2025 Annual Landfill Inspection Report

Landfill

Northeastern Power Plant
Public Service Company of Oklahoma
Oologah, OK

December 2025

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Prepared by: American Electric Power Service Corporation
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Director – AEP Civil Engineering

12-01-2025

REGISTERED PROFESSIONAL ENGINEER
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21255
OKLAHOMA

I certify to the best of my knowledge, information and belief the information contained in this report meets the requirements of OAC § 252:517-13-5.

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1.0 INTRODUCTION

This report was prepared by AEP- Geotechnical Engineering Services (GES) section, in part, to fulfill requirements of OAC 252:517-13-5 and to provide the Northeastern Plant with an evaluation of the facility.

Shah Baig, P.E., AEP-Geotechnical Engineering performed the 2025 inspection of the Landfill at the Northeastern Plant. This report is a summary of the inspection and an assessment of the general condition of the facility. The inspection was performed on November 20, 2025. Weather conditions were good, and the temperature was 61 degrees Fahrenheit, cloudy, light breeze, and clear skies. There was 0.18-inch rain on the day of inspection and no recorded precipitation over the seven days prior to the inspection.

The last annual landfill inspection of this facility was performed on November 6, 2024.

2.0 DESCRIPTION OF LANDFILL

The Public Service Company of Oklahoma (PSO), Northeastern Power Station is located at the junction of U.S. Highway 169 and Oklahoma highway 88, approximately 1 mile south of Oologah, Rogers County, Oklahoma. The onsite CCR landfill is located on the southeast side of the power plant, adjacent to the Verdigris River. Figure 1 (Site Location Map) illustrates the location of the Landfill with respect to the Generating Station, Bottom Ash Pond, and Coal-Yard.

Overall, landfill was divided into the following components as a means of organizing the inspection and reporting. These components are shown on Figure 2 (Landfill Facility Map).

- Active Landfill Disposal Area (Cell 1 through Cell 4)
- Leachate Collection Pond (Leachate Impoundment)
- Contact Water Pond (Basin C)
- Storm Water Drainage Ditches

- Perimeter Berm

Temporary geomembrane and wind defender cover previously placed over Cells 2, 3, and 4 is removed. The active landfill disposal area consists of entire footprint of the landfill where waste is being placed. At present, the CCR materials from the closure by removal of the existing Bottom Ash Pond and the coal-yard have been placed in the landfill. There were no disposal/operational activities taking place at the time of the inspection.

3.0 REVIEW OF AVAILABLE INFORMATION (252:517-13-5 (b)(1)(A))

A review of available information regarding the status and condition of the Landfill has been conducted. This information includes files available in the operating record, such as design and construction information, previous 7-day inspection reports, and all previous annual inspections including the most recent one conducted in 2024. Based on the review of the data there were no signs of actual or potential structural weakness or adverse conditions.

4.0 INSPECTION (252:517-13-5 (b)(1)(B))

4.1 CHANGES IN GEOMETRY SINCE LAST INSPECTION (252:517-13-5(b)(2)(A))

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

4.2 VOLUME (252:517-13-5(b)(2)(B))

As of the inspection date, the total volume of CCR in the landfill is estimated at 2,074,522 cubic yards based on the reported tonnage through October 2025 and applying a conversion factor of 1 ton/cubic-yard.

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/
Satisfactory: A condition or activity that generally meets what is minimally expected or 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 dam. 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 (252:517-13-5(b)(1)(B))

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, drainage features, leachate pond, cells, and appurtenances.

Overall, the facility is in good condition. The landfill is functioning as intended with no signs of potential structural weakness or conditions that are disrupting the safe operation of the landfill. Figure 3-Inspection Photograph Location Map (Landfill), Figure 4-Inspection Photograph Location Map (Leachate Pond and Basin C) and Inspection Photographs are included in the report. Additional pictures taken during the inspection can be made available to the Owner upon request.

1. Overall view of the west areas of the landfill that previously included designated Cells 3 and 4 (Photograph No. 1). The temporary geomembrane cover and wind defender are removed and CCR materials have been placed. The waste filling areas of the landfill appeared in stable condition with positive drainage and no significant water ponding.

