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October 28, 2020

ELECTRONIC DELIVERY

Mr. Timothy Cazier, P.E.
Environmental Protection Specialist
Colorado Department of Natural Resources
Division of Reclamation, Mining and Safety
Office of Mined Land Reclamation
1313 Sherman Street, Room 215
Denver, Colorado 80203

Re: Permit No. M-1980-244; Cripple Creek & Victor Gold Mining Company; Cresson Project; – Technical Revision 123 – Squaw Gulch Valley Leach Facility – Phase 2B Part 1 Record of Construction Report, Adequacy Review Response

Dear Mr. Cazier:

On October 16, 2020, Newmont Corporation's Cripple Creek and Victor Gold Mining Company (CC&V) received the Division of Reclamation, Mining and Safety's (DRMS's) adequacy review of Technical Revision (TR) 123, which includes the Phase 2B Part 1 Record of Construction report dated September 2020. Below are DRMS comments in italics followed by CC&V's responses in bold.

Report:

1. *Section 2.9 Drain cover fill: The narrative indicates both overburden (DCF) and ore (DCF-ore) used for drain cover fill were processed and stockpiled away from the immediate construction area. The inclusions of panel numbers in summary Tables 7 and 8 suggest gradation samples were collected for DCF and DCF-ore after placement. Given there are differing specifications for DCF and DCF-ore, it is important to maintain a distinction between the two materials. Please clarify where gradation samples were obtained (stockpile vs. final placement area), and if samples were taken in the final placement area, how was it determined which gradation specification was applicable.*

   The samples for DCF and DCFO were obtained from the final placement area. The DCF and DCFO were located in different stockpiles and therefore were obvious as to which the contractor was loading from. The contractor first used up the DCFO until the stockpile was depleted then notified NewFields when they switched over to using DCF.

2. *Section 3.1 - Testing Standards: Please explain why there is no QA/QC or other documentation regarding the LLDPE 40 mil geomembrane that was used in the leak detection trench and provide the appropriate documentation.*

   The contractor substituted 80mil geomembrane instead of the 40mil geomembrane for this phase of construction. The roll of the 40 mil was depleted in a section of a trench upstream of this phase, to be reported in a future submittal. The Engineer of Record (EoR) approved this change since the replacement material exceeded the specification of the material.

3. *Section 3.1.3 Geotextile Testing Standards: The DRMS acknowledges the inclusion of accepting ASTM 6241 for a geotextile puncture test in Section 4, Project Deviations. However, no explanation for the substitute test or passing standards are provided. Please clarify why geotextile testing standard CBR Puncture (ASTM 6241) is being referenced when it is not a testing standard in Technical Specification No. 02777.*

   ASTM 6241 is being referenced because ASTM recommends, within the ASTM standard D4833 itself, that geotextile be tested using the CBR puncture strength test, D6241. Technical Specification No. 02777 will be updated for future phases.

4. *Section 3.3.5 Geotextile QC Certificates: Please provide the following:*

   a. *Expand the discussion to include why the approved puncture test, ASTM D4833, was not met or why there was a change to a substitute test, CBR Puncture (ASTM 6241). Include what the CBR test value is for geotextile used.*

      ASTM 6241 was substituted for ASTM D4833 because within the ASTM standard D4833 itself, it states geotextile shall be tested using the CBR puncture strength test, D6241. The minimum CBR puncture value required is 685.1 pounds based on the comparison equation in "Comparison of CBR AND Pin Puncture Strength Testing Used in the Evaluation of Geotextiles," written by the University of Wisconsin, Milwaukee in May 2014. The CBR puncture values for the geotextile used are 1561lbs, 1165lbs, 1165lbs, and 1019lbs and can be seen in Appendix I.6.

   b. *Provide a revised Technical Specification No. 02777 to update the change.*

      Technical Specification No. 02777 will be updated and revised in future phases.

   c. *Describe in more detail where and how the geotextile was stored to meet the specifications.*

      The geotextile was stored in the contractor's laydown yard and covered with a tarp to protect it from the elements.

