering practice. Instead, the font size of the slope indicators in the plan view was slightly increased but is still obscured by crisscrossing topography contours. The Division also asked for segments (*i.e., beginning and ending stations; STA X+XX to STA Y+YY)* not meeting the 2% slope criteria and why (e.g., *was constructed at a ZZ% slope due to ____field conditions*) also be provided in the profile view. None of this information was moved to or expanded upon in the profile view. As such, only incomplete and illegible information has been provided to explain why deviations to the approved drawings and specifications were allowed by the approving engineer. This required information is for the public record. As such it must be thorough and legible. Therefore, as a condition to approving TR-140, the Division is now requiring standard civil engineering practice be followed on Figures 5 and 6 cited in the Deviations section of the CQA report to explain deviations to the approved designs and specifications. This includes the following:

   - Slope indicators must be shown in the Profile Views on Figures 5 and 6.
   - Beginning and ending stations where the 2% minimum slope was not adhered to, must be identified in the Profile View on Figures 5 and 6.
   - The rationale for these segments of the Leak Detection System needing not meet approved drawings and specifications must clearly be directed at these specific segments either by a note with a leader specifying the beginning and ending stations or a note in the Profile View over the specific segments explaining why the approved grades were not met.

4) Drain Cover Fill Isopach Drawings 1 and 2: The response was adequate.

5) Additional Comment: Based on the meeting between the Division and CC&V held online this morning, additional commitments are necessary to avoid future concerns and comments related to the LDS maximum survey spacing and minimum pipe slopes. As stated by the Division during the meeting, it is imperative the LDS be constructed as close as practical to the approved design in order to ensure the utmost efficiency in detecting potential leaks in the liner system in the most expedient manner.

   Pursuant specifically to Rule 7.3.2(2), the Division's mandate is to "confirm that the facility was constructed in accordance with the approved design plan." The Division

strives to ensure Permittees and Operators are aware requirements and commitments arrived at through the review processes that may extend or clarify design requirements stemming from technical revisions and amendments to a permit. However, during today's meeting it became clear that some of these clarifications to the approved design and subsequent commitments from CC&V, were not carried over the appropriate documentation referenced during construction. We present the following excerpts from recent reviews related to the LDS construction as evidence of commitments made by CC&V that must be adhered to in future construction:

- *When agreeing to adhere to 100-foot maximum survey segments, this part of the LDS was already constructed and surveyed, as it is a part of the same LDS approved in Phase 2B Part 1. The 100-foot maximum survey segments will be adhered to in all future LDS constructions. {reference Newmont Response to Comment #3c, Technical Revision 125 PAR Response – VLF 2 Phase 2B, Part 2 Record of Construction – Construction Quality Assurance Report dated January 19, 2021}*
- *Although we believe a minimum slope of 1% on the leak detection trench is adequate, the minimum slope on the leak detection trench has been increased to 2% for additional conservatism to address the concerns around potential settlement. The updated design is provided in Attachment 13. {reference Newmont Response to Comment #77, Preliminary Adequacy Review, Amendment Application (AM-13) Response to Comments dated August 3, 2020}*
- *Per CC&V's discussion with the Division during the November 24, 2020 teleconference to discuss additional input from the Division, the Division requested that CC&V re-open comment number 77, though the Division accepted the initial response to Comment 77 in the first round of adequacy review comments. The Division's follow-up comment request was for CC&V and the EoR to verify that the 2% LDS grade included in the design would maintain positive flow if modeled settlement occurred after the VLF was constructed and loaded with ore.*

  As such, CC&V provides the following response:

  With a minimum 2% constructed flowline slope of the leak detection trench, the leak detection trench will maintain a slope that will provide positive drainage towards the sump after the leach pad has been loaded with ore. {reference Newmont Response to Comment #77, Second Adequacy Review

and Supplemental Second Adequacy Review, Amendment Application (AM-13) Response to Comments dated December 4, 2020}

During the meeting, CC&V and the Division agreed these commitments need to be incorporated into the design drawings and project specifications in order to eliminate potential future problems in missing these commitments. CC&V stated they had begun redesigning future Phase 3 LDS pipe layouts such that they would be installed at a nominal three percent grade, with an intended goal of obtaining a minimum of a two percent slope even where site conditions make it difficult to achieve the current two percent slopes referenced in the excerpts above. The Division agreed a three percent nominal slope would go a long way in precluding future construction issues and stated a need to establish an absolute minimum grade for any segment of the LDS. A half percent grade was offered during the meeting, although the Division would prefer a one percent grade as an ideal absolute minimum, and then only where unanticipated field conditions preclude the establishment of the approved two percent slope. As the three percent nominal grade is a significant change to the approved design, the Division stated a Technical Revision would be required to avoid the new design being a deviation to the approved two percent design. Similarly, it was agreed the criteria for surveying the as-constructed LDS alignment needs to be incorporated into the project specifications either through a technical revision or the upcoming amendment (AM-14). In summary, the following items to be addressed in a revision (TR, or AM-14).

<u>LDS As-Constructed Survey Criteria</u> (to be added to the Project Specifications):

i. Maximum distance between survey points is 100 feet.
ii. Additional intermediate survey points as necessary to reflect horizontal and vertical bends.

<u>LDS Constructed slope</u> (to be addressed in Design Drawings and/or design reports specific to each liner system phase):

i. Nominal overall design slope of three percent.
ii. Absolute minimum acceptable as-constructed slope for any LDS pipe segment (The Division recommends 1.0%, but no less than 0.5%).
iii. General acceptable criteria under which achieving a slope less than the heretofore accepted 2% pipe slope (This should be reflected in design drawing notes for all LDS plans and detail drawings)
iv. The absolute minimum acceptable as-constructed slope for any LDS pipe segment should reflect final leach pad build out configuration(s) where the maximum expected differential settlement impacting the LDS is expected.

The decision date for TR-140 has been extended to February 13, 2024. Please submit your responses to this letter by February 9, 2024 to allow the Division to review them prior to the decision date.

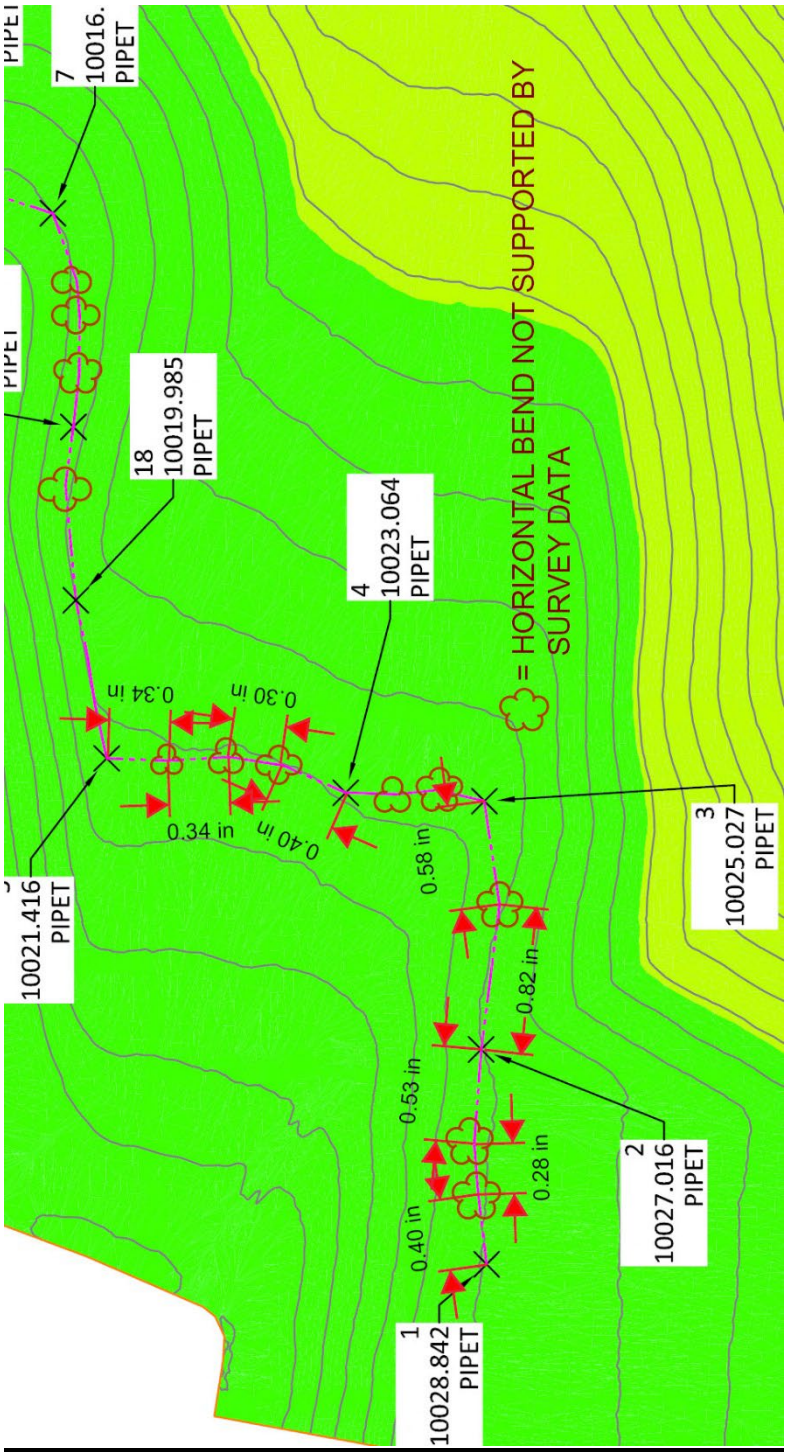
Please contact me if you have any questions.

