

St. Charles Co (54)
Ameren mo Sioux Power Plant
Utility Waste Land Fill

LEO Exhibit No. 358
Date 4/1/14 Reporter SB
File No. EA-2012-0281



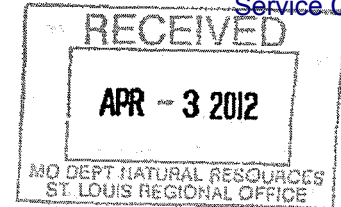
Jeremiah W. (Jay) Nixon, Governor • Sara Parker Pauley, Director

DEPARTMENT OF NATURAL RESOURCES

www.dnr.mo.gov

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April 8, 2014
Data Center
Missouri Public
Service Commission



Mr. Paul Pike
Ameren Services
One Ameren Plaza
1901 Chouteau Avenue, P.O. Box 66149
St. Louis, MO 63166-6149

RE: Review of Background Groundwater Data and the Semi-Annual Groundwater Monitoring Reports for 2011, Ameren Missouri Sioux Power Plant Utility Waste Landfill, Permit Number 0918301, St. Charles County

Dear Mr. Pike:

The Solid Waste Management Program (SWMP) has conducted a review of the electronic groundwater monitoring data and reporting submitted for the background data and the semi-annual groundwater monitoring reports for the calendar year of 2011. The groundwater data review includes our evaluation of the following documents:

1. "AmerenUE Sioux Plant Utility Waste Landfill – First Quarter 2011 Groundwater Monitoring Event", prepared by Gredell Engineering Resources, Inc., and received by the SWMP on January 27, 2012.
2. "Ameren Missouri Sioux Energy Center Utility Waste Landfill St. Charles County, Solid Waste Construction Permit No. 0918301, Initial Background and Semi-Annual Report" prepared by Ameren, and received by the SWMP on October 27, 2011.
3. "Ameren Missouri Sioux Plant Utility Waste Landfill – Semi-Annual May 2011 Groundwater Monitoring Event", prepared by Gredell Engineering Resources, Inc., and received by the SWMP on January 27, 2012.
4. "Ameren Missouri Sioux Energy Center Utility Waste Facility 2011 Groundwater Analytical Data and Field Sampling Logs", prepared by Ameren, and received by the SWMP on January 27, 2012.
5. "Ameren Missouri Sioux Energy Center Utility Waste Landfill Addendum to 1st and 2nd Semi-Annual Report-2011", prepared by Ameren, and received by the SWMP on February 1, 2012.

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6. "Ameren Missouri Sioux Energy Center Utility Waste Landfill St. Charles County, Solid Waste Construction Permit No. 0918301, 2nd Semi-Annual Report - 2011" prepared by Ameren, and received by the SWMP on February 2, 2012.

The Ameren Missouri Sioux Utility Waste Landfill is approved to use intrawell statistical analysis, and has completed the calendar year of 2011 semi-annual groundwater monitoring reporting. The SWMP has the following comments that pertain to our review and data evaluation of the above-mentioned reports.

COMMENTS:

1. Please only submit data qualifiers that are indicated in the groundwater monitoring worksheet instructions that can be found at:
<http://www.dnr.mo.gov/env/swmp/gdwtrsub.htm>. In the data submittals there were reported qualifiers S and SU that were defined in the lab report as being a spike recovery outside of recovery limits. Prior to submitting the data, please evaluate qualifiers that are not an approved qualifier and determine if the result is a valid detected result that can be used in the statistical analysis. If it is determined that the data will be used in the statistical analysis then submit the data without a qualifier; if it is not determined that the data should be used in the statistical analysis then submit the data with a non-detect qualifier.
2. The Monitoring Well Field Inspection forms recorded that some of the wells have damaged weep holes and are buried beneath the pad. Please elaborate on the damage of the weep holes that are buried beneath the pad and ensure that the construction and the development of the monitoring wells meet all of the requirements of 10 CSR 23-4.
3. In future semi-annual groundwater monitoring report submittals, please duplex all pages and bind the reports either in a three ring binder or with a plastic binding. The SWMP prefers that the entire semi-annual sampling data and reporting, including the laboratory analytical data, sampling field logs and the statistical analysis be compiled into one report. If all of the reports cannot be compiled into one single semi-annual report, please provide a cover letter for each individual report that distinguishes the month and year of the sampling event.
4. In the May 2010 sampling event all of the monitoring wells resulted in a high concentration of chemical oxygen demand. Enclosed with this letter are multiple time series plots of all of the monitoring wells' results for chemical oxygen demand. The SWMP recommends that these spiked data results be flagged and not included in future statistical analysis calculations.

