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**Sikeston Power Station
2021 Annual Groundwater Monitoring Report for
Bottom Ash Pond
For Compliance with USEPA 40 CFR 257.90(e)**

Prepared for:



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January 31, 2022

Sikeston Power Station
2021 Annual Groundwater Monitoring Report for
Bottom Ash Pond
For Compliance with USEPA 40 CFR 257.90(e)

Prepared for:
Sikeston Board of Municipal Utilities
1551 West Wakefield Avenue
Sikeston, Missouri 63801

January 2022

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1.0 INTRODUCTION

The Sikeston Power Station (SPS), owned and operated by the Sikeston Board of Municipal Utilities (SBMU), is an electric power producer and distributor located within the western city limits of Sikeston, in southern Scott County, Missouri. The SBMU-SPS began operation in 1981 and produces approximately 235 megawatts. Coal combustion residuals (approximately 10,000 tons per annum) are currently sold or placed in the facility's two coal ash surface impoundments located immediately east of the power station. Both impoundments are on properties owned and controlled by SBMU. One coal ash impoundment measuring approximately 61 acres in size is used for bottom ash disposal. The second coal ash impoundment measuring approximately 30 acres in size is primarily used for fly ash disposal. It is subject to the alternate compliance schedule specified by the United States Environmental Protection Agency (USEPA) under 40 CFR Part 257.100(e)(5)(ii) due to its initial inactive status and the Response to Partial Vacatur (the Direct Final Rule). Consequently, this report pertains specifically to the Bottom Ash Pond.

Pursuant to USEPA's 40 CFR Part 257 (§257) Federal Criteria for Classification of Solid Waste Disposal Facilities and Practices, Subpart D – Standards for Disposal of Coal Combustion Residuals (CCR) in Landfills and Surface Impoundments (ponds), the establishment of a groundwater monitoring system and routine detection sampling and reporting is required at all coal ash surface impoundments. The purpose of a monitoring well system is to evaluate the quality of groundwater as it passes beneath the waste mass within an impoundment. Groundwater samples are collected and analyzed on a semi-annual basis in accordance with §257.93, or as otherwise detailed in a site-specific Groundwater Monitoring and Sampling Plan (GMSAP). Statistical analyses of the resulting data are conducted in accordance with §257.93(f), and the results are included in this Annual Groundwater Monitoring Report in accordance with §257.90(e). If results suggest a statistically significant increase (SSI) in one or more constituents for detection monitoring listed in Appendix III of §257, a written demonstration is required to determine if the SSI is attributable to an ash pond release or to other causative factors. If a successful demonstration is not made, an assessment monitoring program must be initiated as required under §257.95.

Prior to completion of the 2018 Annual Groundwater Monitoring and Corrective Action Report (Gredell Engineering, 2019), an Alternate Source Demonstration (ASD) was prepared to address three suspected SSIs in one of the wells comprising the groundwater monitoring network for the Bottom Ash Pond. The ASD was successfully completed and certified in accordance with §257.94(e)(2) on September 26, 2018. The ASD report (Gredell Engineering, 2019) documented that the suspected SSIs in monitoring well MW-8 (Chloride, Sulfate, and Calcium) resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. As a result of this successful ASD, semi-annual detection monitoring in accordance with §257.94 has continued as specified in §257.94(b). The ASD also concluded that a minimum of eight additional rounds of background data be collected and analyzed for the constituents listed in Appendix III and IV to Part 257. Following the collection of the 8th additional round of background sampling in October 2020, the additional data were reviewed, and the data were used to update the baseline

data sets for each well. A collection of statistical tools, including time series plots, box and whisker plots, histograms, probability plots, outlier analysis, trend analysis, and analysis of variation, was used to explore, understand, and prepare the data sets for statistical analysis. This analysis allowed for censoring of outliers and data set detrending, revised prediction limits were calculated for comparison to detection monitoring results compiled after October 2020. This statistical analysis was performed in accordance with §257.93(f) using the appropriate statistical analysis method as filed in the SBMU-SPS operating record on October 17, 2017.

This report describes the results of the eighth semiannual detection groundwater sampling event conducted at the SPS Bottom Ash Pond on April 16 and 17, 2021. Included is a description of the sampling event, groundwater elevations, water table surface, summary of field activities, analytical results, and statistical analysis results. Field sampling and reporting activities were conducted in accordance with the site-specific GMSAP. The ninth semi-annual groundwater sampling field activities were initiated on November 1, 2021, but data analysis was not complete at the time of this report and will therefore be included in the next Annual Groundwater Monitoring Report.

2.0 GROUNDWATER MONITORING SYSTEM

The groundwater monitoring system for the Bottom Ash Pond consists of five monitoring wells. Well locations are depicted on Figure 1. The wells are identified as MW-3, MW-4, MW-5, MW-6, and MW-8. Monitoring wells MW-3 and MW-6 are located hydraulically upgradient of the Bottom Ash Pond, whereas MW-4, MW-5 and MW-8 are hydraulically downgradient of the Bottom Ash Pond. MW-3 through MW-6 were installed during characterization of the site in May 2016 (Gredell Engineering, 2017). MW-8 was installed in April 2017 to serve as an additional downgradient monitoring well. Well construction activities were performed under the direction of a Registered Geologist in the State of Missouri. Well design and installation techniques were completed in accordance with 10 CSR 23-4, which is consistent with the standards summarized in 40 CFR 257.91(e). All five wells monitor uppermost groundwater, which is within the alluvial aquifer at the Bottom Ash Pond site. Each well is between 34 and 36 feet deep as measured from ground surface and yields sufficient quantities of water for the purposes of sampling and analysis.

Table 1 presents a construction summary of the wells comprising the Bottom Ash Pond groundwater monitoring system. Figure 1 depicts well locations and groundwater contour map of the uppermost aquifer for the April 2021 semi-annual sampling event. This map confirms that water in the uppermost aquifer continues to move in a west-southwesterly direction, consistent with the conclusions of the Site Characterization Report (Gredell Engineering, 2017). Table 2 summarizes historical piezometric data from the Bottom Ash Pond groundwater monitoring system and indicates that groundwater flow direction has remained consistent since the system was installed. All groundwater wells are equipped with dedicated tubing for use with a peristaltic pump. This system has been used for chemical sampling since inception of groundwater sampling with the Bottom Ash Pond monitoring system. The Bottom Ash Pond monitoring system is described in more detail in the site-specific GMSAP for this facility.

3.0 FIELD SAMPLING SUMMARY

SPS environmental staff initiated the eighth semi-annual detection groundwater sampling event on April 16, 2021, at the Sikeston Power Station. Following this sampling event, it was noted that Total Dissolved Solids (TDS) analysis for sample MW-3 was completed after the hold time had expired. Monitoring well MW-3 is also a component of the Fly Ash Pond monitoring system, and because MW-3 was also sampled on April 17, 2021 and analyzed within the holding time, this TDS result was used for Bottom Ash Pond detection monitoring compliance for this sampling event.

Groundwater samples were collected using low-flow sampling techniques and dedicated sampling equipment. Field tests of indicator parameters were performed using an In-Situ, Inc. SmarTROLL™ MP flow cell unit and HF Scientific MicroTPI field portable turbidimeter. Each groundwater sample was subsequently analyzed for the constituents listed in §257 Appendix III. All monitoring wells produced sufficient volumes of groundwater for full analysis.

The environmental staff inspected each monitoring well upon arrival. Wells appeared to be in satisfactory condition and had locks in place. Staff initially gauged water levels in the monitoring wells using a standard electronic water level meter graduated in increments of 0.01 feet. Static water levels were recorded on forms provided in the GMSAP. Each well was then purged while staff monitored water quality until indicator parameters (pH and specific conductance) stabilized in accordance with the criteria in the GMSAP. Additional parameters (turbidity, temperature, dissolved oxygen, and oxidation/reduction potential) were monitored for stability prior to groundwater sample collection. Following stabilization of indicator parameters, final field data were recorded, and groundwater samples were then collected.

Field notes documenting the sampling event and a copy of the chain-of-custody form are presented in Appendix 1. Field sampling notes are also summarized in Table 3, including initial and final water level measurements, purge volumes, and pH. Laboratory analytical reports for the sampling event, including the field blanks and sample duplicates, are included in Appendix 2. Quality Assurance/Quality Control (QA/QC) documentation is presented in Appendix 3. A summary of background and detection monitoring analytical data, including field parameters, is presented in Appendix 4.

3.1 Field Quality Assurance/Quality Control

Field QA/QC during the April 16, 2021 sampling event included the collection of one field blank and one field duplicate. The duplicate was collected from MW-8 (Table 5). Rinsate blanks were not collected because dedicated sampling equipment was used. Samples were immediately shipped to PDC Laboratories' (PDC Labs) primary facility located in Peoria, Illinois using standard chain-of-custody documentation procedures. Samples collected during this sampling event were received by the primary facility on April 20, 2021 and subsequently analyzed for the six detection monitoring constituents listed in §257 Appendix III and required under §257.94(b) (Table 4). Final analytical reports were received from PDC Laboratories on June 11, 2021.

4.0 ANALYTICAL SUMMARY

Analytical data summary data reports for each monitoring well sampled during the April 2021 detection monitoring event are provided in Appendix 2. The data pertain to water quality results from the uppermost aquifer in the area bordering the Bottom Ash Pond, along with sample duplicate and field blank results.

4.1 Laboratory Quality Control

Laboratory analyses of all groundwater samples collected in April 2021 were completed by PDC Laboratories, Inc., of Peoria, Illinois. The results were accompanied by appropriate QA/QC documentation. That documentation is presented in Appendix 3.

4.2 Precision and Accuracy

Precision is a measure of the reproducibility of analytical results, generally expressed as a *Relative Percent Difference (RPD)*. Laboratory quality control procedures to measure precision consist of laboratory control sample (LCS) analysis and analysis of matrix spike/matrix spike duplicates (MS/MSD). These analyses are used to define analytical variability. Accuracy is defined as the degree of agreement between the measured amount of a species and the amount actually known to be present, expressed as a percentage. It is generally determined by calculating the percent recoveries for analyses of surrogate compounds, laboratory control samples, continuing calibration check standards and matrix spike samples. Acceptable percent recoveries are established for SW-846 and USEPA methods. Field and laboratory blank analyses are also used to address measurement bias.

The analyses of the samples collected on April 16, 2021 were performed within appropriate hold times (except as noted above for TDS in MW-3) and both initial and continuing calibrations met acceptance criteria for all analyses. Similarly, method blanks and LCS analyses met acceptance criteria. The case narrative for the April 16, 2021 sampling event indicates that all testing was performed according to the lab's TNI accreditations. Several results from the April 16, 2021 event were qualified as follows:

- TDS analysis for MW-3 was conducted outside hold time (subsequent sampling at MW-3 on April 17, 2021 resulted in a TDS result within hold time).
- The Sulfate result for MW-6 is qualified with "Q4" to signify that the MS recovery result is greater than four times the spike level. The associated blank spike was acceptable.

Additional QA/QC comments for this sampling event include the following:

- *Field Duplicates:* Analyses of duplicate samples are used to define the total variability of the sampling/analytical system as a whole. One field duplicate from MW-8 was collected during the April 16, 2021 sampling event. RPDs were calculated for all detected chemical parameters, and a summary table showing the results of the RPD calculations is included as Table 5. Using a tolerance level of ± 20 percent, all calculated RPDs were within acceptable ranges for each parameter.

-
- *Field Blank:* One field blank was incorporated into the data set for the April 16, 2021 sampling event. The field blank analytical results do not indicate concentrations above detection limits for sampled parameters.
 - *Laboratory Blanks:* Method blanks, artificial, and matrix-less samples are analyzed to monitor the laboratory system for interferences and contamination from glassware, reagents, etc. Method blanks are taken throughout the entire sample preparation process. They are included with each batch of extractions or digestions prepared, or with each 20 samples, whichever is more frequent. Reference to Appendix 3 should be made for comments related to these and other laboratory control samples.

The analysis of TDS for the sample collected at MW-3 on April 17, 2021 was performed within appropriate hold time and both initial and continuing calibrations met acceptance criteria. Accordingly, the TDS result for MW-3 is not qualified. Similarly, method blanks and LCS analyses met acceptance criteria. The analytical data report for the April 17, 2021 (Appendix 2) sampling event indicates that all testing was performed according to the lab's TNI accreditations.

4.3 Representativeness

Representativeness expresses the degree to which sample data accurately and precisely reflect site conditions. Representativeness of the data is determined by comparing actual sampling procedures to those delineated in the field sampling plan, comparing results from field duplicate samples and reviewing the results of field blanks.

Approved sampling procedures are described in the GMSAP. Procedures specified in that plan have been followed. Approved sampling procedures should be reviewed annually. Groundwater monitoring data is evaluated using an intrawell statistical analysis methodology and is conducted separately for each constituent in each monitoring well using prediction limits in accordance with §257.93(f)(3) and the performance standards in §257.93(g). The stated statistical approach, along with supporting documentation and engineering certification, are available in the SBMU-SPS On-Site Operating Record.

4.4 Comparability

Comparability expresses the confidence with which one data set can be compared to another data set measuring the same property. Comparability is ensured by using established and approved sample collection techniques and analytical methods, consistent basis of analysis, consistent reporting units, and analyzing standard reference materials

4.5 Completeness

Completeness is a measure of the amount of valid data obtained from a measurement system compared to the amount expected under controlled laboratory conditions. Completeness is defined as the valid data percentage of the total tests requested. Valid data are defined as those where the sample arrived at the laboratory intact, properly preserved, in sufficient quantity to perform the requested analyses, and accompanied by a completed chain-of-custody form

(Appendix 3). Furthermore, the sample must have been analyzed within the specified holding time and in such a manner that analytical QC acceptance criteria are met.

5.0 STATISTICAL ANALYSIS

The statistical analysis approach used to evaluate groundwater within the uppermost aquifer for the Bottom Ash Pond monitoring well network at SBMU-SPS consists of intra-well analysis using prediction limits. The analysis is conducted separately for each constituent in each of the five monitoring wells for each sampling event in accordance with §257.93(f)(3). This statistical method complies with the accepted performance standards listed in §257.93(g).

The background data used to evaluate current groundwater quality is based on 18 rounds of groundwater sampling of MW-3, MW-4, MW-5, and MW-6 spanning November 2016 to October 2020 and MW-8 spanning May 2017 to October 2020. In general, all background data were used for each well constituent pair. However, data trend removal and screening of outliers reduced the background sample population for some well constituent pairs. The background may be updated every two years, but any SSIs will not be included in background unless they are unconfirmed in accordance with Unified Guidance (USEPA, 2009).

Statistical analysis was performed in accordance with §257.93 using Sanitas® for Ground Water (Version 9.6.31; 2021). Intra-well prediction intervals were compared at the 99 percent confidence level for each constituent with a 1 of 2 retest methodology to improve accuracy and reduce false positives. The groundwater results from the April 2021 monitoring event were compared to the prediction limits (Table 7) to determine if potential SSIs over background are apparent.

If the number of reportable concentrations of a given constituent in a given well is not sufficient to permit parametric analysis, non-parametric prediction interval analysis is conducted. Both parametric and non-parametric prediction limit analysis were performed for the Bottom Ash Pond groundwater monitoring well network data. Following review of baseline data for outliers and trends, prediction intervals are computed based on the reviewed and screened background monitoring data sets (Appendix 4), including values reported as less than detection limits.

Initially, outlier analysis was performed for the background data set using Exploratory Data Analysis (EDA) with Sanitas®, time-series plots, box and whiskers plots, histograms, and probability plots. These analyses resulted in the identification of 12 outliers from the 630 data points. The outliers are identified in Appendix 4 and were screened from the background data prior to additional statistical analysis. Trend analysis was conducted on the screened background data sets using Sanitas® and modification of data sets was completed where constituent-well pairs were found to be significantly trending upward (or downward in the case of pH). The resulting alternate data sets are summarized in Table 6 and in Appendix 4.

The results of the statistical analysis for the April 2021 sampling event are described below. A complete database summarizing the sample results, dates of sampling, and the purpose of sampling event, as per §257.90(e)(3), is provided in Appendix 4. A statistical power curve, based on the background data, is provided in Appendix 5. Trend analysis (time-series) plots of background data for all detection monitoring constituents are presented in Appendix 6. Box and whiskers plots of background data are presented in Appendix 7. Prediction limit charts are provided in Appendix 8.

5.1 Statistical Results

The results of the statistical analysis for the April 2021 Bottom Ash Pond groundwater monitoring data did not suggest the presence of SSIs. Consequently, semi-annual detection monitoring should continue as specified in §257.94(b).

6.0 SUMMARY

The statistical analysis results for samples obtained during the eighth groundwater detection monitoring event conducted on April 16 and 17, 2021, do not indicate the presence of SSIs associated with a release from the Bottom Ash Pond. Therefore, it is recommended that semi-annual detection monitoring of the Bottom Ash Pond continue in accordance with §257.94(b).

7.0 LIMITATIONS

This report has been prepared for the exclusive use of the client and GREDELL Engineering Resources, Inc. for the specific project discussed in accordance with generally accepted environmental practices common to this locale at this time. The report is applicable only to this specific project and identified site conditions as they existed at the time of report preparation. The use of this report by others to develop independent interpretations of data or conclusions not explicitly stated in this report are the sole responsibility of those firms or individuals.

This report is not a guarantee of subsurface conditions. Variations in subsurface conditions may be present that were not identified during this or previous investigations. Interpretations of data and recommendations made in this report are based on observations of data that were available and referred to in this report unless otherwise noted. No other warranties, expressed or implied, are provided.

8.0 REFERENCES

GREDELL Engineering Resources, Inc., 2017, *Sikeston Power Station Site Characterization for Compliance with Missouri State Operating Permit #MO-0095575*, dated May 2017.

GREDELL Engineering Resources, Inc., 2019, *Sikeston Power Station, 2018 Annual Groundwater Monitoring and Corrective Action Report for Bottom Ash Pond for Compliance with USEPA 40 CFR 257.90(e)*, dated January 30, 2019.

GREDELL Engineering Resources, Inc., 2020, *Sikeston Power Station, 2019 Annual Groundwater Monitoring Report for Bottom Ash Pond for Compliance with USEPA 40 CFR 257.90(e)*, dated January 30, 2020.

GREDELL Engineering Resources, Inc., 2021, *Sikeston Power Station, 2020 Annual Groundwater Monitoring Report for Bottom Ash Pond for Compliance with USEPA 40 CFR 257.90(e)*, dated January 29, 2021.

Sanitas Statistical Software, © 1992-2021 SANITAS TECHNOLOGIES, Alamosa Colorado 81101-0012.

U.S. Environmental Protection Agency, March 2009, *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities Unified Guidance: USEPA 530/R-09-007*, Office of Resource Conservation and Recovery, Program Implementation and Information Division, Washington, D.C.

FIGURES



LEGEND

PROPERTY LINE	— PL —
GROUNDWATER CONTOUR	—
MONITORING WELL	⊙ MW
UP GRADIENT MONITORING LOCATION	UG
DOWN GRADIENT MONITORING LOCATION	DG
GENERAL FLOW DIRECTION	←

- NOTES:**
1. IMAGE PROVIDED BY BING MAPS.
 2. MONITORING WELL LOCATIONS, CASING ELEVATIONS & UNDERGROUND CULVERT ELEVATIONS SURVEYED BY BOWEN ENGINEERING & SURVEYING.
 3. GROUNDWATER ELEVATIONS MEASURED BY SIKESTON POWER STATION STAFF ON APRIL 16, 2021.
 4. MAP DEVELOPMENT BASED ON CONTOURS GENERATED BY SURFER® SOFTWARE.
 5. RANGE OF HYDRAULIC GRADIENT AS DETERMINED BY SURFER® SOFTWARE 0.0005 FT./FT. TO 0.001 FT./FT.

WELL ID	GROUNDWATER ELEVATION	CASING ELEVATION	NORTHING	EASTING
MW-3	298.03	308.55	381130.00	1079946.62
MW-4	295.55	305.61	380804.62	1077766.95
MW-5	296.08	305.91	379858.94	1078477.85
MW-6	297.06	307.72	379874.77	1079384.36
MW-8	295.55	304.77	380311.20	1077940.08

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**SIKESTON POWER STATION
 BOTTOM ASH POND
 2021 ANNUAL GROUNDWATER
 MONITORING & REPORT**

**FIGURE 1
 GROUNDWATER CONTOUR MAP
 APRIL 16, 2021**

THE GEOLOGIST WHO REVIEWED AND APPROVED THIS REPORT ASSUMES RESPONSIBILITY ONLY FOR GEOLOGIC INTERPRETATIONS OF DATA APPEARING ON THIS PAGE AND DISCLAIMS PURSUANT TO SECTION 256.456 RSMO ANY RESPONSIBILITY FOR ALL OTHER PLANS, SPECIFICATIONS, ESTIMATES, REPORTS OR OTHER DOCUMENTS OR INSTRUMENTS NOT PREPARED UNDER THE SUPERVISION OF THE GEOLOGIST RELATING TO OR INTENDED TO BE USED FOR ANY PART OR PARTS OF THE PROJECT TO WHICH THIS FIGURE REFERS.

DESIGNED	NA	DRAWN	CM	CHECKED	KE	APPROVED	MCC	DATE	12/2021	SCALE	AS NOTED	PROJECT NAME	SIKESTON/GWMAP/BAP	FILE NAME	SIKESTON/GWMAP/BAP 04-2021	SHEET #	1 OF 1
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TABLES

**Annual Groundwater Monitoring Report
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**Table 1
Groundwater Monitoring Network Summary**

Monitoring Well ID^{1,2}	Northing Location^{3,4}	Easting Location^{3,4}	Ground Surface Elevation^{3,4} (feet)	Top of Riser Elevation^{3,4} (feet)	Well Depth⁵ (feet)	Base of Well Elevation⁶ (feet)	Screen Length⁷ (feet)	Top of Screen Elevation (feet)
MW-3	381130.00	1079946.62	306.11	308.55	37.21	271.34	10	281.5
MW-4	380804.62	1077766.95	303.26	305.61	37.55	268.06	10	278.3
MW-5	379858.94	1078477.85	303.57	305.91	37.17	268.74	10	278.9
MW-6	379874.77	1079384.36	305.37	307.72	38.03	269.69	10	279.9
MW-8	380311.20	1077940.08	302.37	304.77	37.41	267.36	10	277.6

NOTES:

1. Refer to Figure 1 for monitoring well locations.
2. Refer to Sikeston Power Station On-Site Operating Record for well construction diagrams.
3. Monitoring well survey data provided by Bowen Engineering & Surveying, Inc.
4. Horizontal Datum: Missouri State Plane Coordinates - NAD 83 (Feet), Vertical Datum: NAVD 88 (Feet).
5. Depth measurements relative to surveyed point on top of well casing.
6. Sump installed at base of screen (0.2 feet length).
7. Actual screen length (9.7 feet) is the machine-slotted section of the 10-foot length of Schedule 40 PVC pipe.

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**Table 2
Historical Groundwater Level Summary**

Well ID	MW-3	MW-4	MW-5	MW-6	MW-8
Date	Groundwater Elevation (feet MSL)				
05/12/16	298.13	296.01	296.68	297.41	NM
06/28/16	297.58	294.75	295.51	296.57	NM
07/15/16	297.37	294.77	295.53	296.44	NM
08/08/16	297.05	294.66	294.87	295.77	NM
09/08/16	296.76	294.40	294.96	295.84	NM
10/05/16	296.40	294.02	294.70	295.57	NM
11/01/16	296.10	293.99	294.49	295.24	NM
11/30/16	296.03	294.26	294.80	295.37	NM
01/24/17	296.35	294.73	295.19	295.77	NM
01/26/17	296.35	294.73	295.19	295.77	NM
02/22/17	296.00	294.40	294.81	295.41	NM
02/24/17	296.00	294.40	294.81	295.41	NM
03/20/17	296.45	295.10	295.46	295.97	NM
04/19/17	296.35	294.73	295.19	295.81	NM
04/27/17	296.72	295.41	295.78	296.20	NM
05/17/17	297.81	295.76	296.31	297.11	NM
05/18/17	NM	NM	NM	NM	295.67
06/08/17	297.81	295.64	296.17	296.96	NM
06/09/17	NM	NM	NM	NM	295.57
07/13/17	296.98	294.60	295.22	296.06	294.70
08/03/17	NM	NM	NM	NM	294.12
08/15/17	NM	NM	NM	NM	294.02
08/30/17	NM	NM	NM	NM	293.72
09/14/17	NM	NM	NM	NM	293.57
09/27/17	NM	NM	NM	NM	293.26
10/31/17	295.22	293.11	293.65	294.41	293.20
06/13/18	297.33	294.93	295.60	296.47	295.02
11/26/18	295.63	293.76	294.27	294.91	293.88
12/26/18	296.04	294.19	294.64	295.36	294.31
01/08/19	296.38	294.62	295.17	295.77	294.73
02/05/19	296.73	294.99	295.46	296.06	295.07
02/22/19	298.35	296.58	297.33	297.94	296.79
03/27/19	298.51	296.05	296.72	297.69	296.15
04/16/19	298.93	296.58	297.31	298.22	296.67
05/14/19	299.25	296.36	297.10	298.21	296.45
05/28/19	298.95	296.01	296.80	297.91	296.16
06/12/19	298.82	296.00	296.71	297.82	296.10
07/17/19	298.38	295.84	296.46	297.44	295.97
07/24/19	298.41	295.97	296.66	297.57	296.13
08/14/19	297.80	295.03	295.70	296.76	295.12
08/28/19	297.55	294.81	295.47	296.51	294.91
09/16/19	297.22	294.51	295.20	296.20	294.63
10/10/19	296.84	294.29	294.89	295.85	294.36
10/22/19	296.80	294.40	295.00	295.88	294.50
11/04/19	297.34	295.24	295.80	296.57	295.32
02/18/20	299.00	296.50	297.28	298.22	296.66
03/30/20	300.09	297.66	298.48	299.40	297.81
07/21/20	298.35	295.16	295.98	297.19	295.32
10/20/20	297.08	294.53	295.29	296.17	294.77
04/16/21	298.03	295.55	296.08	297.06	295.55

NOTES:

1. Refer to Figure 1 for monitoring well locations.
2. Refer to Sikeston Power Station On-Site Operating Record for well construction diagrams.
3. NM - Not Measured.
4. Maximum and minimum groundwater elevations are shaded.

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**Table 3
Water Level and Field Parameter Summary
April 16, 2021**

Monitoring Well I.D.	Hydraulic Position	Initial Water Level (ft, BTOC²)	Final Water Level (ft, BTOC²)	Minimum³ Purge Vol. (mL⁴)	Actual Purge Vol. (mL⁴)	pH (S.U.⁵)
MW-3	Upgradient	10.52	10.52	300	8,360	6.5
MW-4	Downgradient	10.06	10.06	300	9,420	7.4
MW-5	Downgradient	9.83	9.83	300	7,040	6.9
MW-6	Upgradient	10.66	10.66	300	4,500	6.8
MW-8	Downgradient	9.22	9.22	300	6,420	7.2

NOTES:

1. Sequence of sampling is MW-3, MW-6, MW-5, MW-8, MW-4.
2. BTOC: Below Top of Casing
3. Purge calculations based on 1/4" ID tubing and complete evacuation of single tubing volume.
4. mL: milliliter
5. S.U.: Standard Unit.

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**Table 4
Groundwater Monitoring Constituents**

USEPA 40 CFR 257			
Appendix III - Constituents for Detection Monitoring		Appendix IV - Constituents for Assessment Monitoring	
Chemical Constituent	Method	Chemical Constituent	Method
pH (S.U.)	Field	Antimony (µg/L)	SW 6020
Boron (µg/L)	SW 6020	Arsenic (µg/L)	SW 6020
Calcium (mg/L)	SW 6020	Barium (µg/L)	SW 6020
Chloride (mg/L)	EPA 300.0	Beryllium (µg/L)	SW 6020
Fluoride (mg/L)	EPA 300.0	Cadmium (µg/L)	SW 6020
Sulfate (mg/L)	EPA 300.0	Chromium (µg/L)	SW 6020
Total Dissolved Solids (mg/L)	SM 2540C	Cobalt (µg/L)	SW 6020
		Fluoride (mg/L)	EPA 300
		Lead (µg/L)	SW 6020
		Lithium (µg/L)	SW 6020
		Mercury (µg/L)	SW 6020
		Molybdenum (µg/L)	SW 6020
		Selenium (µg/L)	SW 6020
		Thallium (µg/L)	SW 6020
		Radium 226 and 228 combined (pCi/L)	EPA 903.1 & 904.0

NOTES:

1. S.U. = Standard Unit.
2. µg/L = micrograms per liter.
3. mg/L = milligrams per liter.
4. pCi/L = picocurie per liter.

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**Table 5
 Relative Percent Difference Summary -
 April 16, 2021**

Chemical Parameter	Units	MW-8	DUP	Relative Percent Difference
pH	S.U.	7.2	7.2	0.00
Boron	µg/L	460	460	0.00
Calcium	mg/L	100	100	0.00
Chloride	mg/L	51	59	14.55
Fluoride	mg/L	<0.250	<0.250	N/A
Sulfate	mg/L	130	120	8.00
Total Dissolved Solids	mg/L	400	420	4.88

NOTES:

1. S.U. = Standard Unit.
2. µg/L = micrograms per liter.
3. mg/L = milligrams per liter.
4. Relative Percent Difference tolerance = 20%.
5. N/A = Not applicable - parameter concentration below reporting limit.

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**Table 6
Alternate Data Sets**

Constituent-Well Pair¹		Proposed Background Data Base (to eliminate trending data)²	Background set size (n)
Well ID	Constituent		
MW-3	pH	June 2017 through October 2020	12
MW-6	pH	January 2017 through October 2020	17
	Boron	November 2018 through October 2020	8
MW-8	Calcium	November 2018 through October 2020	8
	Chloride	June 2018 through October 2020	8
	Total Dissolved Solids	November 2018 through October 2020	8

Notes:

1. Trending constituent-well pairs identified based on Mann-Kendall Sen's Slope Trend Analysis of data.
2. Alternate background data sets proposed to eliminate significant increasing (or decreasing for pH) trends in data sets.

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**Table 7
 Intra-Well Prediction Limit Summary**

40 CFR 257 Appendix III Constituents for Detection Monitoring	Units	MW-3	MW-4	MW-5	MW-6	MW-8
pH Upper	S.U.	6.749	7.498	6.997	7.00	7.233
pH Lower	S.U.	6.278	7.232	6.694	6.67	7.047
Chloride	mg/L	2.363	19.09	18.9	2.956	76.4
Fluoride	mg/L	0.438	0.259	0.272	0.338	0.26
Sulfate	mg/L	28.98	140.5	262.2	39.39	146.6
Total Dissolved Solids	mg/L	180	407.2	539.8	246.7	532.9
Boron	µg/L	49.58	1517	481.6	57.75	571.1
Calcium	mg/L	23.15	95.47	131	48.1	117.8

Notes:

1. Prediction limits for MW-3 through MW-6 based on data spanning November 2016 to October 2020, except as noted in Table 2.
2. Prediction limits for MW-8 based on data spanning May 2017 to October 2020, except as noted in Table 2.

APPENDICES

Appendix 1

Field Sampling Notes

Appendix 1

Field Sampling Notes – April 16, 2021
(First 2021 Semi-annual Event)

Field Instrumentation Calibration Log

Facility: SBMU SPS CCR Groundwater Sampling

Calibrated by: *W. Sib*

Field Instruments:		<u>In-Situ smarTROLL Field Meter</u>				<u>HF scientific, inc. Micro TPI Field Portable Turbidimeter</u>														
S/N #:		<u>474247</u>				S/N #: <u>201607366</u>														
Date	Time	pH Standards		pH Measurements		Specific Conductance Standard (µS/cm)		Specific Conductance Measurement (µS/cm)		Oxidation Reduction Potential Standard (mV)		Oxidation Reduction Potential Measurement (mV)		Dissolved Oxygen (%)		Turbidity Standards (NTU)		Turbidity Measurements (NTU)		
			=				=				=				=				=	
Beginning of Day Calibration	4-16-2021	0630	4.00	=	4.00	1413	=	1412.6	Temperature (°C)	=	22.03°C	229	=	229.5	Temperature (°C)	=	21.43°C	0.02	=	0.02
			7.00	=	7.00				Standard (mV)	=	229				Tap Water Source	=	SKater City	10.0	=	10.0
			10.00	=	10.00										Barometric Pressure (mm/Hg)	=		1000	=	1000
															Measurement	=	100.06%			
End of Day Check	4-16-2021	1534	4.00	=	4.03	1413	=	1398.7	Temperature (°C)	=	21.65°C	229	=	215.6	Temperature (°C)	=	19.72°C	0.02	=	0.01
			7.00	=	7.06				Standard (mV)	=	229				Tap Water Source	=	SKater City	10.0	=	9.84
			10.00	=	10.02										Barometric Pressure (mm/Hg)	=		1000	=	989.5
															Measurement	=	100.55%			

Notes: The Multi-Probe Field Meter measures Temperature, Specific Conductance, Dissolved Oxygen, pH, and Oxidation Reduction Potential.

The HF scientific, inc. Micro TPI Field Portable Turbidimeter measures Turbidity.

Dissolved oxygen is calibrated via % saturation method; however, field measurements are recorded as mg/L.

I certify that the aforementioned meters were calibrated within the manufacturers specifications.

Date: 4-16-2021

By: *W. Sib*

Field Sampling Log

Monitoring Well ID: MW3 Facility: SBMU Sikeston Power Station - Groundwater Monitoring

Initial Water Level (feet btoc): 10.52 Date: 04-16-2021
 Initial Groundwater Elevation (NAVD88): _____ Air Pressure in Well? Y/N

PURGE INFORMATION

Date: 04-16-2021
 Name (Sample Collector): D Dillingham
 Method of Well Purge: Low Flow Peristaltic Pump Dedicated Tubing? Y/N
 Time Purging Initiated: 0731 One (1) Well Volume (mL): NA
 Beginning Water Level (feet btoc): 10.52 Total Volume Purged (mL): 8360
 Beginning Groundwater Elevation (NAVD88): _____ Well Purged To Dryness? Y/N
 Well Total Depth (feet btoc): 36.99 Water Level after Sampling (feet btoc): 10.52
 (i.e., pump is off)
 Casing Diameter (feet): 2" Sch 40 PVC Time Sampling Completed: 0837

PURGE STABILIZATION DATA

Time	Purge Rate (mL/min)	Cumulative Volume (mL)	Temp (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	pH (S.U.)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Water Level (feet btoc)	Notes (e.g., opacity, color, odor)
0733		400	15.40	222.61	29.67	6.8	51.3	53.64	10.52	Red Flake, no
0735	300	1000	14.54	203.29	26.59	6.5	64.0	70.06	10.52	" "
0737	350	1700	14.31	204.14	24.71	6.4	62.7	61.05	10.52	" "
0739	310	2320	14.26	203.22	22.72	6.4	61.1	24.64	10.52	" "
0741	270	2860	14.17	200.46	21.65	6.5	60.1	23.48	10.52	" "
0743	270	3400	14.17	196.83	20.39	6.5	56.5	18.56	10.52	" "
0745	310	4020	14.16	195.06	18.26	6.5	55.0	10.94	10.52	" "
0747	290	4600	14.14	194.27	16.70	6.5	53.5	7.49	10.52	" "
0749	360	5320	14.10	196.10	15.78	6.5	52.5	5.17	10.52	" "
0751	160	5640	14.05	191.53	14.49	6.5	50.7	7.79	10.52	" "
0753	280	6200	14.00	193.74	13.85	6.5	49.5	6.62	10.52	" "
0755	270	6740	13.99	187.31	13.41	6.5	47.3	6.41	10.52	" "
0757	260	7260	14.01	191.92	13.07	6.5	45.6	4.70	10.52	" "
0759	280	7820	14.04	188.24	13.24	6.5	43.7	4.25	10.52	" "
0801	270	8360	14.10	184.23	12.69	6.5	41.3	4.03	10.52	" "

btoc - below top of casing

Field Sampling Log

Facility: SBMU Sikeston Power Station - CCR Groundwater Monitoring

Monitoring Well ID: MW 3

Sampling Information:

Method of Sampling: Low Flow - Peristaltic Pump & Tubing

Dedicated: Y / N

Water Level @ Sampling (feet btoc): 10.52

Monitoring Event: Annual () Semi-Annual Quarterly () Monthly () Other ()

Final Purge Stabilization Sampling Data:

Date Sample Time	Sample Rate (mL/min)	Temp (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	pH (S.U.)	Oxidation Reduction Potential (mV)	Turbidity (NTU)
<u>04-16-2021</u> <u>0801</u>	<u>270</u>	<u>14.10</u>	<u>189.23</u>	<u>12.69</u>	<u>6.5</u>	<u>41.3</u>	<u>4.03</u>

Instrument Calibration Data:

See instrument calibration log of daily calibration data for the following instruments:

- 1 - In-Situ SmarTroll Multi-Probe Field Meter (Temperature, Specific Conductance, Dissolved Oxygen, pH, Oxidation Reduction Potential)
- 2 - HF scientific, inc. Micro TPI Field Portable Turbidimeter

General Information:

Weather Conditions @ time of sampling: Sunny
45°F

Sample Characteristics: Red Flake, colorless, odorless

Sample Collection Order: Per SAP

Comments and Observations:

I certify that sampling procedures were in accordance with applicable EPA and State protocols.

Date: 4-16-21 By: ASHLIZ PATER Title: Lab Tech

Monitoring Well Field Inspection

Facility: SBMU SPS – CCR Groundwater Monitoring

Monitoring Well ID: MW 6

Name (Field Staff): A Patel D Dillingham

Date: 04-16-2021

Access:

Accessibility: Good Fair Poor

Well clear of weeds and/or debris?: Yes No

Well identification clearly visible?: Yes No

Remarks:

Concrete Pad:

Condition of Concrete Pad: Good Inadequate

Depressions or standing water around well?: Yes No

Remarks:

Protective Outer Casing: Material = 4" x 4" Steel Hinged Casing with Hasp

Condition of Protective Casing: Good Damaged

Condition of Locking Cap: Good Damaged

Condition of Lock: Good Damaged

Condition of Weep Hole: Good Damaged

Remarks:

Well Riser: Material = 2" Diameter, Schedule 40 PVC, Flush Threaded

Condition of Riser: Good Damaged

Condition of Riser Cap: Good Damaged

Measurement Reference Point: Yes No

Remarks:

Dedicated Purging/Sampling Device: Type = ¼" ID Semi-Rigid Polyethylene & 0.170" ID Flexible Silicone Tubing

Condition: Good Damaged Missing

Remarks:

Monitoring Well Locked/Secured Post Sampling?: Yes No

Remarks:

Field Certification

A Patel
Signed

Lab Tech
Title

4-16-21
Date

Field Sampling Log

Facility: SBMU Sikeston Power Station - CCR Groundwater Monitoring

Monitoring Well ID: MW 6

Sampling Information:

Method of Sampling: Low Flow - Peristaltic Pump & Tubing

Dedicated: Y / N

Water Level @ Sampling (feet btoc): 10.66

Monitoring Event: Annual () Semi-Annual Quarterly () Monthly () Other ()

Final Purge Stabilization Sampling Data:

Date Sample Time	Sample Rate (mL/min)	Temp (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	pH (S.U.)	Oxidation Reduction Potential (mV)	Turbidity (NTU)
<u>04-16-21</u> <u>0911</u>	<u>280</u>	<u>14.69</u>	<u>399.31</u>	<u>6.28</u>	<u>6.8</u>	<u>-7.1</u>	<u>16.55</u>

Instrument Calibration Data:

See instrument calibration log of daily calibration data for the following instruments:

- 1 - In-Situ SmarTroll Multi-Probe Field Meter (Temperature, Specific Conductance, Dissolved Oxygen, pH, Oxidation Reduction Potential)
- 2 - HF scientific, inc. Micro TPI Field Portable Turbidimeter

General Information:

Weather Conditions @ time of sampling: Sunny

52° F

Sample Characteristics: Clear, Colorless, odorless

Sample Collection Order: Per SAP

Comments and Observations:

I certify that sampling procedures were in accordance with applicable EPA and State protocols.

Date: 4-16-21 By: [Signature] Title: Lab Tech

Monitoring Well Field Inspection

Facility: SBMU SPS – CCR Groundwater Monitoring
Monitoring Well ID: MW5
Name (Field Staff): A Patel D Dillingham
Date: 4-16-21

Access:

Accessibility: Good Fair Poor
Well clear of weeds and/or debris?: Yes No
Well identification clearly visible?: Yes No

Remarks:

Concrete Pad:

Condition of Concrete Pad: Good Inadequate
Depressions or standing water around well?: Yes No

Remarks:

Protective Outer Casing: Material = 4" x 4" Steel Hinged Casing with Hasp

Condition of Protective Casing: Good Damaged
Condition of Locking Cap: Good Damaged
Condition of Lock: Good Damaged
Condition of Weep Hole: Good Damaged

Remarks:

Well Riser: Material = 2" Diameter, Schedule 40 PVC, Flush Threaded

Condition of Riser: Good Damaged
Condition of Riser Cap: Good Damaged
Measurement Reference Point: Yes No

Remarks:

Dedicated Purging/Sampling Device: Type = 1/4" ID Semi-Rigid Polyethylene & 0.170" ID Flexible Silicone Tubing

Condition: Good Damaged Missing

Remarks:

Monitoring Well Locked/Secured Post Sampling?: Yes No

Remarks:

Field Certification

Ashish Patel

Signed

Les Toeh

Title

4-16-21

Date

Field Sampling Log

Facility: SBMU Sikeston Power Station - CCR Groundwater Monitoring

Monitoring Well ID: MW 5

Sampling Information:

Method of Sampling: Low Flow - Peristaltic Pump & Tubing Dedicated: Y / N

Water Level @ Sampling (feet btoc): 9.83

Monitoring Event: Annual () Semi-Annual Quarterly () Monthly () Other ()

Final Purge Stabilization Sampling Data:

Date Sample Time	Sample Rate (mL/min)	Temp (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	pH (S.U.)	Oxidation Reduction Potential (mV)	Turbidity (NTU)
<u>04-16-21</u> <u>1100</u>	<u>270</u>	<u>15.79</u>	<u>837.40</u>	<u>7.27</u>	<u>6.9</u>	<u>-11.1</u>	<u>2.84</u>

Instrument Calibration Data:

- See instrument calibration log of daily calibration data for the following instruments:
 1 - In-Situ SmartTroll Multi-Probe Field Meter (Temperature, Specific Conductance, Dissolved Oxygen, pH, Oxidation Reduction Potential)
 2 - HF scientific, inc. Micro TPI Field Portable Turbidimeter

General Information:

Weather Conditions @ time of sampling: Sunny
55°F

Sample Characteristics: Clear, colorless, odorless

Sample Collection Order: Per SAP

Comments and Observations:

I certify that sampling procedures were in accordance with applicable EPA and State protocols.

Date: 04-16-21 By: [Signature] Title: Lab Tech

Monitoring Well Field Inspection

Facility: SBMU SPS – CCR Groundwater Monitoring

Monitoring Well ID: MW 8

Name (Field Staff): A Patel D Dillingham

Date: 04-16-21

Access:

Accessibility: Good Fair Poor

Well clear of weeds and/or debris?: Yes No

Well identification clearly visible?: Yes No

Remarks:

Concrete Pad:

Condition of Concrete Pad: Good Inadequate

Depressions or standing water around well?: Yes No

Remarks:

Protective Outer Casing: Material = 4" x 4" Steel Hinged Casing with Hasp

Condition of Protective Casing: Good Damaged

Condition of Locking Cap: Good Damaged

Condition of Lock: Good Damaged

Condition of Weep Hole: Good Damaged

Remarks:

Well Riser: Material = 2" Diameter, Schedule 40 PVC, Flush Threaded

Condition of Riser: Good Damaged

Condition of Riser Cap: Good Damaged

Measurement Reference Point: Yes No

Remarks:

Dedicated Purging/Sampling Device: Type = 1/4" ID Semi-Rigid Polyethylene & 0.170" ID Flexible Silicone Tubing

Condition: Good Damaged Missing

Remarks:

Monitoring Well Locked/Secured Post Sampling?: Yes No

Remarks:

Field Certification

Abhishek Patel

Signed

Leah Tooh

Title

04-16-21

Date

Field Sampling Log

Facility: SBMU Sikeston Power Station - CCR Groundwater Monitoring

Monitoring Well ID: MW 8

Sampling Information:

Method of Sampling: Low Flow - Peristaltic Pump & Tubing

Dedicated: Y / N

Water Level @ Sampling (feet btoc): 9.22

Monitoring Event: Annual () Semi-Annual Quarterly () Monthly () Other ()

Final Purge Stabilization Sampling Data:

Date Sample Time	Sample Rate (mL/min)	Temp (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	pH (S.U.)	Oxidation Reduction Potential (mV)	Turbidity (NTU)
<u>04-16-21</u> <u>1253</u>	<u>290</u>	<u>15.85</u>	<u>758.55</u>	<u>3.47</u>	<u>7.2</u>	<u>-44.7</u>	<u>5.16</u>

Instrument Calibration Data:

See instrument calibration log of daily calibration data for the following instruments:

- 1 - In-Situ SmarTroll Multi-Probe Field Meter (Temperature, Specific Conductance, Dissolved Oxygen, pH, Oxidation Reduction Potential)
- 2 - HF scientific, inc. Micro TPI Field Portable Turbidimeter

General Information:

Weather Conditions @ time of sampling: Mostly Sunny

61°F

Sample Characteristics: Clear, colorless, odorless

Sample Collection Order: Per SAP

Comments and Observations:

collected Field Duplicate

I certify that sampling procedures were in accordance with applicable EPA and State protocols.

Date: 04-16-21 By: Abish Patel Title: Lab Tech

Monitoring Well Field Inspection

Facility: <u>SBMU SPS – CCR Groundwater Monitoring</u> Monitoring Well ID: <u>MW 4</u> Name (Field Staff): <u>A Patel D Dillingham</u> Date: <u>04-16-21</u>		
Access:		
Accessibility:	Good <input checked="" type="checkbox"/>	Fair <input type="checkbox"/> Poor <input type="checkbox"/>
Well clear of weeds and/or debris?:	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Well identification clearly visible?:	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Remarks:		
Concrete Pad:		
Condition of Concrete Pad:	Good <input checked="" type="checkbox"/>	Inadequate <input type="checkbox"/>
Depressions or standing water around well?:	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Remarks:		
Protective Outer Casing: Material = 4" x 4" Steel Hinged Casing with Hasp		
Condition of Protective Casing:	Good <input checked="" type="checkbox"/>	Damaged <input type="checkbox"/>
Condition of Locking Cap:	Good <input checked="" type="checkbox"/>	Damaged <input type="checkbox"/>
Condition of Lock:	Good <input checked="" type="checkbox"/>	Damaged <input type="checkbox"/>
Condition of Weep Hole:	Good <input checked="" type="checkbox"/>	Damaged <input type="checkbox"/>
Remarks:		
Well Riser: Material = 2" Diameter, Schedule 40 PVC, Flush Threaded		
Condition of Riser:	Good <input checked="" type="checkbox"/>	Damaged <input type="checkbox"/>
Condition of Riser Cap:	Good <input checked="" type="checkbox"/>	Damaged <input type="checkbox"/>
Measurement Reference Point:	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Remarks:		
Dedicated Purging/Sampling Device: Type = 1/4" ID Semi-Rigid Polyethylene & 0.170" ID Flexible Silicone Tubing		
Condition:	Good <input checked="" type="checkbox"/>	Damaged <input type="checkbox"/> Missing <input type="checkbox"/>
Remarks:		
Monitoring Well Locked/Secured Post Sampling?: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks:		

Field Certification	<u>Ashish Patel</u>	<u>Lab Tech</u>	<u>04-16-21</u>
	Signed	Title	Date

Field Sampling Log

Monitoring Well ID: MW 4 Facility: SBMU Sikeston Power Station - Groundwater Monitoring

Initial Water Level (feet btoc): 10.06 Date: 04-16-21
 Initial Groundwater Elevation (NAVD88): _____ Air Pressure in Well? Y/N

PURGE INFORMATION

Date: 04-16-21
 Name (Sample Collector): D Oillingham
 Method of Well Purge: Low Flow Peristaltic Pump Dedicated Tubing? (Y) / N
 Time Purging Initiated: 1349 One (1) Well Volume (mL): NA
 Beginning Water Level (feet btoc): 10.06 Total Volume Purged (mL): 9420
 Beginning Groundwater Elevation (NAVD88): _____ Well Purged To Dryness? Y / (N)
 Well Total Depth (feet btoc): 37.23 Water Level after Sampling (feet btoc): 10.06
 (i.e., pump is off)
 Casing Diameter (feet): 2" Sch 40 PVC Time Sampling Completed: 1458

PURGE STABILIZATION DATA

Time	Purge Rate (mL/min)	Cumulative Volume (mL)	Temp (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	pH (S.U.)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Water Level (feet btoc)	Notes (e.g., opacity, color, odor)
1351		420	16.48	564.34	10.59	7.4	-42.9	139.7	10.06	Yellow, no odor
1353	300	1020	16.20	581.73	9.72	7.4	-44.6	139.9	10.06	" "
1355	300	1620	16.08	587.37	9.03	7.4	-46.1	157.8	10.06	" "
1357	290	2200	16.04	592.61	6.59	7.4	-48.4	477.8	10.06	" "
1359	280	2760	16.09	599.10	5.99	7.4	-49.3	540.4	10.06	" "
1401	280	3320	16.04	593.91	5.47	7.4	-51.0	92.57	10.06	" "
1403	290	3900	16.01	592.26	5.31	7.4	-51.8	123.4	10.06	" "
1405	280	4460	16.02	597.76	5.13	7.4	-52.5	61.69	10.06	" "
1407	270	5000	15.98	592.31	4.77	7.4	-52.6	31.10	10.06	" "
1409	290	5680	16.05	594.47	6.25	7.4	-54.2	26.07	10.06	" "
1411	270	6120	16.07	594.07	5.97	7.4	-54.4	36.87	10.06	" "
1413	270	6700	16.02	595.10	4.92	7.4	-54.9	10.59	10.06	clear, no odor
1415	270	7240	16.00	594.52	4.86	7.4	-56.3	22.13	10.06	" "
1416	270	7780	15.98	597.47	4.95	7.4	-55.6	23.61	10.06	" "
1418	290	8360	16.01	591.24	4.52	7.5	-57.5	13.92	10.06	" "
1420	270	8900	16.00	596.44	5.76	7.5	-56.1	13.64	10.06	" "
1422	260	9420	15.99	591.21	4.85	7.4	-58.4	12.85	10.06	" "

btoc - below top of casing

Field Sampling Log

Facility: SBMU Sikeston Power Station - CCR Groundwater Monitoring

Monitoring Well ID: MW 4

Sampling Information:

Method of Sampling: Low Flow - Peristaltic Pump & Tubing

Dedicated: Y / N

Water Level @ Sampling (feet btoc): 10.06

Monitoring Event: Annual () Semi-Annual Quarterly () Monthly () Other ()

Final Purge Stabilization Sampling Data:

Date Sample Time	Sample Rate (mL/min)	Temp (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	pH (S.U.)	Oxidation Reduction Potential (mV)	Turbidity (NTU)
<u>04-16-21</u> <u>1422</u>	<u>260</u>	<u>15.99</u>	<u>591.21</u>	<u>4.85</u>	<u>7.4</u>	<u>-58.4</u>	<u>12.85</u>

Instrument Calibration Data:

See instrument calibration log of daily calibration data for the following instruments:

- 1 - In-Situ SmartTroll Multi-Probe Field Meter (Temperature, Specific Conductance, Dissolved Oxygen, pH, Oxidation Reduction Potential)
- 2 - HF scientific, inc. Micro TPI Field Portable Turbidimeter

General Information:

Weather Conditions @ time of sampling: Sunny

62° F

Sample Characteristics: Clear, colorless, odorless

Sample Collection Order: Per SAP

Comments and Observations:

Collected Field Blank

I certify that sampling procedures were in accordance with applicable EPA and State protocols.

Date: 04-16-21 By: Ashish Patel Title: Lab Tech

Appendix 1

Field Sampling Notes – April 17, 2021

(MW-3 TDS Re-sample)

Field Instrumentation Calibration Log

Facility: SBMU SPS CCR Groundwater Sampling

Calibrated by: Asghish Paul

Field Instruments: <u>In-Situ smartROLL Field Meter</u>	HF scientific, inc. Micro TPI Field Portable Turbidimeter
S/N #: <u>474247</u>	S/N #: <u>201607366</u>

	Date	Time	pH		Specific Conductance Standard (µS/cm)	Specific Conductance Measurement (µS/cm)	Oxidation Reduction Potential Standard (mV)		Oxidation Reduction Potential Measurement (mV)	Dissolved Oxygen (%)		Turbidity Standards (NTU)	Turbidity Measurements (NTU)		
			Standards	Measurements			Temperature (°C)	Standard (mV)		Temperature (°C)	Measurement				
Beginning of Day Calibration	4-17-21	0620	4.00	= 4.0	1413	= 1412.9	Temperature (°C)	= 22.16	= 2320	Temperature (°C)	= 21.82	0.02	= 0.02		
			7.00	= 7.0			Standard (mV)	= 229		Tap Water Source	= Sikeston City	10.0	= 10.0		
			10.00	= 10.0				Barometric Pressure (mm/Hg)		= 1000.4	1000	= 1000.0			
End of Day Check	4-17-21	1500	4.00	= 4.1	1413	= 1468.3	Temperature (°C)	= 21.81	= AP 204.5 217.5	Temperature (°C)	= 19.96	0.02	= 0.01		
			7.00	= 7.0			Standard (mV)	= 229		Tap Water Source	= Sikeston City	10.0	= 9.89		
			10.00	= 10.0				Barometric Pressure (mm/Hg)		= 1001.8	1000	= 980.3			
							Measurement	= 1020.6				Measurement	= 1020.0		

Notes: The Multi-Probe Field Meter measures Temperature, Specific Conductance, Dissolved Oxygen, pH, and Oxidation Reduction Potential.

The HF scientific, inc. Micro TPI Field Portable Turbidimeter measures Turbidity.

Dissolved oxygen is calibrated via % saturation method; however, field measurements are recorded as mg/L.

I certify that the aforementioned meters were calibrated within the manufacturers specifications.

Date: 4-17-21 By: Asghish Paul

Field Sampling Log

Monitoring Well ID: MW 3 Facility: SBMU Sikeston Power Station - Groundwater Monitoring

Initial Water Level (feet btoc): <u>10.50</u>	Date: <u>4-17-21</u>
Initial Groundwater Elevation (NAVD88): _____	Air Pressure in Well? <u>Y</u> / <u>(N)</u>

PURGE INFORMATION

Date: <u>4-17-21</u>	
Name (Sample Collector): <u>D Dillingham</u>	
Method of Well Purge: <u>Low Flow Peristaltic Pump</u>	Dedicated Tubing? <u>(Y)</u> / <u>(N)</u>
Time Purging Initiated: <u>0711</u>	One (1) Well Volume (mL): <u>NA</u>
Beginning Water Level (feet btoc): <u>10.50</u>	Total Volume Purged (mL): <u>6460</u>
Beginning Groundwater Elevation (NAVD88): _____	Well Purged To Dryness? <u>Y</u> / <u>(N)</u>
Well Total Depth (feet btoc): <u>36.99</u>	Water Level after Sampling (feet btoc): <u>10.50</u> (i.e., pump is off)
Casing Diameter (feet): <u>2" Sch 40 PVC</u>	Time Sampling Completed: <u>0812</u>

PURGE STABILIZATION DATA

Time	Purge Rate (mL/min)	Cumulative Volume (mL)	Temp (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	pH (S.U.)	Oxidation Reduction Potential (mV)	Turbidity (NTU)	Water Level (feet btoc)	Notes (e.g., opacity, color, odor)
0713		340	16.24	204.02	22.6	7.2	24.3	22.23	10.50	Red ^{no} flake, odor
0715	260	860	14.99	209.36	21.26	6.7	40.3	17.30	10.50	" "
0717	260	1380	14.52	209.46	19.97	6.6	40.9	16.28	10.50	Clear, no odor
0719	260	1900	14.36	208.46	19.65	6.5	44.3	12.70	10.50	" "
0721	250	2400	14.24	206.96	18.42	6.5	43.6	11.95	10.50	" "
0723	250	2900	14.18	205.72	17.46	6.5	41.0	9.89	10.50	" "
0725	260	3420	14.14	202.87	16.46	6.5	41.3	9.08	10.50	" "
0727	250	3920	14.13	201.22	16.04	6.5	39.5	6.99	10.50	" "
0729	260	4440	14.09	199.89	14.55	6.5	38.8	5.59	10.50	" "
0731	250	4940	14.07	197.30	13.77	6.6	37.7	4.81	10.50	" "
0733	240	5420	14.05	196.29	13.12	6.6	36.7	4.36	10.50	" "
0735	250	5920	14.04	195.11	12.57	6.6	35.1	3.74	10.50	" "
0737	270	6460	14.04	196.77	12.04	6.6	34.3	3.47	10.50	" "

btoc - below top of casing

Field Sampling Log

Facility: SBMU Sikeston Power Station - CCR Groundwater Monitoring

Monitoring Well ID: MW 3

Sampling Information:

Method of Sampling: Low Flow - Peristaltic Pump & Tubing

Dedicated: Y / N

Water Level @ Sampling (feet btoc): 10.50

Monitoring Event: Annual () Semi-Annual Quarterly () Monthly () Other ()

Final Purge Stabilization Sampling Data:

Date Sample Time	Sample Rate (mL/min)	Temp (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	pH (S.U.)	Oxidation Reduction Potential (mV)	Turbidity (NTU)
<u>04-17-21</u> <u>0737</u>	<u>270</u>	<u>14.04</u>	<u>196.77</u>	<u>12.04</u>	<u>6.6</u>	<u>34.3</u>	<u>3.47</u>

Instrument Calibration Data:

See instrument calibration log of daily calibration data for the following instruments:

- 1 - In-Situ SmarTroll Multi-Probe Field Meter (Temperature, Specific Conductance, Dissolved Oxygen, pH, Oxidation Reduction Potential)
- 2 - HF scientific, inc. Micro TPI Field Portable Turbidimeter

General Information:

Weather Conditions @ time of sampling: Mostly cloudy
49°F

Sample Characteristics: clear, colorless, odorless

Sample Collection Order: Per SAP

Comments and Observations:

I certify that sampling procedures were in accordance with applicable EPA and State protocols.

Date: 4-17-21 By: ASH, R. Puro Title: Lab Tech

Appendix 2

Laboratory Analytical Results – April 16, 2021
(First 2021 Semi-annual Event)



PDC Laboratories, Inc.

PROFESSIONAL • DEPENDABLE • COMMITTED

June 11, 2021

Luke St Mary
Sikeston BMU, Sikeston Power Station
1551 W Wakefield
Sikeston, MO 63801

Dear Luke St Mary:

Please find enclosed the **revised** analytical results for the sample(s) the laboratory received. All testing is performed according to our current TNI accreditations unless otherwise noted. This report cannot be reproduced, except in full, without the written permission of PDC Laboratories, Inc.

If you have any questions regarding your report, please contact your project manager. Quality and timely data is of the utmost importance to us.

PDC Laboratories, Inc. appreciates the opportunity to provide you with analytical expertise. We are always trying to improve our customer service and we welcome you to contact the Director of Client Services, Lisa Grant, with any feedback you have about your experience with our laboratory at 309-683-1764 or lgrant@pdclab.com.

Sincerely,

David G. Schindler

Project Manager
(309) 692-9688 x1716
gschindler@pdclab.com





SAMPLE RECEIPT CHECK LIST

Items not applicable will be marked as in compliance

Work Order ED03829

<u>YES</u>	<u>Samples received within temperature compliance when applicable</u>
<u>YES</u>	<u>COC present upon sample receipt</u>
<u>YES</u>	<u>COC completed & legible</u>
<u>YES</u>	<u>Sampler name & signature present</u>
<u>YES</u>	<u>Unique sample IDs assigned</u>
<u>YES</u>	<u>Sample collection location recorded</u>
<u>YES</u>	<u>Date & time collected recorded on COC</u>
<u>YES</u>	<u>Relinquished by client signature on COC</u>
<u>YES</u>	<u>COC & labels match</u>
<u>YES</u>	<u>Sample labels are legible</u>
<u>YES</u>	<u>Appropriate bottle(s) received</u>
<u>YES</u>	<u>Sufficient sample volume received</u>
<u>YES</u>	<u>Sample containers received undamaged</u>
<u>NO</u>	<u>Zero headspace, <6 mm present in VOA vials</u>
<u>NO</u>	<u>Trip blank(s) received</u>
<u>YES</u>	<u>All non-field analyses received within holding times</u>
<u>NO</u>	<u>Short hold time analysis</u>
<u>YES</u>	<u>Current PDC COC submitted</u>
<u>NO</u>	<u>Case narrative provided</u>



ANALYTICAL RESULTS

Sample: ED03829-01
Name: MW-3
Matrix: Ground Water - Regular Sample

Sampled: 04/16/21 08:01
Received: 04/20/21 09:40
PO #: 25816

Table with 10 columns: Parameter, Result, Unit, Qualifier, Prepared, Dilution, MRL, Analyzed, Analyst, Method. Rows include Anions - PIA (Chloride, Sulfate), General Chemistry - PIA (Fluoride, Solids - total dissolved solids (TDS)), and Total Metals - PIA (Boron, Calcium).

Sample: ED03829-02
Name: MW-4
Matrix: Ground Water - Regular Sample

Sampled: 04/16/21 14:22
Received: 04/20/21 09:40
PO #: 25816

Table with 10 columns: Parameter, Result, Unit, Qualifier, Prepared, Dilution, MRL, Analyzed, Analyst, Method. Rows include Anions - PIA (Chloride, Fluoride, Sulfate), General Chemistry - PIA (Solids - total dissolved solids (TDS)), and Total Metals - PIA (Boron, Calcium).



ANALYTICAL RESULTS

Sample: ED03829-03
Name: MW-5
Matrix: Ground Water - Regular Sample

Sampled: 04/16/21 11:00
Received: 04/20/21 09:40
PO #: 25816

Table with 10 columns: Parameter, Result, Unit, Qualifier, Prepared, Dilution, MRL, Analyzed, Analyst, Method. Rows include Anions - PIA (Chloride, Fluoride, Sulfate), General Chemistry - PIA (Solids - total dissolved solids (TDS)), and Total Metals - PIA (Boron, Calcium).

Sample: ED03829-04
Name: MW-6
Matrix: Ground Water - Regular Sample

Sampled: 04/16/21 09:11
Received: 04/20/21 09:40
PO #: 25816

Table with 10 columns: Parameter, Result, Unit, Qualifier, Prepared, Dilution, MRL, Analyzed, Analyst, Method. Rows include Anions - PIA (Chloride, Fluoride, Sulfate), General Chemistry - PIA (Solids - total dissolved solids (TDS)), and Total Metals - PIA (Boron, Calcium).



ANALYTICAL RESULTS

Sample: ED03829-05
Name: MW-8
Matrix: Ground Water - Regular Sample

Sampled: 04/16/21 12:53
Received: 04/20/21 09:40
PO #: 25816

Table with 10 columns: Parameter, Result, Unit, Qualifier, Prepared, Dilution, MRL, Analyzed, Analyst, Method. Rows include Anions - PIA (Chloride, Fluoride, Sulfate), General Chemistry - PIA (Solids - total dissolved solids (TDS)), and Total Metals - PIA (Boron, Calcium).

Sample: ED03829-06
Name: FIELD DUPLICATE
Matrix: Ground Water - Regular Sample

Sampled: 04/16/21 00:00
Received: 04/20/21 09:40
PO #: 25816

Table with 10 columns: Parameter, Result, Unit, Qualifier, Prepared, Dilution, MRL, Analyzed, Analyst, Method. Rows include Anions - PIA (Chloride, Fluoride, Sulfate), General Chemistry - PIA (Solids - total dissolved solids (TDS)), and Total Metals - PIA (Boron, Calcium).



ANALYTICAL RESULTS

Sample: ED03829-07
Name: FIELD BLANK
Matrix: Ground Water - Regular Sample

Sampled: 04/16/21 14:22
Received: 04/20/21 09:40
PO #: 25816

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
<u>Anions - PIA</u>									
Chloride	< 1.0	mg/L		04/26/21 19:48	1	1.0	04/26/21 19:48	CRD	EPA 300.0 REV 2.1
Fluoride	< 0.250	mg/L		04/26/21 19:48	1	0.250	04/26/21 19:48	CRD	EPA 300.0 REV 2.1
Sulfate	< 1.0	mg/L		04/26/21 19:48	1	1.0	04/26/21 19:48	CRD	EPA 300.0 REV 2.1
<u>General Chemistry - PIA</u>									
Solids - total dissolved solids (TDS)	< 17	mg/L		04/21/21 13:06	1	17	04/21/21 16:42	BMA	SM 2540C
<u>Total Metals - PIA</u>									
Boron	< 10	ug/L		04/27/21 07:20	5	10	04/30/21 07:19	JMW	EPA 6020A
Calcium	< 200	ug/L		04/27/21 07:20	5	200	04/29/21 16:03	JMW	EPA 6020A

Appendix 2

Laboratory Analytical Results – April 17, 2021

(MW-3 TDS Re-sample)



PDC Laboratories, Inc.

PROFESSIONAL • DEPENDABLE • COMMITTED

June 11, 2021

Luke St Mary
Sikeston BMU, Sikeston Power Station
1551 W Wakefield
Sikeston, MO 63801

Dear Luke St Mary:

Please find enclosed the **revised** analytical results for the sample(s) the laboratory received. All testing is performed according to our current TNI accreditations unless otherwise noted. This report cannot be reproduced, except in full, without the written permission of PDC Laboratories, Inc.

If you have any questions regarding your report, please contact your project manager. Quality and timely data is of the utmost importance to us.

PDC Laboratories, Inc. appreciates the opportunity to provide you with analytical expertise. We are always trying to improve our customer service and we welcome you to contact the Director of Client Services, Lisa Grant, with any feedback you have about your experience with our laboratory at 309-683-1764 or lgrant@pdclab.com.

Sincerely,

David G. Schindler

Project Manager
(309) 692-9688 x1716
gschindler@pdclab.com





SAMPLE RECEIPT CHECK LIST

Items not applicable will be marked as in compliance

Work Order ED03824

YES	Samples received within temperature compliance when applicable
YES	COC present upon sample receipt
YES	COC completed & legible
YES	Sampler name & signature present
YES	Unique sample IDs assigned
YES	Sample collection location recorded
YES	Date & time collected recorded on COC
YES	Relinquished by client signature on COC
YES	COC & labels match
YES	Sample labels are legible
YES	Appropriate bottle(s) received
YES	Sufficient sample volume received
YES	Sample containers received undamaged
NO	Zero headspace, <6 mm present in VOA vials
NO	Trip blank(s) received
YES	All non-field analyses received within holding times
NO	Short hold time analysis
YES	Current PDC COC submitted
NO	Case narrative provided



ANALYTICAL RESULTS

Sample: ED03824-01
Name: MW-1
Matrix: Ground Water - Grab

Sampled: 04/17/21 10:48
Received: 04/20/21 09:40
PO #: 25815

Table with 10 columns: Parameter, Result, Unit, Qualifier, Prepared, Dilution, MRL, Analyzed, Analyst, Method. Rows include Anions - PIA (Chloride, Fluoride, Sulfate), General Chemistry - PIA (Solids - total dissolved solids (TDS)), and Total Metals - PIA (Boron, Calcium).

Sample: ED03824-02
Name: MW-2
Matrix: Ground Water - Grab

Sampled: 04/17/21 08:42
Received: 04/20/21 09:40
PO #: 25815

Table with 10 columns: Parameter, Result, Unit, Qualifier, Prepared, Dilution, MRL, Analyzed, Analyst, Method. Rows include Anions - PIA (Chloride, Fluoride, Sulfate), General Chemistry - PIA (Solids - total dissolved solids (TDS)), and Total Metals - PIA (Boron, Calcium).



ANALYTICAL RESULTS

Sample: ED03824-03
Name: MW-3
Matrix: Ground Water - Grab

Sampled: 04/17/21 07:37
Received: 04/20/21 09:40
PO #: 25815

Table with 10 columns: Parameter, Result, Unit, Qualifier, Prepared, Dilution, MRL, Analyzed, Analyst, Method. Rows include Anions - PIA (Chloride, Fluoride, Sulfate), General Chemistry - PIA (Solids - total dissolved solids (TDS)), and Total Metals - PIA (Boron, Calcium).

Sample: ED03824-04
Name: MW-7
Matrix: Ground Water - Grab

Sampled: 04/17/21 12:28
Received: 04/20/21 09:40
PO #: 25815

Table with 10 columns: Parameter, Result, Unit, Qualifier, Prepared, Dilution, MRL, Analyzed, Analyst, Method. Rows include Anions - PIA (Chloride, Fluoride, Sulfate), General Chemistry - PIA (Solids - total dissolved solids (TDS)), and Total Metals - PIA (Boron, Calcium).



ANALYTICAL RESULTS

Sample: ED03824-05
Name: MW-9
Matrix: Ground Water - Grab

Sampled: 04/17/21 13:26
Received: 04/20/21 09:40
PO #: 25815

Table with 10 columns: Parameter, Result, Unit, Qualifier, Prepared, Dilution, MRL, Analyzed, Analyst, Method. Rows include Anions - PIA (Chloride, Fluoride, Sulfate), General Chemistry - PIA (Solids - total dissolved solids (TDS)), and Total Metals - PIA (Boron, Calcium).

Sample: ED03824-06
Name: DUPLICATE WELL
Matrix: Ground Water - Field Duplicate

Sampled: 04/17/21 00:00
Received: 04/20/21 09:40
PO #: 25815

Table with 10 columns: Parameter, Result, Unit, Qualifier, Prepared, Dilution, MRL, Analyzed, Analyst, Method. Rows include Anions - PIA (Chloride, Fluoride, Sulfate), General Chemistry - PIA (Solids - total dissolved solids (TDS)), and Total Metals - PIA (Boron, Calcium).



ANALYTICAL RESULTS

Sample: ED03824-07
Name: FIELD BLANK
Matrix: Ground Water - Field Blank

Sampled: 04/17/21 12:28
Received: 04/20/21 09:40
PO #: 25815

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
<u>Anions - PIA</u>									
Chloride	< 1.0	mg/L		04/28/21 00:04	1	1.0	04/28/21 00:04	EJO	EPA 300.0 REV 2.1
Fluoride	< 0.250	mg/L		04/28/21 00:04	1	0.250	04/28/21 00:04	EJO	EPA 300.0 REV 2.1
Sulfate	< 1.0	mg/L		04/28/21 00:04	1	1.0	04/28/21 00:04	EJO	EPA 300.0 REV 2.1
<u>General Chemistry - PIA</u>									
Solids - total dissolved solids (TDS)	< 17	mg/L	H	05/11/21 08:55	1	17	05/11/21 12:23	BCR	SM 2540C
<u>Total Metals - PIA</u>									
Boron	10	ug/L		04/26/21 14:13	5	10	05/12/21 12:46	JMW	EPA 6020A
Calcium	< 200	ug/L		04/26/21 14:13	5	200	04/29/21 10:12	JMW	EPA 6020A

Appendix 3

Laboratory Quality Assurance/Quality Control Data

Appendix 3

Laboratory QA/QC Data – April 16, 2021
(First 2021 Semi-annual Event)



QC SAMPLE RESULTS

Parameter	Result	Unit	Qual	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<u>Batch B128301 - No Prep - SM 2540C</u>									
Blank (B128301-BLK1)				Prepared & Analyzed: 04/21/21					
Solids - total dissolved solids (TDS)	< 17	mg/L							
LCS (B128301-BS1)				Prepared & Analyzed: 04/21/21					
Solids - total dissolved solids (TDS)	967	mg/L		1000		97	84.9-109		
<u>Batch B128517 - No Prep - SM 2540C</u>									
Blank (B128517-BLK1)				Prepared & Analyzed: 04/23/21					
Solids - total dissolved solids (TDS)	< 17	mg/L							
LCS (B128517-BS1)				Prepared & Analyzed: 04/23/21					
Solids - total dissolved solids (TDS)	1040	mg/L		1000		104	84.9-109		
Duplicate (B128517-DUP2)				Sample: ED03829-01		Prepared & Analyzed: 04/23/21			
Solids - total dissolved solids (TDS)	220	mg/L			230			4	5
<u>Batch B128694 - SW 3015 - EPA 6020A</u>									
Blank (B128694-BLK1)				Prepared: 04/26/21 Analyzed: 04/29/21					
Boron	< 10	ug/L							
Calcium	< 200	ug/L							
LCS (B128694-BS1)				Prepared: 04/26/21 Analyzed: 04/29/21					
Boron	486	ug/L		555.6		88	80-120		
Calcium	5720	ug/L		5556		103	80-120		
<u>Batch B128759 - SW 3015 - EPA 6020A</u>									
Blank (B128759-BLK1)				Prepared: 04/27/21 Analyzed: 04/30/21					
Boron	< 10	ug/L							
Calcium	< 200	ug/L							
LCS (B128759-BS1)				Prepared: 04/27/21 Analyzed: 04/30/21					
Boron	511	ug/L		555.6		92	80-120		
Calcium	5530	ug/L		5556		99	80-120		
Matrix Spike (B128759-MS1)				Sample: ED03829-03		Prepared: 04/27/21 Analyzed: 04/30/21			
Boron	831	ug/L		555.6	366	84	75-125		
Calcium	122000	ug/L	Q4	5556	118000	87	75-125		
Matrix Spike Dup (B128759-MSD1)				Sample: ED03829-03		Prepared: 04/27/21 Analyzed: 04/30/21			
Boron	845	ug/L		555.6	366	86	75-125	2	20
Calcium	121000	ug/L	Q4	5556	118000	62	75-125	1	20
<u>Batch B128788 - IC No Prep - EPA 300.0 REV 2.1</u>									
Calibration Blank (B128788-CCB1)				Prepared & Analyzed: 04/26/21					
Fluoride	0.00	mg/L							
Sulfate	0.00	mg/L							
Chloride	0.00	mg/L							
Calibration Check (B128788-CCV1)				Prepared & Analyzed: 04/26/21					
Chloride	4.72	mg/L		5.000		94	90-110		
Fluoride	4.87	mg/L		5.000		97	90-110		



QC SAMPLE RESULTS

Parameter	Result	Unit	Qual	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<u>Batch B128788 - IC No Prep - EPA 300.0 REV 2.1</u>									
Calibration Check (B128788-CCV1)				Prepared & Analyzed: 04/26/21					
Sulfate	4.88	mg/L		5.000		98	90-110		
Matrix Spike (B128788-MS3)				Sample: ED03829-04 Prepared & Analyzed: 04/26/21					
Chloride	3.6	mg/L		1.500	2.0	105	80-120		
Fluoride	1.88	mg/L		1.500	0.174	114	80-120		
Sulfate	1.00E9	mg/L	Q4	1.500	23.7	NR	80-120		
Matrix Spike Dup (B128788-MSD3)				Sample: ED03829-04 Prepared & Analyzed: 04/26/21					
Fluoride	1.87	mg/L		1.500	0.174	113	80-120	0.6	20
Sulfate	1.00E9	mg/L	Q4	1.500	23.7	NR	80-120	0	20
Chloride	3.5	mg/L		1.500	2.0	99	80-120	3	20
<u>Batch B128932 - IC No Prep - EPA 300.0 REV 2.1</u>									
Calibration Blank (B128932-CCB1)				Prepared & Analyzed: 04/27/21					
Sulfate	0.0762	mg/L							
Chloride	0.401	mg/L							
Calibration Check (B128932-CCV1)				Prepared & Analyzed: 04/27/21					
Chloride	4.98	mg/L		5.000		100	90-110		
Sulfate	5.13	mg/L		5.000		103	90-110		
<u>Batch B128934 - IC No Prep - EPA 300.0 REV 2.1</u>									
Calibration Blank (B128934-CCB1)				Prepared & Analyzed: 04/27/21					
Chloride	0.943	mg/L							
Calibration Check (B128934-CCV1)				Prepared & Analyzed: 04/27/21					
Chloride	5.05	mg/L		5.000		101	90-110		
<u>Batch B129058 - No Prep - SM 4500F C 1997</u>									
Calibration Blank (B129058-CCB1)				Prepared & Analyzed: 04/29/21					
Fluoride	0.0170	mg/L							
Calibration Blank (B129058-CCB2)				Prepared & Analyzed: 04/29/21					
Fluoride	0.00800	mg/L							
Calibration Check (B129058-CCV2)				Prepared & Analyzed: 04/29/21					
Fluoride	0.720	mg/L		0.7000		103	90-110		
<u>Batch B130177 - No Prep - SM 2540C</u>									
Blank (B130177-BLK1)				Prepared & Analyzed: 05/11/21					
Solids - total dissolved solids (TDS)	< 17	mg/L							
LCS (B130177-BS1)				Prepared & Analyzed: 05/11/21					
Solids - total dissolved solids (TDS)	960	mg/L		1000		96	84.9-109		



NOTES

Specifications regarding method revisions and method modifications used for analysis are available upon request. Please contact your project manager.

