2004 Annual Inspection for the Parkersburg, West Virginia, Nuclear Waste Policy Act Section 151(c) Disposal Site

Summary

The Parkersburg, West Virginia, Disposal Site, inspected on September 23, 2004, is in good condition. The U.S. Department of Energy's (DOE's) weed control efforts during spring and summer 2004 significantly reduced the population of invasive weeds on the disposal cell cover, although significant infestations continue to thrive outside the perimeter fence. Vegetation on the cell cover was healthy and vigorous. Inspectors noted that several minor maintenance items had not been completed as expected by the maintenance subcontractor — perimeter sign P1 had not been replaced and minor fence repairs had not been made. Inspectors also identified a need to clear shrubby vegetation from along the outside of the north, west, and south perimeter fences. No need for a follow-up inspection was identified.

1.0 Introduction

This report presents the findings of the annual DOE inspection of the Nuclear Waste Policy Act (NWPA) Section 151(c) disposal site at Parkersburg, West Virginia. M. K. Kastens (Chief Inspector) and M. R. Widdop (Assistant Inspector), both of S.M. Stoller Corporation, the Legacy Management (LM) Contractor for the DOE office in Grand Junction, Colorado, conducted the inspection on September 23, 2004. R. Staubly of DOE participated in the inspection. The inspection was conducted in accordance with the *Long-Term Surveillance Plan* [LTSP] *for the Parkersburg, West Virginia, Disposal Site* (DOE–GJO, September 1995).

The purposes of the annual inspection were to confirm the integrity of visible features at the site, to identify changes or new conditions that may affect site integrity, and to determine the need, if any, for maintenance or follow-up inspections and monitoring.

2.0 Inspection Results

Features discussed in this report are shown on the attached drawings. Photographs supporting specific observations are identified in the text and on Sheet 1 of the drawings by photograph location (PL) numbers.

2.1 Site Access and Security Fence

The access road that leads to the site from Northwest Drive and the grade over the railroad tracks is in good condition and provides adequate clearance for a passenger car. The access route is along a permanent 20-foot-wide right-of-way that is unimpeded. (Northwest Drive was formerly called Foster Drive, as in the LTSP).

The security fence is in fair condition. Although the fence continues to function as designed, most of the chain link fabric is becoming heavily rusted due to the humid climate of the region. The chain link fence is now approximately 19 years old. The barbed wire attached to angle brackets along the top of the security fence is in poor condition. During the 2003 inspection, inspectors noted that the barbed wire was severely rusted in most areas and broken at three locations. Apparently, the life expectancy is shorter for the barbed wire than for the chain link fabric. DOE instructed the maintenance subcontractor to repair the broken strands in spring 2004 during a scheduled trip to the site, but inspectors noted that the repairs had not been made. DOE will make arrangements to complete this maintenance.

Inspectors have noted additional fence maintenance items during the last several inspections. A number of steel fence posts are bent near perimeter signs P9 and P14 and between signs P6 and P7, the top rail is out of its socket at two locations, and several angle brackets are bent or broken.

Because the fence generally remains serviceable, inspectors will continue to monitor and report on its condition and make minor repairs. At some time, the condition of the fence will become so degraded that DOE will request budget and scope to replace the entire security fence system (i.e., posts, fabric, top railing, barbed wire, hardware, etc.).

Padlocks on the entrance and personnel gates are heavily rusted. Some locks on personnel gates are so corroded they no longer work, but the lock on the entrance gate remains serviceable. Inspectors and other workers visiting the site must be prepared to cut rusted locks to gain access and will carry replacement locks.

2.2 Disposal Cell and Area Inside Security Fence

The vegetation on the disposal cell cover, essentially the area inside the security fence, appeared healthy and vigorous in most areas. Several areas continue to contain infestations of poison hemlock (*Conium maculatum*) and Canada thistle (*Cirsium arvense*). Scattered plants of poison hemlock occur throughout the site, and the primary infestations of Canada thistle are shown on Sheet 2 of the attached drawings.

