




**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>Timothy A. Cazier  | <b>INSP. DATE:</b><br>May 12, 2016                                | <b>INSP. TIME:</b><br>10:00 |
| <b>OPERATOR:</b><br>Cripple Creek & Victor Gold Mining Company | <b>OPERATOR REPRESENTATIVE:</b>            | <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>May 27, 2016  |

**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>N</u>                 | (FN) FINANCIAL WARRANTY----- <u>N</u>    | (RD) ROADS----- <u>Y</u>        |
| (HB) HYDROLOGIC BALANCE----- <u>Y</u>      | (BG) BACKFILL & GRADING----- <u>N</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>Y</u>       | (RV) REVEGETATION---- <u>N</u>  |
| (SM) SIGNS AND MARKERS----- <u>N</u>       | (SW) STORM WATER MGT PLAN---- <u>N</u>   | (CI) COMPLETE INSP---- <u>N</u> |
| (ES) OVERBURDEN/DEV. WASTE----- <u>Y</u>   | (SC) EROSION/SEDIMENTATION--- <u>N</u>   | (RS) RECL PLAN/COMP-- <u>N</u>  |
| (AT) ACID OR TOXIC MATERIALS----- <u>Y</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**

The Division conducted a monitoring inspection of the site on May 12, 2016. Ms. Meg Burt and Mr. Marc Tidquist represented the Operator during various parts of the inspection. Tim Cazier represented the Division. The following facilities were inspected during this site visit:

- High Grade Mill – platform seep, spill observations, status, field investigation;
- Arequa Gulch Valley Leach Facility (AGVLF) – Injection wells, HVSCS/LVSCS water levels;
- Squaw Gulch Valley Leach Facility (SGVLF) – PSSA pond status;

### **On Site Meeting:**

After the inspection the Division representatives met with Ms. Meg Burt and Mr. Tidquist to discuss the following permit related issues:

- I. Relocating American Eagles overlook items to elsewhere within the permit boundary. The Division will need documentation describing how this equipment will be dealt with at final reclamation. We suggest including plans for the new site in an upcoming technical revision. It is not necessary to submit a revision solely for this change.
- II. Status of the wildlife exit ramps in the SGVLF underdrain ponds. CC&V stated they are pumping water from one pond to the other in order to install the exit ramps.
- III. Material Safety Data Sheets for the designated chemicals included in the Tank #5 spill that occurred on 5/11/2016. Mr. Tidquist provided hard copies of the MSDSs for all designated chemicals.
- IV. Acreage Release Request for the Goldfield area. Ms. Burt indicated the mine was working on the submittal. *{Note the Division received the submittal prior to completion of this report}.*
- V. Future reporting thresholds for loss of containment. The Division will work with the mine on clarifying reporting requirements and notification.
- VI. Record Drawings for EPF structures. The Division asked about getting record drawings to help understand designated chemical containment. CC&V suggested the Division define exactly what is needed in order to limit the number of drawings to a practical and useful amount. The Division will provide specifics.

**High Grade Mill:** Messrs. Jeff Winterton and Kevin Riley were on site to discuss the mill discharge, leach circuit primary containment loss (Tank #1), the May 11, 2016 spill, and the mill platform seep investigation:

- a) Mill Discharge – This discharge was previously routed to a trench on the north side of the AGVLF Phase IV pad. This practice was cited as a potential problem in the Division's May 6, 2016 report for the April 28, 2016 inspection. Mr. Winterton provided additional information on the mill discharge. The original design was for the middle mill platform sump (Sump #2) to collect both meteoric water and high pH circuit discharge then convey this to either of the VLF drip line systems or the barren solution pipeline. The mix of these waters was causing chemical precipitates which prevented infiltration. Mr. Winterton explained the mine is now diverting the high pH water from Sump #2 via a newly installed "valve box" (see **Photos 1** and **2**), and pumping it to one of two injection wells (see **Photo 3**) above and to the southwest of the aforementioned AGVLF infiltration trench.

The Division observed no discharge into the infiltration trench and the required extra bird balls appeared to have been placed (see **Photo 4**). With the bird balls in place, the Division could not determine whether any water remained in the infiltration trench. CC&V notified they stopped discharging to this trench on May 6, 2016.

