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.

MINE NAME: Schwartzwalder Mine	**MINE/PROSPECTING ID#:** M-1977-300	**MINERAL:** Uranium	**COUNTY:** Jefferson
INSPECTION TYPE: Monitoring	**INSPECTOR(S):** Tom Kaldenbach, Tim Cazier	**INSP. DATE:** July 3, 2012	**INSP. TIME:** 09:30
OPERATOR: Cotter Corporation	**OPERATOR REPRESENTATIVE:** John Hamrick, Mike Villegrana	**TYPE OF OPERATION:** 112d-2 - Designated Mining Operation	

REASON FOR INSPECTION: Normal I&E Program	**BOND CALCULATION TYPE:** None	**BOND AMOUNT:** $2,843,671.63
DATE OF COMPLAINT: NA	**POST INSP. CONTACTS:** None	**JOINT INSP. AGENCY:** None
WEATHER: Clear	**INSPECTOR'S SIGNATURE:** Tom Kaldenbach	**SIGNATURE DATE:** July 5, 2012

GENERAL INSPECTION TOPICS

This list identifies the environmental and permit parameters inspected and gives a categorical evaluation of each. IF PB or PV IS INDICATED, YOU SHOULD READ THE FOLLOWING PAGES CAREFULLY IN ORDER TO ASSURE COMPLIANCE WITH THE TERMS OF YOUR PERMIT AND APPLICABLE RULES AND REGULATIONS. If PV is indicated, you will be notified under separate cover when the Mined Land Reclamation Board will consider possible enforcement action. 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---------- N	(FN) FINANCIAL WARRANTY-------- N	(RD) ROADS---------- N
(HB) HYDROLOGIC BALANCE---------- PV	(BG) BACKFILL & GRADING---------- N	(EX) EXPLOSIVES--------- N
(PW) PROCESSING WASTE/TAILING---- N	(SF) PROCESSING FACILITIES------- N	(TS) TOPSOIL---------- N
(MP) GENL MINE PLAN COMPLIANCE- N	(FW) FISH & WILDLIFE---------- N	(RV) REVEGETATION---- N
(SM) SIGNS AND MARKERS---------- N	(SP) STORM WATER MGT PLAN---- N	(SB) COMPLETE INSP---- N
(ES) OVERBURDEN/DEV. WASTE--------- N	(SC) EROSION/SEDIMENTATION--- N	(RS) RECL PLAN/COMP-- N
(AT) ACID OR TOXIC MATERIALS------- N	(OD) OFF-SITE DAMAGE----------N	(ST) STIPULATIONS------- 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 inspection was conducted by Tom Kaldenbach and Tim Cazier of DRMS. John Hamrick represented the operator. Mike Villegrana conducted water sampling for the operator.

The main objective of the inspection was to collect a water quality sample in the area where drilling and pressure grouting had been conducted during the week of June 25, 2012 near Sump 10 (the grout curtain project area).

Hydrologic Balance:
The ground was dry on the mine site, with the exception of the three areas described in Table 1 below. Field parameters of the water in the three areas and in Sump 4 were measured with Hanna pen meters that had been calibrated immediately prior to the inspection (see measurement results in Table 2, below). The operator used its own meters for measuring field parameters concurrently with DRMS.

A sample for laboratory analysis of major ions, metals, and radionuclides was collected from the water flowing into the lowest part of the grout curtain area. This sample was collected in 8 bottles (5 with HNO_3 preservative), and then was immediately stored in a chest with ice. The ice chest was delivered to the Accutest laboratory in Wheat Ridge at 1:40 p.m. on the day of the inspection. The operator used its own bottles for collecting a sample at the grout curtain location concurrently with DRMS.

