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Projects C130770.24.001

Mr. Joseph Kushner, P.E.
Strategy and Compliance Manager
Keystone-Conemaugh Operating, LLC
Conemaugh Generating Station
1442 Power Plant Road
New Florence, Pennsylvania 15944

Conemaugh March 2025 CCR Release
Conemaugh Ash/Refuse Disposal Landfill
Conemaugh Generating Station
Indiana County, Pennsylvania

Dear Mr. Kushner:

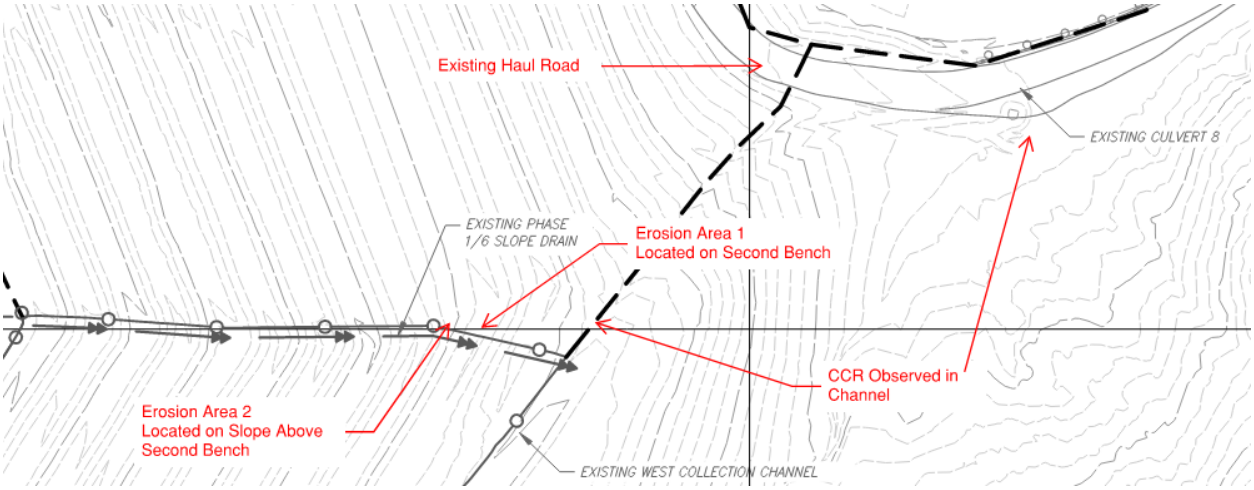
GAI Consultants, Inc. (GAI) has prepared this letter for Keystone-Conemaugh Operating, LLC (KeyCon) to document a surficial (non-groundwater) coal combustion residuals (CCR) release event that was identified on Monday March 3, 2025, at the Conemaugh Ash/Refuse Disposal Landfill (Landfill). The Pennsylvania Department of Environmental Protection (DEP) performed an inspection to investigate the incident on March 6, 2025. In response to a DEP request, we have prepared this letter to describe the incident, potential contributing factors, corrective measures, and future monitoring and inspections.

The Landfill is a captive disposal facility that primarily receives CCR generated by the coal-fired boilers with steam turbine driven electric generating units and the supporting flue gas desulphurization process at the Conemaugh Generating Station (Conemaugh Station or Station). The Landfill is subject to state regulations at 25 Pa. Code Sections 287 (*Residual Waste Management – General Provisions*) and 288 (*Residual Waste Landfills*).

The Landfill is also subject to federal regulations at 40 CFR Part 257 Subpart D, *Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments* (CCR Rule). The CCR Rule includes requirements for responding to a release of CCR at § 257.84(b)(5), which states that the owner or operator must "remedy the deficiency as soon as feasible and prepare documentation detailing the corrective measures taken". This letter serves to meet the requirements of the CCR Rule to document the release event and corrective measures taken to remedy the release.

CCR Release Event

On Monday, March 3, 2025, two erosion areas were observed along the east side of the Phase 1/6 Slope Drain. See Location Map below for a figure that depicts the location of the disturbance. Erosion Area 1 was located on the second bench from the toe of the Landfill slope. It measured approximately 5 feet in diameter and 4 to 5 feet deep (Photograph 1). Erosion Area 2 was located along the slope above the second bench and measured approximately 5 feet long (*i.e.*, parallel to the slope drain), up to 3 feet wide, and up to 2 feet deep (Photograph 2).

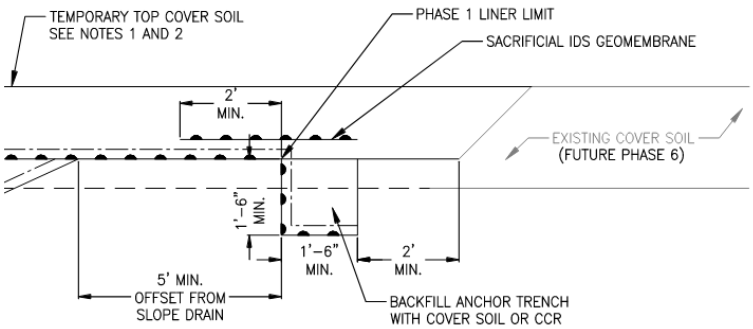


Location Map (Scale 1" = 300')

CCR was observed in two locations within the concrete lined West Collection Channel that runs along the toe of the Landfill. Based on the observations of Station personnel on March 3, the CCR is estimated to have traveled approximately 700 feet from its original location into the concrete-lined channel. The incident involved approximately 2.5 cubic yards of CCR based on the approximate Erosion Area dimensions previously mentioned. Although the above-mentioned CCR materials migrated a short distance beyond the limit of waste placement for the Landfill, the CCR was contained on site within the West Collection Channel and was not observed beyond the permit or property boundaries.

Potential Contributing Factors

The erosion areas may have developed along the anchor trench, a relatively new feature of the Landfill, which is used for the slope drain geosynthetics component of the Landfill capping system that was completed in 2023. See construction detail below. The contributing factors are believed to be desiccation cracks that formed during dry periods within the soil above the anchor trench. During winter freeze/thaw cycles, the cracks may have widened allowing stormwater to enter the cracks and flow along the geosynthetics at the bottom of the anchor trench. During large storm events, concentrated stormwater flow within the anchor trench and on top of the geosynthetics may have caused erosion mobilizing cover soil and CCR in the cracked areas.



NOTES:

1. PLACE APPROXIMATELY 20" OF TEMPORARY COVER SOIL DURING PHASE 1 TO ALLOW POSITIVE DRAINAGE FROM FUTURE PHASE 6 TO THE PHASE 1/6 SLOPE DRAIN.
2. DURING PHASE 6 CONSTRUCTION, AFTER SEAMING PHASE 1 IDS TO PHASE 6 IDS, PLACE BENCH COLLECTION PIPES AND 24" FINAL COVER SOIL.

TYPICAL PHASE 1/6 IDS TERMINATION
N.T.S.

2023 Slope Drain Termination Detail

Repair / Corrective Measures

The Landfill contractor repaired the erosion areas and removed the CCR from the West Collection Channel on Tuesday March 4, 2025. The following list is a sequence of corrective measures taken by the contractor:

- Removed visible CCR from the West Collection Channel using a flat bucket on an excavator and disposed of the CCR at the Landfill.
- Excavated wet CCR material from the erosions areas and disposed of the CCR at the Landfill.
- Placed and compacted rock backfill into both erosion area excavations.
- Placed two feet of cover soil on top of the rock backfill.
- Fine graded the areas to provide positive drainage to the back of the second bench and longitudinally towards the slope drain.
- Placed seed and mulch along disturbed areas (Photograph 3).

Station personnel provided oversight while the repairs were made by the contractor. GAI observed the repaired area on Monday, March 10, 2025, to verify that these corrective measures were taken and successful.

Inspection / Monitoring

GAI and Conemaugh Station personnel performed an inspection of the areas where corrective measures were taken and the West Collection Channel on Monday, March 10, 2025, to observe the repair. During the inspection, personnel walked along the entire length of the slope drain and observed that there were no new emerging conditions, potentially leading to further erosion or instability.

Conemaugh Station personnel performs regular documented inspections (nominally once every seven days) of the Landfill in accordance with 40 CFR § 257.84(a)(1)(i). More frequent but informal observations of the active portions of the Landfill are conducted by Station and contractor personnel. Closer inspection of the cap anchor trench termination will be conducted as part of the seven-day CCR inspections. GAI personnel will be on site at the Landfill beginning in May 2025 for capping construction. While on site, GAI will observe the slope drain area after rain events for any emerging conditions that may warrant further corrective action.

Statement of Opinion

I hereby certify, as a qualified professional engineer licensed in the Commonwealth of Pennsylvania, that the information described in this letter is factually accurate to the best of my knowledge. It is my opinion that the actions taken at the Conemaugh Ash/Refuse Disposal Landfill to respond to a surficial release of CCR on March 3, 2025, including assessment of the release, prompt removal of CCR from areas outside of the permitted waste boundary, and repair of the erosion areas by the contractor meet the requirements outlined at 40 CFR § 257.84(b)(5).

Should you have any questions, please contact Ron Harris at 412.399.5141.

Sincerely,
GAI Consultants, Inc.

Kenneth R. Harris
Digitally signed by Kenneth R. Harris
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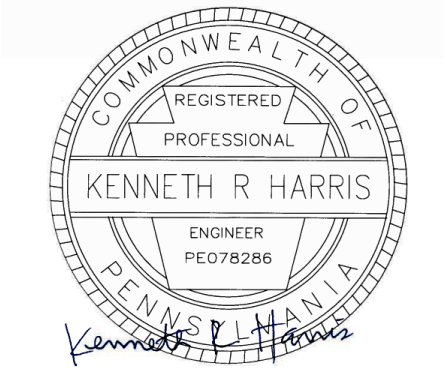
Date: 2025.04.28 12:01:05-04'00'

Ron Harris, P.E.
Senior Engineering Manager 1



Attachments: Photographs

PHOTOGRAPHS

Photograph 1: Erosion Area 1

Photograph 2: Erosion Area 2

Photograph 3: Repaired Area