- b) Leach circuit Tank #1 – Tank #1 overflow was cited as a possible violation in the Division's May 6, 2016 report for the April 28, 2016 inspection for failure to notify the Division and to maintain the secondary containment capacity. Mr. Riley explained the concentration circuit pumps were undersized and the viscosity of the fluid kept the pumps from performing as expected. Furthermore, the frother and promoter additives overdosed the solution and the resulting bubbles prevented the flow from entering the overflow pipe. The material observed within the secondary containment is fine grind with little water. However, Mr. Riley explained that the material had enough water in it that the cold temperatures on site kept it frozen until early the week of May 9<sup>th</sup> when cleanup of the fine grind was initiated. He stated the last time Tank #1 overflowed was in November/December 2015. Messrs. Winterton and Riley estimated the rotational speed of the paddle in the leach tanks to be on the order of 30 rpm, thus not likely the cause of the observed splatter on the adjacent building. They attributed this splatter to high winds catching the froth at the crest of Tank #1.

The mine began upgrades to the system beginning in February 2016. The upgrades included the addition of 24-inch diameter pipes to increase the flow capacity as well as replacing the pumps with new larger capacity pumps that he expects to be installed and operational by early June 2016. He expressed confidence that the upgrades would prevent future spills. Mine personnel are using hoses to wash the fine grind into the secondary sump to be pumped back into the leach circuit. They thought the process would take longer than the May 20 corrective action deadline to complete. While onsite the Division observed a crane (see **Photo 5**) placing a manlift in the secondary containment area. Mr. Riley indicated the manlift was needed for the pump replacement effort.

- c) May 11, 2016 spill – On May 11, 2016 CC&V telephoned to notify the Division that Frother Tank #5 backed up and spilled approximately 130,000 gallons of process water (none cyanide containing). The volume of the spill exceeded the capacity of the sumps within the mill building. Mr. Winterton provided some more background during the inspection. Tank #5 was observed where Mr. Winterton explained the failure of both dart valves controlling outflow from the tank. The mill building sumps were observed to be in working order (see **Photo 6**) and no flow was exiting the building (see **Photo 7**).
- d) Mill platform seep - Mr. Winterton provided new information regarding the previously observed seep on the southwest corner of the mill platform. CC&V discovered the source of the majority of the water was from significant leaks in the mill's fire suppression system. He stated two joints had been repaired and the mine is considering replacing other joints supplied by the same manufacturer. As such the majority of the water released was fresh water and the staining was due primarily to interaction with the waste rock from which the mill platform was constructed.

AGVLF Inspection: The high and low volume solution collection water levels were recorded. The Division observed the two new injection wells discussed in Item (a) of the High Grade Mill section above. The Division also observed the hydrojex lime injection wells in the Phase II/III area of the pad, approved as part of TR-57 in

2010. No problems or concerns observed.

SGVLF Inspection: Water levels were observed on three of the four transducer displays. CC&V personnel indicated they were still being calibrated, so they are not provided in this report.

Water levels: The inspection continued as the Division visited each of the high and low solution collection system transducers and recorded water level values. The recording sheet is included as **Attachment A**, and the values are summarized below in the Transducer Readings. Mine Low Volume Solution Collection System (LVCS) inspection log books were observed in the Phase IV and V pump shelter buildings.

The North and South Arequa Gulch underdrains were inspected. The South Underdrain discharge was determined to be 10.9 gpm. The North Underdrain was dry. The A35 and B63 pumpback lines were dry.

Transducer Readings:

**Phase I High Volume Solution Collection (readings in ft)**

|                             |                             |
|-----------------------------|-----------------------------|
| <u>Pump #299 / XDCR #xx</u> | <u>Pump #300 / XDCR #00</u> |
| 42.6                        | 33.7                        |
| <u>Pump #301 / XDCR #01</u> | <u>Pump #302 / XDCR #02</u> |
| 22.0                        | 21.5                        |

Pump #303 / XDCR #03  
27.4

**Phase I Low Volume Solution Collection (readings in ft)**

|                           |                               |
|---------------------------|-------------------------------|
| <u>Pond Lvl / XDCR #1</u> | <u>System Press / XDCR #2</u> |
| 42.60                     | 44.10                         |

**Phase I Pond Piezometers (readings in ft)**

|                        |                        |
|------------------------|------------------------|
| <u>Piezo #1 (HAND)</u> | <u>Piezo #2 (AUTO)</u> |
| 0.40                   | 0.62                   |

**Phase II & III High Volume Solution Collection (readings in ft)**

|                       |                       |                       |
|-----------------------|-----------------------|-----------------------|
| <u>Pump / XDCR #4</u> | <u>Pump / XDCR #5</u> | <u>Pump / XDCR #6</u> |
| 13.9                  | 17.0                  | 17.3                  |

**Phase II & III Low Volume Solution Collection (readings in ft)**

|                              |                              |
|------------------------------|------------------------------|
| <u>Pump / XDCR #1 (AUTO)</u> | <u>Pump / XDCR #2 (AUTO)</u> |
| 0.57                         | 0.51                         |

**Phase II & III Pond Piezometer (readings in ft)**

Piezo (Pipe)  
30.90

**Phase IV High Volume Solution Collection (readings in ft)**

|                            |                            |                            |                                |
|----------------------------|----------------------------|----------------------------|--------------------------------|
| <u>Pump #4 / XDCR #307</u> | <u>Pump #5 / XDCR #308</u> | <u>Pump #6 / XDCR #309</u> | <u>XDCR pipe (#310 Resv'd)</u> |
| 19.2                       | 24.5                       | 18.7                       | 19.0                           |

**Phase IV Low Volume Solution Collection (readings in inches)**

|                       |                       |
|-----------------------|-----------------------|
| <u>Pump / XDCR #1</u> | <u>Pump / XDCR #2</u> |
| 16.40                 | 11.70                 |

**Phase V High Volume Solution Collection (readings in ft)**

|                         |                         |                         |                         |
|-------------------------|-------------------------|-------------------------|-------------------------|
| <u>XDCR #311 (AUTO)</u> | <u>XDCR #312 (AUTO)</u> | <u>XDCR #313 (AUTO)</u> | <u>XDCR #314 (AUTO)</u> |
| 15.90                   | 15.60                   | 16.40                   | 15.50                   |

**Phase V Low Volume Solution Collection (readings in inches)**

|                  |                  |
|------------------|------------------|
| <u>XDCR #001</u> | <u>XDCR #002</u> |
| 8.25             | 16.10            |

**External Pond Low Volume Solution Collection (readings in inches)**

|                           |                           |
|---------------------------|---------------------------|
| <u>Pump / XDCR #1-EXT</u> | <u>Pump / XDCR #2-EXT</u> |
| <u>(AUTO)</u>             | <u>(AUTO)</u>             |
| 14.0                      | 15.7                      |

**Summary:**

1. CC&V agreed to revise Mr. Hank's February 24, 2016 response to "DRMS question on drainage from the southeast corner of the High Grade Mill Pad". The Division received an electronic copy of the revised response on May 19 and deemed it adequate.
2. The Division is still waiting for the results of the AGVLF infiltration trench slope stability evaluation.
3. The Division plans to continue observing Mill platform seep.
4. Observed water AGVLF levels were below the 80 percent limit.



## PHOTOGRAPHS



Photo 1. Mill platform valve box (looking NE).



Photo 2. Interior of Mill platform valve box.



**PHOTOGRAPHS (cont.)**



Photo 3. One of two injection mill discharge injection well heads on the Phase IV AGVLF.



Photo 4. Bird balls observed in dry infiltration trench on north side of Phase IV AGVLF (looking west).  
{Note – no discharge from pipe}



**PHOTOGRAPHS (cont.)**



Photo 5. Crane placing a manlift in the secondary containment area.



Photo 6. Mill building sumps.



**PHOTOGRAPHS (cont.)**



Photo 7. Mill building door through which Tank #5 fluid discharged (looking south).

**Inspection Contact Address**

Jack Henris  
Cripple Creek & Victor Gold Mining Company  
100 North Third Street  
Victor, CO 80860

Enclosure

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

**ATTACHMENT A**

| Date:   | 7/21/15     | 8/12/15   | 10/21/15 | 11/10/15 | 3/15/16 | 5/12/16    | Notes            |
|---|-------------|-----------|----------|----------|---------|------------|------------------|
| <b>Phase I High Volume Solution Collection</b>            |             |           |          |          |         |            |                  |
| Pump #299 / XDCR #xx                                      | TIME: 12:07 | 12:59     | 9:35     | 13:08    | 13:04   |            |                  |
| (ft)  | 58.7        | 48.7      | 47.2     | 44.4     | 48.0    | 42.6       |                  |
| Note: 80% Pump #300 / XDCR #00                            | (ft)        | 33.7      | 34.5     | 34.4     | 34.3    | 33.8       | 32.7             |
| cap. @ 63.75 Pump #301 / XDCR #01                         | (ft)        | 23.6      | 22.7     | 24.2     | 22.6    | 22.4       | 22.0             |
| ft Pump #302 / XDCR #02                                   | (ft)        | 37.4      | 28.0     | 25.6     | 22.7    | 24.0       | 21.5             |
| Pump #303 / XDCR #03                                      | (ft)        | 45.0      | 34.9     | 30.3     | 28.2    | 27.8       | 27.4             |
| <b>Phase I Pond Piezometers</b>                           |             |           |          |          |         |            |                  |
| 80% cap. @ Pond Lvl / XDCR #1                             | TIME: 12:07 | 12:59     | 9:35     | 13:08    | 13:04   |            |                  |
| 63.75 ft System Press / XDCR #2                           | (ft)        | 59.4      | 49.0     | 47.4     | 44.6    | 48.5       | 42.6             |
|   | (ft)        | 48.5      | 45.2     | 45.8     | 44.3    | 45.1       | 44.1 system head |
| <b>Phase I Low Volume Solution Collection</b>             |             |           |          |          |         |            |                  |
| Note: Req'd Piezo #1 (HAND)                               | TIME: 12:16 | 13:04     | 9:41     | 13:14    | 13:12   |            |                  |
| < 2 ft Piezo #2 (AUTO)                                    | (ft)        | 0.56      | 0.50     | 0.66     | 0.75    | 0.63       | 0.46             |
|   | (ft)        | 0.77      | 0.47     | 0.63     | 0.76    | 0.52       | 0.62             |
| <b>Phase II &amp; III High Volume Solution Collection</b> |             |           |          |          |         |            |                  |
| Note: 80% Pump / XDCR #4                                  | TIME: 12:19 | 13:08     | 9:52     | 13:21    | 13:18   |            |                  |
| cap. @ 49.4 Pump / XDCR #5                                | (ft)        | 16.3      | 20.3     | 12.7     | 11.8    | 13.2       | 13.9             |
| ft Pump / XDCR #6   | (ft)        | 17.4      | 22.8     | 15.4     | 14.3    | 16.4       | 17.0             |
|   | (ft)        | 16.1      | 21.9     | 13.7     | 13.3    | 17.0       | 17.3             |
| <b>Phase II &amp; III Pond Piezometer</b>                 |             |           |          |          |         |            |                  |
| 80% @ 49.4 ft Piezo (Pipe)                                | TIME: 12:19 | 13:08     | 9:52     | 13:21    | 13:18   |            |                  |
|   | (ft)        | 30.9      | 30.9     | 30.9     | 30.9    | 30.9       | 30.9             |
| <b>Phase II &amp; III Low Volume Solution Collection</b>  |             |           |          |          |         |            |                  |
| Note: Req'd Pump / XDCR #1 (AUTO)                         | TIME: 12:20 | 13:09     | 9:53     | 13:20    | 13:16   |            |                  |
| < 2 ft Pump / XDCR #2 (AUTO)                              | (ft)        | 0.53      | 0.66     | 0.35     | 0.45    | 0.28       | 0.57             |
|   | (ft)        | 0.54      | 0.38     | 0.24     | 0.53    | 0.58       | 0.51             |
| <b>Phase IV High Volume Solution Collection</b>           |             |           |          |          |         |            |                  |
| Pump #4 / XDCR #307                                       | TIME: 11:37 | 12:08     | 8:30     | 12:18    | 12:30   |            |                  |
| Note: 80% Pump #5 / XDCR #308                             | (ft)        | UNK (100) | 30.9     | 23.4     | 21.5    | 15.5       | 19.2             |
| cap. @ 56.5 Pump #6 / XDCR #309                           | (ft)        | UNK (100) | 31.1     | 23.1     | 21.3    | 15.4       | 24.5             |
| ft XDCR pipe (#310 Resv'd)                                | (ft)        | UNK (100) | off      | 23.7     | 20.9    | 15.3       | 18.7             |
|   | (ft)        | ooo       | 30.9     | 23.9     | 21.3    | 15.6       | 19.0             |
| <b>Phase IV Low Volume Solution Collection</b>            |             |           |          |          |         |            |                  |
| Note: Req'd Pump / XDCR #1                                | TIME: 11:42 | 12:11     | 8:33     | 12:21    | 12:34   |            |                  |
| < 24" Pump / XDCR #2                                      | (in)        | 19.0      | 20.0     | 9.1      | 12.9    | 16.3       | 16.4             |
|   | (in)        | 11.9      | 11.7     | 11.9     | 12.1    | 12.2       | 11.7             |
| <b>Phase V High Volume Solution Collection</b>            |             |           |          |          |         |            |                  |
| XDCR #311 (AUTO)  | TIME: 11:55 | 12:49     | 9:25     | 12:52    | 12:55   |            |                  |
| Note: 80% XDCR #312 (AUTO)                                | (ft)        | 18.8      | --       | 15.6     | 15.0    | 14.7       | 15.9             |
| cap. @ 36.5 XDCR #313 (AUTO)                              | (ft)        | 18.1      | --       | 15.2     | 14.6    | 14.3       | 15.6             |
| ft XDCR #314 (AUTO)                                       | (ft)        | 19.1      | --       | 15.7     | 15.0    | 14.7       | 16.4             |
|   | (ft)        | 17.9      | --       | 14.9     | 14.2    | 13.9       | 15.5             |
| <b>Phase V Low Volume Solution Collection</b>             |             |           |          |          |         |            |                  |
| Note: Req'd XDCR #001                                     | TIME: 11:57 | 12:51     | 9:27     | 12:54    | 12:57   |            |                  |
| < 24" XDCR #002   | (in)        | 12.46     | --       | 8.38     | 8.75    | 10.36      | 8.25             |
|   | (in)        | 14.40     | --       | 10.20    | 8.70    | 14.60      | 16.1             |
| <b>External Pond Low Volume Solution Collection</b>       |             |           |          |          |         |            |                  |
| Note: Req'd Pump / XDCR #1-EXT (AUTO)                     | TIME: 12:12 | 13:02     | 9:27     | 13:16    | 13:10   |            |                  |
| < 24" Pump / XDCR #2-EXT (AUTO)                           | (in)        | 13.7      | 13.7     | 13.7     | 10.3    | 13.7       | 19.0             |
|   | (in)        | 11.4      | 14.9     | 16.8     | 17.4    | 11.5       | 15.7             |
| <b>Underdrain Discharge Area</b>                          |             |           |          |          |         |            |                  |
| South Underdrain (S U/D)                                  | TIME: 12:27 | 10:08     | 13:31    | 13:28    |         |            |                  |
| (gpm)   | ~30*        | --        | --       | 30.0     | 17.1    | 29.4/11sec |                  |
| Note: 1 4" Pipe Discharge AG 01 Spring Pipe               | (gpm)       | Dry       | --       | Dry      | Dry     | DRY        |                  |
| 8/sec = NPDES Discharge AG 1.5 -001A                      | (gpm)       | Dry       | --       | Dry      | Dry     |            |                  |
| 15.85 gpm North Underdrain (N U/D)                        | (gpm)       | Dry       | --       | Dry      | Dry     |            |                  |
| 24-inch Solid Pipe  | (gpm)       | Dry       | --       | Dry      | Dry     |            |                  |
| <b>Aregua Gulch Monitor Well Pumpback System</b>          |             |           |          |          |         |            |                  |
| 35A   | TIME: 12:31 | 10:01     | 13:31    | 13:25    |         |            |                  |
| Data first 63B  | (in)        | 0.00      | --       | 0.00     | 0.00    | 0.00       |                  |
| collected by 63B  | (ft)        | 28.20     | --       | 26.91    | 29.06   | 37.77      |                  |
| DRMS 3/8/12 B63   | (gpm)       | low       | --       | 0.2      | 0.63    | 0.0        |                  |
| A35   | (gpm)       | 0.0       | --       | 0.0      | 0.0     | 0.0        |                  |

SG VLF PSSA LE/LIT 88307 = 5.44  
 88305 = 5.57  
 88303 = 19.43  
 } Proba. 6/6  
 } Can. 1/8/16  
 } Patrick Marley NW  
 NO\* 28301?