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

January 17, 2023

Jim Harrington
Colorado Legacy Land, LLC
333 W. Hampton Ave., Suite 935
Englewood, CO 80110

RE: Schwartzwalder Mine, Permit No. M-1977-300, Technical Revision No. 30 (TR-30), Preliminary Adequacy Review

Mr. Harrington,

On December 30, 2022, the Division of Reclamation, Mining and Safety (Division) received your Technical Revision application (TR-30) for the Schwartzwalder Mine, Permit No. M-1977-300. The requested revision addresses the following:

> *Groundwater Monitoring Locations; Groundwater Monitoring Sampling Plan; Surface Water Monitoring Locations; Surface Water Sampling Plan; South Waste Rock Pile Drainage Design; Identification of Topsoil Borrow Areas; and Structures Requiring Demolition.*

The Division has identified the following adequacy items that must be addressed before approval of TR-30 can be issued:

1. Colorado Legacy Land (CLL) is proposing to remove MW-6, MW-7, MW-12 and the Master Sump 1. In reviewing Figure 1 – Reclamation Project Extents and Monitoring Well Location Map, MW-12 is not located within an area that has been identified for excavation of historically placed waste rock. Please provide a discussion and technical justification for the removal of MW-12.

2. CLL is proposing to eliminate the first quarter sampling of the groundwater monitoring wells and the Mine Pool. The Division has concerns about eliminating the first quarter sampling of the groundwater monitoring wells. The Schwartzwalder Mine is inspected on a quarterly basis and to date there have not been any instances where the site could not be accessed during the first quarter of the year. Continuity of environmental monitoring is essential in evaluating a complex site such as the Schwartzwalder Mine. Please commit to continuing to sample all groundwater monitoring wells during the first quarter of the year or provide additional technical justification for the Division's consideration.

3. CLL is proposing to limit surface water sampling within the permit area to the following locations: SW-AWD, SW-BDIS, SW-BOS, and SW-BPL. Surface water monitoring station SW-NWRP is situated between the North Waste Rock Pile (NWRP) and the South Waste Rock

Pile (SWRP). In November of 2020, CLL completed construction of the NWRP Diversion Channel which was installed in part to address a seep that had expressed at the toe of the NWRP. Water quality data obtained from surface water monitoring station SW-BDIS will serve to identify any sources of contamination from the waste rock piles. However, eliminating SW-NWRP will make it difficult to determine which waste rock pile may be a source of contamination. Furthermore, the NWRP Diversion Channel has only been in place for approximately two years and there has been no discussion under TR-30 of the status of the seep. The Division believes it is appropriate to retain SW-NWRP as a sampling location. Please respond.

4. CLL is proposing to eliminate the following surface water sampling stations located outside of the permit area: SW-FBRG, SW-ARH, SW-LLHG, SW-Weir. TR-30 does not include any discussion on the elimination of these surface water monitoring stations, nor does it provide a technical justification for their elimination. The Division acknowledges that SW-BPL serves to demonstrate that surface water leaving the Schwartzwalder Mine is in compliance with water quality standards. However, as part of the approval of AM-6, CLL committed to installing an additional deep bedrock well near MW-12 in an effort to further demonstrate the pumping of the mine pool has created an inward hydraulic gradient in the vicinity of the mine. Additionally, the removal of contaminated waste rock from the valley floor continues to occur. For the above listed reasons, the Division believes it is appropriate for all of the above listed surface water sampling locations to remain in the sampling plan. Please respond.

5. CLL is proposing to reduce the analytical sample suite for the surface and groundwater monitoring sampling plans. As CLL noted, the current quarterly sampling program commenced in January 2019. The Division agrees that a reduction of the sample suite is appropriate when considering the long-term monitoring requirements of the site. However, the Division has concerns about reducing the groundwater and surface water sample suite while alluvial valley excavation is ongoing and believes that the appropriate time to consider reducing the sample suite would be when all surface reclamation has been completed. In addition, CLL committed under AM-6 to sample all surface water monitoring locations on a monthly basis after Ralston Creek flows are reestablished. Given that the creek is currently dry during most sampling events, the Division believes that a full sample suite at the surface water monitoring locations is necessary to demonstrate that surface water resources are being protected. Please respond.

6. CLL has provided a stormwater management plan (SWMP) related to the expansion of the SWRP. The SWMP is generally acceptable to prevent sediment from entering into Ralston Creek. Please address the following comments:

    a) Provide a map showing the approximate location of the sediment control structures that will be installed in the vicinity of alluvial valley excavation activities.

