2025 Annual Landfill Inspection Report

Little Broad Run Landfill

Mountaineer Plant
New Haven, West Virginia

December 2025

Appalachian Power
Wheeling, WV

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2025 Annual Landfill Inspection Report
(CCR Landfill)

Mountaineer Plant

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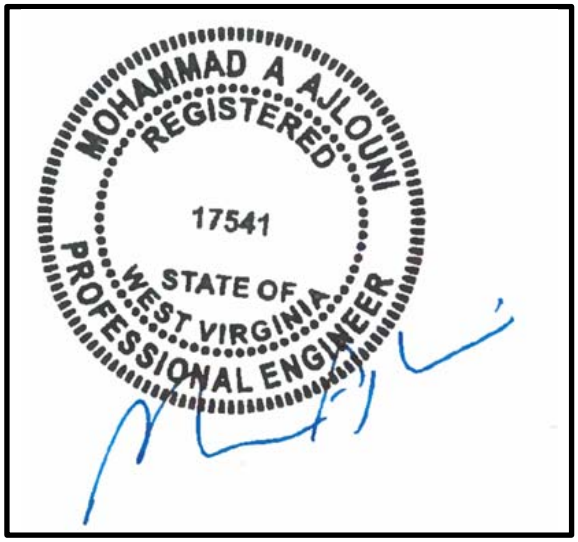

I certify to the best of my knowledge, information and belief the information contained in this report meets the requirements of 40 CFR § 257.84(b).

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Attachments

Appendix A

1.0 INTRODUCTION

This report was prepared by AEP- Geotechnical Engineering Services (GES) section, in part, to fulfill requirements of 40 CFR 257.84 and to provide the Mountaineer Plant an evaluation of the facility.

Mr. Brian Palmer, P.E. and Mr. Mohammad Ajlouni performed the 2025 inspection of the Landfill at the Mountaineer Plant. This report is a summary of the inspection and an assessment of the general condition of the facility. Mr. Charles Cunningham of the plant was the facility contact. The inspection was performed on October 16, 2025. Weather conditions were cloudy with temperatures in the mid to upper 60's (°F). There was no rainfall recorded by the plant over the seven days prior to the inspection. All portions of the landfill had been recently mowed.

2.0 DESCRIPTION OF LANDFILL

The Landfill is permitted for nine disposal areas (Areas 1 through 9) and a vertical expansion that is designed over the existing landfill area of approximately 209 acres. Areas 1-7 of the landfill are filled to the permitted grades. Areas 8 and 9 are permitted but not constructed. The vertical expansion is currently divided into four development phases (Phase 1-4) and could be adjusted in acreages based on the operational needs. Figure 1 illustrates major components of the landfill facility that includes landfill, leachate collection ponds, wastewater pond complex and gypsum stacker pad. Figure 2 provides general overview of the Landfill and breakdown of areas (1-9) and vertical expansion Phases 1-4.

The landfill inspection included all the fill areas (1-7) including vertical expansion, storm water management system, leachate collection management system, access roads and ditches, and conveyance channels.

At the time of the landfill inspection, operational activities were performed in the vertical expansion area. The landfill work was performed in accordance with the approved permit. Landfill areas outside of the current active fill area were generally covered with soil cover.

3.0 REVIEW OF AVAILABLE INFORMATION (257.84(b) (1)(i))

A review of available information regarding the status and condition of the Landfill, which include files available in the operating record, such as design, and construction information, previous 7-day inspection reports, and previous annual inspections reports. Based on the review of the data there were no new signs of actual or potential structural weakness or adverse conditions. There is an open deficiency further discussed in Section 5.4

4.0 INSPECTION (257.84(b)(1)(ii))

4.1 Changes in Geometry Since Last Inspection (257.84(b)(2)(i))

No modifications have been made to the geometry of the Landfill since the 2024 annual inspection. The geometry of the landfill has remained essentially unchanged, except for the change in topography of the active disposal area.

4.2 Volume (257.84(b)(2)(ii))

The total volume of CCR waste disposed at the landfill as of October 2025 was estimated by Charles Cunningham with Mountaineer Plant as 30.8 million tons or approx. 26.04 million cubic yards.

