

10.0 Lowman, Idaho, Disposal Site

10.1 Compliance Summary

The Lowman, Idaho, Uranium Mill Tailings Radiation Control Act (UMTRCA) Title I Disposal Site was inspected on May 18, 2015. The disposal cell was in excellent condition. Minor maintenance to address erosion in the interceptor benches on State of Idaho property was identified. No additional maintenance needs or cause for a follow-up or contingency inspection was identified.

10.2 Compliance Requirements

Requirements for the long-term surveillance and maintenance of the site are specified in the *Long-Term Surveillance Plan for the U.S. Department of Energy Lowman, Idaho, (UMTRCA Title I) Disposal Site* (LTSP) (DOE-LM/GJ771-2005, Revision 2, U.S. Department of Energy [DOE], January 2005) and in procedures that DOE established to comply with the requirements of Title 10 *Code of Federal Regulations* Section 40.27 (10 CFR 40.27). Table 10-1 lists these requirements.

Table 10-1. License Requirements for the Lowman Disposal Site

Requirement	Long-Term Surveillance Plan	This Report
Annual Inspection and Report	Section 3.3	Section 10.4
Follow-Up Inspections	Section 3.4	Section 10.5
Maintenance	Section 3.5	Section 10.6
Emergency Response	Section 3.6	Section 10.7
Environmental Monitoring	Section 3.7	Section 10.8

10.3 Institutional Controls

The 18-acre disposal site (Figure 10-1) is owned by the United States of America and was accepted under the U.S. Nuclear Regulatory Commission general license (10 CFR 40.27) in 1994. DOE is the licensee and, in accordance with the requirements for UMTRCA Title I sites, is responsible for the custody and long-term care of the site. Institutional controls at the site consist of federal ownership of the property and the following physical features that are inspected annually: a locked entrance gate, perimeter warning signs, site markers, and survey and boundary monuments.

10.4 Inspection Results

The site, near Lowman, Idaho, was inspected on May 18, 2015. The inspection was conducted by D. Traub and L. Sheader of the DOE Office of Legacy Management support contractor. T. Petrosky (DOE Site Manager), R. Evans (U.S. Nuclear Regulatory Commission), D. Nygard (Idaho Department of Environmental Quality), and P. Rekow (Boise County weed control) also attended the inspection.

The purposes of the inspection were to confirm the integrity of visible features at the site, to identify changes in conditions that might affect site integrity, and to determine the need, if any,

for maintenance or additional inspections and monitoring. Numbers in the left margin of this report refer to items summarized in Table ES-1 of the “Executive Summary.”

10.4.1 Site Surveillance Features

Figure 10-1 shows the locations of site surveillance features. 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 10-1 by photograph location (PL) numbers.

10.4.1.1 Access Road and Entrance Gate

The site is at the end of a hard-packed gravel road about 650 feet north of Idaho State Highway 21. The road is in excellent condition. A locked gate spans the road about 150 feet from the state highway and is in excellent condition. The site is not fenced, but the topography and forest vegetation prevent vehicle access around the entrance gate or along the site perimeter.

10.4.1.2 Entrance Sign and Perimeter Signs

Eighteen perimeter signs (PL-1) are located along the site boundary. Several signs (P2, P3, P4, P13, and P15, and the entrance sign) have bullet damage but remain legible and do not need to be replaced at this time.

10.4.1.3 Site Markers

Two site markers are present at the site. The first, SMK-1 (PL-2), is just inside the site’s southwest boundary. The second, SMK-2, is on top of the disposal cell. Both markers are in excellent condition.

10.4.1.4 Boundary and Survey Monuments

Seven monuments define the site boundary. Three are combined survey and boundary monuments (SM-1/BM-1, SM-2/BM-2, and SM-4/BM-4) and four are boundary monuments (BM-3, BM-5, BM-6, and BM-7). Steel t-posts are installed next to the survey and boundary monuments (with the exception of BM-3, which is adjacent to perimeter sign P9) to help inspectors find the monuments. All seven monuments were verified during the 2015 inspection.

10.4.2 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 top and side slopes of the disposal cell; (2) the area between the disposal cell and the site boundary; and (3) the outlying area.

Within each area, inspectors examined the specific site surveillance features. Inspectors also looked for evidence of settlement, erosion, slumping, or other disturbances that might affect the site’s integrity, protectiveness, or long-term performance.

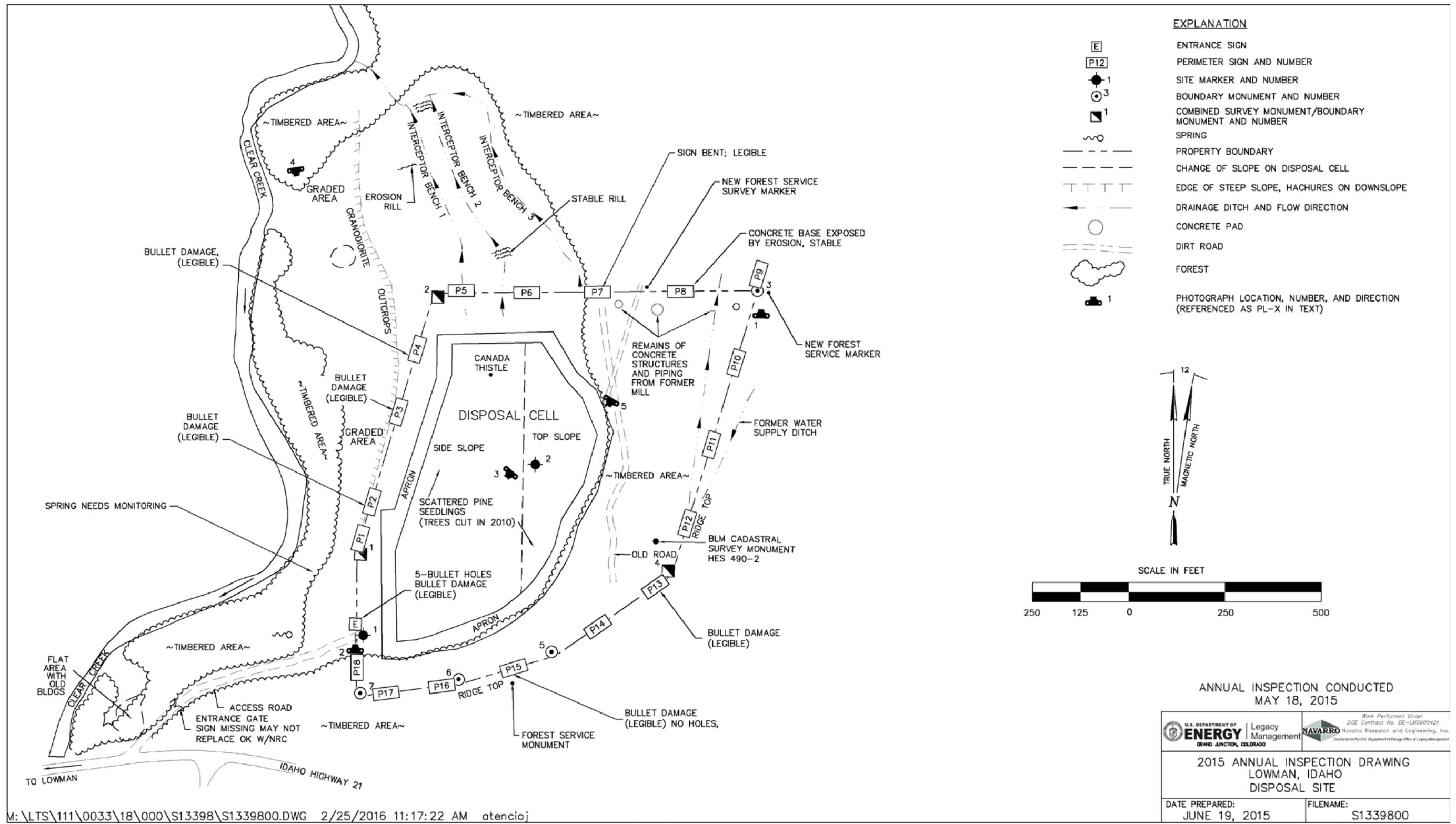


Figure 10-1. 2015 Annual Inspection Drawing for the Lowman Disposal Site

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10.4.2.1 Top and Side Slopes of the Disposal Cell

The disposal cell was completed in 1991. Basalt riprap armors the top and west-facing side slopes of the disposal cell. An apron of larger riprap surrounds the disposal cell on all sides. The riprap was in excellent condition (PL-3, PL-4). No evidence of instability, such as subsidence, slumping, or cracking, was observed on the cell surfaces.

