

## 18.0 Spook, Wyoming, Disposal Site

### 18.1 Compliance Summary

The Spook, Wyoming, Uranium Mill Tailings Radiation Control Act (UMTRCA) Title I Disposal Site was inspected on July 19, 2022. No changes were observed on the land surface of the disposal cell or in the associated drainage features. Groundwater monitoring is not required.

### 18.2 Compliance Requirements

Requirements for the long-term surveillance and maintenance of the site are specified in the site-specific Long-Term Surveillance Plan (DOE 1993) (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 18-1 lists these requirements.

Table 18-1. License Requirements for the Spook, Wyoming, Disposal Site

Requirement	LTSP	This Report	10 CFR 40.27
Annual Inspection and Report	Section 6.0	Section 18.4	(b)(3)
Follow-Up or Contingency Inspections	Section 7.0	Section 18.5	(b)(4)
Maintenance	Section 8.0	Section 18.6	(b)(5)
Groundwater Monitoring	Section 5.0	Section 18.7	(b)(2)
Corrective Action	Section 9.0	Section 18.8	--

### 18.3 Institutional Controls

The 14-acre site, identified by the property boundary shown in Figure 18-1, is owned by the United States and was accepted under the NRC general license in 1993. The U.S. Department of Energy (DOE) is the licensee and, in accordance with the 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, entrance sign, perimeter signs, site markers, and survey and boundary monuments.

### 18.4 Inspection Results

The site, 48 miles northeast of Casper, Wyoming, was inspected on July 19, 2022. The inspection was conducted by J. Cario, J. Doebele, T. Santonastaso, and P. Schwarz of the Legacy Management Support contractor. C. Boger (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 evaluate whether maintenance or follow-up inspection and monitoring are needed.

## **18.4.1 Site Surveillance Features**

Figure 18-1 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 18-1 by photograph location (PL) numbers. The photographs and photograph log are presented in Section 18.10.

### ***18.4.1.1 Access Road and Entrance Sign***

Access to the site is from Wyoming Highway 95 from Glenrock or Wyoming Highway 93 from Douglas to Converse County Road 31 and onto Hornbuckle Ranch Road. Site access is maintained through perpetual easements across the Hornbuckle Ranch. The graded, hard-packed road to the site is maintained by the ranch. The entrance sign is mounted on a steel post set in concrete. No maintenance needs were identified.

### ***18.4.1.2 Perimeter Signs***

There are 10 perimeter signs (PL-1) attached to steel posts set in concrete and positioned around the site outside the unfenced property boundary. The 2021 inspection noted that perimeter sign P5 showed signs of weathering and was delaminating. The sign was replaced after the 2022 inspection. Perimeter sign P1 is plastic and warped but still legible. Soil around the concrete base of perimeter sign P3 is eroded but remains stable (PL-2). The phone numbers on perimeter signs P6 and P7 were updated during the inspection. No other maintenance needs were identified.

### ***18.4.1.3 Site Markers***

The site has two granite site markers. Site marker SMK-1 is at the south side of the disposal cell. Its concrete base is damaged due to spalling but is stable; there were no apparent changes from the previous year. Site marker SMK-2 is at the north side of the disposal cell (PL-3). No maintenance needs were identified.

### ***18.4.1.4 Survey and Boundary Monuments***

The site has three survey monuments and eight boundary monuments. Boundary monument BM-6 is bent and the base is eroded but stable (PL-4). The boundary monuments and a survey monument, as well as the perimeter signs are outside the property boundary. The owner of the surrounding property (Hornbuckle Ranch) is aware that the monuments are on his property, but he is not concerned. Therefore, the survey and boundary monuments and perimeter signs will remain at their current locations. No maintenance needs were identified.

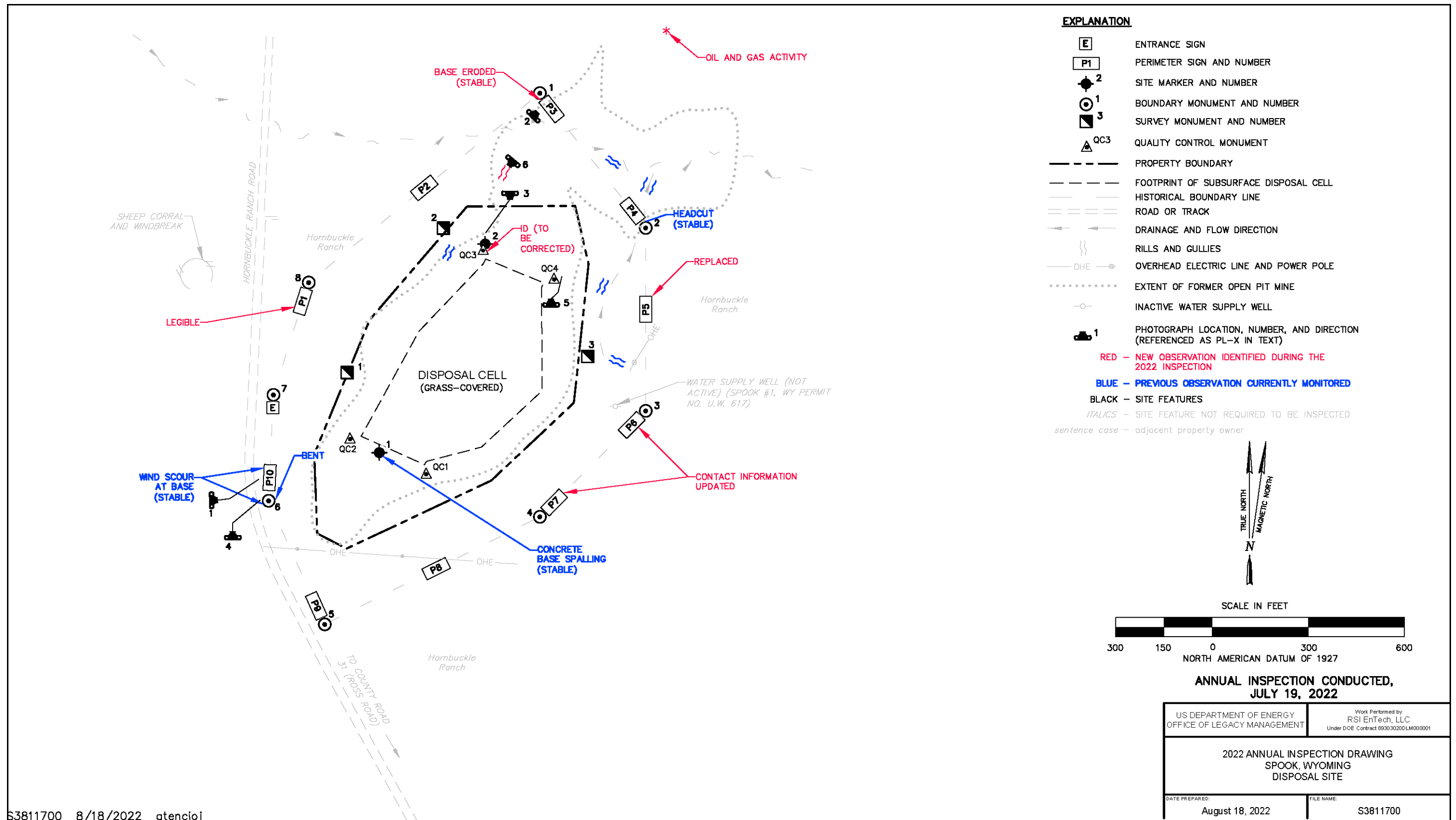


Figure 18-1. 2022 Annual Inspection Drawing for the Spook, Wyoming, Disposal Site

### ***18.4.1.5 Aerial Survey Quality Control Monuments***

Four aerial survey quality control (QC) monuments were inspected (PL-5). The cap for quality control monument QC-3 was stamped as QC-1. The cap will be renumbered before the next annual inspection. No other maintenance needs were identified.

## **18.4.2 Inspection Areas**

The site is divided into three inspection areas to ensure a thorough and efficient inspection. The inspection areas are (1) the disposal cell, (2) the site perimeter, and (3) the outlying area. Inspectors examined specific site surveillance features within each area, observed the condition of site vegetation, and looked for evidence of erosion, settling, slumping, or other modifying processes that might affect the site's conformance with the LTSP requirements.

### ***18.4.2.1 Disposal Cell***

The site is unique among Title I sites in that the mill tailings were placed in the bottom of an open pit mine and covered with 40–60 feet of clean fill and topsoil. Therefore, many of the observations and concerns routinely associated with above-grade disposal cells—such as the quality of the riprap and the stability of side slopes—do not apply to this site. The ground surface over the 5-acre disposal cell, completed in 1989, showed no evidence of settling. Vegetation on the ground surface consisting of grasses and forbs, was healthy and indistinguishable from that growing on the remainder of the site and on the surrounding ranch land. No maintenance needs were identified.

### ***18.4.2.2 Site Perimeter***

There is no perimeter fence at the site. The area between the disposal cell and the site perimeter showed no evidence of settling or active erosion. No maintenance needs were identified.

### ***18.4.2.3 Outlying Area***

The area beyond the site boundary for a distance of 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. Several minor rills and gullies are near the site and appear to be stable. One minor gully was noted north of the disposal site, which was not identified in previous inspections (PL-6). This gully appeared to be stable and had established vegetation. None of the erosion areas are harming the function of the disposal cell cover or other site features and are not a concern at this time. Inspectors will continue to monitor these erosion areas.

The access road has frequent truck traffic to service and maintain oil wells in the area. Activity associated with construction of a new well pad was observed northeast of the site, between 0.25–0.5 mile away. Although oil field activity has greatly increased near the site, inspectors found no evidence of trespassing or vandalism onsite.

## 18.5 Follow-Up or Contingency Inspections

LM will conduct follow-up or contingency 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 or contingency inspection was identified.

## 18.6 Maintenance

Inspectors updated the contact information listed on perimeter signs P6 and P7 during the inspection. Following the inspection, perimeter sign P5 was replaced. The label on quality control monument QC-3 will be corrected before the next inspection.

## 18.7 Groundwater Monitoring

In accordance with the LTSP, groundwater monitoring is not required due to the application of supplemental standards. Groundwater at the site qualifies for supplemental standards because it is designated as limited use; this designation is given to groundwater that is not a current or potential source of drinking water. Groundwater in the uppermost aquifer is designated as limited use because it contains contamination from widespread, naturally occurring uranium mineralization and is of limited yield. Therefore, groundwater monitoring is not required.

## 18.8 Corrective Action

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

## 18.9 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), 1993. *Final Long-Term Surveillance Plan for the Spook, Wyoming, Disposal Site*, UMTRA-DOE/AL-350215.0000, January.

## 18.10 Photographs

Photograph Location Number	Azimuth	Photograph Description
PL-1	90	Perimeter Sign P10
PL-2	45	Erosion Around Base of Perimeter Sign P3
PL-3	180	Site Marker SMK-2
PL-4	—	Boundary Monument BM-6
PL-5	—	Quality Control Monument QC-4
PL-6	220	Erosional Gully, Previously Unreported

**Note:**

— = Photograph taken vertically from above.



*PL-1. Perimeter Sign P10*



*PL-2. Erosion Around Base of Perimeter Sign P3*



*PL-3. Site Marker SMK-2*



*PL-4. Boundary Monument BM-6*



*PL-5. Quality Control Monument QC-4*



*PL-6. Erosional Gully, Previously Unreported*