2. The condition of the perimeter berm, protective geomembrane liner, and access road appeared in good condition with no sign of misalignment, settlement, or excessive erosion. The perimeter ditch was functioning as designed and the liner was intact and in good condition (Photographs No. 2-4). Cell 4 area is protected by straw wattle along the perimeter for containment of solid. Cell 3 area was not protected at the perimeter of the landfill.

3. A temporary weir is cut into the perimeter berm (Photograph No. 5) for stormwater management appeared to be non-functional due to CCR fill. The CCR fill placement has exceeded beyond the height of the berm.

4. The slope adjacent to the river is very steep and was heavily vegetated with mature trees and small bushes (Photograph No. 6). Observation of the slope from the access road indicated overall stable condition.

5. The typical condition of landfill Cells 1 and 2 is shown in Photograph No. 7. The surface appeared graded and free of ponding water. Temporary grades are maintained to direct runoff primarily to the perimeter ditch to the north.

6. The east area (Cell 1 and 2) of the landfill appeared in good condition as shown in Photograph No. 8. CCR material is currently placed in this area. Most of the runoff for the interim condition at present is directed to the perimeter contact water ditch but no containment berm or control was observed between the leachate pond and the landfill.

7. The west and south perimeter ditches at the eastern, downstream end of the landfill consists of pipe box culverts (Photographs No. 9-12). These pipe box culverts were structurally sound and clear of any debris and indicated no obstruction to flow or standing water. The drainage structures are functioning as designed.

8. Typical condition of the west, north, and south dikes and interior slope of the leachate pond are illustrated in Photographs No. 13-15. Overall, the dikes and interior slopes appeared in good condition without any sign of significant erosion, settlement, or cracks. At the time inspection, the leachate pond indicated very low level of leachate.

9. The interior of Basin C (contact water pond) is illustrated in Photographs No. 16 and 17. Two sprayers are temporarily installed in the pond to help with contact water management during the closure of the Bottom Ash Pond and Coal-yard. The geosynthetic liner was in place, intact and in good condition without any tears or damage. The crest also used as haul road of the north dike appeared in good and stable condition.

10. The splitter dike between the leachate pond and Basin C is illustrated in Photograph No. 18. The splitter dike appeared in good and stable condition without any settlement or misalignment.

4.5 CHANGES THAT EFFECT STABILITY OR OPERATION (252:517-13-5(b)(2)(D))

Based on the field observations there were no changes to the landfill since the last annual inspection that would affect the stability of the Landfill. CCR (waste) materials from the closure by removal of the Coal-Yard and Bottom Ash Pond have been excavated and placed in the landfill in accordance with the approved landfill permit.

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. All areas of the facility are maintained and in good condition.
2) The Northeastern Plant and AEP-Construction personnel perform regular maintenance and inspections as required.
3) As CCR materials are placed in the landfill and grades rise above the perimeter berm, they must remain contained within the designated waste boundary. Perimeter controls (e.g., berms, straw wattles) should be installed to ensure that only contact water is discharged while solids are retained within the landfill.

5.2 MAINTENANCE ITEMS

The following specific maintenance items were identified during the visual inspection.

1) Maintain positive grades of the runoff towards the perimeter ditches.
2) Adequate measures should be implemented along the perimeter of the landfill to make sure that solids (CCR) are retained within the landfill.
3) Temporary cover (e.g. soil or geosynthetic) should be placed on exposed CCR fill to manage contact water within the limits of the waste and/or directed into the contact water ditch, specifically between the landfill and leachate pond and west slope of the landfill.

5.3 ITEMS TO MONITOR

None.

5.4 DEFICIENCIES (252:517-13-5(b)(5))

There were no 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 were no deficiencies noted during this inspection.

If you have any questions regarding this report, please contact AEP-Geotechnical Engineering Shah Baig (Phone: 614-716-2241, email: sbaig@aep.com) or Daniel W Pizzino (Phone: 614-716-1472, email: dwpizzino@aep.com.