4.3 Definitions of Visual Observations and Deficiencies

This summary of the visual observations uses terms to describe the general appearance or condition of an observed item, activity or structure. The meaning of these terms is as follows:

Good:	A condition or activity that is generally better or slightly better than what is minimally expected or anticipated from a design or maintenance point of view.
Fair/:	A condition or activity that generally meets what is minimally expected or
Satisfactory	anticipated from a design or maintenance point of view.
Poor:	A condition or activity that is generally below what is minimally expected or anticipated from a design or maintenance point of view.
Minor:	A reference to an observed item (e.g., erosion, seepage, vegetation, etc.) where the current maintenance condition is below what is normal or desired, but which is not currently causing concern from a structure safety or stability point of view.
Significant:	A reference to an observed item (e.g., erosion, seepage, vegetation, etc.) where the current maintenance program has neglected to improve the condition. Usually, conditions that have been identified in the previous inspections, but have not been corrected.
Excessive:	A reference to an observed item (e.g., erosion, seepage, vegetation, etc.) where the current maintenance condition is above or worse than what is normal or desired, and which may have affected the ability of the observer to properly evaluate the structure or particular area being observed or which may be a concern from a structure safety or stability point of view.

This document also uses the definition of a "deficiency" as referenced in the CCR rule section §257.84(b)(5) Inspection Requirements for CCR Landfills. This definition has been assembled using the CCR rule preamble as well as guidance from MSHA, "Qualifications for Impoundment Inspection" CI-31, 2004. These guidance documents further elaborate on the definition of deficiency. Items not defined by deficiency are considered maintenance or items to be monitored.

A "deficiency" is some evidence that a landfill has developed a problem that could impact the structural integrity of the landfill. There are four general categories of deficiencies. These four categories are described below:

1. Uncontrolled Seepage (Leachate Outbreak)
   Leachate outbreak is the uncontrolled release of leachate from the landfill.
2. Displacement of the Embankment
   Displacement of the embankment is large scale movement of part of the landfill. Common signs of displacement are cracks, scraps, bulges, depressions, sinkholes and slides.
3. Blockage of Control Features
   Blockage of Control Features is the restriction of flow at spillways, decant or pipe spillways, or drains.

4. Erosion

   Erosion is the gradual movement of surface material by water, wind or ice. Erosion is considered a deficiency when it is more than a minor routine maintenance item.

4.4 Visual Inspection (257.84(b)(1)(ii))

A visual inspection of the landfill was conducted to identify any signs of distress or malfunction of the landfill and appurtenant structures. Specific items inspected included all structural elements of the landfill perimeter berms, temporary and final covers, drainage features, open cells, and appurtenances such as chimney drains, etc.

Overall, the facility is in satisfactory condition. The landfill is functioning as intended with no signs of potential structural weakness or conditions which are disrupting to the safe operation of the landfill. Inspection photos are included in Appendix A. Additional pictures taken during the inspection can be made available upon request. A site map presenting locations of the inspection observations is included in Figure 3.

1. The soil cover over Landfill Area 1 appeared in satisfactory and with the area with a good stand of vegetation (Photo #1).
2. On the southwest side of Area 1 where the top drainage channels breaks over the ridge needs to be repaired and vegetated or armored (Photo #2)
3. The bench on the southwest side of Area 1 has been repaired and needs to be reseeded to establish vegetation (Photos #3 & #4).
4. The soil cover and vegetation in Area 2 was satisfactory (Photos #5 & #6) with no signs of erosion or deformation.
5. No signs of erosion, deformation, or animal activity were observed on the soil cover in Area 3 (Photos #7,#,8, #11, & #12).
6. The riprapped toe and channels in Area 3 appeared satisfactory (Photos #9 & #10) with no signs of standing water or movement.
7. Landfill Area 4 appeared satisfactory with no signs of erosion, deformation, or animal activity (Photos #13, #14, #15, & #16).
8. The inactive portion of Phase 1 vertical expansion (over Area 5 & 6) appeared satisfactory with good vegetation, and no signs of erosion, deformation, or animal activity observed (Photos #17-#21, #24, #27, & #28).
9. The haul roads over Phase 1 appeared satisfactory with no signs of erosion or rutting. (Photos #22 & #23)
10. The Channel to the Northeast Sediment Pond appeared satisfactory with no signs of erosion (Photo #29).
11. The Northeast Sediment Pond was generally satisfactory with the need to remove cattails that are growing around the perimeter (Photo #30).
12. The soil cover and vegetation of Area 7 was generally satisfactory (Photo #31) except for the need to repair erosion area on bench (Photo #32).
13. The fabriform slope drainage channel in Area 7 appeared to be in satisfactory condition (Photo #33).
14. The inlet to the stormwater sediment ponds were in good condition (Photo #34).

15. The leachate collection ponds were observed to be in overall satisfactory condition (Photos #37 & #38).
16. The soil and vegetative cover of Area 6 that has not had the vertical expansion fill placed was observed to be in satisfactory condition with no signs of erosion, deformation, or animal activity (Photos #39 & #40)

4.5 Changes That Effect Stability or Operation (257.84(b)(2)(iv))

Based on interviews with plant personnel and field observations there were no changes to the landfill since the last annual inspection that would affect the stability or operation of the landfill.

5.0 SUMMARY OF FINDINGS

5.1 General Observations

The following general observations were identified during the visual inspection:

1. In general, the landfill is functioning as intended and the active cell, inactive cells, closed areas, and storm water ditches are in satisfactory condition. The Plant is performing regular maintenance and inspections as required. Several maintenance items have been noted and are described in Section 5.2.

5.2 Maintenance Items

The following maintenance items were identified during the visual inspection, see site map for locations. Contact GES for specific recommendations regarding repairs:

1. Repair and reseed the areas on the southwest side of Area 1.
2. Remove cattail growth on the interior slopes of the dikes of the northwest sediment pond.
3. Continue periodic mowing of soil cover areas.

5.3 Items to Monitor

The following items were identified during the visual inspection as items to be monitored:

1. Monitor the slopes in Areas 1, 2, and 3 for signs of instability.
2. Monitor soil cover areas for animal borrowing activities and remove animals and repair damage as needed.

5.4 Deficiencies (257.84(b)(2)(iii))

There were no new signs of structural weakness or disruptive conditions that were observed at the time of the inspection that would require additional investigation or remedial action.

There is, however, a noted deficiency pertaining to leachate seepage and buildup in Area 3 of the existing landfill. The deficiency related to seepage from the cover soils of Area 3 was identified as part of regular monitoring and inspections on July 9, 2020.

An interim seepage control plan for Area 3 was developed that consisted of installing several shallow toe drains and sump structures to intercept the seepage before it could daylight through the toe areas of the cover soils. The sump structures pump the collected seepage to a storage tank that is then emptied back into the landfill leachate collection system. A study into the thickness and permeability of the final soil cap in Area 3 was completed in March, 2022.

The remediation plan for the seepage build-up in Area 3 consists of 10 dewatering wells that

discharge into a storage tank. The system was installed from June to July 2022 and began dewatering on August 4, 2022. Weekly piezometer readings collected to monitor the effectiveness of the system transitioned to monthly monitoring in October 2024.

Following additional geotechnical and hydrogeologic investigations in 2023 and 2024 multiple options were reviewed for feasibility using AEP's Risk Based Technical Option (RBTO) process. Plan for final remediation of the deficiencies are being developed to improve pumping well operations and regrade a portion of the soil cover.

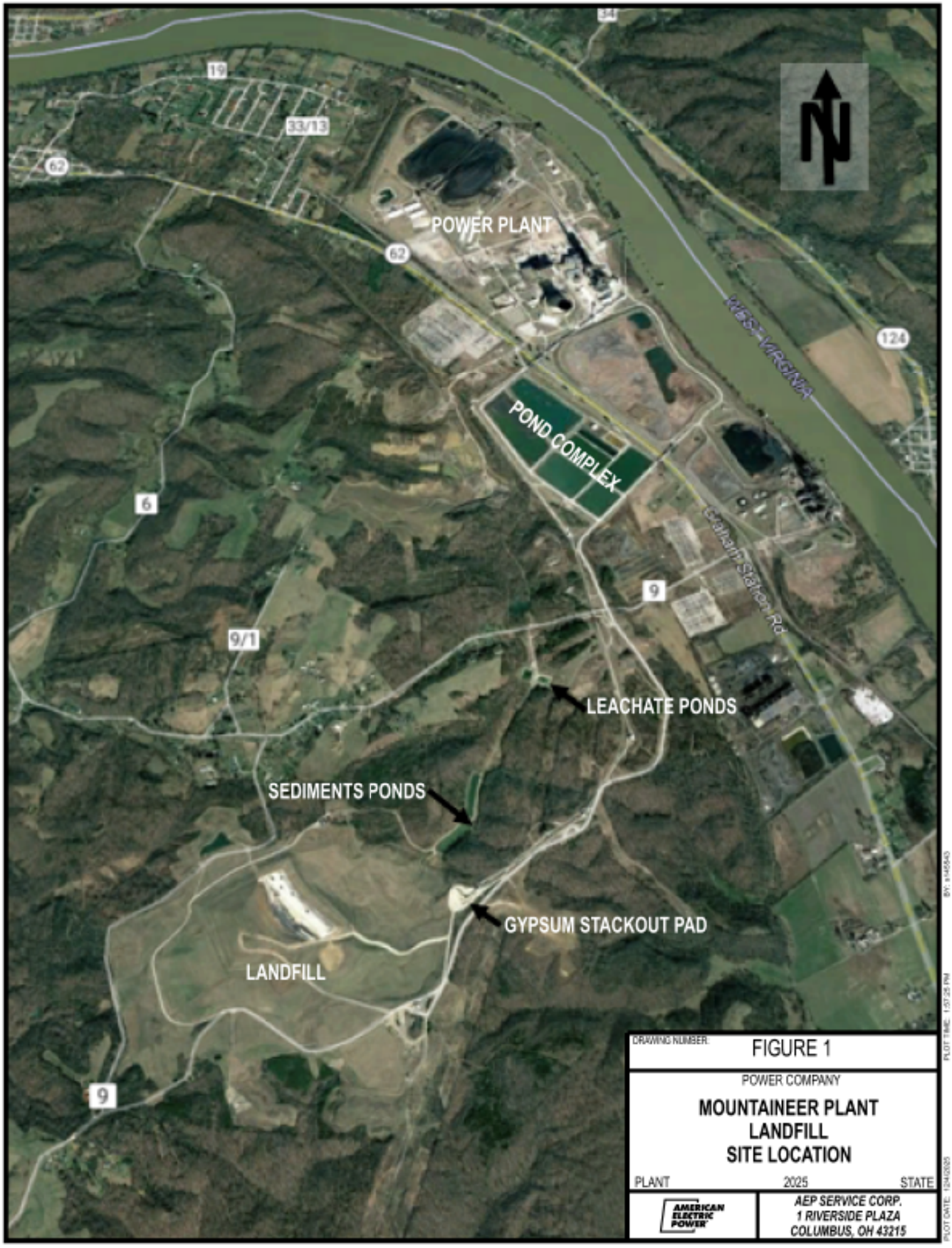
During the 2025 annual inspection, there were no new signs of structural weakness or disruptive conditions observed that would require additional investigation or remedial action.

A deficiency is defined as either:

1) Uncontrolled seepage (leachate outbreak),
2) Displacement of the embankment,
3) Blockage of control features, or
4) Erosion, more than minor maintenance.

If any of these conditions occur before the next annual inspection, contact AEP Geotechnical Engineering immediately.

Figure



DRAWING NUMBER: FIGURE 1

POWER COMPANY

MOUNTAINEER PLANT
LANDFILL
SITE LOCATION

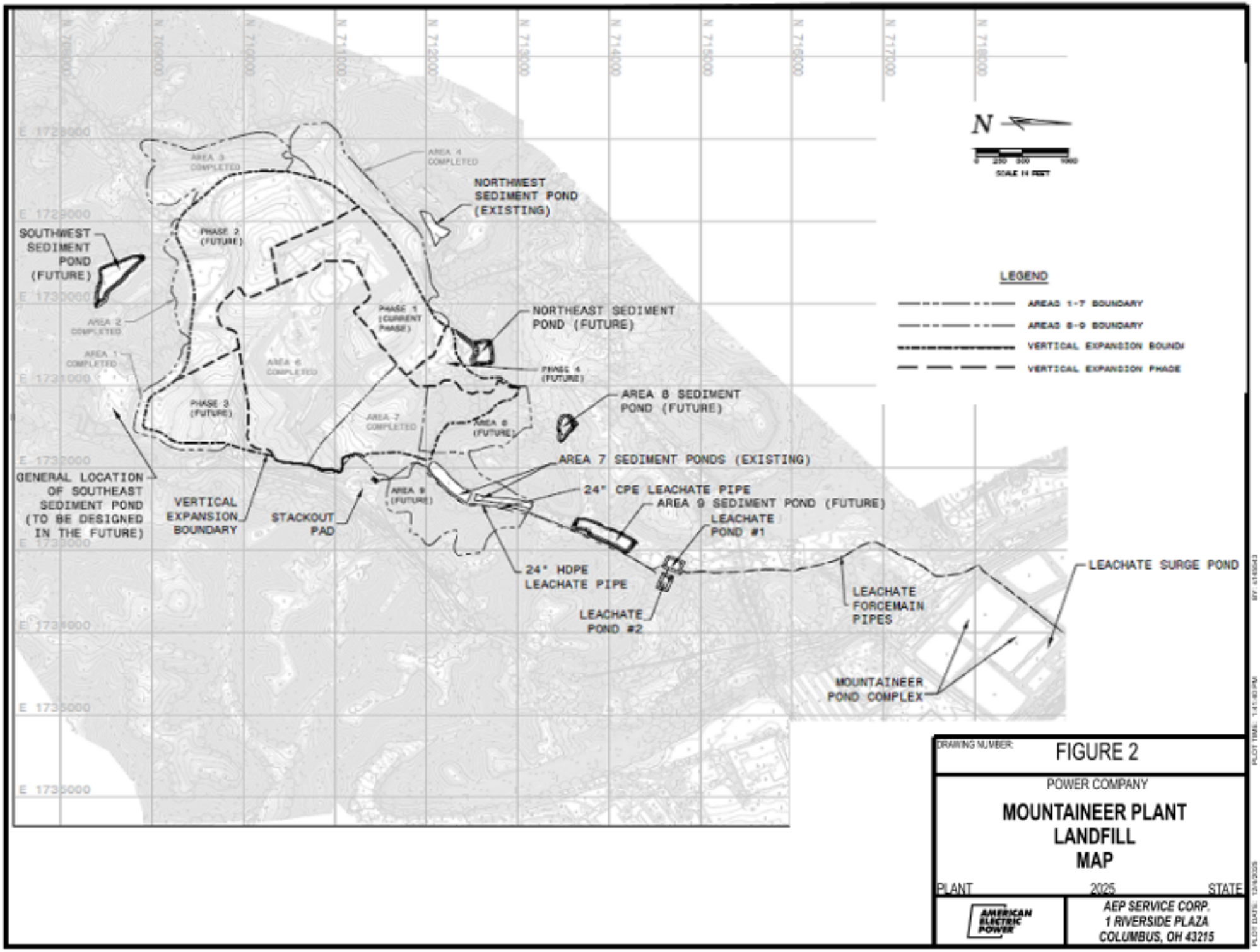
PLANT 2025 STATE

AMERICAN ELECTRIC POWER

AEP SERVICE CORP.
1 RIVERSIDE PLAZA
COLUMBUS, OH 43215

PLOT DATE: 12/4/2025
PLOT TIME: 1:57:25 PM
BY: a145843
CROSS REFS:

A (8.5"x11")



DRAWING NUMBER: FIGURE 2

POWER COMPANY

MOUNTAINEER PLANT LANDFILL MAP

PLANT 2025 STATE

AMERICAN ELECTRIC POWER

AEP SERVICE CORP.
1 RIVERSIDE PLAZA
COLUMBUS, OH 43215

A [8.5"x11"]

DRAWING NUMBER: FIGURE 3

POWER COMPANY

MOUNTAINEER PLANT
LANDFILL
PHOTO FIGURE

PLANT 2025 STATE

AMERICAN ELECTRIC POWER

AEP SERVICE CORP.
1 RIVERSIDE PLAZA
COLUMBUS, OH 43215

PLOT DATE: 12/4/2025 PLOT TIME: 12:56:27 PM BY: s143043

A [8.5"x11"]

Appendix A

Inspection Photos

AEP GES Landfill Inspection

Plant Name: Mountaineer

Inspector: M Ajlouni/ B Palmer

Unit: Little Broad Run Landfill

Date: 16 October 2025

Photo #: 1

Notes: General condition of soil cover over Area 1 looking south

N38 56.685 W81 56.656

Photo #: 2

Notes: Vegetation missing from shallow channel on cover at edge of fill where top breaks to slope

N38 56.580 W81 56.716

AEP GES Landfill Inspection

Plant Name: Mountaineer

Inspector: M Ajlouni/ B Palmer

Unit: Little Broad Run Landfill

Date: 16 October 2025

Photo #: 3

Notes: General condition of bench and slope along southwest side of Area 1 looking northwest. Vegetation from recent repairs not taken.

N38 56.584 W81 56.736

Photo #: 4

Notes: General condition of bench and slope along southwest side of Area 1 looking southeast. Vegetation from recent repairs not taken.

AEP GES Landfill Inspection

Plant Name: Mountaineer

Inspector: M Ajlouni/ B Palmer

Unit: Little Broad Run Landfill

Date: 16 October 2025

Photo #: 5

Notes: General condition of soil cover over Area 2 looking west

N38 56.684 W81 56.948

Photo #: 6

Notes: General condition of soil cover on south slope of Area 2

N38 56.652 W81 56.959

AEP GES Landfill Inspection

Plant Name: Mountaineer

Inspector: M Ajlouni/ B Palmer

Unit: Little Broad Run Landfill

Date: 16 October 2025

Photo #: 7

Notes: General condition of soil cover over Area 3 looking south

N38 56.716 W81 57.265

Photo #: 8

Notes: General condition of soil cover over Area 3 in area of 2017 slip repair.

N38 56.659 W81 57.322

AEP GES Landfill Inspection

Plant Name: Mountaineer

Inspector: M Ajlouni/ B Palmer

Unit: Little Broad Run Landfill

Date: 16 October 2025

Photo #: 9

Notes: General condition of soil cover over Area 3 in area of 2004 slip repair.

N38 56.784 W81 57.373

Photo #: 10

Notes: General condition of soil cover over Area 3 looking east.

N38 56.801 W81 57.371

AEP GES Landfill Inspection

Plant Name: Mountaineer

Inspector: M Ajlouni/ B Palmer

Unit: Little Broad Run Landfill

Date: 16 October 2025

Photo #: 11

Notes: General condition of soil cover over Area 3 looking south

N38 56.782 W81 57.298

Photo #: 12

Notes: General condition of soil cover over Area 3 looking east

N38 56.774 W81 57.261

AEP GES Landfill Inspection

Plant Name: Mountaineer

Inspector: M Ajlouni/ B Palmer

Unit: Little Broad Run Landfill

Date: 16 October 2025

Photo #: 13

Notes: General condition of soil cover over Area 4 looking east

N38 56.888 W81 57.322

Photo #: 14

Notes: General condition of soil cover over Area 4 looking northwest.

N38 56.892 W81 57.350

AEP GES Landfill Inspection

Plant Name: Mountaineer

Inspector: M Ajlouni/ B Palmer

Unit: Little Broad Run Landfill

Date: 16 October 2025

Photo #: 15

Notes: General condition of soil cover over Area 4 looking east along slope

N38 56.962 W81 57.286

Photo #: 16

Notes: General condition of soil cover over Area 4 looking north

N38 56.980 W81 57.226

AEP GES Landfill Inspection

Plant Name: Mountaineer

Inspector: M Ajlouni/ B Palmer

Unit: Little Broad Run Landfill

Date: 16 October 2025

Photo #: 17

Notes: General condition of soil cover over Phase 1 north slope looking west

N38 56.996 W81 57.000

Photo #: 18

Notes: General condition of soil cover over Phase 1 west slope looking south

N38 56.949 W81 57.150

AEP GES Landfill Inspection

Plant Name: Mountaineer

Inspector: M Ajlouni/ B Palmer

Unit: Little Broad Run Landfill

Date: 16 October 2025

Photo #: 19

Notes: General condition of soil cover over Phase 1 west slope looking north

N38 56.910 W81 57.106

Photo #: 20

Notes: General condition of soil cover over Phase 1 west slope looking north

N38 56.827 W81 57.089

AEP GES Landfill Inspection

Plant Name: Mountaineer

Inspector: M Ajlouni/ B Palmer

Unit: Little Broad Run Landfill

Date: 16 October 2025

Photo #: 21

Notes: General condition of soil cover over Phase 1 southwest slope looking east

N38 56.823 W81 57.073

Photo #: 22

Notes: General condition of access road

N38 56.868 W81 57.008

AEP GES Landfill Inspection

Plant Name: Mountaineer

Inspector: M Ajlouni/ B Palmer

Unit: Little Broad Run Landfill

Date: 16 October 2025

Photo #: 23

Notes: General condition of secondary access road

N38 56.877 W81 56.938

Photo #: 24

Notes: General condition of soil cover over Phase 1 east slope looking north

N38 56.924 W81 56.869

AEP GES Landfill Inspection

Plant Name: Mountaineer

Inspector: M Ajlouni/ B Palmer

Unit: Little Broad Run Landfill

Date: 16 October 2025

Photo #: 25

Notes: General condition of active working face

N38 56.947 W81 56.879

Photo #: 26

Notes: General condition of active working face

N38 56.992 W81 56.971

AEP GES Landfill Inspection

Plant Name: Mountaineer

Inspector: M Ajlouni/ B Palmer

Unit: Little Broad Run Landfill

Date: 16 October 2025

Photo #: 27

Notes: General condition of soil cover over Phase 1 east slope looking south

N38 56.987 W81 56.949

Photo #: 28

Notes: General condition of soil cover over Phase 1 top area looking southwest

N38 56.984 W81 56.975

AEP GES Landfill Inspection

Plant Name: Mountaineer

Inspector: M Ajlouni/ B Palmer

Unit: Little Broad Run Landfill

Date: 16 October 2025

Photo #: 29

Notes: General condition of drainage ditch across Area 4 for Vertical Expansion drainage to Northwest Sediment Pond

N38 57.064 W81 57.166

Photo #: 30

Notes: General condition of Northwest Sediment Pond. Excess vegetation growing in the pond.

N38 57.112 W81 57.094

AEP GES Landfill Inspection

Plant Name: Mountaineer

Inspector: M Ajlouni/ B Palmer

Unit: Little Broad Run Landfill

Date: 16 October 2025

Photo #: 31

Notes: General condition of slope where Areas 6&7 come together.

N38 57.055 W81 56.546

Photo #: 32

Notes: Previously repaired erosion on bench in Area 7 that needs reworked.

N38 57.060 W81 56.556

AEP GES Landfill Inspection

Plant Name: Mountaineer

Inspector: M Ajlouni/ B Palmer

Unit: Little Broad Run Landfill

Date: 16 October 2025

Photo #: 33

Notes: General condition of fabriform slope drainage channel on Area 7 slope

N38 57.062 W81 56.580

Photo #: 34

Notes: General condition of stormwater discharge into Area 7 Sediment Pond from the Landfill.

N38 57.099 W81 56.532

AEP GES Landfill Inspection

Plant Name: Mountaineer

Inspector: M Ajlouni/ B Palmer

Unit: Little Broad Run Landfill

Date: 16 October 2025

Photo #: 35

Notes: General condition of the Area 7 Sediment Pond looking northeast.

N38 57.099 W81 56.532

Photo #: 36

Notes: General condition of the Area 7 Sediment Pond including the outlet structure looking southwest

N38 57.293 W81 56.435

AEP GES Landfill Inspection

Plant Name: Mountaineer

Inspector: M Ajlouni/ B Palmer

Unit: Little Broad Run Landfill

Date: 16 October 2025

Photo #: 37

Notes: General condition of Leachate Pond #2

N38 57.525 W81 56.268

Photo #: 38

Notes: General condition of Leachate Pond #1

N38 57.524 W81 56.280

AEP GES Landfill Inspection

Plant Name: Mountaineer

Inspector: M Ajlouni/ B Palmer

Unit: Little Broad Run Landfill

Date: 16 October 2025

Photo #: 39

Notes: General condition of soil cover over Area 6 looking northwest

N38 56.917 W81 56.606

Photo #: 40

Notes: General condition of soil cover over Area 6 looking southwest

N38 56.997 W81 56.581