

2.0 Edgemont, South Dakota, Disposal Site

2.1 Compliance Summary

The Edgemont, South Dakota, Uranium Mill Tailings Radiation Control Act (UMTRCA) Title II Disposal Site (site) was inspected on July 16, 2019. No changes were observed on the disposal cell or in associated drainage features. The grazing licensee will remove the unmaintained interior fence. Inspectors identified no other maintenance needs or cause for a follow-up inspection. Groundwater monitoring is not required at the site.

2.2 Compliance Requirements

Requirements for the long-term surveillance and maintenance of the site are specified in the site-specific U.S. Department of Energy (DOE) Office of Legacy Management (LM) Long-Term Surveillance Plan (LTSP) (DOE 1996) and in procedures LM established to comply with the requirements of Title 10 *Code of Federal Regulations* Section 40.28 (10 CFR 40.28). Table 2-1 lists these requirements.

Table 2-1. License Requirements for the Edgemont, South Dakota, Disposal Site

Requirement	LTSP	This Report	10 CFR 40.28
Annual Inspection and Report	Sections 3.3 and 3.4	Section 2.4	(b)(3)
Follow-Up Inspections	Section 3.5	Section 2.5	(b)(4)
Routine Maintenance and Emergency Measures	Section 3.6	Section 2.6	(b)(5)
Environmental Monitoring	Section 3.7	Section 2.7	(b)(3)

2.3 Institutional Controls

The 360-acre site, identified by the property boundary shown in Figure 2-1, is owned by the United States and was accepted under the U.S. Nuclear Regulatory Commission general license (10 CFR 40.28) in 1996. DOE is the licensee and, in accordance with the requirements for UMTRCA Title II sites, 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: disposal cell, entrance gate and sign, perimeter fence and signs, site marker, and boundary monuments.

2.4 Inspection Results

The site, approximately 2 miles south of Edgemont, South Dakota, was inspected on July 16, 2019. The inspection was conducted by C. Boger, R. Johnson, B. Mays, and N. Keller of the Legacy Management Support (LMS) contractor. T. Jasso (LM site manager) attended the inspection. 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 determine the need, if any, for maintenance or additional inspection and monitoring.

A grazing license granted by LM allows a local rancher to graze his cattle on the site. The LM site manager and LMS site lead met with the grazing licensee before the inspection to discuss any issues or concerns the licensee might have. As discussed in Section 2.4.1.2, the grazing licensee will remove the unmaintained interior fence from the site. No other concerns were identified by the grazing licensee.

2.4.1 Site Surveillance Features

Figure 2-1 shows the locations of site features in black, including site surveillance features and inspection areas. 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 text. There were no new observations in 2019. Inspection results and recommended maintenance activities associated with site surveillance features are included in the following subsections. Photographs to support specific observations are identified in the text and in Figure 2-1 by photograph location (PL) numbers. The photographs and photograph log are presented in Section 2.9.

2.4.1.1 Site Access and Entrance Gate

Access to the site is from Fall River County Road 6N. The entrance sign is mounted on a steel post set in concrete (PL-1). The tubular metal entrance gate was secured by a locked chain and was intact. The perimeter fence features three additional wire gates (1) at the northwest corner of the property, (2) approximately 700 feet north of the southeast corner, and (3) at the southeast corner of the site. All gates were closed and intact. The telephone number posted on the entrance sign was updated during the inspection. No maintenance needs were identified.

2.4.1.2 Perimeter Fence and Signs

A four-strand barbed-wire fence encloses the site, truncating at the southeast corner to allow livestock access to a preexisting stock pond (PL-2). Two perimeter signs are attached to the perimeter fence. No maintenance needs were identified.

The grazing licensee monitors site security and maintains the perimeter fence. The licensee has proposed removing the unmaintained interior fence that was installed to prevent grazing during vegetation establishment following closure of the disposal cell. The LM site manager concurred with this proposal, as this fence is no longer required. The fence will be removed by the grazing licensee as his schedule permits.

2.4.1.3 Site Marker

The site has one granite site marker just inside the site entrance gate (PL-3). No maintenance needs were identified.

2.4.1.4 Boundary Monuments

There are four boundary monuments, each at a corner of the property (PL-4). All boundary monuments were inspected, and no maintenance needs were identified.

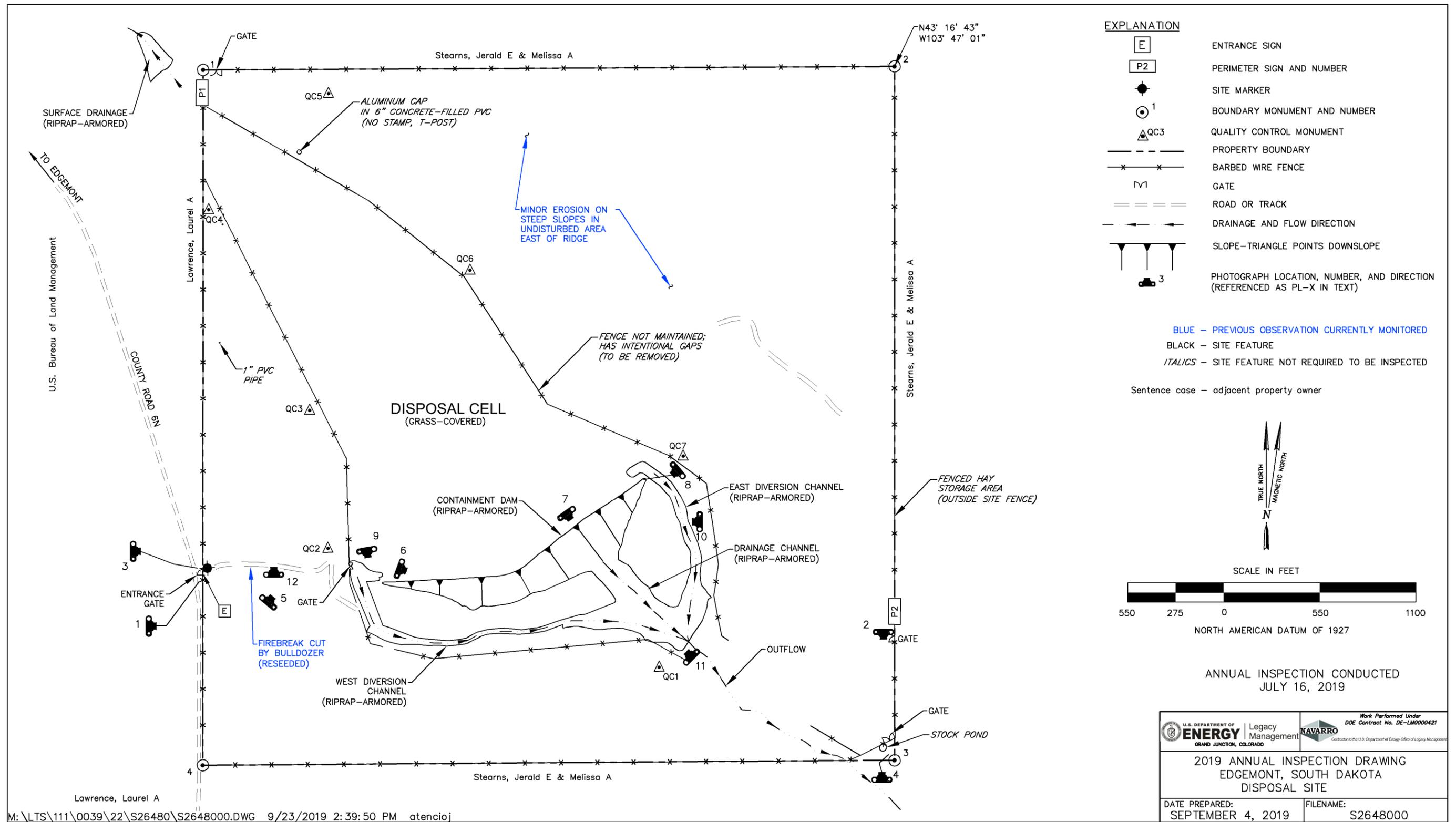


Figure 2-1. 2019 Annual Inspection Drawing for the Edgemont, South Dakota, Disposal Site

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2.4.2 Inspection Areas

In accordance with the LTSP, the site is divided into three inspection areas (referred to as “transects” in the LTSP) to ensure a thorough and efficient inspection. The inspection areas are (1) the cover of the disposal cell; (2) the containment dam and diversion channels; and (3) the site perimeter, outlying areas, and balance of the site. 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.

2.4.2.1 Cover of the Disposal Cell

The grass-covered disposal cell, completed in 1989, occupies 100 acres (PL-5). It showed no signs of erosion, settling, or other modifying processes that might affect its integrity. No maintenance needs were identified.