Vegetation encroachment continues on the top and side slopes of the disposal cell. Encroachment is a natural process operating at this location and will be allowed to continue in accordance with the LTSP. However, high velocity winds periodically blow down mature trees in the region. Therefore, at the request of the Idaho Department of Environmental Quality, trees large enough to damage the disposal cell cover and uproot cell materials if knocked down by wind storms are routinely removed. Site ecologists believe that any trees would need to be at least 20 years old to present a hazard, but tree growth will continue to be monitored annually. Trees were cut down in 2010, and no large trees are currently growing on the cover (PL-5).

10.4.2.2 Area Between the Disposal Cell and the Site Boundary

The steep slopes east and south of the disposal cell are stable and vegetated with well-established ponderosa pines and grasses. Surfaces north and west of the disposal cell that were highly disturbed during site remediation are stable and well vegetated. Noxious weeds are controlled in accordance with state and county requirements.

10.4.2.3 Outlying Area

An area within 0.25 mile around the site was visually observed for evidence of erosion, construction, development, logging, or change in land use that might affect the site. No changes were noted in the area across Clear Creek to the west, where several summer cabins and campsites are located.

The U.S. Forest Service manages the areas east and south of the site, and those areas remain relatively unchanged from previous inspections. Minor erosion has occurred in drainage channels west of the site but it does not impact any site features or the disposal cell. The State inspector walked over this area during the 2015 inspection with DOE staff and noted that there was minor erosion in the same areas noted previously. The area along Idaho Highway 21 south of the site does not indicate any new development.

10.5 Follow-Up Inspections

DOE will conduct follow-up or contingency inspections if (1) an annual inspection or other site visit identifies a condition that requires a return to the site to evaluate the condition, or (2) a citizen or outside agency notifies DOE that conditions at the site or in the vicinity of the site are substantially changed. No need for a follow-up or contingency inspection was identified.

10.6 Maintenance

- 10A** Erosion identified during the inspection is located on the State of Idaho property; this will be addressed to determine whether this will be a DOE or State of Idaho repair.

10.7 Emergency Response

Emergency response is action DOE will take in response to “unusual damage or disruption” that threatens or compromises site safety, security, or integrity in compliance with 10 CFR 40, Appendix A, Criterion 12. No need for an emergency response was identified.

10.8 Environmental Monitoring

10.8.1 Groundwater Monitoring

10B Groundwater monitoring was discontinued in 1999 because the disposal cell is performing as designed. All former monitoring wells on the site were decommissioned in 2006.

10.8.2 Vegetation Monitoring

Infestations of six species on the Statewide Containment Noxious Weed List have been found on and near the site. No species on the Statewide Early Detection/Rapid Response Noxious Weed List have ever been found. Although no other state-listed noxious weeds occur, three non-noxious, locally invasive plants are monitored and controlled when necessary. The weeds are periodically sprayed with herbicides and/or controlled mechanically through a subcontract with Boise County.

10.9 Photographs

Photograph Location Number	Azimuth	Photograph Description
PL-1	0	Perimeter sign P-9 with DOE boundary monument 3 and Forest Service monument in red.
PL-2	0	Site marker 1 (lichen growing on granite causes what looks like bullet marks).
PL-3	220	Disposal cell surface near site marker 2.
PL-4	170	Disposal cell from the northwest.
PL-5	210	Disposal cell from the northeast.



LOW 5/2015. PL-1. Perimeter sign P-9 with DOE boundary monument 3 and Forest Service monument in red.



LOW 5/2015. PL-2. Site marker 1 (lichen growing on granite causes what looks like bullet marks).



LOW 5/2015. PL-3. Disposal cell surface near site marker 2.



LOW 5/2015. PL-4. Disposal cell from the northwest.



LOW 5/2015. PL-5. Disposal cell from the northeast.

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