7. CLL did not provide any design details for the two stormwater control structures that will be

constructed on or adjacent to the SWRP. Please address the following comments:

a) Provide an previously submitted figures or maps that were included under AM-6 and ensure the maps meet the requirements of Rule 6.2.1(2)(a)-(e).
b) Rule 1.1(21) defines an Environmental Protection Facility (EPF) as a structure which is identified in the Environmental Protection Plan as designed, constructed and operated for control or containment of designated chemicals, uranium, uranium by-products or other radionuclides, acid mine drainage, or toxic or acid-forming materials that will be exposed or disturbed as a result of mining or reclamation operations. Therefore, the Division considers the two stormwater control structures to be EPFs as defined by the Rules. Please provide appropriate design details and ensure the designs conform to Rules 3.1.6(1), 6.4.7 and 7.3.1 (Technical Revision No. 28 can be used as a reference for the design requirements on an EPF).
c) Specify how the stormwater in the drainage swale and the bermed drainage flow path will cross the access road and discharge into Ralston Creek. Provide details for any culverts or energy dissipation structures that will be installed.
d) Specify the size of the riprap to be used on the perimeter of the SWRP and describe how it will be placed.

8. CLL has indicated the riprap required for the SWRP will be obtained from locally available sources. Please specify where this material will come from and provide the estimated volume of material that will be required. If the material will be obtained on site, then specify where the material is currently located within the permit area.

9. Under the 'Topsoil Borrow Area' section of TR-30, the Operator states 'the full analytical results are expected back in late-December 2023 and shall be shared with DRMS when available'. The analytical results from topsoil sampling have been included with TR-30. Please confirm that there are no additional analyses to be submitted in regards to topsoil sampling.

10. CLL has identified 43,172 CY of suitable topsoil material from two different locations within the permit area. However, only 5,727 CY of topsoil are needed. Please specify where the needed topsoil will be obtained from. Based on visual observations made during the last monitoring inspection, the Division recommends that the topsoil is obtained from near the mesa. In addition, specify if the 5,727 CY of material will be utilized on the valley floor, the SWRP, or both. If the material will be utilized on the valley floor and the SWRP, then specify the volume of material needed for each area of reclamation.

11. The analytical results from the topsoil sampling indicate that topsoil is suitable for use as plant growth medium. Please provide an additional discussion on how the samples were collected and provided to the laboratory. For example, CLL has indicated the test pits near the mesa have revealed that topsoil extends to a depth of 12' below the surface. Was the sample uniformly mixed across the entire depth of the sample? Could different horizons be distinguished within

the test pits? If so, which horizon(s) will be salvaged and used for reclamation?

12. In reviewing Figure 1 and Figure 6, there does not appear to be any overlap with the topsoil test pits and the alluvial excavation areas. As such, please describe how the areas where topsoil will be borrowed will be reclaimed.

13. CLL is proposing to revise the Reclamation Plan to allow for the cutoff wall, bypass pipeline and water treatment plant to remain upon final reclamation. The Division understands that CLL is seeking authorization from the USACE and Jefferson County to allow these structures to remain. Until such time as the appropriate agency makes a final determination on whether or not the structures can remain, the Division must hold a cost for their removal. Please provide a final determination from the appropriate agency or remove these items from consideration under TR-30.

14. CLL has proposed to eliminate the use of phosphoric acid on an as-needed basis as a nutrient for microbes. CLL further indicated the use of phosphoric acid has no bearing on the effectiveness of in situ treatment in reducing uranium or other constituents. Please provide any analyses that were performed to support this position.

15. The financial warranty must account for all approved reclamation tasks. Please provide a cost estimate for the following reclamation tasks.

    a) Construction of storm water control structures on the SWRP
    b) Placement of riprap on the toe of the SWRP.
    c) Excavation of topsoil required for reclamation of the valley floor.

This concludes the Division's preliminary adequacy review of TR-30. The decision date has been set for **January 30, 2023**. If you are unable to provide satisfactory responses to any inadequacies prior to this date, it will be your responsibility to request an extension of time to allow for continued review of this Technical Revision. If there are still unresolved issues when the decision date arrives and no extension has been requested, the Technical Revision will be denied.

If you have any questions, please contact me at (303)866-3567 x8116.

Sincerely,

Michael A. Cunningham
Senior Environmental Protection Specialist