

# STATE OF COLORADO

**DIVISION OF RECLAMATION, MINING AND SAFETY**  
Department of Natural Resources

1313 Sherman St., Room 215  
Denver, Colorado 80203  
Phone: (303) 866-3567  
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## MEMORANDUM

**To:** Tim Cazier

**From:** Michael Cunningham 

**Date:** June 29, 2012

**RE:** Cresson Project; DRMS File No. M-1980-244; AM-10 (MLE2) Adequacy Review

John W. Hickenlooper  
Governor

Mike King  
Executive Director

Loretta E. Piñeda  
Director

### 6.4.5 Exhibit E – Reclamation Plan

1. Table 5-4 Growth Medium Stockpiles indicates there will be an estimated 3,227,198 yd<sup>3</sup> of topsoil available for use in reclamation. However, Section 12.2 of Volume I states there is approximately 3.4 million yd<sup>3</sup> of topsoil available for reclamation. Please clarify this discrepancy.
2. The footnotes for Table 5-4 Growth Medium Stockpiles indicate that Stockpile 4 will be comprised of Stockpiles 2, 3, 20, and 36. The associated comments for Stockpile 36 state the stockpile will likely be relocated or used in concurrent reclamation. If Stockpile 36 will be added to Stockpile 4, then the comments should be revised to reflect this. In addition, the associated comments for Stockpile 21 state the stockpile will be added to Stockpile 4; however, the table footnotes do not indicate this. Please revise Table 5-4 Growth Medium Stockpiles accordingly.
3. On page 12-14 of Volume I, the Applicant has stated other material containing fines will be used to cover the overburden placed as backfill if stockpiled growth medium is not available. Table 5-4 Growth Medium Stockpiles indicates there will be an estimated 3,227,198 yd<sup>3</sup> of topsoil available for use in reclamation, which exceeds the estimated 2.4 million yd<sup>3</sup> of topsoil required for reclamation. Please provide a technical justification as to why fines would be used to cover backfilled overburden when it appears there will be an excess of suitable growth medium.
4. The Applicant has stated topsoil will be replaced over disturbed areas at a depth of 6" or less. Operators are encouraged to allow flexibility in their reclamation plans by committing themselves to a range of numbers (e.g., 6" – 12") rather than specific figures. The Division requests the Operator commit to replacing topsoil at a depth of no less than 6". Please specify the range of depths to which topsoil will be replaced.

5. On page 12-4 of Volume I, the Applicant has stated the application rate of the seed mix will be approximately 25 pounds of pure live seed (PLS) per acre. The proposed seeding rate is appropriate for drill seeding; however, the rate should be doubled for broadcast or hydroseeding. Please clarify if this is the seeding rate which is intended to be used for all three seeding application methods.
6. On page 12-4 of Volume I, the Applicant has stated that broadcast and drill seeded areas will generally not be required to be mulched. Please explain why these areas will generally not be required to be mulched.
7. The Applicant has stated seeding of grasses will occur primarily in the late spring/early summer and/or during the late fall/early winter periods. Please note that Indian ricegrass has a high rate of dormancy and germination may be improved by fall dormant planting.
8. The Applicant has provided an Alternate Species seed mix to be used in the event the species from the Preferred Species seed mix are not commercially available. The Division requests the Operator commit to notifying the Division in writing of any changes to the seed mix should any of the preferred species not be commercially available. The grass species on the Alternate Species list are non-native and the Division wants to ensure that if one or more species are replaced, that the seed mix contains a well rounded mix of grass species which is appropriate to the post-mining land use.
9. The post-mining land use for the site includes rangeland. Please indicate how the reclaimed area will be protected from overgrazing. The Division recommends keeping cattle off of the reclaimed area for a minimum of two growing seasons following seeding.
10. The Reclamation Plan calls for plating steep slopes with rock to emulate historic underground development rock piles. Please clarify how emulating historic underground development rock piles helps to achieve the post-mining land use of rangeland/wildlife habitat. In addition, specify the location and approximate size of any proposed rock piles.
11. Table A-1 of the Baseline Technical Report from Arcadis lists several different noxious weeds which were observed at the mine site. The Applicant has indicated a third party contractor sprays for noxious weeds annually. Please clarify if the Operator has an approved Weed Control Plan. If there is not an approved Weed Control Plan in place, then one should be developed as part of the review of MLE2. The Weed Control Plan should include the following:
  - a) A list of potential species of noxious weeds that may occur on the site.
  - b) A description of the various control methods that will be employed such as mechanical, chemical or biological control.
  - c) A monitoring plan that specifies how often the Operator will monitor the site for noxious weeds and the steps to be taken if noxious weeds are observed.
  - d) A post-treatment monitoring plan to determine control effectiveness.
  - e) A commitment the Weed Control Plan will be implemented for the life of the permit.

12. There is no mention in the Reclamation Plan of how the water treatment ponds at the terminus of the Carlton Tunnel will be reclaimed. Please specify how the Operator intends to reclaim this area.
13. Section 12.4.5 of the Reclamation Plan states the fill material which will be placed onto the haul roads typically contains soil. Any haul road that will be revegetated should receive a cover of topsoil to ensure the establishment of a diverse and long lasting vegetative cover. Please commit to replacing topsoil over the haul roads in the same manner in which topsoil will be replaced over other disturbed areas.
14. Section 12.3.3 of the Reclamation Plan states the fertilizer blend and application rates will be determined from the results of soil analyses and observations of the specific reclamation areas. The Baseline Technical Report from Arcadis indicates the suitability rating of the various Soil Map Units ranges from Good to Poor. Please specify how the soil analyses will be conducted given that each stockpile will likely contain soils that exhibit a range of Good to Poor suitability ratings. When will soil analyses occur? How many samples will be collected for each of the stockpiles? How will the Operator ensure the collected sample is representative of the soils in the stockpile?

#### **6.4.21 Exhibit U – Designated Mining Operation Environmental Protection Plan**

15. Pursuant to Rule 6.4.21(17)(c), the Operator is to provide for each soil map unit, in tabular form, all data from analyses of representative samples of surface and subsurface soil units as to soil pH, texture, electrical conductivity, and sodium adsorption ration. Alternately, the Operator may provide a plan of experiments to determine the type, form and amount of any soil amendments that may be necessary to fulfill the requirements of the Reclamation Plan. Please provide the Division with this information (see comments under No. 15).
16. The Arcadis Baseline Technical Report concluded that project activities will likely result in the loss of critical habitat for mule deer and potentially nesting habitat for raptors. Pursuant to Rule 6.4.21(18)(a), please adequately describe mitigation measures to ensure there is no overall net loss of important wildlife habitat.
17. The Arcadis Baseline Technical Report identified several areas that may potentially support red-tailed hawks. The wildlife survey was conducted in 2011. Please indicate if any subsequent surveys have been conducted for raptor nests in the areas identified by Arcadis. If not, please commit to conducting a survey for raptor nests prior to disturbing these areas and commit to working with CDOW to identify mitigation measures in the event raptor nests are found.
18. The Applicant has designated 'Wildlife Habitat' as one of the post-mining land uses. The Reclamation Plan for the Cresson Project is directed towards creating habitat for larger game species. Please specify what measures will be taken to create habitat for smaller non-game species.

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John W. Hickenlooper  
Governor

Mike King  
Executive Director

Loretta E. Pineda  
Director

July 23, 2012

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

**RE: Cresson Project; DRMS File No. M-1980-244;  
Amendment 10 (AM10) Preliminary Adequacy Review**

Dear Mr. Comer:

The Division of Reclamation, Mining and Safety (Division) has completed its preliminary adequacy review (PAR) of your 112d-3 Reclamation Permit Amendment Application (AM10)/Mine Life Extension 2 (MLE2) for the Cresson Project. The application was received on February 28, 2012. On March 5, 2012 the Division determined that the permit amendment application is "filed" as that term is defined in Rule 1.1(20.1) of the Mineral Rules and Regulations of the Colorado Mined Land Reclamation Board (MLRB). Also on March 5, 2012, the Division determined that the application is complex as that term is defined in Rule 1.1(10) and reset the decision date for the application from June 3, 2012 to August 2, 2012. This was done in accordance with Rule 1.4.1(7). During the public comment period which ended on May 1, 2012, 20 days after the last public notice was published, pursuant to Rule 1.7.1(2)(a), objections were received by the Division. The receipt of objections adds 30 days to the decision date, resetting the decision date to **September 3, 2012**. The receipt of objections may require a formal hearing before the MLRB. A 30-day notice is required for objectors prior to a formal hearing. As such, the earliest possible date for which a hearing could be scheduled is September 12<sup>th</sup> – 13<sup>th</sup>, 2012. The Division has received and approved a request from CC&V to extend the decision date to **September 13, 2012** in order to accommodate the formal hearing.

Please be advised that if you are unable to satisfactorily address any concerns identified in this review before the decision date, **it will be your responsibility to request an extension of the review period**. 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 will deny this application.

The review consisted of comparing the application content with specific requirements of the Hard Rock Act, 34-32-101 *et seq.*, C.R.S. (the Act) and the Minerals Rules and Regulations of the Colorado Mined Land Reclamation Board for Hard rock, Metal and Designated Mining Operations (Rules). Any inadequacies are identified under the respective exhibit heading along with suggested actions to correct them. In addition to the following comments, other Division staff members have performed preliminary reviews of the AM10 application. A Memorandum from Michael Cunningham is attached as part of this PAR. A memorandum from Berhan Keffelew will be submitted under separate cover. Finally, the Division obtained outside consultant assistance in reviewing more complex geotechnical issues. Comments from their review will also be sent under separate cover.

### APPLICATION

1. Page 5, On Site Processing – based on narrative in Exhibit U, Section 6.1, the Division believes the "second product produced by flotation processes and in-tank leaching processes" is a vat leach operation. As such, the "Vat Leach" box on page 5 should be checked. Please submit a corrected version of the Application page 5.

#### 6.4 SPECIFIC EXHIBIT REQUIREMENTS – 112 OPERATIONS

2. General Comment, Map Scale – the Division notes that Exhibits C-1, C-2, C-3, C-4, C-4a, C-4b, C-5, C-6, C-7 and F-1 are drawn at a scale smaller than 1 inch = 660 feet as stated in Rule 6.2.1(2)(e). However, the Division also notes that the scale of the aforementioned Exhibits is appropriate for what is shown, as is also stated in Rule 6.2.1(2)(e). The Division will not require the Applicant to resubmit these Exhibits in order to change the scale to be larger than 1 inch = 660 feet. No action required by the Applicant.

##### 6.4.1 EXHIBIT A – Legal Description

3. Legal Description of Permit Boundary, Section 19 – the legal description in Exhibit A for Section 19, Township 15 South, Range 69 West is inconsistent with the MLE2 permit boundary drawn on Drawing C-1 and the intent to construct the Squaw Gulch Valley Leach Facility (SGVLF). Based on Drawing C-1, it appears all of Section 19 SW ¼ is within the permit boundary, not just portions as indicated. Please provide corrections or clarification as to what portions of the SW ¼ are not in the permit boundary and how these portions will not be affected by the SGVLF.
4. Legal Description of Permit Boundary, Section 30 – the legal description in Exhibit A for Section 30, Township 15 South, Range 69 West is inconsistent with the MLE2 permit boundary drawn on Drawing C-1. Based on Drawing C-1, it appears not all of Section 30 SE ¼ is within the permit boundary. Please provide corrections or clarification as to what portions of the SE ¼ are not in the permit boundary.

