To: Coal Combustion Residual's (CCR) Rule Compliance Data and Information File

From: Tony Sedlacek, Fremont Department of Utilities

Date: October 16, 2016

Subject: Closure and Post-Closure for CCR landfills (40 CFR part 257.102 and 257.104))

The final rule to regulate the disposal of coal combustion residuals (CCR) as solid waste under subtitle D of the Resource Conservation and Recovery Act (RCRA) was published in the Federal Register, Volume 80, NO. 74 on Friday, April 17, 2015 (CCR Rule). This final rule was effective on October 14, 2015 and is self-implementing. It is understood that the Fossil Fuel Combustion Ash (FFCA) Monofill owned and operated by the City of Fremont's Department of Utilities (FDU) and authorized by the Nebraska Department of Environmental Quality (NDEQ) under Nebraska Solid Waste Permit No. NE0203777 will be regulated under this new rule as a CCR Landfill, by definition. CCR Landfills are collectively regulated by reference as "CCR Units."

Under the new CCR Rile, run-on and run-off controls for landfills must meet the requirements under 257.81, in summary, as follows:

1. The owner or operator of an existing or new CCR landfill or any lateral expansion or a CCR landfill must design, construct, operate and maintain:

    a. A run-on control system to prevent flow control the active portion of the CCR unit during the peak discharge from a 24-hour, 25-year storm; and

    b. A run-off control system from the active portion of the CCR unit to collect and control at least the water volume resulting from a resulting a 24-hour, 25-hour storm.

    c. Run-off from the active portion of the CCR unit must be handled in accordance with the surface water requirements under 257.3.

2. Run-on and Run-off control system plan; initial plan and revisions to the plan.

    To demonstrate compliance with the CCR, the owner or operator must prepare an initial and perform periodic review and revisions to the plan every five years or any time changes substantially affect the plan.

The CCR rule requirements imposed by the new rule and referenced above have been met by Fremont Department of Utilities through the NDEQ FFCA permitting process. The permit is renewed every five years and the most recent was issued by NDEQ effective July 16, 2016 (NE0203777). A permit renewal application will be reviewed and submitted to the permitting authority no less than 180-days prior to expiration. Any necessary changes to the already approved run-on and run-off system will be amended as needed.

Applicable excerpts pertaining to run-on and run-off controls from FDU's CCR Unit permit are attached to this memo. The permit application containing these requirements has been reviewed and certified by a Nebraska Certified Professional Engineer and approved by NDEQ.

Run-on and Run-off

(References herein are to the Permit Application approved by NDEQ and affective July 16, 2016)

The Monofill's containment berms provide a physical diversion barrier precluding storm water run-on. The elevation of the containment berms is 1,182 feet above mean sea level ("amsl"), and the highest recorded surface water elevation at the Power Plant is below 1,178 feet amsl.

During ash disposal operations and prior to overall ash disposal grades reaching the top of the containment berms, a portion of the storm water run-off from active disposal areas will be collected in the leachate collection system and pumped to the leachate retention pond. Storm water that has ponded above the ash and has not infiltrated into the leachate collection system will be pumped or drained into the leachate retention pond.

During Phase 1 operations, the western portion of storm water run-off will be diverted to the liner transition berm between Phases 1 and 2. This area has adequate storage capacity to retain a 25-year, 24-hour storm event. Accumulated storm water retained by the liner transition berm will be pumped into the leachate retention pond.

When ash elevations in the Phase(s) near the containment berm's elevation (i.e., 1182 feet amsl), a drainage ditch within the perimeter of the Monofill will be constructed at the edge of the ash to prevent storm water run-off. When necessary, construction of the flat bottom ditch along the containment berm as illustrated in Appendix A, Figure 3 will begin. Figure 3 illustrates the grading and elevations to be maintained for the Phase 1 ditch to direct storm water run-off to the broad-crested weir.

When the ditch is constructed, the 8 inches of crushed rock and protective cover soil in the weir should be removed to drop the weir crest elevation to 1180.83, and the weir can be graded to maintain the one foot drop to the leachate retention pond. The grade of the ditch will be maintained to prevent ponding.

Water from the Monofill perimeter drainage ditch will be pumped or drained to the leachate retention pond. The drainage ditch diverts storm water run-off to the south and west ends of the Phase 1 Monofill and the east end of the Phase 2 Monofill. A portion of the storm water will be pumped and/or drained (using broad-crested weirs) into the leachate retention pond. The capacity of the drainage ditches, storm water pumps, and broad-crested weirs for storm water management were calculated based on a peak discharge from a 25-year storm. The profile and slope of the broad-crested weirs will be checked against the original drawings when ash has reached an elevation above the containment berms (i.e., elevation 1182 feet amsl) that will cause storm water to drain to the weirs (see Appendix A, Figure 3 for Phase 1 drainage). The Phase 1 perimeter ditch will be graded to drain towards the transition area and the broad-crested weir. Broad-crested weirs will be modified as necessary to permit drainage to the leachate retention pond.

The final cover for Phases 1 and 2 will be graded to minimize infiltration and erosion of cover material. As illustrated in Drawing C-2, the final cover for Phase 1 will be graded with an approximate 7 percent slope from the top of the Phase down to the crest of the containment berm along the north side of the Phase. The final cover will be graded with an approximate 2 percent slope on the south side of the Phase. As shown in Drawing C-3, the final cover for Phase 2 will be similarly graded. Graded slopes are specified to promote consistent surface water run-off without excessive erosion. Re-grading will occur as required during construction and after completion to avoid ponding and to maintain cover material integrity.

Storm Water Management

(References herein are to the Permit Application approved by NDEQ and affective July 16, 2016)

The Monofill's containment berms will protect against storm water run-on. The elevation of the containment berms is 1,182 feet amsl, and the highest recorded surface water elevation at the Power Plant is below 1,178 feet amsl.

During ash disposal operations and prior to overall ash disposal grades reaching the top of the containment berms, a portion of the storm water run-off from active disposal areas will be collected in the leachate collection system and pumped to the leachate retention pond. The Leachate Management Plan (Appendix E) describes leachate management. Storm water that has ponded above the ash and has not infiltrated into the leachate collection system will be pumped or drained into the leachate retention pond.

When ash elevations in the Phase(s) near the containment berms elevation (i.e., 1182 feet amsl), a flat-bottom drainage ditch along the containment berm within the perimeter of the Monofill will be constructed at the edge of the ash to prevent storm water run-off, as illustrated in Figure 3. Figure 3 shows the grading and elevations to be maintained for the Phase 1 ditch to direct storm water run-off to the broad-crested weir. When the ditch is constructed, the 8 inches of crushed rock and protective cover soil in the weir should be removed to drop the weir crest elevation to 1180.83 amsl, maintaining the one foot drop to the leachate retention pond. Grading of the ditch will be maintained to prevent ponding. The soil slope will be maintained every spring to prevent growth of unwanted vegetation and maintain a suitable grass cover; spot treatment will be provided as needed. During Phase 1 operations, the western portion of storm water run-off will be diverted to the liner transition berm between Phases 1 and 2. This area will have adequate storage capacity to retain a 25-year, 24 -hour storm event. Accumulated storm water retained by the liner transition berm will be pumped into the leachate retention pond. Appendix O provides calculations supporting this design.

Water from the Monofill perimeter drainage ditch will be pumped or drained to the leachate retention pond. The drainage ditch will divert storm water run-off to the south and west ends of Phase 1 and the east end of Phase 2. A portion of the storm water will be pumped and/or drained (using broad-crested weirs) into the leachate retention pond. The capacity of the drainage ditches, storm water pumps, and broad-crested weirs for storm water management were calculated based on a peak discharge from a 25-year storm (see the Calculations in Appendix O). The profile and slope of the broad-crested weirs will be checked against the original drawings when ash has reached an elevation above the containment berms (i.e., elevation 1182 feet amsl) that will cause storm water to drain to the weirs (see Figure 3 for Phase 1 drainage). The Phase 1 perimeter ditch will be graded to drain towards the transition area and the broad-crested weir. The broad-crested weirs will be modified if necessary to permit drainage to the leachate retention pond.

The final cover for Phases 1 and 2 will be graded to minimize infiltration and erosion of cover material. As shown in Drawing C-2, the final cover for Phase 1 will be graded with an approximate 7 percent slope from the top of the phase down to the crest of the containment berm along the north side of the phase. The final cover will be graded with an approximate 2 percent slope on the south side of the phase. As shown in Drawing C-3, the final cover for Phase 2 will be similarly graded. These slopes will promote rapid surface water run-off without excessive erosion, as discussed in Section A.13, Unstable Areas.

Regrading will be provided as required during construction and after completion to avoid ponding of precipitation and to maintain cover material integrity.

PERMIT RENEWAL APPLICATION FOR FOSSIL FUEL COMBUSTION ASH DISPOSAL AREA

FREMONT DEPARTMENT OF UTILITIES FOSSIL FUEL COMBUSTION ASH DISPOSAL SITE

Submittal Date: January 15, 2016

PREPARED FOR:
Fremont Department of Utilities
400 East Military
Fremont, Nebraska 68026

PREPARED BY:
Tetra Tech, Inc.
6307 Center Street, Suite 210
Omaha, Nebraska 68106

1-15-2016
DATE

Scott Schmoker, P.E.