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2022 Annual Inspection Report for the Parkersburg, West Virginia, Disposal Site

January 2023

U.S. DEPARTMENT OF ENERGY | Legacy Management

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Contents

Appendix

Abbreviations

DOE	U.S. Department of Energy
IC	institutional control
LM	Office of Legacy Management
PL	photograph location

1.0 Inspection Summary

The U.S. Department of Energy (DOE) Office of Legacy Management (LM) Parkersburg, West Virginia, Disposal Site was inspected on October 28, 2022. No evidence of erosion or slope instability on the disposal cell was noted during the inspection. Minor maintenance needs were noted during the inspection to address animal burrowing. A follow-up or contingency inspection is not required. No evidence of trespassing was observed.

In addition to routine vegetation management activities in 2022, several animal burrows were collapsed, filled in with clean topsoil, and revegetated in 2022. A few of the collapsed burrows showed signs of new activity.

Monitoring wells at the Parkersburg site were last sampled in November 2013. Results from those tests were included in a groundwater monitoring report issued in February 2014 (DOE 2014b). Based on results from that report and a follow-up assessment (DOE 2014a), the sampling frequency was reduced to once every 10 years. As documented in the *Long-Term Surveillance Plan for the Parkersburg, West Virginia, Disposal Site* (DOE 2019), monitoring wells at the Parkersburg site will be sampled again in 2023. Monitoring at the Parkersburg site is coordinated with monitoring at the Canonsburg, Pennsylvania, Disposal Site and the Burrell, Pennsylvania, Disposal Site to maximize cost efficiency. All monitoring wells were inspected and found properly secured.

1.1 Inspection Requirements

Requirements for the long-term surveillance and maintenance of the site are specified in the *Long-Term Surveillance Plan for the Parkersburg, West Virginia, Disposal Site* (DOE 2019).

1.2 Institutional Controls

Institutional controls (ICs) at the site consist of LM ownership and ongoing stewardship of the site. IC features include perimeter signs placed along the property boundary, a site perimeter fence, and locked gates at the site entrances. ICs are verified during the annual inspection. The inspection team did not observe any evidence that the ICs have been compromised or are not functioning effectively as intended.

1.3 Inspection Team

K. Broberg and A. Henke of the Legacy Management Support contractor conducted the inspection on October 28, 2022. K. Whysner (LM site manager); P. Kerl, G. Deguia, and T. Drake (LM); and A. McCreary (West Virginia Department of Environmental Protection) also participated in the inspection.

1.4 Site Surveillance Features

The locations of site surveillance features are shown in Figure A-1 (Appendix A). Inspection results and recommended maintenance activities associated with site surveillance features are described in the following subsections. Photographs to support specific observations are identified in the text and in Figure A-1 by photograph location (PL) number.

1.4.1 Access Route, Entrance Gates, and Entrance

The Parkersburg site is adjacent to land owned by the Northwest Pipe Company. Access to the site from Northwest Drive (formerly called Foster Drive) entails crossing a grass field. The access route is along a permanent 20-foot-wide right-of-way through the grass field owned by the Northwest Pipe Company. A new small-drainage ditch was found crossing the right-of-way access to the site. Inspectors parked vehicles east of this ditch rather than risk potential vehicle damage driving over the ditch. The presence and condition of the ditch will be brought to the attention of the Northwest Pipe Company for resolution.

A Northwest Pipe Company rail spur that crosses the site right-of-way was replaced in 2016. Northwest Pipe Company maintains a gravel crossing where the rail spur crosses the site right-of-way to provide vehicle access to the site. The gravel crossing was found to be well maintained (PL-1).

All entrance gates were properly secured (PL-2).

1.4.2 Perimeter Fence and Perimeter Signs

The perimeter fence was replaced in 2007. The site maintenance subcontractor maintains a vegetation-free zone along the base of the fence line and ensures that vegetation does not grow on the fence fabric. The vegetation-free zone along the fence line was being maintained (PL-3), and the fence fabric was free of vegetation.

It appears that something ran into the fence in 2020 causing one of the vertical posts to lean slightly. The fence remains serviceable; no action is needed to repair the damage (PL-4).

The site has an entrance sign and 16 perimeter signs. All signs were replaced in 2021 and remain in good condition.

1.4.3 Survey Monuments and Boundary Monuments

The Parkersburg site has six boundary monuments and one concrete survey monument. All were located during the inspection. It was noted in 2019 that the top of the concrete survey monument is missing, but its replacement is not necessary.

All boundary monuments were located during the inspection (PL-5). Boundary monument BM-3 is about 6 inches beneath ground surface. A 6-inch section of PVC pipe was installed around the monument and filled with pea gravel to make it flush with the ground surface (PL-6).

1.4.4 Monitoring Wells

There are six groundwater monitoring wells at the Parkersburg site. All six wells are inside the security fence. The wells are numbered in the chronological order in which they were drilled and installed. All six wells were properly locked. The site maintenance subcontractor clears vegetation around the monitoring wells. Vegetation was being properly controlled around the monitoring wells (PL-7).

Of the six monitoring wells, well construction and completion records for monitoring wells MW-1 through MW-4 are incomplete; therefore, only monitoring wells MW-5 and MW-6 are routinely sampled for water quality parameters. Water levels are collected at all six wells. Sampling and water level measurements were last collected in November 2013 and are scheduled for 2023. Sampling results from 2013 were reported in a groundwater monitoring report (DOE 2014b). Sampling at the Parkersburg site is coordinated with sampling at the Canonsburg and Burrell sites to maximize cost efficiency.

1.5 Transects

To ensure a thorough and efficient inspection, inspectors divided the site into two transects as follows: (1) the disposal cell and (2) the site perimeter and outlying area.

Inspectors walked a series of traverses within each transect. They examined specific site surveillance features, drainage structures, vegetation, and other features. Inspectors also looked for evidence of settlement, erosion, or other modifying processes that might affect site integrity or long-term performance.

1.5.1 Disposal Cell

At the time of the inspection, vegetation on top of the disposal cell had been recently mowed. No evidence of erosion or slope instability on the disposal cell was noted during the inspection (PL-8).

Animal burrowing activity at the site continues. In 2021, 2 weeks of trap-and-release were conducted to humanely remove two groundhogs from the site. Existing burrows were collapsed, filled with clean soil, and reseeded. Additional burrows were collapsed, filled with clean soil, and reseeded in 2022 (PL-9). Also, in 2022, a coyote den was found and collapsed. During the site inspection, new additional animal burrows were discovered. Their locations are identified on the site map. These new burrows will be collapsed, filled with clean soil, and reseeded as deemed appropriate. Inspectors also noted that some of the recently collapsed burrows showed signs of new animal activity, indicating that another round of trap-and-release is needed.

1.5.2 Site Perimeter and Outlying Area

The drainage channel in the southwest corner of the site, lined with high-density polyethylene honeycomb baffles and brick energy-dissipation baffles in August 1996, is functioning as designed. Erosion in the channel appears to be unchanged from 2021 (PL-10).

The Parkersburg site is in a developed industrial area. Inspectors noted that conditions at the neighboring Northwest Pipe Company property had changed considerably from 2021. The large inventory of pipe observed in 2021 was gone in 2022.

1.6 Follow-Up or Contingency Inspections

DOE will conduct follow-up inspections if (1) an annual inspection or other site visit reveals a condition that must be reevaluated during a return to the site or (2) a citizen or outside agency notifies DOE that conditions at the site are substantially changed.

No follow-up or contingency inspections were required in 2022.

1.7 Routine Maintenance and Repairs

LM needs to be vigilant about addressing animal burrows on the disposal cell. As burrows are located, they need to be collapsed, filled with clean soil, and reseeded. Additional rounds of trap-and-release will be needed as long as animal burrow activity is observed at the site.

1.8 Environmental Monitoring

1.8.1 Groundwater Monitoring

During site characterization, modeling was conducted to estimate the number of years, after site closure in 1982, that it would take a contaminant plume to travel through unsaturated materials, reach the water table, travel in groundwater, and reach monitoring wells MW-5 or MW-6, assuming the cover allowed precipitation to infiltrate and saturate the buried waste materials and form a leachate plume (DOE 1995). The following two models were used: the Hydrologic Evaluation of Landfill Performance model and the Multimedia Exposure Assessment model.

Three different modeling scenarios were assessed: (1) worst case, (2) most likely case, and (3) best case:

- Worst case: 15–20 years after 1982 site closure (i.e., between 1997 and 2002)
- Most likely case: 35–40 years after 1982 site closure (i.e., between 2017 and 2022)
- Best case: 95–100 years after 1982 site closure (i.e., between 2078 and 2082)

Groundwater sampling was last conducted in 2013. Results from 2013 were reported in a groundwater monitoring report (DOE 2014b). Those sampling results provided no evidence for a contaminant plume and indicated that no significant changes in groundwater quality had occurred. Therefore, the "worst case" scenario has not occurred. The next sampling round is scheduled for 2023, which follows the end date of the "most likely case" scenario.

1.8.2 Vegetation Management

Vegetation management at the Parkersburg site involves periodic mowing and spot herbicide application. Vegetation along the fence line and around the monitoring wells was being sufficiently controlled.

The current approach of mowing followed by spot herbicide application appears to provide sufficient control of poisonous and noxious weeds at this time but could be improved by adding an additional round of mowing and spraying. Species of concern include Canada thistle (*Cirsium arvense*), poison hemlock (*Conium maculatum*), teasel (*Dipsacus fullonum*), reed canarygrass (*Phalaris arundinacea*), Johnsongrass (*Sorghum halepense*), curly dock (*Rumex crispus*), and eastern poison ivy (*Toxicodendron radicans*). The only species of concern observed in 2022 were scattered poison hemlock on the western edge of the mowed field outside the fence and scattered curly dock in the northwest corner of the mowed field inside the perimeter fence.

A number of native species continued to be observed in 2022, consistent with findings from previous inspections. DOE is looking for innovative ways to provide reuse at the Parkersburg site and providing a native prairie for pollinator purposes is one possibility. While the open portions of the site consist primarily of cool-season grasses and weedy species, native species, such as mistflower (*Conoclinium coelestinum*), wingstem (*Verbesina alternifolia*), Indianhemp (*Apocynum cannabinum*), and goldenrod (*Solidago* species), were also observed.

1.9 Corrective Action

Corrective action is taken to correct out-of-compliance or hazardous conditions that create potential health and safety problems or that might affect the integrity of the disposal cell or compliance with Title 40 *Code of Federal Regulations* Section 192 (40 CFR 192).

No corrective actions were identified based on the inspection conducted in 2022.

2.0 References

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), 1995. *AMAX Radioactive Material Storage Area, Parkersburg, West Virginia, Site Characterization Results*, GJPO-ES-15, September.

DOE (U.S. Department of Energy), 2014a. *Groundwater Monitoring Assessment Parkersburg, West Virginia, Disposal Site,* LMS/PKB/S11932, Office of Legacy Management, June.

DOE (U.S. Department of Energy), 2014b. *November 2013 Groundwater Sampling at the Parkersburg, West Virginia, Disposal Site*, LMS/PKB/S01113, Office of Legacy Management, February.

DOE (U.S. Department of Energy), 2019. *Long-Term Surveillance Plan for the Parkersburg, West Virginia, Disposal Site*, LMS/PKB/S11796, Office of Legacy Management, May.

3.0 Photographs

Photo Location Number	Azimuth	Photograph Description
PL-1	45	Railroad Tracks Across Site Access Right-of-Way
PL-2	300	Main Vehicle Entrance Gate
PL-3	300	Looking Northwest Down North Fence Line
PL-4	90	Leaning Fence Post of Perimeter Fence
PL-5	—	Boundary Monument BM-2
PL-6	—	Top of PVC Pipe Marking Boundary Monument BM-3
PL-7	270	Monitoring Well MW-5
PL-8	180	Looking South Across Top of Disposal Cell
PL-9	—	Collapsed and Repaired Animal Burrow
PL-10	—	Erosion Control Area

Note:
— = Photograph taken vertically from above.

PL-1. Railroad Tracks Across Site Access Right-of-Way

PL-2. Main Vehicle Entrance Gate

PL-3. Looking Northwest Down North Fence Line

PL-4. Leaning Fence Post of Perimeter Fence

PL-5. Boundary Monument BM-2

PL-6. Top of PVC Pipe Marking Boundary Monument BM-3

PL-7. Monitoring Well MW-5

PL-8. Looking South Across Top of Disposal Cell

PL-9. Collapsed and Repaired Animal Burrow

PL-10. Erosion Control Area

Appendix A

Site Drawing

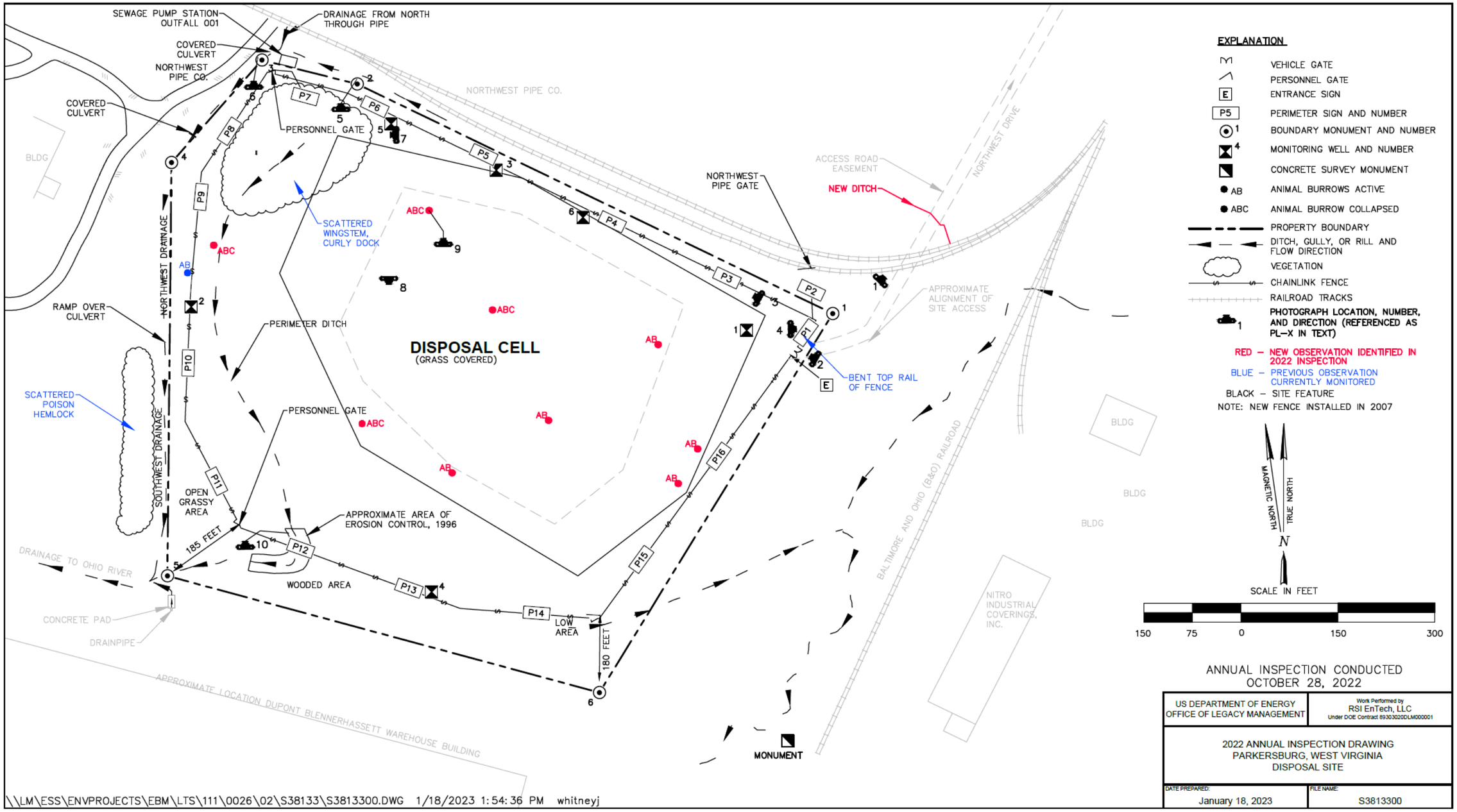

Figure A-1. 2022 Annual Inspection Drawing for the Parkersburg, West Virginia, Disposal Site