



MEMORANDUM

October 14, 2016

CEC Project 144-189.6205

SUBJECT: CCR Post-Closure Plan: Version 1
Carter Hollow Landfill
Dayton Power & Light Company
J.M. Stuart Electric Generating Station
Sprigg Township, Adams County, Ohio

Dayton Power & Light Company (DP&L) operates the coal-fired J.M. Stuart Electric Generating Station (JMSS) located in Sprigg Township, Adams County, Ohio. Carter Hollow Landfill (CHLF) is an existing Class III residual waste landfill that is being constructed and will operate in compliance with the approved Permit to Install (Approved PTI) No. RSWL019994 issued by the Ohio Environmental Protection Agency (Ohio EPA), which includes a Final Closure/Post-Closure Plan (Approved Closure Plan) in Appendix C9-C. CHLF is a Coal Combustion Residuals (CCR) Unit by definition of the United States Environmental Protection Agency (USEPA) CCR Rule which has been published in the Federal Register (FR) on April 17, 2015 and is an extension of the current Code of Federal Rules (CFR) Title 40, Part 257 (§257).

This CCR Post-Closure Plan has been prepared for DP&L to demonstrate that the CHLF meets or exceeds the requirements for a written post-closure plan as defined in §257.104(d) *written post-closure plan*. Civil & Environmental Consultants, Inc. (CEC) has been contracted by DP&L to provide a qualified Professional Engineer to certify compliance with the written post-closure plan requirements.

This CCR Post-Closure Plan has been developed based upon information provided by DP&L and describes the CHLF, closure design, schedule for closure and post-closure, and steps required to amend the CCR Post-Closure Plan in the future if necessary. CHLF will be closed leaving CCR's in-place and a final cover system will be installed in accordance with the Approved Closure Plan. Subsequent to closure, the post-closure activities will also be completed in accordance with the Approved Closure Plan. The subject CCR Rule is provided below in italicized text followed by DP&L's description of compliance with the rule.

§257.104(c)(1): Post-closure care period. (1) Except as provided by paragraph (c)(2) of this section, the owner or operator of the CCR unit must conduct post-closure care for 30 years.

§257.104(c)(2): 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, 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.

DP&L will extend the post-closure care activities defined in the Approved Closure Plan from 15 years to 30 years following completion of closure activities at CHLF to meet §257.104(c). In the event that the CHLF is operating under groundwater assessment monitoring at the end of the 30 year period, post-closure care activities will continue to be implemented beyond the 30 year timeframe until the groundwater monitoring program returns to detection monitoring in accordance with §257.95.

§257.104(d)(1)(i): A description of the monitoring and maintenance activities required in paragraph (b) of this section for the CCR unit, and the frequency at which these activities will be performed.

§257.104(b): Post-closure care maintenance requirements. Following closure of the CCR unit, the owner or operator must conduct post-closure care for the CCR unit, which must consist of at least the following:

§257.104(b)(1): 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, subsidence, erosion, or other events, and preventing run-on and run-off from eroding or otherwise damaging the final cover;

§257.104(b)(2): If the CCR unit is subject to the design criteria under §257.70, maintaining the integrity and effectiveness of the leachate collection and removal system and operating the leachate collection and removal system in accordance with the requirements of § 257.70; and,

§257.104(b)(3): Maintaining the groundwater monitoring system and monitoring the groundwater in accordance with the requirements of §257.90 through §257.98.

As specified in the Approved Closure Plan, post-closure activities will be comprised of continuing operation, maintenance and repair of the following systems at CHLF:

- Final cover system;
- Leachate management system;
- Surface water management system; and,
- Groundwater monitoring system.

These systems will be monitored as part of a regular quarterly inspection program throughout the first 15-year time frame of the post-closure care period for compliance with the Approved Closure Plan. System inspections will be completed annually from year 16 to year 30 in accordance with §257.104(c).

Descriptions of the CHLF post-closure care systems, associated activities and reporting are described below:

Final Cover System:

The final cover system, as defined in the Approved Closure Plan, consists of a recompacted soil barrier (RSB), frost protection layer and vegetative cover. The cover system will be inspected regularly as part of the CHLF post-closure inspection program. Corrective measures and/or repairs are required if inspections reveal deficiencies such as erosion, non-vegetated areas, seepage, woody growth, sloughing, instability, damage, stormwater ponding on the final cover system, animal burrows, and overall integrity of the cover system. Noted deficiencies shall be repaired as necessary to re-establish the design function and structural integrity of the final cover system, meeting the requirements defined in the Approved Closure Plan and CQA/QC Plan.

Leachate Management System:

The CHLF leachate management system described in the Approved Closure Plan will be operated and maintained to collect and remove leachate from the landfill during the post-closure period. In accordance with §257.70, the leachate management system will be operated to maintain less than a 30 centimeter depth of leachate on the RSB and minimize clogging during the post-closure care period. The RSB is constructed with adequate slope and the leachate collection system components are sized, designed and constructed to account for potential settlement and flow volumes to maintain positive drainage to the Leachate Pond and J.M. Stuart Station treatment without exceeding the maximum 30 centimeters of leachate liquid depth on the RSB. To minimize clogging, the leachate collection and transmission pipes include cleanout access. The cleanouts provide access to the perforated leachate collection pipes and solid transmission pipes to allow for periodic removal of sediment using a high pressure water jet cleaning device.

The leachate management system will be inspected regularly as part of the CHLF post-closure inspection program. Components of the CHLF leachate management system that will be inspected include: structural integrity of the Leachate Pond, operation of the Leachate Pond (i.e., inlet and outlet flows, sediment accumulation, leachate levels, etc.), cleanout/valve vault access, and transmission piping/valves. Noted operational deficiencies or maintenance requirements shall be addressed and/or repaired as necessary to re-establish the design function and structural

integrity of the leachate management system, meeting the requirements defined in the Approved Closure Plan and CQA/QC Plan.

Surface Water Management System:

The CHLF surface water management system described in the Approved Closure Plan includes surface water diversion berms, collection channels, culverts, perimeter channels and stormwater ponds. These drainage structures will be inspected regularly as part of the CHLF post-closure inspection program. Corrective measures and/or repairs are required if inspections reveal deficiencies such as primary/emergency spillway damage, culvert damage, instability of interior or exterior pond slopes, skimmer malfunction, settlement or erosion of channel linings, displacement of rip-rap, or silting of the structures. During the post-closure period, accumulated silt will be removed from the sedimentation ponds on an as-needed basis to comply with NPDES Permit limits.

Groundwater Monitoring System:

The CHLF groundwater monitoring system (GMS) is described in the Approved PTI, Appendix C9-A Groundwater Monitoring Plan. The CHLF GMS consists of monitoring wells installed in weathered and competent bedrock units which meet the performance standards in §257.91 *groundwater monitoring systems*. Certification of the GMS as required by §257.91 and the Groundwater Sampling and Analysis Plan (GSAP) as required by §257.93 *groundwater sampling and analysis requirements* are addressed under separate covers. These documents shall be reviewed for applicability and additional information during the post-closure care period.

Collection of background groundwater quality data from the CHLF GMS began in September 2016 and will be completed in October 2017. Semi-annual groundwater detection sampling under §257.94 *detection monitoring program* will begin in April 2018 and will continue through completion of the post-closure care period. For each groundwater detection monitoring event, the detection samples will be analyzed, statistically evaluated, and reported in accordance with the GSAP and §257.94. If a significant statistical increase (SSI) over background groundwater quality data has been confirmed and due to a release from the landfill, then a groundwater assessment that complies with the GSAP and §257.95 *assessment monitoring program* shall be completed. Assessment monitoring may result in the return to detection monitoring or may require compliance with §257.96 *assessment of corrective measures*, §257.97 *selection of remedy*, and §257.98 *implementation of corrective action program*. The post-closure care period will require extension if CHLF is following compliance with §257.95 through §257.98 at the end of the 30-year post-closure period.

As part of the semi-annual detection monitoring program completed during the post-closure period, each groundwater monitoring well will be inspected for cracks in the concrete pad, frost

heave, and damage or vandalism to the protective steel casing or inner well riser pipe or cap. Any identified damage or deficiency in the integrity of the monitoring wells or components shall be repaired to maintain the integrity of the system.

Reporting:

An annual report will be completed no later than the first day of April each year during the post-closure period in accordance with the Approved Closure Plan. The annual report will include at a minimum the following information:

- A summary of CHLF inspection reports;
- An evaluation of the groundwater water flow directions and the adequacy of monitoring well locations comprising the CHLF GMS;
- A summary of the quantity of leachate collected for treatment and disposal on a monthly basis during the year, and the location of leachate treatment and/or disposal;
- Results of analytical testing of an annual grab sample of leachate; and
- The most recent updated post-closure cost estimate adjusted for inflation.

