KENVIRONS
Civil & Environmental Engineers

2023 ANNUAL CCR LANDFILL INSPECTION

SPURLOCK STATION POWER PLANT

EAST KENTUCKY
POWER COOPERATIVE

EAST KENTUCKY POWER COOPERATIVE

COAL COMBUSTION RESIDUAL RULE COMPLIANCE

JANUARY 6, 2024

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Civil & Environmental Engineering and Laboratory Services • Visit us at www.Kenvirons.com

CERTIFICATION

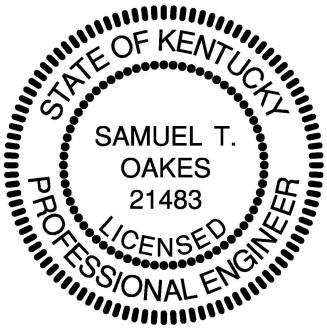
EAST KENTUCKY POWER COOPERATIVE
ANNUAL CCR LANDFILL INSPECTION
SPURLOCK POWER PLANT

CERTIFICATION

I hereby certify, as a Professional Engineer in the state of Kentucky, that the inspection and information represented in this document was prepared by me or under my direct supervision and meets the requirements of 40 CFR Part 257.84, Inspection requirements for CCR landfills. This report is not intended for reuse without specific verification or adaptation by the Engineer.

_____
S. Tim Oakes, P.E. – Kenvirons, Inc.

Date: 1/6/24



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1.0 INTRODUCTION

On April 17, 2015, the Environmental Protection Agency (EPA) issued the final version of the federal Coal Combustion Residual Rule (CCR Rule) to regulate the disposal of coal combustion residual (CCR) materials generated at coal-fired units. The rule is administered as part of the Resource Conservation and Recovery Act [RCRA, 42 United States Code (U.S.C.) §6901 et seq.], using the Subtitle D approach.

East Kentucky Power Cooperative (EKPC) is subject to the CCR Rule and as such must have an annual inspection performed on all CCR landfills per 40 Code of Federal Regulations (CFR) §257.84. An excerpt from this rule is located in Attachment 3. This report provides the results and observations from the 2023 annual inspection performed by Kenvirons for Spurlock Power Plant (Spurlock) Landfill located near Maysville, Kentucky. This annual inspection is the ninth annual inspection as required by the CCR Rule.

Table 1-1 summarizes the requirements located in 40 CFR §257.84 related to the 2023 Annual CCR Landfill Inspection Report at Spurlock Landfill. The table is to be used to reference the appropriate Section or Attachment within the 2023 Annual CCR Landfill Inspection Report for specific comments, details, photographs, etc.

TABLE 1-1 CCR COMPLIANCE SUMMARY

CCR LANDFILLS			
UNIT: Spurlock Landfill			
Description	**Units**		**Report Reference**
Approximate Volume of CCR in the Landfill at time of inspection	29,197,174 Cubic Yards (Survey: 12/7/23)		See Section 2.2 and Attachment 2
Description	**YES**	**NO**	**Report Reference**
Review the previous 7-day and 30-day inspection reports	☑	☐	See Section 2.2
Review the previous annual inspection reports	☑	☐	See Section 2.2
Changes in geometry of the CCR unit since previous annual inspection	☑	☐	See Section 2.2 and Attachment 2
Other changes which may have affected the stability or operation of the CCR unit since previous annual inspection	☐	☑	See Section 2.3 and Attachment 1
Perform a visual inspection and fill out the Inspection Checklist	☑	☐	See Section 2.3 and Attachment 1
Appearance of actual or potential structural weakness	☐	☑	See Section 2.3 and Attachment 1
Existing conditions that are disrupting or have the potential to disrupt the operation and safety of the CCR unit and appurtenant structures	☐	☑	See Section 2.3 and Attachment 1

2.0 INSPECTION RESULTS

Per the CCR Rule (§257.84), the primary goal is to perform an inspection of the CCR landfill to "ensure that the design, construction, operation, and maintenance of the CCR unit is consistent with recognized and generally accepted good engineering standards." One part of this inspection included reviewing available information on the CCR landfill including previous 7-day inspections performed, in-place waste survey, construction drawings, and Kentucky Division of Waste Management Permit Drawings. Construction drawings were reviewed from Spurlock Landfill's Area A, Area B, and Area C Phase 1 through 5 Construction Design and Record Drawings. Additionally, the in-place waste survey, conducted on 12/7/23, was reviewed and is located in Attachment 2. The other part of the annual inspection included a visual inspection of the CCR landfill. The visual inspection included examining the toe and crest of all slopes, side slopes, hydraulic structures, and other features for any signs of distress or deficient operation of the CCR landfill. The observations made from the review of existing information and visual inspection is provided below.

2.1 Landfill Description

Spurlock landfill is located southwest of the power station. Fly ash, bottom ash, bed ash and gypsum are the coal combustion residuals generated by Spurlock Power Station and disposed of at Spurlock Landfill. Permit drawings prepared by Kenvirons, Inc., dated 2002, and record construction drawings prepared by Kenvirons, Inc., dated 2006, 2007, 2011, 2012, 2014, 2017, 2018, 2019, 2020, 2021, and 2022 were reviewed from the Construction Progress Reports (CPR's) for a better understanding of the landfill design and geometry.

The final cover slopes are designed to be 4H:1V on the north, south, and west slopes. The lower section below the bench, along the west and south sides of the final cover is 3H:1V. The east slope is designed and being filled at a slope of 3H:1V with benches while the very top of the landfill will consist of 15% slopes. The maximum crest elevation for the final landfill geometry is elevation 1,171 feet. The liner system for Area A, Area B, and Area C Phase 1 is made up of a 24-inch thick soil liner with a permeability of $1x10^{-7}$ cm/sec. The liner system for Area C Phase 2, 3, 4, and 5 is made up of a 24-inch thick soil liner with a permeability of $1x10^{-7}$ cm/sec and 60-mil textured high density polyethylene geomembrane. Leachate in Phase 2 is collected by leachate collection pipes within the drainage pathways within the liner system. Leachate in Phase 3, 4 and 5 is collected by a geocomposite drainage layer and leachate collection pipes along benches and within the drainage pathways within the liner system. The leachate is collected in a lined pond (Pond 1) and discharged through a permitted Kentucky Pollutant Discharge Elimination System (KPDES) monitored outfall along with stormwater run-on/run-off from the south, east, and portions of the north side of the landfill. Pond 2A located northeast of the landfill is

utilized for stormwater run-off control for the west and portions of the north side of the landfill. Pond 2A was constructed during 2022 to replace Pond 2.

