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):** Amy Eschberger, Michael Cunningham, Russ Means	**INSP. DATE:** June 28, 2018	**INSP. TIME:** 10:00
OPERATOR: Cripple Creek & Victor Gold Mining Company	**OPERATOR REPRESENTATIVE:** Justin Bills, Meg Burt	**TYPE OF OPERATION:** 112d-3 - Designated Mining Operation	

REASON FOR INSPECTION: Normal I&E Program	**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:** Amy Eschberger	**SIGNATURE DATE:** August 31, 2018

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---------- Y	(FN) FINANCIAL WARRANTY-------- N	(RD) ROADS---------- Y
(HB) HYDROLOGIC BALANCE---------- N	(BG) BACKFILL & GRADING---------- Y	(EX) EXPLOSIVES--------- N
(PW) PROCESSING WASTE/TAILING---- Y	(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-- Y
(ES) OVERBURDEN/DEV. WASTE--------- Y	(SC) EROSION/SEDIMENTATION--- N	(ST) STIPULATIONS------- N
(AT) ACID OR TOXIC MATERIALS------- N	(OD) OFF-SITE DAMAGE---------- N	

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, Michael Cunningham, and Russ Means of the Division of Reclamation, Mining and Safety (Division). The Division was accompanied by Meg Burt and Justin Bills during the inspection. This is a 112d-3 Designated Mining Operation permitted for 6,007 acres to mine and process gold ore. The site is located between the towns of Cripple Creek and Victor. The approved post-mining land use is a combination of rangeland and wildlife habitat.

The inspection included the following facilities/areas:

- Liner repair area in Squaw Gulch Valley Leach Facility (SGVLF)
- SGVLF leaching surfaces and Leak Detection System sumps
- Exterior of High Grade Mill Facility
- Water level readings for SGVLF and Arequa Gulch Valley Leach Facility (AGVLF)
- South Cresson Mine
- East Cresson Mine (Wildhorse Extension)
- East Cresson Overburden Storage Area (ECOSA) seep location

Liner repair area in SGVLF:

The Division observed the liner repair area on the eastern side of the SGVLF (**Photos 1-4**). Placement of the 80 mil LLPDE double sided textured geomembrane liner (liner) was completed between the 9,650 foot and 9,750 foot elevations. Deployment of the liner between the 9,850 foot and 9,750 foot elevations was in process during the inspection. Drain cover fill (DCF) was stockpiled at the 9,650 foot bench. The operation was in the process of pushing a two-foot lift of DCF up from the 9,650 foot stockpile across the liner using a small dozer.

The cease and desist order the operator voluntarily consented to on April 4, 2018 prohibits any further leaching activities on the 9,850 lift within 500 feet of the slope failure and possible damaged liner area, until the Division reviews and approves the recertification of the Environmental Protection Facility. The operation was observed to be in compliance with the cease and desist order. No ore will be placed in the liner repair area until the Division has approved all certification reports for the repairs. The operator committed to submitting certification reports for each of the components of the liner system in phases in order to streamline the review process and minimize potential rework. At the time of the signature date of this report, the Division has not yet approved the final certification report for the repair area. No problems were observed.

SGVLF leaching surfaces and Leak Detection System sumps:

The Division observed the SGVLF (**Photo 5**). The operation is currently advancing the 4th (100 foot) ore lift in the SGVLF. The operation is required to minimize ponding of leaching solution to less than 3 feet by 3 feet in area. This is to prevent the ponds from being a wildlife attractant. No issues with ponded solution were observed on leaching surfaces in the SGVLF. Due to the damaged portion of the SGVLF liner (mentioned above), the operation is required to conduct daily inspections of the facility's Leak Detection System, and report the inspection results to the Division on a monthly basis. This must be done until the Division approves the recertification of the facility. The Division examined Leak Detection Sumps SG-LDS1 (**Photo 6**) and SG-LDS2 (**Photo 7**) during the inspection, and found them both to be dry. No problems were observed.

Exterior of High Grade Mill Facility:

The Division walked around the exterior of the High Grade Mill Facility to visually inspect for leaks, spills, and any secondary containment issues (**Photos 8-11**). The secondary containment structures had no significant reduction in storage. No problems were observed.

Water level readings for SGVLF and AGVLF:

The Division recorded water level readings from transducers for the AGVLF high volume solution collection system (HVSCS), pond piezometers, and low volume solution collection system (LVSCS) for Phases I, II/III, and IV. Readings were also recorded from the transducers for the SGVLF HVSCS, pond piezometer, and LVSCS. The values recorded over the past year, including during this inspection, are presented on the enclosed **Attachment A**. All recorded values were well below their respective limits. However, the Division has expressed concern to the operator regarding the accuracy of the readings observed for AGVLF Phase IV HVSCS. Specifically, that pumps #307, #308, and #309 should read lower than the transducer pipe (#310) given the transducer pipe should have little to no influence by the cone of depression created by the pumps. Since the February 27, 2018 inspection, the Division has recorded pump values that were higher than the transducer pipe values.

The operator indicated they believe the pump values for Phase IV are reading artificially higher due to solution inflow across the pump area from the back side of Phase V. The solution is not from overflow of the Phase V Pregnant Solution Storage Area (PSSA), but from leaching solution migrating through the heap, as Phases IV and V boundaries overlap in that area. If the Phase V PSSA was overflowing to the Phase IV PSSA, the water levels recorded for Phase V would be over the 80% storage volume, which is not the case. In mid-August, the operator installed a new pipe and transducer for #310 on the other side of the pumps to reduce influence from the Phase V solution inflow. Although the pumps will continue to be influenced by the Phase V solution inflow, more importantly, the new transducer pipe location should be more representative of the Phase IV PSSA water level. The Division will follow up on this matter in an upcoming inspection.

South Cresson Mine:

The Division observed the South Cresson Mine located between the AGVLF and the East Cresson Mine (**Photos 12 and 13**). The operation was excavating from the southwestern edge of the pit during the inspection. The operator currently blasts in the South Cresson Mine once a day, a few days a week. The South Cresson Mine will tie in to the Main Cresson Mine (to the north). The southern edge of the South Cresson Mine is currently very close to the operator's Ajax Exploration Building. The operator has expressed a potential desire to remove the Ajax Exploration Building in order to expand the South Cresson Mine slightly southward. As long as the approved mine area delineation for the South Cresson Mine accounts for this expansion of the pit, only a Technical Revision will be required. No problems were observed.

East Cresson Mine (Wildhorse Extension):

The Division observed the East Cresson Mine (Wildhorse Extension) from the overlook off of County Road 82 (**Photo 14**). The operation has recently begun backfilling the southeastern corner of the pit. The approved reclamation plan for this pit was slightly revised with Technical Revision No. 96 (approved on February 2, 2018), to allow the operation to backfill the pit approximately 280 feet above previously permitted heights. The operation will now backfill portions of the pit to approximate original contour, 10,425 feet above mean sea level. No issues were observed.

ECOSA seep location:

The Division observed the seep location at the eastern toe of the ECOSA (**Photos 15 and 16**). Seep water is retained within a trench constructed at the toe of the ECOSA. The operator has a plan for monitoring the accumulation of water from the seep, and if necessary, conveying the solution from the ECOSA to a lined facility internal to the site. Given the low pH and high metal concentrations of the ECOSA seep water, the Division was concerned about potential impacts to the shallow groundwater system in Grassy Valley. Therefore, the operator submitted Technical Revision No. 97 on May 30, 2018 to install an additional monitoring well (GVMW-25) south of the creek thalweg. The installation of GVMW-25 on the west side of the creek thalweg, downgradient from the ECOSA seep area, should monitor for any potential impacts to shallow groundwater from the seep area.

According to the operator, the seep has been expressing at one location in the ECOSA, typically within 4-5 hours of a rain event, and flowing at a rate of approximately one gallon per minute. The Division observed the trench at the toe of the ECOSA to be dry during the inspection, most likely due to the lack of precipitation in recent weeks. The operator is currently exploring long-term solutions to mitigate the seep for final reclamation.

Close-out meeting:

The Division had a close-out meeting with the operator at their Victor office, with discussion of the following:

- The operator inquired about revising the requirements of Technical Revision No. 83 (TR-83) as mill tailings will no longer contain cyanide due to the removal of the mill flotation concentrate from the circuit. As of Technical Revision No. 89, concentrates are removed from the High Grade Mill and processed at the operator's facilities in Nevada. The operator anticipates current stockpiles of mill concentrate that contain cyanide will be removed no later than end of 2018.

  TR-83 addressed the haulage of crushed ore and agglomerated mill tailings (containing free sodium cyanide) from the Load-Out Bin (LOB) to SGVLF over approximately 6,600 feet of unlined haul road. The revision includes a monitoring plan, a spill response plan, and a decontamination plan to prevent off-liner impacts from spilled material containing cyanide. The operator estimates the SGVLF Phase II liner will be completely tied-in to the Phase I liner in 2020, which will reduce most of the unlined haul road. However, an approximately 1,200 foot section of haul road located between the LOB and SGVLF will not be lined.

  To revise the plan approved in TR-83, the operator would need to submit a Technical Revision requesting this change to the mining plan, and demonstrating the material hauled over unlined areas would not pose a risk to the environment if spilled off-liner.

- The operator informed the Division of the anticipated timeline for submitting phased certification reports for the separate components of the SGVLF liner repair.

- The operator informed the Division of their desire to mine old waste dumps located within the approved affected area. This material was historically considered low grade, but is now considered economical to mine with modern milling methods. The dump areas are located mainly in the Altman backfill area and Squaw Gulch Overburden Storage Area. The Division received a Technical Revision (TR-104) for this activity after the inspection, on August 27, 2018. This revision is currently under review.

This concludes the report.

PHOTOGRAPHS

Photo 1. View of liner repair area in SGVLF, showing drain cover fill (DCF) stockpiled at the 9,650 foot bench (below the exposed liner).

Photo 2. View of liner repair area in SGVLF, showing deployment of liner between the 9,850 foot and 9,750 foot elevations in process during the inspection.

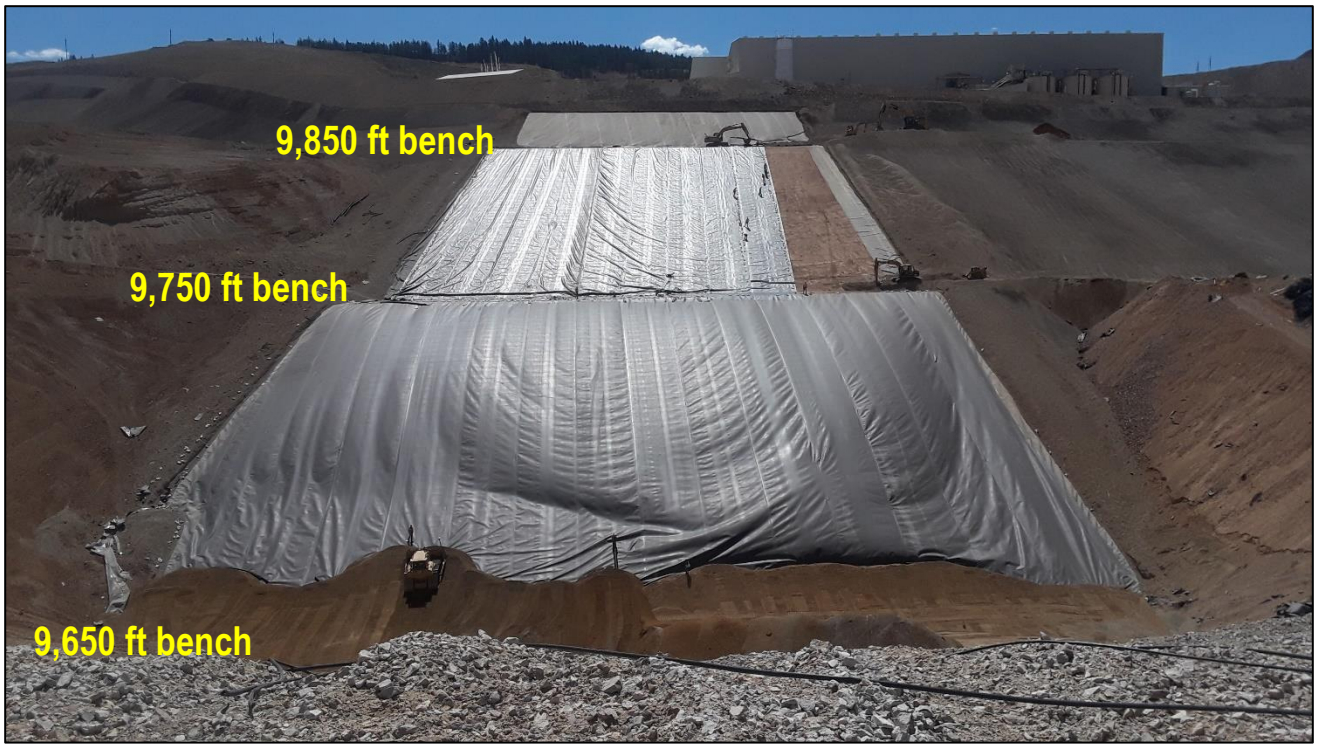

Photo 3. View of liner repair area in SGVLF, showing deployment of liner between the 9,850 foot and 9,750 foot elevations in process, liner between 9,750 foot and 9,650 foot elevations completed, and DCF placement started from 9,650 foot bench.

Photo 4. View of liner repair area in SGVLF, showing operation in process of pushing a two-foot lift of DCF up from the 9,650 foot stockpile across the liner using a small dozer.

Photo 5. View looking west across SGVLF. The operation was advancing the 4th (100 foot) ore lift in the facility. No issues with ponded solution were observed on leaching surfaces.

Photo 6. View of SGVLF Leak Detection Sump SG-LDS1, located at southern edge of facility. This sump was observed to be dry during the inspection.

Photo 7. View of SGVLF Leak Detection Sump SG-LDS2, located at the northern edge of the facility. This sump was observed to be dry during the inspection.

Photo 8. View of secondary containment structure for processed ore thickener tank located on exterior southeastern side of High Grade Mill (HGM). No significant reduction in storage was observed.

Photo 9. View of secondary containment structure for high pH process water tank located on exterior southeastern side of HGM. No significant reduction in storage was observed.

Photo 10. View of secondary containment structure for neutral pH process water tank located on exterior southeastern side of HGM. No significant reduction in storage was observed.

Photo 11. View of concentrate storage building located at southern end of HGM. This building was constructed in 2017 and is designed to store approximately 3,000 cy of concentrate.

Photo 12. View looking west across South Cresson Mine located between AGVLF and East Cresson Mine.

Photo 13. View looking southwest across South Cresson Mine located between AGVLF and East Cresson Mine. Operation was mining southwestern pit wall during inspection. Note Ajax Exploration Building located at southern edge of pit (indicated), which may be removed to allow for pit expansion to the south.

Photo 14. View looking south across East Cresson Mine (Wildhorse Extension) located at northern edge of mine site. Operation has begun backfilling southeastern corner of the pit (circled). Approved reclamation plan now calls for backfilling portions of the pit to approximate original contour.

Photo 15. View looking northwest across eastern toe of the ECOSA at seep location. Any seep water is retained within a trench constructed at the toe of the ECOSA, and if necessary, is pumped from the ECOSA trench to a lined facility internal to the site.

Photo 16. View looking inside trench constructed at toe of ECOSA from which seep water is pumped to a lined facility internal to the site, as necessary. Note trench was dry during the inspection.

Inspection Contact Address

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Enclosure: Attachment A - Water level readings for SGVLF and AGVLF

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ATTACHMENT A

CC&V VLF Inspection Readings

Previous Results

Date:			7/27/17	11/29/17	2/27/18	3/29/18	6/28/18		Notes
AREQUA VLF:		**EPS:**			ERR	TC1	AME		
Phase I HVSC & Pond Piezometers		TIME:	NR	10:19	11:25		12:16		
Note: 80% cap. @ 63.75 ft	Max. of Pump #299, #300, #301, 302, or #303 (Circle Pump #)	(ft)	61.5	57.3	53.7	--			
	Pond Lvl / XDCR #1	(ft)	--	57.4	53.6	--	13.1		
	System Press / XDCR #2	(ft)	--	46.3	43.3	--	12.4		system head
Phase I Low Volume Solution Collection		TIME:	NR	9:53	11:14		12:22		
Note: Req'd < 2 ft	Piezo #1 (HAND)	(ft)	0.71	0.42	0.67	--	0.63		
	Piezo #2 (AUTO)	(ft)	0.63	0.76	0.66	--	0.79		
Phase II & III HVSC & Pond Piezometer		TIME:	NR	9:59	11:53		12:21		
Note: 80% @ 49.4 ft	Max. of XDCR #4, #5, or #6 (Circle XDCR #)	(ft)	--	19.7	23.9	--	16.9		
	Piezo (Pipe)	(ft)	30.9	30.9	30.9	--	30.9		
Phase II & III Low Volume Solution Collection		TIME:	NR	9:52	11:52		12:24		
Note: Req'd < 2 ft	Pump / XDCR #1 (AUTO)	(ft)	0.73	0.34	0.35	--	0.71		
	Pump / XDCR #2 (AUTO)	(ft)	0.46	0.24	0.47	--	0.25		
Phase IV High Volume Solution Collection		TIME:		10:49	13:17	12:43	12:43		
Note: 80% cap. @ 56.5 ft	Max. of Pump #307, #308, or #309 (Circle Pump #)	(ft)	--	20.5	32.8	36.3	18.1		
	XDCR pipe (#310 Resv'd)	(ft)	--	34.4	15.2	17.1	11.7		
Phase IV Low Volume Solution Collection		TIME:	NR	10:46	13:19		12:45		
Note: Req'd < 24"	Pump / XDCR #1	(in)	--	15.1	16.0	--	7.4		
	Pump / XDCR #2	(in)	--	12.0	12.1	--	11.6		
Phase V High Volume Solution Collection		TIME:	NR	9:36	10:40				
Note: 80% cap. @ 36.5 ft	Max. of XDCR #311, #312, #313, or #314 (Circle XDCR #)	(ft)	19.9	18.5	21.1	--	--		
Phase V Low Volume Solution Collection		TIME:	NR	9:34	10:43				
Note: Req'd < 24"	XDCR #001	(in)	8.2	14.61	10.70	--	--		
	XDCR #002	(in)	15.1	14.40	14.40	--	--		
External Pond Low Volume Solution Collection		TIME:		9:50	11:16				
Note: Req'd < 24"	Pump / XDCR #1-*EXT* (AUTO)	(in)		10.8	13.7	--	--		
	Pump / XDCR #2-*EXT* (AUTO)	(in)		15.6	14.0	--	--		
Underdrain Discharge Area		TIME:		10:05	--				
Note: 1 ℓ/sec = 15.85 gpm	South Underdrain (S U/D)	(gpm)	34.5	3.2	Dry	--	--		
	4" Pipe Discharge AG 01 Spring Pipe	(gpm)	--	Dry		--	--		
	NPDES Discharge AG 1.5 -001A	(gpm)	--	Dry	--	--	--		
	North Underdrain (N U/D)	(gpm)	--	Dry	Dry	--	--		
	24-inch Solid Pipe	(gpm)	--	Dry		--	--		
Arequa Gulch Monitor Well Pumpback System		TIME:		10:11	11:43				
Data first collected by DRMS 3/8/12	35A	(in)	--	0.00	0.00	--	--		
	63B	(ft)	169?	36.56	24.15	--	--		
	B63	(gpm)	--	0.00		--	--		
	A35	(gpm)	--	0.0		--	--		
SQUAW GULCH VLF High Vol. SC:		TIME:		12:00	12:36		11:27		
Note: 80% cap. @ 94 ft	LIT #88301 (north end)	(ft)	--	37.04	62.94	--	46.56		
	LIT #88303	(ft)	--	36.99	--	--	46.37		
	LIT #88305	(ft)	--	36.22	62.25	--	45.70		
	LIT #88307 (south end)	(ft)	--	36.32	61.87	--	45.24		
	Piezometer-LIT #88314	(ft)	--	43.52	69.46	--	52.70		
SQUAW GULCH VLF Low Vol. SC:		TIME:		12:08	12:31		11:35		
Note: Req'd < 24"	Leachate Pump 1	(in)	--	12.50	13.60	--	9.30		
	Leachate Pump 2	(in)	--	13.10	13.70	--	8.20		