2020 Annual Landfill CCR Inspection Report

Class 3N Landfill

Flint Creek Plant

Southwestern Electric Power Company

Gentry, AR

December 2020

Project No. 35207224

Prepared for:
Southwestern Electric Power Company – Flint Creek Plant
Gentry, AR facility

American Electric Power Service Corporation
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Gentry, AR

Document Number: GEVR-20-021

PREPARED BY _____ DATE 12/8/20
David McCormick, P.E.

REVIEWED BY _____ DATE 12/8/20
Tony Bardella.

APPROVED BY _____ DATE 12/8/20
David McCormick, P.E.
Solid Waste Department Manager

12/8/20
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9199
DAVID C. McCORMICK

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).

Table of Contents

1.0 INTRODUCTION

This report was prepared by Terracon Consultants Inc (Terracon), in part, to fulfill requirements of 40 CFR 257.84 and to provide the Flint Creek Plant an evaluation of the facility.

David McCormick, P.E. performed the 2020 inspection of the Landfill at the Flint Creek Plant. This report is a summary of the inspection and an assessment of the general condition of the facility. Greg Carter, P.E. (TX), of AEP Regional Engineering also participated in the inspection. The inspection was performed on November 4, 2020. Weather conditions were sunny, and the temperature was in the low 40's (°F). There was 0.0 inches of recorded 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
- Inactive Landfill Areas
- Leachate Collection/Contact Water Pond
- Storm Water Drainage Ditches
- Closed Areas

These features are shown on the **FIGURE 1**.

The Active Landfill Disposal Area is currently where waste is being placed.

Inactive Landfill Areas consists for the remaining portions of the landfill. The intermediate geomembrane liner is exposed until the areas are required for disposal capacity.

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 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 (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 last 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 disposed at the landfill as of the inspection date of was estimated to be 1,542,563 (1,525,328 last inspection + 17,235 to date) 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 §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 or perimeter berm. 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, culverts, or leachate pipes 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, final covers, drainage features, leachate/contact water ponds, and the open cell.

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**. The locations of photos are shown on **FIGURE 2**. Additional pictures taken during the inspection are available upon request.

Active Landfill Area

1. No ponding of water was observed on the surface **(Photo 1 & 2)**. The material in the Cell is separated from the inactive areas by a low splitter berm **(Photo 3)**. Disposal activities were taking place at the time of the inspection.
2. There was no erosion of the CCR material in the active area.

3. No slopes of the Active Area have or require any temporary cover at the time of the inspection.
4. Stormwater runoff from this area is directed into the Contact Water pond via the concrete lined ditches **(FIGURE 1)**.

Inactive Landfill Disposal Areas

5. The exposed geomembrane was observed only from the perimeter of the cells. There was no apparent significant damage to the exposed geomembrane based on the observation from the perimeter. A complete walk down of the area is recommended prior to placing CCR to ensure the integrity of the liner **(Photos 3, 5, & 6).**
6. There was minor ponding of water on the surface of the inactive areas by the southwest letdown **(Photo 5)**. The areas drain to the perimeter stormwater letdowns **(Photo 7)** and channels.

Leachate Collection Pond

7. There is one active leachate collection pipe that flows into the pond **(Photo 8)**. The pipe was visible and only a small volume of leachate (~1 gpm) was flowing out of the pipes. The leachate effluent appeared clear.
8. The pond was containing a very low volume of water at the time of this inspection. The protective cover of the interior slopes appeared to be in good condition **(Photo 9)**.
9. The leachate pond sump is on the southwest corner of the landfill **(Photo 10)**. The leachate sump level indicator is in the building on the east side of the leachate collection pond **(Photo 11)**.
10. The contact water portion of the pond complex was full but not at the level to discharge.
11. The concrete protective cover of the interior slopes of the contact water portion was in good condition **(Photos 12 & 13)**. There was no misalignment of the concrete joints. The condition of the caulking material at the joints was good.

Storm Water Drainage Ditches

12. The perimeter ditches were in good condition. The ditches are grassed lined and no scour or erosion was observed during the inspection **(Photos 14 & 16)**.
13. There are three stormwater letdown channels on the slopes of the landfill **(Photos 4, 7, & 15)**. These are fabriform-lined and there were no observed issues with the channel. The channels discharge into a riprap-lined channel to dissipate energy before entering the receiving drainage features. There was some minor erosion under the letdown at the southwest corner of the landfill.
14. The stormwater culverts around the landfill appeared in good condition **(Photo 17)**.

Perimeter Berm

15. The perimeter berm was in fair condition. There was good vegetative cover over the entire exterior slopes of the berm. There was no erosion or displacement of the berm observed during the inspection.
16. The south and east exterior slopes are fairly steep but appeared stable.
17. The vegetation is well established. The slope appeared to have been recently mowed.

Closed Areas/Slopes

18. Portions of the landfill slopes have received final cover and certified as closed. The condition of these slopes was good **(Photos 18-20)**. There were no observed erosion gullies, sloughs, or other signs of movement of these areas. All areas had adequate vegetative cover. The vegetation is well established.

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 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 inspections as required.

5.2 MAINTENANCE ITEMS

The following specific maintenance items were identified during this inspection.

1. None of any concern noticed.

5.3 ITEMS TO MONITOR

Continue to monitor the riprap and scour at the toe of the west letdown.

5.4 DEFICIENCIES (257.84(B)(2)(III))

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 inspection.

N

0 75 150 300

SCALE IN FEET

LEGEND:

LANDFILL WASTE BOUNDARY

INSPECTION DATE: 11/4/2020

FIGURE 1

DESIGNED BY:	TLB
DRAWN BY:	TLB
APPVD. BY:	DCM
SCALE:	SEE BARSCALE
DATE:	11/20/2020
JOB NO.	216-001-35207224
ACAD NO.	001
SHEET NO.:	OF

SITE LAYOUT

2020 ANNUAL CCR INSPECTION

AMERICAN ELECTRIC POWER

SWEPCO FLINT CREEK POWER PLANT LANDFILL

GENTRY ARKANSAS

Terracon
Consulting Engineers and Scientists
25809 I-30 SOUTH
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REV.	DATE	BY	DESCRIPTION

ATTACHMENT A

Photographs

N

0 75 150 300

SCALE IN FEET

LEGEND:

LANDFILL WASTE BOUNDARY

INSPECTION DATE: 11/4/2020

PHOTO LOCATION MAP

2020 ANNUAL CCR INSPECTION

AMERICAN ELECTRIC POWER

SWEPCO FLINT CREEK POWER PLANT LANDFILL

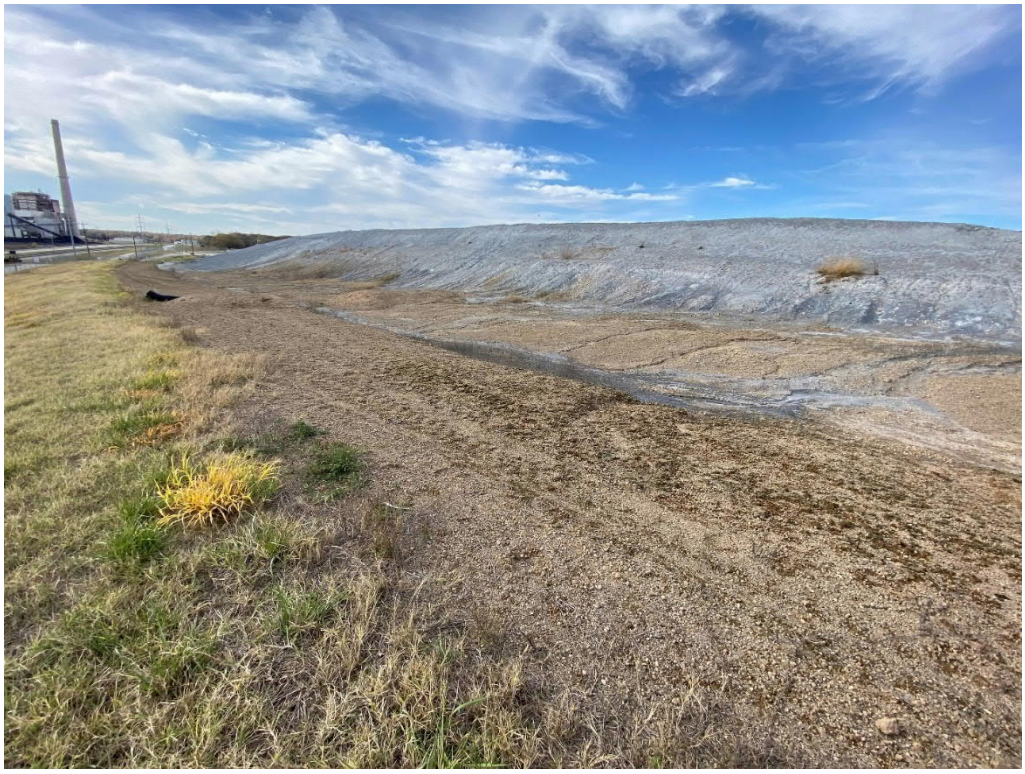
GENTRY ARKANSAS

FIGURE 2

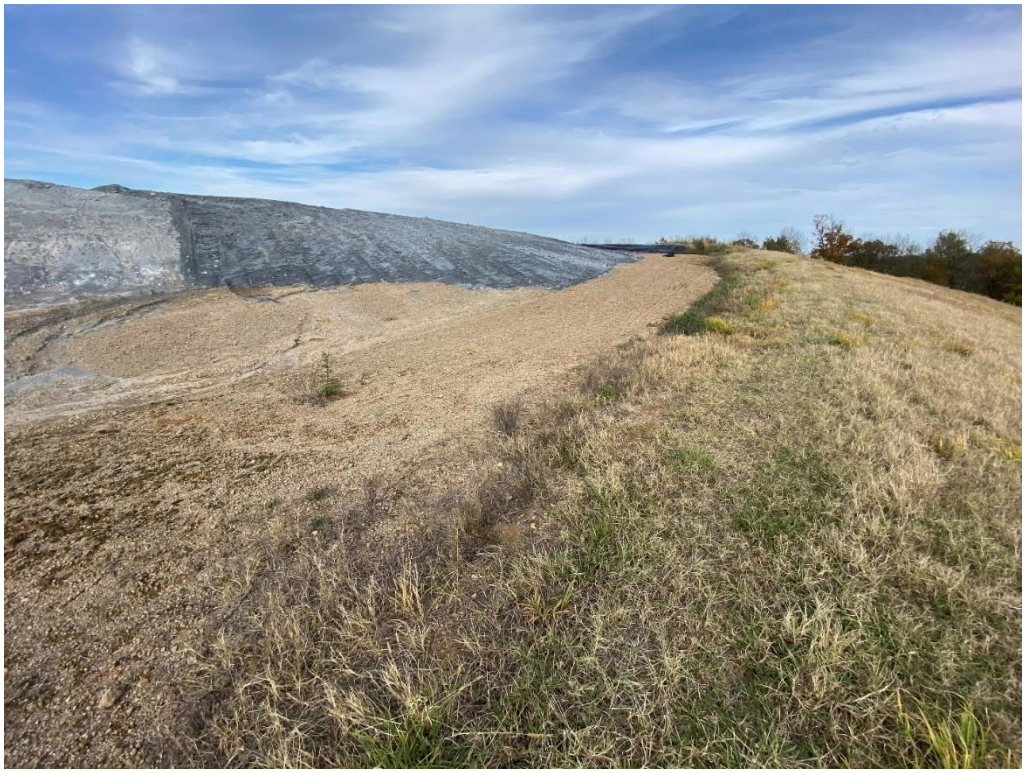
DESIGNED BY:	TLB
DRAWN BY:	TLB
APPVD. BY:	DCM
SCALE:	SEE BARSCALE
DATE:	12/7/2020
JOB NO.	216-001-35207224
ACAD NO.	001
SHEET NO.:	OF

Terracon
Consulting Engineers and Scientists
25809 I-30 SOUTH
PH. (501) 847-9292
BRYANT, AR 72022
FAX: (501) 847-9210

