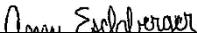




**COLORADO DIVISION OF RECLAMATION, MINING AND SAFETY**  
**MINERALS PROGRAM INSPECTION REPORT**  
**PHONE: (303) 866-3567**

The Division of Reclamation, Mining and Safety has conducted an inspection of the mining operation noted below. This report documents observations concerning compliance with the terms of the permit and applicable rules and regulations of the Mined Land Reclamation Board.

|  |  |   |                             |
|--|--|---|-----------------------------|
| <b>MINE NAME:</b><br>Cresson Project                           | <b>MINE/PROSPECTING ID#:</b><br>M-1980-244     | <b>MINERAL:</b><br>Gold   | <b>COUNTY:</b><br>Teller    |
| <b>INSPECTION TYPE:</b><br>Monitoring                          | <b>INSPECTOR(S):</b><br>Amy Eschberger         | <b>INSP. DATE:</b><br>December 9, 2015                            | <b>INSP. TIME:</b><br>10:15 |
| <b>OPERATOR:</b><br>Cripple Creek & Victor Gold Mining Company | <b>OPERATOR REPRESENTATIVE:</b><br>Chris Hanks | <b>TYPE OF OPERATION:</b><br>112d-3 - Designated Mining Operation |                             |

|   |  |   |
|---|--|---|
| <b>REASON FOR INSPECTION:</b><br>Normal I&E Program | <b>BOND CALCULATION TYPE:</b><br>None  | <b>BOND AMOUNT:</b><br>\$173,434,420.00     |
| <b>DATE OF COMPLAINT:</b><br>NA                     | <b>POST INSP. CONTACTS:</b><br>None  | <b>JOINT INSP. AGENCY:</b><br>None          |
| <b>WEATHER:</b><br>Clear                            | <b>INSPECTOR'S SIGNATURE:</b><br> | <b>SIGNATURE DATE:</b><br>December 21, 2015 |

**GENERAL INSPECTION TOPICS**

This list identifies the environmental and permit parameters inspected and gives a categorical evaluation of each. No problems or possible violations were noted during the inspection. The mine operation was found to be in full compliance with Mineral Rules and Regulations of the Colorado Mined Land Reclamation Board for the Extraction of Construction Materials and/or for Hard Rock, Metal and Designated Mining Operations. Any person engaged in any mining operation shall notify the office of any failure or imminent failure, as soon as reasonably practicable after such person has knowledge of such condition or of any impoundment, embankment, or slope that poses a reasonable potential for danger to any persons or property or to the environment; or any environmental protection facility designed to contain or control chemicals or waste which are acid or toxic-forming, as identified in the permit.

|  |  |                                 |
|--|--|---------------------------------|
| (AR) RECORDS----- <u>Y</u>                 | (FN) FINANCIAL WARRANTY----- <u>N</u>    | (RD) ROADS----- <u>Y</u>        |
| (HB) HYDROLOGIC BALANCE----- <u>N</u>      | (BG) BACKFILL & GRADING----- <u>Y</u>    | (EX) EXPLOSIVES----- <u>N</u>   |
| (PW) PROCESSING WASTE/TAILING---- <u>N</u> | (SF) PROCESSING FACILITIES----- <u>Y</u> | (TS) TOPSOIL----- <u>N</u>      |
| (MP) GENL MINE PLAN COMPLIANCE- <u>Y</u>   | (FW) FISH & WILDLIFE----- <u>N</u>       | (RV) REVEGETATION---- <u>N</u>  |
| (SM) SIGNS AND MARKERS----- <u>N</u>       | (SW) STORM WATER MGT PLAN---- <u>Y</u>   | (CI) COMPLETE INSP---- <u>N</u> |
| (ES) OVERBURDEN/DEV. WASTE----- <u>N</u>   | (SC) EROSION/SEDIMENTATION--- <u>Y</u>   | (RS) RECL PLAN/COMP-- <u>N</u>  |
| (AT) ACID OR TOXIC MATERIALS----- <u>N</u> | (OD) OFF-SITE DAMAGE----- <u>N</u>       | (ST) STIPULATIONS----- <u>N</u> |

Y = Inspected and found in compliance / N = Not inspected / NA = Not applicable to this operation / PB = Problem cited / PV = Possible violation cited

