COLORADO
Division of Reclamation, Mining and Safety
Department of Natural Resources

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	**INSP. DATE:** August 22, 2022	**INSP. TIME:** 09:00
OPERATOR: Colorado Legacy Land, LLC	**OPERATOR REPRESENTATIVE:** Jim Harrington, Elizabeth Busby, Billy Ray	**TYPE OF OPERATION:** 112d-2 - Designated Mining Operation	

REASON FOR INSPECTION: Normal I&E Program	**BOND CALCULATION TYPE:** None	**BOND AMOUNT:** $7,674,022.00
DATE OF COMPLAINT: NA	**POST INSP. CONTACTS:** None	**JOINT INSP. AGENCY:** None
WEATHER: Clear	**INSPECTOR'S SIGNATURE:** Amy Eschberger	**SIGNATURE DATE:** September 2, 2022

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---------- Y	**(FN) FINANCIAL WARRANTY-------- N**	**(RD) ROADS---------- Y**
(HB) HYDROLOGIC BALANCE---------- Y	**(BG) BACKFILL & GRADING---------- Y**	**(EX) EXPLOSIVES--------- N**
(PW) PROCESSING WASTE/TAILING---- N	**(SF) PROCESSING FACILITIES------- Y**	**(TS) TOPSOIL---------- N**
(MP) GENL MINE PLAN COMPLIANCE- Y	**(FW) FISH & WILDLIFE---------- N**	**(RV) REVEGETATION---- N**
(SM) SIGNS AND MARKERS---------- N	**(SP) STORM WATER MGT PLAN---- N**	**(RS) RECL PLAN/COMP-- Y**
(ES) OVERBURDEN/DEV. WASTE--------- N	**(SC) EROSION/SEDIMENTATION--- N**	**(ST) STIPULATIONS------- N**
(AT) ACID OR TOXIC MATERIALS------- Y	**(OD) OFF-SITE DAMAGE----------N**	

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 of the Division of Reclamation, Mining and Safety (Division). The operator was represented by Jim Harrington, Elizabeth Busby, and Billy Ray 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 3rd quarter inspection for 2022. **Photos 1-22** taken during the inspection are included with this report.

At the time of the inspection, the weather was warm and sunny. The mine pool was reported at 322 feet below Steve Level, which is 172 feet below the required 150 foot depth. The water treatment plant was brought back online on May 2, 2022 (after being shut down for the winter in September 2021). The most recent in-situ treatment of the mine pool (the 5th treatment since 2013) occurred during the last week of September 2021. The operator anticipates the water treatment plant will be shut down for the season on August 26, 2022.

The valley excavation project in which radionuclide-impacted alluvial valley soils are excavated and disposed of underground (on site) had not recommenced. This project has been on hold since December 2021, after the Black Forest Mine reached capacity (for disposal of excavated material) and the main portal was partially backfilled in accordance with Amendment No. 5 (AM-5; approved on January 13, 2021). In Amendment No. 6 (AM-6; currently under review), the operator is proposing to place any additional excavated material at the southeastern edge of the existing South Waste Rock Pile (SWRP). This material will be tied into the adjacent Black Forest Mine backfill area and "capped" with a minimum of one foot of growth medium and revegetated with a grass and wildflower seed mixture. The Division observed the proposed SWRP expansion area during the inspection. In its August 2, 2022 adequacy review #4 for AM-6, the Division requested additional information for this proposal, including a description of the type of cover material to be used to "cap" the contaminated soils, a description of the material to be used in the expansion area compared with existing material in the SWRP, and a description of how stormwater from the two natural drainages above the expansion area will be managed.

The operator indicated during the inspection they are considering whether to proceed with the excavation project this year or to pick it back up during the next construction season (in 2023). In the reclamation plan presented in AM-6, the operator states the project was expected to be completed this year. <u>Given the amount of time that has passed since mining activities occurred at the site (since 2000), the Division strongly encourages the operator to complete all surface reclamation as soon as possible.</u> While the Division is currently reviewing the proposal (in AM-6) to expand the SWRP, the operator is already approved to temporarily store excavated material on the valley floor. Therefore, the operator could proceed with the excavation project per the current approved plan.

