




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): Amy Eschberger, Michael Cunningham	INSP. DATE: May 18, 2021	INSP. TIME: 09:00
OPERATOR: Colorado Legacy Land, LLC	OPERATOR REPRESENTATIVE: Elizabeth Busby, Billy Ray, Jim Harrington	TYPE OF OPERATION: 112d-2 - Designated Mining Operation	
REASON FOR INSPECTION: Normal I&E Program	BOND CALCULATION TYPE: None	BOND AMOUNT: \$8,900,000.00	
DATE OF COMPLAINT: NA	POST INSP. CONTACTS: None	JOINT INSP. AGENCY: None	
WEATHER: Clear	INSPECTOR'S SIGNATURE: 	SIGNATURE DATE: May 28, 2021	

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>Y</u>
(HB) HYDROLOGIC BALANCE----- <u>Y</u>	(BG) BACKFILL & GRADING----- <u>Y</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>Y</u>	(FW) FISH & WILDLIFE----- <u>N</u>	(RV) REVEGETATION---- <u>Y</u>
(SM) SIGNS AND MARKERS----- <u>N</u>	(SP) STORM WATER MGT PLAN---- <u>Y</u>	(RS) RECL PLAN/COMP-- <u>Y</u>
(ES) OVERBURDEN/DEV. WASTE----- <u>N</u>	(SC) EROSION/SEDIMENTATION--- <u>Y</u>	(ST) STIPULATIONS----- <u>N</u>
(AT) ACID OR TOXIC MATERIALS----- <u>N</u>	(OD) OFF-SITE DAMAGE----- <u>N</u>	

Y = Inspected / 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 Schwartzwalder Mine (Permit No. M-1977-300) conducted by Amy Eschberger and Michael Cunningham of the Division of Reclamation, Mining and Safety (Division). The operator was represented by Elizabeth Busby, Billy Ray, and Jim Harrington during the inspection. The site is located approximately 6 miles northwest from Golden, CO in Jefferson County. Access to the site is off of Glencoe Valley Road. The affected lands are owned by the operator. This site is on a quarterly inspection frequency. This inspection serves as the 2nd quarter inspection for 2021. **Photos 1-16** taken during the inspection are included with this report.

At the time of the inspection, the mine pool was at 198 feet below the Steve Level, which is 48 feet below the required 150 foot depth. The water treatment plant was brought back online on May 10, 2021. The plant was shut down for the winter on November 1, 2020. This means the plant was offline for about 27 weeks, which, according to the operator, is the longest shut down period thus far. When the plant was brought back online this month, the mine pool was at 188 feet below the Steve Level. When the plant was shut down last November, the mine pool was at 340 feet below the Steve Level. Therefore, the mine pool ascended 152 feet during the recent winter shut down period. The last in-situ injection treatment of the mine pool was completed in January of 2020. Depending on the mine pool chemistry observed over the year, the operator may complete another in-situ injection treatment of the mine pool this fall. The operator continues to collect daily average mine pool elevations and quarterly water quality samples from the mine pool and reports this data with other site sampling data in its quarterly monitoring reports submitted to the Division.

The wetland and biochemical reactor (BCR) pilot-scale study which was conducted on top of the mesa, east of the water treatment plant, has concluded. According to the operator, the results of this study were promising with regard to the potential biological treatment of uranium on site. This passive treatment system may be proposed as part of the final reclamation plan for the site in a future permit revision. The materials used in this study (e.g., tanks, hoses, small greenhouse) have not yet been removed from the site.

The valley excavation project, in which radionuclide-impacted alluvial valley soils are excavated and disposed of underground (on site), had recommenced the day before this inspection. This project start-up was delayed by the frequent precipitation events occurring in the area this spring. The operator estimates they have approximately 3-4 weeks left of hauling excavated material to the CV Glory Hole in the Minnesota Mine, before this disposal location reaches its capacity. As of the Division's approval of Amendment No. 5 (AM-5) on January 13, 2021, the operation is also approved to dispose of the excavated alluvial soils in the Black Forest Mine. This mine will provide an additional capacity of approximately 15,000 cubic yards. The portal of this mine is located near the valley floor and is currently covered by steel grating with a locked gate. While evidence of the recent heavy rain storms that occurred in this area was observed throughout the site, including ponded water in low-lying areas and high creek levels, no discharge was observed from the Black Forest Mine portal. According to the operator, only minor drippings have been observed inside the mine this spring. This is consistent with the operator's description of the Black Forest Mine (in AM-5) as a "dry" mine. The operator expects to complete the valley excavation project this year. However, final surveys of the project area may extend into 2022.