##### 6.4.2 EXHIBIT B – Index Map

This Exhibit is adequate as submitted.

##### 6.4.3 EXHIBIT C – Pre-mining & Mining Plan Maps

5. Exhibit C-1 – Please respond to the following comments:
- The 200-foot permit boundary offset line is not labeled or listed in the legend. Please label and/or add the offset boundary to the legend.
  - There are several properties excluded from the permit boundary in the SE ¼ of Section 24 and the NE ¼ of Section 25. There is no 200-foot offset line in this area which might exclude some smaller properties. Is the 200-foot offset boundary omitted on purpose in these areas? If so, it may help in addressing some discrepancies between Drawing C-1 and Exhibit O (please see Comment 5d below).
  - Drawing C-1 is not signed. Pursuant to Rule 6.2.1(2)(b), maps must be prepared and signed by a registered land surveyor, professional engineer, or other qualified person. Please include a signature on the revised Exhibit.
  - There are several properties found on Drawing C-1 that appear to be within 200 feet of the permit boundary, but are not listed in Exhibit O. Please provide clarification as to why each property in the following list is not included in Exhibit O.

MSID or Other ID No.	Appears Within 200' of Boundary on Dwg. C-1	Listed in Exhibit O?	Drawing C-1 Location by PLSS Section No.
F	YES	??	21
G	YES	??	28
7852	YES	no	24
9345	YES	no	25
9363	YES	no	8
9378	YES	no	21
9479	Possibly	no	24
10006	YES	no	8

MSID or Other ID No.	Appears Within 200' of Boundary on Dwg. C-1	Listed in Exhibit O?	Drawing C-1 Location by PLSS Section No.
10014	YES	no	8
10293	YES	no	7
10453	YES	no	9
10667	YES	no	8
10734	YES	no	21
10890	YES	no	8
10890	YES	no	8
11675	YES	no	8
11935	YES	no	8
12998	YES	no	9
13760	YES	no	9
14543	YES	no	7
14638	YES	no	9
17208	YES	no	8
H	YES	no	21

6. Drawing C-1a – Please respond to the following comments:
  - a. Drawing C-1a is not signed. Pursuant to Rule 6.2.1(2)(b), maps must be prepared and signed by a registered land surveyor, professional engineer, or other qualified person. Please include a signature on the revised Exhibit.
  - b. There is one property found on Drawing C-1a that appears to be within 200 feet of the permit boundary, but is not listed in Exhibit O. Please provide clarification as to why the property labeled as “002 – Ragan, Michael A” is not included in Exhibit O.
7. Drawing C-2 – There are two sediment control ponds labeled “EMP 006”: one in Section 30, the other in Section 31. Please relabel as appropriate.
8. Drawing C-3 – Please add the proposed permit boundary to Drawing C-3.
9. Drawing C-4 – The legend in Drawing C-4 includes a water line. The Division cannot find a water line on the drawing. Was the water line omitted or should it be eliminated from the legend?
10. Drawing C-5 – Active mining in the North Cresson Mine (Globe Hill) area in years 2020, 2021, and 2024 – 2025 appear very close to the permit boundary and the Mollie Kathleen tourist mine.
  - a. Has CC&V considered the impact blasting in that area may have on the safety and stability of the tourist mine? Please provide a narrative.
  - b. Does CC&V have accurate underground maps of the Mollie Kathleen Mine that can be used to assess the proximity of the tourist mine’s underground workings to the planned North Cresson pit wall? Please provide a narrative.
11. Drawing C-6 – Please clarify what time-frame of the mine process is presented on the plan view in the upper left corner of the drawing.

#### **6.4.4 EXHIBIT D – Mining Plan**

Comments on Exhibit D are presented in the appropriate sections of Exhibit U below.

#### **6.4.5 EXHIBIT E - Reclamation Plan**

Comments on Exhibit E are presented in the attached memorandum from Michael Cunningham.

**6.4.6 EXHIBIT F - Reclamation Plan Map**

Comments on Exhibit F are presented in the attached memorandum from Michael Cunningham.

**6.4.7 EXHIBIT G – Water Information**

Comments on Exhibit G are presented in the appropriate sections of Exhibit U below.

**6.4.8 EXHIBIT H – Wildlife Information**

Comments on Exhibit H are presented in the attached memorandum from Michael Cunningham..

**6.4.9 EXHIBIT I - Soils Information**

Comments on Exhibit I are presented in the attached memorandum from Michael Cunningham.

**6.4.10 EXHIBIT J - Vegetation Information**

Comments on Exhibit J are presented in the attached memorandum from Michael Cunningham.

**6.4.11 EXHIBIT K – Climate**

This Exhibit is adequate as submitted.

**6.4.12 EXHIBIT L – Reclamation Costs**

This Exhibit is adequate as submitted.

**6.4.13 EXHIBIT M – Other Permits and Licenses**

12. Dam permits – Related to Comment 29c below, if either of the SGVLF Phase 1 or Phase 2 Sediment Ponds is jurisdictional, a permit will need to be obtained from the Office of the State Engineer (OSE). Please clarify whether or not a dam permit will be needed for either sediment pond. (*Note: the OSE defines a dam as jurisdictional if it exceeds 10 feet in height measured vertically from the elevation of the lowest point of the natural surface of the ground where that point occurs along the longitudinal centerline of the dam up to the crest of the emergency spillway of the dam*).
13. Well permits – Please comment on whether new monitoring wells are anticipated for AM-10 and if monitoring wells are to be installed, will they be permitted with the Office of the State Engineer.
14. Highway 67 relocation – Are Colorado Department of Transportation (CDOT) permits expected for any of the activities associated with the temporary tunnel or other aspects of the highway relocation discussed on page 7-9 of Exhibit U?

**6.4.14 EXHIBIT N – Source of Legal Right to Enter**

This Exhibit is adequate as submitted.

**6.4.15 EXHIBIT O – Owner(s) of Record of Affected Land (Surface Area) and Owners of Substance to be Mined**

15. There are several properties found in Exhibit O that appear to be within 200 feet of the permit boundary as found on Map C-1, but are not check as such in the last column in Exhibit O. Please provide clarification as to why each property in the following list is not checked off as such in Exhibit O.

MSID or Other ID No.	Checked as Within 200' of Boundary in Exh. O	Appears Within 200' of Boundary on Exh. C-1	Exhibit O Name of Addressee
9878	no	YES	Abbott, Melvin
9007	no	YES	Brown, Bayne



MSID or Other ID No.	Checked as Within 200' of Boundary in Exh. O	Appears Within 200' of Boundary on Exh. C-1	Exhibit O Name of Addressee
10783	no	YES	Cr Ck & Victor Narrow Gauge RR
13250	no	YES	Cr Ck Gold Mining Corp
10262	no	YES	El Paso Gold Mines Inc
11455	no	YES	El Paso Gold Mines Inc
9084	no	YES	Everhart, Jack F
8244	no	YES	Fay, W O ...
9878	no	YES	Abbott, Melvin
9345	no	YES	James, Richard K
9693	no	YES	James, Richard K
10014	no	YES	Kirkpatrick, Ed ...
10428	no	YES	Mar Holdings
13650	no	YES	Marston, Thaleia ...
9878	no	YES	Abbott, Melvin
10262	no	YES	El Paso Gold Mines Inc
10800	no	YES	Shiloh Plain Inc
9249	no	YES	Wagner, Nicholas A
9665	no	YES	Wallace, John Jacob

#### **6.4.16 EXHIBIT P – Municipalities Within Two Miles**

This Exhibit is adequate as submitted.

#### **6.4.17 EXHIBIT Q – Proof of Mailing of Notices to Board of County Commissioners and Soil Conservation District**

This Exhibit is adequate as submitted.

#### **6.4.18 EXHIBIT R – Proof of Filing with County Clerk and Recorder**

This Exhibit is adequate as submitted.

#### **6.4.20 EXHIBIT T – Permanent Man-made Structures**

16. Owners of land within 200 feet – Pursuant to Rule 1.6.2(1)(g), the Applicant must provide proof of notice to: a) all Owners of Record of the surface and mineral rights of the affected land, and b) the Owners of Record of all land surface within 200 feet of the boundary of the affected lands. The “OMLR Compliance List” at the beginning of the Application (reference page 2, Rule 1.6.2(1)(g)) states proof of notices will be submitted upon receipt of return receipts. The Division has not received these proofs of notice. Please provide copies of the return receipts.
17. Proposed North Cresson Blasting – The letter from Matheson Mining Consultants (reference Appendix 5, Volume III) notes the ongoing blasting and monitoring programs demonstrates compliance with blast vibration regulations and precludes damage to sensitive structural elements in homes including historically significant structures. Given the proximity of proposed blasting in the North Cresson (Globe Hill and Schist Island) to the Mollie Kathleen Tourist Mine, the Division is concerned about the effects blasting may have on the Mollie Kathleen underground workings, mine operators and tourists. Please provide the Division assurance that the underground workings and the safety of people in those workings have been considered in the blasting analysis.

#### **6.4.21 EXHIBIT U – Designated Mining Operations Environmental Protection Plan**

18. Page 4-8, 2<sup>nd</sup> and 3<sup>rd</sup> bullets – The statement that “All precipitation water infiltrating to ground water through MLE2 mine facilities ... will pass by subsurface flow paths through the diatreme ...” and a similar statement in the third bullet, appears inconsistent with the fact that some proposed MLE2 facilities (e.g., East Cresson Mine Wildhorse Extension, north edge of East Cresson Overburden Storage



Area, and SGVLF – Adsorption, Desorption and Recovery Plant (ADR) and underdrain ponds) will extend beyond the delineated edge of the diatreme (reference Drawings C-4, C-4a and C-7). Please provide some narrative to correct or substantiate the statements in the second and third bullets.

19. Page 4-19, 3<sup>rd</sup> paragraph – Please elaborate on the last statement the historic mine features have some influence on the current groundwater quality. Is this influence potentially significant? If so, can it be quantified? If not, is it important?
20. Page 5-5, Table 5-1 – Should the 7<sup>th</sup> row from the bottom refer to reclamation of Arequa Gulch Adsorption, Desorption and Recovery Plant (AGADR) Facilities, not just AGADR?
21. Page 5-7, 4<sup>th</sup> paragraph – Should the volume of potentially suitable soil in the MLE2 development be 1.9 “million” cubic yards?
22. Page 6-10, Section 6.3.2 – The High Grade Mill Facility will hold, convey, contain, and/or transport designated chemicals used in the extractive metallurgical process. Pursuant to Rule 6.4.21(10)(a), the Applicant must provide design specifications certified by a licensed professional engineer for all Environmental Protection Facilities intended for that purpose. There is not an engineer’s stamp and signature on the preliminary design summary presented in Appendix 10, Volume VI – Design Summary Squaw Gulch High Grade Mill Facilities. Please have the responsible engineer from FL Smidth stamp and seal the last page of the design summary that precedes the series of drawings in Appendix 10, Volume VI. (*Note: Colorado statutes require the certifying engineer to be licensed in Colorado*).
23. Page 7-8, 1<sup>st</sup> paragraph – the “post-closure” pregnant solution storage area (PSSA) drains are to be drilled a minimum of 10 feet into the diatreme (note: this is also discussed in the last paragraph on p. 7-10). Based on Figure 3 (Appendix 9) the drilled shafts under the PSSA originate approximately 180 horizontal feet outside the diatreme. Please provide some discussion addressing:
  - a. The selection of a minimum 10-foot penetration into the diatreme,
  - b. How it will be verified that the drilled shafts are terminated the proposed minimum 10 feet into the diatreme, and
  - c. How an angle for the drilled shafts will be selected to ensure the hydraulic gradient of the shaft will sufficiently compensate for the permeability of the material encountered in the first 180 horizontal feet of the proposed shaft.
24. Page 7-9, last paragraph – There are some areas within the SGVLF footprint with 1H:1V side slopes. How does the Applicant intend to keep drain cover fill (DCF) stable on a 1H:1V slope after construction and prior to ore loading?
25. Page 7-10, 5<sup>th</sup> paragraph – A three-foot layer of structural fill (and possibly geogrid and/or geotextile) is proposed to control differential settlement of the SGVLF over portions of the regraded SGOSA. Furthermore, section 7.2.7.1 (reference pp.7-15 – 16) states settlements will likely range from 2.4 to 29 inches. Please substantiate how the liner can tolerate 29 inches of differential settlement.
26. Page 7-15, Section 7.2.6 – This section states the SGVLF sediment ponds will be designed to store twice the runoff from the 25-year, 24-hour storm event. Appendices 9 and 12 state the design volume is two times the 10-year, 24-hour storm event runoff. Please clarify and correct the statement(s) in error.
27. Page 8-4, Section 8.2 – The SGADR will hold, convey, contain, and/or transport designated chemicals used in the extractive metallurgical process. Pursuant to Rule 6.4.21(10)(a), the Applicant must provide design specifications certified by a licensed professional engineer for all Environmental Protection Facilities intended for that purpose. There is not an engineer’s stamp and signature on the preliminary design summary presented in Appendix 10, Volume VI – Squaw Gulch Valley Leach Facility and ADR Process Description & Design Basis. Please have the responsible engineer from FL Smidth stamp and seal the last

page of the design summary that precedes the series of drawings in Appendix 10, Volume VI. (*Note: Colorado statutes require the certifying engineer to be licensed in Colorado*).

28. Page 9-6, 3<sup>rd</sup> paragraph and page 12-8, 4<sup>th</sup> paragraph – The Division questions the selection of 100 feet for the height of highwalls to be fenced off. Falls from a height significantly less than 100 feet could be equally fatal. Please provide some discussion on the 100-foot criteria.
29. Page 10-1, Surface water Management – Please respond to the following comments:
  - a. Why was a 2.7-inch design storm was used for the 10-year, 24-hour storm event for all areas except the SGVLF and Arequa Gulch Valley Leach (AGVLF)?
  - b. Why is AMEC using a 25-year, 24-hour storm event for detention pond design, when the design criterion is two times the 10-year, 24-hour storm event?
  - c. Related to Comment 12, the Division's review of the Phase 1 and 2 sediment ponds for the SGVLF (reference Drawings A505 and A520), and storm water management plan sediment pond designs (reference Appendix 12, Volume VI, Drawing Nos. CCV10-SA4, -SA5; specifically EMP-8a, -09, -16, -17M, -18, -20 and -21) appear to exceed the 10-foot height limit for non-jurisdictional dams. Please substantiate why these ponds are non-jurisdictional or commit to getting dam construction permits from the OSE for each jurisdictional dam.
  - d. The Division's review of the Phase 1 and 2 sediment ponds for the SGVLF (reference Drawings A505 and A520), and EMP-8a (reference Appendix 12, Volume VI, Drawing No. CCV10-SA5) indicate these ponds have no spillways. Even if they are "zero-discharge" ponds, a spillway is required to pass the peak flow resulting from the 100-year, 24-hour storm event. Please provide spillway designs certified by a licensed professional engineer for these ponds.
  - e. The Division's review of the SGVLF Phase 1 diversion channel (reference Drawings A505 and A520) indicate there is no designed conveyance for over 200 feet between the pond and sta. 0+00 of the channel. Please explain the lack of designed conveyance. (*Note: the proposed diversion channel would be expected to bring much higher flows to this reach than what the reach has been exposed to prior to receiving flows from the diversion channel*).
  - f. North arrows are useful in orienting drawings. Please resubmit all six drawings in Appendix 12, Volume VI with north arrows for each plan view.
30. Page 10-5, last paragraph – Hay bales attract large game animals such as deer and elk, which eat the hay and destroy the BMP. Please confirm the use of "hay" in the last paragraph is a typographic error and that straw will be the only material used in bales for this project.
31. Page 11-1, Surface water monitoring – Poverty Gulch is not mentioned in this section. Please provide a discussion on surface water monitoring in Poverty Gulch.
32. Page 11-4, LVSC system monitoring – Given the requirement to maintain less than two feet of head on the low volume solution collection (LVSC) liner and the pumping rates observed in the AGVLF LVSC sumps, the Division requests the Applicant commit to monitoring water levels in the SGVLF at least daily, as is current practice in the AGVLF.
33. Page 12-10, section 12.4.2 – The Applicant cites changing conditions and project economics for reasons to vary the amount of backfilling in the mine pits. The Division understands the difficulty in committing to such a large undertaking. However, safety, water quality and aesthetics are important considerations to be considered in the reclamation phase of the Cresson Project. Furthermore, economics should not be a major reason for reducing the planned backfill during reclamation. In order to prevent major disagreements between the Applicant and the Division during the reclamation phase, the Division requests the Applicant commit to a minimum level of pit backfilling, should conditions shift to the impractical. These criteria

should indicate which areas have the highest priority for backfilling and which are the lowest. These criteria should stress safety, water quality and aesthetics (and others if appropriate) as reasons for ranking.

34. Page 12-14, 3<sup>rd</sup> paragraph – the Applicant states the relocated Grassy Valley stormwater drainage will be lined with clay to prevent infiltration into the active mining area. Flow velocities (transporting colloidal silts) in excess of five feet per second can erode the clay lining. Please discuss how the clay lining will be protected from erosion.
35. Page 12-16, 2<sup>nd</sup> paragraph – the Applicant states that portions of benches created during operations will be retained and the overall reclaimed slope of the VLF will be 2.5H:1V. Please provide a minimum criterion for intrabench slopes for reclamation.

Additional comments on elements related to Exhibit U are presented in a memorandum from Berhan Keffelew are to be submitted under separate cover.

### **6.5 GEOTECHNICAL STABILITY EXHIBIT**

35. Given the DCF sloughing event that occurred in April 2012, please comment on the stability of the DCF on the SGVLF liner system prior to ore placement.

### **OBJECTOR COMMENTS**

36. Kirby Hughes Comment No. 3 – Please provide some background discussion on the rationale to puncture the VLF liner after rinsing the VLF for the purpose of reclamation.
37. Letter from Janet A. Kunz – Please respond to Ms. Kunz's concerns regarding the remains of her son, Wayne B. Tease.
38. State Historic Preservation Office – Please provide an update on the status of the "previously agreed to documentation of five (5) sites located within the Cripple Creek & Victor Gold Mine (CC&V), Cresson Project, Amendment (AM) #9 area". (*reference March 26, 2012 letter signed by Edward C. Nichols*).

Please be advised the Cresson Project Amendment 10 Application may be deemed inadequate and the application may be denied on **September 13, 2012** unless the abovementioned adequacy review items are addressed to the satisfaction of the Division. If you feel more time is needed to complete your reply, the Division can grant an extension to the decision date. This will be done upon receipt of a written waiver of your right to a decision by **September 13, 2012** and request for additional time. This must be received no later than the deadline date.

If you have any questions, please contact me (303-866-3567 ext. 8169).

Sincerely,



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

Enclosure

cc: Tony Waldron, DRMS,  
Tom Kaldenbach, DRMS  
Berhan Keffelew, DRMS  
Michael Cunningham, DRMS