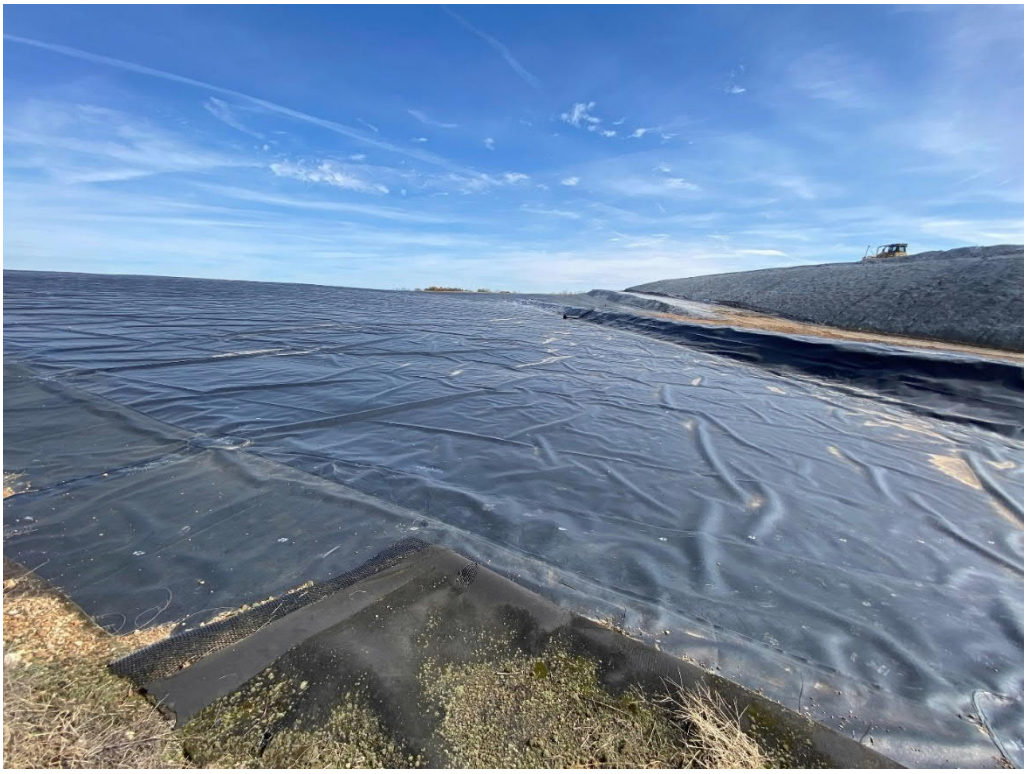
REV.	DATE	BY	DESCRIPTION



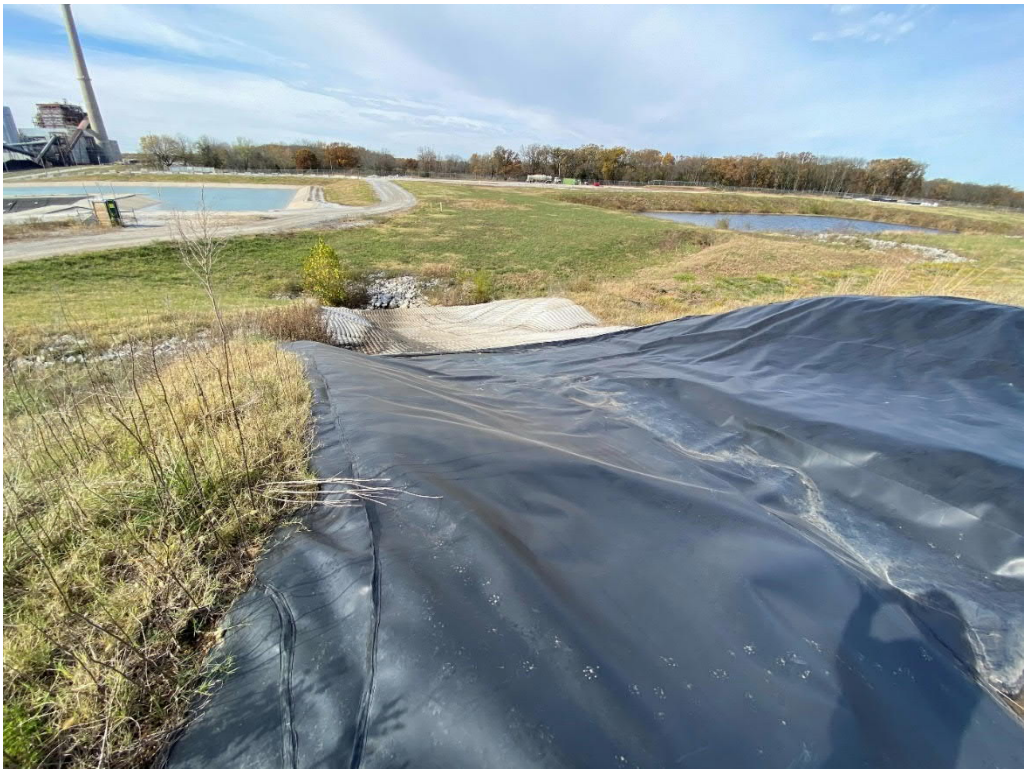
1. The southwest corner of the active area looking from the east.



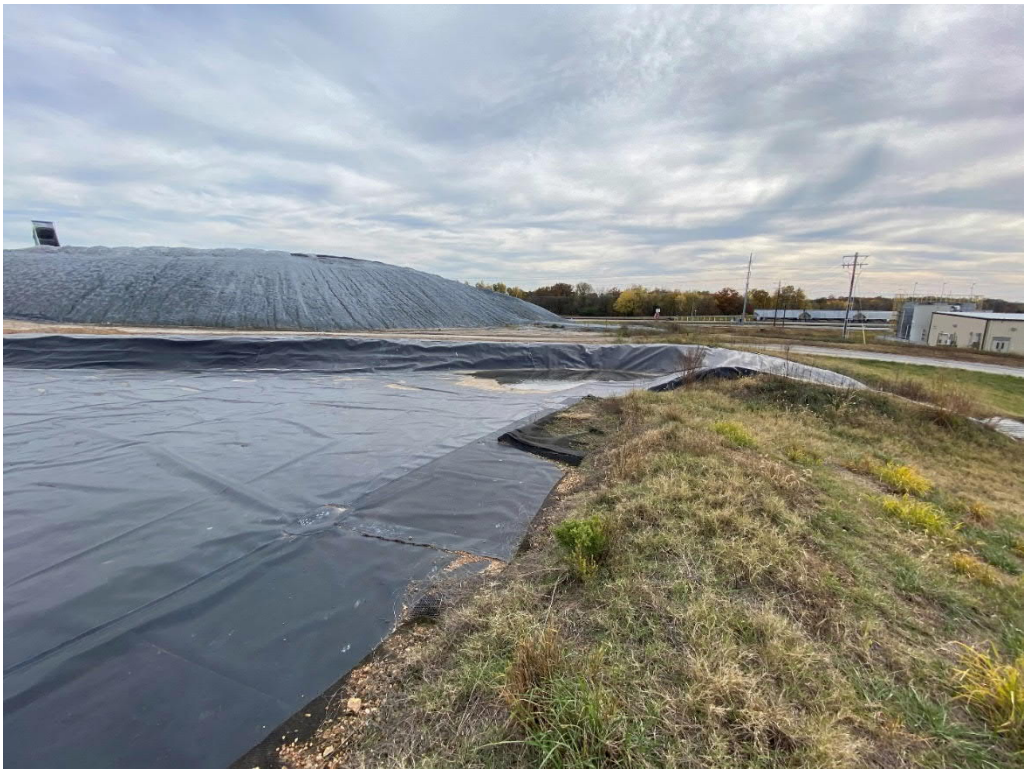
2. The southeast corner of the active area looking from the west.



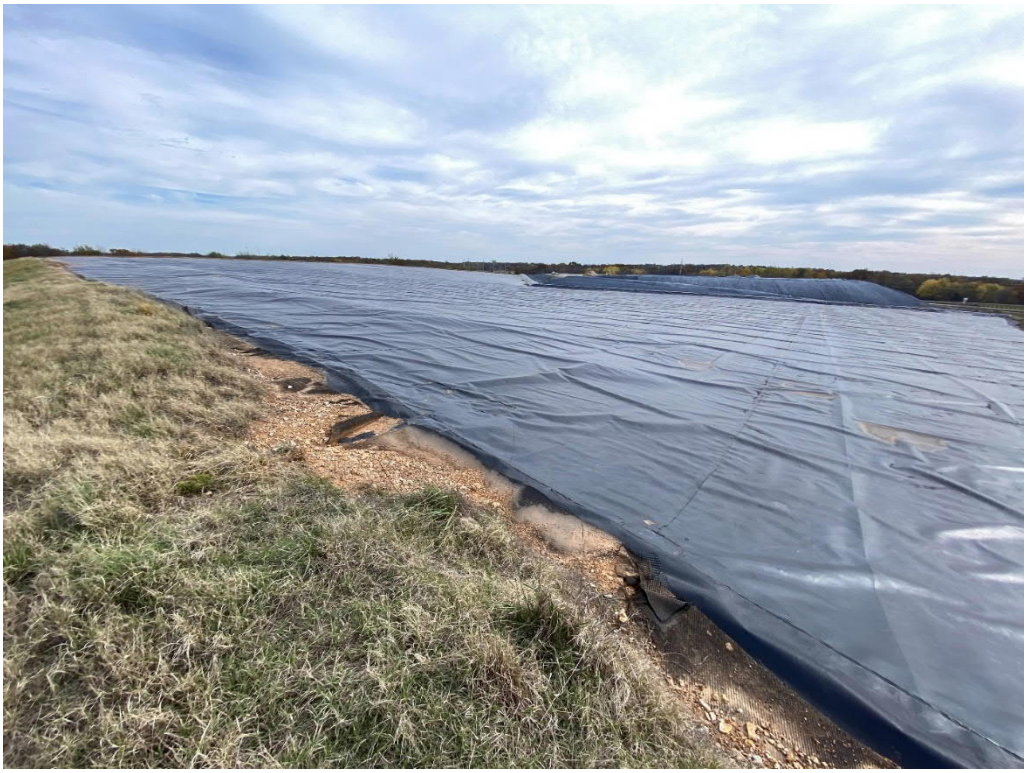
3. The northeast corner from the active landfill looking from the west side of the inactive area.



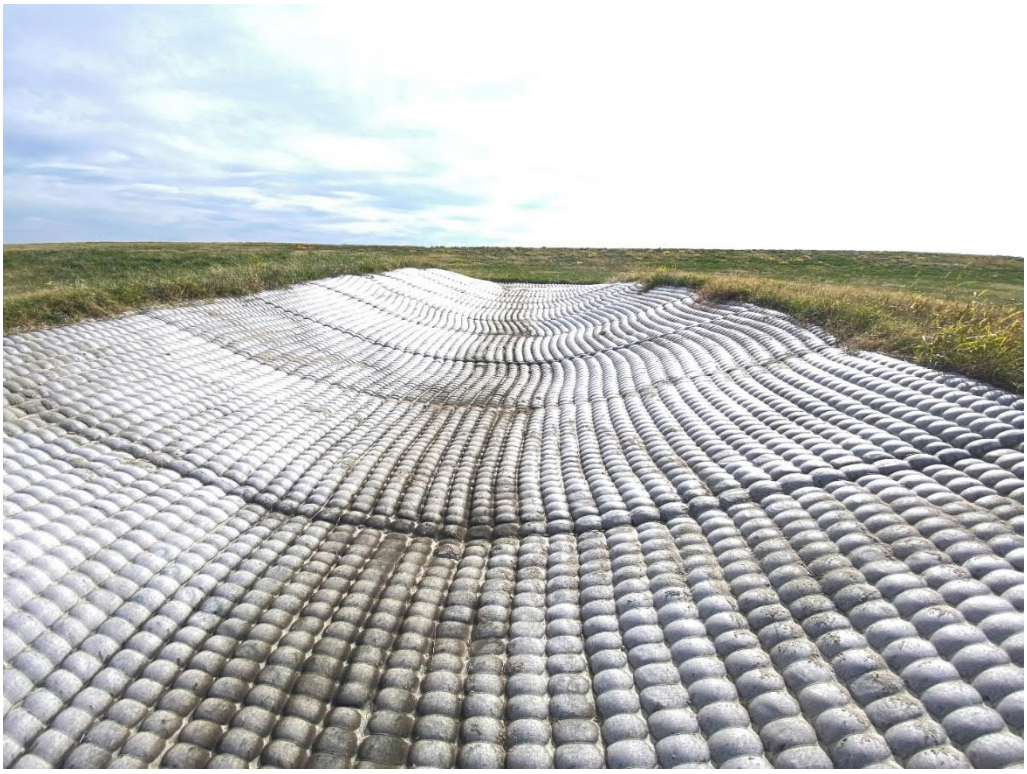
4. Inactive area letdown on the southwest corner of the inactive area.



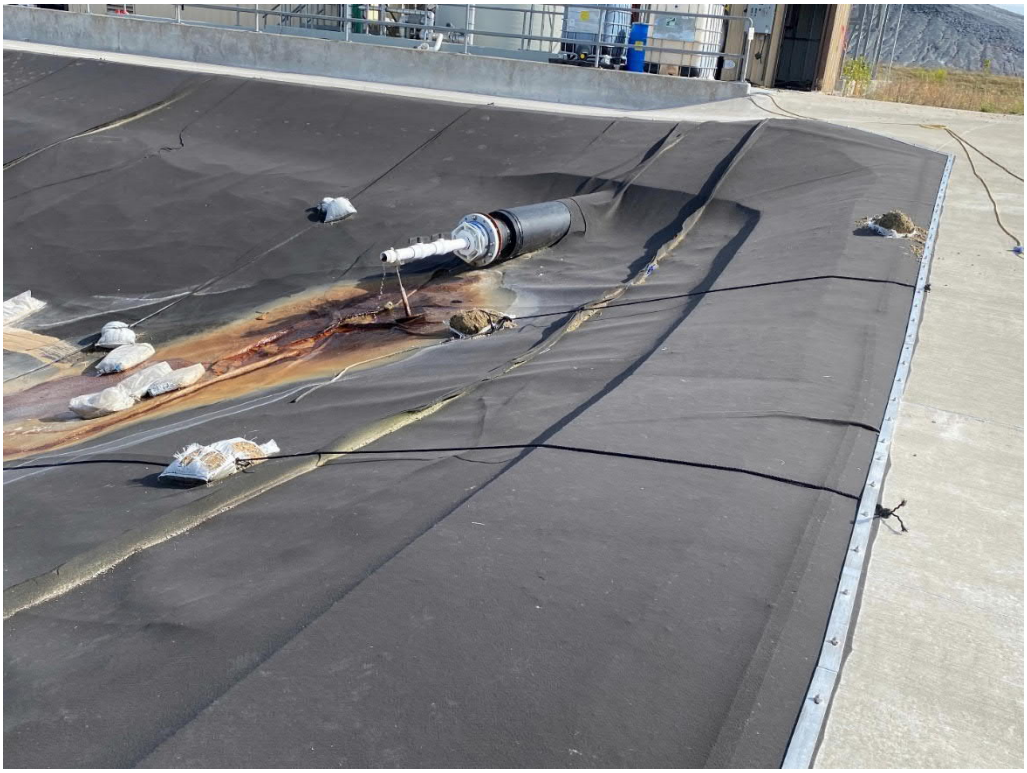
5. Minor ponding at the top of the southwest letdown of the inactive area.



