

Sikeston Board of Municipal Utilities
Sikeston Power Station
Clay Liner Evaluation
Federal CCR Rule Record Document for Compliance with
40 CFR 257.107(f)(3)

On behalf of the Sikeston Board of Municipal Utilities, Sikeston Power Station (SPS), GREDELL Engineering Resources, Inc. conducted a limited evaluation of the existing clay liner for SPS' Bottom Ash Pond, a coal combustion residual (CCR) surface impoundment. A clay liner evaluation is required by the United States Code of Federal Regulations, Chapter 40, and Part 257 – Criteria for Classification of Solid Waste Disposal Facilities and Practices, Subpart D – Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments (the Federal CCR Rule – Section 71(a)). This section of the Federal CCR Rule is provided below for reference.

§257.71 Liner Design Criteria for Existing CCR Surface Impoundments

(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).*

(a)(2) The hydraulic conductivity of the compacted soil must be determined using recognized and generally accepted methods.

(a)(3) An existing CCR surface impoundment is considered to be an existing unlined CCR surface impoundment if either:

- (i) The owner or operator of the CCR unit determines that the CCR unit is not constructed with a liner that meets the requirements of paragraphs (a)(1)(i), (ii), or (iii) of this section; or*
- (ii) The owner or operator of the CCR unit fails to document whether the CCR unit was constructed with a liner that meets the requirements of paragraphs (a)(1)(i), (ii), or (iii) of this section.*

(a)(4) All existing unlined CCR surface impoundments are subject to the requirements of §257.101(a).

Clay Liner Evaluation

Field work for the limited evaluation of the clay liner was conducted on July 26 and 27, 2016 for the Bottom Ash Pond, which is located directly south of SPS's coal pile and inactive Fly Ash Pond. Test pits were excavated at six separate locations along the side slopes of the impoundment at the approximate current water level and representative, undisturbed samples of the clay liner soils were obtained using Shelby tubes. The representative soil samples (in the Shelby tubes) were submitted to a qualified geotechnical laboratory for hydraulic conductivity analysis using ASTM Method D5084. All samples were extracted from the Shelby tubes by the laboratory, a general log was created, the length of the clay soil component was measured, and the general engineering characteristics of the clay soil samples were determined. One of the samples was found to include clay soils that met the minimum thickness criteria of 2.0 feet (24 inches). Initially, only three of the samples were analyzed for hydraulic conductivity. Of the three samples tested, two met the regulatory criteria specified under 40 CFR 257.71(a)(1)(i).

Based on these results, Gredell Engineering Resources, Inc. concludes that the Bottom Ash Pond clay liner system does not, in all instances, meet the criteria of 40 CFR 257.71(a)(1)(i). Therefore the provisions of 40 CFR 257(a)(3)(ii) are applicable. SBMU chose not to complete additional sampling and laboratory testing at this time.

Professional Engineer's Certification

40 CFR 257.71 Liner Design Criteria for Existing CCR Surface Impoundments

I, Thomas R. Gredell, P.E., a professional engineer licensed in the State of Missouri, hereby certify in accordance with 40 CFR 257.71(b) that the determination regarding whether the Sikeston Board of Municipal Utilities, Sikeston Power Station, Bottom Ash Pond meets the requirements of 40 CFR 257.71(a)(3)(ii) as found in federal regulation 40 CFR 257, Subpart D – Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments. In addition, the determination was made using recognized and generally accepted methods.

Name: Thomas R. Gredell, P.E.

Signature: *Thomas R. Gredell*

Date: 10-17-2016

Registration Number: PE-021137
State of Registration: Missouri

