



**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> Schwartzwalder Mine	<b>MINE/PROSPECTING ID#:</b> M-1977-300	<b>MINERAL:</b> Uranium	<b>COUNTY:</b> Jefferson
<b>INSPECTION TYPE:</b> Monitoring	<b>INSPECTOR(S):</b> Tom Kaldenbach	<b>INSP. DATE:</b> October 11, 2013	<b>INSP. TIME:</b> 1:00 pm
<b>OPERATOR:</b> Cotter Corporation	<b>OPERATOR REPRESENTATIVE:</b> John Hamrick	<b>TYPE OF OPERATION:</b> 112d-2 - Designated Mining Operation	

<b>REASON FOR INSPECTION:</b> Normal I&E Program	<b>BOND CALCULATION TYPE:</b> None	<b>BOND AMOUNT:</b> \$4,339,003.39
<b>DATE OF COMPLAINT:</b> NA	<b>POST INSP. CONTACTS:</b> None	<b>JOINT INSP. AGENCY:</b> None
<b>WEATHER:</b> Clear	<b>INSPECTOR'S SIGNATURE:</b> <i>Tom Kaldenbach</i>	<b>SIGNATURE DATE</b> November 18, 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>N</u>	(RD) ROADS----- <u>Y</u>
(HB) HYDROLOGIC BALANCE----- <u>Y</u>	(BG) BACKFILL & GRADING----- <u>Y</u>	(EX) EXPLOSIVES----- <u>NA</u>
(PW) PROCESSING WASTE/TAILING---- <u>NA</u>	(SF) PROCESSING FACILITIES----- <u>Y</u>	(TS) TOPSOIL----- <u>Y</u>
(MP) GENL MINE PLAN COMPLIANCE- <u>Y</u>	(FW) FISH & WILDLIFE----- <u>Y</u>	(RV) REVEGETATION---- <u>Y</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>Y</u>
(AT) ACID OR TOXIC MATERIALS----- <u>Y</u>	(OD) OFF-SITE DAMAGE----- <u>Y</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 monitoring inspection conducted by Tom Kaldenbach of DRMS. The operator was represented by John Hamrick, Ken Mushinski, Charlotte Nietzel, and Robert Tuchman. Also along on the inspection were Tony Waldron (DRMS), Jeff Fugate (Attorney General's office), Mike Harris (CWQCD), and Pat Pfaltzgraff (Attorney General's office). The primary purpose of the inspection was to see the damage caused by large rain storms that occurred in the region during the week of September 12, 2013.

The operator had reported to DRMS prior to the inspection that the storms forced evacuation of the site on approximately September 12. The evacuation necessitated shutting down the reverse osmosis (RO) system and mine pool pumping that had begun on July 23, 2013. The RO system and mine pool pumping have not yet resumed operation due to the mine's access road being washed out by the storm flows. The site currently is being accessed through an alternate route which crosses Jefferson County Open Space south of the mine. This alternate access is inadequate for transporting the chemical reagents necessary for operating the RO plant.

Although the surface facilities at the mine suffered relatively minor damage from the storms, there was ample evidence of heavy stormwater flows on the north slope of the Ralston Creek Valley. Large gullies and rock debris flows extended down the valley's north slope at three locations inside or next to the permit area. The debris flows included a few large trees that had been uprooted by the storm flows. One rock debris flow completely destroyed the mine's access road outside the permit boundary where the road approaches the entrance gate of the mine. The operator's representatives explained that the access road also was largely destroyed at other locations where the road crossed steep slopes between the mine entrance gate and Ralston Reservoir.

The mine access road is owned by Jefferson County, and is maintained by the mine operator. The operator has been working with Jefferson County and Denver Water on a plan for reconstructing the road. Denver uses the lower part of the road for access to the inlet area of Ralston Reservoir.

The channel of Ralston Creek in the permit area had been heavily scoured by the storm flows, resulting in the channel being significantly deeper, wider, and straighter than before the storms.

The North and South Waste Rock Piles withstood the storm flows very well with grass and shrub cover having protected the waste piles. There was an approximate 2-foot deep gully incised in the drainage that extends along the northwest side of the North Pile. Water was discharging at about 10 gpm from a 4-inch diameter black PVC pipe that extended from the upper part of the North Waste Rock Pile to the face of the pile. There were only a few small gullies on the South Pile.

The ion exchange treatment plant was operating during the inspection. This plant removes uranium from groundwater that is collected in alluvial sumps. The treated water was discharging into Ralston Creek at BPL at about 50 gpm.

## PHOTOGRAPHS



Photo 1 – Ion exchange treatment plant building.



Photo 2 – View to east from on top of South Waste Rock Pile.



Photo 3 – One of alluvial ground water sumps damaged by storm waters.



Photo 4 – Discharges into Ralston Creek near BPL from creek diversion (large HDPE) and ion exchange treatment plant (small HDPE).



Photo 5 – Debris flow outside mine entrance gate on slope north of Ralston Creek.



Photo 6 – Erosion cut-face on north side of Ralston Creek outside permit area near location of Photo 5.





Photo 7 – Top of South Waste Rock Pile.



Photo 8 – Gully on north slope of Ralson Creek valley. Land is inside permit area, but has not been disturbed by mining activities.



Photo 9 – Ralston Creek channel at outlet end of pipe that extends through diversion cut-off wall on west side of permit area



Photo 10 – South Waste Rock Pile.



Photo 11 – Gully behind North Waste Rock Pile.

**Inspection Contact Address**

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