



**COLORADO**

**Division of Reclamation,  
Mining and Safety**

Department of Natural Resources

1313 Sherman Street, Room 215  
Denver, CO 80203

December 28, 2016

Mr. Jack Henris  
Cripple Creek & Victor Gold Mining Company  
100 N. Third Street  
P.O. Box 191  
Victor, CO 80860

**Re: Third Adequacy Review, AM-11, Hydrologic & Reclamation Issues,  
Cresson Project, Permit No. M-1980-244**

Dear Mr. Henris:

The Division has completed its adequacy review of the No. 2 Hydrology Section (received December 9, 2016) and the Follow-up Adequacy Review Responses to Amendment 11 Reclamation Plan (received December 19, 2016) for AM-11. The attached Memoranda from Amy Eschberger and Elliot Russell provide the Division's comments on the December 9 and December 19 submittals. The Division is continuing to review the remaining two of the three December 19, 2016 submittals. Additional comments will be provided under separate cover.

Please note the Division's recommendation deadline for AM-11 has been tentatively reset for February 1, 2017. Therefore, please respond to these adequacy issues by January 23, 2017, to ensure sufficient time for the Division to complete its review process timely.

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: Wally Erickson, DRMS  
Amy Eschberger, DRMS  
Elliott Russell, DRMS  
Meg Burt, CC&V





## COLORADO

Division of Reclamation,  
Mining and Safety

Department of Natural Resources  
1313 Sherman Street, Room 215  
Denver, Colorado 80203

**To:** Tim Cazier; DRMS

**From:** Elliott Russell; DRMS

**Date:** December 28, 2016

**Re: Second Follow-up Adequacy Review; Amendment 11 Application (AM-11) and Amended AM-11; Cresson Project; DRMS File No. M-1980-244**

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This letter refers to the Division's July 21, 2016 and October 18, 2016 adequacy reviews and the Operator's October 3, 2016 and December 19, 2016 responses. Inadequate, incomplete, or responses which require additional clarification/information are listed as inadequate and are identified by the same adequacy item number. The Division's follow-up adequacy is in normal font. Additional adequacy items 55-57 follow the inadequacies.

### 6.4.5 Exhibit E - Reclamation Plan

#### **10. *Second response to Adequacy Item 10 is inadequate.***

Using the topographic details of Drawing F-1 Rev 3, and the "Steep High-wall Areas with No Growth Media" cross-hatched polygons on Drawing F-1 Rev 4, the Division has concerns on the 254 acres in the Main Cresson Mine and the 311 acres in the East Cresson Wildhorse Extension Mine where the Operator proposes to not replace plant growth medium. The map depicts accessible locations within these areas (haul road and pit floors) that are planned to not receive growth media nor application of the revegetation seed mix. This is contrary to the Division's allowance of leaving highwall benches void of topsoil and revegetation due to accessibility and safety. Please provide a technical justification for not reclaiming accessible locations within the depicted "Steep High-wall Areas with No Growth Media" areas OR commit to reclaiming accessible locations within these areas. If CC&V commits to reclaiming additional affected lands in these areas, please revise the cross hatched polygon on the Reclamation Plan Map to reflect the actual area where no topsoil will be replaced and adjust the reclamation cost estimate to account for the additional costs.

#### **21. *Second response to Adequacy Item 21 is inadequate.***

The response to Adequacy Item 21 states the cost to purchase and deliver water to irrigate transplanted aspen trees is accounted for the Cripple Creek and Victor Gold Mining Company reclamation cost estimate on page 84 of Appendix 11. After further review, the cost associated with water is likely inaccurate. Please demonstrate the \$2,608 for 1,058,000 gallons of water (\$1.23 for 1,000 gallons rate) is reflective of the cost incurred for a state-hired contractor to purchase and deliver this water for the transplanted trees OR update the Exhibit L reclamation



cost estimate to account for the actual water costs. If the reclamation cost is updated with revised figures, please submit a replacement task sheet showing the revision and an updated Cost Summary sheet. Pursuant to Rules 3.1.10(5) and 6.4.7(3) and (4), please demonstrate that the sources of this water (Cities of Victor, Cripple Creek, and Colorado Springs) are capable to provide the estimated 1,056,000 gallons of water during the summer months.

#### **6.4.8 Exhibit H – Wildlife Information**

**40. *Second response to Adequacy Item 40 is inadequate.***

CC&V has requested the Division issue a conditional approval with the provision CC&V submits a technical revision fencing plan within 180 days of approval of Amendment 11. Given the scope and nature of Amendment 11, the Division is amenable to accepting the following permit condition:

*CC&V shall submit a modification to the permit addressing wildlife protection within 60 days of the approval of Amendment 11, with all materials in approvable form within 120 days of the approval of Amendment 11. This permit modification shall include, at a minimum: (1) a wildlife report describing and enumerating all wildlife incidents resulting in injury or fatality within the last 5 years associated with the mining operation; (2) detailed maps depicting the locations of all wildlife fencing locations during the mining operation; (3) a schedule for the installation of required fencing; (4) detailed maps depicting the locations of all wildlife fencing at final reclamation; (5) any modifications of the current fencing requirements to address Colorado Parks and Wildlife concerns; and (6) adjustments to the financial warranty associated with any changes to the wildlife protection plan including, but not limited to, installation, maintenance, and removal of wildlife protection measures.*

Please affirmatively state in writing, CC&V agrees with the permit condition identified above. Please note, if, on the decision deadline there exists unresolved adequacy issues which prohibit the Division from rendering a favorable recommendation, this condition may be used to support a recommendation to deny AM-11.

#### **6.4.5 Exhibit E - Reclamation Plan**

**49. *Second response to Adequacy Item 49 is inadequate.***

Response to adequacy item 49 did not provide a technical justification and demonstration that highwalls less than 100 feet are not considered a hazard and that no fencing is required OR commit to installing the fence around the crest of any highwall that remains as a permanent feature of the reclamation. By responding with fencing additional areas within the WHEX/Globe Hill Pits, the Division assumes the original commitment of “upon completion of mining and reclamation, a 6-foot high (minimum) chain link fence will be installed around the crest of those portions of the mine areas where highwalls of greater than approximately 100 feet in depth exist at the top of the mine area” has been modified to “upon completion of mining and reclamation, a

6-foot high (minimum) chain link fence will be installed around the crest of highwalls which are not reduced or backfilled”. Please clarify that the modified commitment is correct.

Additionally, please submit a replacement reclamation cost task sheet showing the revised fencing costs associated with the WHEX/Globe Hill Pits. An updated Cost Summary sheet will also need to be submitted to reflect this change.

**51. *Second response to Adequacy Item 51 is inadequate.***

CC&V alleges the 15-20 foot wide ditch located on the mine side of County Road 82 (CR82) doubles as a physical barrier, which is sufficient to protect vehicular traffic traveling on CR82 north of the East Cresson Mine - Wildhorse Extension (WHEX) from encountering the highwall. Please provide a rigorous demonstration, certified by a Colorado licensed professional engineer who is experienced with traffic safety appurtenances, which confirms the 15-20 foot wide ditch is sufficient to protect the public from the vertical hazards associated with the WHEX along CR82 or propose an alternate barrier (e.g., guardrail or berm) that is adequately protective.

**Additional Adequacy Items:**

**6.4.6 Exhibit F- Reclamation Plan Map**

- 55.** The forth revision of Drawing F-1: Approximate Post Mining Topography contains shaded area depicting “Restricted Access” and “Areas where Reclamation is not required - Forested, Natural, or Already Reclaimed”. These polygons have been placed over the contour lines, obscuring the topography of these areas. Please revise this map to correct this error. Please ensure the reclamation plan maps satisfy the requirements of Rule 6.4.6.
- 56.** The forth revision of Drawing F-1: Approximate Post Mining Topography contains an arrow, depicting the direction of slope, in the center of the East Cresson Mine (Wildhorse Extension) mine area, which points upslope instead of downslope. Please revise this map to correct this error and ensure compliance with Rule 6.4.6.
- 57.** In accordance with Rule 6.2.1(2)(e), please submit additional maps of the affected lands at a larger scale, thus depicting more detail on a smaller area. The Division requires at least seven additional reclamation plan maps (F-2 through F-8) to show better details of the following: East Cresson Mine (Wildhorse Extension), East Cresson Overburden Storage area and East Cresson Mine (Altman), Main Cresson Mine and Main Cresson Mine (South Cresson), Areqa Gulch Valley Leach Facility, Squaw Gulch Valley Leach Facility, Squaw Gulch Overburden Storage Area, and North Cresson Mine (Schist Island) and North Cresson Mine (Globe Hill). Each new map should contain a small indicator map to show how it relates to the F-1 map. The Division has provided the sample figure below, on Page 4, which outlines the approximate size and location of the additional maps.