In order to evaluate the potential for disturbance to the prevailing hydrologic balance in the affected area, the electroconductivity value of the discharge in the grout curtain area has been compared to the most recent values the operator has reported for the mine pool and the upstream alluvial monitoring well (see Table 3, below). The value in the grout curtain project area (2,809 µmhos/cm) is much closer to the value from the mine pool water (3,298 µmhos/cm), than to the value for upstream alluvial ground water (300 µmhos/cm).

Table 1 – Water on land surface observed during inspection.

Location	Source of Water	Description
Ralston Creek channel, immediately upstream from upper cutoff wall of creek diversion pipeline	Ralston Creek	Pooling of clear water at elevation below pipe inlets in cutoff wall. The Ralston Creek channel appeared dry upstream from the pooled area. The two pipelines that extend through the cutoff wall (the 18-inch diameter diversion pipeline and the 24-inch diameter creek flow pipeline) were both dry. The creek channel was dry immediately downstream from the cutoff wall.

Location	Source of Water	Description
Grout curtain project area	Metamorphic bedrock	Clear water was discharging from bedrock at several locations and was pooling in a low area. The total discharge appeared to be approximately 20 gpm, consistent with the operator's 15 to 20 gpm estimate. The pooled water was being pumped via a 4-inch diameter HDPE pipe to the treatment plant approximately 400 feet to the northwest.
Ralston Creek channel at BPL (Below Property Line)	Operator's water treatment plant (according to operator's representative). Treatment plant is fed by pumps located in grout curtain project area and in sumps in alluvial fill.	Clear water was pooled in the creek channel and was flowing at less than 20 gpm (visual estimate). Operator's representative explained that the treatment plant discharges to the creek channel at a location upstream from BPL. The outlets of the two pipes that are at this location (the 18-inch diameter creek diversion pipeline and the - inch water treatment plant pipeline) were dry, with the exception of a slow drip of water from the treatment plant pipeline.

Table 2 – Field parameters measured during inspection

Location	Temperature	pH	Electroconductivity, µmhos/cm
Ralston Creek channel, immediately upstream from upper cutoff wall of creek diversion pipeline	65°F	7.5	397
Grout curtain project area	66°F	7.1	2,809

Location	Temperature	pH	Electroconductivity, µmhos/cm
Sump 4 (central part of Ralston Creek valley, approximately 300 feet from grout curtain area)	57°F	7.8	903
Ralston Creek channel at BPL (Below Property Line)	69°F	7.5	1,860

Table 3 – Comparison of field electroconductivity measurements: Grout curtain area vs. First quarter 2012 data from mine pool and upstream alluvial monitoring well

Location	Measurement date	Electroconductivity, µmhos/cm
Grout curtain project area	7/3/12	2,809
Mine pool	3/9/12	3,298
Alluvial monitoring well upstream from Schwartzwalder Mine (well MW-00)	1/5/12	300

It is reasonable to conclude that the mine pool contributes to the discharge in the grout curtain area. This conclusion is based on the similarity of electroconductivity values in the two locations (see Table 3), the close proximity of the mine pool to the grout curtain area, and the likely elevation difference between the mine pool and the grout curtain area. The Steve Adit is located approximately 200 feet from the grout curtain area. The fractured mass of metamorphic rock that separates the Steve Adit from the grout curtain area provides a subsurface flowpath between those two areas. The elevation of the mine pool was most recently reported as 6,578 feet, which appears to be a few feet higher than the unlabeled elevation contours of the grout curtain area shown on Figure 1 submitted for TR-20.

The suspected flow of mine water from the workings to the Ralston Creek alluvial valley is consistent with such flow hypothesized by the USGS (Cain et al, 2011), by Cotter's consultant AMEC Environment and Infrastructure (AMEC Report, October 10, 2011, concluding that the Mine Pool was "the only potential source, based on this data set, that could have produced the observed elevated uranium and TDS concentrations at Sump No. 10 by mixing with alluvial groundwater."), and by Denver Water (Arcadis Technical Memorandum, January 25, 2011). The operator has previously reported water flowing into the mine workings from Ralston Creek

alluvium (page 6 of Appendix E-2 of Permit Application M-1977-300). Reversal of flow from the workings to the alluvium would be expected as the mine workings were flooded in recent years to an elevation above the alluvium, creating a local hydraulic gradient directed downward from the workings to the alluvium.