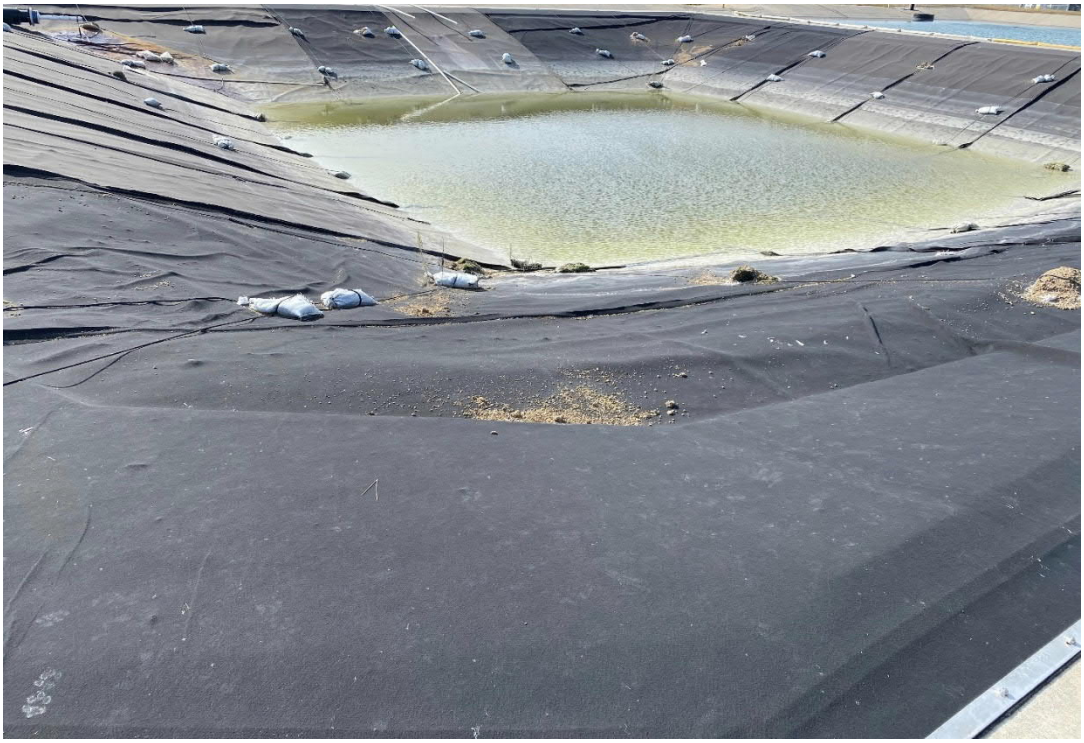
6. Exposed geomembrane of the inactive area looking southeast from the northwest corner.



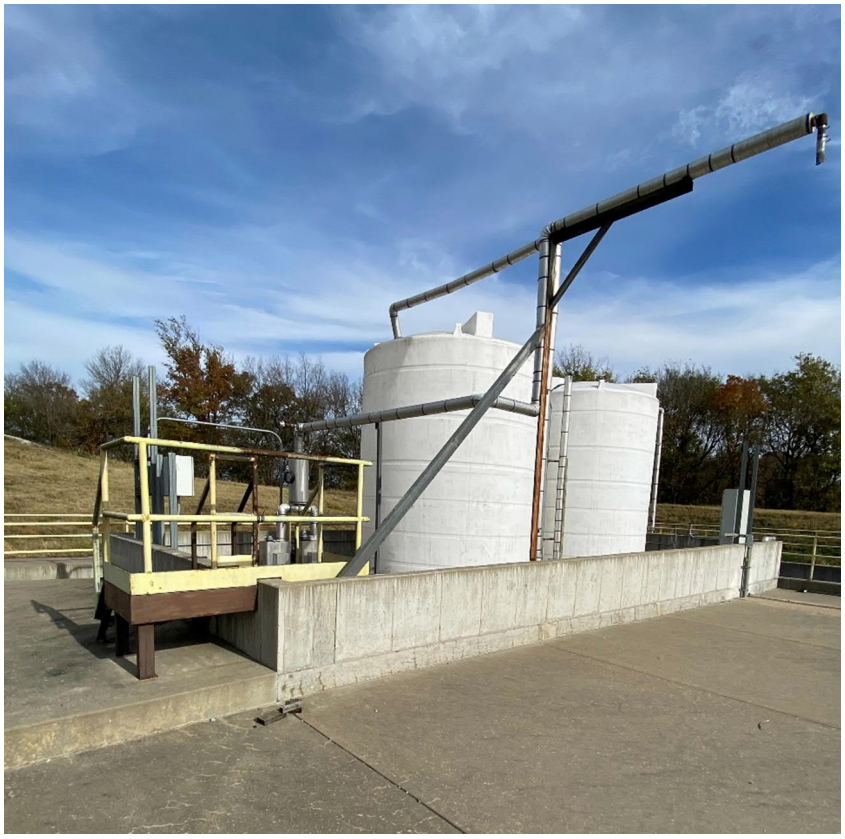
7. Fabriform letdown on the north closed area of the landfill.



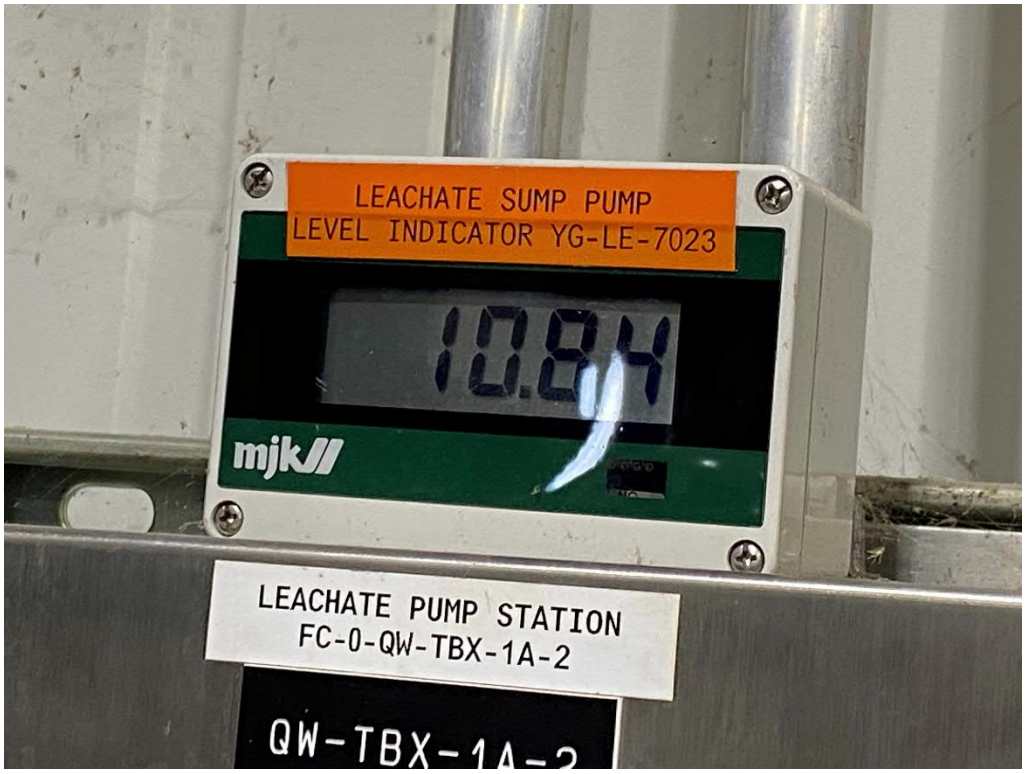
8. Leachate inlet pipe at the southeast corner of the leachate collection pond.



