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Coal Combustion Residuals Landfill Closure and Post-Closure Plans

Cheswick Generating Station
Ash Disposal Site
Allegheny County, Pennsylvania

GAI Project Number: R220960.00
August 2025

Cheswick Lefever, LLC

Prepared by: GAI Consultants, Inc.
Pittsburgh Office
385 East Waterfront Drive
Homestead, Pennsylvania 15120-5005

Prepared for: Cheswick Lefever, LLC
4235 South Stream Blvd
Suite 180
Charlotte, North Carolina 28217

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Professional Engineer's Certification

The Coal Combustion Residuals Closure and Post-Closure Plan (Plan) for the Cheswick Ash Disposal Site was prepared by GAI Consultants, Inc. (GAI) in accordance with the United States Environmental Protection Agency's "Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments", published in the Federal Register on April 17, 2015 with an effective date of October 19, 2015 (40 CFR 257 Subpart D), and subsequent revisions. The Plan may contain findings and determinations that are based certain information that, other than for information GAI originally prepared, GAI has relied on but not independently verified. This Certification/Statement of Professional Opinion is therefore limited to the information available to GAI at the time the Plan was written. On the basis of and subject to the foregoing, it is my professional opinion as a Professional Engineer licensed in the Commonwealth of Pennsylvania that the Plan has been prepared in accordance with good and accepted engineering practices as exercised by other engineers practicing in the same discipline(s), under similar circumstances, at the same time, and in the same locale. It is my professional opinion that the Closure Plan and Post-Closure Plan meet the requirements of §257.102(b) and §257.104(d) of 40 CFR 257 Subpart D, respectively, and the final cover system design fulfills the requirements of §257.102(d)(3) of 40 CFR 257 Subpart D.

The use of the words "certification" and/or "certify" in this document shall be interpreted and construed as a Statement of Professional Opinion and is not and shall not be interpreted or construed as a guarantee, warranty or legal opinion.

GAI Consultants, Inc.

Kevin M. Bortz
Senior Engineering Manager 2

Date 08/20/2025

1.0 Introduction

The Cheswick Ash Disposal Site (Landfill), also known as the Lefever Ash Landfill, has historically been used for the disposal of residual waste materials produced by the coal-fired Cheswick Generating Station (Station). The Landfill is located along Lefever Hill Road in Indiana Township, Allegheny County, Pennsylvania.

The Cheswick Ash Disposal Site is a Class II residual landfill permitted through the Pennsylvania Department of Environmental Protection (PaDEP) with Solid Waste Permit No. 300720 and has been used for the disposal of Cheswick Generating Station Coal Combustion Residuals (CCR). The permitted area for the Landfill is 143 acres, although actual disposal and utilization has occurred over approximately 31 acres.

2.0 Purpose

This document has been prepared in accordance with the United States Environmental Protection Agency's 40 CFR Part 257, Disposal of Coal Combustion Residuals from Electric Utilities (CCR Rule). The CCR Closure Plan has been prepared pursuant to §257.102(b) of the CCR Rule and the CCR Post-Closure Plan has been prepared pursuant to §257.104(d) of the CCR Rule.

According to the February 2022 Closure & Post-Closure Plan prepared by Civil & Environmental Consultants, Inc., an original closure demonstration was placed in the Station's Operating Record by October 17, 2016. The 2016 demonstration was revised in the February 2022 plan prepared by Civil & Environmental Consultants, Inc. due to change in ownership of the facility from NRG Power Midwest LP to GenOn Power Midwest LP. This document supersedes the February 2022 plan and will be placed in the Station's Operating Record as required by §§257.102(j) and 257.104(f) of the CCR Rule.

This document revises the previous plans to address:

- Change in ownership from GenOn Power Midwest LP to Cheswick Lefever, LLC; and
- Proposed plans to close the Landfill at a lower elevation than presented in the 2016 and 2022 Closure Plans.

3.0 Closure Plan

This CCR Closure Plan sets forth the techniques that will be utilized to complete closure activities of the Landfill by placement of a final cover system in accordance with §257.102(d) of the CCR Rule. The Landfill was originally permitted to consist of two disposal locations, the northern and southern disposal areas. Only the southern disposal area has been utilized, so the northern disposal area is not considered in this Closure Plan. All references to the Landfill consider the southern disposal area only.

