

# **2018 Annual Landfill Inspection Report**

**Northeastern Plant  
Landfill**

**Public Service Company of Oklahoma  
Oologah, OK**

**October 5, 2018**

Prepared for: Public Service Company of Oklahoma – Northeastern Plant

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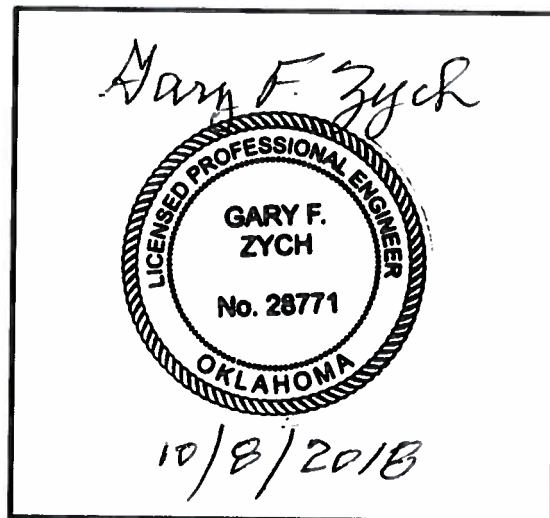
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DATE

10/8/2018

Manager – AEP Geotechnical Engineering



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 an evaluation of the facility.

Mohammad A Ajlouni, P.E. performed the 2018 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. Bryan White and Sam Miller, staff members at the Plant, were also present during the inspection. The inspection was performed on September 13, 2018. Weather conditions were partly cloudy and the temperature was in the mid 70's (°F). There was about 0.15 inches of rainfall over the seven days prior to the inspection.

## **2.0 DESCRIPTION OF LANDFILL**

The overall features of the landfill were categorized into the following components as a means of organizing the inspection and reporting:

- Active Landfill Disposal Area (Cell 2)
- Inactive Landfill Areas (Cells 1,3 and 4)
- Leachate Collection Pond
- Storm Water Drainage Ditches
- Perimeter Berm

These features are shown on Figure 1.

The Active Landfill Disposal Area (Cell 2) is currently where waste is being placed.

Inactive Landfill Areas (Cells 1, 3 and 4) consists for the remaining portions of the landfill.

The intermediate geomembrane liner in the active and the inactive areas is covered with a minimum of one foot of bottom ash and one foot of fly ash protective cover.

## **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 which include files available in the operating record, such as design and construction information, previous 7 day inspection reports, and previous annual inspections has been conducted. 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, expect for the change in topography of the active disposal area.

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

The total volume of CCR disposed in the landfill as of the inspection date is estimated to be 1,660,000 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/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 (252:517-13-5 (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, temporary and final covers, drainage features, leachate ponds, open cells, and appurtenances such as chimney drains etc.

Overall the facility is in good 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 Attachment A. Additional pictures taken during the inspection can be made available to the Owner upon request.

**Active Landfill Area (Cell 2)**

1. Cell 2 is the active disposal area. No ponding of surface water was observed on the surface. The material in the Cell is separated from the inactive areas by a low splitter berm.
2. There was no erosion of the CCR material in the active area. The height of the fill above the intermediate liner is relatively small (< 10 feet).
3. No slopes or other areas of the landfill have received permanent cover. The west end of the landfill has exposed geomembrane as a temporary cover. No damages to the temporary cover were observed.

**Inactive Landfill Disposal Areas**

4. Exposed geomembrane is the surface of the inactive disposal areas. This area was observed only from the perimeter of the cells. A complete walk down of the area will be performed prior to placing CCR to ensure the integrity of the liner.
5. There was no ponding of water on the surface of the inactive areas. The areas drain to the perimeter stormwater channels. The channels flow into Basin C which is periodically pumped to the plant's permitted outfall.