It appears that water from the mine pool has been discharging from metamorphic rock in the grout curtain area prior to the operator's excavation in that area. The discharge prior to excavation has contaminated water in the alluvial fill, based on the electroconductivities of 2,809 µmhos/cm of the discharge and 300 µmhos/cm of the alluvial water (see Table 3, above). Some of the discharge continues to enter unexcavated alluvial fill material in the grout curtain area. Contamination of the alluvial fill prior to the excavation and continuing today represents a failure to minimize disturbance to the affected land and to the quality of ground water systems after the mining operation and during reclamation (see C.R.S § 34-32-116(7)(g) and Rule 3.1.6). Based on this contamination, the discharge in the grout curtain area is cited as a possible violation of the referenced Statute and Rule.

PHOTOGRAPHS

Photo 1 – Ralston Creek at BPL location.

Photo 2 – 18-inch diversion pipeline and 4-inch water treatment pipeline at BPL location (downstream from mine surface facilities area).

Photo 3 - Sump 4 covered manhole (center right) and control panel (center left). Tank partially in view on right side of photo is no longer in use.

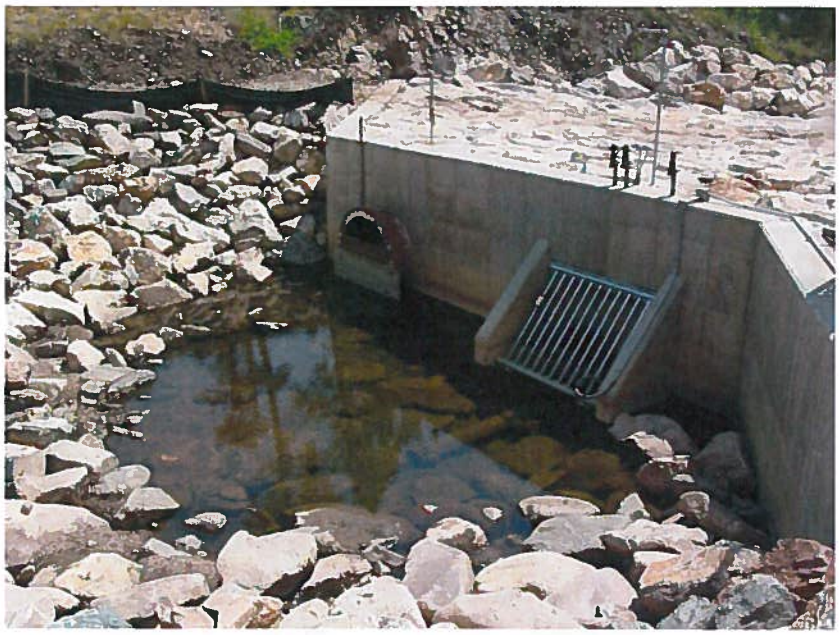

Photo 4 – Ponded Ralston Creek water on upstream side of upper cut-off wall for creek diversion pipeline. 18-inch diameter diversion pipeline is out of view behind trash rack on right side of photo. Steel pipe on left side of photo is stream overflow pipe.

Photo 5 – Inactive drill rig (right side of photo) in grout curtain area that was drilling holes for grout curtain during week prior to this inspection.

Photo 6 – Close-up of inactive drill rig shown in previous photo. Drill string was still in hole during this inspection and water was flowing out of the hole at less than 1 gpm, and was flowing to nearby low area on ground where DRMS and operator sampled.

Photo 7 – Operator's representative (center of photo) collecting sample where water flows to low area in grout curtain area. Black pipe on right side of photo carries water from pump in pool to water treatment plant approximately 400 feet away.