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

# 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.**

| | | | |
|---|---|---|---|
| **MINE NAME:** Cresson Project | **MINE/PROSPECTING ID#:** M-1980-244 | **MINERAL:** Gold | **COUNTY:** Teller |
| **INSPECTION TYPE:** Monitoring | **INSPECTOR(S):** Elliott R. Russell | **INSP. DATE:** February 14, 2019 | **INSP. TIME:** 09:00 |
| **OPERATOR:** Cripple Creek & Victor Gold Mining Company | **OPERATOR REPRESENTATIVE:** Justin Bills and Katie Blake | **TYPE OF OPERATION:** 112d-3 - Designated Mining Operation | |

| | | |
|---|---|---|
| **REASON FOR INSPECTION:** Citizen Complaint | **BOND CALCULATION TYPE:** None | **BOND AMOUNT:** $208,491,188.00 |
| **DATE OF COMPLAINT:** NA | **POST INSP. CONTACTS:** None | **JOINT INSP. AGENCY:** None |
| **WEATHER:** Clear | **INSPECTOR'S SIGNATURE:**  | **SIGNATURE DATE:** April 8, 2019 |

## GENERAL INSPECTION TOPICS

**This list identifies the environmental and permit parameters inspected. 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---------- Y** | **(FN) FINANCIAL WARRANTY-------- N** | **(RD) ROADS---------- N** |
| **(HB) HYDROLOGIC BALANCE---------- N** | **(BG) BACKFILL & GRADING---------- N** | **(EX) EXPLOSIVES--------- N** |
| **(PW) PROCESSING WASTE/TAILING---- N** | **(SF) PROCESSING FACILITIES------- Y** | **(TS) TOPSOIL---------- N** |
| **(MP) GENL MINE PLAN COMPLIANCE- Y** | **(FW) FISH & WILDLIFE---------- N** | **(RV) REVEGETATION---- N** |
| **(SM) SIGNS AND MARKERS---------- N** | **(SP) STORM WATER MGT PLAN---- N** | **(RS) RECL PLAN/COMP-- N** |
| **(ES) OVERBURDEN/DEV. WASTE--------- N** | **(SC) EROSION/SEDIMENTATION--- Y** | **(ST) STIPULATIONS------- N** |
| **(AT) ACID OR TOXIC MATERIALS------- N** | **(OD) OFF-SITE DAMAGE----------N** | |

**Y = Inspected / N = Not inspected / NA = Not applicable to this operation / PB = Problem cited / PV = Possible violation cited**

## PROBLEMS/POSSIBLE VIOLATIONS

None observed during the inspection.

## OBSERVATIONS

The Division of Reclamation, Mining and Safety (DRMS or Division) conducted an inspection of the Cresson Project, Permit No. M-1980-244 (Permit), a Regular 112d(3) Designated Mining Operation Reclamation Permit with 6,007 permitted acres and an approved post-mining land use of Rangeland and Wildlife Habitat. The mine, operated by the Cripple Creek & Victor Golding Mining Company (CC&V or Operator), is located southeast of Cripple Creek, Colorado and north of Victor, Colorado. Elliott Russell, with the Division, inspected the site. Justin Bills and Katie Blake, representing the Operator, accompanied the inspection. The Operator was also represented by Gary Horton, Justin Raglin, Laurin Colby, and Charles Bissue at times during the inspection.

This inspection was carried out following a citizen's complaint received on February 3, 2019, from Ryan Blevins. Mr. Blevins alleged the Operator was in violation by dumping unmixed mill tailings on the leach pad at the 9950 elevation, dumping mixed tailings at a rate of 25% tailings to 75% crushed ore which exceeds the permitted 10% tailings to 90% crushed ore ratio, and that the Operator is dumping mill tailings over the outside face of the lifts and not staying back 25 feet from the face of the pile. The Division forwarded the complaint (CT-03) to the Operator on February 5, 2018, conducted a permit file review, and scheduled this inspection to investigate the allegation.