**Leachate Collection Pond**

6. There are two leachate collection pipes that flow into the pond. The pipes were visible and only a small volume of leachate was flowing out of the pipes. The leachate was clear.
7. The plant has switched to a manual pumping system instead of the existing leachate pumping system. Generally, the leachate is used for dust control and compaction water for the CCR material placed in the active area. The pond was empty at the time of this inspection.

**Storm Water Drainage Ditches**

8. The perimeter ditches were in good condition. The ditches are currently lined with exposed geomembrane. There were some local areas of very shallow ponding either due to minor sediment or small wrinkles in the geomembrane.

9. No damage to the geomembrane was observed during the inspection.

#### **Perimeter Berm**

10. The crest of the perimeter was in fair condition. There were a few minor ruts in the surface of aggregate road surface.
11. The exterior slope of the berm is steep and heavily vegetated. The natural riverbank slope is exposed rock. The exterior slope was observed from the top of the dike because of heavy vegetation that prevented walking along the slope. Plant personal will walk the slope later in the winter season. There were no signs of instability of the berm.

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

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 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. All areas of the facility are in good condition.
- 2) The Plant is performing regular maintenance and inspections as required.

### **5.2 MAINTENANCE ITEMS**

No specific maintenance items were identified during the visual inspection.

### **5.3 ITEMS TO MONITOR**

No specific issues or areas were identified during the visual inspection as items to be monitored.

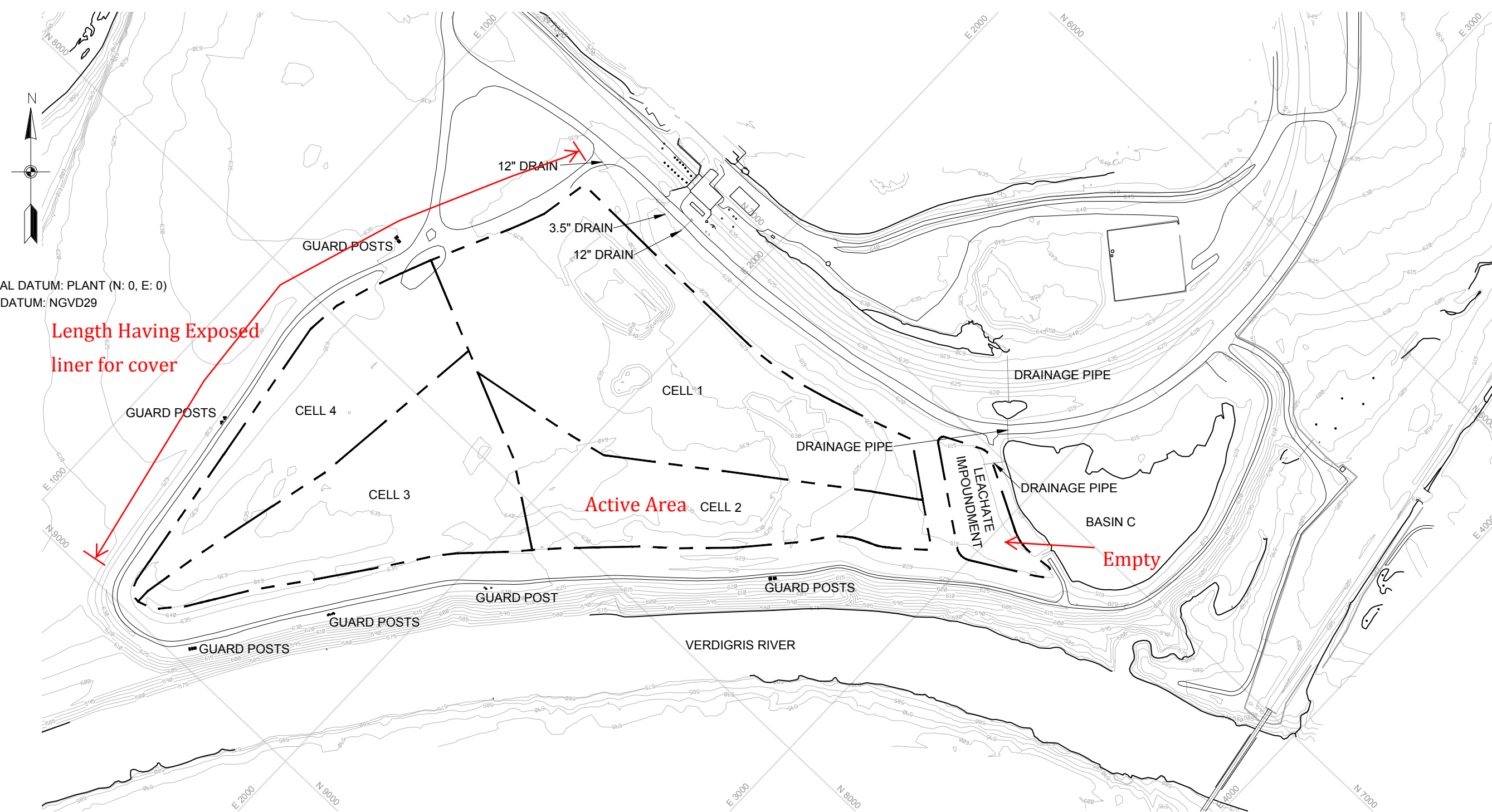
### **5.4 DEFICIENCIES (252:517-13-5(b)(5))**