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5. The SWMP notes that there are increasing chloride trends in DG-4, DG-5, and DG-6, and increasing sodium trends in DG-4. Enclosed with this letter are time series graphs that show these trends.
6. The SWMP notes that there was an increase in pH in all of the monitoring wells in the November 2011 sampling event. On the field instrumentation calibration log it was reported that: "Lined-out pH readings were out of calibration range. Restarted 3-pt. calibration." The SWMP suspects that the pH meter becoming un-calibrated may have contributed to the increase pH readings in the November 2011 sampling event.
7. The arsenic concentration in DG-12 has exceeded the Federal Maximum Contaminant Level of 10 µg/L in several of the background sampling events and the 2011 semi-annual monitoring events. The SWMP considers this an area of concern (AOC) and will continue to monitor the arsenic concentration in this compliance well. Enclosed is a graph that depicts this AOC in DG-12.
8. To reduce the sediment in the groundwater samples in DG-12, the SWMP recommends that the sampler lower the purge rate to 500 mL/min. By reducing the sediment in the groundwater sample it may lower the arsenic concentration in the groundwater. The field sampling log reports that DG-12 is the only compliance well that is reported having a negative Redox/Oxidation Potential, indicating that there are reducing conditions.

The SWMP generally concurs with the statistical analysis that was prepared by the facility for the 2011 semi-annual monitoring events. If you have any questions regarding these comments, please contact Ms. Connie Rozycki of my staff at (573) 526-3940 or P.O. or Box 176 Jefferson City, Missouri 65102-0176.

Sincerely,

SOLID WASTE MANAGEMENT PROGRAM

Charlene S. Fitch

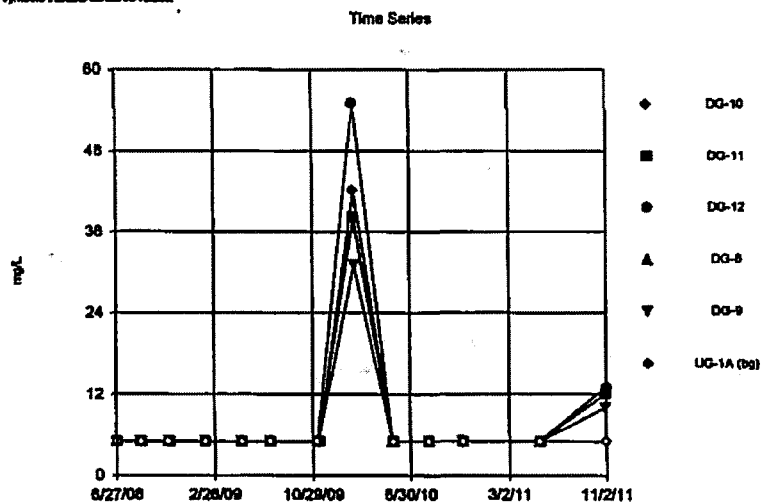
Charlene S. Fitch, P.E.
Chief, Engineering Section

CSF:crl

Enclosure

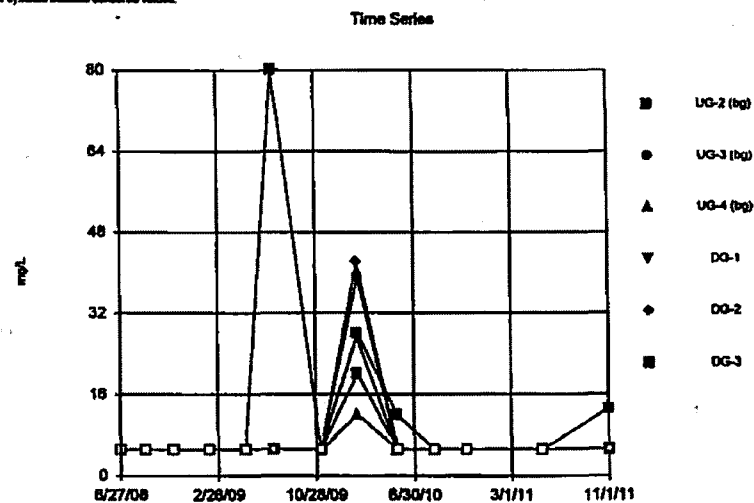
c: Mr. Thomas Gredell, Gredell Engineering Resources, Inc. w/ enclosure
St. Louis Regional Office w/ enclosure

v.8.2.10 For regulatory purposes only. UG
Hollow symbols indicate censored values.



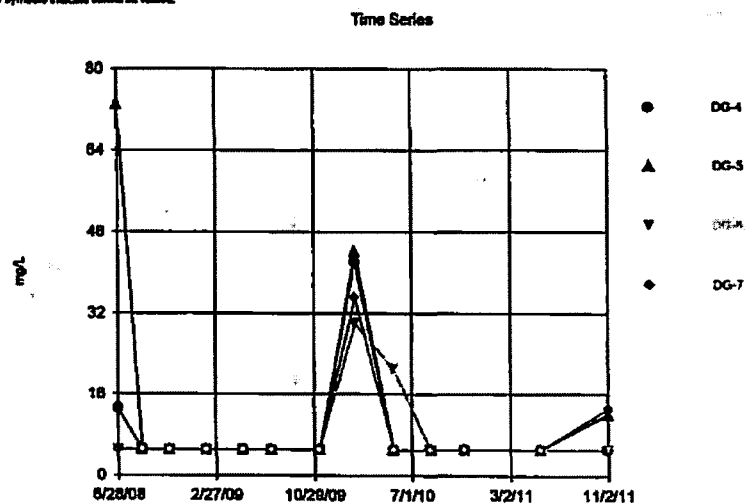
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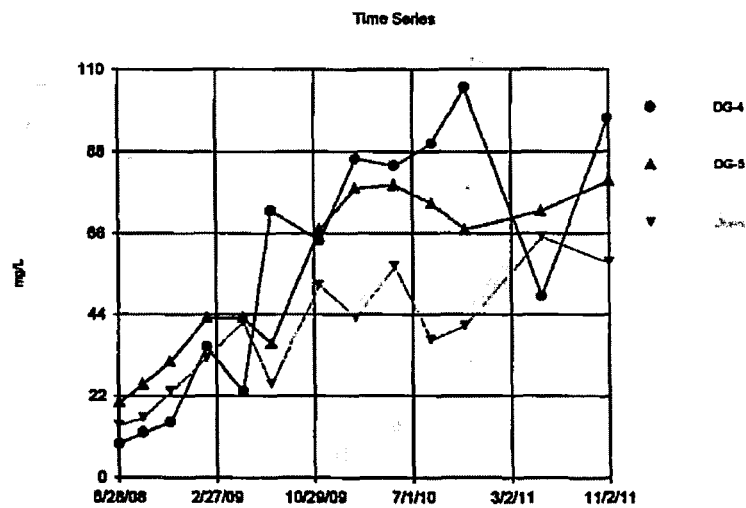


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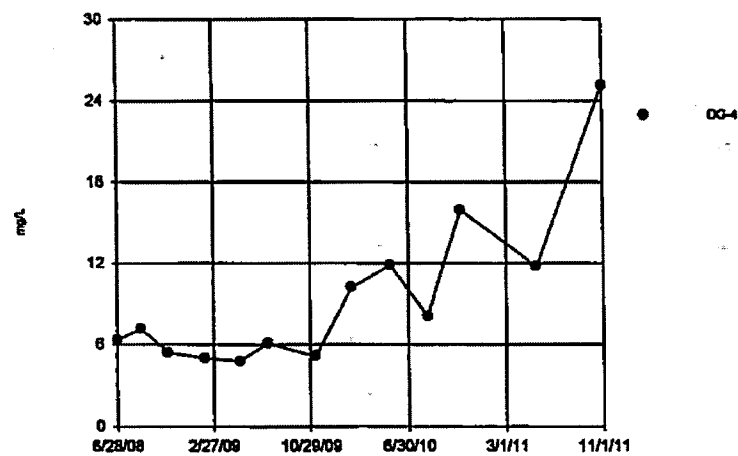
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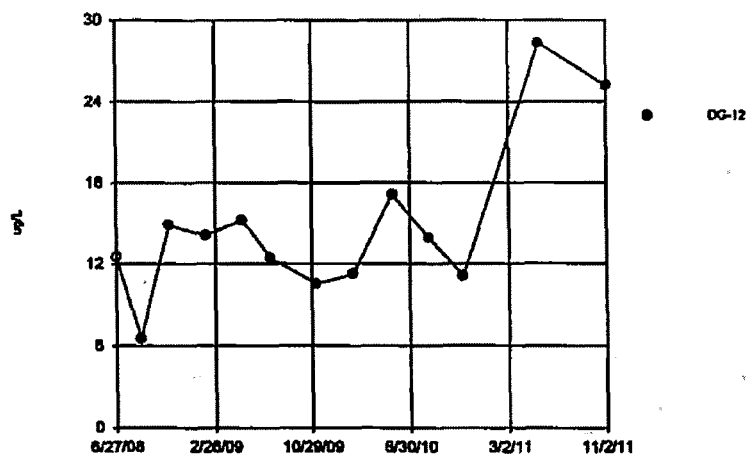
Time Series



Constituent: Sodium Analysis Run 3/26/2012 2:59 PM
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v.3.2.10 For regulatory purposes only, US
Hollow symbols indicate censored values.

Time Series



Constituent: Arsenic Analysis Run 3/25/2012 3:08 PM
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