Records and reports generated by post-closure activities will be kept in the Operating Record for the duration of the post-closure period.

§257.104(d)(1)(ii): The name, address, telephone number, and email address of the person or office to contact about the facility during the post-closure care period.

Name: Craig Spangler
Address: P.O. Box 468, Aberdeen, OH 45101
Telephone Number: 937-549-2641
Email Address: Craig.spangler@aes.com

§257.104(d)(1)(iii): A description of the planned uses of the property during the post-closure period. Post-closure use of the property shall not disturb the integrity of the final cover, liner(s), or any other component of the containment system, or the function of the monitoring systems unless necessary to comply with the requirements in this subpart. Any other disturbance is allowed if the owner or operator of the CCR unit demonstrates that disturbance of the final cover, liner, or other component of the containment system, including any removal of CCR, will not increase the potential threat to human health or the environment. The demonstration must be certified by a qualified professional engineer, and notification shall be provided to the State Director that the demonstration

has been placed in the operating record and on the owners or operator's publicly accessible Internet site.

After closure of CHLF, DP&L intends to maintain the property as part of the industrialized site with no public access. DP&L has no planned uses for the property during the post-closure period at this time. As such, post-closure use of the property shall not disturb the integrity of the final cover system. DP&L will amend this CCR Post-Closure Plan at the appropriate time if the planned use of the property changes.

*§257.104(d)(2): Deadline to prepare the initial written post-closure plan
Existing CCR landfills and existing CCR surface landfills. No later than October 17, 2016, the owner or operator of the CCR unit must prepare an initial written post-closure plan consistent with the requirements specified in paragraph (d)(1) of this section.*

This CCR Post-Closure Plan serves as the initial written post-closure plan for CHLF meeting the requirement of an existing CCR landfill.

*§257.104(d)(3): Amendment of a written post-closure plan.
The owner or operator may amend the initial or any subsequent written post-closure plan developed pursuant to paragraph (d)(1) of this section at any time.*

The owner or operator must amend the written closure plan whenever:

- (A) There is a change in the operation of the CCR unit that would substantially affect the written post-closure plan in effect; or,*
- (B) After post-closure activities have commenced, unanticipated events necessitate a revision of the written post-closure plan.*

The owner or operator must amend the written post-closure plan at least 60 days prior to a planned change in the operation of the facility or CCR unit, or no later than 60 days after an unanticipated event requires the need to revise an existing written post-closure plan. If a written post-closure plan is revised after post-closure activities have commenced for a CCR unit, the owner or operator must amend the written post-closure plan no later than 30 days following the triggering event.

This CCR Post-Closure Plan will be amended appropriately when there is a significant change in operation of CHLF that would substantially affect the post-closure plan or when unanticipated events necessitate a revision of the plan either before or after post-closure activities have commenced in accordance with §257.104(d)(3).

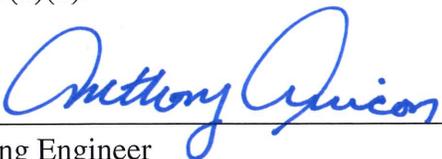
Any amendments to the plan will include written certification from a qualified Professional Engineer that the amendments to this CCR Post-Closure Plan meet the requirements of §257.104.

A record of amendments to the CCR Post-Closure Plan will be tracked below. The latest version of the CCR Post-Closure Plan will be noted on the front cover of the plan.

Version	Date	Description of Changes Made
1	October 14, 2016	Initial Issue

§257.104(d)(4): The owner or operator of the CCR unit must obtain a written certification from a qualified professional engineer that the initial and any amendment of the written post-closure plan meets the requirements of this section.

I certify that this initial written CCR Post-Closure Plan for the DP&L Carter Hollow Landfill at the J.M. Stuart Electric Generating Station meets the USEPA's Final CCR Rule requirements of §257.104(d)(1).

Signed: 
Consulting Engineer

Print Name: Anthony P. Amicon
Ohio License No.: E-58805
Title: Principal
Company: Civil & Environmental Consultants, Inc.

Professional Engineer's Seal:

