




**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> Revenue Mine	<b>MINE/PROSPECTING ID#:</b> M-2012-032	<b>MINERAL:</b> Lead, silver and gold	<b>COUNTY:</b> Ouray
<b>INSPECTION TYPE:</b> Monitoring	<b>INSPECTOR(S):</b> Bob Oswald	<b>INSP. DATE:</b> July 19, 2013	<b>INSP. TIME:</b> 12:30
<b>OPERATOR:</b> Star Mine Operations, LLC	<b>OPERATOR REPRESENTATIVE:</b> Rory Williams, Don Gurule	<b>TYPE OF OPERATION:</b> 112d-1 - Designated Mining Operation	

<b>REASON FOR INSPECTION:</b> Normal I&E Program	<b>BOND CALCULATION TYPE:</b> None	<b>BOND AMOUNT:</b> \$277,078.00
<b>DATE OF COMPLAINT:</b> NA	<b>POST INSP. CONTACTS:</b> None	<b>JOINT INSP. AGENCY:</b> None
<b>WEATHER:</b> Cloudy	<b>INSPECTOR'S SIGNATURE:</b> 	<b>SIGNATURE DATE:</b> July 25, 2013

**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>NA</u>	(FN) FINANCIAL WARRANTY----- <u>Y</u>	(RD) ROADS----- <u>Y</u>
(HB) HYDROLOGIC BALANCE----- <u>Y</u>	(BG) BACKFILL & GRADING----- <u>Y</u>	(EX) EXPLOSIVES----- <u>N</u>
(PW) PROCESSING WASTE/TAILING---- <u>NA</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>NA</u>
(SM) SIGNS AND MARKERS----- <u>Y</u>	(SP) STORM WATER MGT PLAN---- <u>NA</u>	(SB) COMPLETE INSP---- <u>NA</u>
(ES) OVERBURDEN/DEV. WASTE----- <u>Y</u>	(SC) EROSION/SEDIMENTATION--- <u>Y</u>	(RS) RECL PLAN/COMP-- <u>NA</u>
(AT) ACID OR TOXIC MATERIALS----- <u>Y</u>	(OD) OFF-SITE DAMAGE----- <u>NA</u>	(ST) STIPULATIONS----- <u>NA</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 routine inspection performed by the Division of an active Hard Rock and Metals 112d-1 permit. The operators named on page one were present throughout the inspection. The required permit ID sign was posted on the entrance gate at the bridge to the mine site.

The operator is continuing to advance and complete the underground mill space, an activity which generates a significant amount of benign development rock. A large amount of the rock is screened and crushed for use as ballast in the Revenue Tunnel as well as exported from the site to various stockpile areas designated by Ouray County to be used for maintenance of the Yankee Boy Basin Road. The remainder is being placed in onsite stockpile areas for permanent disposal, in accordance with the approved plan.

There is a large stockpile of waste rock developing immediately east of the entrance bridge and north of the mill tunnel. The toe of the pile is in a natural swale well above the creek and no rolling material or fine sediment is able to reach the creek. A smaller amount of new waste rock has been placed on the north-facing slope of the old waste dump, facing the creek. This area is much closer to the creek, although still within the affected area. Both of these areas are approved for placement of waste rock, but the current slopes are steeper than the approved final slope gradient, since they are not sufficiently stable for the long-term. The operator must eventually pull these slopes back to 3:1. In the interim, the operator must be aware and monitor the existing slope and further dumping, to ensure that all material and runoff remains contained within the affected area. If necessary, a sediment control structure or berm may be installed as an added level of containment.

The crusher installation at the south end of the temporary waste rock storage area is finished. It includes a retaining wall, crusher on steel supports, conveyor and concrete pad. Gravel generated by the crusher is stockpiled on the temporary waste rock storage area.

A new pond (Sediment Pond 3) has been constructed immediately west of the entrance bridge, just above the creek. Runoff from portions of the affected areas of the site will be routed to this pond. The outer embankment surfaces will be plated with topsoil or growth medium and seeded. Until these new surfaces are vegetated sufficiently to not produce sediment during runoff, a temporary sediment control structure should be installed below the pond structure. This could be a woven poly silt fence or straw wattle.

An excavator was observed on the old waste rock dump west of the wetland area. It is in the process of constructing another pond (Sediment Pond 2). Construction involves the removal of approximately 25 vertical feet of waste rock over more than a quarter acre. This material was used for constructing the embankment of Sediment Pond 3, and the excess is being moved to the temporary waste rock storage area.

The operator is reminded that the mine's facilities and structures (such as the underground mill space, filter building, stormwater control structures, monitoring wells, and sediment ponds) are considered "environmental protection facilities" (EPFs). As such, they must be constructed to meet the approved designs, inspected at intervals during construction, and after construction the operator must provide engineering certification that they meet the designs. For additional explanation please see Rules 6.4.21 (15) and (16), and Rule 7.3 and 7.4. All changes or additions to the approved plan must be reviewed as technical revisions or amendments.

Runoff from the mine site currently is controlled by percolating into the existing permeable pad material, and surface runoff from the slopes reports to the wetland area. The wetland is temporarily bermed just above the creek, to retain sediment there. Areas of standing water in the wetland exhibit a bit of cloudy sediment, but it does not leave the site. Presently there is no uncontrolled runoff or point source reporting to the creek.

The mill tunnel is still under construction. The bench outside the mill tunnel is currently being used to store the beams and other hardware and new milling equipment that will be installed in the mill soon. The western edge of the bench is now buttressed by three tiers of gabion baskets. The wall rock in the mill was reinforced with mesh and rock bolts, then with shot-crete. The steel to support the overhead crane and other mill infrastructure is currently being installed. The concrete bins of the filter building are nearly fully constructed outside the mill portal. The portal entry structure is not installed yet.

The mine water discharge is still piped to the west end of the existing waste rock dump, where it is discharged to Sneffels Creek. The inlet end (at the Revenue Tunnel portal) and outlet end of the pipe were inspected. The mine water entering the pipe was visually estimated as only very slightly cloudy. The discharge at the outlet crosses the toe of the old waste rock. The discharge flow has cut down through the waste rock. It is recommended that the operator improve this discharge structure to reduce the possibility of sediment transport to the creek. Possible actions could be to discharge directly onto boulders or a concrete apron to dissipate the flow velocity, or to route the flow into a sediment pond (such as Sediment Pond 2, when it is completed). The permit environmental protection plan and the WQCD stormwater management plan require all mine-related runoff and sediment generated on the mine site to be controlled. It is important that this is monitored frequently. Additionally, the operator is reminded that the CDPHE discharge permit must be obtained soon, with a copy forwarded to this office promptly.

The operator stated that the 2nd quarter 2013 water quality sampling results will be submitted to the Division in the next few days. Additional sampling has been performed, per instructions from CDPHE, at shorter intervals this summer. These analyses must be forwarded to the Division also.

The operation will be inspected later this summer, to check the initiation or progress of additional facilities. At this time there are no problems noted and the bond is sufficient.

For questions related to this report please contact this inspector at the Division's Durango Field Office:  
DRMS – Durango Field Office  
691 CR 233, Room A-2  
Durango, CO 81301  
Telephone 970-247-5193

**Inspection Contact Address**

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Inspection photographs are on the following two pages.



PHOTOGRAPHS