LIST OF FIGURES

Figure 1 – Site Location Map

Northeastern Landfill
Northeastern Plant, Oologah, OK

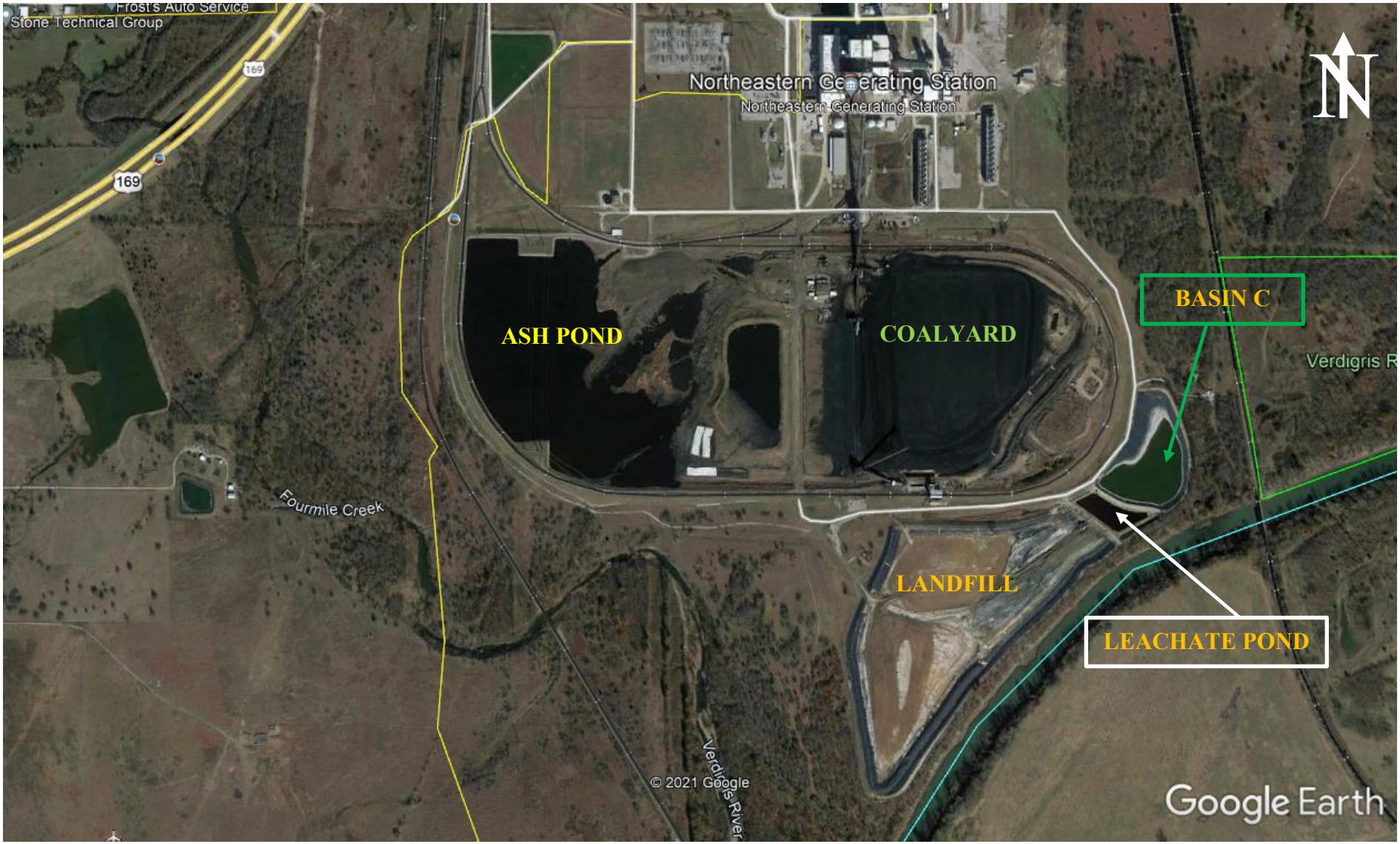

Figure 2 – Landfill Facility Map

Northeastern Landfill

Northeastern Plant, Oologah, OK

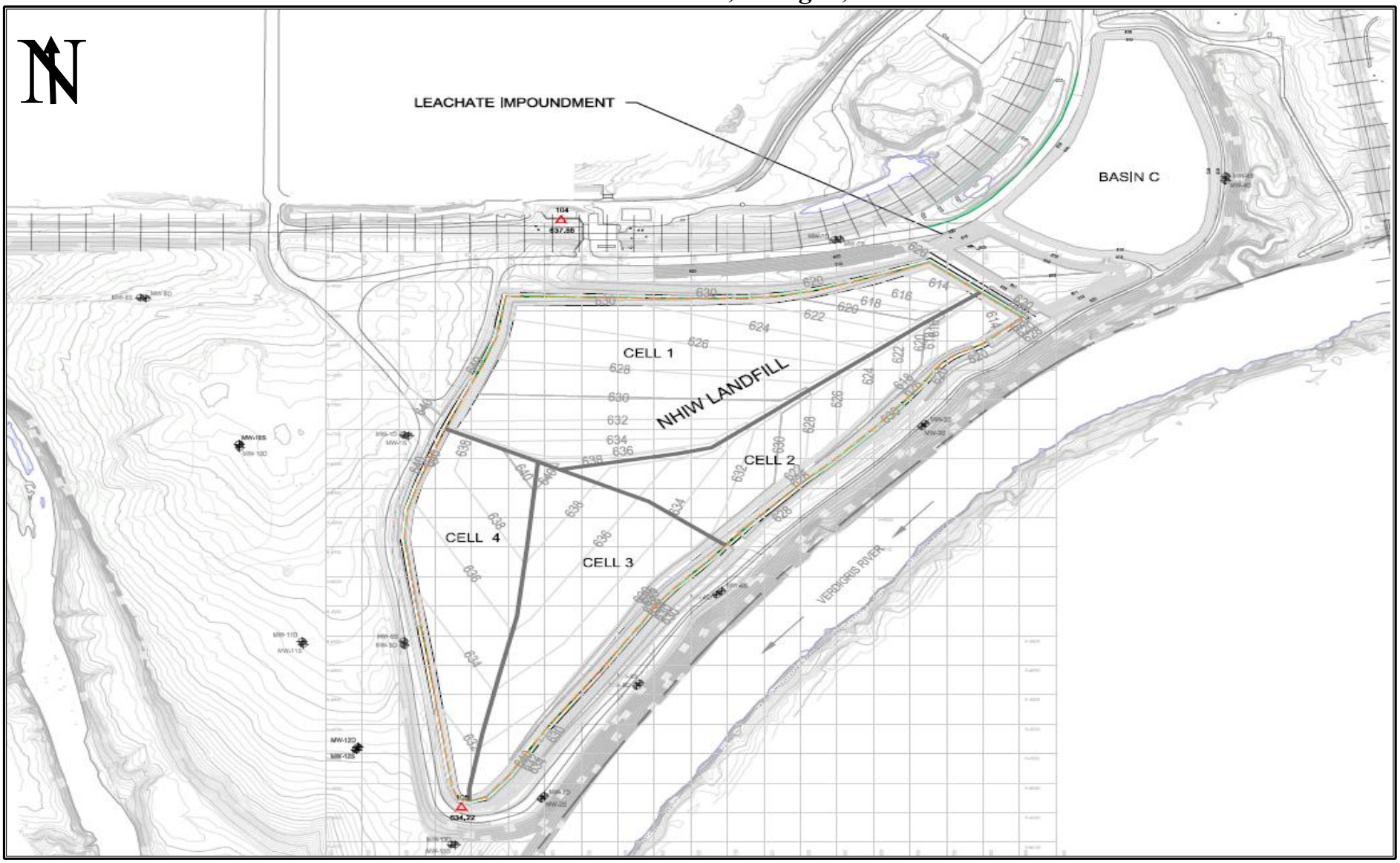

Figure 3 – Inspection Photograph Location Map

Northeastern Landfill, Northeastern Plant, Oologah, OK

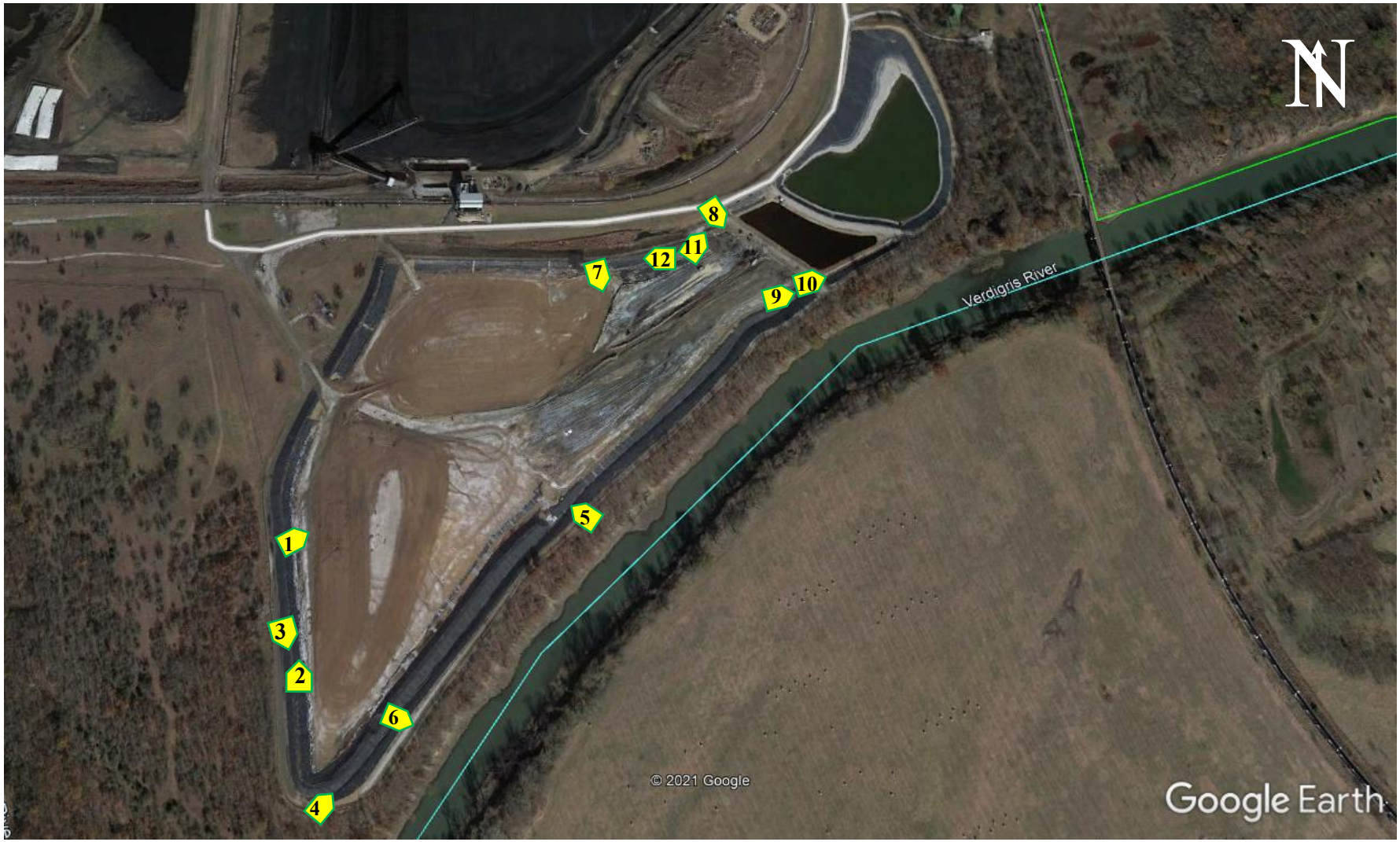

Figure 4 – Inspection Photograph Location Map

Northeastern Landfill Leachate Pond and Basin C
Northeastern Plant, Oologah, OK

ATTACHMENT

►Inspection Photographs

Photograph No. 1	
Temporary geosynthetic cover removed from the landfill.	
Photograph No. 2	
Cell 4 berm, access road, and CCR fill (looking north).	
Photograph No. 3	
Cell 4 berm, access road, and CCR fill (looking south).	

Photograph No. 4	
Cell 3 perimeter berm and access road (looking northeast).	
Photograph No. 5	
Temporary stormwater control weir.	
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Stability berm adjacent to the river.	

Photograph No. 7 Overall view of landfill Areas 1 and 2.	
Photograph No. 8 East side of landfill area (Cell 1 and 2).	
Photograph No. 9 South perimeter ditch pipe culvert inlet.	

Photograph No. 10	
South perimeter ditch pipe culvert outlet (looking northeast).	
Photograph No. 11	
North side landfill ditch pipe culvert inlet.	
Photograph No. 12	
North landfill ditch (looking west).	

Photograph No. 13	
South contact water ditch.	
Photograph No. 14	
Interior slope of the east dike.	
Photograph No. 15	
North dike and contact water ditch.	

Photograph No. 16 Basin C interior illustrating sprayers.	
Photograph No. 17 Overflow discharge structure (northwest corner),	
Photograph No. 18 Splitter dike between leachate pond and Basin C.