## **OBSERVATIONS**

This was a normal monitoring inspection of the Cresson Project (Permit No. M-1980-244) conducted by Amy Eschberger of the Division of Reclamation, Mining and Safety (Division). Mr. Chris Hanks represented the operator during the inspection. This was a partial inspection conducted as part of the Division's objective to monitor ongoing construction projects at this site on a monthly basis. This is a Regular 112d-3 Designated Mining Operation with an approved permit area of 5,989.7 acres. The site is located between the towns of Cripple Creek, Colorado and Victor, Colorado. The approved post-mining land use is rangeland and wildlife habitat.

The following facilities were inspected:

- Squaw Gulch Valley Leach Facility (SGVLF)
- Arequa Gulch Valley Leach Facility (AGVLF)

After completing the inspection, the Division met with Mr. Lawrence Myers and Mr. Hanks at the operator's office in Victor.

### **SGVLF Inspection:**

Mr. Ron DiDonato accompanied the Division and Mr. Hanks for the SGVLF inspection. The Division observed the following:

- Location of 14 inch diameter barren solution pipeline (**Photos 1 and 2**) and 10-12 inch diameter fresh water pipeline constructed from the Arequa Gulch Adsorption Desorption and Recovery Plant (AGADR) to the Squaw Gulch Adsorption Desorption and Recovery Plant (SGADR) associated with Technical Revision No. 76 (TR-76) approved by the Division on 11/5/2015. The AGVLF barren solution pipeline is located on the AGVLF lined area. The SGVLF barren solution pipeline is located on the SGVLF lined area. Most of the pipeline connecting the barren solution lines will be placed on the lined Mill Platform Drainline Containment Area (MPDCA). A small portion of the connection pipeline will cross an unlined area (between the edges of the MPDCA and the SGVLF lined areas). However, this portion of the pipeline, and a minimum of 10 additional feet on each end (extending onto the lined areas) will be double-walled (i.e., pipe-in-pipe/sleeved) and constructed as to gravity drain to the lined areas on either end in case of a leak. The fresh water pipeline will not follow the same alignment as the barren solution pipeline. The fresh water pipeline will run from the crusher water line toward the water tank (located south of the High Grade Mill), and then from the water tank to the SGADR.
- Location of two new vertical injection wells on northwestern side of AGVLF Phase IV (at 9,950 feet elevation; **Photo 3**). High pH water discharged from the High Grade Mill leach circuit will be pumped via a 4" HDPE pipeline from the High Grade Mill to the AGVLF where it will be injected deep into Phase IV via these two wells. This activity was approved in Amendment No. 10 (AM-10); however, deep injection is an improved method from the surface drip system proposed in AM-10. The operator has found that injecting the high pH water helps reduce the potential for precipitation, and also places it deeper into the heap where it is more readily mixed with process solution. The recently installed wells are very similar to existing wells that were installed in the AGVLF within the past five years. According to the operator, all of the injection wells are monitored regularly for performance and flows are manually directed between the wells. As needed with time, the operator can use the pad injection pump to inject solution at high pressure/volume to flush the area around the wells.

- Soil Liner Fill compaction/moisture conditioning and geomembrane deployment near the northeast corner of SGVLF Phase I (**Photo 4**). Mr. DiDonato indicated that the operational objective is to complete geomembrane liner installation by the end of the week (before the forecasted snowstorm moved through the area).
- Drain Cover Fill (DCF) placement on approved geomembrane liner in SGVLF Phase I (**Photos 5-11**). The operation will attempt to complete DCF placement across all installed and approved liner before the construction season closes. However, the specifications do allow the liner to be exposed for up to 180 days, meaning that if the current construction season ends in December, the operation would have until June 2016 to resume without Amec Foster Wheeler requiring additional conformance testing.

The Division monitored the areas which have received DCF placement for signs of erosion (observed in previous inspections). Previously, the erosion damage appeared to be primarily concentrated in the corners of the Pregnant Solution Storage Area (PSSA) and was attributed to surface water runoff. According to the operator, the DCF washouts were repaired before the PSSA filling activity began. AMEC monitored the repair work at that time, and no damaged liner was encountered. Since that time, the operation has continued to monitor for erosion of the DCF and make repairs as needed. Fresh dozer tracks were observed along contour on the west side of the SGVLF Phase I, evidence of recent DCF grading/repair. All lined areas that have received DCF appeared to be smooth and stable at the time of the inspection.

- Placement of Crushed Ore Fill in the eastern portion of the SGVLF PSSA to create an approximate 100 foot lift to load the PSSA up to the 9,550 foot bench (**Photos 12-14**). Mr. DiDonato discussed the operation's objective to begin circulating fluids in the PSSA in February, 2016. Therefore, the PSSA is expected to be loaded with ore to the 9,550 foot bench within the next few months.
- Ponded water that was observed in the SGVLF PSSA in recent inspections is being backfilled by placement of crushed ore in the PSSA. The Division cited problems for the ponded water in the inspection report for the aerial inspection that was conducted on 08/28/2015. The Division's primary concerns were the potential for wildlife impact, and the potential for geotechnical slope instability problems that may lead to sloughing (of DCF and/or spent ore) on the certified and approved PSSA liner. The operator's response stated that CC&V anticipated eliminating the pool by mid-November. In addition, if there are observations of wildlife in the vicinity of the pooled area, CC&V will provide temporary fencing along the PSSA perimeter in the pooled area. The response also noted that a ramp to the water currently exists which would allow for egress of wildlife.

During the inspection, some displaced water was observed in the PSSA at the other end from where the crushed ore is being placed (**Photos 15 and 16**). Mr. DiDonato estimates the displaced water to currently be approximately one foot in depth, and the water level to be at an elevation of approximately 9,402 feet. The operator was not able to meet the objective to eliminate the pooled water by mid-November. However, it is the understanding of the Division that the water will be backfilled with ore within the next two months. No wildlife was observed in or near the SGVLF PSSA during the inspection.

- Soil Liner Fill (SLF) containment berms that were constructed along the western edges of the SGVLF Phase I geomembrane lined areas (**Photos 17 and 18**). The berms are lined with geomembrane and covered with DCF. The operator listed the SLF berms as a drawing deviation in the Quality Assurance Monitoring and Test Results Final Report for Phase I (9,450 foot to 9,550 foot bench) that was submitted in October. The berms are low-lying with slopes that are steeper than 2H:1V. However,

according to the project specifications, the berms will never be loaded with ore or leached. Mr. DiDonato pointed out during the inspection that the berms are located at least 100 feet from where the spent ore will toe out in the SGVLF (**Photo 19**). The barren solution pipeline was installed approximately 15 feet from the berms. Mr. DiDonato explained the purpose of the berms is to work as a containment feature if the barren solution pipeline were to leak. In this event, the berms should help keep any leaked barren solution on the lined area. Similar berms were also constructed in the AGVLF.

- Continued construction of the SGADR facility (**Photo 20**). This project appears to still be in its phase 1 of construction where mainly support framework is being installed. Several pieces of equipment that will be installed inside the SGADR (e.g., vat leach tanks) were temporarily staged outside of the facility. This equipment is expected to be installed shortly (as part of phase 2 of construction).
- SGVLF High Volume Solution Collection System riser pipes located at southern edge of PSSA; header to be installed shortly (**Photo 21**).
- Location where processed product from the new High Grade Mill is mixed with fresh ore hauled in from the AGVLF load out bin to place into the SGVLF (**Photo 22**). The Division received notice from the operator describing this activity on 11/05/2015. Approximately two 30 yard buckets of processed product is added to each 240 ton load of fresh ore. This activity began in November and is expected to continue throughout the life of the SGVLF.
- Completed SGVLF Phase II stormwater diversion ditches (**Photos 23 and 24**) appeared to be in good repair.

Additionally, the Division discussed with Mr. DiDonato the status of the next Quality Assurance Monitoring & Test Results Final Report that will be submitted this month. This report should include the area of the Phase 1 SGVLF completed during the 2015 construction season above the 9,550 foot bench. On 12/18/2015, the Division completed its review of and accepted the Final Report for Phase I (benches 9,450 feet to 9,550 feet) that was submitted on 10/14/2015.

### **AGVLF Inspection:**

The Division inspected the top surface of the AGVLF (at 10,300 feet elevation) to observe whether the issue with ponding solution is being mitigated. Two problems were cited for this issue in the inspection report for the aerial inspection that was conducted on 08/28/2015. One of the Division's concerns was that the ponded solution exceeded the 3 feet x 3 feet maximum surface area allowed under the operator's Wildlife Protection Plan that was approved by the Division with Amendment No. 10 (AM-10). The other concern was that the ponded solution appeared (in the aerial photographs) to have saturated the surface, in which case it could pose geotechnical slope instability problems. The operator submitted a response to the Division on 09/21/2015 attributing the ponded solution to surficial salt crusting which formed mainly around the misters being used to correct the upset water balance in the AGVLF. According to this explanation, the salt crusts prevented the unevaporated solution from infiltrating the pad efficiently, thus causing an increase in ponding. The operator has since then re-ripped the top surface of the AGVLF where the ponding was prevalent (to break up the crusts), installed sumps, and relocated/rotated flows. Additionally, the operator stated that all misters would be shut off by the end of September, 2015. The operator determined that the ponding does not pose a geotechnical stability issue as there was no evidence found that the ore was saturated below the surface.

At the time of the inspection, the Division noted some small patches of ice and a few small puddles (less than 1 foot x 1 foot in surface area) mainly around the driplines (**Photos 25-32**). However, no evidence of larger scale

solution ponding (as evidenced in the aerial photographs for the 08/28/2015 inspection report) was observed. The Division observed approximately 6-8 inch deep furrows across the top surface that were left by the ripper. It appears that the operator has effectively mitigated the problem of ponding solution on the AGVLF at this time. According to the operation's Environmental Management System (EMS), the AGVLF is inspected daily for operational issues and any identified problems are corrected as soon as possible. During the inspection, a small crew was present on top of the AGVLF inspecting the driplines.

### **Post-Inspection Meeting:**

After the inspection concluded, the Division met with Mr. Lawrence Myers and Mr. Chris Hanks at the operator's office in Victor. The following topics were discussed:

- Points of Compliance groundwater monitoring wells
- Other groundwater sampling locations inside the permit area (not Points of Compliance)
- Locations of groundwater monitoring wells in relation to the permit boundary
- Status of Amendment No. 11, which the operator intends to submit to the Division shortly (after the inspection, AM-11 was received by the Division on 12/17/2015, and is currently under review for completeness).

The Division continues to evaluate the effectiveness of the operator's groundwater quality monitoring plan after the construction of additional facilities associated with Amendment No. 10 (approved 09/13/2012), and anticipated modifications associated with the recently submitted Amendment No. 11. The operator has agreed to provide the Division with a Shapefile or Google Earth Data showing current locations of all groundwater sampling wells inside the permit area; or at a minimum, all Point of Compliance wells. The operator also agreed to provide the Division with the same type of digital file with the revised permit boundary for AM-11. After speaking with Mr. Hanks and Mr. Myers, it appears that these files are already in existence. The Division believes that this file format will be very helpful considering the large size and complexity of the Cresson Project.

This concluded the inspection. No problems were observed.

## PHOTOGRAPHS



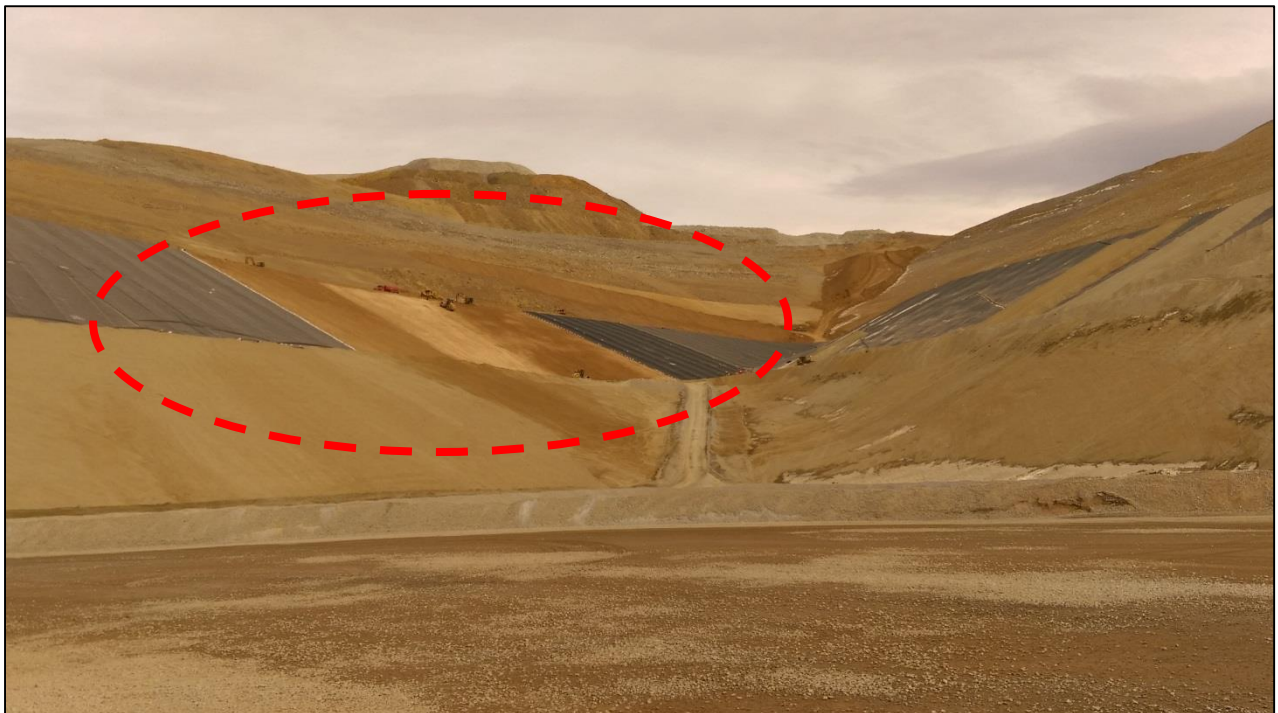
**Photo 1.** View of southwestern corner of High Grade Mill Platform, showing barren solution pipeline installation (incomplete at this time). This pipeline will connect the AGADR to the SGADR.



**Photo 2.** View of southwestern edge of High Grade Mill (HGM) Platform, showing barren solution pipeline installation (incomplete at this time). This pipeline will connect the AGADR to the SGADR. Note side of HGM facility and conveyor at top of platform.



**Photo 3.** View looking south at AGVLF Phase IV, showing approximate location of two new injection wells at 9,950 feet elevation. Wells are located just around edge of bench from where indicated.



**Photo 4.** View looking at northeastern corner of SGVLF, showing Soil Liner Fill compaction/moisture conditioning and geomembrane deployment in Phase I up to 9,550 feet bench (area circled).



**Photo 5.** View looking east from haul road in northwestern portion of Phase I, showing Drain Cover Fill placement on approved geomembrane liner up to 9,550 foot bench.



**Photo 6.** View looking east at eastern side of SGVLF, showing Drain Cover Fill placement on approved geomembrane liner up to 9,550 foot bench of Phase I. Note High Grade Mill facility located at top right.



**Photo 7.** View looking northwest across western side of SGVLF from top of crushed ore lift (inside PSSA), showing Drain Cover Fill (DCF) spread across the slope. Note no DCF erosion evident.



**Photo 8.** View looking northeast across western side of SGVLF Phase I from southwestern corner of the facility, showing Drain Cover Fill (DCF) spread across the slope. Note no DCF erosion evident.



**Photo 9.** View looking northeast across western side of SGVLF PSSA and Phase I from southwestern corner of PSSA, showing Drain Cover Fill (DCF) placed across approved geomembrane liner. Note no DCF erosion evident.



**Photo 10.** View looking east up eastern side of SGVLF, showing Drain Cover Fill placement on approved geomembrane liner up to 9,550 foot bench of Phase I. Note High Grade Mill facility located at top of hill. Portion of access ramp located at bottom left.



**Photo 11.** View looking northeast at northeastern side of SGVLF, showing Drain Cover Fill placement on approved geomembrane liner up to 9,550 foot bench of Phase I.



**Photo 12.** View looking southwest from northeastern corner of SGVLF PSSA, showing Crushed Ore Fill that was added to eastern portion of PSSA to create an approximate 100 foot lift to load the PSSA to the 9,550 foot bench. Note access ramp at left.