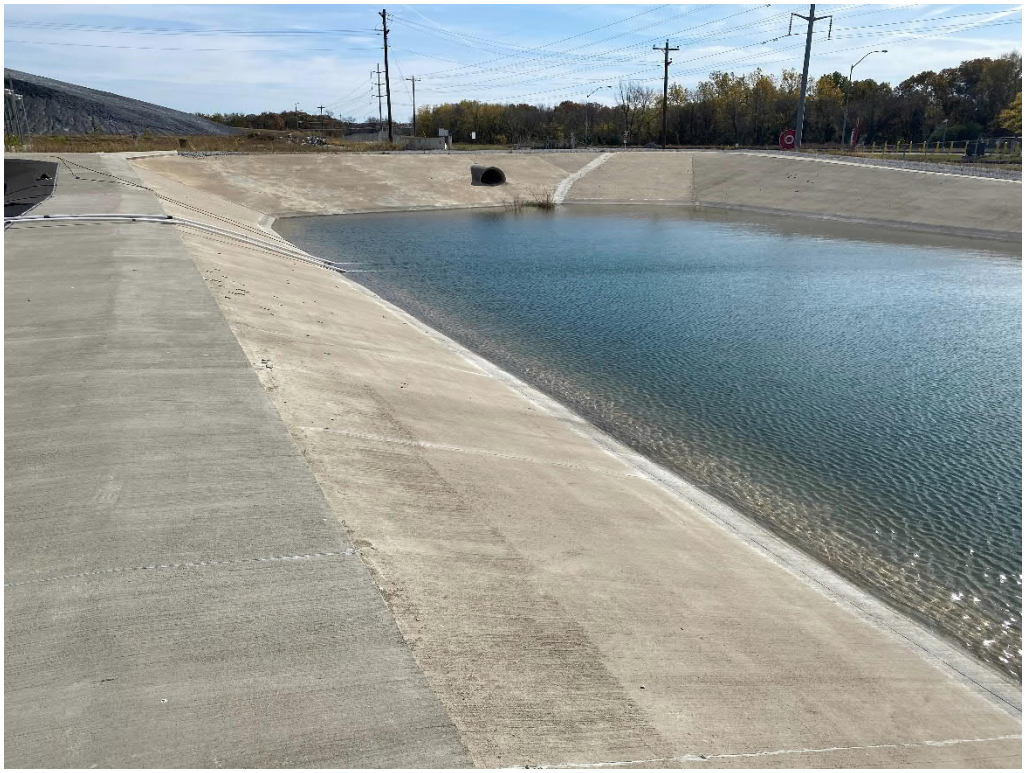
9. Leachate Collection Pond.



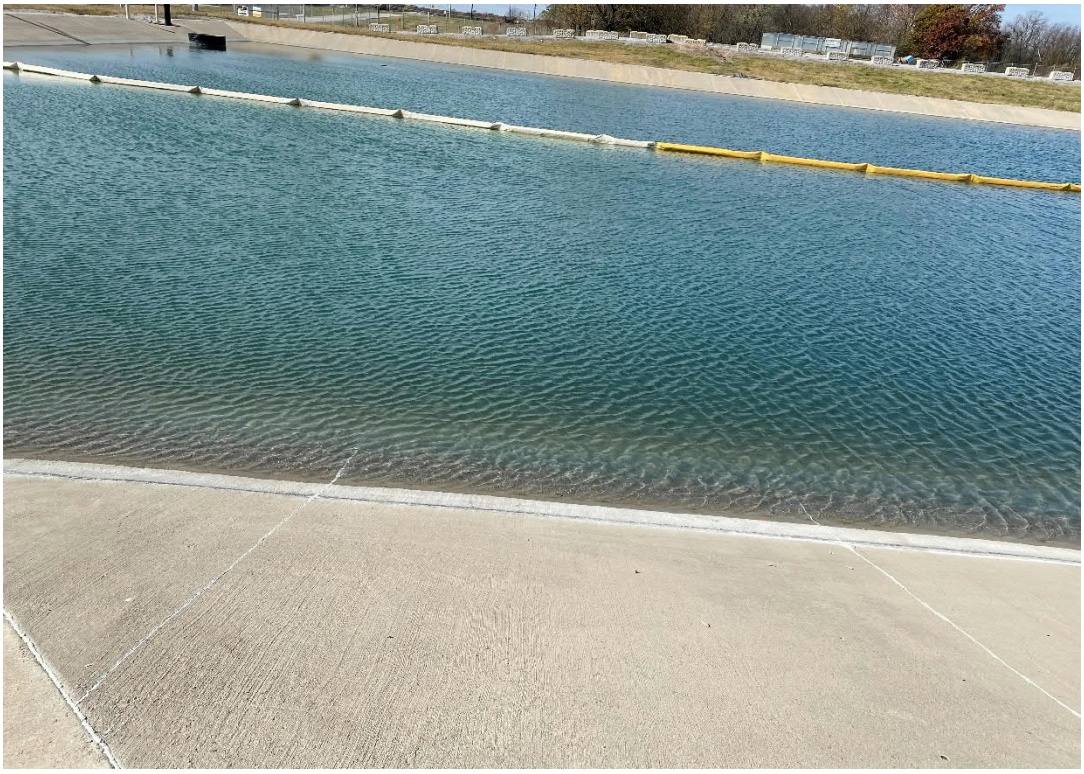
10. Inactive leachate sump on the southeast corner of the landfill.



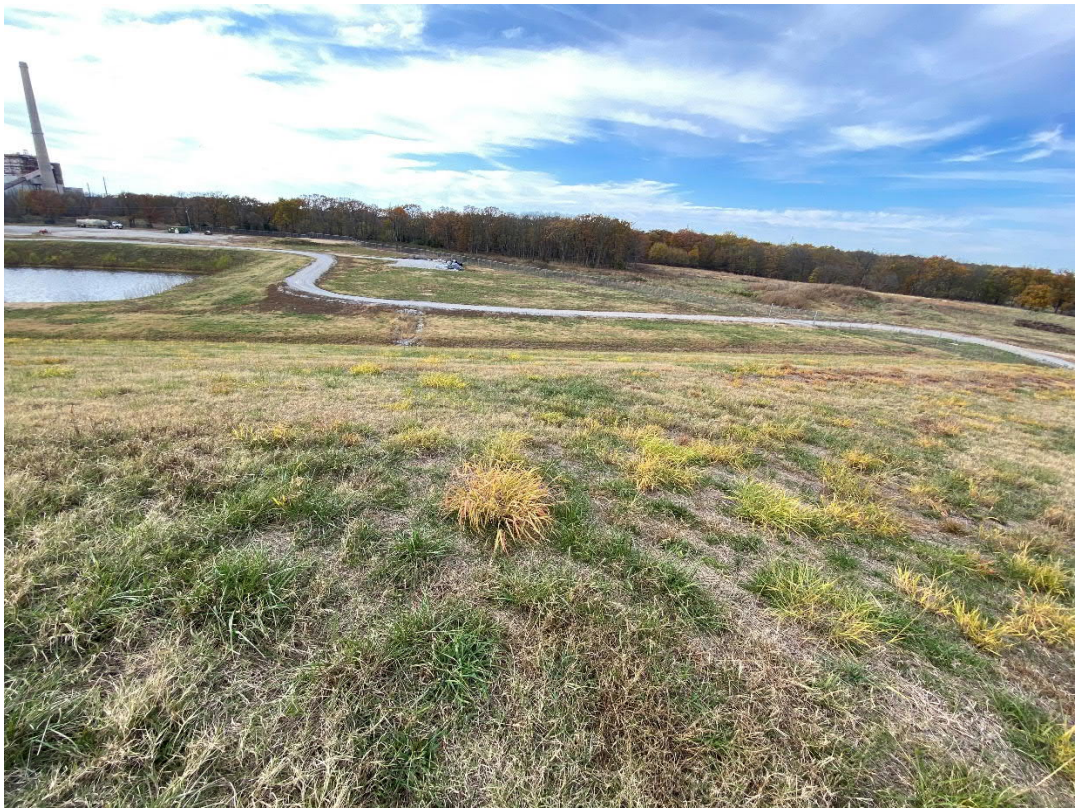
11. Leachate pond sump level indicator.