5. *Section 3.4 Geomembrane Construction Quality Assurance: Please address the following:*

   a. *Section 3.4.1 Third Party Conformance Testing: Why was Puncture Resistance (ASTM 4833) not tested for by the third party?*

      As stated in section 3.11 of Technical Specification No. 02776-0, Puncture Resistance (ASTM 4833) testing is not required to verify conformance.

b. *Section 3.4.5 Geomembrane Destructive Testing: The DRMS counted 178 tests not 172 fusion tests as stated in this section. Please explain the discrepancy in the number of tests.*

172 represents the number of original tests, not including P and N for the three failed destructs. If P and N are included for the three destructs (6 additional tests), the total number is 178.

6. *Section 4 Project Deviations: Based on Comments 9, 10 and 11 below, the leak detection trench, high volume solution collection pipe, and horizontally deployed geomembrane panels need to be included in this section.*

The contractor substituted 80mil geomembrane instead of the 40mil geomembrane for this phase of construction. The roll of the 40 mil was depleted in a section of a trench upstream of this phase, to be reported in a future submittal. The EoR approved this change since the replacement material exceeded the specification of the material.

The 12" Perimeter Drain was installed around the perimeter of the facility. This pipeline is not part of the high volume solution collection piping network and is not a critical component to convey solution to the PSSA.

Comment 11 does not require a deviation. The panels are installed per the technical specifications and the grade of the pad drains north.

CC&V will work with DRMS in future CQA submittals to ensure alignment of deviation requirements. Additionally, design reports and corresponding drawings will better document tolerances and expressed flexibility afforded to the EoR. The future Phase 2B Part 2 CQA submittal will include a discussion of the nominal grade of the leak detection trench.

Tables:

7. *Tables 1 and 8 - Drain Cover Fill (Crushed Ore): See Comment 12 below for a discussion on the discrepancies related to this document's presentation of the gradation specification for the crushed ore drain cover fill. Please provide appropriately revised Tables 1 and/or 8 to be consistent with Appendix C, Technical Specification 02200 and Appendix H.5 to be consistent.*

NewFields revised Table 8 and Appendix H.5 to be consistent with Appendix C, Technical Specification 02200. The revised Table and Appendix are enclosed as Attachment 1.

8. *Table 6 - CQA Earthworks Testing Summary-Soil Liner Fill: Soil Liner Fill (SLF) Sample Number NFSLF-130-R shows a 99.2 percent passing of 2.0" Grain Size Distribution. The table and Technical Specification 02200, Soil liner Fill requires the specification for 2.0" Grain Size Distribution is 100 percent passing. The narrative within Section 3.2.3 Soil Liner Fill states all forty SLF samples were tested with passing results. Please explain why NFSLF-130-R was not identified as a failed sample when the 2.0" Grain Size Distribution did not meet the specification listed in Table 6.*

The sample NFSLF-130-R was deemed acceptable by the EoR test due to the small amount of material retained on the 2" sieve. Submitted with "Squaw Gulch Valley Leach Facility Phase 2A Part 1 Record of Construction Report" by NewFields in July 2019, NFSLF-3-C was submitted with a similar grain size distribution, with 99.5% passing the 2" sieve. This previously accepted control sample was tested for permeability and met the intent of the design with passing permeability results. Since NFSLF-130-R has only a minor difference

of percent passing the 2" sieve compared to NFSLF-3-C, the engineer allowed this minor deviation.

Record of Construction Drawings:

9. *Squaw Gulch – 20VLF Phase 2B Part 1, Leak Detection Pipe Asbuilts: The DRMS identified several segments of the leak detection pipe with grades not meeting the approved specifications. Segments totaling approximately 351 feet (cumulatively) were found to have a slope less than 1%, but at least 0.5% (see Attached Table A). Additional segments totaling approximately 306 feet (cumulatively) were found to have a slope less 0.5% (see Attached Table A). Finally, three segments totaling approximately 79 feet (cumulatively) were found to have a slope with a reverse gradient (see Attached Table A). According to IFC Drawing A68 – Leak Detection & Typical Erosion Control Details, Detail/Section N – Leak Detection Trench, the slope of the pipe in this trench which is critical to the function of this designated environmental protection facility (EPF) is to be "1% minimum". It should also be noted the construction of the leak detection trench includes a 40-mil geomembrane liner. Where this liner ends and another piece is required to continue, the liner is not welded as a seam, but has a 5-foot overlap with the next piece. Should this overlap occur in the vicinity of very flat, or worse, reverse gradients, the potential for captured process solution to leak out under the overlap is very real. The DRMS is aware of the reference in Detail/Section N to "Note 4" that seemingly is intended to allow flatter slopes by the inclusion of a reference to Note 4. In fact, Note 4 on the drawing only provides dimensions for the soil liner fill plug. However, Note 3 states "AS REQUIRED BY LOCALIZED GRADING, THE UNDERDRAIN CAN BE INSTALLED WITH A MINIMUM SLOPE OF 0.5% WITH APPROVAL FROM THE ENGINEER". The underlined emphasis on "as required by localized grading" and "underdrain" is intentional. As Note 3 clearly states "underdrain" and not "leak detection" trench or pipe, and the Note 3 is not referenced in Detail/Section N; there is at best some ambiguity as to whether this flatter slope is even intended to be considered for the leak detection pipe. It should also be noted that while Drawing A68 is a Newfields drawing, the original drawing approved by the DRMS for the Squaw Gulch VLF under AM-10 is an AMEC drawing and has a similar design and reference to an identical note which also references the underdrain, rather than the leak detection pipe or trench. Furthermore, the beginning of the note indicates such a reduction in slope should only be allowed by constraints related to the local grading. This segment of the leak detection trench/pipe is nearly all on slopes between 2H:1V and 2.5 H:1V, thereby not providing any demonstrable localized grading constraints.*

   a. *Please explain why this deviation was not addressed in Section 4, Project Deviations.*

      The deviation was not included in Section 4, Project Deviations by the EoR because the nominal slope of the trench is greater than 1%, which meets the typical grade requirement of the design. Drawing A260 in the September 1, 2011 "Cripple Creek & Victor Gold Mining Company Squaw Gulch Valley Leach Facility Design", as well as IFC drawing A68, issued September 12, 2018, are both titled "Leak Detection and Typical Erosion Control Details" and the design report narrative are intended as a guide when constructing the LDS. This 1% specification is typical, intended to be a general guide.

   b. *Please address how you will bring this leak detection trench into compliance with the approved drawings and specifications, or otherwise demonstrate how it will function as intended per the design drawings.*

      The intent of the approved leak detection system (LDS) is to detect leaks of both the primary (80 mil LLDPE Geomembrane) and secondary (Soil Liner Fill)

containment systems. The LDS does not function as VLF containment, as the design only allows for the LDS to intercept solution <u>after</u> it has left the VLF containment. As the LDS is designed to function as leak detection, the nominal grade of the constructed leak detection trench is greater than 1%, confirming positive flow to the sump, achieving the intent of the leak detection system design.

Three small sections were identified that will fill with solution at the following depth to trench liner elevations: 0.1', 0.17', and 0.12', respectively. These sections may capture approximately 15.2, 6.4, and 5.4 gallons prior to draining to the sump.

c. *If the 0.5% grade allowance is to be proposed as acceptable, please demonstrate how localized grading constrained the trench such that the prescribed minimum 1% slope was not attainable.*

The intent of allowing localized grades of less than 1% is to afford the contractor flexibility during construction to accommodate field conditions. While every effort is made to conform to the 1%, in some scenarios the excavator lacks the tooling to achieve precise grades. As a result, the leak detection trench slope varies. In the sections in question, the excavator was not able to rip through the lithified material encountered. In order to achieve 1% grades in these sections, the contractor would have had to utilize more extensive, less precise techniques, such as blasting and backfilling. These techniques would have created more disturbance to the pad directly above and below the trench. Therefore, the EoR allowed the grades of less than 1% in these sections.

The 0.5% grade allowance applies to the Leak Detection Trench. The reference to "Underdrain" in the notes section is erroneous and unintentional. The substitution of "underdrain" for "leak detection" can be attributed to a duplication error from note 4 in IFC drawing A64 and note 4 of the original design drawing A250, both specifically intended to detail the underdrain configuration.

10. *<u>Squaw Gulch – 20VLF Phase 2B Part 1, High Volume Collection Pipe Asbuilts</u>: The DRMS identified several segments (see attached Table B) of the 12-inch High Volume Collection Pipe with grades not meeting the approved specifications. Note 1 on IFC drawings A70 and A72 clearly states "SOLUTION COLLECTION PIPING SHALL BE PLACED WITH A <u>MINIMUM SLOPE OF 1 PERCENT</u>". The DRMS is uncertain as to whether or not the flatter than one percent installation of these pipes might compromise the environmental protection function of this EPF. It appears to only affect the efficiency at which process solution is conveyed to the ADR. It is nonetheless a deviation from the approved design.*

    a. *Please explain why this deviation was not addressed in Section 4, Project Deviations.*

    The pipe in question is a perimeter drain, located downstream from the edge of the pad and barren pipeline. This pipe is not part of the High Volume Collection Piping System and is not intended to collect solution from active leaching. The perimeter drain was included in the design as a backup conduit to aid in the prevention of surface solution from flowing off the pad in the unlikely event of a potential barren pipeline failure. The perimeter drain layout with the High Volume Solution Collection Piping was included because the NewFields Drawing A72/AMEC Drawing A400 illustrates the location of all the gravity-draining pipes above the geomembrane liner.

NewFields visually observed the placement of this pipeline during construction. At the time of placement, the visual observations of the perimeter drain did not appear to create any low points in the flow line. If solution should flow inside this pipe, the solution will not become trapped since a) the 12" pipeline is perforated, b) the slope of the pad is greater than 2.5:1, and c) the pipeline is generally located approximately 20' downhill from the edge of the pad.

b. *Please address how you will bring this High Volume Collection Pipe into compliance with the approved drawings and specifications, or otherwise demonstrate how it will function as intended per the design drawings.*

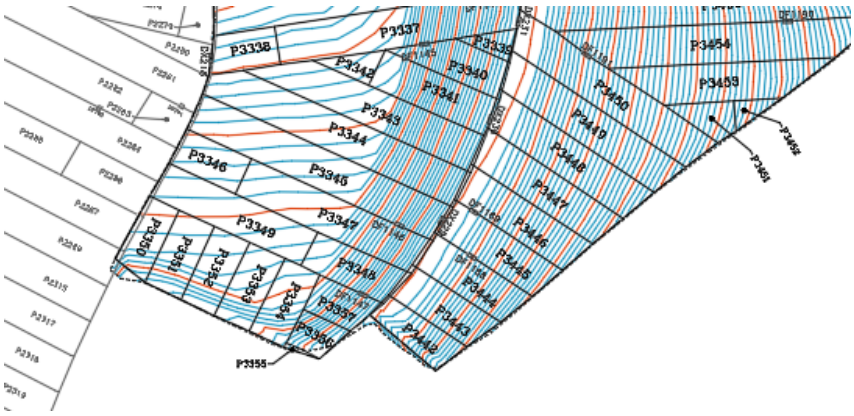
This comment is addressed in CC&V's response to Comment 10.a, above.

11. *<u>Geomembrane Panel Layout As-Built, Drawing No. 9</u>: In the southeast corner of this drawing, panels P3350, P3351, P3352, P3353, and P3354 appear to be deployed in a horizontal alignment (i.e., roughly parallel to the contours). According to Technical Specification No. 02776-0 Geomembrane, field seams "shall be oriented parallel to the line of maximum slope, i.e., oriented down, not across the slope" (reference p. 13, section 3.7.A.1). The purpose of this particular specification is to minimize strain on welded seams and rely more on the tensile strength of the intact manufactured product. Please:*

a. *Explain how this layout meets the approved specifications, and*

The panels are installed per technical specifications. The grade of the pad drains north, as shown the image below.

As a follow up on a question from DRMS during a phone call on October 28, 2020, the panels deployed in the abandoned haul road are continuations of the panels running down the steeper 40%-50% slopes above. They were deployed in this manner in an effort to minimize the strain of seams and the number of defects/extrusion welding along the toe. Similar deployment methods for the same reasons were used in Phase 1 and Phase 2A Parts 1, 2 and 3.



b. *Explain why the orientation of these five panels was not addressed in Section 4.0 Project Deviations.*

No deviation is required for Comment 11 as the panels are installed per the technical specifications and the grade of the pad drains north.

Appendices:

12. *<u>Appendix C - Technical Specification No. 02200</u>: The date and revision designation for this specification changed between TR-122 and TR-123. The TR-122 version was dated March 13, 2020 and designated as "REV D". The TR-123 version was dated March 17 with no revision designation whatsoever. The DRMS has also noted flaws with the specification for the "substitute crushed ore as Drain Cover Fill specification" (p. 4 of 02200). There is no range for the second largest sieve (2-inch), only 97 percent passing which means exactly three percent of the test sample must be retained on the 2-inch screen. Furthermore, the third largest sieve range (for the ¾-inch screen) allows up to 100 percent of the test sample to pass. This is simply an invalid range if 3 percent must be retained on the 2-inch screen. This discrepancy is also presented in Table 1. However, the DRMS noted the range for the test samples passed through the 2-inch sieve presented in Table 8 and Appendix H.5 was altered to be an actual range from 97 to 100 percent which is inconsistent with the 02200 specification. Please address the following:*

    a. *Explain why there were two different versions of the 02200 specification in as few as four days and why the later version has no revision designation,*

       NewFields revised the technical specification to include crushed ore, as discussed with DRMS via phone on January 30, 2020. Based upon knowledge of the crushed ore, NewFields developed a gradation the proposed a maximum particle size 2.5" and issued Revision C. However, after receiving additional gradation results, it then was determined that on occasion the maximum size of the crushed material is between 2.5" and 3" and the technical specification was updated to include the larger material. This technical specification was discussed and agreed upon with DRMS via phone on March 24, 2020.

    b. *Please summarize all the changes made to 02200 between the March 13 and March 17 versions,*

       The gradation specification for the crushed ore as DCF in Revision C:

U.S. Standard Sieve Size	Percent Passing by Dry Weight
2 ½ -inch	100
¾-inch	40 – 100
No. 4	5 – 35
No. 200	0 – 8
Plasticity Index: Non Plastic	

       The gradation specification for the crushed ore as DCF in Revision D:

U.S. Standard Sieve Size	Percent Passing by Dry Weight
3-inch	100
2-inch	97
¾-inch	40 – 100
No. 4	5 – 35
No. 200	0 – 8
Plasticity Index: Non Plastic	

c. *Please explain the discrepancy between the drain cover fill – ore specification in Appendix C and Table 1 when compared to Appendix h.5*

The intent of the 97% was to allow occasional crushed ore. The specification should read 97%-100%, which will be included in future submittals.

d. *Provide corrections to Appendix C, Tables 1 and 8, and/or Appendix H.5 to be consistent.*

NewFields revised Table 8 and Appendix H.5 to be consistent with Appendix C, Technical Specification 02200. The revised Table and Appendix are enclosed in Attachment 1.

13. *Appendix C - Technical Specification No. 02776-1: There appears to be a significant document control problem. This Geogrid specification was submitted to DRMS in July of this year as revision 2, issued for construction dated 6/15/2016. The revision for this Geogrid specification submitted with TR-123 in September of this year is designated as revision 3, re-issued for construction and dated 8/25/2016, just over two months after the revision 2 version. Yet construction for the project subject to TR-122 did not start until this year, almost 4 years after revision 3 of this specification was re-issued for construction. It is important that construction activity have the latest version of specifications for reference and that for environmental protection facilities (EPFs) such as this, the DRMS reviews and approves any significant change to specifications prior to construction, if they differ from the specifications previously approved by the DRMS. A side-by-side comparison of revisions 2 and 3 indicate no change other than possible minor formatting changes which raises two questions:*

a. *What was the purpose of re-issuing this specification in August 2016?*

NewFields never re-issued this technical specification. CC&V had contemplated re-issuing all the technical specifications in August 2016, so NewFields had prepared a Revision 3. However, this did not happen and only the technical specifications that were modified were included TR-122.

b. *As revision 3 version was released nearly four years ago, why was it not submitted with TR-122?*

As explained above, CC&V had contemplated re-issuing all the technical specifications in August 2016, so NewFields had prepared a Revision 3. However, this did not happen and only the technical specifications that were modified were included TR-122.

To address DRMS'previous request for a footer, with the number of the technical specification, to be included on all the pages of the Technical specification, NewFields unintentionally used the incorrect version of this technical specification.

14. *Appendix C – Specification Document Control: As a follow-on to the two previous comments (12 and 13), when the DRMS discovers any unannounced changes to specifications in a CQA report submittal, this prompts us to do a detailed review of the remainder of specifications as an integral part of our CQA report review requires checking test results against the specifications. It is quite time consuming to perform a page-by-page comparison of all 136 pages of the specifications.*

Implementing adequate document control and providing notice of any changes prior to the initiation of construction will reduce review time and lessen adequacy review comments. No response is necessary, but incorporating this comment into future submittals will help streamline the review process.

No response is necessary.

15. *Appendix F – Figures: Weekly reports for weeks ending July 4 and September 5 referenced Figures 1, 2, 3, and 4; but those four figures were not included in Appendix F. Please provide Figures 1 through 4 for the Weekly reports ending July 4 and September 5.*

    This was a clerical error. Weekly reports for the identified dates are enclosed in Attachment 2 with the missing figures.

16. *Appendix H.3 - Soil Liner Fill Laboratory Test Results: The laboratory test results for Soil Liner Fill (SLF) Sample Numbers NFSLF-128-R, NFSLF-129-R, NFSLF-130-R, and NFSLF-132-R were not provided in Appendix H.3. Please provide the four laboratory test results for the four missing samples.*

    This was a clerical error. Lab reports for the identified sample numbers are enclosed in Attachment 3.

17. *Appendix J.-5.1: The DRMS has identified the following apparent discrepancies. Please provide the requested clarification:*

    a. *Sample DF-1127N in the table appears to be mislabeled and should be to DF-1126N to match ROC Drawing 9. Update the Drawing or Table as appropriate.*

       This was a clerical error. The table in Appendix J.5.1 was updated to the correct test number and is enclosed in Attachment 4.

    b. *DF-1115 the first peel strength is 313 ppi. Please confirm this is a true value*

       This was a clerical error. The table in Appendix J.5.1 was updated to the correct peel strength of 131 and is enclosed in Attachment 4.

18. *Appendix J.-5.2: The DRMS has identified the following apparent discrepancies. Please provide the requested clarification:*

    a. *There are no test results for DX-220P in the table, whereas on ROC Drawing 9, a sample is indicated. Please explain the discrepancy.*

       This was a clerical error. The table in Appendix J.5.2 was updated with DX-220P and is enclosed in Attachment 5.

    b. *Please define what is meant by CAP, P-CAP1 and P-CAP3 in Appendix J.5.2*

       This was a clerical error. The tests with CAP in the seam were updated to the correct defect number in Appendix J.5.2, which is enclosed in Attachment 5.

Should you require further information please do not hesitate to contact Katie Blake at 719.689.4048 or myself at 719.689.4042 or Justin.Raglin@newmont.com.

Sincerely,

Justin Raglin
Sustainability and External Relations Manager
Cripple Creek & Victor Gold Mining Co

JR/kb
Ec: T. Cazier – DRMS
R. Means – DRMS
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