At the time of the inspection, portions of Areas A, B, and C were covered with temporary soil cover and vegetation. Approximately 38.2 acres of final cover has been completed along the west and south slopes of Areas A and B. Landfill areas not covered with temporary or final cover were the peaks of Area A and B, upper portion of Area C Phase 1, the upper north, south and east slopes of Area C Phase 3, 4 and 5. Currently, waste is being placed in portions of Phases 3, 4, and 5.

The Special Waste Landfill Permit Application was prepared by Kenvirons, and approved by the Kentucky Energy and Environment Cabinet, Department of Environmental Protection, Division of Waste Management on February 22, 2005. The landfill was approved to be transitioned from a Special Waste Landfill to a CCR Unit – Landfill (as defined by 401 KAR 46:101) by the Kentucky Energy and Environment Cabinet, Department of Environmental Protection, Division of Waste Management on January 9, 2019.

2.2 Existing Data Review

Per the CCR Rule, previous inspections are to be reviewed as part of this report. Inspection reports reviewed included the 7-day inspections performed on November 2, 2022 through November 8, 2023 and the Annual CCR Landfill Inspections performed since 2015. Construction of Pond 2A was completed in 2022 to replace Pond 2. A review of these inspection reports did not yield conditions that had the potential to disrupt the operation and safety of the CCR Unit or appurtenant structures. Work orders for items noted on the 7-day and annual reports were created to address any one-time and reoccurring conditions.

The CCR Rule also requires that approximate volumes of CCR in the landfill be provided in the annual inspection report. To determine this volume, an aerial survey was performed by MIKON Corporation. This survey was performed on 12/7/23. The survey provided existing topography and overall geometry of the landfill. Based on a visual review, fill areas had a maximum slope of 1.5H:1V. The areas with maximum slope are limited to the landfill peak located on the northwestern portion of the landfill, a small area on the north slope of Area A, Phase 2 and the outslope of the access road into Area C Phases 3, 4 and 5. The majority of the fill has been placed at 3H:1V and 4H:1V slopes. Total existing volume of CCR in the landfill is estimated to be 29,197,174 cubic yards. The current maximum elevation is 1,062 feet.

As required by the CCR Rule, a discussion of any changes in geometry or changes that may affect the stability or operation of the CCR landfill is appropriate. Since the 2022 annual inspection, the facility has placed waste in Area C Phase 1, Phase 2, Phase 3, Phase 4 and Phase 5. Recently placed exterior waste slopes have been

constructed at 4H:1V and 3H:1V slopes and the working faces are sloped to provide positive drainage. The maximum vertical geometry of the fill has not increased in elevation since the October 28, 2016 survey. However, since the 2022 survey, the vertical geometry in the active fill areas (Area C Phases 3, 4 and 5) has increased by approximately 34 feet. The fill height within active areas of Area C Phase 1 and 2 has increased by approximately 16 feet since the 2022 survey. The horizontal footprint geometry has not increased since the 2022 inspection. The fill geometry is equal to or less than the reviewed designed fill slopes based on permitted and construction design documents except for a few small isolated areas where the fill is steeper than 3H:1V. These areas are temporary and will be regraded during future filling activities.

2.3 Visual Inspection

A visual inspection was performed by Kenvirons on November 15, 2023. The visual inspection involved walking the perimeter of Pond 1, discharge location and valley side slopes. The inspection continued with walking the toe/perimeter of the landfill and along the crest, active fill areas in Area C Phases 1, 2, 3, 4 and 5 and the western final cap area. An inspection of Pond 2A was performed including inspection of the discharge point. The visual inspection report checklist including photos taken during the inspection can be found in Attachment 1. Potential conditions that the inspection was looking for included:

- Surface cracking along crest or slopes indicating possible movement,
- Misalignment of linear features of landfill, such as the crest or ditches, indicating possible movement,
- Displacements (slides, slumps, slips, and sloughs) indicating slope instability,
- Animal burrows in cover system that create a preferential flow path for water,
- Slope erosion along the cover system or uncovered CCR material,
- CCR outside of permitted limits because of inappropriate placement or erosion,
- Seepage of leachate from landfill,
- Issues with leachate system including visual evidence of leachate outbreaks or sediment in the leachate discharge,
- Inadequate slope protection such as sparse or patchy vegetation,

- Excessive and/or woody vegetation along the cover system that would lead to preferential flow paths through the cover system,
- Debris or mounded CCR on the landfill that could lead to unaccounted loading,
- Settlement (or depressions) in landfill that could indicate internal piping of CCR or karstic subsurface,
- Outlet/overflow structure in proper working order including no evidence of piping, clear of debris that may block flow, or adequate erosion protection,
- Drainage features in proper working order including appropriate drainage of surface water,
- Signs of vandalism on landfill, and
- Signs of piping and other internal erosion.

Based on observations at the time of the visual inspection, there were no indications of structural deficiencies in the landfill such as slope instability, excessive settlement, displacements, or misalignment. However, temporary soil cover cracking was observed on the upper east slope of Area C Phase 4 and 5. No visual signs of waste movement or displacements associated with the soil cover cracking were observed. The cracking appears to have stabilized based on the review of inspection photos from the 7-day inspections. No leachate outbreaks were observed, and no sediment was visible in the leachate discharge. The water flowing out of Pond 1 and Pond 2A was clear. One abandoned animal hole found on the west cap. No signs of vandalism were observed. Placement of the CCR appeared to be in general accordance with the construction drawings and acceptable practices.

Conditions not requiring corrective measures have been noted to help improve daily operations and overall facility conditions. These items should be monitored to determine if future repairs are needed. Items noted during the inspection for monitoring are as follows:

1) Monitor temporary cover soil repairs at the following locations:
    a. Northeast slope of Area C Phase 4 and 5 (Photo IMG-2598, 2575).
    b. East slope of Area C Phase 4 and 5 (Photo IMG-2578, 2579, 2588)
    c. South slope of Area C Phase 5 (Photo IMG-2473).

2) Temporary soil cover cracking on the upper bench of Area C Phase 4 & 5's east slope. During the annual inspection, cracks still visible appear to have stabilized. (Photo IMG-2590).

3) Seed, fertilize, and mulch bare temporary soil cover placed on Area C Phase 4 and 5's South and East slopes (Photo IMG-2583, 2574).

Conditions requiring corrective measures observed during the inspection are as follows:

1) Rocks located on the liner system at the toe of Area C Phase 5 south slope (Photo IMG-2475) and Area C Phase 4 and 5 northeast slope, at various places (Photo IMG-2574, 2570).

2) Woody vegetation/tree growth on the landfill and sediment ponds at the following locations:

   - Area C Phase 3 south ditch (Photo IMG-2476).
   - Northwest ditch on the final cap (Photo IMG-2541, 2542).
   - Area C Phase 3 entrance road at 36-inch culvert outlet (Photo IMG-2557).
   - Toe of Area C Phase 3 haul road at the intersection of Area C Phase 2 and Phase 5 (Photo IMG-2558).
   - Pond 2A around the edge of the pond riprap (Photo IMG-2601, 2604).
   - Pond 1 around the pond edges (Photo IMG-2614).
   - West final cap - North downdrain at the top of the slope (Photo IMG-2494). Latitude: 38° 41' 26.84" Longitude: -83° 50' 33.63"
   - Southeast waste limit on Area C Phase 4 (Photo IMG 2622, 2623).

3) Abandoned animal hole on the west cap above the lower drainage bream and north of the northern downdrain (Photos IMG-2505).
   Latitude: 38° 41' 28.3" Longitude: -83° 50' 37.83"

4) Clean out ditches and ponds at the following locations:

   - Clean out sediment from the ditch on the south side of the haul road (lower west end) up to Area C Phase 1 (Photo IMG-2540).

- Clean out sediment from the toe ditch on the east side of the landfill (Photo 2621).

- Clean out sediment from Pond 1 (Photo IMG-2615) and Pond 1 upper chamber (Photo IMG-2617).

- Clean out sediment from Pond 1 concrete sediment trap (Photo IMG-2618).

- Liner system anchor trench soil backfill erosion – Northeast side of Area C Phase 4 (Photo IMG-2566, 2567)

- Area C Phase 4, Northeast waste limits – soil erosion between anchor trench and perimeter ditch near Area C Phase 4 access road (Photo-IMG-2598)

There are no items listed above that have the potential to disrupt the operation and safety of the CCR unit or appurtenant structures.

3.0 RECOMMENDED CORRECTIVE MEASURES

Based on observations made at the site during the visual inspection and documented in Attachment 1, measures to correct conditions listed in Section 2.3 will need to be performed in order to prevent further erosion and possible future damage to the landfill and other associated structures. The following corrective measures are recommended for Spurlock Landfill:

- Area C Phase 4 and 5 - remove rocks from the south and northeast toe of slope, near the landfill liner interface to avoid potential geosynthetics damage.

- Remove woody vegetation in downdrain structures and growing in CCR at or near the liner system. Controlling woody vegetation growth in ditches, downdrains and pond riprap protection may be performed by: applying herbicides, cutting or direct removal. Woody vegetation growing in CCR materials at or near the liner system should be eliminated by direct removal.

- Fill in holes/voids created by abandoned animal burrow with soil and establish vegetation to deter surface water infiltration and erosion.

- Backfill anchor trench with compacted clay soils or other acceptable structural materials and install erosion protection that will deter future erosion from surface water run-on/run-off.

- Repair erosion between the linear system and perimeter ditches where steep slopes occur on the Northeast limits of the landfill. Reestablish/apply erosion control materials/features to defer future erosion.

- Clean surface water perimeter ditches, ponds, and silt traps to provide for future sediment capture and proper operation of stormwater control structures.

4.0 REPORT LIMITATIONS

This report is based on observations made of features that could be visually inspected at the time of the inspection, permit, and construction drawings, previous inspection reports, and survey information provided by EKPC. Features not visible at the surface or accessible, such as the liner systems, cover systems, and the leachate system, etc. were not assessed as part of this inspection.

Landfill design and record construction drawings accepted by the Kentucky Division of Waste Management were reviewed to gain an understanding of the design geometry and aspects of the landfill. No assessment or confirmation of the design was performed as part of this inspection. No Construction Quality Assurance documents or operational placement records were reviewed as part of this inspection, other than record construction drawings. An assessment of the adequacy and state of groundwater monitoring wells or water quality was not a part of this inspection.

Any recommended corrective measures or further monitoring referenced in this report is assumed to be corrected by EKPC as soon as feasible and monitored by EKPC during the required 7-day inspection schedule currently being performed.

ATTACHMENT 1

INSPECTION CHECKLIST AND PHOTOGRAPHS

EPA - Disposal of Coal Combustion Residuals (CCR) from Electric Utilities Final Rule
Regulatory Compliance Inspection – 40 CFR § 257.84(a)
CCR Landfills
Annual Inspection Checklist Form

Facility Name:	Spurlock Station Landfill
CCR Landfill Name / Designation #:	CCR Landfill
Date of Inspection: *	November 15, 2023
Date of Last Prior Inspection: *	November 14, 2022
Weather Conditions:	Partly Sunny 54 deg. F
Recent Snow/Rainfall:	Rain - 0 inches
Name of Qualified Inspector (performing inspection):	Tim Oakes, P.E.
Signature	

Area	Condition Items	YES	NO	MONITOR **	Inspector Observations and Photo Number(s)
Landfill	Surface Cracking	☒	☐	☒	Temp. soil cover cracking: Cracks on Area C Phase 4 & 5 upper east bench (IMG-2590).
	Misalignment	☐	☒	☐	
	Displacements (also referred to as slides, slumps, slips and sloughs)	☐	☒	☐	
	Animal Burrows	☒	☐	☐	Abandoned animal hole on west cap above the lower drainage bream. (IMG-2505).
	Slope Erosion (final cover)	☐	☒	☐	
	Slope Erosion (active areas)	☐	☐	☒	Temp. soil cover erosion - Area C Phase 4 & 5 NE slope (IMG 2598, 2574, 2575), Area C Phase 4 and 5 E slope (IMG-2578, 2579, 2588), and Area C Phase 5 S slope (IMG-2473).
	Seepage	☐	☒	☐	
	Leachate Collection	☐	☒	☐	

** Inspection shall not exceed one year from previous annual inspection.*
*** Indicates condition to be monitored by inspector but no action is required at this time*

EPA - Disposal of Coal Combustion Residuals (CCR) from Electric Utilities Final Rule
Regulatory Compliance Inspection – 40 CFR § 257.84(a)
CCR Landfills
Annual Inspection Checklist Form

Area	Condition Items	YES	NO	MONITOR **	Inspector Observations and Photo Number(s)
Landfill (continued)	Lacking Vegetation	☒	☐	☒	Establish vegetation on bare temp cover soils on Area C Phase 4 and 5 east and south slopes (IMG-2583, 2472).
	Liner Distress/Cracks/Holes (If Liner is Exposed)	☐	☒	☐	
	Inadequate Slope Protection	☐	☒	☐	Area C Phase 4 anchor trench erosion, NE slope (IMG-2566, 2567).
	Excessive and/or Woody Vegetation	☒	☐	☐	Area C Phase 3 south ditch (IMG-2476), NW ditch on final cap (IMG- 2541, 2542), Area C Phase 3 entrance road (IMG-2557), intersection of Phase 3 & 5 (IMG-2558), Area C Phase 4 SE waste limit (IMG-2622, 2623), final cap downdrain (IMG-2494).
	Debris	☒	☐	☐	Remove rocks laying on or near liner system Area C Phase 4 & 5, NE and South toe of slope (IMG-2470, 2474, 2475).
	Settlement (or depressions)	☐	☒	☐	
	Signs of Vandalism	☐	☒	☐	
	Overall Status of Current Inspection (Satisfactory, Fair, Poor, Unsatisfactory, Not Rated)	Satisfactory			
	Overall Status as Compared to Last Inspection (Similar, Improved, Deteriorated, or Unknown)	Similar			

** Inspection shall not exceed one year from previous annual inspection.*
*** Indicates condition to be monitored by inspector but no action is required at this time*

EPA - Disposal of Coal Combustion Residuals (CCR) from Electric Utilities Final Rule
Regulatory Compliance Inspection – 40 CFR § 257.84(a)
CCR Landfills
Annual Inspection Checklist Form

Area	Condition Items	YES	NO	MONITOR **	Inspector Observations and Photo Number(s)
Sediment Pond 1	Signs of Piping and Other Internal Erosion	☐	☒	☐	
	Animal Burrows	☐	☒	☐	
	Excessive and/or Woody Vegetation	☒	☐	☐	Around the edges of the pond and principal spillway (Photo IMG-2614).
	Signs of Seepage	☐	☒	☐	
	Inadequate Slope Protection	☐	☒	☐	
	Signs of Movement or Structural Damage	☐	☒	☐	
	Abnormal Discharge Discoloration	☐	☒	☐	
	Discharge of Sediment or Debris	☐	☒	☐	
	Channel Lining or Stone Cover Not Intact	☐	☒	☐	
	Discharge Pipe Damaged or Requiring Remedial Action	☐	☒	☐	
	Outlet/Overflow Structure Require Remedial Action	☐	☒	☐	
	Overall Status of Current Inspection (Satisfactory, Fair, Poor, Unsatisfactory, Not Rated)	Satisfactory			
	Overall Status as Compared to Last Inspection (Similar, Improved, Deteriorated, or Unknown)	Similar			

** Inspection shall not exceed one year from previous annual inspection.*
*** Indicates condition to be monitored by inspector but no action is required at this time*

EPA - Disposal of Coal Combustion Residuals (CCR) from Electric Utilities Final Rule
Regulatory Compliance Inspection – 40 CFR § 257.84(a)
CCR Landfills
Annual Inspection Checklist Form

Area	Condition Items	YES	NO	MONITOR **	Inspector Observations and Photo Number(s)
Sediment Pond 2A	Signs of Piping and Other Internal Erosion	☐	☒	☐	
	Animal Burrows	☐	☒	☐	
	Excessive and/or Woody Vegetation	☒	☐	☐	Around the edge of the pond sediment trap and sedimentation basins (Photo IMG-2601, 2604).
	Signs of Seepage	☐	☒	☐	
	Inadequate Slope Protection	☐	☒	☐	
	Signs of Movement or Structural Damage	☐	☒	☐	
	Abnormal Discharge Discoloration	☐	☒	☐	
	Discharge of Sediment or Debris	☐	☒	☐	
	Channel Lining or Stone Cover Not Intact	☐	☒	☐	
	Discharge Pipe Damaged or Requiring Remedial Action	☐	☒	☐	
	Outlet/Overflow Structure Require Remedial Action	☐	☒	☐	
	Overall Status of Current Inspection (Satisfactory, Fair, Poor, Unsatisfactory, Not Rated)	Satisfactory			
	Overall Status as Compared to Last Inspection (Similar, Improved, Deteriorated, or Unknown)	Similar			

** Inspection shall not exceed one year from previous annual inspection.*
*** Indicates condition to be monitored by inspector but no action is required at this time*

EPA - Disposal of Coal Combustion Residuals (CCR) from Electric Utilities Final Rule
Regulatory Compliance Inspection – 40 CFR § 257.84(a)
CCR Landfills
Annual Inspection Checklist Form

		YES	NO
1.	Per observation of the above items, does there appear to be actual or potential structural weaknesses? If yes, discuss below and attach photos:	☐	☒
2.	Per observation of the above items, does there appear to be conditions which are disrupting or have potential to disrupt the operation or safety of the CCR unit? If yes, discuss below and attach photos:	☐	☒
3.	Per observation of the above items, are there remedial actions that need to take place. If yes, discuss below and attach photos: Repair soil cover and anchor trench erosion at the NE toe of slope in Area C Phase 4, east and south slopes of Area C Phase 4 & 5. Repair animal burrow hole on the west final cap. Remove woody vegetation: final cap north downdrain, Area C Phase 3 & 5 liner tie-in/anchor trench, Area C Phase 3 entrance road culvert pipe outlet, ditches - NW final cap and south Phase 3, Pond 1 and 2A edges and spillways and SE waste limit of Phase 4 & 5. Remove sediment from the road ditch to Area C Phase 1, Area C Phase 3 east toe ditch, Pond 1 (including upper chamber & sed. trap).	☒	☐
4.	Per observations at time of inspection, are there conditions that would impede performing the recommended remedial actions or conditions that performing immediate remedial action could result in damage to the unit (i.e. adverse weather conditions/wet periods/etc.). If yes, discuss below and attach photos: Due to winter weather and wet site conditions, grading work and various erosion and bare soil repairs will need to be performed during dry conditions. Establishing vegetation will need to be conducted during the spring growing season.	☒	☐

** Inspection shall not exceed one year from previous annual inspection.*
*** Indicates condition to be monitored by inspector but no action is required at this time*

5.	Other concerns or comments: _____ _____ _____ _____ _____

** Inspection shall not exceed one year from previous annual inspection.*
*** Indicates condition to be monitored by inspector but no action is required at this time*


LEGEND
IMG2601 INSPECTION PHOTOGRAPH LOCATION
APPROX. PERMITTED WASTE LIMITS
APPROX. LIMITS OF DEVELOPED LANDFILL
GRAPHIC SCALE
(SCALE IN FEET)
1 inch = 200ft.
CONSTRUCTION ENTRANCE
LANDFILL HAUL ROAD
AREA C ACCESS ROAD
ACCESS ROAD
SOUTH RIPLEY RD.
S Ripley Rd
Tuckahoe Rd
TUCKAHOE RD.
LANDFILL OFFICE AND MAINTENANCE BUILDING
SEDIMENT TRAP
POND 1
POND 2A
IMG2541
IMG2542
IMG2540
IMG2499
IMG2496
IMG2505
IMG2494
IMG2501
IMG2489
IMG2469
IMG2471
IMG2476
IMG2472
IMG2475
IMG2473
IMG2552
IMG2557
IMG2558
IMG2516
IMG2562
IMG2563
IMG2578
IMG2590
IMG2588
IMG2583
IMG2567
IMG2579
IMG2574
IMG2575
IMG2570
IMG2566
IMG2598
IMG2565
IMG2621
IMG2623
IMG2622
IMG2618
IMG2620
IMG2617
IMG2615
IMG2616
IMG2614
IMG2610
IMG2604
IMG2599
IMG2601
IMG2609

ATTACHMENT 1
INSPECTION PHOTOGRAPH PLAN

EAST KENTUCKY POWER COOPERATIVE

SPURLOCK STATION LANDFILL
MASON COUNTY, KENTUCKY
2023 ANNUAL CCR LANDFILL INSPECTION

DRAWN BY: MEL
CHECKED BY:
CHECKED BY: STO
DATE: DEC. 2023
SCALE: 1"=200'
REVISIONS

KENVIRONS
Civil & Environmental Engineers

PROJECT NO.
2019152

SHEET NO.
1 of 1

EPA - Disposal of Coal Combustion Residuals (CCR) from Electric Utilities Final Rule
Regulatory Compliance Inspection – 40 CFR § 257.84
CCR Landfills
Photographic Log

KENVIRONS

Facility Name	Spurlock Station Landfill
CCR Landfill Name	CCR Landfill
Date of Inspection	November 15, 2023
Date of Last Inspection	November 14, 2022
Name of Qualified Inspector (Performing Inspection)	Tim Oakes, P.E. (Kenvirons)
Weather Conditions	Sunny 53 deg. F

EAST KENTUCKY
POWER COOPERATIVE

EPA - Disposal of Coal Combustion Residuals (CCR) from Electric Utilities Final Rule
Regulatory Compliance Inspection – 40 CFR § 257.84
CCR Landfills
Photographic Log

Photograph Number: IMG-2505
Description: West Final Cap Slope, north lower drainage berm – Abandoned animal burrow

Photograph Number: IMG-2598
Description: NE Area C phase 4 & 5– Erosion between anchor trench and ditch

EPA - Disposal of Coal Combustion Residuals (CCR) from Electric Utilities Final Rule
Regulatory Compliance Inspection – 40 CFR § 257.84
CCR Landfills
Photographic Log

Photograph Number: IMG-2567
Description: NE Area C phase 4 – Anchor Trench erosion

Photograph Number: IMG-2473
Description: South side of Area C Phase 5 – Monitor erosion & veg. growth

EPA - Disposal of Coal Combustion Residuals (CCR) from Electric Utilities Final Rule
Regulatory Compliance Inspection – 40 CFR § 257.84
CCR Landfills
Photographic Log

Photograph Number: IMG-2578
Description: Phase 4 & 5 east slope– Monitor erosion & veg. growth

Photograph Number: IMG-2579
Description: Phase 4 & 5 east slope – Monitor erosion & veg. growth

EPA - Disposal of Coal Combustion Residuals (CCR) from Electric Utilities Final Rule
Regulatory Compliance Inspection – 40 CFR § 257.84
CCR Landfills
Photographic Log

Photograph Number: IMG-2590
Description: Area C Phase 4 & 5 east slope – Monitor temp. cover soil cracking

Photograph Number: IMG-2583
Description: Area C Phase 4 & 5 – Seed and fertilize bare soil cover

EPA - Disposal of Coal Combustion Residuals (CCR) from Electric Utilities Final Rule
Regulatory Compliance Inspection – 40 CFR § 257.84
CCR Landfills
Photographic Log

Photograph Number: IMG-2570
Description: Area C Phase 5 south slope – Rocks on liner system

Photograph Number: IMG-2475
Description: Area C Phase 5 south slope – Rocks on liner system

EPA - Disposal of Coal Combustion Residuals (CCR) from Electric Utilities Final Rule
Regulatory Compliance Inspection – 40 CFR § 257.84
CCR Landfills
Photographic Log

Photograph Number: IMG-2574
Description: Area C Phase 4 & 5, NE – Rocks on liner system

Photograph Number: IMG-2476
Description: Area C Phase 3 South ditch – Woody vegetation growth

Photograph Number: IMG-2541
Description: West final cap, NW ditch – Woody vegetation growth

Photograph Number: IMG-2542
Description: West final cap, NW – Remove woody vegetation growth

EPA - Disposal of Coal Combustion Residuals (CCR) from Electric Utilities Final Rule
Regulatory Compliance Inspection – 40 CFR § 257.84
CCR Landfills
Photographic Log

Photograph Number: IMG-2557
Description: Area C Phase 3 entrance road– Woody vegetation growth at culvert outlet

Photograph Number: IMG-2558
Description: Area C Phase 5 tie-in, north slope – Woody vegetation growth

EPA - Disposal of Coal Combustion Residuals (CCR) from Electric Utilities Final Rule
Regulatory Compliance Inspection – 40 CFR § 257.84
CCR Landfills
Photographic Log

Photograph Number: IMG-2601
Description: Pond 2A – Woody vegetation growth

Photograph Number: IMG-2604
Description: Pond 2A – Woody vegetation growth

EPA - Disposal of Coal Combustion Residuals (CCR) from Electric Utilities Final Rule
Regulatory Compliance Inspection – 40 CFR § 257.84
CCR Landfills
Photographic Log

Photograph Number: IMG-2614
Description: Pond 1– Woody vegetation growth

Photograph Number: IMG-2494
Description: West Final Cap, north downdrain – Woody vegetation growth

EPA - Disposal of Coal Combustion Residuals (CCR) from Electric Utilities Final Rule
Regulatory Compliance Inspection – 40 CFR § 257.84
CCR Landfills
Photographic Log

Photograph Number: IMG-2622
Description: Area C Phase 4, SE – Woody vegetation growth

Photograph Number: IMG-2623
Description: Area C Phase 4, SE – Woody vegetation growth

EPA - Disposal of Coal Combustion Residuals (CCR) from Electric Utilities Final Rule
Regulatory Compliance Inspection – 40 CFR § 257.84
CCR Landfills
Photographic Log

Photograph Number: IMG-2540
Description: South Ditch– sediment accumulation road to Area C Phase 1, South Ditch

Photograph Number: IMG-2621
Description: Area C Phase 4, east toe ditch – Remove sediment and veg. growth

EPA - Disposal of Coal Combustion Residuals (CCR) from Electric Utilities Final Rule
Regulatory Compliance Inspection – 40 CFR § 257.84
CCR Landfills
Photographic Log

Photograph Number: IMG-2615
Description: Pond 1– Clean out sediment

Photograph Number: IMG-2617
Description: Pond 1 Upper chamber – Clean out sediment

EPA - Disposal of Coal Combustion Residuals (CCR) from Electric Utilities Final Rule
Regulatory Compliance Inspection – 40 CFR § 257.84
CCR Landfills
Photographic Log

Photograph Number: IMG-2618
Description: Pond 1 – Clean out concrete sediment trap

Photograph Number: IMG-2566
Description: NE Area C phase 4 – Anchor Trench erosion

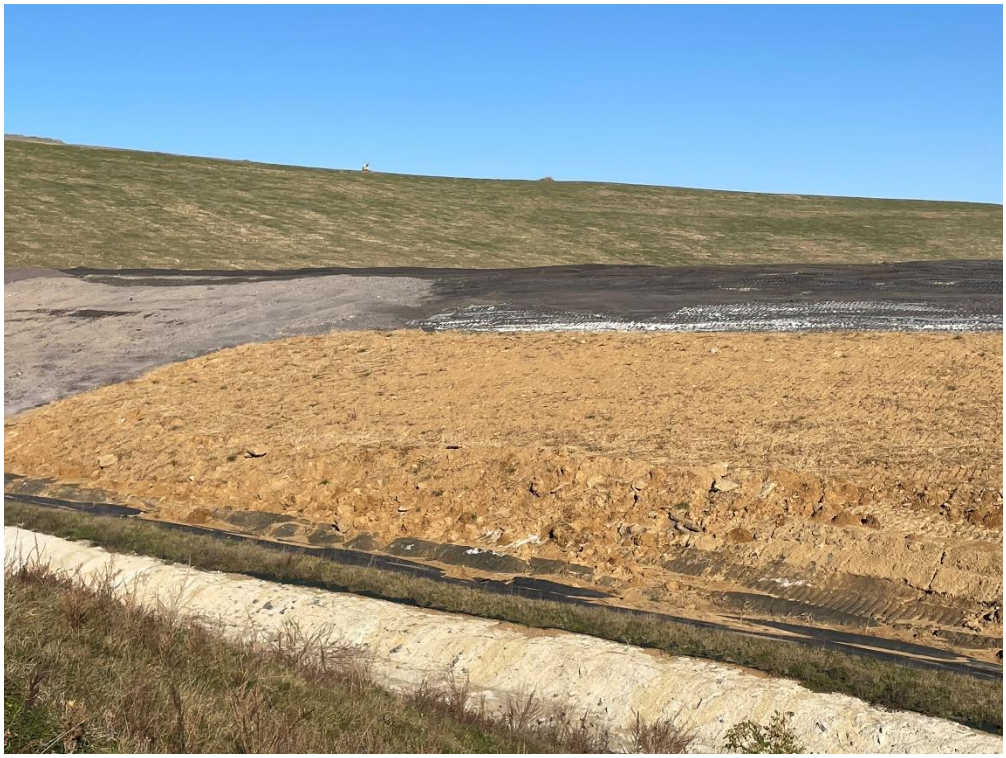
EPA - Disposal of Coal Combustion Residuals (CCR) from Electric Utilities Final Rule
Regulatory Compliance Inspection – 40 CFR § 257.84
CCR Landfills
Photographic Log

Photograph Number: IMG-2575
Description: NE slope Area C Phase 5 – Monitor erosion & veg. growth

Photograph Number: IMG-2588
Description: east slope of Area C Phase 4 and 5 – Monitor erosion & veg. growth

EPA - Disposal of Coal Combustion Residuals (CCR) from Electric Utilities Final Rule
Regulatory Compliance Inspection – 40 CFR § 257.84
CCR Landfills
Photographic Log

Photograph Number: IMG-2489
Description: Final cap – SW slope



Photograph Number: IMG-2472
Description: Area C, Phase 5 – South perimeter ditch

EPA - Disposal of Coal Combustion Residuals (CCR) from Electric Utilities Final Rule
Regulatory Compliance Inspection – 40 CFR § 257.84
CCR Landfills
Photographic Log

Photograph Number: IMG-2499
Description: Final cap – NW Slope

Photograph Number: IMG-2496
Description: Final cap – West slope

EPA - Disposal of Coal Combustion Residuals (CCR) from Electric Utilities Final Rule
Regulatory Compliance Inspection – 40 CFR § 257.84
CCR Landfills
Photographic Log

Photograph Number: IMG-2471
Description: Final cap – South perimeter ditch

Photograph Number: IMG-2501
Description: Final cap – West slope

EPA - Disposal of Coal Combustion Residuals (CCR) from Electric Utilities Final Rule
Regulatory Compliance Inspection – 40 CFR § 257.84
CCR Landfills
Photographic Log

Photograph Number: IMG-2516
Description: Active fill area – Area C Phase 4 & 5

Photograph Number: IMG-2552
Description: Active fill area – Area C Phase 4 & 5

Photograph Number: IMG-2562
Description: Area C Phase 5 – North perimeter ditch

Photograph Number: IMG-2563
Description: Area C Phase 4 and 5 – NE perimeter ditch

EPA - Disposal of Coal Combustion Residuals (CCR) from Electric Utilities Final Rule
Regulatory Compliance Inspection – 40 CFR § 257.84
CCR Landfills
Photographic Log

Photograph Number: IMG-2469
Description: Final Cap – South Slope

Photograph Number: IMG-2565
Description: East Slope – Area C Phase 4 & 5

EPA - Disposal of Coal Combustion Residuals (CCR) from Electric Utilities Final Rule
Regulatory Compliance Inspection – 40 CFR § 257.84
CCR Landfills
Photographic Log

Photograph Number: IMG-2609
Description: Pond 2A Discharge

Photograph Number: IMG-2599
Description: Pond 2A

EPA - Disposal of Coal Combustion Residuals (CCR) from Electric Utilities Final Rule
Regulatory Compliance Inspection – 40 CFR § 257.84
CCR Landfills
Photographic Log

Photograph Number: IMG-2616
Description: Pond 1

Photograph Number: IMG-2620
Description: Leachate Discharge to Pond 1

EPA - Disposal of Coal Combustion Residuals (CCR) from Electric Utilities Final Rule
Regulatory Compliance Inspection – 40 CFR § 257.84
CCR Landfills
Photographic Log

Photograph Number: IMG-2610
Description: Pond 1 Discharge

ATTACHMENT 2

LANDFILL SURVEY AND IN-PLACE VOLUMES

December 28, 2023

Mr. Jarrad Burton, P.E.
East Kentucky Power Cooperative, Inc.
Winchester, Kentucky

<jarrad.burton@ekpc.coop>

RE: Spurlock and Peg's Hill Ash Landfills

Dear Mr. Burton:

We have completed the volume calculations of the Spurlock and Peg's Hill Ash Landfills near Maysville, Kentucky. Aerial survey with LiDAR data acquisition was performed by Kucera International working as a subcontractor for MIKON Corporation. Ground control was provided by the Client, supplemented by additional control set by MIKON. All reported volumes are referenced to the surfaces described below per the Client and include any clay stockpiles or cover material within the project area. Following is a summary of the volume calculations.

Spurlock Landfill Volumes

Date of Survey: December 7, 2023

Surface	Reference Datum	Fill (cy)	Cut (cy)	Net (cy)
Design Capacity Surface [1]	2023 Surface	12,297,314	110,407	12,186,907
2023 Surface	2022 Surface [2]	1,511,500	27,376	1,484,124
2023 Surface	Base [3]	29,197,174	17,645	29,179,529

[1] Design features (perimeter and surface contours) provided by Kenvirons via Client.
[2] Developed by MIKON Corporation in December 2022.
[3] Provided by Kenvirons via Client.

Peg's Hill Landfill Volumes

Date of Survey: December 7, 2023

Surface	Reference Datum	Fill (cy)	Cut (cy)	Net (cy)
2023 Surface [1]	Base [2]	133,047	14	133,033

[1] Developed by MIKON Corporation in December 2023.
[2] Design features (perimeter and surface contours) provided by Kenvirons via Client.

Topographic drawings of the 2023 mapping are attached. These volumes are provided for internal planning purposes only and are not meant for use in permitting requirements. Should you have any questions regarding this report, please do not hesitate to contact us. We appreciate the opportunity to provide our services to East Kentucky Power Cooperative.

Respectfully submitted,

MIKON Corporation

Bryan W. Davis

Brian J. Kramer

BWD/BJK:js / Attachments

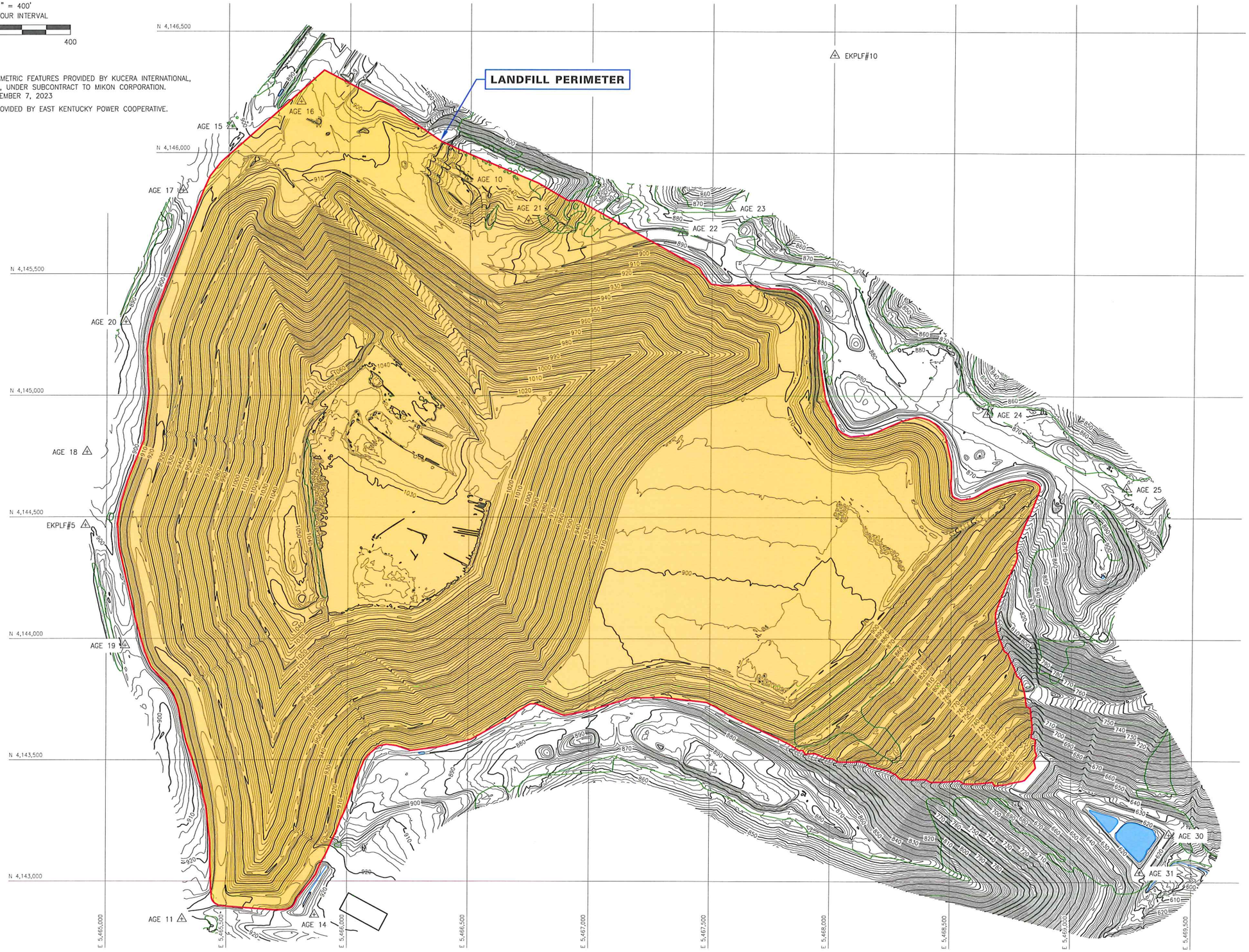
SCALE 1" = 400'
2' CONTOUR INTERVAL

0 400

NORTH

SHEET NOTES:

1. TOPOGRAPHY AND PLANIMETRIC FEATURES PROVIDED BY KUCERA INTERNATIONAL, INC., WILLOUGHBY, OHIO, UNDER SUBCONTRACT TO MIKON CORPORATION. DATE OF SURVEY: DECEMBER 7, 2023
2. LANDFILL PERIMETER PROVIDED BY EAST KENTUCKY POWER COOPERATIVE.



MIKON CORPORATION
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FILE NAME: SPUR_LF_TOPO_23
DRAWN BY: DHS | CHECKED BY: BJK

EAST KENTUCKY POWER COOPERATIVE

SPURLOCK GENERATING STATION

ASH LANDFILL TOPOGRAPHY

MAIN

DATE: 12/28/23

SHEET 1 of 2

ATTACHMENT 3

CCR RULE (§257.84) REFERENCE

following the date of initial receipt of CCR in the CCR unit.

(4) *Frequency of inspections.* (i) Except as provided for in paragraph (b)(4)(ii) of this section, the owner or operator of the CCR unit must conduct the inspection required by paragraphs (b)(1) and (2) of this section on an annual basis. The date of completing the initial inspection report is the basis for establishing the deadline to complete the first subsequent inspection. Any required inspection may be conducted prior to the required deadline provided the owner or operator places the completed inspection report into the facility's operating record within a reasonable amount of time. In all cases, the deadline for completing subsequent inspection reports is based on the date of completing the previous inspection report. For purposes of this section, the owner or operator has completed an inspection when the inspection report has been placed in the facility's operating record as required by § 257.105(g)(6).

(ii) In any calendar year in which both the periodic inspection by a qualified professional engineer and the quinquennial (occurring every five years) structural stability assessment by a qualified professional engineer required by §§ 257.73(d) and 257.74(d) are required to be completed, the annual inspection is not required, provided the structural stability assessment is completed during the calendar year. If the annual inspection is not conducted in a year as provided by this paragraph (b)(4)(ii), the deadline for completing the next annual inspection is one year from the date of completing the quinquennial structural stability assessment.

(5) If a deficiency or release is identified during an inspection, the owner or operator must remedy the deficiency or release as soon as feasible and prepare documentation detailing the corrective measures taken.

(c) The owner or operator of the CCR unit must comply with the recordkeeping requirements specified in § 257.105(g), the notification requirements specified in § 257.106(g), and the internet requirements specified in § 257.107(g).

§ 257.84 Inspection requirements for CCR landfills.

(a) *Inspections by a qualified person.* (1) All CCR landfills and any lateral expansion of a CCR landfill must be examined by a qualified person as follows:

(i) At intervals not exceeding seven days, inspect for any appearances of actual or potential structural weakness and other conditions which are disrupting or have the potential to disrupt the operation or safety of the CCR unit; and

(ii) The results of the inspection by a qualified person must be recorded in the facility's operating record as required by § 257.105(g)(8).

(2) *Timeframes for inspections by a qualified person*—(i) *Existing CCR landfills.* The owner or operator of the CCR unit must initiate the inspections required under paragraph (a) of this section no later than October 19, 2015.

(ii) *New CCR landfills and any lateral expansion of a CCR landfill.* The owner or operator of the CCR unit must initiate the inspections required under paragraph (a) of this section upon initial receipt of CCR by the CCR unit.

(b) *Annual inspections by a qualified professional engineer.* (1) Existing and new CCR landfills and any lateral expansion of a CCR landfill must be inspected on a periodic basis by a qualified professional engineer to ensure that the design, construction, operation, and maintenance of the CCR unit is consistent with recognized and generally accepted good engineering standards. The inspection must, at a minimum, include:

(i) A review of available information regarding the status and condition of the CCR unit, including, but not limited to, files available in the operating record (*e.g.,* the results of inspections by a qualified person, and results of previous annual inspections); and

(ii) A visual inspection of the CCR unit to identify signs of distress or malfunction of the CCR unit.

(2) *Inspection report.* The qualified professional engineer must prepare a report following each inspection that addresses the following:

(i) Any changes in geometry of the structure since the previous annual inspection;

(ii) The approximate volume of CCR contained in the unit at the time of the inspection;

(iii) Any appearances of an actual or potential structural weakness of the CCR unit, in addition to any existing conditions that are disrupting or have the potential to disrupt the operation and safety of the CCR unit; and

(iv) Any other change(s) which may have affected the stability or operation of the CCR unit since the previous annual inspection.

(3) *Timeframes for conducting the initial inspection*—(i) *Existing CCR landfills.* The owner or operator of the CCR unit must complete the initial inspection required by paragraphs (b)(1) and (2) of this section no later than January 18, 2016.

(ii) *New CCR landfills and any lateral expansion of a CCR landfill.* The owner or operator of the CCR unit must complete the initial annual inspection required by paragraphs (b)(1) and (2) of this section no later than 14 months following the date of initial receipt of CCR in the CCR unit.

(4) *Frequency of inspections.* The owner or operator of the CCR unit must conduct the inspection required by paragraphs (b)(1) and (2) of this section on an annual basis. The date of completing the initial inspection report is the basis for establishing the deadline to complete the first subsequent inspection. Any required inspection may be conducted prior to the required deadline provided the owner or operator places the completed inspection report into the facility's operating record within a reasonable amount of time. In all cases, the deadline for completing subsequent inspection reports is based on the date of completing the previous inspection report. For purposes of this section, the owner or operator has completed an inspection when the inspection report has been placed in the facility's operating record as required by § 257.105(g)(9).

(5) If a deficiency or release is identified during an inspection, the owner or operator must remedy the deficiency or release as soon as feasible and prepare documentation detailing the corrective measures taken.

(c) The owner or operator of the CCR unit must comply with the recordkeeping requirements specified in § 257.105(g), the notification requirements specified in § 257.106(g), and the internet requirements specified in § 257.107(g).

Groundwater Monitoring and Corrective Action

§ 257.90 Applicability.

(a) Except as provided for in § 257.100 for inactive CCR surface impoundments, all CCR landfills, CCR surface impoundments, and lateral expansions of CCR units are subject to the groundwater monitoring and corrective action requirements under §§ 257.90 through 257.98.

(b) *Initial timeframes*—(1) *Existing CCR landfills and existing CCR surface impoundments.* No later than October 17, 2017, the owner or operator of the CCR unit must be in compliance with the following groundwater monitoring requirements:

(i) Install the groundwater monitoring system as required by § 257.91;

(ii) Develop the groundwater sampling and analysis program to include selection of the statistical