

Sikeston Board of Municipal Utilities  
Sikeston Power Station  
Most Appropriate Method of Statistical Analysis Recommendation  
Federal CCR Rule Record Document  
for Compliance with 40 CFR 257.93(f)

The selection of a statistical method used to evaluate groundwater monitoring data for each specified constituent is required by the United States Code of Federal Regulations (CFR), 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 (CCR) in Landfills and Surface Impoundments (the Federal CCR Rule – Section 93(f)). The first paragraph of this section of the Federal CCR Rule is provided below for reference.

**§257.93 Groundwater sampling and analysis requirements.**

*(f) The owner or operator of the CCR unit must select one of the statistical methods specified in paragraphs (f)(1) through (5) of this section to be used in evaluating groundwater monitoring data for each specified constituent. The statistical test chosen shall be conducted separately for each constituent in each monitoring well.*

On behalf of the Sikeston Board of Municipal Utilities, Sikeston Power Station (SPS), GREDELL Engineering Resources, Inc. recommends that the following statistical method be used for the evaluation of groundwater monitoring data for each specified constituent. Based on our review of Sanitas<sup>1</sup> generated time series, box & whisker, histogram, and probability plots; outlier identification and removal; trend analysis; and Analysis of Variance (ANOVA) testing of the upgradient wells, we recommend that intrawell analysis using prediction limits be conducted separately for each constituent in each monitoring well in accordance with 40 CFR 257.93(f)(3). This section of the Federal CCR Rule is provided below for reference.

**§257.93 Groundwater sampling and analysis requirements.**

*(f)(3) A tolerance or prediction interval procedure, in which an interval for each constituent is established from the distribution of the background data and the level of each constituent in each compliance well is compared to the upper tolerance or prediction limit.*

It is also recommended that this statistical method comply with the applicable performance standards in 40 CFR 257.93(g).

Footnote

<sup>1</sup> Sanitas Statistical Software, © 1992-2017 SANITAS TECHNOLOGIES, Alamosa Colorado 81101-0012.

**Professional Engineer's Certification**

§ 257.93(f)(6) Certification of selected statistical method

I, Thomas R. Gredell, P.E., a professional engineer licensed in the State of Missouri, hereby certify in accordance with 40 CFR 257.93(f)(6) that the statistical method is appropriate of evaluating the groundwater monitoring data for the Sikeston Board of Municipal Utilities, Sikeston Power Station, Bottom Ash Pond. Intrawell analysis using prediction limits conducted separately for each constituent in each monitoring well in accordance with 40 CFR 257.93(f)(3) meets the requirements of 40 CFR 257.93(f) 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: 

Date: 10-16-2017

Registration Number: PE-021137  
State of Registration: Missouri