* Not a TNI accredited analyte

Memos

Revised report - included reanalysis results

Certifications

CHI - McHenry, IL - 4314-A W. Crystal Lake Road, McHenry, IL 60050

TNI Accreditation for Drinking Water and Wastewater Fields of Testing through IL EPA Accreditation No. 100279
Illinois Department of Public Health Bacterial Analysis in Drinking Water Approved Laboratory Registry No. 17556

PIA - Peoria, IL - 2231 W. Altorfer Drive, Peoria, IL 61615

TNI Accreditation for Drinking Water, Wastewater, Solid and Hazardous Material Fields of Testing through IL EPA Accreditation No. 100230

Illinois Department of Public Health Bacterial Analysis in Drinking Water Approved Laboratory Registry No. 17553

Drinking Water Certifications/Accreditations: Iowa (240); Kansas (E-10338); Missouri (870)

Wastewater Certifications/Accreditations: Arkansas (88-0677); Iowa (240); Kansas (E-10338)

Solid and Hazardous Material Certifications/Accreditations: Arkansas (88-0677); Iowa (240); Kansas (E-10338)

SPMO - Springfield, MO - 1805 W Sunset Street, Springfield, MO 65807

USEPA DMR-QA Program

STL - Hazelwood, MO - 944 Anglum Rd, Hazelwood, MO 63042

TNI Accreditation for Wastewater, Solid and Hazardous Material Fields of Testing through KS KDHE Certification No. E-10389

TNI Accreditation for Wastewater, Solid and Hazardous Material Fields of Testing through IL EPA Accreditation No. - 200080

Illinois Department of Public Health Bacterial Analysis in Drinking Water Approved Laboratory, Registry No. 171050

Missouri Department of Natural Resources - Certificate of Approval for Microbiological Laboratory Service - No. 1050

Qualifiers

- H Test performed after the expiration of the appropriate regulatory/advisory maximum allowable hold time.
- Q4 The matrix spike recovery result is unusable since the analyte concentration in the sample is greater than four times the spike level. The associated blank spike was acceptable.

Gail G Schindler

Certified by: Gail Schindler, Project Manager





PDC LABORATORIES, INC.
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REGULATORY PROGRAM (CIRCLE):	NPDES
MORBCA	RCRA
CCDD	TACO: RES OR IND/COMM

CHAIN OF CUSTODY RECORD
STATE WHERE SAMPLE COLLECTED IL

ALL HIGHLIGHTED AREAS MUST BE COMPLETED BY CLIENT (PLEASE PRINT)

1 CLIENT SIKESTON BMU POWER STATION ADDRESS: 1551 W WAKEFIELD CITY: SIKESTON, MO 63801 CONTACT PERSON: MR LUKE ST MARY		PROJECT NUMBER: _____ PHONE NUMBER: 573-475-3131 PROJECT LOCATION: BOTTOM ASH APP III E-MAIL: _____ PURCHASE ORDER #: _____ DATE SHIPPED: _____		3 ANALYSIS REQUESTED CL, F, SO4, TDS B, CA		4 (FOR LAB USE ONLY) LOGIN: E003879 LOGGED BY: _____ CLIENT: SIKESTON BMU, SIKESTON POWER STATION PROJECT: SIKESTON BOTTOM ASH APP III PROJ. MGR: GJ SCHINDLER				
2 SAMPLE DESCRIPTION (UNIQUE DESCRIPTION AS IT WILL APPEAR ON THE ANALYTICAL REPORT)		DATE COLLECTED	TIME COLLECTED	SAMPLE TYPE GRAB	COMP	MATRIX TYPE	BOTTLE COUNT	PRES CODE CLIENT PROMISE	REMARKS	
MW-3		4-16-21	0801	X		GW	2	3,6	X	X
MW-4		4-16-21	1422	X		GW	2	3,6	X	X
MW-5		4-16-21	1100	X		GW	2	3,6	X	X
MW-6		4-16-21	0911	X		GW	2	3,6	X	X
MW-8		4-16-21	1253	X		GW	2	3,6	X	X
DUPLICATE		4-16-21		X		GW	2	3,6	X	X
FIELD BLANK		4-16-21	1422	X		DI	2	3,6	X	X
CHEMICAL PRESERVATION CODES:		1 - HCL	2 - H2SO4	3 - HNO3	4 - NAOH	5 - NA2S2O3	6 - UNPRESERVED	7 - OTHER		
5 TURNAROUND TIME REQUESTED (PLEASE CIRCLE) NORMAL RUSH (RUSH TAT IS SUBJECT TO PDC LABS APPROVAL AND SURCHARGE) RUSH RESULTS VIA (PLEASE CIRCLE) EMAIL PHONE EMAIL IF DIFFERENT FROM ABOVE: _____ PHONE # IF DIFFERENT FROM ABOVE: _____		DATE RESULTS NEEDED		6 I understand that by initialing this box I give the lab permission to proceed with analysis, even though it may not meet all sample conformance requirements as defined in the receiving facility's Sample Acceptance Policy and the data will be qualified. Qualified data may NOT be acceptable to report to all regulatory authorities. PROCEED WITH ANALYSIS AND QUALIFY RESULTS: (INITIALS) _____						
7 RELINQUISHED BY: (SIGNATURE) Ash. B. Patel		DATE	TIME	RECEIVED BY: (SIGNATURE)		DATE	TIME	8 COMMENTS: (FOR LAB USE ONLY)		
RELINQUISHED BY: (SIGNATURE)		DATE	TIME	RECEIVED BY: (SIGNATURE)		DATE	TIME	SAMPLE TEMPERATURE UPON RECEIPT 1.4 °C		
RELINQUISHED BY: (SIGNATURE)		DATE	TIME	RECEIVED BY: (SIGNATURE)		DATE	TIME	CHILL PROCESS STARTED PRIOR TO RECEIPT SAMPLE(S) RECEIVED ON ICE Y OR N		
RELINQUISHED BY: (SIGNATURE)		DATE	TIME	RECEIVED BY: (SIGNATURE)		DATE	TIME	SAMPLE ACCEPTANCE NONCONFORMANT REPORT IS NEEDED Y OR N		
RELINQUISHED BY: (SIGNATURE)		DATE	TIME	RECEIVED BY: (SIGNATURE)		DATE	TIME	DATE AND TIME TAKEN FROM SAMPLE BOTTLE		

Appendix 3

Laboratory QA/QC Data – April 17, 2021

(MW-3 TDS Re-sample)



QC SAMPLE RESULTS

Parameter	Result	Unit	Qual	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<u>Batch B128301 - No Prep - SM 2540C</u>									
Blank (B128301-BLK1)				Prepared & Analyzed: 04/21/21					
Solids - total dissolved solids (TDS)	< 17	mg/L							
LCS (B128301-BS1)				Prepared & Analyzed: 04/21/21					
Solids - total dissolved solids (TDS)	967	mg/L		1000		97	84.9-109		
<u>Batch B128302 - No Prep - SM 2540C</u>									
Blank (B128302-BLK1)				Prepared & Analyzed: 04/21/21					
Solids - total dissolved solids (TDS)	< 17	mg/L							
LCS (B128302-BS1)				Prepared & Analyzed: 04/21/21					
Solids - total dissolved solids (TDS)	933	mg/L		1000		93	84.9-109		
<u>Batch B128517 - No Prep - SM 2540C</u>									
Blank (B128517-BLK1)				Prepared & Analyzed: 04/23/21					
Solids - total dissolved solids (TDS)	< 17	mg/L							
LCS (B128517-BS1)				Prepared & Analyzed: 04/23/21					
Solids - total dissolved solids (TDS)	1040	mg/L		1000		104	84.9-109		
Duplicate (B128517-DUP1)				Prepared & Analyzed: 04/23/21					
Solids - total dissolved solids (TDS)	240	mg/L	M		200			18	5
<u>Batch B128694 - SW 3015 - EPA 6020A</u>									
Blank (B128694-BLK1)				Prepared: 04/26/21 Analyzed: 04/29/21					
Boron	< 10	ug/L							
Calcium	< 200	ug/L							
LCS (B128694-BS1)				Prepared: 04/26/21 Analyzed: 04/29/21					
Boron	486	ug/L		555.6		88	80-120		
Calcium	5720	ug/L		5556		103	80-120		
<u>Batch B128758 - IC No Prep - EPA 300.0 REV 2.1</u>									
Calibration Blank (B128758-CCB1)				Prepared & Analyzed: 04/23/21					
Sulfate	0.00	mg/L							
Fluoride	0.00	mg/L							
Chloride	0.698	mg/L							
Calibration Check (B128758-CCV1)				Prepared & Analyzed: 04/23/21					
Chloride	5.14	mg/L		5.000		103	90-110		
Fluoride	4.97	mg/L		5.000		99	90-110		
Sulfate	4.99	mg/L		5.000		100	90-110		
<u>Batch B128788 - IC No Prep - EPA 300.0 REV 2.1</u>									
Calibration Blank (B128788-CCB1)				Prepared & Analyzed: 04/26/21					
Chloride	0.00	mg/L							
Fluoride	0.00	mg/L							
Sulfate	0.00	mg/L							
Calibration Check (B128788-CCV1)				Prepared & Analyzed: 04/26/21					



QC SAMPLE RESULTS

Parameter	Result	Unit	Qual	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<u>Batch B128788 - IC No Prep - EPA 300.0 REV 2.1</u>									
Calibration Check (B128788-CCV1)				Prepared & Analyzed: 04/26/21					
Fluoride	4.87	mg/L		5.000		97	90-110		
Chloride	4.72	mg/L		5.000		94	90-110		
Sulfate	4.88	mg/L		5.000		98	90-110		
Matrix Spike (B128788-MS1)				Sample: ED03824-01 Prepared & Analyzed: 04/26/21					
Fluoride	1.74	mg/L		1.500	0.167	105	80-120		
Sulfate	1.00E9	mg/L	Q4	1.500	37.5	NR	80-120		
Chloride	5.4	mg/L	Q1	1.500	3.5	130	80-120		
Matrix Spike (B128788-MS2)				Sample: ED03824-03 Prepared & Analyzed: 04/26/21					
Sulfate	1.00E9	mg/L	Q4	1.500	15.4	NR	80-120		
Chloride	2.4	mg/L	Q1	1.500	ND	158	80-120		
Fluoride	1.79	mg/L		1.500	0.219	105	80-120		
Matrix Spike Dup (B128788-MSD1)				Sample: ED03824-01 Prepared & Analyzed: 04/26/21					
Fluoride	1.75	mg/L		1.500	0.167	105	80-120	0.1	20
Sulfate	1.00E9	mg/L	Q4	1.500	37.5	NR	80-120	0	20
Chloride	5.4	mg/L	Q2	1.500	3.5	128	80-120	0.6	20
Matrix Spike Dup (B128788-MSD2)				Sample: ED03824-03 Prepared & Analyzed: 04/26/21					
Fluoride	1.77	mg/L		1.500	0.219	103	80-120	1	20
Sulfate	1.00E9	mg/L	Q4	1.500	15.4	NR	80-120	0	20
Chloride	2.3	mg/L	Q2	1.500	ND	157	80-120	1	20
<u>Batch B128930 - IC No Prep - EPA 300.0 REV 2.1</u>									
Calibration Blank (B128930-CCB1)				Prepared & Analyzed: 04/27/21					
Chloride	0.207	mg/L							
Sulfate	0.0604	mg/L							
Fluoride	0.00	mg/L							
Calibration Check (B128930-CCV1)				Prepared & Analyzed: 04/27/21					
Sulfate	5.05	mg/L		5.000		101	90-110		
Chloride	5.00	mg/L		5.000		100	90-110		
Fluoride	4.66	mg/L		5.000		93	90-110		
<u>Batch B128934 - IC No Prep - EPA 300.0 REV 2.1</u>									
Calibration Blank (B128934-CCB1)				Prepared & Analyzed: 04/27/21					
Fluoride	0.00	mg/L							
Chloride	0.943	mg/L							
Calibration Check (B128934-CCV1)				Prepared & Analyzed: 04/27/21					
Fluoride	5.07	mg/L		5.000		101	90-110		
Chloride	5.05	mg/L		5.000		101	90-110		
<u>Batch B129075 - IC No Prep - EPA 300.0 REV 2.1</u>									
Calibration Blank (B129075-CCB1)				Prepared & Analyzed: 04/28/21					
Sulfate	0.00	mg/L							
Calibration Check (B129075-CCV1)				Prepared & Analyzed: 04/28/21					
Sulfate	5.01	mg/L		5.000		100	90-110		
<u>Batch B130177 - No Prep - SM 2540C</u>									



QC SAMPLE RESULTS

Parameter	Result	Unit	Qual	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<u>Batch B130177 - No Prep - SM 2540C</u>									
Blank (B130177-BLK1)				Prepared & Analyzed: 05/11/21					
Solids - total dissolved solids (TDS)	< 17	mg/L							
LCS (B130177-BS1)				Prepared & Analyzed: 05/11/21					
Solids - total dissolved solids (TDS)	960	mg/L		1000		96	84.9-109		
<u>Batch B130353 - IC No Prep - EPA 300.0 REV 2.1</u>									
Calibration Blank (B130353-CCB1)				Prepared & Analyzed: 05/11/21					
Fluoride	0.00	mg/L							
Calibration Check (B130353-CCV1)				Prepared & Analyzed: 05/11/21					
Fluoride	4.95	mg/L		5.000		99	90-110		



NOTES

Specifications regarding method revisions and method modifications used for analysis are available upon request. Please contact your project manager.

* Not a TNI accredited analyte

Memos

Revised report - included reanalysis results

Certifications

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USEPA DMR-QA Program

STL - Hazelwood, MO - 944 Anglum Rd, Hazelwood, MO 63042

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Illinois Department of Public Health Bacterial Analysis in Drinking Water Approved Laboratory, Registry No. 171050

Missouri Department of Natural Resources - Certificate of Approval for Microbiological Laboratory Service - No. 1050

Qualifiers

- H Test performed after the expiration of the appropriate regulatory/advisory maximum allowable hold time.
- M Analyte failed to meet the required acceptance criteria for duplicate analysis.
- Q1 Matrix Spike failed % recovery acceptance limits. The associated blank spike recovery was acceptable.
- Q2 Matrix Spike Duplicate failed % recovery acceptance limits. The associated blank spike recovery was acceptable.
- Q3 Matrix Spike/Matrix Spike Duplicate both failed % recovery acceptance limits. The associated blank spike recovery was acceptable.
- Q4 The matrix spike recovery result is unusable since the analyte concentration in the sample is greater than four times the spike level. The associated blank spike was acceptable.

Gail Schindler

Certified by: Gail Schindler, Project Manager





PDC LABORATORIES, INC.
WWW.PDCLAB.COM

REGULATORY PROGRAM (CIRCLE):	NPDES
MORBCA	RCRA
CCDD	TACO: RES OR IND/COMM

CHAIN OF CUSTODY RECORD
STATE WHERE SAMPLE COLLECTED IL

ALL HIGHLIGHTED AREAS MUST BE COMPLETED BY CLIENT (PLEASE PRINT)

1 CLIENT SIKESTON BMU POWER STATION	PROJECT NUMBER	PROJECT LOCATION FLY ASH APP III	PURCHASE ORDER #	3 ANALYSIS REQUESTED CL, F, SO4, TDS	4 (FOR LAB USE ONLY) LOGIN # ED03924 LOGGED BY: <i>[Signature]</i> CLIENT: SIKESTON BMU, SIKESTON POWER STATION PROJECT: SIKESTON FLY ASH APP III PROJ. MGR.: GJ SCHINDLER								
	ADDRESS 1551 W WAKEFIELD	PHONE NUMBER 573-475-3131	E-MAIL			DATE SHIPPED							
CITY STAT ZIP SIKESTON, MO 63801	SAMPLER (PLEASE PRINT) DGNAIRI Dillingham	MATRIX TYPES: W-W WASTEWATER DW- DRINKING WATER GW- GROUND WATER WWAL- ALLIAGE WAS- NON ACCESSIBLE SOLID LCH- LEACHATE OL- OIL SC- SOLID SOL- SOLID	SAMPLER'S SIGNATURE <i>[Signature]</i>										
CONTACT PERSON MR LUKE ST MARY													
2 SAMPLE DESCRIPTION (UNIQUE DESCRIPTION AS IT WILL APPEAR ON THE ANALYTICAL REPORT)	DATE COLLECTED	TIME COLLECTED	SAMPLE TYPE GRAB COMP	MATRIX TYPE	BOTTLE COUNT	PRES CODE CLIENT PROVIDED	CL	F	SO4	TDS	B	CA	REMARKS
	MW-1	4-17-21	1048	X	GW	2	3,6	X	X				
	MW-2	4-17-21	0842	X	GW	2	3,6	X	X				
	MW-3	4-17-21	0737	X	GW	2	3,6	X	X				
	MW-7	4-17-21	1228	X	GW	2	3,6	X	X				
	MW-9	4-17-21	1326	X	GW	2	3,6	X	X				
	DUPLICATE	4-17-21		X	GW	2	3,6	X	X				
	FIELD BLANK	4-17-21	1228	X	DI	2	3,6	X	X				
CHEMICAL PRESERVATION CODES: 1-HCL 2-H2SO4 3-HNO3 4-NAOH 5-NA2S2O3 6-UNPRESERVED 7-OTHER													
5 TURNAROUND TIME REQUESTED (PLEASE CIRCLE) NORMAL RUSH RUSH RESULTS VIA (PLEASE CIRCLE) EMAIL PHONE EMAIL IF DIFFERENT FROM ABOVE: PHONE # IF DIFFERENT FROM ABOVE:	DATE RESULTS NEEDED		6 I understand that by initialing this box I give the lab permission to proceed with analysis, even though it may not meet all sample conformance requirements as defined in the receiving facility's Sample Acceptance Policy and the data will be qualified. Qualified data may NOT be acceptable to report to all regulatory authorities. PROCEED WITH ANALYSIS AND QUALIFY RESULTS: (INITIALS) _____										
7 RELINQUISHED BY: (SIGNATURE) <i>Ashish Patel</i>	DATE TIME 4-19-21 07:30	RECEIVED BY: (SIGNATURE)	DATE TIME	8 COMMENTS: (FOR LAB USE ONLY) SAMPLE TEMPERATURE UPON RECEIPT 3.6°C CHILL PROCESS STARTED PRIOR TO RECEIPT SAMPLE(S) RECEIVED ON ICE SAMPLE ACCEPTANCE NONCONFORMANT REPORT IS NEEDED DATE AND TIME TAKEN FROM SAMPLE BOTTLE 9:40 YORN YORN									
RELINQUISHED BY: (SIGNATURE)	DATE TIME	RECEIVED BY: (SIGNATURE)	DATE TIME										
RELINQUISHED BY: (SIGNATURE)	DATE TIME	RECEIVED BY: (SIGNATURE)	DATE TIME										

Appendix 4

Groundwater Quality Data Base

**Sikeston Board of Municipal Utilities
Sikeston Power Station
Bottom Ash Pond Scott County, Missouri
CCR Groundwater Data Base**

Well ID	Date	Monitoring Purpose	Field Parameters					Appendix III Monitoring Constituents (Detection)								Appendix IV Monitoring Constituents (Assessment)												
			Spec. Cond. μmhos/cm	Temp. °C	ORP mV	D.O. mg/L	Turbidity NTU	pH S.U.	Chloride mg/L	Fluoride mg/L	Sulfate mg/L	TDS mg/L	Boron ug/L	Calcium mg/L	Antimony ug/L	Arsenic ug/L	Barium ug/L	Beryllium ug/L	Cadmium ug/L	Chromium ug/L	Cobalt ug/L	Lead ug/L	Lithium ug/L	Mercury ug/L	Molybdenum ug/L	Selenium ug/L	Thallium ug/L	Radium 226 and 228 (Combined) pCi/L
								None	4.0	None	None	None	None	None	6	10	2000	4	5	100	6	15	40	2	100	50	2	5
MW-3 (UG)	11/30/2016	Background	254.0	15.75	-27.1	0.41	37.28	7.1	2.3	0.438	26	160	18	24	<3.0	1.5	96	<1.0	<1.0	<4.0	<2.0	<1.0	<10	<0.20	<1.0	<1.0	<1.0	1.668
	1/24/2017	Background	226.4	16.52	-8.4	0.39	4.46	6.9	2.0	0.261	30	130	12	21	<3.0	1.2	120	<1.0	<1.0	<4.0	<2.0	<1.0	<10	<0.20	<1.0	<1.0	<1.0	0.677(ND)
	2/22/2017	Background	226.6	16.47	9.7	0.36	3.56	6.9	1.9	0.290	26	120	33	22	<3.0	1.0	120	<1.0	<1.0	<4.0	<2.0	<1.0	<10	<0.20	<1.0	<1.0	<1.0	0.460(ND)
	3/20/2017	Background	212.1	17.07	33.7	0.43	6.61	6.7	1.8	0.286	21	170	22	19	<3.0	<1.0	110	<1.0	<1.0	<4.0	<2.0	<1.0	<10	<0.20	<1.0	<1.0	<1.0	0.277(ND)
	4/27/2017	Background	223.2	15.35	9.2	0.57	2.69	6.7	2.0	0.257	28	140	54	20	<3.0	<1.0	110	<1.0	<1.0	<4.0	<2.0	<1.0	<10	<0.20	9.9	<1.0	<1.0	-0.030(ND)
	5/17/2017	Background	224.9	17.68	26.8	0.45	12.59	6.6	1.5	<0.250	21	130	19	17	<3.0	<1.0	120	<1.0	<1.0	<4.0	<2.0	<1.0	<10	0.40	<1.0	<1.0	<1.0	0.844(ND)
	6/8/2017	Background	217.9	16.73	18.2	0.49	2.61	6.7	1.7	0.276	22	160	20	19	<3.0	<1.0	110	<1.0	<1.0	<4.0	<2.0	<1.0	<10	<0.20	<1.0	<1.0	<1.0	-0.469(ND)
	7/13/2017	Background	243.8	19.02	5.5	0.39	4.79	6.7	2.2	0.256	19	160	18	20	<3.0	<1.0	100	<1.0	<1.0	<4.0	<2.0	<1.0	<10	<0.20	<1.0	<1.0	<1.0	0.715(ND)
	10/31/2017	Background / D1	246.2	16.74	12.4	0.65	7.47	6.6	2.0	0.331	20	140	27	19	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	6/13/2018	Background / D2	194.2	17.19	42.3	0.42	7.57	6.6	1.3	0.291	17	130	23	20	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	11/26/2018	Background / D3	194.9	15.05	49.8	0.47	2.23	6.5	1.5	0.301	18	100	23	17	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8
	2/5/2019	Background	205.0	14.49	46.9	0.49	1.92	6.5	1.5	0.342	20	160	22	17	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8
	5/28/2019	Background / D4	218.4	16.42	32.2	0.82	9.69	6.4	1.3	<0.250	20	(NA)	51	17	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8
	7/23/2019		203.0	16.58	71.0	0.88	4.96	(NA)	(NA)	(NA)	(NA)	140	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	8/28/2019	Background / D5	207.4	16.97	75.6	0.89	4.02	6.4	1.1	<0.250	18	140	35	15	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8
	11/4/2019	Background	202.3	16.60	63.2	0.70	4.22	6.4	1.4	<0.250	18	130	37	15	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8
	2/18/2020	Background / D6	207.6	14.17	58.6	1.22	6.34	6.4	1.3	<0.250	21	(NA)	27	16	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8
	3/30/2020		199.3	14.87	61.2	1.20	6.01	(NA)	(NA)	(NA)	(NA)	180	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	7/21/2020	Background / D7	197.8	16.87	-40.4	8.42	3.43	6.5	1.0	<0.250	15	140	21	18	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8
	10/20/2020	Background	206.2	16.22	-15.1	8.73	2.88	6.5	1.2	<0.250	15	130	21	17	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8
	4/16/2021	Detection 8	189.2	14.10	41.3	12.69	4.03	6.5	1.2	<0.250	16	(NA)	25	17	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	4/17/2021		196.8	14.04	34.3	12.04	3.47	(NA)	(NA)	(NA)	(NA)	150	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)