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 or during any of the periodic 7-day inspections. A deficiency is defined as either 1) uncontrolled seepage, 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.

If you have any questions with regard to this report, please contact Mohammad Ajlouni at 614-716-2939 (Audinet: 200-2939).

## **Figures**





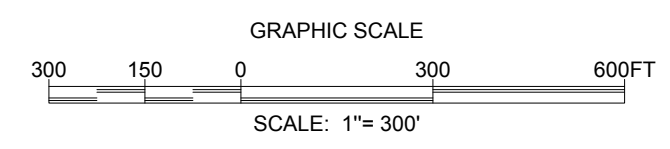
HORIZONTAL DATUM: PLANT (N: 0, E: 0)  
VERTICAL DATUM: NGVD29


Length Having Exposed  
liner for cover

Active Area

Empty

Inspection Date: 9/13/2018



DRN BY:	GEOTECHNICAL	 AEP SERVICE CORP. 1 RIVERSIDE PLAZA COLUMBUS, OH 43215
DATE:	PUBLIC SERVICE COMPANY OF OKLAHOMA	
SCALE: 1"=300'	NORTHEASTERN PLANT	
	LANDFILL	
	FIGURE 1	

**ATTACHMENT A**

**Photos**

# AEP Northeastern Landfill Inspection

Plant Name: Northeastern

Inspector: M A Ajlouni

Unit: Landfill

Date: September 13, 2018

Photo #: 1

Description:

Notes:



Location: Leachate collection

Photo #: 2

Description: —

Notes: Leachate collection pipe -  
Minimal flow.



Location:

## AEP Northeastern Landfill Inspection

Plant Name: Northeastern

Inspector: M A Ajlouni

Unit: Landfill

Date: September 13, 2018

Photo #:

3

Description:

—

Notes:

Exposed geomembrane liner as intermediate liner . Also used as temporary cover over CCR slope

Location:

Inactive cells



Photo #:

4

Description:

—

Notes:



Location:



## AEP Northeastern Landfill Inspection

Plant Name: Northeastern

Inspector: M A Ajlouni

Unit: Landfill

Date: September 13, 2018

Photo #: 5

Description: —

Notes: Active cell 2



Location:

Photo #: 6

Description: —

Notes:



Location:

## AEP Northeastern Landfill Inspection

Plant Name: Northeastern

Inspector: M A Ajlouni

Unit: Landfill

Date: September 13, 2018

Photo #: 7

Description: —



Notes: Exposed geomembrane liner  
- stormwater channels

Location: Storm water channels along  
crest of containment dike

Photo #: 8

Description: —



Notes:

Location: