




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: Henderson Mine	MINE/PROSPECTING ID#: M-1977-342	MINERAL: Molybdenum	COUNTY: Clear Creek, Grand
INSPECTION TYPE: Monitoring	INSPECTOR(S): Peter S. Hays	INSP. DATE: July 27, 2017	INSP. TIME: 09:00
OPERATOR: Climax Molybdenum Company	OPERATOR REPRESENTATIVE: Miguel Hamarat	TYPE OF OPERATION: 112d-3 - Designated Mining Operation	
REASON FOR INSPECTION: Normal I&E Program	BOND CALCULATION TYPE: Partial Bond	BOND AMOUNT: \$37,993,785.00	
DATE OF COMPLAINT: NA	POST INSP. CONTACTS: None	JOINT INSP. AGENCY: None	
WEATHER: Clear	INSPECTOR'S SIGNATURE: 	SIGNATURE DATE: August 9, 2017	

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>N</u>
(HB) HYDROLOGIC BALANCE----- <u>N</u>	(BG) BACKFILL & GRADING----- <u>N</u>	(EX) EXPLOSIVES----- <u>N</u>
(PW) PROCESSING WASTE/TAILING---- <u>N</u>	(SF) PROCESSING FACILITIES----- <u>N</u>	(TS) TOPSOIL----- <u>N</u>
(MP) GENL MINE PLAN COMPLIANCE- <u>N</u>	(FW) FISH & WILDLIFE----- <u>N</u>	(RV) REVEGETATION---- <u>N</u>
(SM) SIGNS AND MARKERS----- <u>Y</u>	(SP) STORM WATER MGT PLAN---- <u>N</u>	(CI) COMPLETE INSP---- <u>N</u>
(ES) OVERBURDEN/DEV. WASTE----- <u>N</u>	(SC) EROSION/SEDIMENTATION--- <u>N</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

The Henderson Mine was inspected by Peter Hays with the Division of Reclamation, Mining and Safety (Division/DRMS) as part of the Division's monitoring inspection program. Mr. Miguel Hamarat with Climax Molybdenum - Henderson Operations (Henderson) was present during the inspection. The purpose of the inspection was to observe the stormwater structures located around the mine facility.

The Henderson Mine facilities are constructed primarily on waste rock from the development of the mine and include approximately 121 acres of disturbance. The disturbance at the Henderson Mine is fairly static and all potential sources of pollution have been well documented. The surface water features at the mine include Butler Gulch which flows through the affected area, the West Fork of Clear Creek which follows the northern permit boundary and No Name Gulch which is diverted around the south and east sides of the affected area.

The Henderson Mine includes a diversion ditch south of the mine office which diverts water around industrial activities and the primary parking area to the east end of the affected area. Water which flows onto the affected area from the south is captured by a diversion ditch which either routes water to the west and into Butler Gulch or to the east and into the West Fork of Clear Creek. The BMPs used to prevent erosion within the ditches include minimizing impacts to existing vegetation as well as rock check dams. Water channels which are designed for flows in excess of 2 feet per second contain a suitable bedding 6" in depth.

The Division and Henderson staff inspected the sixteen outfalls at the mine. A list of the outfalls with comments from the inspection is below:

OF-1: BMP's at this outfall location consist of a series of rock check dams leading to a rip-rap outfall. The outfall was dry and appeared to be functioning properly.

OF-2: BMP's at this outfall location consist of a series of rock check dams leading to a sedimentation pond above the rip-rap outfall. The sedimentation pond contained water above the outfall. The outfall appeared to be functioning properly.

OF-3: BMP's at this outfall location consist of an engineered wetland and a sedimentation pond. Water was flowing through the outfall and the outfall appeared to be functioning properly.

OF-4: BMP's at this outfall location consist of a vegetated area at the bottom of a slope. The outfall appeared to be functioning properly.

OF-5: BMP's at this outfall location consist of rip-rap and vegetation leading to a sedimentation pond above a culvert. The sedimentation pond contained water and appeared to be functioning properly.

OF-6: BMP's at this outfall location consist of rip-rap and a sedimentation pond. The outfall appeared to be functioning properly.

OF-7: BMP's at this outfall location consist of rip-rap and rock check dams. The outfall was dry and appeared to be functioning properly.

OF-8a: BMP's at this outfall location consist of ditch with a series of rock check dams leading to a sedimentation pond. The ditch and sedimentation pond contained water and appeared to be functioning properly.

OF-8b: BMP's at this outfall location consist of a series of ditch with a series of rock check dams leading to a rip-rap outfall. The ditch leading to the outfall contained water and appeared to be functioning properly. Sediment was observed in the road crossing culverts above the outfall. The Division recommends are culverts are cleaned out to maintain the function of the culverts.

OF-8c: BMP's at this outfall location consist of a ditch with a series of rock check dams leading to a rip-rap outfall. The outfall was wet and contained sediment above the rip-rap outfall. A minor erosion feature was observed below the outfall. The Division recommends the outfall is evaluated for the addition of a straw waddle at the outfall to prevent erosion.

OF-9: BMP's at this outfall location consist of rip-rap and vegetation below the discharge pipe. The outfall was dry and appeared to be functioning properly.

OF-12: BMP's at this outfall location consist of a rip-rap check dam above a creek. The outfall was dry and appeared to be functioning properly.

OF-13: BMP's at this outfall location consist of a rip-rap check dam. The outfall was dry and appeared to be functioning properly.

OF-14: BMP's at this outfall location consist of a ditch with a series of rock check dams leading to a rip-rap outfall. The outfall was damp and contained sediment above the outfall. The Division recommends the outfall is evaluated for the addition of a straw waddle at the outfall due to the amount of sediment behind the outfall.

OF-15: BMP's at this outfall location consist of a series of rock check dams leading to a sedimentation pond above a culvert. The sedimentation pond contained water and appeared to be functioning properly.

OF-16: BMP's at this outfall location consist of rip-rap and vegetation below the discharge pipe. The inlet of the culvert above the outfall was partially filled with sediment. The Division recommends are culvert is cleaned out to maintain the function of the culvert. The outfall appeared to be functioning properly.

Inspection Contact Address

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Parshall, CO 80468

Ec: Wally Erickson, DRMS

PHOTOGRAPHS



Stormwater Outfall OF-2



Stormwater Outfall OF-13



Inlet culvert for Stormwater Outfall OF-16, partially filled with sediment



Stormwater Outfalls OF-9 (near) and OF-16 (far)



Stormwater Outfall OF-15



Stormwater Outfall OF-5



Stormwater Outfall OF-12



Rock check dams above Stormwater Outfall OF-8a



Stormwater Outfall OF-8b



Stormwater Outfall OF-8c



Stormwater Outfall OF-14



Stormwater Outfall OF-7



Rock check dams above Stormwater Outfall OF-1