**Photo 13.** View looking northwest from northeastern corner of SGVLF PSSA, showing Crushed Ore Fill that was added to eastern portion of PSSA to create an approximate 100 foot lift to load the PSSA to the 9,550 foot bench. Note access ramp at right.



**Photo 14.** View looking northeast from southwestern corner of SGVLF PSSA, showing Crushed Ore Fill that was added to eastern portion of PSSA to create an approximate 100 foot lift to load the PSSA to the 9,550 foot bench. Note displaced water ponded on floor of PSSA (iced over).



**Photo 15.** View looking southwest from top of crushed ore lift, showing displaced water present on SGVLF PSSA floor (iced over). Note SGADR facility located in background (at right).



**Photo 16.** View looking east from southwestern corner of SGVLF PSSA, showing displaced water present on PSSA floor (iced over). Note crushed ore lift present in PSSA at left.



**Photo 17.** View looking at southern edge of geomembrane liner in southeastern corner of SGVLF, showing Soil Liner Fill containment berm constructed along this edge. Note berm is covered with Drain Cover Fill. Also note barren solution pipeline located approximately 15 feet from (left of) the berm.



**Photo 18.** View looking at southern edge of geomembrane liner in southwestern corner of SGVLF, showing Soil Liner Fill containment berm constructed along this edge. Note berm is covered with Drain Cover Fill.



**Photo 19.** View looking northeast from southeastern corner of SGVLF, showing location of HVSCS riser pipes (indicated at left) and approximate location of where ore will toe out (indicated with dashed red line) once facility is loaded to 9,550 elevation.



**Photo 20.** View of SGADR facility located at southwestern corner of SGVLF. The operation appears to be completing support framework of this facility. Inside equipment (e.g, vat leach tanks shown in foreground) is expected to be installed shortly.



**Photo 21.** View looking southeast, showing the four HVSCS riser pipes (circled) located at southern edge of SGVLF; header will be installed soon.



**Photo 22.** View of stockpile of processed product from High Grade Mill (HGM) that is mixed here (east of HGM) with fresh ore hauled in from AGVLF load out bin, then is hauled to the SGVLF PSSA.



**Photo 23.** View of SGVLF Phase II stormwater diversion ditch, which appears to be in good repair.



**Photo 24.** View of SGVLF Phase II stormwater diversion ditch (different ditch than one shown in **Photo 23**), which appears to be in good repair.



**Photo 25.** View of top surface of AGVLF (at 10,300 feet elevation), showing some minor ice around driplines, but no ponding of solution greater than 3 foot x 3 foot in surface area is evident. Note ripped surface.



**Photo 26.** View of top surface of AGVLF (at 10,300 feet elevation), showing no ponding of solution greater than 3 foot x 3 foot in surface area is evident. Note ripped surface.



**Photo 27.** View of top surface of AGVLF (at 10,300 feet elevation), showing some minor ice around driplines, but no ponding of solution greater than 3 foot x 3 foot in surface area is evident. Note ripped surface.



**Photo 28.** View of top surface of AGVLF (at 10,300 feet elevation), showing some minor ice and ponding around driplines, but no ponding of solution greater than 3 foot x 3 foot in surface area is evident. Note ripped surface.



**Photo 29.** View of top surface of AGVLF (at 10,300 feet elevation), showing some minor ice around driplines, but no ponding of solution greater than 3 foot x 3 foot in surface area is evident. Note ripped surface.



**Photo 30.** View of top surface of AGVLF (at 10,300 feet elevation), showing some minor ice around driplines, but no ponding of solution greater than 3 foot x 3 foot in surface area is evident. Note ripped surface.



**Photo 31.** View of top surface of AGVLF (at 10,300 feet elevation) and side of next ore lift, showing no ponding of solution greater than 3 foot x 3 foot in surface area is evident.



**Photo 32.** View of top surface of AGVLF (at 10,300 feet elevation), showing some minor ice around driplines, but no ponding of solution greater than 3 foot x 3 foot in surface area is evident. Note conveyor (near center) which runs from crusher area (at right; not shown) to LOB (at left; not shown). Top of large overburden stockpile in Squaw Gulch Overburden Stockpile Area shown in background (at top left).

**Inspection Contact Address**

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