The Division inspected the diversion channel installed along the top northern edge of the North Waste Rock Pile (NWRP) under Technical Revision No. 28 (TR-28; approved on March 27, 2020). Installation of this channel was completed in November of 2020. The Division inspected the site throughout the major phases of this project and accepted the work completed in its inspection report signed on December 10, 2020. The operator submitted the Record of Construction for this project on December 28, 2020. This report was approved by the Division on April 12, 2021, after the operator provided the additional information requested. The

diversion channel consists of a three-liner base system composed of a geosynthetic liner sandwiched between two non-woven geotextile liners, and a four-inch thick layer of Geoweb panels installed across the top of the liner system and filled with concrete. A water capture structure (seal wall) was installed at the upstream end of the channel in the ephemeral drainage above the NWRP. A buried perforated pipeline was installed upstream of the seal wall which transitions to a solid pipeline prior to daylighting approximately 50 feet downstream of the seal wall to discharge into the channel. A riprap-lined energy dissipation basin was installed at the downstream end of the channel. Overflow from this basin will flow across a road crossing constructed out of a gravel-filled Geoweb system. During the inspection, water was discharging from the outlet pipe into the channel at a rate of approximately 5 gallons per minute (no measurements were obtained). Some water was ponded inside the riprap-lined dissipation basin. The channel was free of any significant debris and appeared to be functioning as designed. No evidence of seeps was observed at the toe of the NWRP. This would suggest the diversion channel is adequately addressing the seep issue, especially given the significant amount of precipitation that has occurred in the area this spring. It should be noted, the Division observed some germination of the grass seed planted in disturbed areas adjacent to the channel last fall.

As mentioned above, evidence of a wet spring was observed throughout the site. Water was ponded in low-lying areas, including in the excavated areas in the valley, and Ralston Creek was running high. The creek flows were not being captured above the upgradient cutoff wall and routed around the mine site via the bypass pipeline as usual. The creek was flowing in the channel below the upgradient cutoff wall. According to the operator, no water quality issues have been observed thus far at the creek monitoring location below the mine site (SW-BPL) with the creek flowing across the site. This is attributed to the installation of the NWRP diversion channel (which is addressing the seep issue) and the progress made in excavating contaminated alluvial soils from the valley. Additionally, the current high creek flows would act as a dilution factor for any minor contamination that may be present. The operator also informed the Division that any water remaining in excavated areas after 72 hours would be pumped to the plant for treatment and ultimately discharged at the operator's permitted outfall location.

The Division observed the borrow area located up the valley from the NWRP, where rock and fill material was derived for the diversion channel project. The material excavated in this area was deposited at the base of an ephemeral drainage during the September 2013 flood events. While the borrow area is located outside of the approved mine permit area, the operator demonstrated that reclamation of this area is included in their 404 permit held with the U.S. Army Corps of Engineers. In its inspection report signed on December 10, 2020, the Division informed the operator that any additional activities in the borrow area besides reclamation (approved under the 404 permit) would require the area to also be permitted through our office. The operator has discontinued mining activities in this area as advised by the Division, and all equipment has been removed from this area. It did not appear that reclamation of this area has been initiated at this time.

During the inspection, the following items were discussed:

- The next Amendment application (AM-6), which was to be submitted by September 30th of this year, will be submitted much sooner, possibly in late June or early July of this year.
- AM-6 will focus on addressing conditions #2 and #3 of the Division's approval of the Succession of Operators application (SO-01), as outlined in its February 20, 2018 letter. Condition #2 requires the operator to submit an Amendment application that affirms the permanent cessation of mining activities, provides a conceptual site model, provides a plan addressing the physical and chemical stabilization of the mine pool specifically addressing the concentrations of dissolved uranium and other constituents as required under the conditions of the permit, and updates the reclamation and environmental protection plans. Condition #3 requires the operator to modify the permit to address the long-term cost of operating

the water treatment plant and managing the mine pool, based on a minimum of three consecutive years of data which verify the physical and chemical stabilization of the mine pool.

- AM-6 will not address surface reclamation in the valley. A final reclamation plan for the valley will be proposed in a subsequent revision after the excavation project has concluded and final surveys of the project area have been obtained. The operator expects this revision will be submitted in 2022.
- On May 5, 2021, the operator requested an alternate schedule for reporting the required quarterly water monitoring data for the site. The Division has recently begun requiring that monitoring data for a particular quarter be submitted within 30 days of the end of that quarter. For example, the first quarter monitoring data (for January-March) is due by May 1. However, the operator requested the reporting deadlines be extended to the end of the next quarter. According to the operator, this additional time is needed due to the longer analytical turnaround time required for radiological analytes, as well as for reanalysis or resampling (if needed), data management, quality assurance/control review, interpretation, documentation, and internal review prior to submission to the Division. During the inspection, the Division informed the operator that a 60 day extension to the reporting deadlines will be approved. This means the quarterly monitoring data for the site must be submitted by the following deadlines:

1st quarter report – due by June 1

2nd quarter report – due by September 1

3rd quarter report – due by December 1

4th quarter report – due by March 1 (of the following year)

The Division will send a separate letter to the operator with the approved alternate reporting schedule.

