

17.0 Slick Rock, Colorado, Disposal Site

17.1 Compliance Summary

The Slick Rock, Colorado, Uranium Mill Tailings Radiation Control Act (UMTRCA) Title I Disposal Site was inspected on May 31, 2022. No changes were observed on the disposal cell or in the associated drainage features. Inspectors identified routine maintenance needs but found no cause for a follow-up or contingency inspection. Groundwater monitoring is not required.

17.2 Compliance Requirements

Requirements for the long-term surveillance and maintenance of the site are specified in the site-specific Long-Term Surveillance Plan (DOE 1998) (LTSP) in accordance with procedures established to comply with the requirements of the U.S. Nuclear Regulatory Commission (NRC) general license at Title 10 *Code of Federal Regulations* Section 40.27 (10 CFR 40.27). Table 17-1 lists these requirements.

Table 17-1. License Requirements for the Slick Rock, Colorado, Disposal Site

Requirement	LTSP	This Report	10 CFR 40.27
Annual Inspection and Report	Sections 3.0 and 6.2	Section 17.4	(b)(3)
Follow-Up Inspections	Section 3.4	Section 17.5	(b)(4)
Maintenance and Repairs	Section 4.0	Section 17.6	(b)(5)
Groundwater Monitoring	Section 2.5	Section 17.7	(b)(2)
Corrective Action	Section 5.0	Section 17.8	--

17.3 Institutional Controls

The 62-acre site, defined by the property boundary shown in Figure 17-1, is owned by the United States and was accepted under the NRC general license in 1998. The U.S. Department of Energy (DOE) is the licensee and, in accordance with requirements for UMTRCA Title I sites, the Office of Legacy Management (LM) is responsible for the custody and long-term care of the site. Institutional controls (ICs) at the site include federal ownership of the property, administrative controls, and the following physical ICs that are inspected annually: the disposal cell and associated drainage features, entrance gate and sign, perimeter fence and signs, site markers, and survey and boundary monuments.

17.4 Inspection Results

The site, 5 miles northeast of Slick Rock, Colorado, was inspected on May 31, 2022. The inspection was conducted by K. Meadows and D. Marshall of the Legacy Management Support contractor. M. Hurt from LM and M. Cosby from the Colorado Department of Public Health and Environment were also in attendance. The purposes of the inspection were to confirm the integrity of visible features at the site, identify changes in conditions that might affect conformance with the LTSP, and evaluate whether maintenance or follow-up inspection and monitoring are needed.

17.4.1 Site Surveillance Features

Figure 17-1 shows the locations of site features, including site surveillance features and inspection areas, in black and gray font. Some site features that are present but not required to be inspected are shown in italic font. Observations from previous inspections that are currently monitored are shown in blue, and new observations identified during the 2022 annual inspection are shown in red. Inspection results and recommended maintenance activities associated with site surveillance features are described in the following subsections. Photographs to support specific observations are noted in the text and in Figure 17-1 by photograph location (PL) numbers. The photographs and photograph log are presented in Section 17.10.

17.4.1.1 Entrance Gate and Sign

Access to the site is from San Miguel County Road T11. Entrance to the site is through a chained and locked gate. The entrance gate was locked and is worn but remains functional. The entrance sign is next to the gate (PL-1). No maintenance needs were identified.

17.4.1.2 Perimeter Fence and Signs

A four-strand barbed-wire perimeter fence encloses the disposal cell, drainage structures, and much of the site. The top and bottom strands are smooth wire to allow wildlife to pass over and under, and the middle two strands are barbed wire.

Inspectors noticed rills and gullies expanding on the southwest side of the site from the apron area extending to the fence line between perimeter signs P30 and P32. The gullies and rills terminate into the culvert along San Miguel County Road T11. Consequently, the fence posts along that fence line are undercut by the erosion and are unstable. Stabilization of the fence posts will be completed before the next inspection, and if mitigation to the erosional features will be required, it will be completed in the future. No other maintenance needs were identified.

There are 32 perimeter signs, attached to steel posts set in concrete, positioned along the property boundary; they are set back 5 feet (ft) from the boundary and cut in at the southwest corner. The printed overlay is cracked on perimeter sign P27, but remains legible. The concrete bases on perimeter signs P14 and P15 are slightly undercut by erosion but remain stable. No maintenance needs were identified.

17.4.1.3 Site Markers

The site has two granite site markers. Site marker SMK-1 is just inside the entrance gate, and site marker SMK-2 is on top of the disposal cell (PL-2). No maintenance needs were identified.

17.4.1.4 Survey and Boundary Monuments

The site has three survey monuments. Six boundary monuments delineate the corners of the site boundary (PL-3). No maintenance needs were identified.

17.4.1.1 Aerial Survey Quality Control Monuments

Inspectors inspected the five aerial survey quality control monuments installed in 2021. The baseline aerial survey was performed in May 2022. Animal burrows were detected around quality control monument QC-5. No maintenance needs were identified.

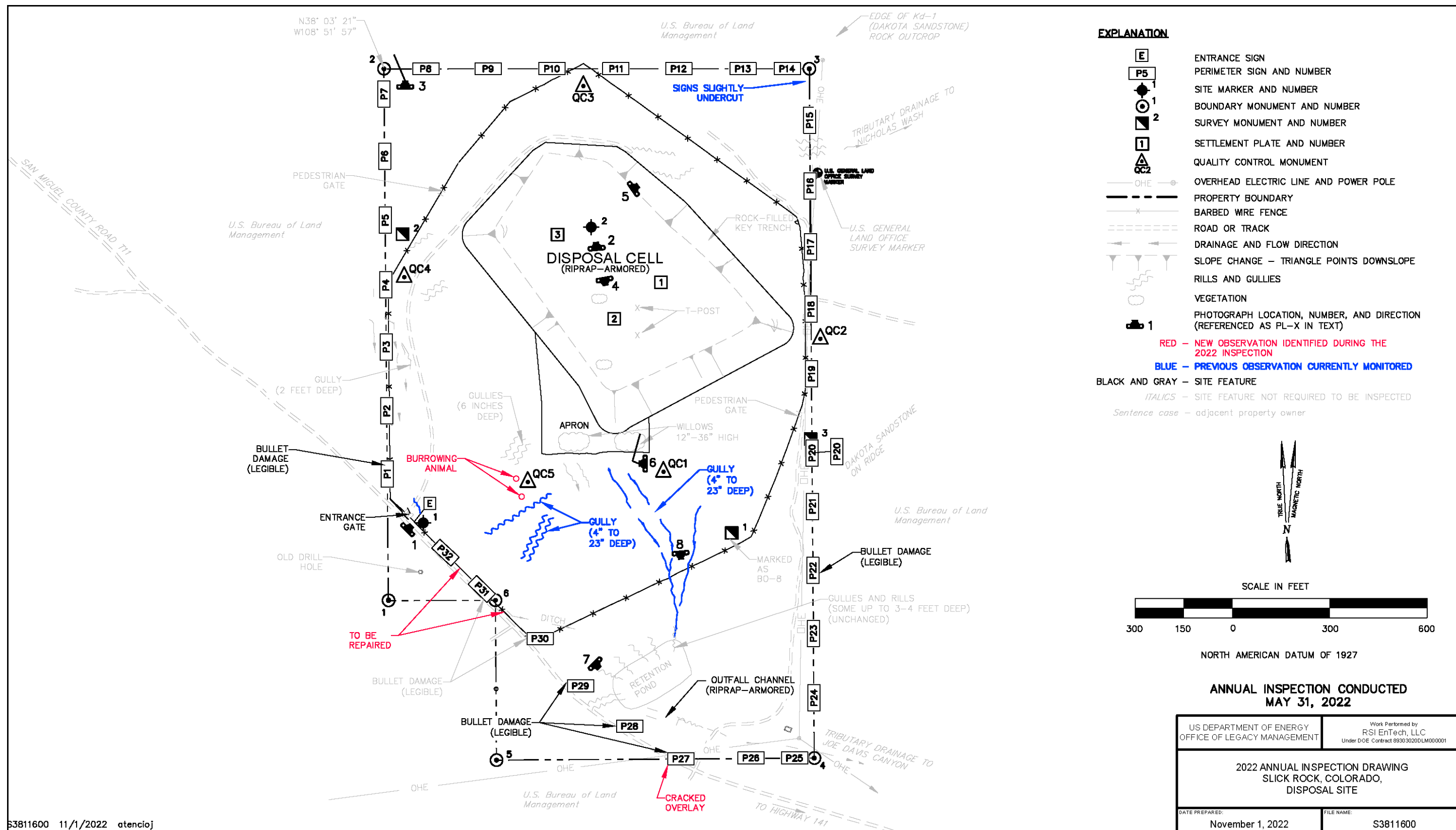


Figure 17-1. 2022 Annual Inspection Drawing for the Slick Rock, Colorado, Disposal Site

17.4.2 Inspection Areas

In accordance with the LTSP, the site is divided into three inspection areas to ensure a thorough and efficient inspection. The inspection areas are (1) the disposal cell, including side slopes, key trench, and apron; (2) the area between the disposal cell and the site boundary; and (3) the outlying area. Inspectors examined specific site surveillance features within each area and looked for evidence of erosion, settling, slumping, or other modifying processes that might affect the site's conformance with LTSP requirements.

17.4.2.1 Disposal Cell, Key Trench, and Apron

The disposal cell, completed in 1996, occupies 12.9 acres and is armored with riprap, consisting of rounded, cobble-sized river rock, to control erosion and deter animal and human intrusion (PL-4). The inspection found no evidence of erosion, settling, slumping, rock degradation, or other modifying processes that might affect the integrity of the disposal cell. Several bunches of grass are growing on the top of the disposal cell but do not require treatment at this time. No other maintenance needs were identified.

At the toe of the disposal cell side slopes is a key trench that encloses the disposal cell (PL-5). The key trench, designed to convey stormwater runoff away from the disposal cell, is approximately 5 ft deep and 20 ft wide and filled with rock. Stormwater runoff from the key trench discharges to an apron at the south (downslope) corner of the disposal cell. The apron extends 50 to 200 ft beyond the key trench. The key trench and apron are covered with rounded cobble- and pebble-sized river rock. Willows (a deep-rooted species) are growing on a portion of the apron but are not considered detrimental to the integrity of the disposal cell (PL-6). No maintenance needs were identified.

17.4.2.2 Area Between the Disposal Cell and the Site Boundary

The area around the disposal cell includes a stormwater retention pond (PL-7). Surface drainage from the disposal cell flows south from the apron into the retention pond, which is constructed in a channel tributary that drains to Joe Davis Canyon. An outflow channel below the pond is lined with rounded riprap for a short distance. The pond was dry at the time of inspection.

The site was originally graded for sheet flow from the apron to the retention pond. Rills have been developing since 1998 on the northwest side of the retention pond and now are 3 ft deep or deeper adjacent to the pond and shallower farther upslope. Most of the rills have stabilized or are stabilizing. Deeper gullies identified in the 2020 inspection have not grown significantly since the previous inspection and do not threaten the integrity of the disposal cell (PL-8). Erosional gullies on the southwest side of the apron area have grown to affect the fence posts along San Miguel County Road T11. This erosional area will be evaluated for mitigation but does not currently affect the integrity of the disposal cell. Inspectors will continue to monitor this area. No maintenance needs were identified.

Vegetation in the reclaimed areas were healthy. Noxious weeds are controlled regularly to comply with state and county requirements. No maintenance needs were identified.

17.4.2.3 Outlying Area

The area beyond the site boundary for 0.25 mile was visually observed for erosion, changes in land use, or other phenomena that might affect the long-term integrity of the site. No such impacts were observed. The natural, undisturbed areas outside the site support grass and scattered pinyon and juniper trees. Steep hillsides north and northeast of the site slope eastward into Nicholas Wash. The primary land use is grazing. The areas north and northeast of the site also are routinely used for cutting firewood and recreational uses, such as hunting and off-road all-terrain vehicle use.

17.5 Follow-Up Inspections

LM will conduct follow-up inspections if (1) a condition is identified during the annual inspection or other site visit that requires a return to the site to evaluate the condition or (2) a citizen or outside agency notifies LM that conditions at the site are substantially changed. No need for a follow-up inspection was identified.

17.6 Maintenance and Repairs

Stabilization of the fence posts between perimeter signs P30 to P32 will be completed before the next inspection. If determined to be necessary, the erosional features downslope from the cell and apron extending to San Miguel County Road T11 between perimeter signs P30 and P32 will be evaluated and possibly mitigated in the future. No other maintenance needs were identified.

17.7 Groundwater Monitoring

In accordance with the LTSP, groundwater monitoring at this site is not required. Groundwater at the site qualifies for supplemental standards because it is designated as limited use, a designation given to groundwater that is not a current or potential source of drinking water. In addition, the groundwater in the uppermost aquifer is designated as limited use because of low yield since the aquifer does not yield enough water to be used for beneficial purposes. All monitoring wells were abandoned in 2001, and the standpipes in the disposal cell were abandoned in 2002. The LTSP is being revised to reflect these changes.

17.8 Corrective Action

In accordance with the LTSP, corrective action is taken to correct conditions that threaten the integrity of the disposal cell in compliance with 40 CFR 192. No need for corrective action was identified.

17.9 References

10 CFR 40.27. U.S. Nuclear Regulatory Commission, "General License for Custody and Long-Term Care of Residual Radioactive Material Disposal Sites," *Code of Federal Regulations*.

40 CFR 192. U.S. Environmental Protection Agency, "Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings," *Code of Federal Regulations*.

DOE (U.S. Department of Energy), 1998. *Long-Term Surveillance Plan for the Burro Canyon Disposal Cell Slick Rock, Colorado*, DOE/AL/62350-236, Rev. 0, Ver. 4, May.

17.10 Photographs

Photograph Location Number	Azimuth	Photograph Description
PL-1	45	Entrance Sign
PL-2	355	Site Marker SMK-2
PL-3	—	Boundary Monument BM-2
PL-4	170	Disposal Cell Top Slope
PL-5	55	Key Trench on East Side Slope
PL-6	270	Willows Growing in Apron
PL-7	135	Retention Pond
PL-8	175	Gullies on South Area Between Disposal Cell and Site Boundary

Note:

— = Photograph taken vertically from above.



PL-1. Entrance Sign



PL-2. Site Marker SMK-2



PL-3. Boundary Monument BM-2



PL-4. Disposal Cell Top Slope



PL-5. Key Trench on East Side Slope



PL-6. Willows Growing in Apron



PL-7. Retention Pond



PL-8. Gullies on South Area Between Disposal Cell and Site Boundary