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Well ID	Date	Monitoring Purpose	Field Parameters					Appendix III Monitoring Constituents (Detection)								Appendix IV Monitoring Constituents (Assessment)												
			Spec. Cond. µmhos/cm	Temp. °C	ORP mV	D.O. mg/L	Turbidity NTU	pH S.U.	Chloride mg/L	Fluoride mg/L	Sulfate mg/L	TDS mg/L	Boron ug/L	Calcium mg/L	Antimony ug/L	Arsenic ug/L	Barium ug/L	Beryllium ug/L	Cadmium ug/L	Chromium ug/L	Cobalt ug/L	Lead ug/L	Lithium ug/L	Mercury ug/L	Molybdenum ug/L	Selenium ug/L	Thallium ug/L	Radium 226 and 228 (Combined) pCi/L
									None	4.0	None	None	None	None	6	10	2000	4	5	100	6	15	40	2	100	50	2	5
MW-4 (DG)	11/30/2016	Background	575.6	17.51	-108.3	0.48	0.61	7.5	18	0.259	140	390	1400	89	<3.0	<1.0	41	<1.0	<1.0	<4.0	<2.0	<1.0	<10	<0.20	<1.0	<1.0	<1.0	0.572(ND)
	1/24/2017	Background	543.7	17.00	-105.2	0.50	0.48	7.5	15	<0.250	120	290	880	79	<3.0	<1.0	46	<2.0	<1.0	<4.0	<2.0	<1.0	<10	<0.20	<1.0	<1.0	<1.0	0.7031(ND)
	2/22/2017	Background	554.0	17.95	-115.3	0.51	1.19	7.5	13	<0.250	97	320	1500	78	<3.0	<1.0	51	<1.0	<1.0	<4.0	<2.0	<1.0	<10	<0.20	<1.0	<1.0	<1.0	0.550(ND)
	3/20/2017	Background	562.8	18.58	-108.8	0.69	1.70	7.4	12	<0.250	94	350	1400	72	<3.0	<1.0	53	<1.0	<1.0	<4.0	<2.0	<1.0	<10	1.3	<1.0	<1.0	<1.0	1.036
	4/27/2017	Background	536.9	17.25	-129.6	0.91	2.38	7.4	14	<0.250	99	300	1300	74	<3.0	<1.0	50	<1.0	<1.0	<4.0	<2.0	<1.0	<10	<0.20	<1.0	<1.0	<1.0	0.210(ND)
	5/17/2017	Background	554.9	17.90	-115.5	0.63	3.02	7.4	14	<0.250	96	320	1200	71	<3.0	<1.0	66	<1.0	<1.0	<4.0	<2.0	<1.0	<10	<0.20	<1.0	<1.0	<1.0	0.774(ND)
	6/8/2017	Background	509.7	18.24	-122.9	0.86	0.84	7.4	12	<0.250	86	340	1100	61	<3.0	<1.0	45	<1.0	<1.0	<4.0	<2.0	<1.0	<10	<0.20	<1.0	<1.0	<1.0	0.464(ND)
	7/13/2017	Background	575.5	19.46	-115.2	0.52	1.43	7.4	13	<0.250	88	300	1200	79	<3.0	<1.0	52	<1.0	<1.0	<4.0	<2.0	<1.0	<10	<0.20	<1.0	<1.0	<1.0	1.086(ND)
	10/31/2017	Background / D1	525.8	18.35	-118.1	0.63	1.07	7.3	17	<0.250	83	290	1400	67	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	6/13/2018	Background / D2	511.5	18.92	-120.7	0.44	18.50	7.3	14	<0.250	86	290	1200	80	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	11/26/2018	Background / D3	468.0	16.07	-101.8	0.53	1.01	7.4	8.8	<0.250	54	260	1100	64	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8
	2/5/2019	Background	761.0	15.62	-97.5	0.52	2.58	7.3	33	<0.250	140	420	1100	100	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8
	5/28/2019	Background / D4	581.7	18.65	-108.5	0.37	3.30	7.3	11	<0.250	75	(NA)	980	70	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8
	7/23/2019		615.2	18.88	-105.2	0.43	0.36	(NA)	(NA)	(NA)	(NA)	(NA)	340	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	8/28/2019	Background / D5	645.4	19.60	-101.7	0.40	2.31	(NA)	18	<0.250	110	300	1100	83	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8
	10/23/2019		620.0	18.90	-110.6	0.55	1.93	7.3	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	11/4/2019	Background	657.7	18.52	-104.2	0.50	0.96	7.2	2.1	<0.250	120	400	1200	89	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8
	2/18/2020	Background / D6	526.9	14.49	-87.6	0.63	1.60	7.4	11	<0.250	66	290H	930	67	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8
	3/30/2020		520.6	16.45	-91.1	0.35	19.51	(NA)	(NA)	(NA)	(NA)	(NA)	300	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	7/21/2020	Background / D7	550.7	19.75	-145.6	5.06	6.49	(NA)	14	<0.250	86	290	920	76	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8
	8/3/2020		567.8	18.81	-117.8	4.87	7.19	7.4	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	10/20/2020	Background	596.6	17.94	-92.1	6.36	1.80	7.4	17	<0.250	96	330	1000	80	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8
	4/16/2021	Detection 8	591.2	15.99	-58.4	4.85	12.85	7.4	19	<0.250	100	340	920	85	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	

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Well ID	Date	Monitoring Purpose	Field Parameters					Appendix III Monitoring Constituents (Detection)								Appendix IV Monitoring Constituents (Assessment)												
			Spec. Cond. μmhos/cm	Temp. °C	ORP mV	D.O. mg/L	Turbidity NTU	pH S.U.	Chloride mg/L	Fluoride mg/L	Sulfate mg/L	TDS mg/L	Boron ug/L	Calcium mg/L	Antimony ug/L	Arsenic ug/L	Barium ug/L	Beryllium ug/L	Cadmium ug/L	Chromium ug/L	Cobalt ug/L	Lead ug/L	Lithium ug/L	Mercury ug/L	Molybdenum ug/L	Selenium ug/L	Thallium ug/L	Radium 226 and 228 (Combined) pCi/L
									None	4.0	None	None	None	None	6	10	2000	4	5	100	6	15	40	2	100	50	2	5
MW-5 (DG)	11/30/2016	Background	808.3	16.20	-48.7	0.50	1.24	7.0	16	0.255	230	560	470	96	<3.0	<1.0	84	<1.0	<1.0	<4.0	4.3	<1.0	<10	<0.20	<1.0	<1.0	<1.0	1.844
	1/24/2017	Background	745.3	16.24	-37.6	0.58	0.72	6.9	15	<0.250	270	470	480	120	<3.0	<1.0	91	<1.0	<1.0	<4.0	5.2	<1.0	<10	<0.20	<1.0	<1.0	<1.0	0.827(ND)
	2/22/2017	Background	717.8	17.75	-50.5	0.36	3.43	7.0	11	<0.250	170	420	470	100	<3.0	<1.0	83	<1.0	<1.0	<4.0	3.6	<1.0	<10	<0.20	<1.0	<1.0	<1.0	0.130(ND)
	3/20/2017	Background	737.9	17.78	-36.5	0.72	2.16	6.9	11	<0.250	170	480	320	99	<3.0	<1.0	76	<1.0	<1.0	<4.0	4.4	<1.0	<10	<0.20	<1.0	<1.0	<1.0	0.538(ND)
	4/27/2017	Background	777.3	16.07	-58.8	0.69	5.20	6.8	12	<0.250	460	480	490	120	<3.0	<1.0	87	<1.0	<1.0	<4.0	4.8	<1.0	<10	<0.20	3.0	<1.0	<1.0	1.676
	5/17/2017	Background	760.1	17.81	-56.0	0.46	5.35	6.8	11	<0.250	200	440	5700	240	<3.0	1.8	180	<1.0	<1.0	16	5.3	6.3	<10	0.24	<1.0	<1.0	<1.0	1.739
	6/8/2017	Background	678.3	17.72	-58.6	0.69	1.89	6.8	11	<0.250	180	480	360	97	<3.0	<1.0	77	<1.0	<1.0	<4.0	3.9	<1.0	<10	<0.20	<1.0	<1.0	<1.0	0.869(ND)
	7/13/2017	Background	799.0	19.19	-82.0	1.08	17.49	7.0	10	<0.250	190	430	320	110	<3.0	<1.0	81	<1.0	<1.0	<4.0	3.8	<1.0	<10	<0.20	<1.0	<1.0	<1.0	0.767(ND)
	10/31/2017	Background / D1	591.8	17.45	-77.6	0.85	3.17	6.9	13	<0.250	88	310	280	72	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	6/13/2018	Background / D2	756.4	18.28	-55.6	0.84	1.91	6.8	11	<0.250	240	480	370	130	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	11/26/2018	Background / D3	836.4	14.90	-27.0	0.51	0.38	6.7	17	<0.250	230	520	420	120	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8
	2/5/2019	Background	845.6	15.22	-23.7	0.41	0.71	6.7	15	0.272	200	480	450	120	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8
	5/28/2019	Background / D4	861.1	18.31	-59.1	0.60	3.71	6.9	10	<0.250	190	(NA)	280	110	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8
	7/23/2019		806.9	18.66	-44.9	0.81	1.34	(NA)	(NA)	(NA)	(NA)	480	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	8/28/2019	Background / D5	848.4	18.49	-42.2	0.64	0.82	6.8	16	<0.250	190	480	410	110	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8
	11/4/2019	Background	729.9	18.03	-55.8	0.77	2.65	6.8	3.2	<0.250	15	440	420	99	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8
	2/18/2020	Background / D6	871.7	14.05	-45.2	0.81	0.88	6.8	15	<0.250	210	(NA)	400	110	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8
	3/30/2020		750.4	15.84	-49.7	0.62	2.90	(NA)	(NA)	(NA)	(NA)	450	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	7/21/2020	Background / D7	816.5	18.35	-102.9	4.37	5.36	6.8	14	<0.250	210	470	330	110	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8
	10/20/2020	Background	886.3	16.27	-70.2	8.15	3.72	6.9	15	<0.250	220	590	360	120	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8
	4/16/2021	Detection 8	837.4	15.79	-11.1	7.27	2.84	6.9	10	<0.250	240	510	370	120	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)

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Well ID	Date	Monitoring Purpose	Field Parameters					Appendix III Monitoring Constituents (Detection)								Appendix IV Monitoring Constituents (Assessment)												
			Spec. Cond. µmhos/cm	Temp. °C	ORP mV	D.O. mg/L	Turbidity NTU	pH S.U.	Chloride mg/L	Fluoride mg/L	Sulfate mg/L	TDS mg/L	Boron ug/L	Calcium mg/L	Antimony ug/L	Arsenic ug/L	Barium ug/L	Beryllium ug/L	Cadmium ug/L	Chromium ug/L	Cobalt ug/L	Lead ug/L	Lithium ug/L	Mercury ug/L	Molybdenum ug/L	Selenium ug/L	Thallium ug/L	Radium 226 and 228 (Combined) pCi/L
								None	4.0	None	None	None	None	None	6	10	2000	4	5	100	6	15	40	2	100	50	2	5
MW-6 (UG)	11/30/2016	Background	369.0	16.39	-49.4	0.85	0.84	6.9	2.8	0.331	36	200	36	45	<3.0	4.3	190	<1.0	<1.0	<4.0	<2.0	<1.0	<10	<0.20	<1.0	<1.0	<1.0	1.532
	1/24/2017	Background	358.9	16.29	-44.8	0.66	0.26	6.9	2.4	<0.250	43	200	27	41	<3.0	5.7	220	<1.0	<1.0	<4.0	<2.0	<1.0	<10	<0.20	<1.0	<1.0	<1.0	0.948(ND)
	2/22/2017	Background	352.5	17.20	-42.2	0.81	15.27	6.9	2.1	0.269	32	160	59	40	<3.0	6.4	210	<1.0	<1.0	<4.0	<2.0	<1.0	<10	<0.20	<1.0	<1.0	<1.0	0.685(ND)
	3/20/2017	Background	360.8	16.90	24.9	0.36	9.70	6.7	2.1	<0.250	31	240	37	39	<3.0	5	160	<1.0	<1.0	<4.0	<2.0	<1.0	<10	<0.20	<1.0	<1.0	<1.0	0.577(ND)
	4/27/2017	Background	331.5	15.71	-50.9	0.39	8.35	6.7	2.3	<0.250	34	170	36	38	<3.0	3.2	180	<1.0	<1.0	<4.0	<2.0	<1.0	<10	<0.20	<1.0	<1.0	<1.0	1.243(ND)
	5/17/2017	Background	323.2	17.65	-71.5	0.45	7.13	6.8	1.8	<0.250	30	170	35	30	<3.0	4.9	190	<1.0	<1.0	<4.0	<2.0	<1.0	<10	<0.20	<1.0	<1.0	<1.0	1.173(ND)
	6/8/2017	Background	326.7	17.50	-53.0	0.33	3.86	6.7	1.7	<0.250	29	180	38	36	<3.0	4.6	190	<1.0	<1.0	<4.0	<2.0	<1.0	<10	<0.20	<1.0	<1.0	<1.0	0.893(ND)
	7/13/2017	Background	396.8	19.68	-84.0	0.72	2.17	7.0	1.6	<0.250	28	180	31	40	<3.0	5.8	200	<1.0	<1.0	<4.0	<2.0	<1.0	<10	<0.20	<1.0	<1.0	<1.0	0.575(ND)
	10/31/2017	Background / D1	359.6	17.57	-57.9	0.71	1.48	6.7	1.7	0.303	29	170	41	38	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	6/13/2018	Background / D2	345.4	17.59	-44.0	0.40	13.24	6.7	2.3	<0.250	32	160	43	41	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	11/26/2018	Background / D3	375.3	15.04	-37.6	1.07	1.66	6.7	1.5	0.313	29	180	46	36	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8
	2/5/2019	Background	384.7	14.86	-33.9	0.56	2.68	6.7	1.6	0.338	27	160	44	40	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8
	5/28/2019	Background / D4	418.2	16.93	-48.2	0.34	7.15	6.7	2.5	<0.250	30	(NA)	52	40	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8
	7/23/2019		419.3	17.64	-59.8	0.51	2.03	(NA)	(NA)	(NA)	(NA)	180	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	8/28/2019	Background / D5	442.2	17.67	-65.4	0.66	1.15	6.7	1.0	<0.250	24	200	54	44	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8
	11/4/2019	Background	388.3	17.62	-48.1	0.38	1.68	6.7	1.4	0.319	22	210	47	43	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8
	2/18/2020	Background / D6	390.3	14.54	-54.5	0.81	5.79	6.7	1.7	<0.250	24	(NA)	40	41	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8
	3/30/2020		391.0	15.17	-53.6	0.67	3.99	(NA)	(NA)	(NA)	(NA)	230	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	7/21/2020	Background / D7	415.1	17.64	-100.2	4.54	3.48	6.7	<1.0	<0.250	22	220	46	43	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8
	10/20/2020	Background	455.5	16.43	-60.5	6.31	0.57	7.0	2.4	<0.250	24	250	47	49	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8
	4/16/2021	Detection 8	399.3	14.69	-7.1	6.88	16.55	6.8	2.0	<0.250	24	200	52	44	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)

**Sikeston Board of Municipal Utilities
Sikeston Power Station
Bottom Ash Pond Scott County, Missouri
CCR Groundwater Data Base**

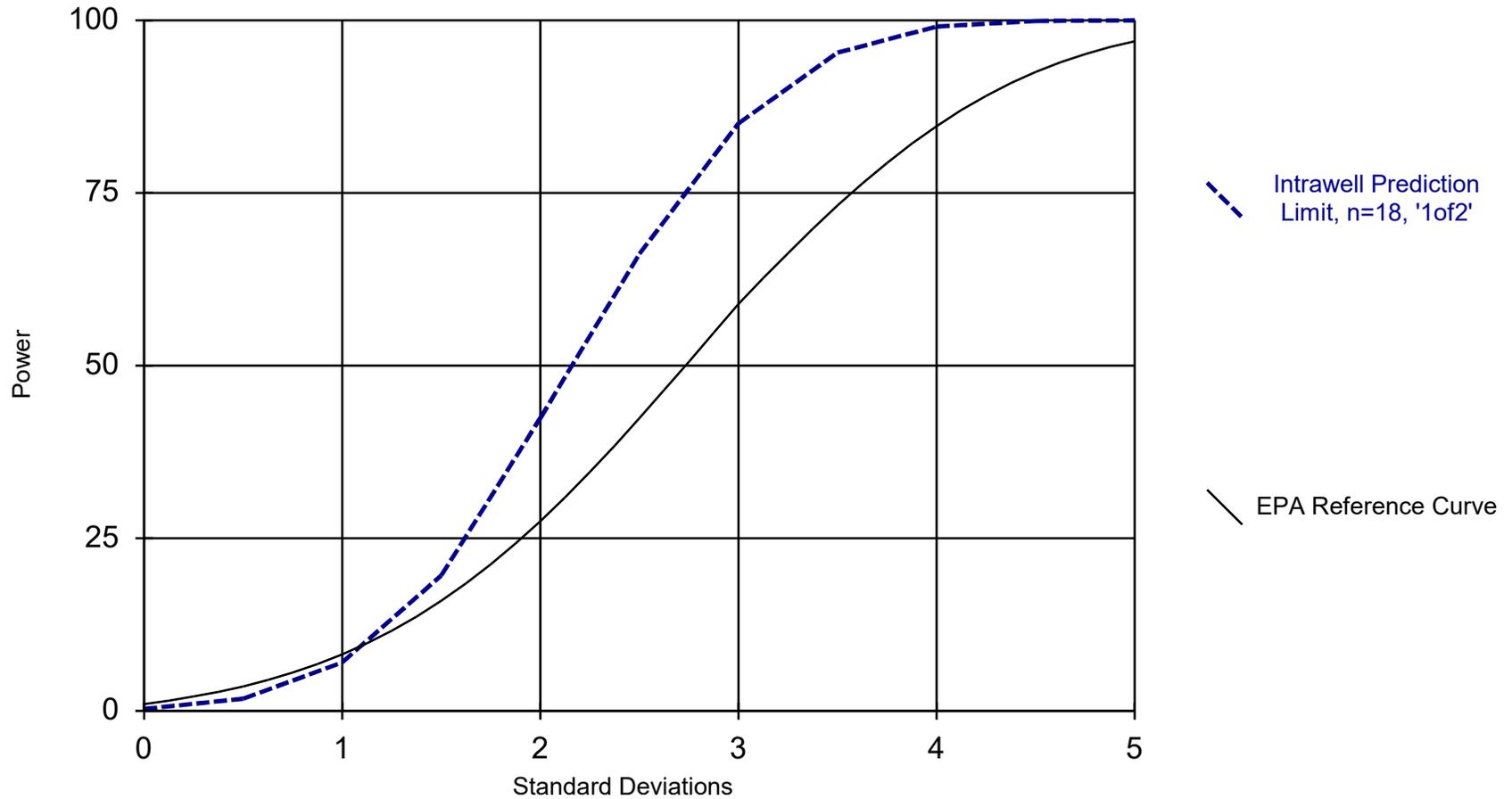
Well ID	Date	Monitoring Purpose	Field Parameters					Appendix III Monitoring Constituents (Detection)								Appendix IV Monitoring Constituents (Assessment)														
			Spec. Cond. µmhos/cm	Temp. °C	ORP mV	D.O. mg/L	Turbidity NTU	pH S.U.	Chloride mg/L	Fluoride mg/L	Sulfate mg/L	TDS mg/L	Boron ug/L	Calcium mg/L	Antimony ug/L	Arsenic ug/L	Barium ug/L	Beryllium ug/L	Cadmium ug/L	Chromium ug/L	Cobalt ug/L	Lead ug/L	Lithium ug/L	Mercury ug/L	Molybdenum ug/L	Selenium ug/L	Thallium ug/L	Radium 226 and 228 (Combined) pCi/L		
									None	4.0	None	None	None	None	6	10	2000	4	5	100	6	15	40	2	100	50	2	5		
MW-8 (DG)	5/18/2017	Background	662.5	17.58	-89.4	0.29	2.39	7.2	46	<0.250	100	340	400	74	<3.0	<1.0	86	<1.0	<1.0	<4.0	<2.0	<1.0	<10	<0.20	<1.0	<1.0	<1.0	1.067		
	6/9/2017	Background	678.2	17.90	-108.5	0.31	0.47	7.2	43	<0.250	110	380	520	92	<3.0	<1.0	86	<1.0	<1.0	<4.0	<2.0	<1.0	<10	<0.20	<1.0	<1.0	<1.0	0.839(ND)		
	7/13/2017	Background	661.5	18.57	-107.1	0.23	1.20	7.3	36	<0.250	89	320	430	87	<3.0	<1.0	74	<1.0	<1.0	<4.0	<2.0	<1.0	<10	<0.20	<1.0	<1.0	<1.0	1.034(ND)		
	8/3/2017	Background	665.7	19.06	-108.4	0.24	0.98	7.2	37	<0.250	89	330	490	80	<3.0	<1.0	74	<1.0	<1.0	<4.0	<2.0	<1.0	<10	<0.20	<1.0	<1.0	<1.0	0.681(ND)		
	8/15/2017	Background	594.9	18.56	-88.7	0.38	0.99	7.2	36	<0.250	83	320	530	75	<3.0	<1.0	68	<1.0	<1.0	<4.0	<2.0	<1.0	<10	<0.20	<1.0	<1.0	<1.0	0.906(ND)		
	8/30/2017	Background	644.2	18.62	-91.3	0.29	1.18	7.2	41	<0.250	96	290	510	88	<3.0	<1.0	75	<1.0	<1.0	<4.0	<2.0	<1.0	<10	<0.20	<1.0	<1.0	<1.0	0.805(ND)		
	9/14/2017	Background	707.9	18.52	-90.1	0.48	0.67	7.1	53	<0.250 H	110	370	510	86	<3.0	<1.0	77	<1.0	<1.0	<4.0	<2.0	<1.0	12	<0.20	<1.0	<1.0	<1.0	0.314(ND)		
	9/27/2017	Background	764.0	19.11	-89.6	0.30	0.58	7.1	50	<0.250	120	420	480	92	<3.0	<1.0	80	<1.0	<1.0	<4.0	<2.0	<1.0	<10	<0.20	<1.0	<1.0	<1.0	0.594(ND)		
	10/31/2017	Background / D1	698.1	17.99	-96.3	0.38	0.94	7.1	45	<0.250	110	380	540	86	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	6/13/2018	Background / D2	788.8	18.34	-99.1	0.23	4.80	7.1	65	<0.250	(NA)	430	520	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	7/10/2018		899.4	18.52	-94.2	0.35	2.69	(NA)	(NA)	(NA)	150	(NA)	(NA)	120	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	11/26/2018	Background / D3	662.1	15.08	-77.6	0.35	2.88	7.2	45	<0.250	100	320	500	94	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8
	2/5/2019	Background	839.7	14.72	-76.0	0.30	2.66	7.1	71	0.26	140	390	550	110	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8
	5/28/2019	Background / D4	836.6	18.25	-90.6	0.29	4.89	7.1	53	<0.250	130	(NA)	540	100	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8
	7/23/2019		819.5	19.34	-90.7	0.30	1.39	(NA)	(NA)	(NA)	(NA)	420	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	8/28/2019	Background / D5	769.1	19.38	-90.0	0.25	1.25	7.1	55	<0.250	110	360	460	93	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8
	11/4/2019	Background	729.8	18.39	-80.0	0.29	0.86	7.1	2.0	<0.250	4.5	400	480	98	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8
	2/18/2020	Background / D6	747.9	13.49	-75.7	0.29	0.69	7.2	53	<0.250	110	(NA)	480	93	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8
	3/30/2020		840.0	15.71	-82.4	0.20	7.48	(NA)	(NA)	(NA)	(NA)	480	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
	7/21/2020	Background / D7	673.7	19.33	-130.8	2.91	3.56	7.1	50	<0.250	100	420	470	89	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8
10/20/2020	Background	794.1	17.14	-83.8	3.59	0.88	7.2	56	<0.250	130	460	510	110	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	Note 8	
4/16/2021	Detection 8	758.6	15.85	-44.7	3.47	5.16	7.2	51	<0.250	130	400	460	100	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	

- Notes:
- All data transcribed from analytical lab data sheets or field notes.
 - Less than (<) symbol denotes concentration not detected at or above reportable limits.
 - (ND) denotes Radium 226 and 228 (combined) concentration not detected above minimum detectable concentration.
 - (NA) denotes analysis not conducted, or not available at time of report.
 - Background monitoring per USEPA 40 CFR 257.93.
 - Detection monitoring per USEPA 40 CFR 257.94.
 - Assessment monitoring per USEPA 40 CFR 257.95.
 - Additional background sampling based on recommendations in Alternate Source Demonstration dated September 26, 2018 (see Gredell Engineering, 2019).
 - Background updated March 2021 to include previous background, additional background (see note 8), and detection monitoring data through October 2021 except as noted in note 10.
 - Censored data for outlier removal or trend elimination indicated as shown below:
 - 4.5 - Value identified by Sanitas for Groundwater as an outlier.
 - 120 - Value censored from data set to eliminate significant trend.

Appendix 5

Statistical Power Curve

Power Curve



Kappa = 2.104, based on 5 compliance wells and 7 constituents, evaluated semi-annually (this report reflects annual total).

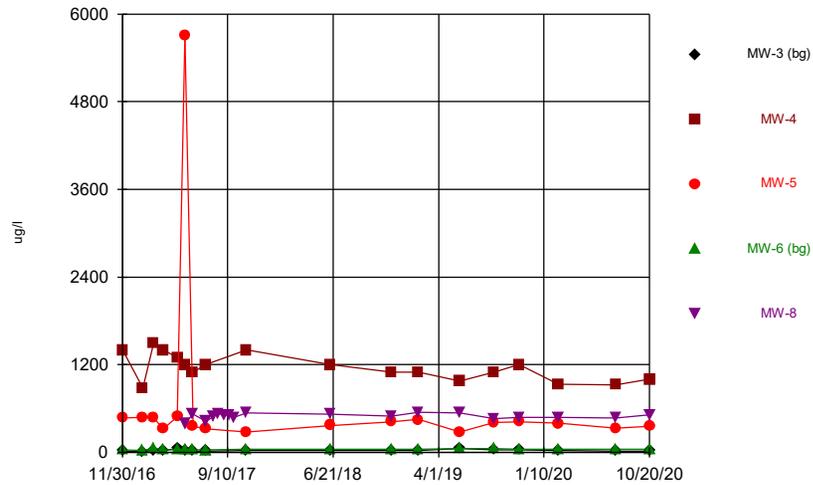
Analysis Run 12/22/2021 9:05 AM View: Everything Minus Detrended Data

SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SBMU-SPS EDD File 09-28-17

Appendix 6

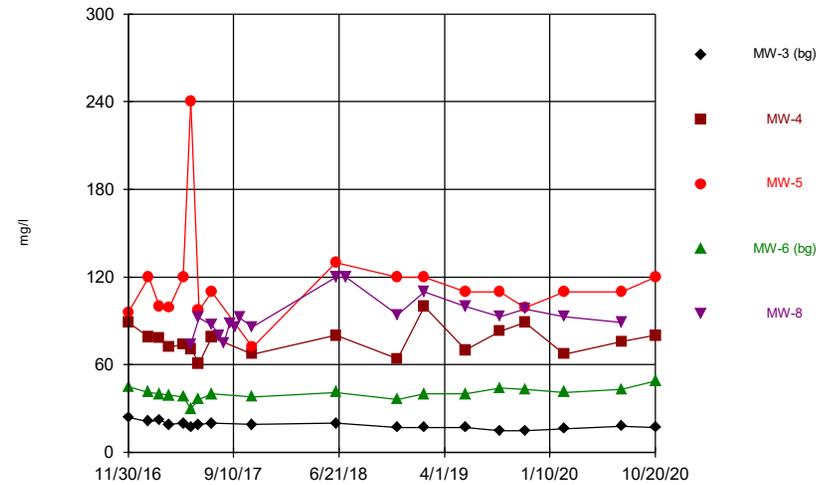
Time Series Plots

Boron



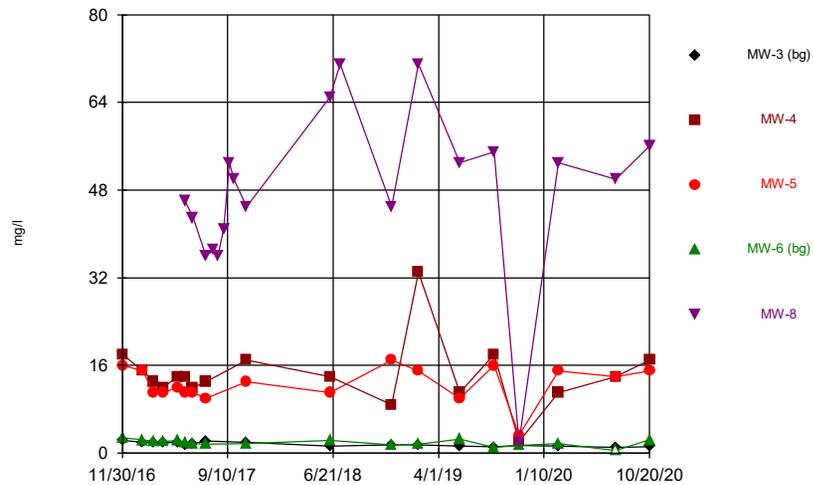
Time Series Analysis Run 1/19/2021 11:06 AM View: No Outliers flagged
 SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SBMU-SPS EDD File 09-28-17

Calcium



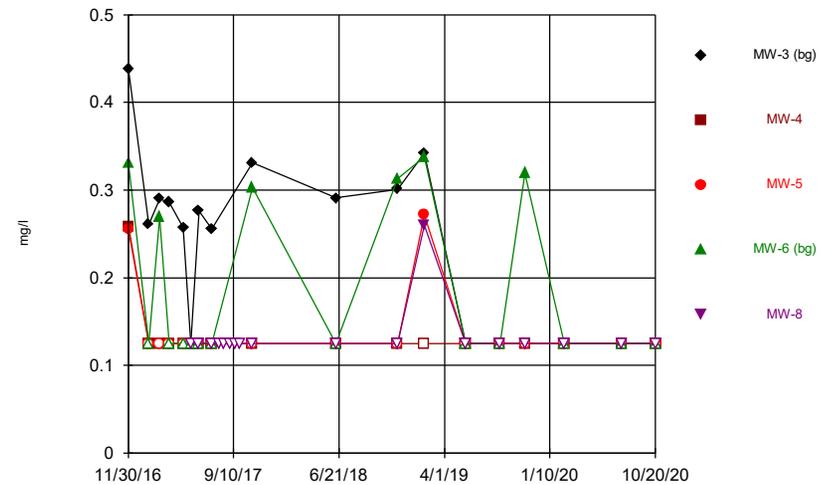
Time Series Analysis Run 1/19/2021 11:06 AM View: No Outliers flagged
 SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SBMU-SPS EDD File 09-28-17

Chloride



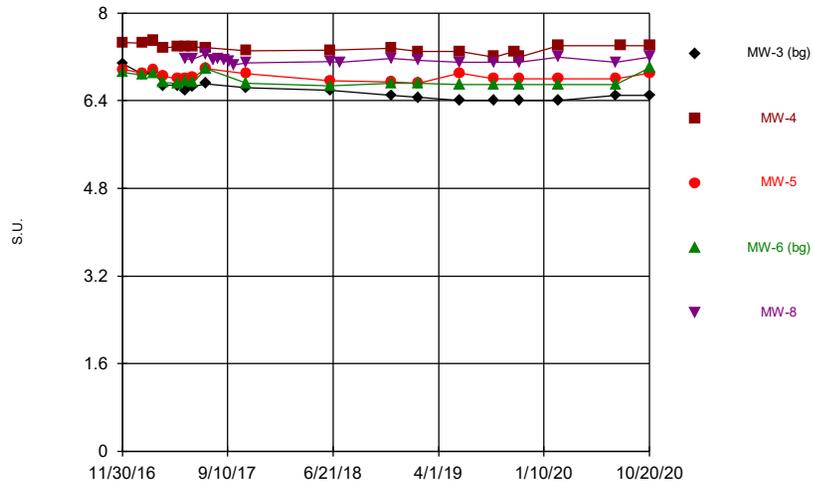
Time Series Analysis Run 1/19/2021 11:06 AM View: No Outliers flagged
 SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SBMU-SPS EDD File 09-28-17

Fluoride



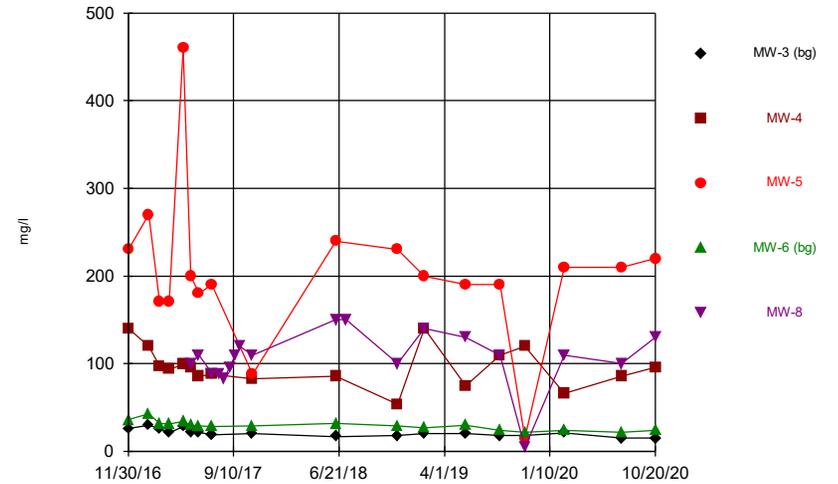
Time Series Analysis Run 1/19/2021 11:06 AM View: No Outliers flagged
 SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SBMU-SPS EDD File 09-28-17

pH



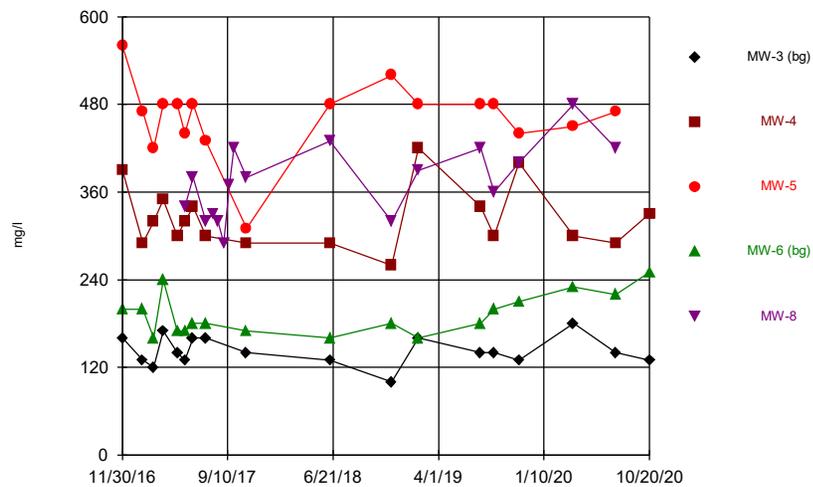
Time Series Analysis Run 1/19/2021 11:06 AM View: No Outliers flagged
 SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SBMU-SPS EDD File 09-28-17

Sulfate



Time Series Analysis Run 1/19/2021 11:06 AM View: No Outliers flagged
 SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SBMU-SPS EDD File 09-28-17

Total Dissolved Solids



Time Series Analysis Run 1/19/2021 11:06 AM View: No Outliers flagged
 SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SBMU-SPS EDD File 09-28-17

Appendix 7

Box and Whiskers Plots

Box & Whiskers Plot

SBMU-Sikeston Power Station

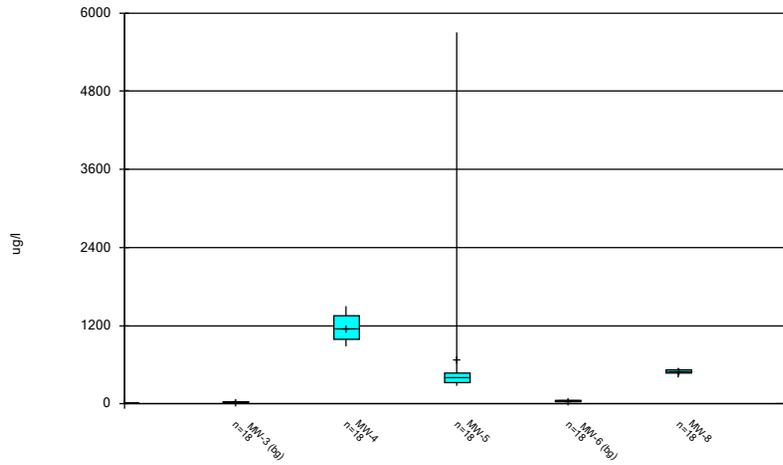
Client: GREDELL Engineering

Data: SBMU-SPS EDD File 09-28-17

Printed 2/1/2021, 2:16 PM

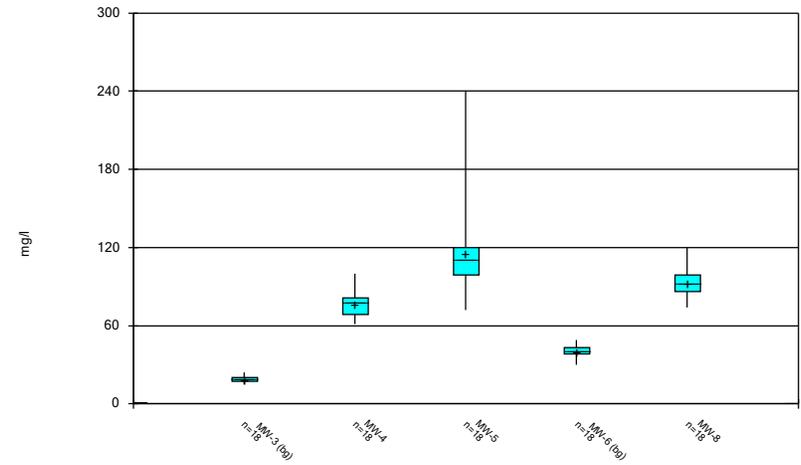
<u>Constituent</u>	<u>Well</u>	<u>N</u>	<u>Mean</u>	<u>Std. Dev.</u>	<u>Std. Err.</u>	<u>Median</u>	<u>Min.</u>	<u>Max.</u>	<u>%NDs</u>
Boron (ug/l)	MW-3 (bg)	18	26.83	11.27	2.656	22.5	12	54	0
Boron (ug/l)	MW-4	18	1162	184	43.37	1150	880	1500	0
Boron (ug/l)	MW-5	18	685	1253	295.4	405	280	5700	0
Boron (ug/l)	MW-6 (bg)	18	42.17	8.162	1.924	42	27	59	0
Boron (ug/l)	MW-8	18	495.6	39.14	9.226	505	400	550	0
Calcium (mg/l)	MW-3 (bg)	18	18.5	2.407	0.5674	18.5	15	24	0
Calcium (mg/l)	MW-4	18	76.61	9.769	2.303	77	61	100	0
Calcium (mg/l)	MW-5	18	115.7	33.75	7.954	110	72	240	0
Calcium (mg/l)	MW-6 (bg)	18	40.22	4.081	0.9619	40	30	49	0
Calcium (mg/l)	MW-8	18	92.61	11.91	2.807	92	74	120	0
Chloride (mg/l)	MW-3 (bg)	18	1.611	0.3894	0.09178	1.5	1	2.3	0
Chloride (mg/l)	MW-4	18	14.27	5.977	1.409	14	2.1	33	0
Chloride (mg/l)	MW-5	18	12.57	3.278	0.7726	12.5	3.2	17	0
Chloride (mg/l)	MW-6 (bg)	18	1.856	0.5701	0.1344	1.75	0.5	2.8	5.556
Chloride (mg/l)	MW-8	18	46.5	14.54	3.427	48	2	71	0
Fluoride (mg/l)	MW-3 (bg)	18	0.2336	0.0979	0.02308	0.259	0.125	0.438	38.89
Fluoride (mg/l)	MW-4	18	0.1324	0.03158	0.007444	0.125	0.125	0.259	94.44
Fluoride (mg/l)	MW-5	18	0.1404	0.04488	0.01058	0.125	0.125	0.272	88.89
Fluoride (mg/l)	MW-6 (bg)	18	0.1874	0.09176	0.02163	0.125	0.125	0.338	66.67
Fluoride (mg/l)	MW-8	18	0.1325	0.03182	0.0075	0.125	0.125	0.26	94.44
pH (S.U.)	MW-3 (bg)	18	6.611	0.1963	0.04628	6.59	6.4	7.08	0
pH (S.U.)	MW-4	18	7.365	0.06913	0.01629	7.375	7.2	7.49	0
pH (S.U.)	MW-5	18	6.846	0.07853	0.01851	6.815	6.72	6.98	0
pH (S.U.)	MW-6 (bg)	18	6.774	0.1061	0.02501	6.72	6.67	7	0
pH (S.U.)	MW-8	18	7.14	0.04826	0.01138	7.145	7.05	7.25	0
Sulfate (mg/l)	MW-3 (bg)	18	20.83	4.218	0.9943	20	15	30	0
Sulfate (mg/l)	MW-4	18	96.44	22.84	5.383	95	54	140	0
Sulfate (mg/l)	MW-5	18	203.5	85.94	20.26	200	15	460	0
Sulfate (mg/l)	MW-6 (bg)	18	29.22	5.264	1.241	29	22	43	0
Sulfate (mg/l)	MW-8	18	104.5	30.77	7.253	110	4.5	150	0
Total Dissolved Solids (mg/l)	MW-3 (bg)	18	142.2	19.57	4.613	140	100	180	0
Total Dissolved Solids (mg/l)	MW-4	18	323.9	43.13	10.17	310	260	420	0
Total Dissolved Solids (mg/l)	MW-5	18	470	58.21	13.72	480	310	590	0
Total Dissolved Solids (mg/l)	MW-6 (bg)	18	192.2	28.19	6.645	180	160	250	0
Total Dissolved Solids (mg/l)	MW-8	18	379.4	52.97	12.48	380	290	480	0

Boron



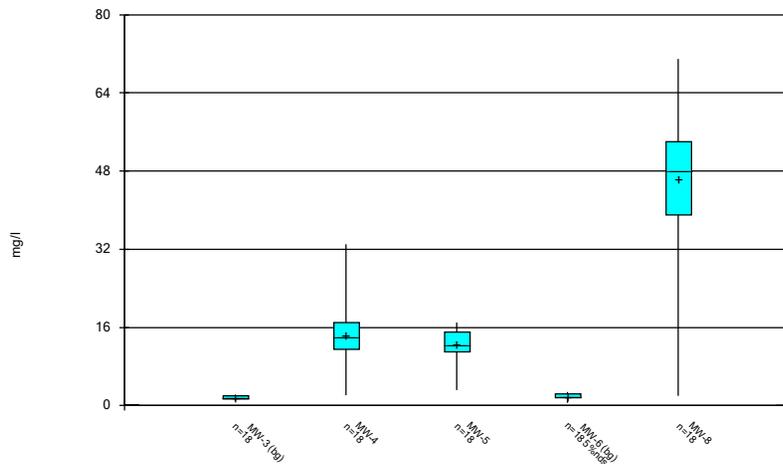
Box & Whiskers Plot Analysis Run 2/1/2021 2:16 PM View: n=18 no outliers removed
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SBMU-SPS EDD File 09-28-17

Calcium



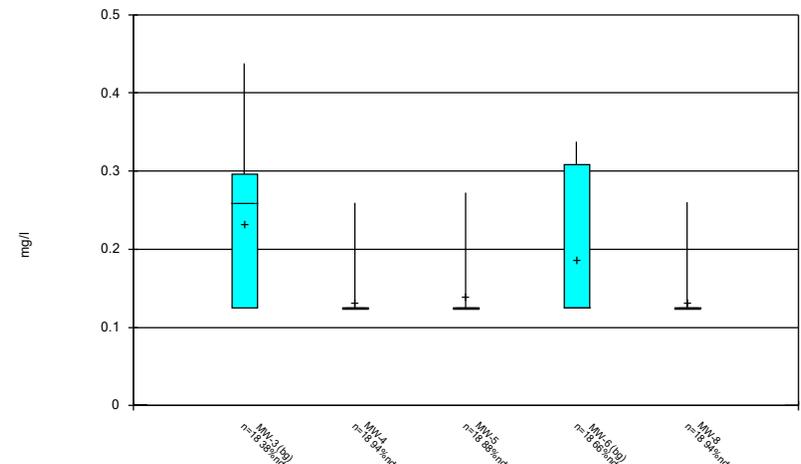
Box & Whiskers Plot Analysis Run 2/1/2021 2:16 PM View: n=18 no outliers removed
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SBMU-SPS EDD File 09-28-17

Chloride



Box & Whiskers Plot Analysis Run 2/1/2021 2:16 PM View: n=18 no outliers removed
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SBMU-SPS EDD File 09-28-17

Fluoride



Box & Whiskers Plot Analysis Run 2/1/2021 2:16 PM View: n=18 no outliers removed
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SBMU-SPS EDD File 09-28-17

Box & Whiskers Plot

Constituent: Boron (ug/l) Analysis Run 2/1/2021 2:16 PM View: n=18 no outliers removed
 SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SBMU-SPS EDD File 09-28-17

	MW-3 (bg)	MW-4	MW-5	MW-6 (bg)	MW-8
11/30/2016	18	1400	470	36	
1/24/2017	12	880	480	27	
2/22/2017	33	1500	470	59	
3/20/2017	22	1400	320	37	
4/27/2017	54	1300	490	36	
5/17/2017	19	1200	5700	35	400
6/8/2017	20	1100	360	38	520
7/13/2017	18	1200	320	31	430
8/3/2017					490
8/15/2017					530
8/30/2017					510
9/14/2017					510
9/27/2017					480
10/31/2017	27	1400	280	41	540
6/13/2018	23	1200	370	43	520
11/26/2018	23	1100	420	46	500
2/5/2019	22	1100	450	44	550
5/28/2019	51	980	280	52	540
8/28/2019	35	1100	410	54	460
11/4/2019	37	1200	420	47	480
2/18/2020	27	930	400	40	480
7/21/2020	21	920	330	46	470
10/20/2020	21	1000	360	47	510
Median	22.5	1150	405	42	505
LowerQ.	19.5	990	325	36	475
UpperQ.	34	1350	470	47	525
Min	12	880	280	27	400
Max	54	1500	5700	59	550
Mean	26.83	1162	685	42.17	495.6

Box & Whiskers Plot

Constituent: Calcium (mg/l) Analysis Run 2/1/2021 2:16 PM View: n=18 no outliers removed
 SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SBMU-SPS EDD File 09-28-17

	MW-3 (bg)	MW-4	MW-5	MW-6 (bg)	MW-8
11/30/2016	24	89	96	45	
1/24/2017	21	79	120	41	
2/22/2017	22	78	100	40	
3/20/2017	19	72	99	39	
4/27/2017	20	74	120	38	
5/17/2017	17	71	240	30	74
6/8/2017	19	61	97	36	92
7/13/2017	20	79	110	40	87
8/3/2017					80
8/15/2017					75
8/30/2017					88
9/14/2017					86
9/27/2017					92
10/31/2017	19	67	72	38	86
6/13/2018	20	80	130	41	
7/10/2018					120
11/26/2018	17	64	120	36	94
2/5/2019	17	100	120	40	110
5/28/2019	17	70	110	40	100
8/28/2019	15	83	110	44	93
11/4/2019	15	89	99	43	98
2/18/2020	16	67	110	41	93
7/21/2020	18	76	110	43	89
10/20/2020	17	80	120	49	110
Median	18.5	77	110	40	92
LowerQ.	17	68.5	99	38	86
UpperQ.	20	81.5	120	43	99
Min	15	61	72	30	74
Max	24	100	240	49	120
Mean	18.5	76.61	115.7	40.22	92.61

Box & Whiskers Plot

Constituent: Chloride (mg/l) Analysis Run 2/1/2021 2:16 PM View: n=18 no outliers removed
 SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SBMU-SPS EDD File 09-28-17

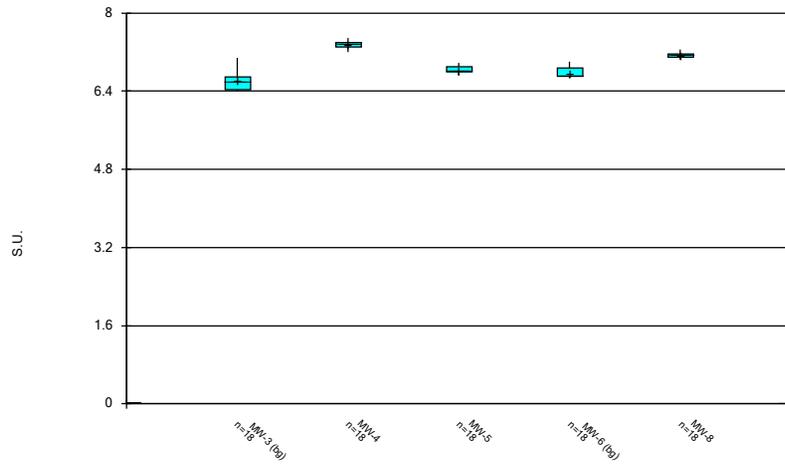
	MW-3 (bg)	MW-4	MW-5	MW-6 (bg)	MW-8
11/30/2016	2.3	18	16	2.8	
1/24/2017	2	15	15	2.4	
2/22/2017	1.9	13	11	2.1	
3/20/2017	1.8	12	11	2.1	
4/27/2017	2	14	12	2.3	
5/17/2017	1.5	14	11	1.8	46
6/8/2017	1.7	12	11	1.7	43
7/13/2017	2.2	13	10	1.6	36
8/3/2017					37
8/15/2017					36
8/30/2017					41
9/14/2017					53
9/27/2017					50
10/31/2017	2	17	13	1.7	45
6/13/2018	1.3	14	11	2.3	65
11/26/2018	1.5	8.8	17	1.5	45
2/5/2019	1.5	33	15	1.6	71
5/28/2019	1.3	11	10	2.5	53
8/28/2019	1.1	18	16	1	55
11/4/2019	1.4	2.1	3.2	1.4	2
2/18/2020	1.3	11	15	1.7	53
7/21/2020	1	14	14	<1	50
10/20/2020	1.2	17	15	2.4	56
Median	1.5	14	12.5	1.75	48
LowerQ.	1.3	11.5	11	1.55	39
UpperQ.	2	17	15	2.35	54
Min	1	2.1	3.2	0.5	2
Max	2.3	33	17	2.8	71
Mean	1.611	14.27	12.57	1.856	46.5

Box & Whiskers Plot

Constituent: Fluoride (mg/l) Analysis Run 2/1/2021 2:16 PM View: n=18 no outliers removed
 SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SBMU-SPS EDD File 09-28-17

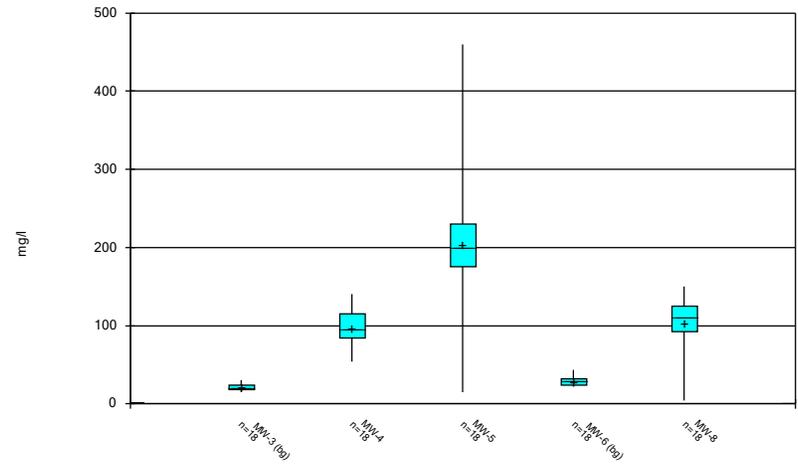
	MW-3 (bg)	MW-4	MW-5	MW-6 (bg)	MW-8
11/30/2016	0.438	0.259	0.255	0.331	
1/24/2017	0.261	<0.25	<0.25	<0.25	
2/22/2017	0.29	<0.25	<0.25	0.269	
3/20/2017	0.286	<0.25	<0.25	<0.25	
4/27/2017	0.257	<0.25	<0.25	<0.25	
5/17/2017	<0.25	<0.25	<0.25	<0.25	<0.25
6/8/2017	0.276	<0.25	<0.25	<0.25	<0.25
7/13/2017	0.256	<0.25	<0.25	<0.25	<0.25
8/3/2017					<0.25
8/15/2017					<0.25
8/30/2017					<0.25
9/14/2017					<0.25
9/27/2017					<0.25
10/31/2017	0.331	<0.25	<0.25	0.303	<0.25
6/13/2018	0.291	<0.25	<0.25	<0.25	<0.25
11/26/2018	0.301	<0.25	<0.25	0.313	<0.25
2/5/2019	0.342	<0.25	0.272	0.338	0.26
5/28/2019	<0.25	<0.25	<0.25	<0.25	<0.25
8/28/2019	<0.25	<0.25	<0.25	<0.25	<0.25
11/4/2019	<0.25	<0.25	<0.25	0.319	<0.25
2/18/2020	<0.25	<0.25	<0.25	<0.25	<0.25
7/21/2020	<0.25	<0.25	<0.25	<0.25	<0.25
10/20/2020	<0.25	<0.25	<0.25	<0.25	<0.25
Median	0.259	0.125	0.125	0.125	0.125
LowerQ.	0.125	0.125	0.125	0.125	0.125
UpperQ.	0.296	0.125	0.125	0.308	0.125
Min	0.125	0.125	0.125	0.125	0.125
Max	0.438	0.259	0.272	0.338	0.26
Mean	0.2336	0.1324	0.1404	0.1874	0.1325

pH



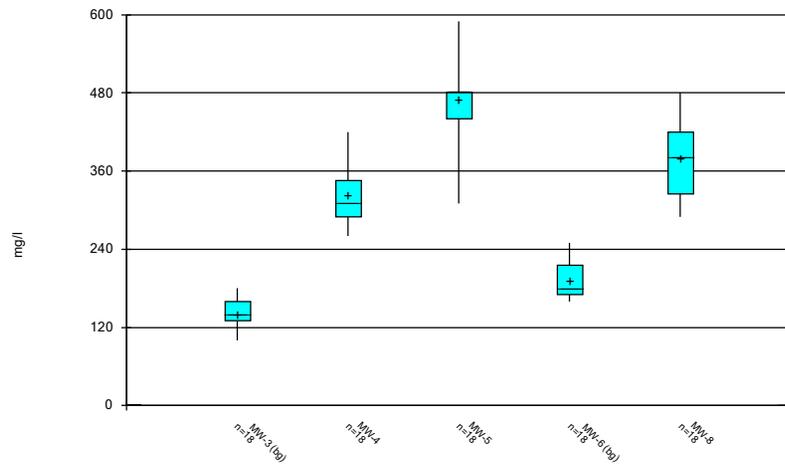
Box & Whiskers Plot Analysis Run 2/1/2021 2:16 PM View: n=18 no outliers removed
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SBMU-SPS EDD File 09-28-17

Sulfate



Box & Whiskers Plot Analysis Run 2/1/2021 2:16 PM View: n=18 no outliers removed
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SBMU-SPS EDD File 09-28-17

Total Dissolved Solids



Box & Whiskers Plot Analysis Run 2/1/2021 2:16 PM View: n=18 no outliers removed
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SBMU-SPS EDD File 09-28-17

Box & Whiskers Plot

Constituent: pH (S.U.) Analysis Run 2/1/2021 2:16 PM View: n=18 no outliers removed
 SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SBMU-SPS EDD File 09-28-17

	MW-3 (bg)	MW-4	MW-5	MW-6 (bg)	MW-8
11/30/2016	7.08	7.46	6.97	6.92	
1/24/2017	6.88	7.45	6.9	6.87	
2/22/2017	6.93	7.49	6.97	6.89	
3/20/2017	6.68	7.37	6.85	6.73	
4/27/2017	6.68	7.38	6.8	6.72	
5/17/2017	6.59	7.38	6.81	6.76	7.16
6/8/2017	6.66	7.38	6.82	6.73	7.16
7/13/2017	6.71	7.37	6.98	6.98	7.25
8/3/2017					7.15
8/15/2017					7.16
8/30/2017					7.15
9/14/2017					7.13
9/27/2017					7.05
10/31/2017	6.64	7.31	6.89	6.72	7.09
6/13/2018	6.59	7.32	6.77	6.67	7.11
11/26/2018	6.5	7.36	6.74	6.72	7.17
2/5/2019	6.46	7.3	6.72	6.72	7.14
5/28/2019	6.4	7.3	6.9	6.7	7.1
8/28/2019	6.4		6.8	6.7	7.1
10/23/2019		7.3 (R)			
11/4/2019	6.4	7.2	6.8	6.7	7.1
2/18/2020	6.4	7.4	6.8	6.7	7.2
7/21/2020	6.5		6.8	6.7	7.1
8/4/2020		7.4			
10/20/2020	6.5	7.4	6.9	7	7.2
Median	6.59	7.375	6.815	6.72	7.145
LowerQ.	6.43	7.305	6.8	6.7	7.1
UpperQ.	6.695	7.4	6.9	6.88	7.165
Min	6.4	7.2	6.72	6.67	7.05
Max	7.08	7.49	6.98	7	7.25
Mean	6.611	7.365	6.846	6.774	7.14

Box & Whiskers Plot

Constituent: Sulfate (mg/l) Analysis Run 2/1/2021 2:16 PM View: n=18 no outliers removed
 SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SBMU-SPS EDD File 09-28-17

	MW-3 (bg)	MW-4	MW-5	MW-6 (bg)	MW-8
11/30/2016	26	140	230	36	
1/24/2017	30	120	270	43	
2/22/2017	26	97	170	32	
3/20/2017	21	94	170	31	
4/27/2017	28	99	460	34	
5/17/2017	21	96	200	30	100
6/8/2017	22	86	180	29	110
7/13/2017	19	88	190	28	89
8/3/2017					89
8/15/2017					83
8/30/2017					96
9/14/2017					110
9/27/2017					120
10/31/2017	20	83	88	29	110
6/13/2018	17	86	240	32	
7/10/2018					150
11/26/2018	18	54	230	29	100
2/5/2019	20	140	200	27	140
5/28/2019	20	75	190	30	130
8/28/2019	18	110	190	24	110
11/4/2019	18	120	15	22	4.5
2/18/2020	21	66	210	24	110
7/21/2020	15	86	210	22	100
10/20/2020	15	96	220	24	130
Median	20	95	200	29	110
LowerQ.	18	84.5	175	24	92.5
UpperQ.	24	115	230	32	125
Min	15	54	15	22	4.5
Max	30	140	460	43	150
Mean	20.83	96.44	203.5	29.22	104.5

Box & Whiskers Plot

Constituent: Total Dissolved Solids (mg/l) Analysis Run 2/1/2021 2:16 PM View: n=18 no outliers removed

SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SBMU-SPS EDD File 09-28-17

	MW-3 (bg)	MW-4	MW-5	MW-6 (bg)	MW-8
11/30/2016	160	390	560	200	
1/24/2017	130	290	470	200	
2/22/2017	120	320	420	160	
3/20/2017	170	350	480	240	
4/27/2017	140	300	480	170	
5/17/2017	130	320	440	170	340
6/8/2017	160	340	480	180	380
7/13/2017	160	300	430	180	320
8/3/2017					330
8/15/2017					320
8/30/2017					290
9/14/2017					370
9/27/2017					420
10/31/2017	140	290	310	170	380
6/13/2018	130	290	480	160	430
11/26/2018	100	260	520	180	320
2/5/2019	160	420	480	160	390
7/23/2019	140	340	480	180	420
8/28/2019	140	300	480	200	360
11/4/2019	130	400	440	210	400
3/30/2020	180	300	450	230	480
7/21/2020	140	290	470	220	420
10/20/2020	130	330	590	250	460
Median	140	310	480	180	380
LowerQ.	130	290	440	170	325
UpperQ.	160	345	480	215	420
Min	100	260	310	160	290
Max	180	420	590	250	480
Mean	142.2	323.9	470	192.2	379.4

Appendix 8

Prediction Limit Charts

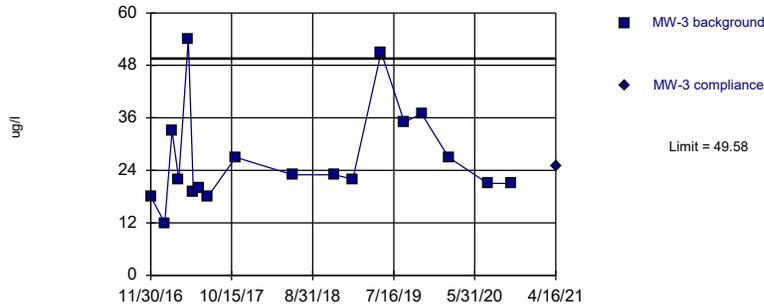
Intrawell Prediction Limit - Detrended Data Sets

SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SBMU-SPS EDD File 09-28-17 Printed 12/22/2021, 9:48 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Boron (ug/l)	MW-3	49.58	n/a	4/16/2021	25	No	18	0	sqrt(x)	0.002505	Param 1 of 2
Boron (ug/l)	MW-4	1517	n/a	4/16/2021	920	No	18	0	No	0.002505	Param 1 of 2
Boron (ug/l)	MW-5	483.6	n/a	4/16/2021	342.2	No	17	0	No	0.002505	Param 1 of 2 Deseas
Boron (ug/l)	MW-8	571.1	n/a	4/16/2021	460	No	18	0	No	0.002505	Param 1 of 2
Calcium (mg/l)	MW-3	23.15	n/a	4/16/2021	17	No	18	0	No	0.002505	Param 1 of 2
Calcium (mg/l)	MW-4	95.47	n/a	4/16/2021	85	No	18	0	No	0.002505	Param 1 of 2
Calcium (mg/l)	MW-5	131	n/a	4/16/2021	120	No	16	0	No	0.002505	Param 1 of 2
Calcium (mg/l)	MW-6	48.1	n/a	4/16/2021	44	No	18	0	No	0.002505	Param 1 of 2
Chloride (mg/l)	MW-3	2.363	n/a	4/16/2021	1.2	No	18	0	No	0.002505	Param 1 of 2
Chloride (mg/l)	MW-4	19.09	n/a	4/16/2021	19	No	16	0	No	0.002505	Param 1 of 2
Chloride (mg/l)	MW-5	18.9	n/a	4/16/2021	10	No	18	0	No	0.002505	Param 1 of 2
Chloride (mg/l)	MW-6	2.956	n/a	4/16/2021	0.5ND	No	18	5.556	No	0.002505	Param 1 of 2
Fluoride (mg/l)	MW-3	0.438	n/a	4/16/2021	0.125ND	No	18	38.89	n/a	0.005373	NP (normality) 1 of 2
Fluoride (mg/l)	MW-4	0.259	n/a	4/16/2021	0.125ND	No	18	94.44	n/a	0.005373	NP (NDs) 1 of 2
Fluoride (mg/l)	MW-5	0.272	n/a	4/16/2021	0.125ND	No	18	88.89	n/a	0.005373	NP (NDs) 1 of 2
Fluoride (mg/l)	MW-6	0.338	n/a	4/16/2021	0.125ND	No	18	66.67	n/a	0.005373	NP (NDs) 1 of 2
Fluoride (mg/l)	MW-8	0.26	n/a	4/16/2021	0.125ND	No	18	94.44	n/a	0.005373	NP (NDs) 1 of 2
pH (S.U.)	MW-4	7.498	7.232	4/16/2021	7.4	No	18	0	No	0.001253	Param 1 of 2
pH (S.U.)	MW-5	6.997	6.694	4/16/2021	6.9	No	18	0	No	0.001253	Param 1 of 2
pH (S.U.)	MW-8	7.233	7.047	4/16/2021	7.2	No	18	0	No	0.001253	Param 1 of 2
Sulfate (mg/l)	MW-3	28.98	n/a	4/16/2021	16	No	18	0	No	0.002505	Param 1 of 2
Sulfate (mg/l)	MW-4	140.5	n/a	4/16/2021	100	No	18	0	No	0.002505	Param 1 of 2
Sulfate (mg/l)	MW-5	262.2	n/a	4/16/2021	240	No	15	0	No	0.002505	Param 1 of 2
Sulfate (mg/l)	MW-6	39.39	n/a	4/16/2021	24	No	18	0	No	0.002505	Param 1 of 2
Sulfate (mg/l)	MW-8	146.6	n/a	4/16/2021	130	No	17	0	No	0.002505	Param 1 of 2
Total Dissolved Solids (mg/l)	MW-3	180	n/a	4/16/2021	150	No	18	0	No	0.002505	Param 1 of 2
Total Dissolved Solids (mg/l)	MW-4	407.2	n/a	4/16/2021	340	No	18	0	No	0.002505	Param 1 of 2
Total Dissolved Solids (mg/l)	MW-5	539.8	n/a	4/16/2021	510	No	16	0	No	0.002505	Param 1 of 2
Total Dissolved Solids (mg/l)	MW-6	246.7	n/a	4/16/2021	200	No	18	0	No	0.002505	Param 1 of 2
Boron (ug/l)	MW-6	57.75	n/a	4/16/2021	52	No	8	0	No	0.002505	Param 1 of 2
Calcium (mg/l)	MW-8	117.8	n/a	4/16/2021	100	No	8	0	No	0.002505	Param 1 of 2
Chloride (mg/l)	MW-8	76.4	n/a	4/16/2021	51	No	8	0	No	0.002505	Param 1 of 2
pH (S.U.)	MW-3	6.749	6.278	4/16/2021	6.6	No	12	0	No	0.001253	Param 1 of 2
pH (S.U.)	MW-6	7	6.67	4/16/2021	6.8	No	17	0	n/a	0.01183	NP (normality) 1 of 2
Total Dissolved Solids (mg/l)	MW-8	532.9	n/a	4/16/2021	400	No	8	0	No	0.002505	Param 1 of 2

Within Limit

Boron
Intrawell Parametric

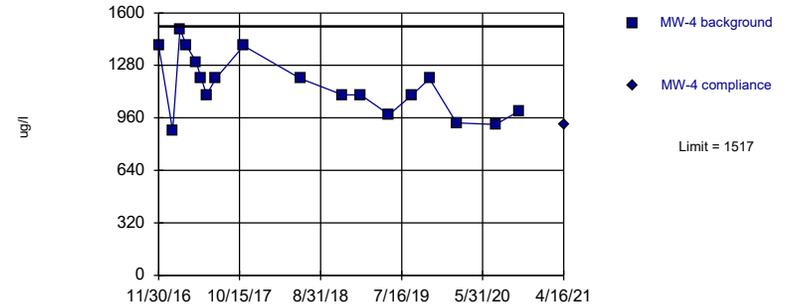


Background Data Summary (based on square root transformation): Mean=5.086, Std. Dev.=1.013, n=18. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8996, critical = 0.858. Kappa = 1.931 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 12/22/2021 9:40 AM View: Everything Minus Detrended Data
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SBMU-SPS EDD File 09-28-17

Within Limit

Boron
Intrawell Parametric

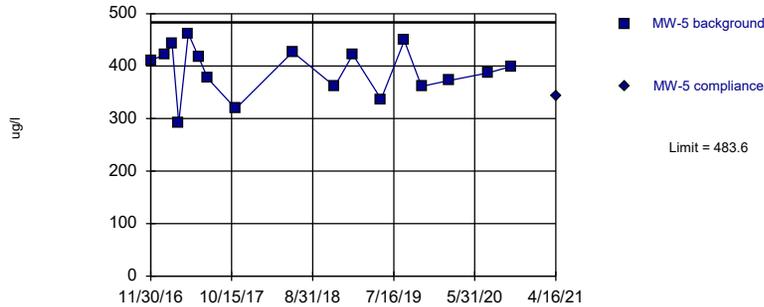


Background Data Summary: Mean=1162, Std. Dev.=184, n=18. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.948, critical = 0.858. Kappa = 1.931 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 12/22/2021 9:40 AM View: Everything Minus Detrended Data
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SBMU-SPS EDD File 09-28-17

Within Limit

Boron
Intrawell Parametric

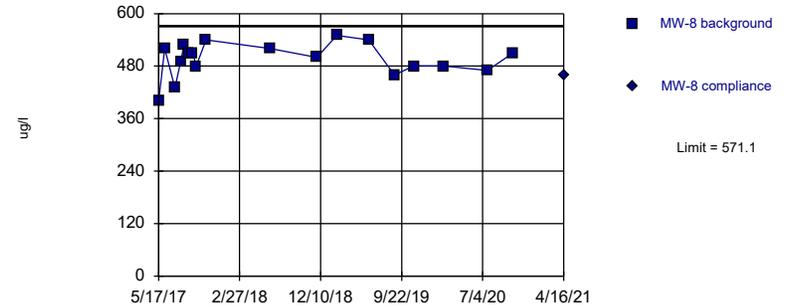


Background Data Summary: Mean=391.6, Std. Dev.=47.16, n=17. Seasonality was detected with 95% confidence and data were deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9648, critical = 0.851. Kappa = 1.951 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 12/22/2021 9:40 AM View: Everything Minus Detrended Data
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SBMU-SPS EDD File 09-28-17

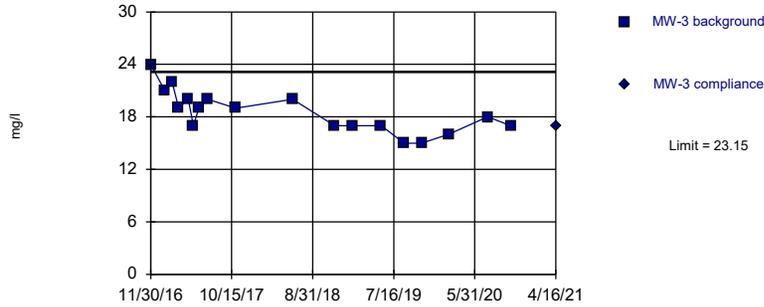
Within Limit

Boron
Intrawell Parametric



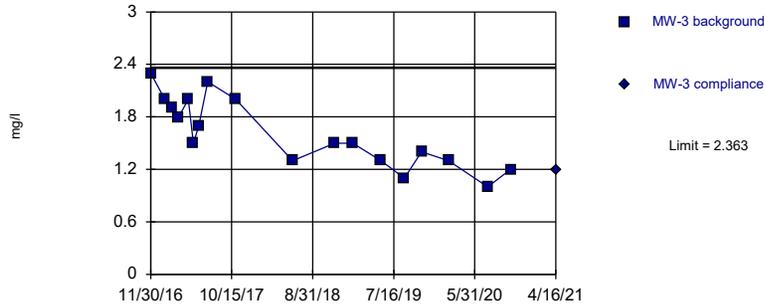
Within Limit

Calcium
Intrawell Parametric



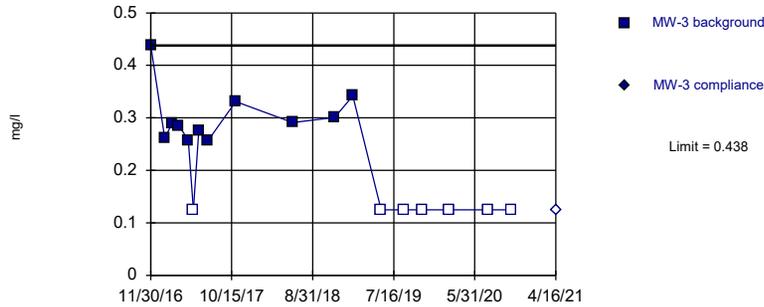
Within Limit

Chloride Intrawell Parametric



Within Limit

Fluoride Intrawell Non-parametric

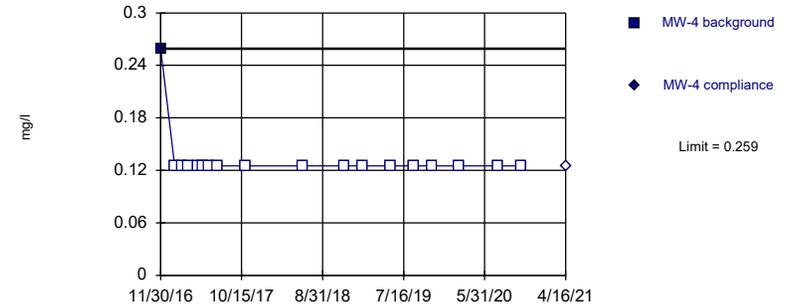


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 18 background values. 38.89% NDs. Well-constituent pair annual alpha = 0.01072. Individual comparison alpha = 0.005373 (1 of 2). Seasonality was not detected with 95% confidence.

Prediction Limit Analysis Run 12/22/2021 9:40 AM View: Everything Minus Detrended Data
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SBMU-SPS EDD File 09-28-17

Within Limit

Fluoride Intrawell Non-parametric

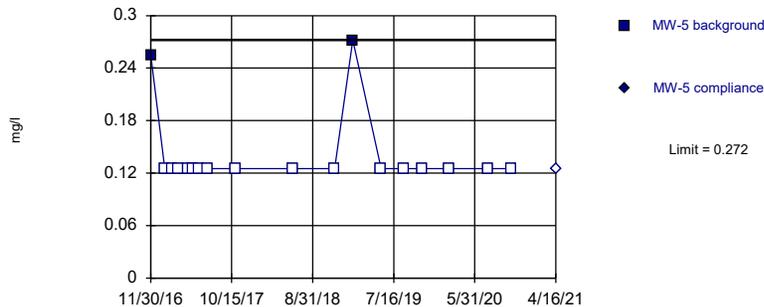


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 18 background values. 94.44% NDs. Well-constituent pair annual alpha = 0.01072. Individual comparison alpha = 0.005373 (1 of 2). Seasonality was not detected with 95% confidence.

Prediction Limit Analysis Run 12/22/2021 9:40 AM View: Everything Minus Detrended Data
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SBMU-SPS EDD File 09-28-17

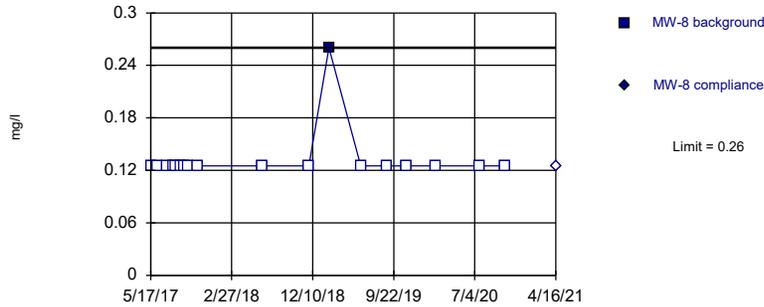
Within Limit

Fluoride Intrawell Non-parametric



Within Limit

Fluoride Intrawell Non-parametric

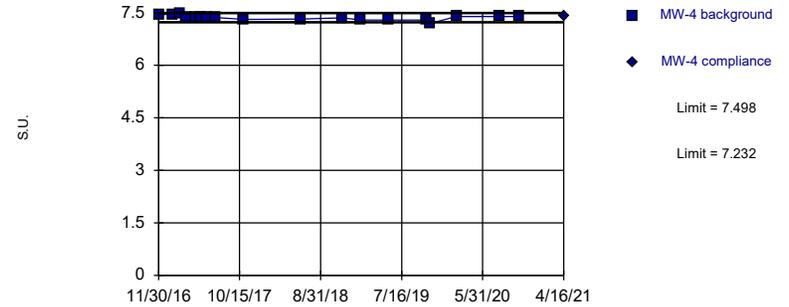


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 18 background values. 94.44% NDs. Well-constituent pair annual alpha = 0.01072. Individual comparison alpha = 0.005373 (1 of 2). Insufficient data to test for seasonality; data were not deseasonalized.