In the period of time the site has been inactive (approximately 8 months), the disturbed areas are becoming overgrown with weeds. Per Rule 3.1.10(6), methods of weed control shall be employed for all prohibited noxious weed species, and whenever invasion of a reclaimed area by other weed species seriously threatens the continued development of the desired vegetation. Weed control methods shall also be used whenever the inhabitation of the reclaimed area by weeds threatens further spread of serious weed pests to nearby areas. <u>The operator must continue to implement the approved weed control plan for the site, even during periods of inactivity.</u>

During the inspection, creek flows were being captured above the upgradient cutoff wall and routed around the mine site via the bypass pipeline. In AM-6, the operator is proposing to re-establish creek flows across the mine site, after the alluvial valley excavation project (and other surface reclamation) has been completed. The

operator is proposing to leave the upgradient cutoff wall and bypass pipeline in place for final reclamation, as a contingency measure. However, the Division must hold costs for removing these features until the operator has demonstrated that leaving them is consistent with the U.S. Army Corps permit. In its adequacy review #4 for AM-6, the Division asked the operator to commit to sampling all approved surface water monitoring locations on a monthly basis (instead of quarterly, as currently approved), after creek flows have been re-established across the mine area. The Division will re-evaluate the sampling frequency after receiving sufficient monthly data that demonstrates no surface water impacts are occurring. There was some discussion during the inspection about potentially reducing the number of creek monitoring locations within the mine area, considering the majority of the historic facilities (associated with particular monitoring locations) have been removed from the valley. The Division agreed that some of the locations may no longer be necessary. Any such proposal will need to be submitted in a Technical Revision for Division review and approval. The operator indicated they may propose a revised surface water monitoring plan with the revised groundwater monitoring plan to be submitted in the Technical Revision requested by the Division for the installation of a new bedrock monitoring well. The operator anticipates this Technical Revision will be submitted next spring.

The Division observed the area of the existing alluvial groundwater monitoring wells MW-6, MW-7, and MW-12, located at the southeastern edge of the mine site. As mentioned in previous inspection reports, these wells have been or will be impacted by the valley excavation project, and will therefore, need to be formally removed from the approved groundwater monitoring plan. In its adequacy review #4, the Division suggested the operator install an additional bedrock groundwater monitoring well south of the creek, between wells MW-7 and MW-12. During the inspection, the operator indicated they believe the area between wells MW-6 and MW-7 would be a more appropriate location for the new well, given the additional space available in this portion of the valley. The Division agreed that anywhere between wells MW-6 and MW-12 could suffice for the new well location, as long as it is south of the creek, and west of the groundwater divide illustrated in AM-6 (on Figure E-4). Given the excavation activities still underway in the area of these wells, the operator will not be able to install the new bedrock well until the excavation project is complete. A Technical Revision will need to be submitted within 30 days of installation of the new well, including a final construction report and an updated groundwater monitoring plan and map that incorporate the new well.

While the reclamation plan proposed in AM-6 includes leaving the water treatment plant for final reclamation (for long-term pumping and treatment of the mine pool), the Division must hold costs for removing the plant and all associated infrastructure until the operator has provided sufficient demonstration that leaving the plant is consistent with local zoning and land use requirements. Removing the plant is one of the last items the Division requires additional information for in order to calculate the bond estimate. During the inspection, the Division took several photos of the exterior and interior of the water treatment plant to document features requiring demolition and/or removal for reclamation. The two primary features inside the plant are the Ion Exchange (IX) system and the Reverse Osmosis (RO) system. The operator is approved to dispose of certain materials such as spent RO membranes and filters inside the Minnesota Mine on site. However, the majority of the plant features (e.g., exterior, foundation, pipes, tanks, chemicals, IX resin) will need to be disposed of offsite. The Division has requested a description of all components of the plant and associated infrastructure which would require demolition and/or removal for reclamation, and the anticipated disposal location(s) for these materials. Once this information has been received, the Division will calculate a bond estimate for removing the water treatment plant.