2.4.2.2 Containment Dam and Diversion Channels

The face of the containment dam, the steepest man-made slope onsite, is covered with riprap and showed no evidence of erosion, settling, slumping, or other modifying processes (PL-6, PL-7, and PL-8). Scattered plants, mostly grass and annual weeds, grow in the riprap. These plants do not threaten the stability or function of the containment dam.

The diversion and drainage channels are covered with grass on their upslope portions (these are gentle swales on each side of the disposal cell) and armored with riprap on their downslope portions and on steeper slopes (PL-9 and PL-10). Minor amounts of vegetation are present in the riprap. The vegetation helps to stabilize these areas and does not impair the function of the channels. Wetland vegetation is present at the base of the drainage channel outflow (PL-11). No maintenance needs were identified.

2.4.2.3 Site Perimeter, Outlying Areas, and Balance of the Site

The site is surrounded by private land used primarily for grazing and wildlife habitat. The area approximately 0.25 mile beyond the site boundary—including a surface drainage area just outside the northwest corner of the property that is riprap armored to prevent headward erosion onto the site—was visually observed for erosion, changes in land use, or other phenomena that might affect the long-term integrity of the site. No such changes were identified.

The balance of the site consists of undisturbed areas covered with native shrubs, grasses, and forbs and formerly disturbed areas covered primarily with seeded grasses and annual weeds. Blooming pollinator species were also observed (PL-12). Some minor erosional features are present on steep slopes in an area isolated from the disposal cell; these features were stable. No maintenance needs were identified.

2.5 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) LM is notified by a citizen or outside agency that conditions at the site are substantially changed. No need for a follow-up inspection was identified.

2.6 Routine Maintenance and Emergency Measures

The grazing licensee will remove the unmaintained interior fence. No other maintenance needs were identified.

In July 2019, following the inspection, seven permanent quality control monuments were installed at the site in preparation for a baseline aerial survey of the disposal cell. The quality control monument locations are shown in Figure 2-1.

Emergency measures are corrective actions that LM will take in response to unusual damage or disruption that threatens or compromises site health and safety, security, integrity, or compliance with 40 CFR 192. No emergency measures were identified.

2.7 Environmental Monitoring

In accordance with the LTSP, groundwater monitoring is not required at this site because a 300- to 700-foot-thick layer of competent shale bedrock lies between the encapsulated tailings and the uppermost confined aquifer. Additionally, clay liners were constructed to isolate the tailings from the shallower, unconfined, perched groundwater that is present as a result of local precipitation. There is no evidence of any direct hydraulic connection between the perched groundwater and the underlying confined bedrock aquifer.

An annual visual inspection of vegetation conditions required by the LTSP was conducted during the annual inspection. No vegetation management is required. There were no cattle grazing on the site during the inspection.

2.8 References

10 CFR 40.28. U.S. Nuclear Regulatory Commission, “General License for Custody and Long-Term Care of Uranium or Thorium Byproduct Materials 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), 1996. *Long-Term Surveillance Plan for the DOE Tennessee Valley Authority (UMTRCA Title II) Disposal Site, Edgemont, South Dakota*, NRC Docket File No. 040-01341, June.

2.9 Photographs

Photograph Location Number	Azimuth	Photograph Description
PL-1	90	Entrance Sign
PL-2	180	East Fence Line
PL-3	90	Site Marker
PL-4	—	Boundary Monument BM-3
PL-5	40	Southwest View of Disposal Cell
PL-6	110	West Portion of Containment Dam
PL-7	145	Center of Containment Dam and Drainage Channel
PL-8	230	East Portion of Containment Dam
PL-9	170	West Diversion Channel
PL-10	270	East Diversion Channel
PL-11	315	Drainage Channel Outflow Area
PL-12	—	Pollinator Plant Species Blooming

Note:

— = Photograph taken from directly above.



PL-1. Entrance Sign



PL-2. East Fence Line



PL-3. Site Marker



PL-4. Boundary Monument BM-3



PL-5. Southwest View of Disposal Cell



PL-6. West Portion of Containment Dam



PL-7. Center of Containment Dam and Drainage Channel



PL-8. East Portion of Containment Dam



PL-9. West Diversion Channel



PL-10. East Diversion Channel



PL-11. Drainage Channel Outflow Area



PL-12. Pollinator Plant Species Blooming

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