Sincerely,

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

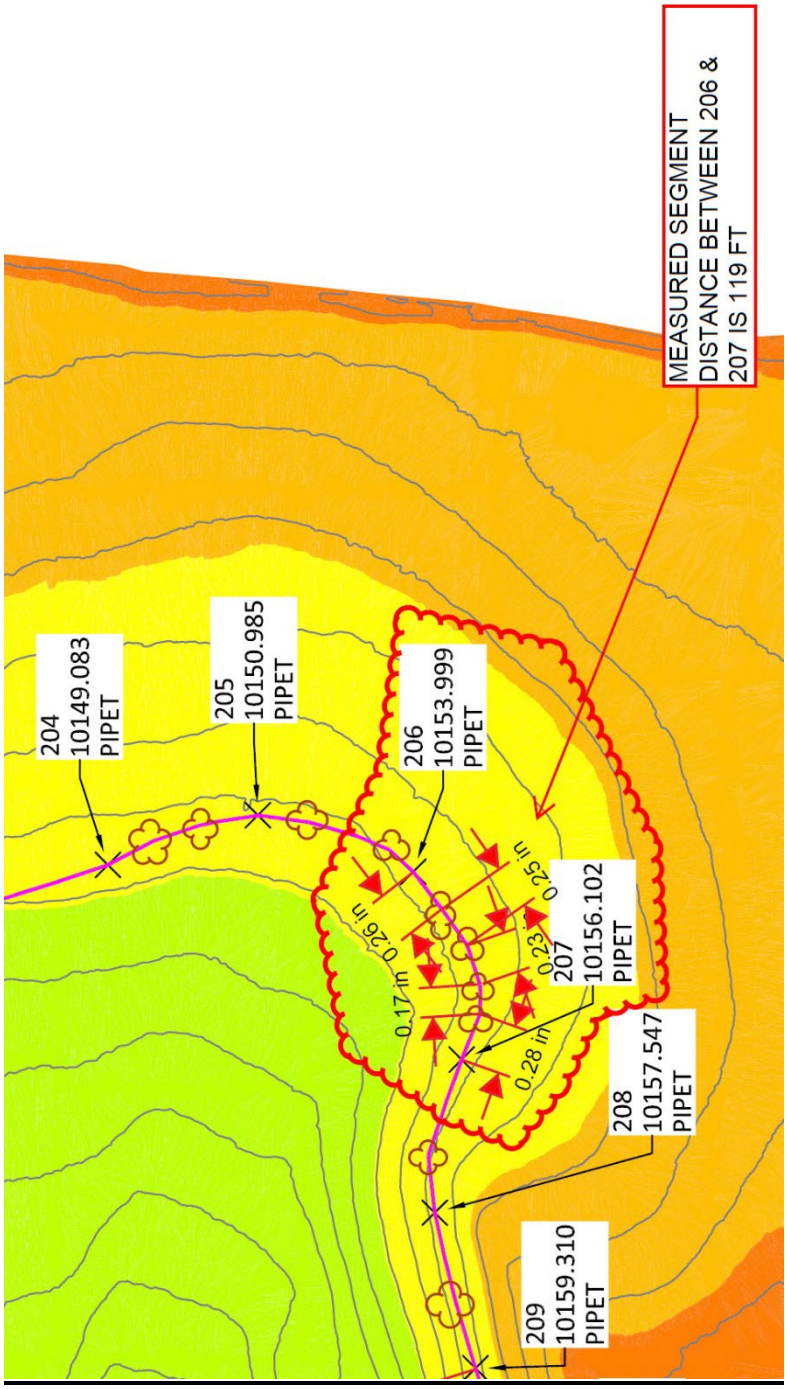
ec: Michael Cunningham, DRMS
Patrick Lennberg, DRMS
DRMS file
Johnna Gonzalez, CC&V
Elliott Russell, DRMS
Nikie Gagnon, DRMS
Katie Blake, CC&V