3.1 Closure Plan Overview

The Closure Plan includes the following information:

- narrative describing how the CCR unit will be closed in accordance with §257.102;
- description of the final cover system including a general description of the methods and procedures to install the final cover system and a description stating how the final cover system will achieve the performance standards set forth by §257.102(d);
- estimate of the maximum inventory of CCR ever on-site over the active life of the disposal site;
- estimate of the largest area of the CCR unit ever requiring final cover at any time over the disposal site's active life;
- schedule for completing all activities necessary to satisfy the closure criteria, including an estimate of the year in which all closure activities for the disposal site will be completed; and

- written certification from a qualified professional engineer that the written closure plan meets the requirements of §257.102.

Throughout the life of the Landfill, portions of the site that have been brought to final grade were covered with final cover soil according to the approved PaDEP permit and certified accordingly. This CCR Closure Plan addresses areas of the Landfill that still need to be closed as of the date of this plan.

3.2 Closure Plan Narrative

The Cheswick Ash Disposal Site will be closed by leaving CCR in place. At final closure, all disposal site surfaces will be brought to final grade, will receive a minimum of two feet of soil cover, and will be vegetated in accordance with the approved PaDEP permit. Benches have been designed and constructed throughout the life of the Landfill to reduce the potential for erosion of the final cover system. The attached drawing (CCR Surface at Closure) shows the anticipated CCR grades at commencement of closure/placement of final cover.

During closure activities, existing stormwater controls (perimeter diversion channels, Landfill stormwater manholes, and the site Sediment Pond) will be utilized to manage non-contact stormwater. Landfill perforated risers within the CCR area will continue to be used to collect contact stormwater. Once the Landfill has had final cover placed and has been properly revegetated, all stormwater will be non-contact stormwater; the perforated contact water risers will be capped and two feet of soil cover installed above the cap.

At final closure, Landfill leachate will continue to be directed to the Monarch Mine Dewatering Plant for treatment.

The closure performance standards stated in §257.102(d) of the CCR Rule will be achieved in the following manner:

- Closure will be accomplished by placing the final cover system, consisting of a minimum of two feet of final cover soil above the in-place CCR to meet §§257.102(d)(1)(i) and 257.102(d)(3)(i) of the CCR Rule.
- The final cover soil layer will be graded to promote positive drainage and to preclude the probability of future impoundment of water, sediment, or slurry as required by §257.102(d)(1)(ii).
- Stability of the final cover system (as required by §257.102(d)(1)(iii) of the CCR Rule) will be supported by using a compacted, vegetated soil cover and limiting the maximum slope to 2H:1V. The stability of the final cover system on 2H:1V slopes was evaluated in the November 1996 Solid Waste Permit Application to PaDEP (Civil and Environmental Consultants, 2022).
- The design of the final cover system minimizes the need for maintenance by use of a vegetated soil cover to reduce erosion and providing considerations for cover stability, as required by §257.102(d)(1)(iv) of the CCR Rule.

3.3 Final Cover System

The final cover system will consist of a vegetated soil cover system.

3.3.1 Infiltration Layer

An eighteen-inch (minimum) soil infiltration layer will be placed on a prepared (compacted) CCR subgrade. According to §257.102(d)(3)(i)(A), “The permeability of the final cover system must be less than or equal to the permeability of any bottom liner system or natural subsoils present, or a permeability no greater than 1×10^{-5} cm/sec, whichever is less.”

A GAI investigation in 2017 evaluated the likely permeability of the natural subsoils beneath the Landfill. This investigation showed that the 1×10^{-5} cm/sec criterion was the limiting factor for cover soil permeability. The infiltration layer will be used to meet the permeability requirements of the CCR Rule.

3.3.2 Erosion Layer

A six-inch (minimum) soil erosion layer will be established on top of the infiltration layer. This layer will be installed to promote vegetative growth on the soil cover. Vegetation will be established according to the requirements of the PaDEP permit.

3.3.3 Stormwater Controls

Throughout the life of the Landfill, contact stormwater has been directed to perforated risers for collection in the Landfill leachate system. As final cover is placed, non-contact stormwater will be directed either to the site's non-contact stormwater manholes or to the perimeter diversion channels for collection and discharge to the Landfill Sediment Pond. As areas draining to the perforated risers receive final cover, the perforated risers will be capped so that non-contact stormwater does not enter the leachate conveyance system.

Stormwater run-on to the capped Landfill will be prevented by the use of the perimeter diversion channels.

3.3.4 Landscaping

The initial permit drawings for the Landfill contained a landscaping plan where shade, flowering, and evergreen trees would be installed on the landfill to provide for aesthetics. As this is no longer recommend on CCR landfills and is prohibited by §257.73(a)(4) of the CCR Rule, the current closure plan will not provide for installation of trees on the Landfill. This is also consistent with the previous Civil and Environmental Consultants, Inc. closure plans and PaDEP-approved Form 18R.

3.4 Estimated CCR Volume and Areal Extent

Drawing D2-007 shows the anticipated final CCR surface to be expected at final closure. This CCR surface will compose the subgrade for the final cover system.

The maximum potential areal extent of the Landfill is approximately 39.5 acres, with approximately 10 acres having been previously certified as closed through PaDEP. The active waste placement footprint is approximately 20 acres. This leaves approximately 9.5 acres that is permitted for disposal but will remain unused.

The total permitted capacity of the Landfill is 7,200,000 tons. According to the 2024 Annual Report (from June, 2025) approximately 3,860,000 tons of CCR has been placed in the landfill as of the end of 2024. A minor amount of CCR may be placed in the landfill prior to commencement of final closure in the Spring/Summer of 2025.

3.5 Closure Schedule

Major project milestones related to closure include:

- Spring/Summer 2025 – Receive final CCR for placement in the Landfill
- Summer 2025 – Finalize grading and place initial lifts of final soil cover infiltration layer
- Summer/Fall 2025 – Complete initial lifts of final soil cover infiltration layer
- Summer/Fall 2025 – Place final lifts of final soil cover infiltration layer; cap all perforated risers
- Fall 2025 – Place final soil cover erosion layer and vegetate.
- Fall 2025/Winter 2026 – Complete certification of Landfill Closure according to the CCR Rule and PaDEP requirements.

Under the CCR Rule, closure of the disposal site must be initiated within thirty days after the disposal site receives the final known volume of CCR [§257.102(e)(1)(i)]. The closure process requires the posting of a notification of intent to close the CCR facility. As required by §257.102(g) of the CCR Rule, the notification must include a certification by a qualified professional engineer that the design of the final cover system meets the requirements of CCR Rule §257.102(d)(3)(iii). Closure is to be

completed within six months [CCR Rule §257.102(f)(1)(i)].

The CCR Rule also allows owners of CCR units to request time extensions beyond the time specified in the Closure Plan. CCR landfills may extend the timeframe to complete closure of the CCR unit two times in one-year increments [CCR Rule §§257.102(f)(2)(i) and 257.102(f)(2)(ii)(C)].

Once closure is complete, a professional engineer will verify and certify that closure has been completed in accordance with the Closure Plan, as required by §257.102(f)(3) of the CCR Rule. Within 30 days of completing closure, a notification of closure will be prepared that must include the professional engineer's certification of completion [CCR Rule §257.102(h)]. A notation must also be recorded on the deed to the property or some other instrument that is normally examined during title search [CCR Rule §257.102(i)], to notify potential buyers that the land has been used as a CCR unit and its use is restricted under the post-closure care requirements as provided by §257.104(d)(1)(iii) of the CCR Rule.

4.0 Post-Closure Plan

This CCR Post-Closure Plan is prepared pursuant to §257.104(d) of the CCR Rule and sets forth the techniques that will be utilized to perform post-closure care activities at the Landfill. The purpose of this Post-Closure Plan document is to detail the post-closure care maintenance activities for the Landfill, which will be performed for a required period of thirty years according to §257.104(c) of the CCR Rule. Post-closure care will also be performed in accordance with the PaDEP-approved *Form 18R: Closure/Post-Closure Land Use Plan* from November 1996.

4.1 Monitoring and Maintenance Activities

Following closure of the CCR unit, the owner or operator will conduct post-closure care, which consists of at least the following:

- maintaining the integrity and effectiveness of the final cover system, including making repairs to the final cover as necessary to correct the effects of settlement, erosion, or other events, and preventing stormwater from eroding or otherwise damaging the final cover;
- maintaining the integrity, effectiveness, and operation of the leachate collection and removal system;
- maintaining the integrity, effectiveness, and operation of the stormwater conveyance system; and
- maintaining the groundwater monitoring system and monitoring the groundwater in accordance with the requirements of §257.90 through §257.98.

The owner or operator of the CCR unit must conduct post-closure care for 30 years. As provided by Section of §257.104(c)(2) of the CCR Rule, if at the end of the post-closure care period the owner or operator of the CCR unit is operating under assessment monitoring in accordance with §257.95 of the rule, the owner or operator must continue to conduct post-closure care until the owner or operator returns to detection monitoring in accordance with §257.95.

4.1.1 Inspection Schedule

The Landfill will be inspected monthly for the first year following closure. Every year thereafter, inspections will occur quarterly or after major storm events.

4.1.2 Final Cover Surface

The final cover surface will be inspected by a qualified person during the 30-year post-closure period. The surface of the landfill will be inspected for stressed vegetation, animal burrows, woody vegetation, and cracking in the soil cover which could indicate surface movement. Woody vegetation will be removed. The final cover surface will be repaired as needed.

4.1.3 Stormwater Drainage Features

Perimeter drainage channels, stormwater manholes, and the Sediment Basin will be inspected during the periodic final cover surface inspections. The channels will be inspected

for signs of damage and siltation, vegetative growth, or other debris which are inhibiting the functionality of the channel. The Sediment Basin will be inspected for signs of excessive siltation, which may be causing operational issues. Stormwater manholes will be inspected for damage, blockage, and erosion of the final cover adjacent to the manholes. The drainage features will be cleaned and repaired if necessary.

4.1.4 Fencing and Gates

Access to the Landfill area will be controlled with the use of an existing security fence and swing gate at the site entrance. The gate shall remain locked at all times when the site is unattended. Any damages observed to the access control features will be repaired.

4.1.5 Groundwater Monitoring System

Groundwater monitoring will be performed in accordance with the groundwater monitoring plan and the requirements of CCR Rule §§257.90 through 257.98 for the duration of the post-closure period.

4.1.6 Leachate Management

Leachate is collected using a bottom ash blanket and underdrain system, from which the leachate is directed to the Monarch Mine Dewatering Plant for treatment and discharge (as authorized by PaDEP under NPDES Permit No. PA0255777). The leachate collection and treatment system will be inspected and maintained during the post-closure period.

4.1.7 Additional Site-Specific Features

Site roads will be inspected and repaired as needed to maintain access to site facilities.

4.2 Site Contact Information

The address and telephone number for site contact needs during the post-closure period is:

Charah Solutions, Inc.
4235 South Stream Blvd
Suite 180
Charlotte, North Carolina 28217
704.731.2300

4.3 Proposed Post-Closure Property Use

As documented in Form 18R, the closed site will be revegetated and will be maintained as open green space with limited access. No specific post-closure land use is planned other than grassed open land. No adjacent land uses will be impacted by the project. The deed notation required under §257.102(i) of the CCR Rule will protect future uses of the property.

5.0 Amendments

This Closure Plan and Post-Closure Plan can be amended at any time as allowed by §§257.102(b)(3) and 257.104(d)(3) of the CCR Rule. Each respective plan must be amended whenever a change in operations substantially affects the written plan in effect. The Closure Plan must be amended at least 60 days prior to a planned change in operation, or no later than 60 days after an unanticipated event. In addition, if closure activities have commenced for the Cheswick Ash Disposal Site, then the written Closure Plan must be revised within 30 days of the event.

6.0 References

Civil and Environmental Consultants, Inc. February 2022. *Closure & Post-Closure Plans, Cheswick Ash Disposal Facility.*

GAI Consultants, Inc. 2024. *2023 Annual Landfill Operations Report, Facility No. 300720.*

Pennsylvania Department of Environmental Protection. 1997 – 2016. *Correspondence related to Lefever Ash Disposal Site, I.D. No. 300720.*

Pennsylvania Department of Environmental Protection. 2021. *NPDES Permit Fact Sheet Individual Industrial Waste (IW) and IW Stormwater, Application No. PA0255777.*

United States Environmental Protection Agency. 2015. *40 CFR Parts 257 and 261 Hazardous and Solid Waste Management Disposal System; Disposal of Coal Combustion Residual from Electric Utilities, Final Rule.* April 2015 and subsequent revisions.

DRAWING

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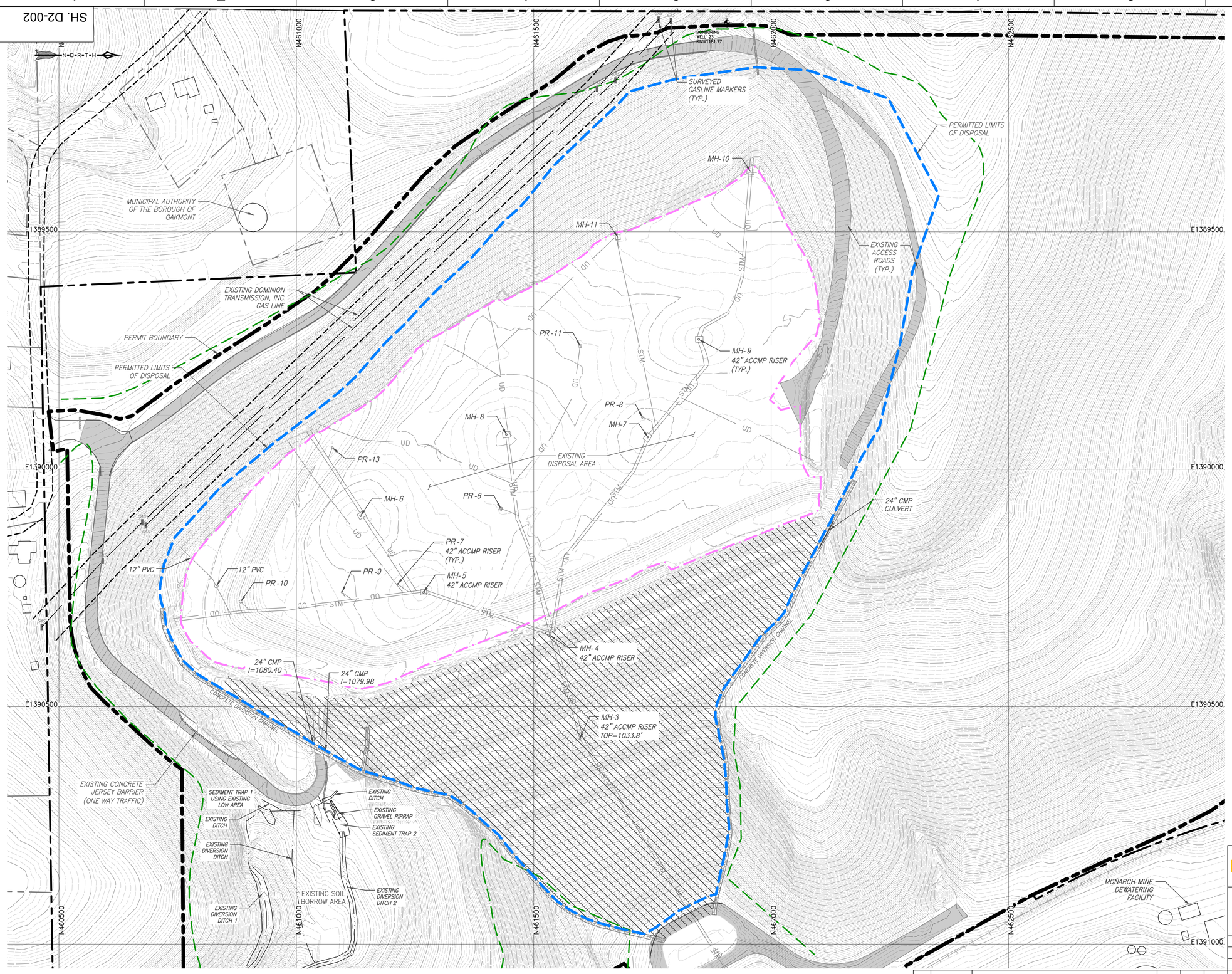
SH. D2-002



LEGEND

- PERMIT BOUNDARY
- 1080 — SURVEYED MAJOR CONTOUR
- 1090 — SURVEYED MINOR CONTOUR
- PROPERTY BOUNDARY
- EXISTING ADJOINING PROPERY
- EXISTING ACCESS EASEMENT
- CLOSED AREA
- LIMITS OF PROPOSED FINAL CCR SURFACE
- PERMITTED LIMITS OF WASTE DISPOSAL
- STM — EXISTING STORM DRAIN PIPING
- UD — EXISTING UNDERDRAIN PIPING
- EXISTING CONCRETE CHANNEL/DOWNCHUTE
- PR-8 / MH-7 — EXISTING PERFORATED RISER MANHOLE
- EXISTING ACCESS ROAD
- EXISTING GAS LINE
- GAS LINE RIGHT-OF-WAY
- GAS — SURVEYED GASLINE MARKER
- TREE LINE
- EXISTING CULVERT
- EXISTING JERSEY BARRIER
- EXISTING RAILROAD TRACKS
- PERMITTED LIMIT OF CLEARING AND GRUBBING

REFERENCE

1. CCR FINAL SURFACE ELEVATIONS FROM GAI FIELD SURVEYS DATED 02/24/2025, 03/31/2025, 05/02/2025, 05/28/2025, 06/30/2025, AND 07/22/2025. PLAN NORTH IS BASED UPON PENNSYLVANIA STATE PLANE NAD83 AND VERTICAL DATUM IS BASED UPON NAVD88.
2. PROPERTY BOUNDARY SURVEY BY GAI CONSULTANTS INC. DATED 11-8-2024, IS TITLED CHESWICK LANDFILL PROPERTY.
3. TOPOGRAPHY OF AREA OUTSIDE THE ACTIVE WASTE DISPOSAL AREA WERE REFERENCED FROM THE END OF 2017 ANNUAL TOPOGRAPHIC SURVEY. THE FOLLOWING ITEMS ARE NOTED:
   - A. THE EXISTING PERMITTED LIMIT OF DISPOSAL WAS REFERENCED FROM DUQUESNE LIGHT COMPANY PERMIT DRAWING 12079-B10, DATED 3/1/79. LOCATIONS SHOWN ARE APPROXIMATE.
   - B. THE APPROXIMATE LOCATION OF THE TREELINE IS BASED ON INFORMATION PROVIDED BY CHARAH, INC IN MAY 2015.
   - C. DOMINION TRANSMISSION, INC. (DTI) GAS LINES LN-30 AND TL-469 HAVE AN ASSUMED RIGHT-OF-WAY WIDTH ON THE OUTSIDE OF EACH GAS LINE OF 25 FEET.
   - D. RAILROAD ALIGNMENT WAS OBTAINED FROM AERIAL IMAGERY.

NOTES:

1. THE CCR FINAL SURFACE ELEVATIONS SHOWN ARE PROJECTED TO REPRESENT CONDITIONS AT LANDFILL CLOSURE, WITH MINOR ADJUSTMENTS ANTICIPATED DUE TO FINAL PLACEMENT OF ADDITIONAL MATERIAL.
2. A MINIMUM OF TWO FEET OF FINAL SOIL COVER WILL BE PLACED ON THE CCR FINAL SURFACE TO COMPLETE CLOSURE OF THE LANDFILL.

SCALE: 1" = 100'
100 0 100 200

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Cheswick Lefever, LLC

CHESWICK GENERATION STATION

CHESWICK ASH DISPOSAL SITE
CCR SURFACE AT CLOSURE

DRAWN: 08/20/2025	DMURGI	DRAWING NUMBER
CHECKED	CWHITE	
APPROVED	KBORTZ	SHEET: D2-007
SIZE: D 22X34		REV:
DISCIPLINE: CIVIL	SCALE: AS SHOWN	FILE: R220960-00-002-C-D2-007

GAI FILE PATH: \\GAICONSULTANTS.LOCAL\BUPROJ\2022\R220960.00 - CHESWICK-FINAL CLOSURE PL\CAD\ACAD\PRODUCTION DWGS\R220960-00-002-C-D2-007.DWG PLOTTED BY: DEANA MURGI DATE: 08/19/2025 PLOT FILE: GAI.STB

NO.	DATE	REVISION	BY	CHK.	APP.