The Division is still reviewing AM-6, which was filed with our office on July 29, 2021. On July 29, 2022, the operator requested a 60 day extension of the review period past the 365-day deadline from filing. This extension was approved by the Mined Land Reclamation Board (Board) during its August 17, 2022 meeting, moving the AM-6 decision date to September 27, 2022. The Division received the operator's response to its adequacy review #4 after this inspection, on August 29, 2022. The Division will review this response and determine

whether all remaining adequacy items in the application have been sufficiently addressed. Because timely objections have been submitted on the application (by City of Arvada and Denver Water), the Division will issue a recommendation for approval or denial of the application by the decision date, and the matter will be scheduled for consideration by the Board. At the hearing, the Board will issue the final decision on the application for approval, approval with conditions, or denial.

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 south at groundwater monitoring well MW-17, installed near Pierce Adit (along road to mesa with water treatment plant).

Photo 2. View looking south at groundwater monitoring well MW-18 (circled), installed at southern edge of valley (northwest of mesa with water treatment plant).

Photo 3. View looking northwest across central portion of valley excavation project. This project has been suspended since December 2021.

Photo 4. View looking southeast across central portion of valley excavation project. This project has been suspended since December 2021.

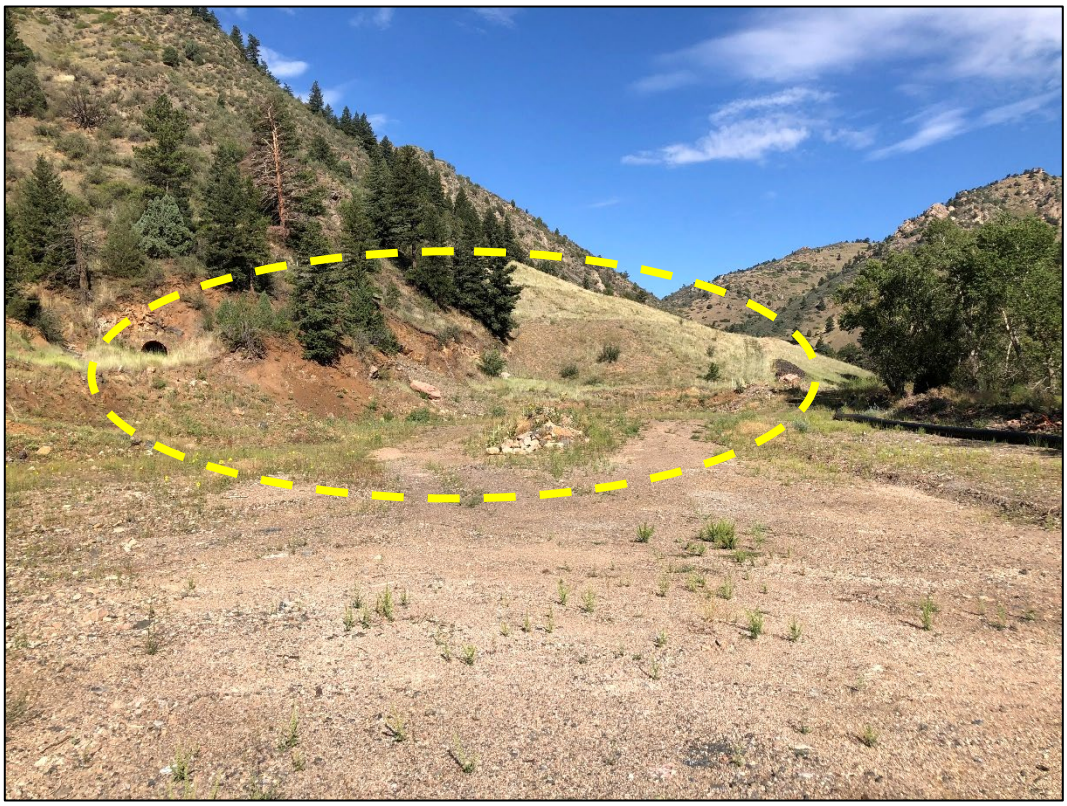

Photo 5. View looking northwest across northern portion of valley excavation project. AM-6 proposes placing additional excavated material on southeastern edge of SWRP and tying this material into the Black Forest Mine backfill. Approximate location of proposed SWRP expansion is circled.

Photo 6. View looking west at main portal of Black Forest Mine (indicated), which was partially backfilled in December 2021. This area is included in the proposed SWRP expansion. Note southwestern edge of SWRP at far right.

Photo 7. View looking north/northwest at southeastern portion of SWRP, showing location of monitoring well MW-19 (circled). The proposed SWRP expansion would leave access to this well from the adjacent road.

Photo 8. View looking southeast across storage area located north of creek. Several items have been removed from this area since it was inspected in November 2021, including empty storage tanks and old mining equipment. This area will be completely cleared out and revegetated for final reclamation.

Photo 9. View looking northwest across northern portion of storage area located north of creek. The small shed and empty storage tank observed in this area in November 2021 have been removed.