Poison hemlock, a biennial weed, is not a listed noxious species in West Virginia; however, it poses a safety hazard to personnel who must walk through or work within infested areas, as all plant parts are poisonous. *Skin contact with this plant should be avoided.* Poison hemlock poses a particular hazard to children, who often play in the soccer fields adjacent to the site. The plant reproduces by seed only and may be controlled effectively with a regular mowing program. It also may be controlled effectively with herbicides, particularly if the plant is sprayed in the rosette stage in the fall or early spring. One insect, the poison hemlock moth (*Agonopterix alstroemeriana*) has been considered for use as a biological control agent for this plant, but its effectiveness is not yet fully known.

A local subcontractor visited the site in June 2003 to conduct the annual mowing and found poison hemlock up to 10 feet high covering 3.8 acres on and near the site. In July 2003, DOE subcontracted to remove the hemlock, which consisted of spraying the plants with herbicide, cutting the plants, removing the root mass, and reseeding. Viable seed remained from the hemlock, and new growth was found in August 2003. The eradication process was repeated for

the 3.8 acres on the cell cover at that time. In late October, inspectors found other areas, approximately 2 acres in extent, within the fence that were largely devoid of turf species, having instead barren patches of soil and weeds consisting predominantly of poison hemlock. These areas were sprayed, cut, and overseeded in November 2003.

Canada thistle was identified at the site in 1999, primarily along the security fence. This weed is not a listed noxious species in West Virginia (although it is considered noxious in the neighboring states of Ohio and Pennsylvania); however, it seems to be outcompeting desirable species on the site. As a best management practice to maintain plant diversity on the property, DOE added control of this species to the scope of routine maintenance activities in 2001. Canada thistle reproduces by horizontal roots and by seed, which makes control difficult. The most effective control consists of a combination of methods—mowing two to three times during the growing season and applying herbicide in the fall.

During 2004, the maintenance subcontractor treated some areas with herbicide and mowed the site on a monthly basis. Inspectors noted that weed populations on the cover had decreased significantly from 2003. DOE will continue its weed control program by treating Canada thistle infestations with a broadleaf-specific herbicide in fall 2004 and again in spring and fall 2005. The cover also will continue to be mowed on a monthly basis to control the spread of poison hemlock.

Inspectors walked a series of traverses inside the security fence to inspect the disposal cell top for signs of settlement, erosion, or other modifying process that would indicate a threat to cell integrity. No signs of instability were observed (PL–1 through PL–4).

The condition of the six monitor wells inside the fence was unchanged. Monitor wells MW–5 and MW–6, installed by DOE in 1994, are in excellent condition. The casings on the four AMAX wells (MW–1 through MW–4) are rusted but adequate. All wells were secured with a padlock.

2.3 Area Between Security Fence and Property Boundary

Spraying vegetation along the base of the security fence with herbicide is an annual maintenance action at this site. Inspectors noted that weeds along the base of the fence appeared to have been sprayed in 2004 but noted a need for clearing shrubby vegetation from around the perimeter fence. A swath of vegetation had been mowed along the eastern fence line (PL–5), but vegetation had not been mowed or cleared along the northern (PL–6 and PL–7), western, and southern fence lines. These unmowed areas contained high densities of poison hemlock and Canada thistle that appeared to have not been treated in 2004. DOE will instruct the maintenance subcontractor to mow a swath around the entire perimeter on a regular basis.

Perimeter signs were in good condition, with one exception. Perimeter sign P1 (PL–8), destroyed by shotgun blasts in 2003, had not been replaced in 2004 by the maintenance subcontractor as requested. DOE will instruct the subcontractor to complete this task. Adhesive overlays with the correct description of the cell contents were applied to perimeter signs in 2001. These remain in good condition.

Inspectors collected perimeter sign location information using global positioning system equipment and applied numbers to perimeter signs. The base map has been updated.

In 2003, inspectors identified a small infestation of Johnsongrass (*Sorghum halapense*), a state-listed noxious weed, outside the security fence near monitor well MW–6. This species was not found during the 2004 inspection.

The drainage channel in the southwest corner of the site, lined with concrete and energy dissipation baffles in August 1996, is in excellent condition and functioning as designed. Erosion has not recurred.

Inspectors could not find boundary monument BM–4 during the 2000 or 2001 site inspections. This monument is in the bottom of a drainage ditch that parallels the northern property boundary. In 2002, a local surveyor located BM–4 beneath more than 4 inches of sediment. In 2003 and 2004, inspectors again removed sediments to uncover the monument (PL–9). All other boundary monuments were located and are in excellent condition.