ATTACHMENT A – EXAMPLE 1



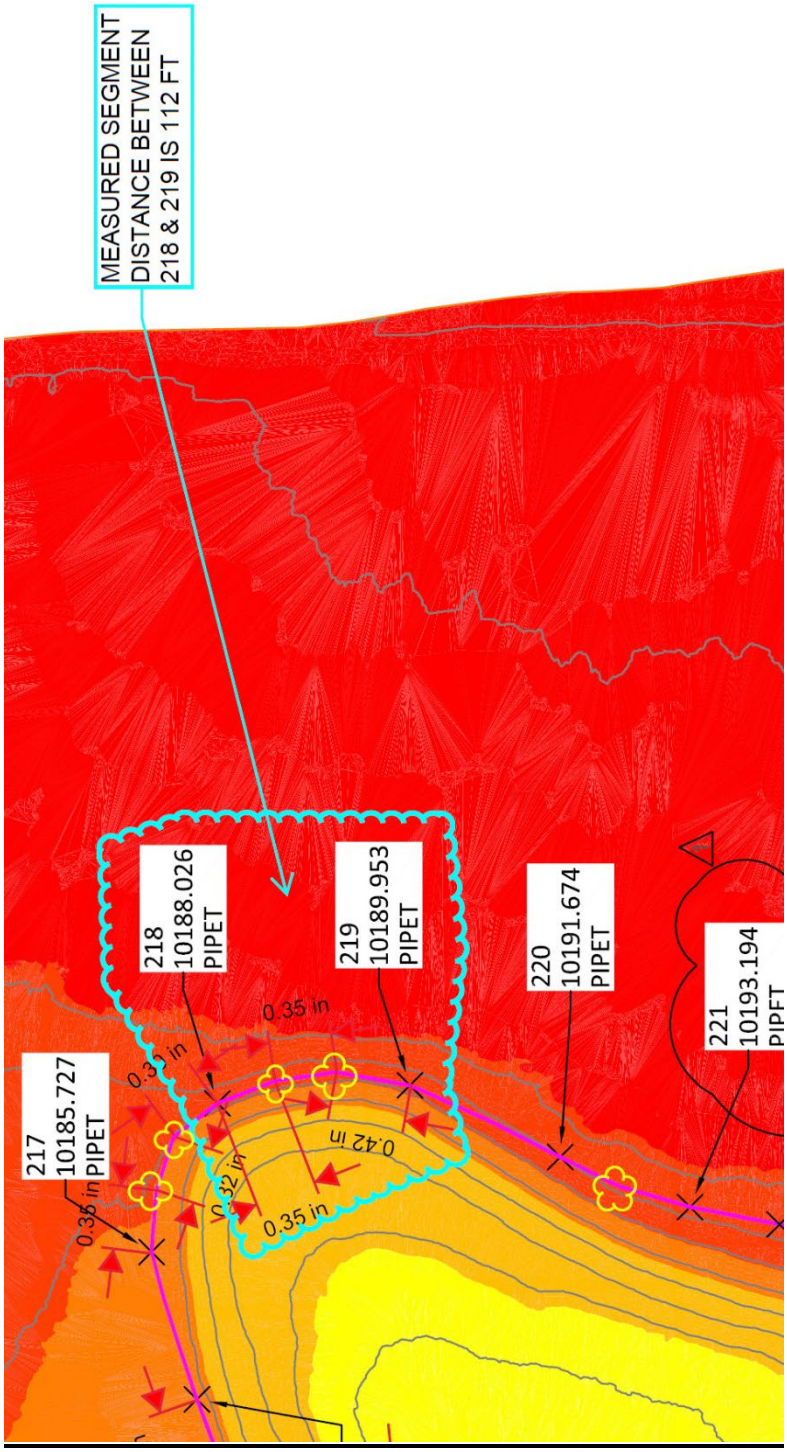
12 Horizontal Bends (cloud circles) Not Supported by Provided Survey Data
[from SHEET 3 LEAK DETECTION TRENCH 1 AS-BUILT; Drawing scale stated as 1" = 70']

ATTACHMENT A – EXAMPLE 2



10 Horizontal Bends (cloud circles) Not Supported by Provided Survey Data
[from SHEET 4 LEAK DETECTION TRENCH 2 AS-BUILT EXHIBIT; Drawing scale stated 1" = 100']

ATTACHMENT A – EXAMPLE 3



Five Horizontal Bends (cloud circles) Not Supported by Provided Survey Data
[from SHEET 4 LEAK DETECTION TRENCH 2 AS-BUILT EXHIBIT; Drawing scale stated 1" = 100']