Photo 10. View of upgradient cutoff wall/headgate in Ralston Creek, showing creek flowing upstream of cutoff wall. Upgradient flows were being routed around the mine site via the bypass pipeline.

Photo 11. View looking downstream from upgradient cutoff wall/headgate in Ralston Creek, showing creek channel dry downstream of cutoff wall.

Photo 12. View looking northwest across southern portion of valley excavation project. Note master sump #1 and monitoring well MW-7 (circled) installed in this area. These features have been rendered inoperative due to the excavation project and will need to be removed from the monitoring plan.

Photo 13. View looking southeast at northwestern side of water treatment plant (on top of mesa).

Photo 14. View looking northwest at southeastern side of water treatment plant (on top of mesa). Note reactor tank and backfill slurry tank (in foreground) which sit inside a lined secondary containment basin, and clean water tank (indicated in background).

Photo 15. View looking west at reactor tank and backfill slurry tank which sit inside a lined secondary containment basin. Note pipeline (indicated) which runs from dewatering pump inside Jeffrey Air Shaft (located uphill from plant) for appox. 250 feet down to tanks.

Photo 16. View looking southeast inside water treatment plant, showing IX system and resin storage area (at left) and RO system (at right). Note approx. 12 foot x 17 foot garage door at end of building, with concrete floor ramp.

Photo 17. Closer view of IX treatment system inside water treatment plant (along northern wall), consisting of 3 tanks. According to operator, only one tank is typically used at this time, mainly for polishing after primary treatment through RO system.

Photo 18. Closer view of RO treatment system inside water treatment plant (along southern wall). This is the primary treatment system for water pumped from the mine workings.

Photo 19. View of mine pump (at center), anti-scale tank (at right), and sump drainage area (indicated) inside water treatment plant (along southern wall). Any fluids captured by sump system are directed to mine workings.

Photo 20. View of backfill pump, booster pumps, backfill pump VFD, and barium chloride drum (at center) located in southern corner of water treatment plant. Note portion of RO system visible at right.

Photo 21. View of main electrical panel located in western corner of water treatment plant.

Photo 22. Closer view of floor of water treatment plant, showing 8 inch high concrete berm (indicated) installed around edge of floor. This berm serves as secondary containment for the plant, to contain at least 110% of the maximum storage capacity of all primary containers inside the building holding hazardous chemicals.

Inspection Contact Address

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

EC: Elizabeth Busby, Ensero Solutions at: ebusby@ensero.com
Billy Ray, Ensero Solutions at: bray@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