City Water, Light & Power
Ash Impoundments
Springfield, Sangamon County, Illinois

Liner Status Report for Coal Combustion Residuals Surface Impoundments

October 2016

Prepared for:
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1. INTRODUCTION

City Water, Light and Power (CWLP) ash ponds are coal combustion residuals (CCR) surface impoundments, which include both the Lakeside and Dallman ash ponds. A review of the construction history for the CCR surface impoundments was conducted as required by 40 CFR Part 257.71:

> *257.71 (a)(1) No later than October 17, 2016, the owner or operator of an existing CCR surface impoundment must document whether or not such unit was constructed with any one of the following:*
> *(i) A liner consisting of a minimum of two feet of compacted soil with a hydraulic conductivity of no more than 1×10^{-7} cm/sec;*
> *(ii) A composite liner that meets the requirements of § 257.70(b); or*
> *(iii) An alternative composite liner that meets the requirements of § 257.70(c)*

Andrews Engineering, Inc. (AEI) performed the review of information, which included the following documents:

- Coal Ash Impoundment Site Assessment Final Report (May 2011)
- Historical Aerial Photographs (April 1995 – March 2014)
- Engineering Report: Proposed Embankment Modification; CWLP Ash Disposal Area (July 1987)
- Construction Grading Plan for the Dallman Ash Pond (August 1976)

2. CCR UNIT INFORMATION

Both the Lakeside Ash Pond and the Dallman Ash Pond are owned and operated by CWLP. The ponds are operated under National Pollutant Discharge Elimination System (NPDES) Permit Number IL0024767.

The Lakeside Ash Pond is primarily a diked embankment with some incising along the east perimeter and was placed into service prior to 1958. The Lakeside Ash Pond ceased receiving ash in 2009. It has been divided into four separate ponds, three lime softening ponds and the settling pond consisting of approximately 35.0 acres in total.

The second impoundment, the Dallman Ash Pond, which is a diked embankment, was placed into service in approximately 1976 and is approximately 34.5 acres. Fly ash and bottom ash are sluiced to the Dallman Ash Pond with raw lake water.

Pursuant to the aforementioned NPDES permit, settled water from both the Dallman Ash Pond and Lakeside Ash Pond flow into opposite sides of a Clarification Pond before being discharged to Sugar Creek at Outfall 004.

3. CONSTRUCTION

The Sugar Creek historically meandered across the site, generally from the south to the north. During the construction of the ash ponds, the creek was abandoned and relocated to the west of the site. The old creek bed was filled with different types of soil, ranging from cohesive soils

characterized as silty clays, to granular fill characterized as poorly graded silty to clayey sands. Most of the soil analysis was performed during hydrogeological investigations performed for the east adjacent CCR landfill.

The cohesive soils of the creek fill were tested and exhibited a range of hydraulic conductivity from 7.6 x 10^{-8} cm/sec to 2.1 x 10^{-5} cm/sec. The upper layer of soil at the site consists of mainly brown, light brown, and brownish-gray silty clays and clayey silts having soft to stiff consistency. This includes all eolian soils (loess) deposited near the surface, isolated pockets and lenses of fine grained silty to clayey sand at some locations and alluvial silts and silty clays. Recompacted silty clay samples from the native soils have exhibited permeability values between 1 x 10^{-7} to 1 x 10^{-9} cm/sec. The in-place creek sediment's soils permeability typically range from 1 x 10^{-6} to 1 x 10^{-8} cm/sec.

4. LINER STATUS

Both the Lakeside Ash Pond and the Dallman Ash pond were built on top of in-place clayey soils. While the vertical hydraulic conductivity is generally low, soils were not compacted beneath the impoundments except for sections where the dikes of the Dallman Ash Pond were built atop the existing creek bed. No composite liner or alternate composite liner as specified in 40 CFR Part 257.70 (b) or 40 CFR Part 257.70 (c)(1), was used to line the bottom of either ash pond.

5. STATEMENT

This Liner Status Report for Coal Combustion Residuals Surface Impoundments was completed for CWLP by Andrews Engineering, Inc. in accordance with the requirements under 40 CFR Part 257.71.

Paul M. Van Metre, P.E.

10-13-2016
Date