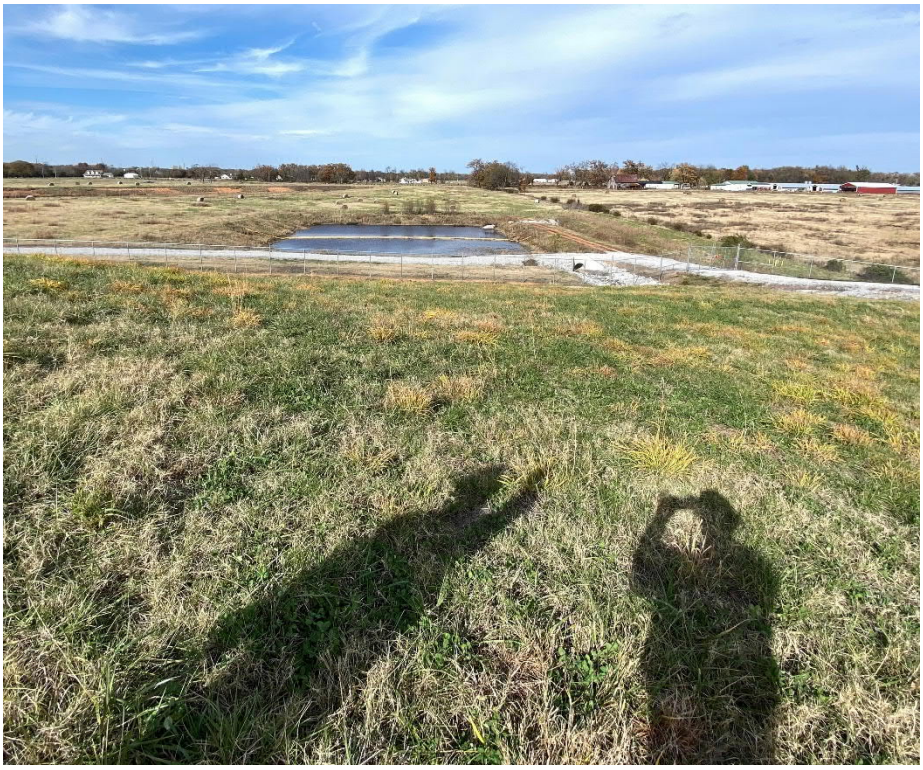
12. East side of contact water pond.



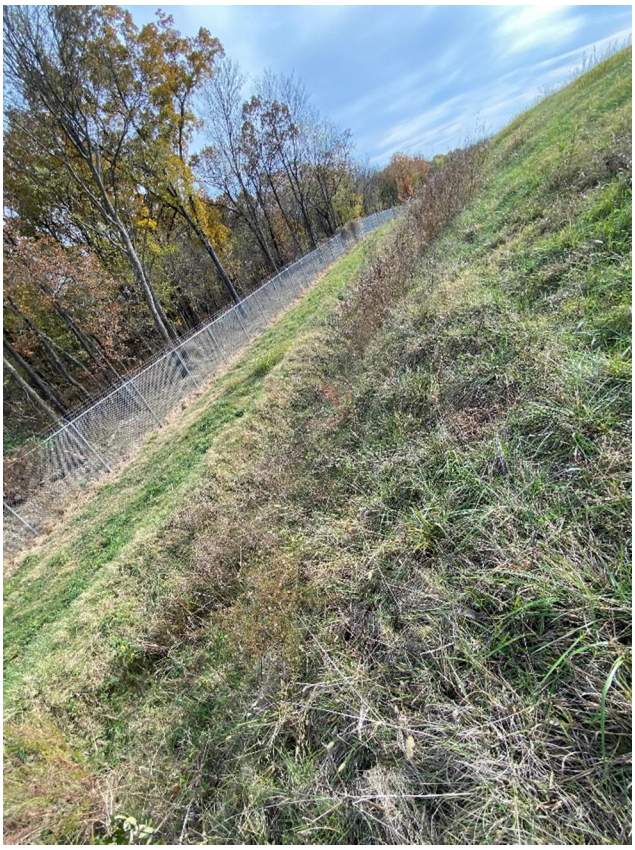
13. West side of contact water pond.



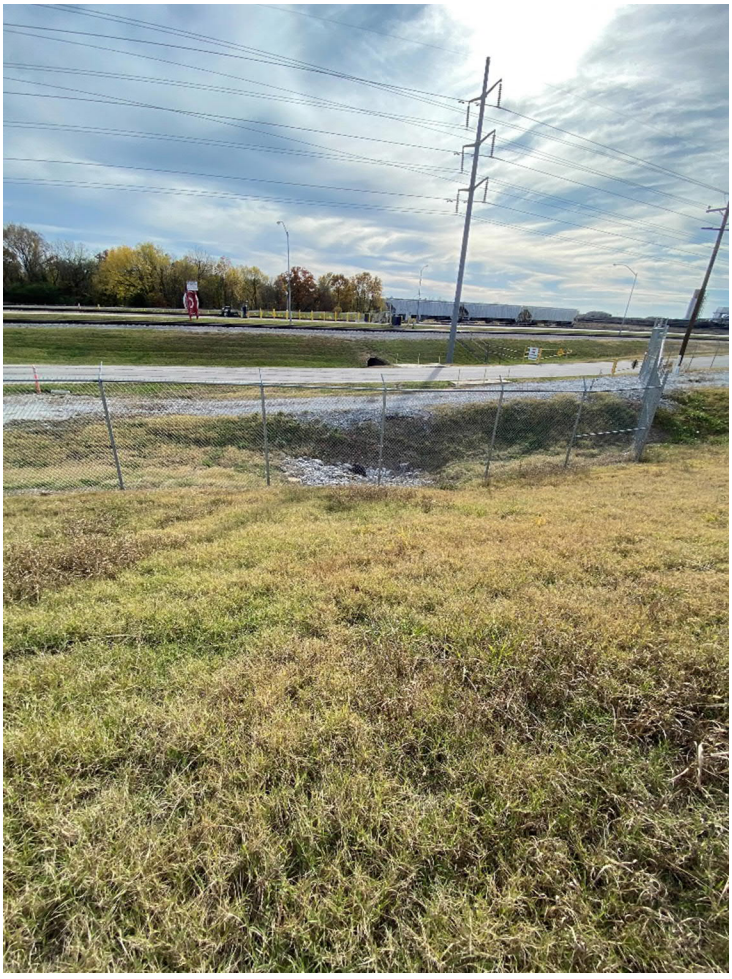
14. Stormwater ditch on the west side of the landfill.



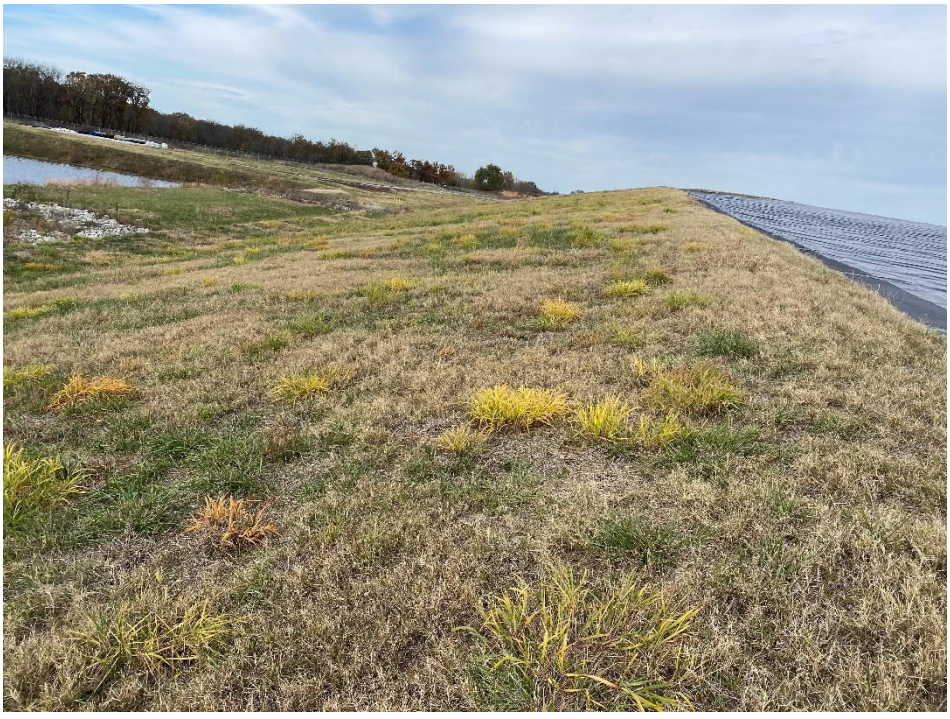
15. Fabriform letdown at the northeast corner of the landfill that flows into the north sediment basin.



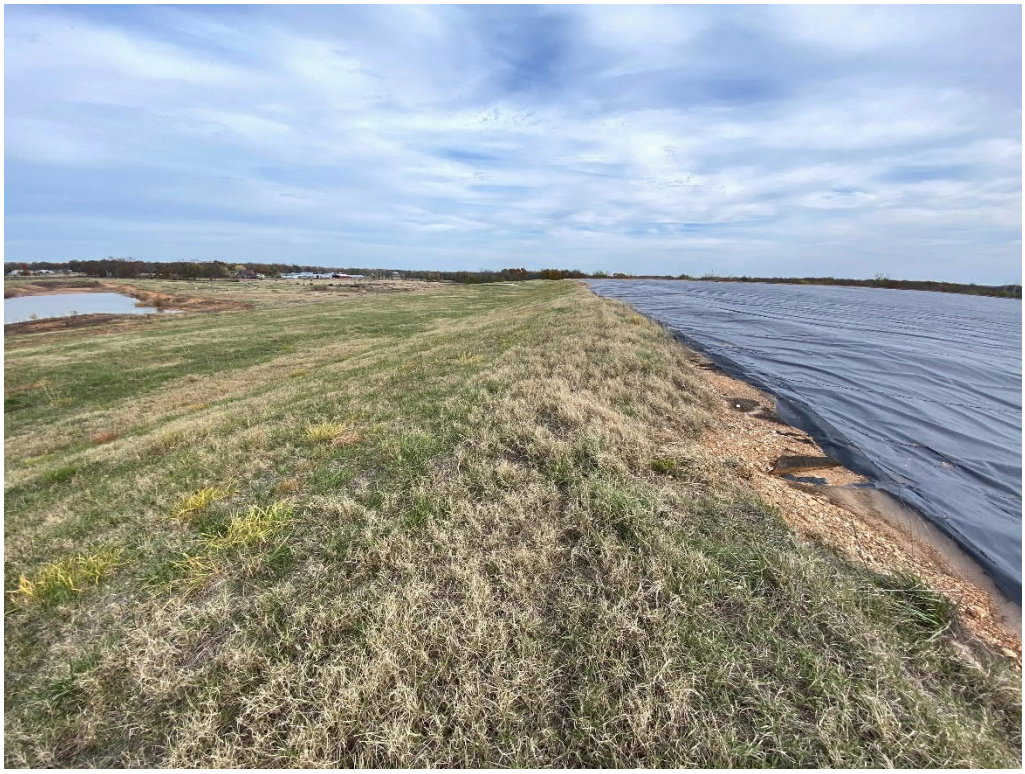
16. Stormwater ditch on the east side of the landfill.



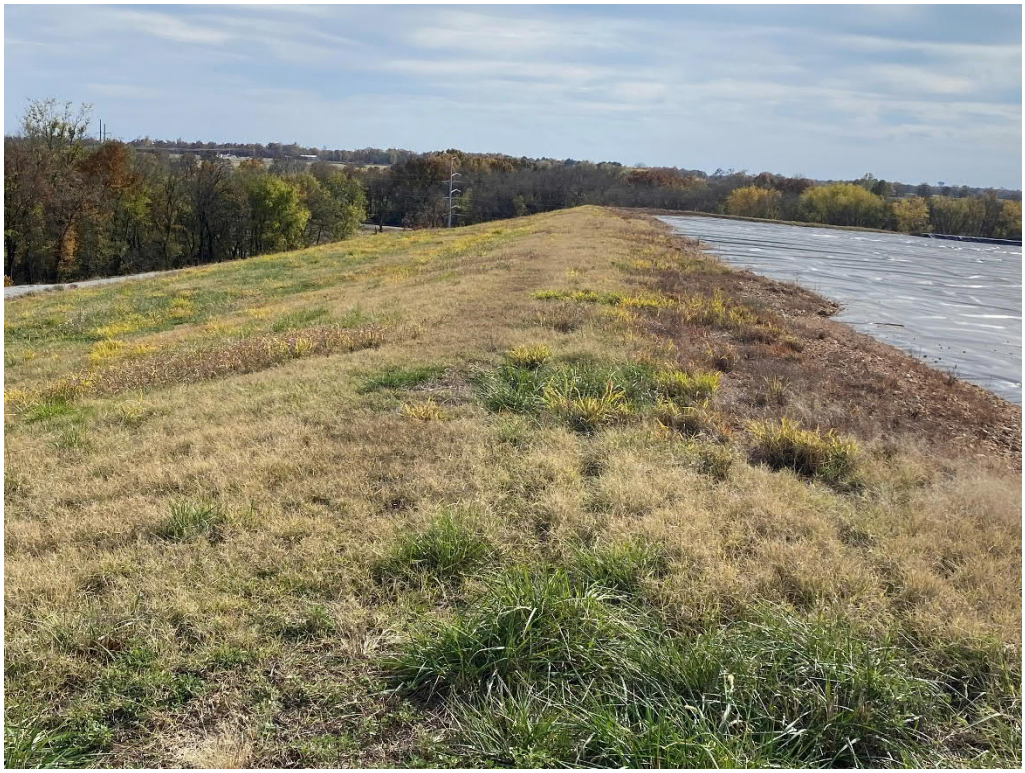
17. Stormwater culvert on the south side of the landfill.



18. West side final cover slope looking north.



19. North side final cover looking east.



20. East side final cover looking south.