2.4 Outlying Area

The Parkersburg site is in a developed industrial area. Inspectors observed that no development or change in adjacent land use has occurred that threatens site integrity or access, or would result in more incidental traffic near the site.

3.0 Recommendations

1. The chain link fabric on the security fence is heavily rusted, as are the three strands of barbed wire on top of the security fence. Other individual fence parts are deteriorated, bent, or broken. The fabric, posts, gates, and top rail may last 5 years or more, but the barbed wire is severely deteriorated at several locations and is expected to continue to break. DOE instructed the maintenance subcontractor to repair the broken barbed wire in 2004, and the repairs were not made (page 2).

   Recommendation: DOE will make arrangements to repair the broken barbed wire. At some time, the condition of the fence will be so degraded that the entire security fence system (i.e., posts, fabric, top railing, barbed wire, hardware, etc.) will require replacement. Inspectors will continue to monitor the overall condition of the fence to determine the optimal time for replacement and will request budget and scope for that activity when necessary.

2. Most of the padlocks on the entrance gate, personnel gates, and monitor wells are heavily rusted. These padlocks may be inoperable during future site visits (page 2).

   Recommendation: Inspectors will be prepared to cut rusted padlocks and/or chain and replace with new equipment during future site visits.

3. The disposal cell cover and the area outside of the perimeter fence continue to contain infestations of poison hemlock and Canada thistle. Scattered plants of poison hemlock occur throughout the site; the primary infestations of Canada thistle are shown on Sheet 2 of the attached drawings (pages 2 and 3).

   Recommendation: DOE will continue the weed control program it began in 2003 by treating Canada thistle infestations with a broadleaf-specific herbicide in fall 2004 and again in spring and fall 2005. The disposal cell cover and a swath along the outside of the fence also will continue to be mowed on a monthly basis.

4. Perimeter sign P1, destroyed by shotgun blasts in 2003, was not replaced by the maintenance subcontractor (page 3).

   Recommendation: DOE will instruct the maintenance subcontractor to replace the sign.

4.0 Photographs

Photo Location Number	Azimuth	Description
PL–1	120	View of disposal cell top.
PL–2	180	View of disposal cell top.
PL–3	250	View of disposal cell top.
PL–4	40	View of disposal cell top.
PL–5	215	View of mowed area along eastern perimeter fence; note rusted condition of fence.
PL–6	270	North side of site, looking westward.
PL–7	120	North side of site, looking eastward.
PL–8	300	Perimeter sign P1, damaged by shotgun blast.
PL–9	30	Boundary monument BM-4.

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PKB 9/2004. PL–1. View of disposal cell top.

PKB 9/2004. PL–2. View of disposal cell top.

PKB 9/2004. PL–3. View of disposal cell top.

PKB 9/2004. PL–4. View of disposal cell top.

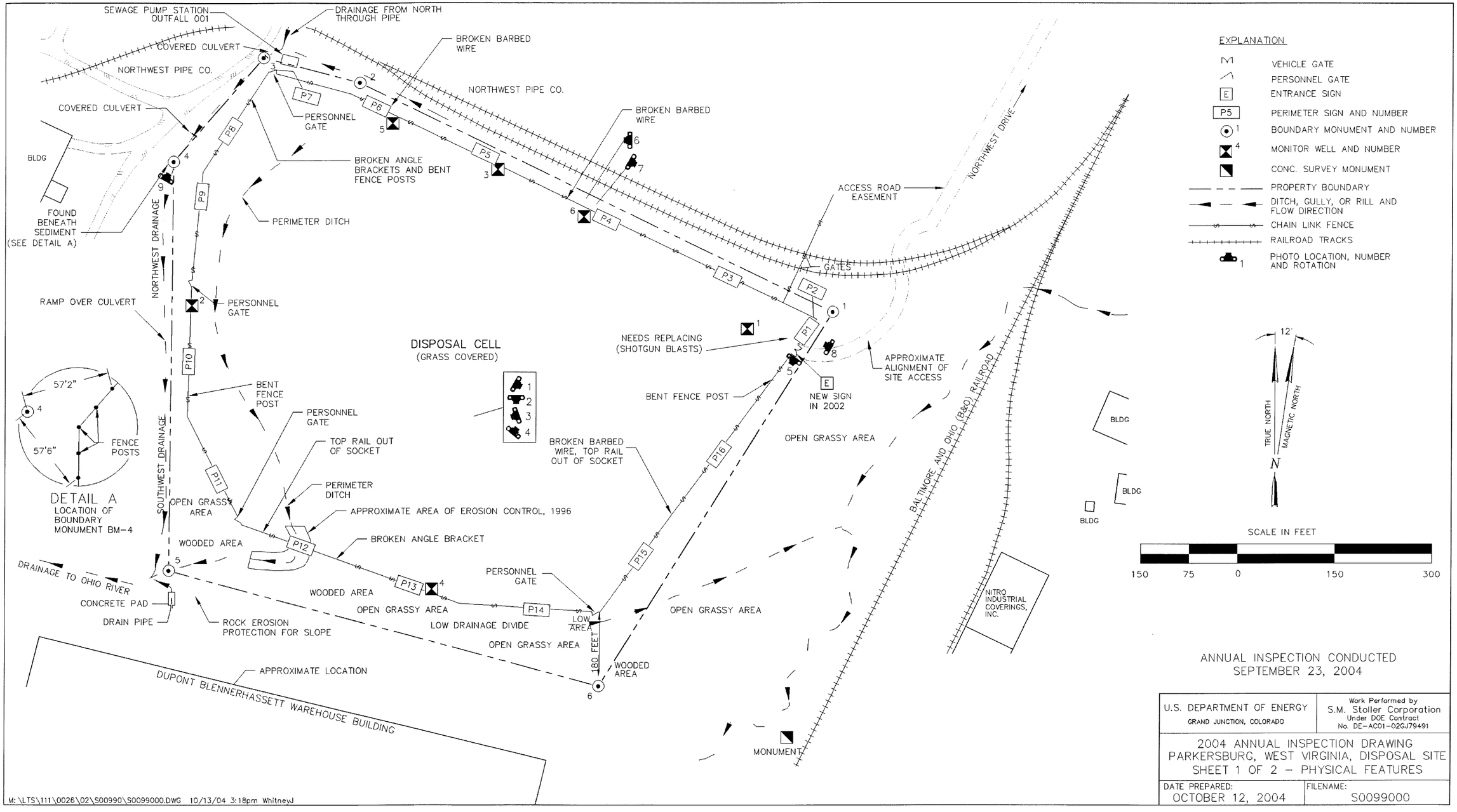
PKB 9/2004. PL–5. View of mowed area along eastern perimeter fence; note rusted condition of fence.

PKB 9/2004. PL–6. North side of site, looking westward.

PKB 9/2004. PL–7. North side of site, looking eastward.

PKB 9/2004. PL–8. Perimeter sign P1, damaged by shotgun blast.

PKB 9/2004. PL–9. Boundary monument BM-4.



ANNUAL INSPECTION CONDUCTED
SEPTEMBER 23, 2004

U.S. DEPARTMENT OF ENERGY GRAND JUNCTION, COLORADO	Work Performed by S.M. Stoller Corporation Under DOE Contract No. DE-AC01-02GJ79491

2004 ANNUAL INSPECTION DRAWING
PARKERSBURG, WEST VIRGINIA, DISPOSAL SITE
SHEET 1 OF 2 – PHYSICAL FEATURES

DATE PREPARED: OCTOBER 12, 2004	FILENAME: S0099000

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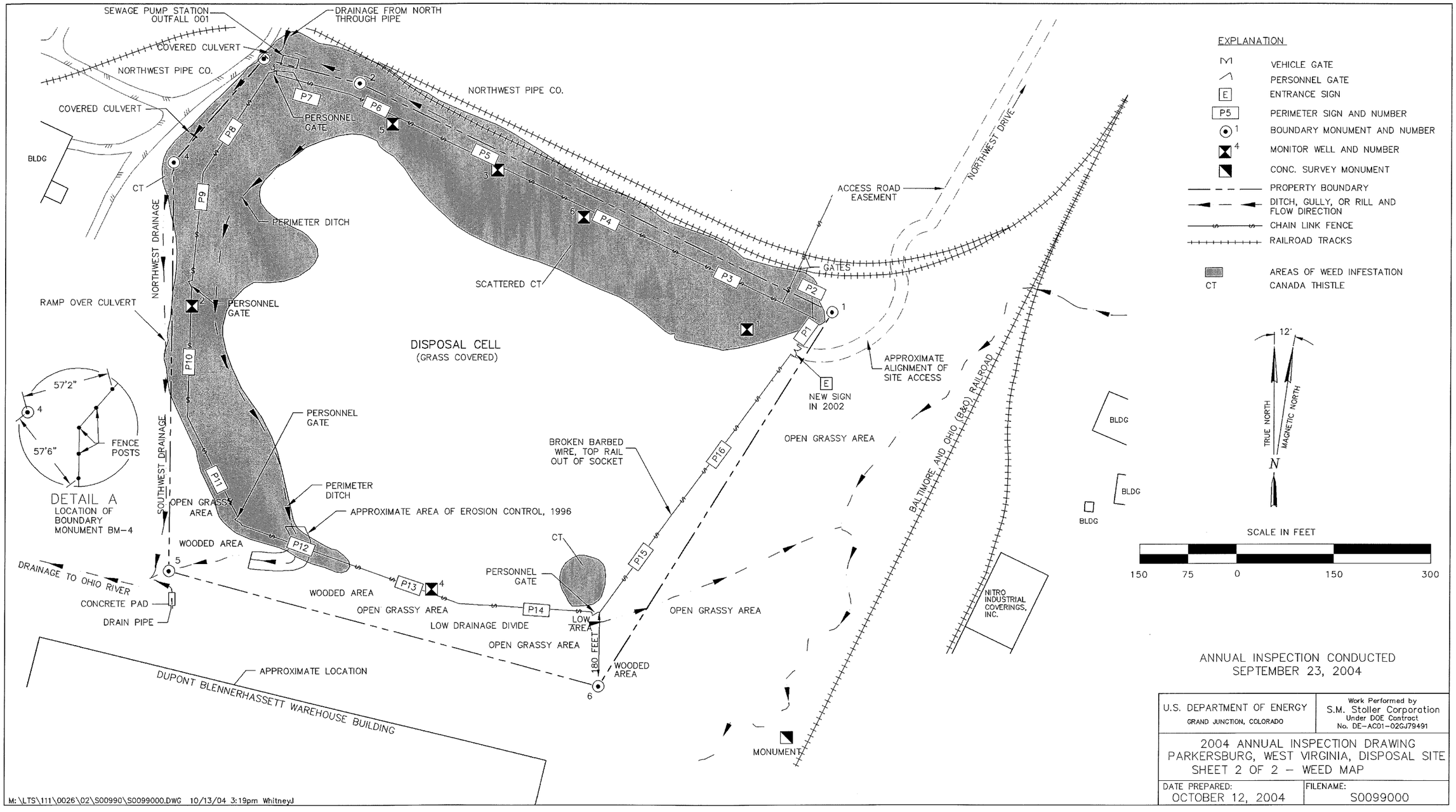

EXPLANATION

- VEHICLE GATE
- PERSONNEL GATE
- E — ENTRANCE SIGN
- P5 — PERIMETER SIGN AND NUMBER
- 1 — BOUNDARY MONUMENT AND NUMBER
- 4 — MONITOR WELL AND NUMBER
- CONC. SURVEY MONUMENT
- PROPERTY BOUNDARY
- DITCH, GULLY, OR RILL AND FLOW DIRECTION
- CHAIN LINK FENCE
- RAILROAD TRACKS
- AREAS OF WEED INFESTATION
- CT — CANADA THISTLE

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SEPTEMBER 23, 2004

U.S. DEPARTMENT OF ENERGY GRAND JUNCTION, COLORADO	Work Performed by S.M. Stoller Corporation Under DOE Contract No. DE-AC01-02GJ79491
2004 ANNUAL INSPECTION DRAWING PARKERSBURG, WEST VIRGINIA, DISPOSAL SITE SHEET 2 OF 2 – WEED MAP	
DATE PREPARED: OCTOBER 12, 2004	FILENAME: S0099000

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