

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 was inspected on June 10, 2008, and was in good condition. A new entrance signpost was installed during the inspection to replace the broken post. Cattle continue to graze on site under a license agreement. The presence of cattle may be affecting range conditions on and off the cell, and may be causing minor erosional features in the southeast portion of the site. Neither the range condition nor the erosion is currently affecting the integrity or stability of the disposal cell. However, the grazing plan will be modified to prohibit grazing during critical periods to improve the range condition. Infestations of three noxious weeds are present on the site and will be treated with herbicide. Groundwater monitoring is not required at this site. No cause for a follow-up inspection was identified.

2.2 Compliance Requirements

Requirements for the long-term surveillance and maintenance of the Edgemont, South Dakota, Disposal Site are specified in the *Long-Term Surveillance Plan [LTSP] for the DOE Tennessee Valley Authority (UMTRCA Title II) Disposal Site, Edgemont, South Dakota*, (U.S. Department of Energy [DOE], Grand Junction, Colorado, June 1996) and procedures established by DOE to comply with the requirements of Title 10 *Code of Federal Regulations* Part 40.28 (10 CFR 40.28). License requirements for this site are listed in Table 2–1.

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

Requirement	Long-Term Surveillance Plan	This Report
Annual Inspection and Report	Sections 3.3 and 3.4	Section 2.3.1
Follow-up Inspections	Section 3.5	Section 2.3.2
Routine Maintenance and Emergency Measures	Section 3.6	Section 2.3.3
Environmental Monitoring	Section 3.7	Section 2.3.4

Institutional Controls—The 360-acre disposal site is owned by the United States of America 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 at the disposal site, as defined by DOE Policy 454.1, consist of federal ownership of the property, a site perimeter fence, a warning/no trespassing sign placed at the site entrance, and a locked gate at the site entrance. Verification of these institutional controls is part of the annual inspection.

2.3 Compliance Review

2.3.1 Annual Inspection and Report

The site, located approximately 2 miles south of the town of Edgemont in Fall River County near the southwestern corner of South Dakota, was inspected on June 10, 2008. Results of the inspection are described below. Features and photograph locations (PLs) mentioned in this report are shown on Figure 2–1. Numbers in the left margin of this report refer to items summarized in the Executive Summary table.

2.3.1.1 Specific Site Surveillance Features

Site Access, Gates, Sign, and Fence—Access to the Edgemont Disposal Site is immediately off County Road 6N. No private property is crossed to gain access.

A tubular metal entrance gate is secured by a locked chain and was in excellent condition. Two wire gates are also present along the perimeter fence: one at the northwest corner of the property on the north perimeter fence line and one approximately 700 ft north of the southeast corner of the property on the east perimeter fence line. Both were in good condition.

2A A new entrance signpost was set in concrete during the inspection (PL-1); cattle had knocked it down the previous year. To allow time for the concrete to cure, the entrance sign was left at its temporary location on the entrance gate; it was fastened to the signpost in September 2008.

A four-strand barbed wire fence was installed in spring 1999 along the site perimeter boundary to demarcate DOE property and to control grazing on the property. The fence truncates the southeast corner to allow livestock access to a pre-existing stock pond. A grazing license granted by DOE allows a local rancher to graze the site in return for checking site security and maintaining the perimeter fence. An all-terrain vehicle was used to inspect the entire site perimeter, and the fence was in excellent condition (PL-2).

Site Marker and Monuments—One unpolished granite site marker identifying the disposal site is located just inside the entrance gate and was in excellent condition (PL-3). Four boundary monuments, located at each corner of the property, were in excellent condition.

2.3.1.2 Transects

To ensure a thorough and efficient inspection, the site was divided into four areas referred to as transects: (1) the grass-covered disposal cell top; (2) the riprap-covered embankment face and associated drainage and diversion channels; (3) the region between the disposal cell and the site perimeter; and (4) the outlying area.

Within each transect, inspectors examined specific site surveillance features, such as boundary monuments. Each transect was inspected for evidence of erosion, settling, slumping, or other disturbance that might affect site integrity or the long-term performance of the cell.

Top of the Disposal Cell—The 100-acre top of the disposal cell, completed in 1989, is grass-covered and in good condition (PL-4). Cattle and antelope were present on the cell cover the day of the inspection (PL-5). Although numerous cattle trails are present on the cell, no signs of erosion, settling, or other modifying processes that might affect the integrity of the cell were noted. The grass cover, which DOE manages through controlled grazing under license agreement, was healthy but weedy. The seeded grasses were well established, but a significant percentage of the plant cover was composed of non-noxious weedy species. Grazing periods will be modified and the range condition will continue to be monitored.

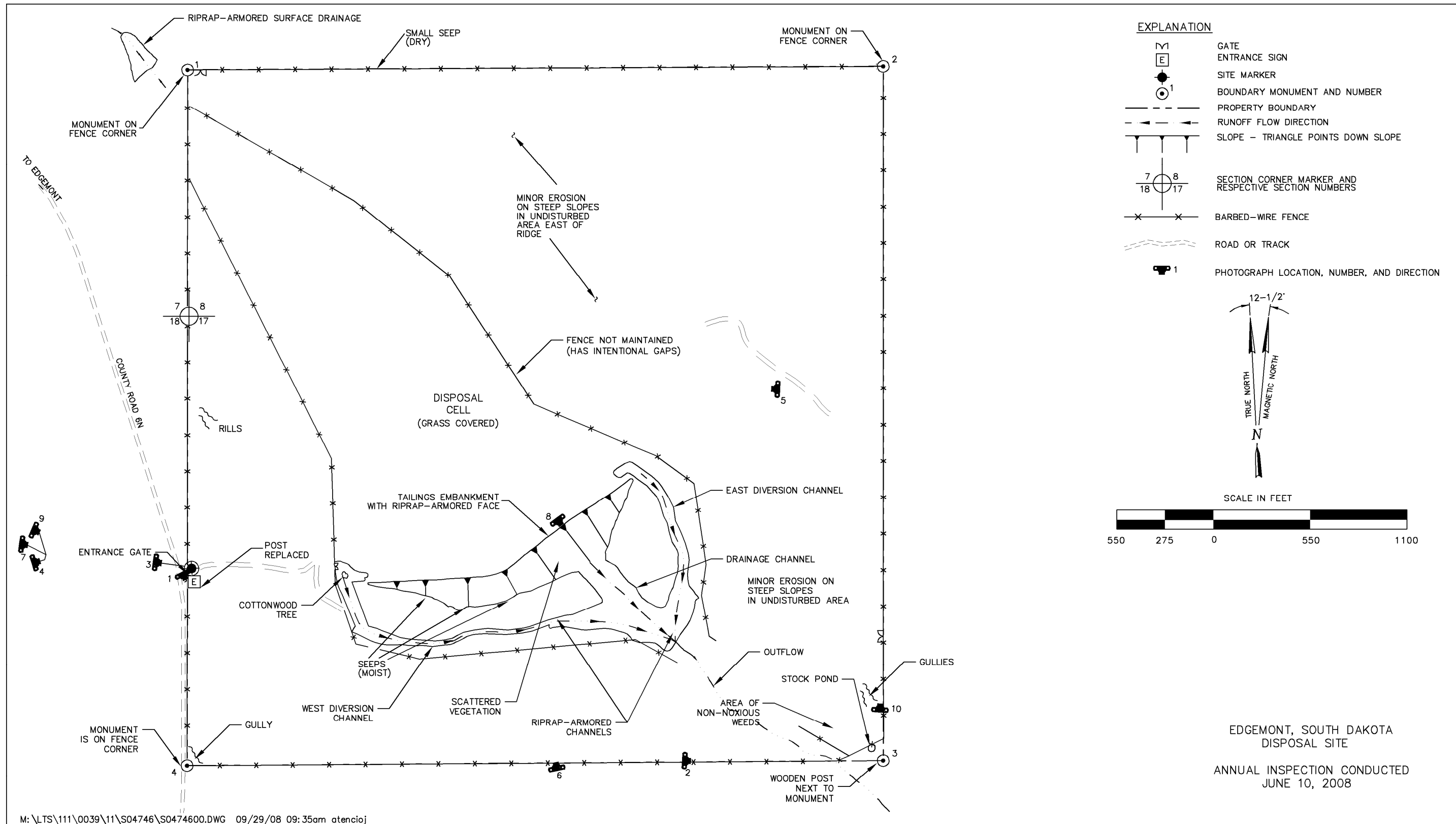


Figure 2-1. 2008 Annual Compliance Drawing for the Edgemont, South Dakota, Disposal Site

This page intentionally left blank

Embankment Face and Drainage and Diversion Channels—The embankment face, the steepest man-made slope on site, is covered with riprap. The slope is stable, and the riprap showed no signs of degradation (PL–6). Scattered plants, mostly grass and annual weeds, grow in the riprap. These plants do not pose a threat to the stability or function of the embankment face.

Diversion and drainage channels are grass-covered on their upgradient portions (these are gentle swales on each side of the disposal cell) and riprap-armored on their downgradient portions and on steeper slopes (PL–7, PL–8, and PL–9). Grass in the vegetated portions of the channels is dense and healthy, and there was no evidence of erosion. Minor amounts of vegetation occur in the riprap. The vegetation density does not appear to have increased significantly in the last few years and does not pose a threat to the function of the channels. The riprap-armored surface drainage channel just outside the northwest corner of the property, designed to prevent headward erosion onto the disposal site, was also stable and in good condition.

Three noxious weeds occur in the riprap-covered areas of the disposal cell: Canada thistle, tamarisk, and common mullein. A licensed herbicide applicator has been treating Canada thistle annually since 1998. Although some patches of dead thistle were observed as a result of the 2007 spraying, new weed growth was evident along the embankment and drainage channels.

2B These new infestations of Canada thistle were sprayed with herbicide this year. Tamarisk plants were observed in the west diversion channel beginning in 2007 and are now being treated with herbicide annually. Common mullein was discovered in the riprap-covered areas during the 2008 inspection. The weed was recently added to the state’s noxious weed list and was treated during the 2008 herbicide application.

Region Between the Disposal Cell and the Site Perimeter—The area between the disposal cell and the site perimeter consists of undisturbed areas covered with native shrubs, grasses, and forbs, and formerly disturbed areas covered primarily with seeded grasses and annual weeds.

Evidence of cattle grazing is present throughout this area of the site. Cattle trails are common and in a few places have concentrated storm runoff and created rills and gullies. The worst erosion features, located in the southeast portion of the site (PL–10), do not have the potential to affect the disposal cell. Although minor natural erosion is occurring on the steep shale slopes in the east and northeast portions of the site, this undisturbed region of the site remains in good condition.

Outlying Area—The site is surrounded by private land used primarily for grazing and wildlife habitat. The area approximately 0.25 mile beyond the site boundary was inspected from within the boundary fence. The town of Edgemont operates a municipal landfill north-northwest of the site, and minor amounts of windblown trash have been observed on site or along the fences; however, landfill trash was insignificant at the site this year. There was no evidence of activity or change in land use that could affect the site.

2.3.2 Follow-Up Inspections

DOE 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) DOE is notified by a citizen or outside agency that conditions at the site are substantially changed. No follow-up inspections were required in 2008.

2.3.3 Routine Maintenance and Emergency Measures

The entrance signpost was replaced and noxious weeds were sprayed with herbicide in 2008. No other maintenance or repairs were required.

Emergency measures are corrective actions that DOE will take in response to unusual damage or disruption that threaten or compromise site health and safety, security, integrity, or compliance with 40 CFR 192. No emergency measures were required in 2008.

2.3.4 Environmental Monitoring

Groundwater monitoring is not required at this site, as stipulated in the LTSP, due to the presence of a 300- to 700-foot-thick layer of competent unweathered shale bedrock lying between the disposed tailings and the uppermost confined aquifer. Additionally, clay liners were constructed to isolate the tailings from the shallower unconfined perched groundwater 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.

2.3.5 Photographs

Photograph Location Number	Azimuth	Description
PL-1	150	New signpost installed at the entrance gate.
PL-2	90	South fence line and grazing horses.
PL-3	95	Site marker.
PL-4	70	Central portion of the disposal cell.
PL-5	270	Cattle grazing on the disposal cell cover.
PL-6	345	View of native rangeland and the tailings embankment face.
PL-7	95	Southeast portion of the disposal cell showing the tailings embankment and diversion channels.
PL-8	140	Main drainage channel viewed from the top of the tailings embankment.
PL-9	110	West diversion channel.
PL-10	355	Soil erosion along cattle trail.



EDG 6/2008. PL-1. New signpost installed at the entrance gate.



EDG 6/2008. PL-2. South fence line and grazing horses.



EDG 6/2008. PL-3. Site marker.



EDG 6/2008. PL-4. Central portion of the disposal cell.



EDG 6/2008. PL-5. Cattle grazing on the disposal cell cover.



EDG 6/2008. PL-6. View of native rangeland and the tailings embankment face.



EDG 6/2008. PL-7. Southeast portion of the disposal cell showing the tailings embankment and diversion channels.



EDG 6/2008. PL-8. Main drainage channel viewed from the top of the tailings embankment.



EDG 6/2008. PL-9. West diversion channel.



EDG 6/2008. PL-10. Soil erosion along cattle trail.

This page intentionally left blank