Since the last inspection (conducted on January 21, 2021), the Division approved the operator's request for a surety reduction (SR-9; approved on February 19, 2021), which reduced the required financial warranty for the site to \$7,674,022.00, a reduction of \$1,225,978.00. This reduction was associated with reclamation work completed at the site in recent years, including demolition and debris removal, work completed for the alluvial valley excavation project, installation of the stormwater diversion channel on the NRWP, placement of a topsoil "cap" on the waste rock piles, and for the initial in-situ mine pool treatment. The currently held financial warranty is considered adequate at this time, but will be reassessed in the Division's review of the upcoming Amendment application.

This concludes the report.

Any questions or comments regarding this inspection report should be forwarded to Amy Eschberger at the Colorado Division of Reclamation, Mining and Safety, 1313 Sherman Street, Room 215, Denver, CO 80203, via telephone at 303-866-3567, ext. 8129, or via email at amy.eschberger@state.co.us.

PHOTOGRAPHS



Photo 1. View looking northwest at water treatment plant on top of mesa. This plant was brought back online as of May 10 of this year, after a 27-week winter shutdown period.



Photo 2. View of Reverse Osmosis System present inside water treatment plant.



Photo 3. View looking southeast at materials that remain from concluded wetland and biochemical reactor pilot-scale study which was conducted on top of mesa, east of water treatment plant.



Photo 4. View looking northwest from top of mesa across valley excavation project area. Note standing water in excavated pits (indicated) from recent storm events. This water will be pumped to plant for treatment (if needed) and ultimately discharged at operator's permitted outfall.



Photo 5. View looking southeast across northern portion of valley excavation project area.



Photo 6. View looking northwest across central portion of valley excavation project area. Note standing water in excavated pit (indicated) from recent storm events. This water will be pumped to plant for treatment (if needed) and ultimately discharged at operator's permitted outfall.



Photo 7. View looking upstream at upgradient cutoff wall/headgate in Ralston Creek. Note creek running high upstream from cutoff wall and standing water present in area during inspection.



Photo 8. View looking south at upgradient cutoff wall/headgate in Ralston Creek, showing creek running high upstream of cutoff wall during inspection.



Photo 9. View looking downstream from upgradient cutoff wall/headgate in Ralston Creek, showing creek flowing downstream of cutoff wall during inspection.



Photo 10. View looking north/northeast (upgradient) at upper section of NWRP diversion channel, showing pipeline from water intake structure which daylights to discharge into channel approx. 50 feet downgradient from seal wall. Note water flowing from pipeline during inspection (at estimated 5 gpm).



Photo 11. View looking north/northeast at riprap-lined water intake structure constructed at upgradient end of NWRP diversion channel in ephemeral drainage above pile.



Photo 12. View looking southwest (downgradient) at section of NWRP diversion channel which curves around hillside. Note channel free of debris and functioning as designed.



Photo 13. View looking east/southeast at riprap-lined energy dissipation basin (at left) constructed at downgradient end of NWRP diversion channel and road crossing (at right) constructed of gravel-filled Geoweb system.



Photo 14. View looking west/northwest at riprap-lined energy dissipation basin constructed at downgradient end of NWRP diversion channel, showing some water ponded in basin during inspection.



Photo 15. View looking north across borrow area located up valley from NWRP where rock and fill material was excavated from flood deposit for diversion channel project. Mining activities have ceased in this area and reclamation will be completed under operator's USACE permit.



Photo 16. View looking south across borrow area located up valley from NWRP where rock and fill material was excavated from flood deposit for diversion channel project. Mining activities have ceased in this area and reclamation will be completed under operator's USACE permit.

Inspection Contact Address

Jim Harrington
Colorado Legacy Land, LLC
12150 E Briarwood Ave - Suite 135
Centennial, CO 80112

EC: Billy Ray, Ensero Solutions at: bray@ensero.com
Elizabeth Busby, Ensero Solutions at: ebusby@ensero.com
Paul Newman, Colorado Legacy Land, LLC at: paul@coloradolegacy.land
Eric Williams, Colorado Legacy Land, LLC at: eric@coloradolegacy.land
Michael Cunningham, DRMS at: michaela.cunningham@state.co.us