Although the High Grade Mill (HGM) tailings were not being transported and dumped on a lift within the Squaw Gulch Valley Leach Facility (SGVLF, a.k.a. VLF2) at the time of the inspection, the Division still inspected the HGM tailings process. From the HGM, tailings are transported uphill by conveyer belt and stockpiled near the Load-Out-Bin (LOB) by a radial stacker (**Photos 1-3**). The Operator has been transporting HGM tailings in a manner that helps reduce the chance of spilling the tailings out of the back of one of a 240 ton haul trucks. This method is referred to as "pancaking" where a haul truck gets loaded with approximately half capacity of crushed ore from the LOB, backs up to the HGM tailings stockpile where a front-end loader loads a couple of buckets of tailings, then goes back to the LOB to finish the load with crushed ore. Pancaking results in having the HGM tailings encapsulated within the crushed ore and helps to prevent spilling tailings while in transport to VLF2. Pancaking also assists with blending the HGM tailings with crushed ore on the dump face of a lift within VLF2 when dumping. The Division observed an internal face of the 9,850' lift where pancaked HGM tailing had been dump and blended on the slope (**Photo 4**).

The Permit requires the Operator to keep the <u>overall</u> ratio of the HGM tailings placed in VLF2 to a mixture of 10% tailings to 90% ore due to geotechnical concerns. This ratio is for the entire valley leach facility and not just each haul truck. The Operator confirmed that on occasion, when the HGM tailings stockpile is at full capacity and the LOB is shut down for maintenance, tailings are transported without crushed ore to a staging stockpile located near the active dump face. Once crushed ore is being hauled again to the VLF, a bulldozer helps blend the staged HGM tailings with each truck load of dumped ore onto the lift face. The Division has observed in the past and is aware of this occasional activity.

The Permit requires the Operator to not dump HGM tailings within 25 feet of the <u>final</u> outside face of a valley leach facility (VLF) due to geotechnical concerns and final reclamation slope grading. The Permit does not limit the Operator from placing tailings on the active dump face while creating and advancing a lift. The Division observed the final outside slopes beneath the current active lift and didn't find any evidence of HGM tailings at the surface (**Photo 5**). The Operator confirmed that they have been following the commitment to not placing HGM tailings within 25 feet of the final outside face of the VLF.

<u>The Operator is in full compliance regarding the dumping of High Grade Mill tailings within VLF2 and no corrective actions or permit revisions are needed at this time.</u>

Following the inspection of the mill tailings process, the Division conducted a normal monitoring inspection of the Cresson Project.

The inspection agenda included the following facilities and areas:

- Arequa Gulch Valley Leach Facility (AGVLF, a.k.a. VLF1);
- Squaw Gulch Valley Leach Facility (SGVLF, a.k.a. VLF2).

Arequa Gulch Valley Leach Facility:
The Division inspected various portions of VLF1 while inspecting the High Volume Solution Collection Systems (HVSCS) and Low Volume Solution Collection Systems (LVSCS) of the four VLF1 phases (Phase I, Phase II/III, Phase IV, and Phase V), and Leak Detection Systems (LDS) of VLF1. No ponded solution was observed while inspecting VLF1. The Division also observed the External Storage Pond (ESP) which contained several feet of frozen precipitation (**Photo 6**). The Low Volume Solution Collection of the ESP was within normal operating levels.

All of the HVSCS and LVSCS levels of the four VLF1 phases were within normal operating levels and no issues were noted (see Attachment A). Phase II/III HVSCS had one of the three pumps down at the time of the inspection. The Operator was currently managing VLF1 leaching operations to have limited reporting of solution to the Phase II/III Pregnant Solution Storage Area (PSSA) while this pump was down for repairs. Due to the limited volume of solution reporting to the Phase II/III PSSA, the two other pumps were ideal until there was enough solution to reinitiate pumping.

All of VLF1 LDS sumps were inspected and were dry except LDS-6, which contained a small amount of water (**Photo 7**). The Operator stated this LDS was sampled on November 28, 2018. The Division expressed concerns that LDS-6 was not completely pumped out after the November sampling event in order for the Operator to determine each week if the water in the sump was new and needed to be sampled again. The Operator stated that their sampling pump could not completely remove all of the water from the sumps, however stated they would work on a solution, such as using an absorbent blanket or placing a small removable bucket beneath the sump inlet, to remove the small amounts of water remaining after a sample is taken.

Squaw Gulch Valley Leach Facility:
The Division observed VLF2 from a lookout point on the north side of VLF1 (**Photos 8 and 9**). The Division also inspected various portions of VLF2 while inspecting the High Volume Solution Collection System (HVSCS), Low Volume Solution Collection System (LVSCS), Leak Detection Systems (LDS), and the Underdrain of VLF2. No ponded solution was observed while inspecting VLF2.

All VLF2 HVSCS and LVSCS levels were within normal operating levels and no issues were noted (see Attachment A).

All of VLF2 LDS were inspected and found to be dry.

The washout located on the crest of the final outside slope of the 9,850' lift, previously observed during the December 20, 2018 DRMS inspection, was actively being backfilled during this inspection (**Photo 10**).

The Division also observed an area where a small washout displaced Drain Cover Fill (DCF) southwest of the 2018 liner repair area (**Photo 11**). A Newfields QA/QC personnel was observing the replacement of DCF to ensure the repair work was being done in accordance with the permit.

This concludes the Division's Inspection Report; a subset of photographs taken during the inspection are included below. For any additional information or questions, please contact me at Division of Reclamation, Mining and Safety, 1313 Sherman Street, Room 215, Denver, CO 80203, by telephone at **303-866-3567 x8132**, or by email at elliott.russell@state.co.us.

## PHOTOGRAPHS

**Photo 1**. High Grade Mill, tailings conveyor (dashed yellow oval) and stockpile (red circle); looking northeast.

**Photo 2**. High Grade Mill tailings stockpile area; looking southwest.

**Photo 3**. High Grade Mill tailings stockpile area and the crushed ore Load-Out-Bin; looking east.

**Photo 4**. Dumped High Grade Mill tailings (yellow circle) and crushed ore on an internal face of the 9,850' lift; looking south.

**Photo 5**. Final outside face of VLF2; looking northeast.

**Photo 6**. External Storage Pond; looking southwest.

**Photo 7**. VLF1 LDS-6; looking down.

**Photo 8**. Overview of VLF2; looking northwest.

**Photo 9**. Overview of VLF2; looking north.

**Photo 10**. VLF2 9,850' lift washout being repaired; looking north.

**Photo 11**. VLF2 Drain Cover Fill being repaired; looking southeast.

**Inspection Contact Address**
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CC: Justin Raglin with CC&V
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Tim Cazier with DRMS
Amy Eschberger with DRMS
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# Attachment A

ATTACHMENT A

| CC&V VLF Water Level Inspection Readings | | | Previous Results | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Date: | | | 3/29/18 | 6/28/18 | 7/31/18 | 9/27/18 | 10/30/18 | 2/14/19 | Notes |
| AREQUA VLF: | | EPS: | TC1 | AME | TC1 | TC1 | AME | ERR | |
| Phase I HVSC & Pond Piezometers | | TIME: | | 12:16 | | 10:28 | 11:17 | 11:48 | |
| Note: 80% cap. @ 63.75 ft | Max. of Pump #299, #300, #301, 302, or #303 (Circle Pump #) | (ft) | -- | | -- | 53.5 | 56.2 | 59.4 | #299 |
| | Pond Lvl / XDCR #1 | (ft) | -- | 13.1 | -- | 52.9 | 11.2 | 59.7 | |
| | System Press / XDCR #2 | (ft) | -- | 12.4 | -- | 38.3 | 15.1 | 42.5 | system head |
| Phase I Low Volume Solution Collection | | TIME: | | 12:22 | | | 11:14 | 11:01 | |
| Note: Req'd < 2 ft | Piezo #1 (HAND) | (ft) | -- | 0.63 | -- | -- | 0.66 | 0.45 | |
| | Piezo #2 (AUTO) | (ft) | -- | 0.79 | -- | -- | 0.79 | 0.83 | |
| Phase II & III HVSC & Pond Piezometer | | TIME: | | 12:21 | | | 11:00 | 11:11 | |
| Note: 80% @ 49.4 ft | Max. of XDCR #4, #5, or #6 (Circle XDCR #) | (ft) | -- | 16.9 | -- | -- | 34.7 | 44 | #6. Note: #5 under repair |
| | Piezo (Pipe) | (ft) | -- | 30.9 | -- | -- | 32.7 | 43.4 | |
| Phase II & III Low Volume Solution Collection | | TIME: | | 12:24 | | | 11:02 | 11:15 | |
| Note: Req'd < 2 ft | Pump / XDCR #1 (AUTO) | (ft) | -- | 0.71 | -- | -- | 0.57 | 0.49 | |
| | Pump / XDCR #2 (AUTO) | (ft) | -- | 0.25 | -- | -- | 0.48 | 0.41 | |
| Phase IV High Volume Solution Collection | | TIME: | 12:43 | 12:43 | | 11:40 | 12:07 | 12:10 | |
| Note: 80% cap. @ 56.5 ft | Max. of Pump #307, #308, or #309 (Circle Pump #) | (ft) | 36.3 | 18.1 | should be fixed < 1 wk | 30.4 | 46.1 | 44.8 | #307 |
| | XDCR pipe (#310 Resv'd) | (ft) | 17.1 | 11.7 | -- | 38.0 | 45.9 | 44.8 | |
| Phase IV Low Volume Solution Collection | | TIME: | | 12:45 | | 11:47 | 12:11 | 12:12 | |
| Note: Req'd < 24" | Pump / XDCR #1 | (in) | -- | 7.4 | -- | 11.2 | 15.2 | 17.2 | |
| | Pump / XDCR #2 | (in) | -- | 11.6 | -- | 12.3 | 12.6 | 12.5 | |
| Phase V High Volume Solution Collection | | TIME: | | | | | 13:25 | 10:35 | |
| Note: 80% cap. @ 36.5 ft | Max. of XDCR #311, #312, #313, or #314 (Circle XDCR #) | (ft) | -- | -- | -- | -- | 31.1 | 31.1 | #311 |
| Phase V Low Volume Solution Collection | | TIME: | | | | | 13:26 | 10:36 | |
| Note: Req'd < 24" | XDCR #001 | (in) | -- | -- | -- | -- | 13.72 | 12.07 | |
| | XDCR #002 | (in) | -- | -- | -- | -- | 15.7 | 17 | |
| External Pond Low Volume Solution Collection | | TIME: | | | | | | 11:00 | |
| Note: Req'd < 24" | Pump / XDCR #1-EXT (AUTO) | (in) | -- | -- | -- | -- | -- | 13.7 | |
| | Pump / XDCR #2-EXT (AUTO) | (in) | -- | -- | -- | -- | -- | 13.8 | |
| Underdrain Discharge Area | | TIME: | | | | | | | |
| Note: 1 ℓ/sec = 15.85 gpm | South Underdrain (S U/D) | (gpm) | -- | -- | -- | -- | -- | -- | |
| | 4" Pipe Discharge AG 01 Spring Pipe | (gpm) | -- | -- | -- | -- | -- | -- | |
| | NPDES Discharge AG 1.5 -001A | (gpm) | -- | -- | -- | -- | -- | -- | |
| | North Underdrain (N U/D) | (gpm) | -- | -- | -- | -- | -- | -- | |
| | 24-inch Solid Pipe | (gpm) | -- | -- | -- | -- | -- | -- | |
| Arequa Gulch Monitor Well Pumpback System | | TIME: | | | | | | | |
| Data first collected by DRMS 3/8/12 | 35A | (in) | -- | -- | -- | -- | -- | -- | |
| | 63B | (ft) | -- | -- | -- | -- | -- | -- | |
| | B63 | (gpm) | -- | -- | -- | -- | -- | -- | |
| | A35 | (gpm) | -- | -- | -- | -- | -- | -- | |
| SQUAW GULCH VLF High Vol. SC: | | TIME: | | 11:27 | 10:12 | | 10:24 | 10:15 | |
| Note: 80% cap. @ 94 ft | LIT #88301 (north end) | (ft) | -- | 46.56 | 70.76 | -- | 55.59 | 83.92 | |
| | LIT #88303 | (ft) | -- | 46.37 | 70.07 | -- | 54.8 | 84.77 | |
| | LIT #88305 | (ft) | -- | 45.7 | 70.07 | -- | 54.97 | 83.54 | |
| | LIT #88307 (south end) | (ft) | -- | 45.24 | 69.55 | -- | 54.6 | 84.99 | |
| | Piezometer-LIT #88314 | (ft) | -- | 52.7 | 77.09 | -- | 62.72 | 84 | |
| SQUAW GULCH VLF Low Vol. SC: | | TIME: | | 11:35 | 10:27 | | 10:27 | 10:20 | |
| Note: Req'd < 24" | Leachate Pump 1 | (in) | -- | 9.3 | pump pulled | -- | 6.4 | 7.0 | |
| | Leachate Pump 2 | (in) | -- | 8.2 | 12.7 | -- | 6.7 | 7.6 | |