## COLORADO

Division of Reclamation,  
Mining and Safety

Department of Natural Resources

1313 Sherman Street, Room 215  
Denver, CO 80203

### MEMORANDUM

To: Tim Cazier, DRMS

From: Amy Eschberger, DRMS

Date: December 28, 2016

**RE: Cresson Project, DRMS Permit No. M-1980-244, Amendment-11 Application  
(Revision No. AM-11), Adequacy Review No. 3 of Hydrology Sections**

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The Division of Reclamation, Mining and Safety (Division) completed its review of the *Responses to DRMS Adequacy Review No. 2 Hydrology Section* received on December 9, 2016, and has identified the following adequacy items which require additional clarification. The adequacy item subtitles listed below correlate with the Division's *Adequacy Review No. 2 of Hydrology Sections*, dated October 19, 2016, but items are numbered separately.

#### (Volume II of IV)

#### Hydrogeochemistry Evaluation / December 15, 2015 / Adrian Brown

##### 3.4.2 Water Table

- 1) On pages 3 and 4 of Attachment 1, the text refers to an attached Plate 27. The Division could not find a Plate 27 in either the hard copy or the digital copy of the submittal. Please provide Plate 27.
- 2) On page 3 of Attachment 1, footnotes 2 and 3 allege the Division is in error when referring to groundwater monitoring wells GVMW-22A and GVMW-22B. The footnotes state the Operator assumes the Division is referring to GVMW-23A and GVMW-23B. However, on the revised Figure 2-1a – Surface Water and Groundwater Monitoring Locations submitted with the previous response, groundwater monitoring wells GVMW-23A and GVMW-23B are not shown. On this figure, GVMW-22A and GVMW-22B are shown to be compliance wells located in Grassy Valley. Please explain this discrepancy.
- 3) The cross-section submitted on December 9<sup>th</sup> as Plate 29 does not show enough detail beneath the ECOSA to illustrate the relationship between the ECOSA, ECOSA underdrains, Grassy Valley perched aquifer, Grassy Valley Creek, and the portion of the





area identified on Plate 9 (Rev. 1) as the “area where drainage tunnels do not cause significant head change in diatreme” which underlies the ECOSA. The vertical scale of the figure is too small to show the requested details. The Division did not request the Carlton Tunnel elevation be shown on this cross-section, as it is displayed on other figures submitted. Please increase the vertical scale of the figure as necessary to show sufficient detail for the requested features. The features of interest occur from surface to approximately 9,500 foot elevation (below the surface). Additionally, please ensure all features are labeled on the figure, including Grassy Valley Creek and monitoring wells, if appropriate.

- 4) The cross-section submitted on December 9<sup>th</sup> as Plate 30 does not show enough detail to illustrate the relationship between the ECOSA, the Grassy Valley perched aquifer, Grassy Valley Creek, groundwater monitoring wells GVMW-8A and GVMW-8B, and the areas identified on Plate 9 (Rev. 1) as “post-mining Grassy Valley capture zone” and “area where drainage tunnels do not cause significant head change in diatreme”. The vertical scale of the figure is too small to show the requested details. The Division did not request the Carlton Tunnel elevation be shown on this cross-section, as it is displayed on other figures submitted. Please increase the vertical scale of the figure and show more detail for the requested features. The features of interest occur from surface to approximately 9,500 foot elevation (below the surface). Additionally, please ensure all features are labeled on the figure, including Grassy Valley Creek and the approximate location of the monitoring wells.
- 5) The cross-section submitted on December 9<sup>th</sup> as Plate 31 does not show enough detail to adequately display the nature of the Grassy Valley perched aquifer in relation to the areas identified on Plate 9 (Rev. 1) as “post-mining Grassy Valley capture zone” and “area where drainage tunnels do not cause significant head change in diatreme”. The vertical scale of the figure is too small to show the requested details. The Division did not request the Carlton Tunnel elevation be shown on this cross-section, as it is displayed on other figures submitted. Please increase the vertical scale of the figure and show more detail for the requested features. The features of interest occur from surface to approximately 9,500 foot elevation (below the surface). Additionally, please ensure all features are labeled on the figure, including Grassy Valley Creek and monitoring wells, if appropriate.

## **Appendix 2 – Hydrologic Evaluation, CC&V / December 2015**

Table 2-1 Water Quality Monitoring Parameters

December 28, 2016

- 6) The Operator's response to item no. 59 proposes groundwater numeric protection levels (NPLs) for five parameters (Total Sulfate, pH, Dissolved Manganese, Dissolved Zinc, Weak Acid Dissociable Cyanide) for each of the drainages where compliance monitoring is required (Arequa Gulch, Grassy Valley, Vindicator, Wilson Creek, Squaw Gulch, and Poverty Gulch). Some of the proposed NPLs are not compliant with the requirements of Colorado Department of Public Health and Environment (CDPHE) Water Quality Control Commission (WQCC) Regulation No. 41 – The Basic Standards for Ground Water. Therefore, pursuant to C.R.S. 34-32-115(4)(c)(I) and (g); C.R.S. 34-32-116(7)(c), (g) and (i); Rule 3.1.7(1)(a), (c) and (d); and Rule 3.1.7(4), the Division's approval of AM-11 cannot constitute approval of the proposed NPLs. The Division understands the complexity of the issue and the time needed for resolution is beyond the scope of AM-11. Please review the enclosed Request for Demonstration of Compliance letter from the Division, and commit to submitting the required information within 90 days, due March 28, 2017.

Please affirmatively state in writing that CC&V agrees with the permit condition identified above. Upon receipt of the Operator's written commitment to submit the required information by the deadline imposed by the Division, the Division shall remove this issue from consideration on AM-11.

If you have any questions, please contact me by telephone at (303) 866-3567, ext. 8129, or by email at [amy.eschberger@state.co.us](mailto:amy.eschberger@state.co.us).

Sincerely,



Amy Eschberger  
Environmental Protection Specialist

Enclosure: Division's Request for Demonstration of Compliance with WQCC Regulation No. 41  
– The Basic Standards for Ground Water

Cc: Wally Erickson, DRMS  
Tim Cazier, DRMS





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Mining and Safety

Department of Natural Resources  
1313 Sherman Street, Room 215  
Denver, Colorado 80203

December 28, 2016

Jack Henris  
Cripple Creek & Victor Gold Mining Company  
100 North Third Street  
P.O. Box 191  
Victor, CO 80860

**RE: DRMS File No. M-1980-244; Cresson Project; Request for Demonstration of Compliance with WQCC Regulation No. 41 – The Basic Standards for Ground Water**

Mr. Henris:

The Division of Reclamation, Mining and Safety (DRMS or Division) has recently reviewed the Groundwater Monitoring Plans and data associated with mining sites, such as the Cresson Project, that are subject to SB-181 reporting to Colorado Department of Public Health and Environment (CDPHE) Water Quality Control Division. All operators must comply with the requirements of CDPHE Water Quality Control Commission (WQCC) Regulation No. 41 – The Basic Standards for Ground Water.

Regulation No. 41 states that WQCC has the exclusive jurisdiction to set groundwater standards and classifications. DRMS is named as an implementing agency, responsible for implementing WQCC's standards and classifications for discharges (other than point source discharges to surface water) through its own regulatory programs after consultation with the WQCC and the WQCD. In areas where groundwater has not yet been classified and no site specific standards have been adopted by WQCC, the Interim Narrative Standard, as summarized from Regulation No. 41 below, applies.

**WQCC's Interim Narrative Standard**

- a. The "Interim Narrative Standard" in 41.5(C)(6)(b)(i) below is applicable to all groundwater, to which standards have not already been assigned in the state, with the exception of those areas where the total dissolved solids (TDS) are equal to or exceed 10,000 mg/l. This standard is applicable independent of and in addition to the statewide standards for radioactive materials and organic pollutants established in this section 41.5.C.
- b. i. Until such time as use classifications and numerical standards are adopted for the groundwater on a site-specific basis throughout the state, and subject to the provisions of subsection (ii) below, groundwater quality shall be maintained for each parameter at whichever of the following *is less restrictive*:

(A) existing ambient quality as of January 31, 1994, or



- (B) that quality which meets the most stringent criteria set forth in Tables 1 through 4 of “The Basic Standards for Ground Water.”

...

iii. In applying this narrative standard, the Commission intends that agencies with authority to implement this standard will exercise their best professional judgment as to what constitutes adequate information to determine or estimate existing ambient quality, taking into account the location, sampling date, and quality of all available data. Data generated subsequent to January 31, 1994, shall be presumed to be representative of existing quality as of January 31, 1994, if the available information indicates that there have been no new or increased sources of groundwater contamination initiated in the area in question subsequent to that date. If available information is not adequate to otherwise determine or estimate existing ambient quality as of January 31, 1994, such groundwater quality for each parameter shall be assumed to be no worse than the most stringent level provided for in Tables 1 through 4 of “The Basic Standards for Ground Water,” unless the Commission has adopted alternative numerical standards for a given specific area.

Therefore, in almost all cases, the most stringent criteria for an analyte set forth in Tables 1 through 4 of “The Basic Standards for Ground Water” will be the applicable standard for that analyte. If an operator wishes to propose a groundwater standard less restrictive than those contained in “The Basic Standards for Ground Water” tables, it will be the operator’s burden to sufficiently demonstrate to DRMS that their circumstances meet at least one of the two conditions outlined below, thereby allowing DRMS to apply a less restrictive standard, and still fully implement the requirements of Regulation No. 41.

The first narrow circumstance and authority for DRMS to apply a groundwater quality standard that is less restrictive than the Table Value Standard at a Point of Compliance exists when a mine operator provides DRMS with adequate documentation and data to determine, to the satisfaction of DRMS, that the existing ambient groundwater quality on January 31, 1994, was above the Table Value Standard.

The second narrow circumstance and authority for DRMS to apply a groundwater quality standard less restrictive than the Table Value Standard is when an operator provides DRMS with data generated after January 31, 1994 which exceeds Table Value Standards and can also demonstrate that no new or increased sources of groundwater contamination in the area in question have been initiated since January 31, 1994, and therefore ambient conditions exceeded Table Value Standards prior to January 31, 1994.

The only other way a DRMS permitted site may allowably exceed the standards set by the Interim Narrative Standards would be for the permittee/applicant to obtain a site-specific exemption or variance from the WQCC through a rulemaking process.

WQCC’s Rules request that DRMS exercise its best professional judgment as to what constitutes adequate information to determine or estimate existing ambient quality as of January 31, 1994, taking into account the location, sampling date, and quality of all available data. DRMS may also seek concurrence with WQCC prior to approval of any NPL that exceeds a table value standard.

In order to demonstrate that Cresson Project’s approved groundwater monitoring plan and groundwater conditions on site comply with Regulation No. 41 requirements, DRMS is requesting that Cripple Creek

& Victor Gold Mining Company provide a review of the current approved groundwater monitoring plan and available site groundwater monitoring data against the Interim Narrative Standard requirements as detailed above within 90 days, due **March 28, 2017**.

Please note that for any NPL for a monitored analyte exceeding the applicable Table Value Standards to be valid, it will be the operator's burden to provide sufficient data and rationale to demonstrate to the satisfaction of DRMS and WQCC that at least one of the two conditions previously listed which would allow DRMS to apply a less restrictive standard have been met.

If you have any questions, you may contact me by telephone at 303-866-3567, ext. 8129, or by email at [amy.eschberger@state.co.us](mailto:amy.eschberger@state.co.us).

Sincerely,

A handwritten signature in black ink that reads "Amy Eschberger". The signature is written in a cursive, flowing style.

Amy Eschberger  
Environmental Protection Specialist