Prediction Limit Analysis Run 12/22/2021 9:40 AM View: Everything Minus Detrended Data
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SBMU-SPS EDD File 09-28-17

Within Limits

pH Intrawell Parametric

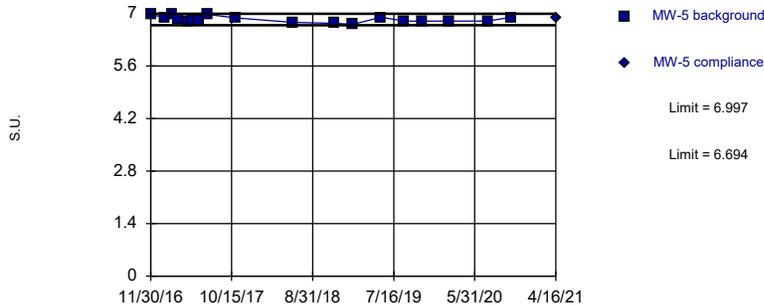


Background Data Summary: Mean=7.365, Std. Dev.=0.06913, n=18. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9546, critical = 0.858. Kappa = 1.931 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 12/22/2021 9:40 AM View: Everything Minus Detrended Data
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SBMU-SPS EDD File 09-28-17

Within Limits

pH Intrawell Parametric

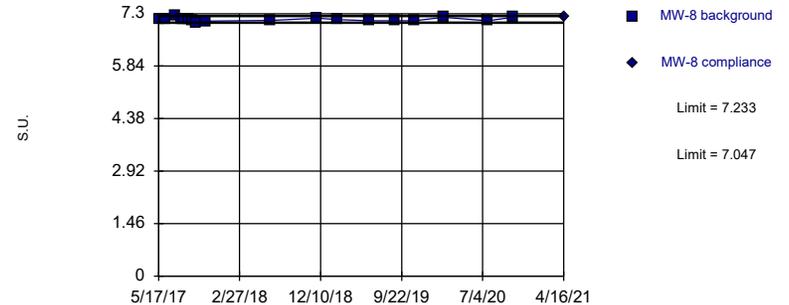


Background Data Summary: Mean=6.846, Std. Dev.=0.07853, n=18. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9237, critical = 0.858. Kappa = 1.931 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 12/22/2021 9:40 AM View: Everything Minus Detrended Data
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SBMU-SPS EDD File 09-28-17

Within Limits

pH Intrawell Parametric

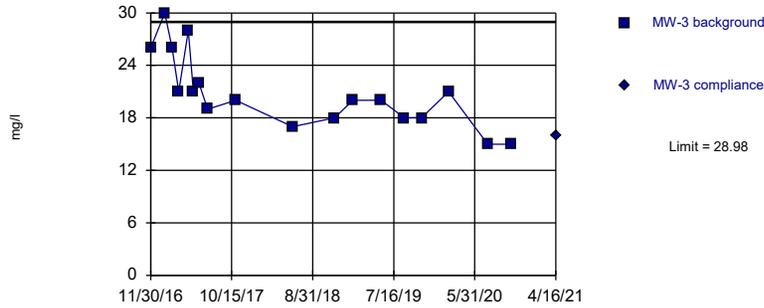


Background Data Summary: Mean=7.14, Std. Dev.=0.04826, n=18. Insufficient data to test for seasonality; data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9628, critical = 0.858. Kappa = 1.931 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 12/22/2021 9:40 AM View: Everything Minus Detrended Data
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SBMU-SPS EDD File 09-28-17

Within Limit

Sulfate
Intrawell Parametric

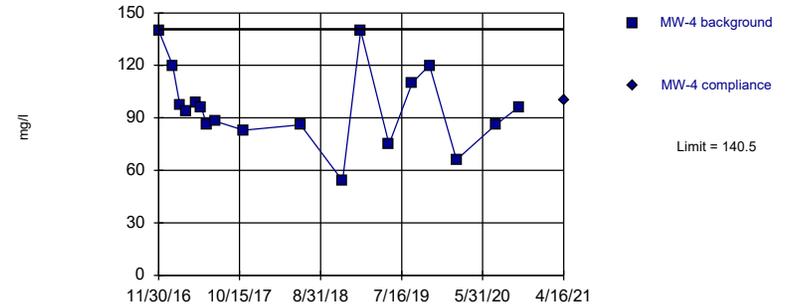


Background Data Summary: Mean=20.83, Std. Dev.=4.218, n=18. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9206, critical = 0.858. Kappa = 1.931 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 12/22/2021 9:40 AM View: Everything Minus Detrended Data
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SBMU-SPS EDD File 09-28-17

Within Limit

Sulfate
Intrawell Parametric

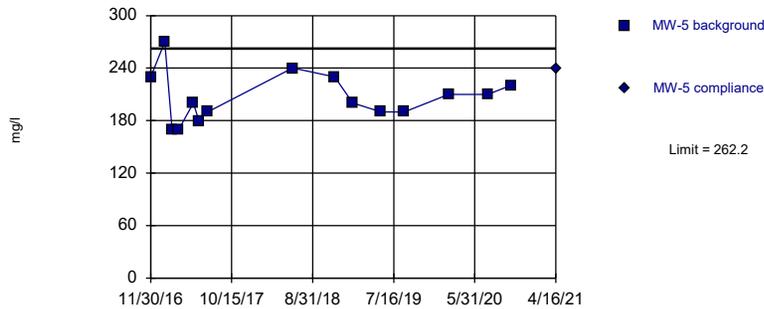


Background Data Summary: Mean=96.44, Std. Dev.=22.84, n=18. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9502, critical = 0.858. Kappa = 1.931 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 12/22/2021 9:40 AM View: Everything Minus Detrended Data
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SBMU-SPS EDD File 09-28-17

Within Limit

Sulfate
Intrawell Parametric

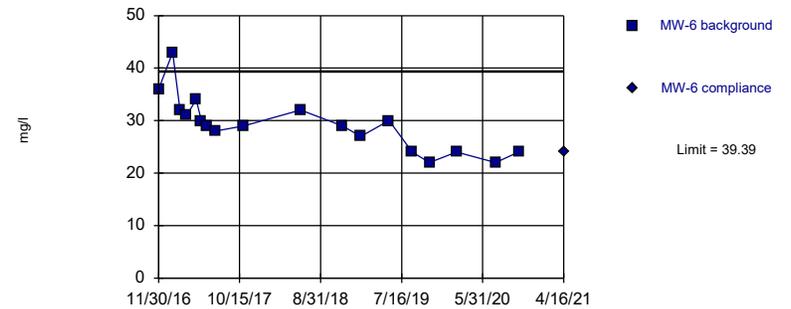


Background Data Summary: Mean=206.7, Std. Dev.=27.69, n=15. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9482, critical = 0.835. Kappa = 2.006 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 12/22/2021 9:40 AM View: Everything Minus Detrended Data
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SBMU-SPS EDD File 09-28-17

Within Limit

Sulfate
Intrawell Parametric

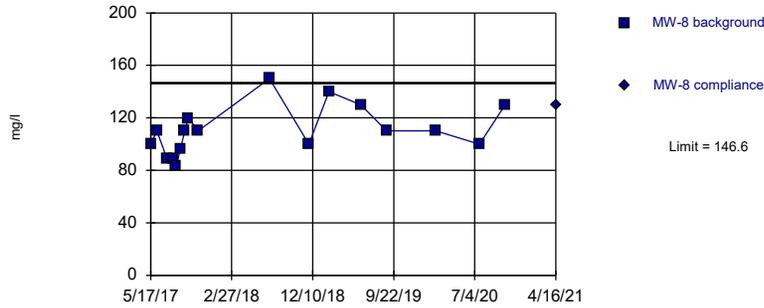


Background Data Summary: Mean=29.22, Std. Dev.=5.264, n=18. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9321, critical = 0.858. Kappa = 1.931 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 12/22/2021 9:40 AM View: Everything Minus Detrended Data
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SBMU-SPS EDD File 09-28-17

Within Limit

Sulfate
Intrawell Parametric

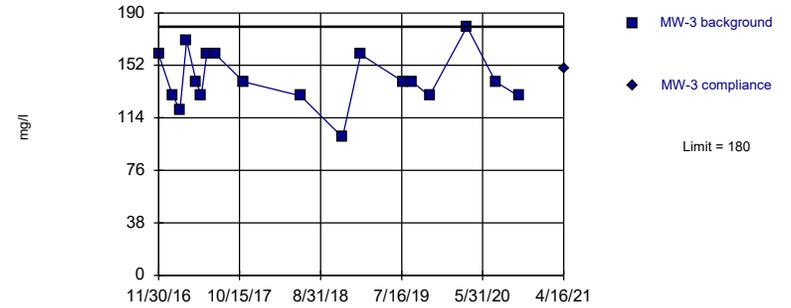


Background Data Summary: Mean=110.4, Std. Dev.=18.55, n=17. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9427, critical = 0.851. Kappa = 1.951 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 12/22/2021 9:40 AM View: Everything Minus Detrended Data
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SBMU-SPS EDD File 09-28-17

Within Limit

Total Dissolved Solids
Intrawell Parametric

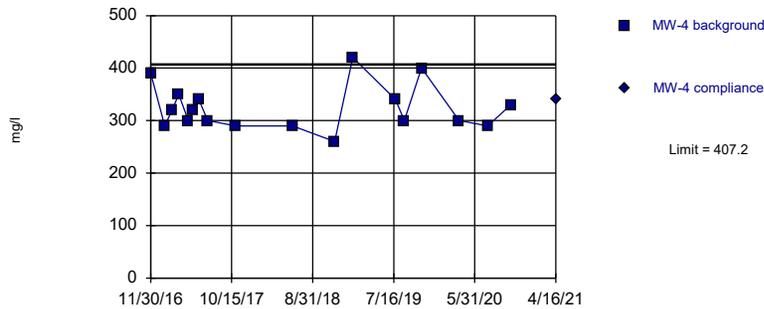


Background Data Summary: Mean=142.2, Std. Dev.=19.57, n=18. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9412, critical = 0.858. Kappa = 1.931 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 12/22/2021 9:40 AM View: Everything Minus Detrended Data
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SBMU-SPS EDD File 09-28-17

Within Limit

Total Dissolved Solids
Intrawell Parametric

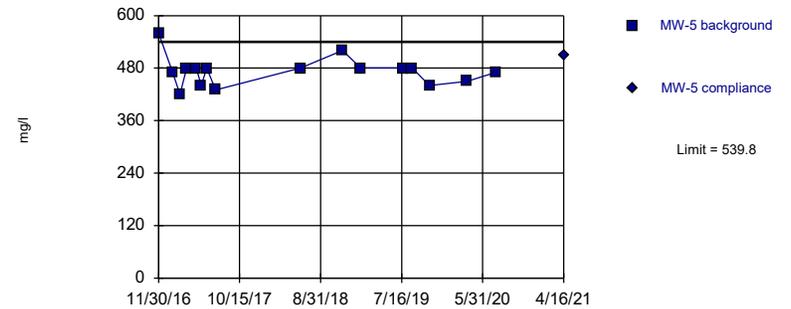


Background Data Summary: Mean=323.9, Std. Dev.=43.13, n=18. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8945, critical = 0.858. Kappa = 1.931 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 12/22/2021 9:40 AM View: Everything Minus Detrended Data
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SBMU-SPS EDD File 09-28-17

Within Limit

Total Dissolved Solids
Intrawell Parametric

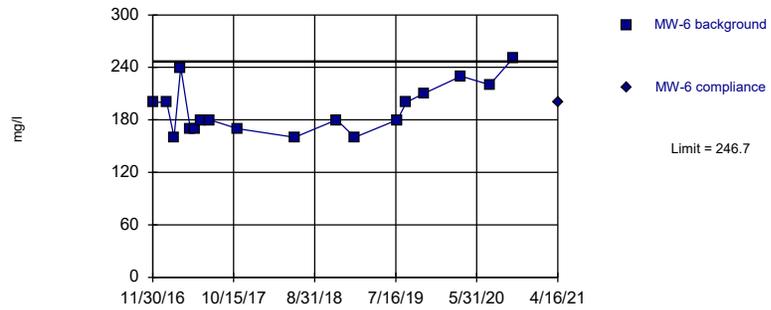


Background Data Summary: Mean=472.5, Std. Dev.=34.16, n=16. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8811, critical = 0.844. Kappa = 1.97 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 12/22/2021 9:40 AM View: Everything Minus Detrended Data
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SBMU-SPS EDD File 09-28-17

Within Limit

Total Dissolved Solids Intrawell Parametric

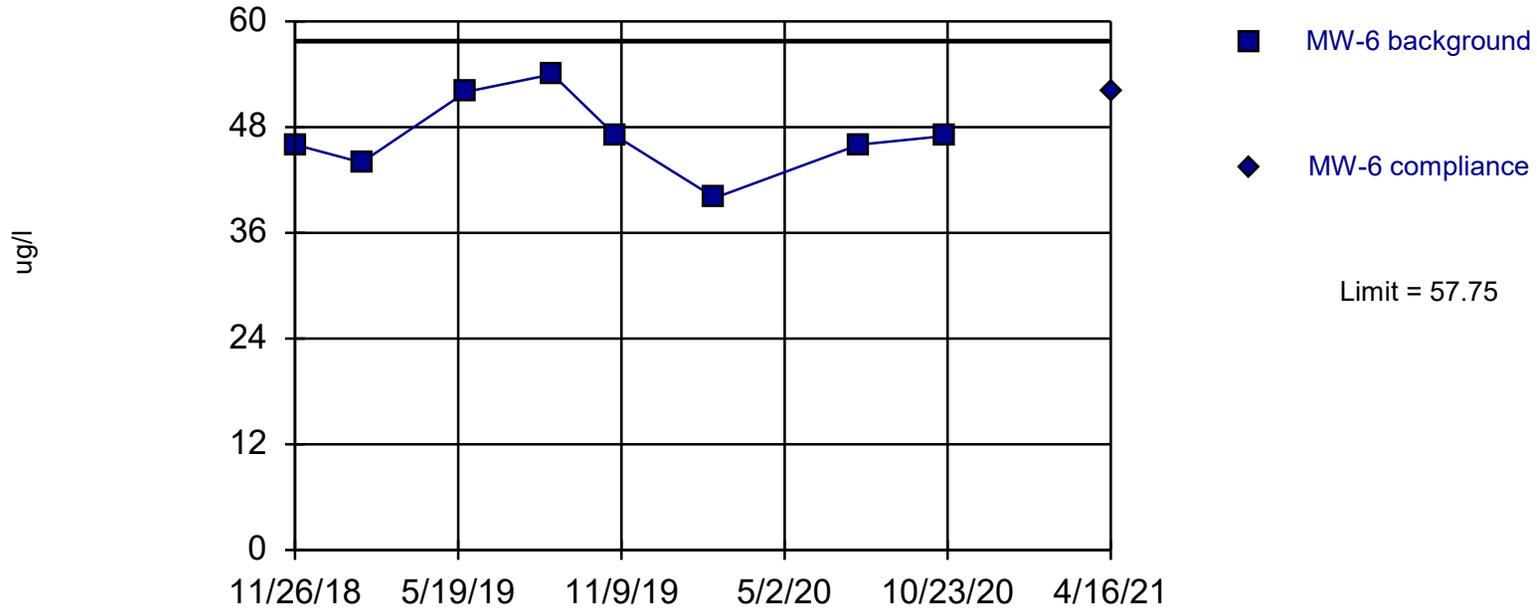


Background Data Summary: Mean=192.2, Std. Dev.=28.19, n=18. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9055, critical = 0.858. Kappa = 1.931 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 12/22/2021 9:40 AM View: Everything Minus Detrended Data
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SBMU-SPS EDD File 09-28-17

Within Limit

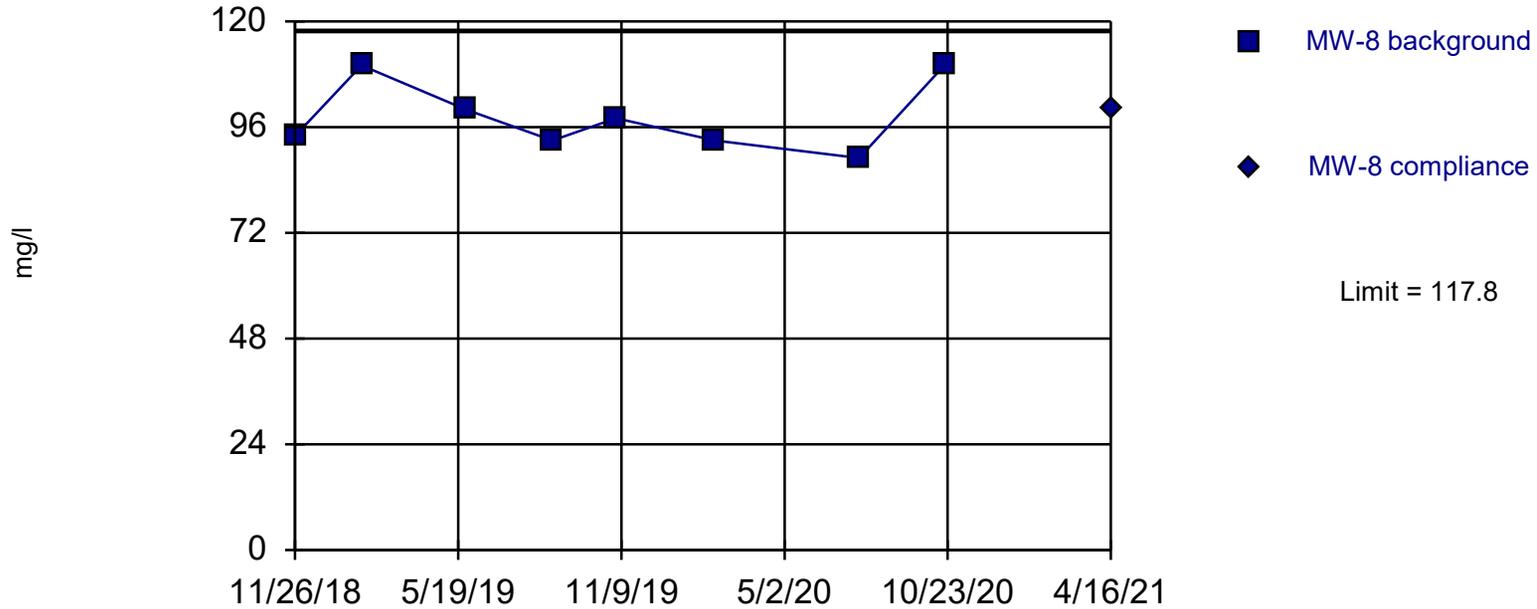
Boron Intrawell Parametric



Background Data Summary: Mean=47, Std. Dev.=4.375, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9419, critical = 0.749. Kappa = 2.458 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Within Limit

Calcium Intrawell Parametric



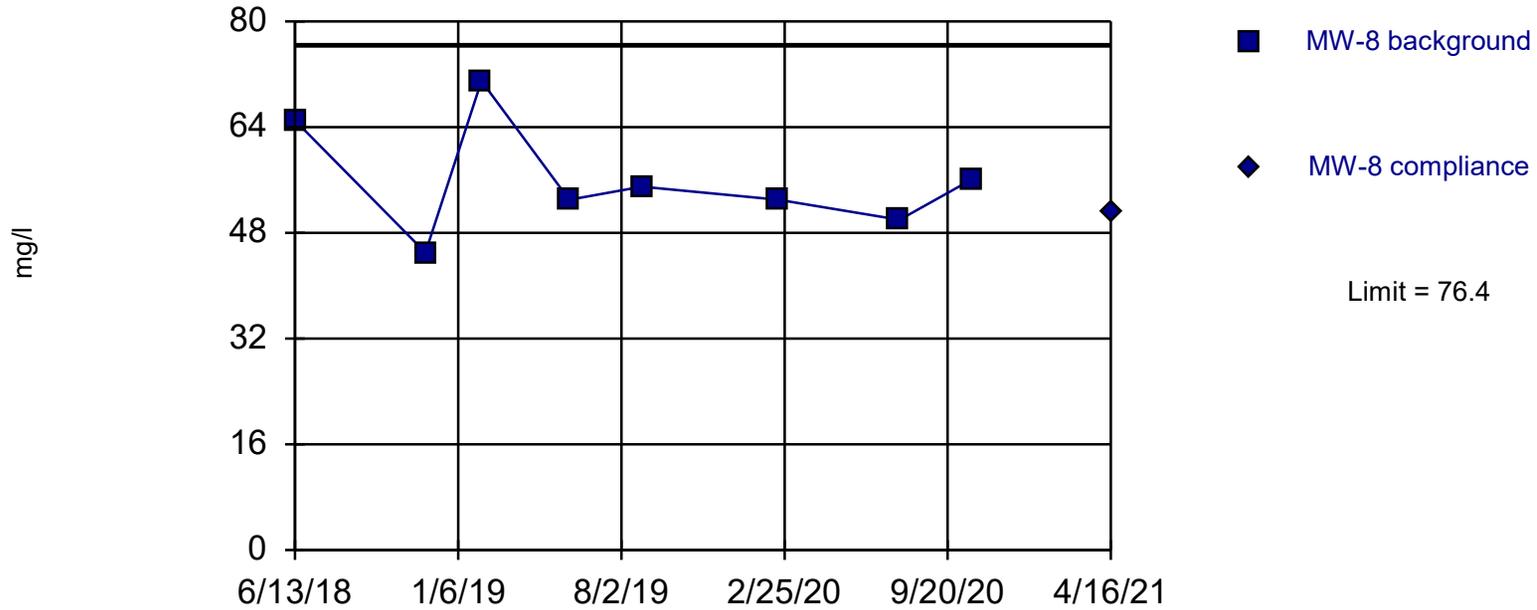
Background Data Summary: Mean=98.38, Std. Dev.=7.909, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8713, critical = 0.749. Kappa = 2.458 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Prediction Limit Analysis Run 12/22/2021 9:53 AM View: Detrended Calcium MW-8
SBMU-Sikeston Power Station Client: GREDELL Engineering Data: SBMU-SPS EDD File 09-28-17

Within Limit

Chloride

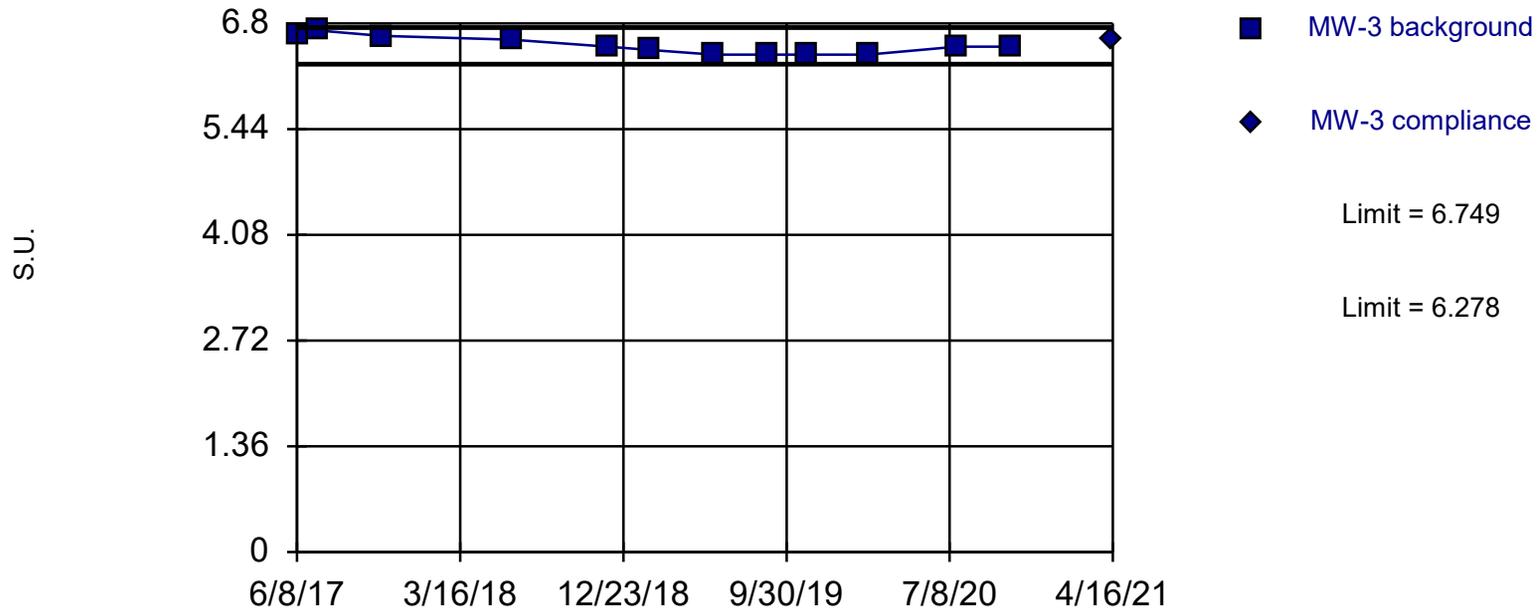
Intrawell Parametric



Background Data Summary: Mean=56, Std. Dev.=8.298, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9251, critical = 0.749. Kappa = 2.458 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Within Limits

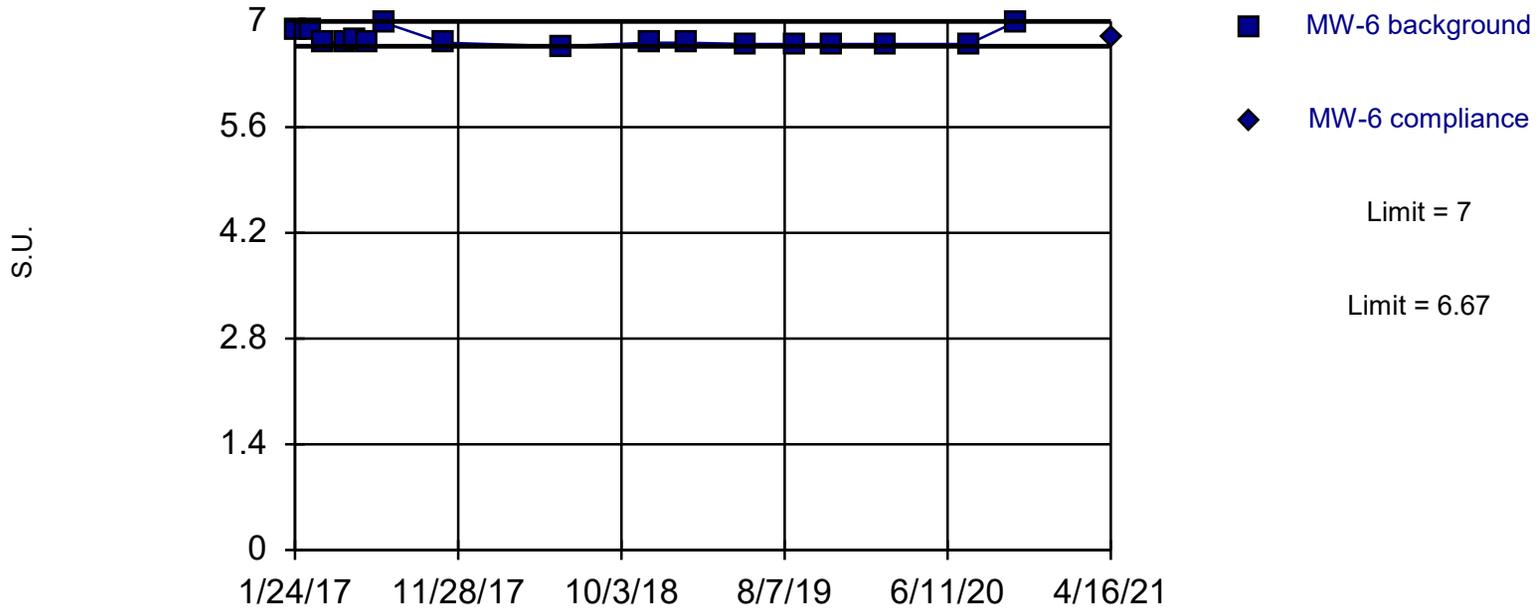
pH Intrawell Parametric



Background Data Summary: Mean=6.513, Std. Dev.=0.1115, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8763, critical = 0.805. Kappa = 2.112 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

Within Limits

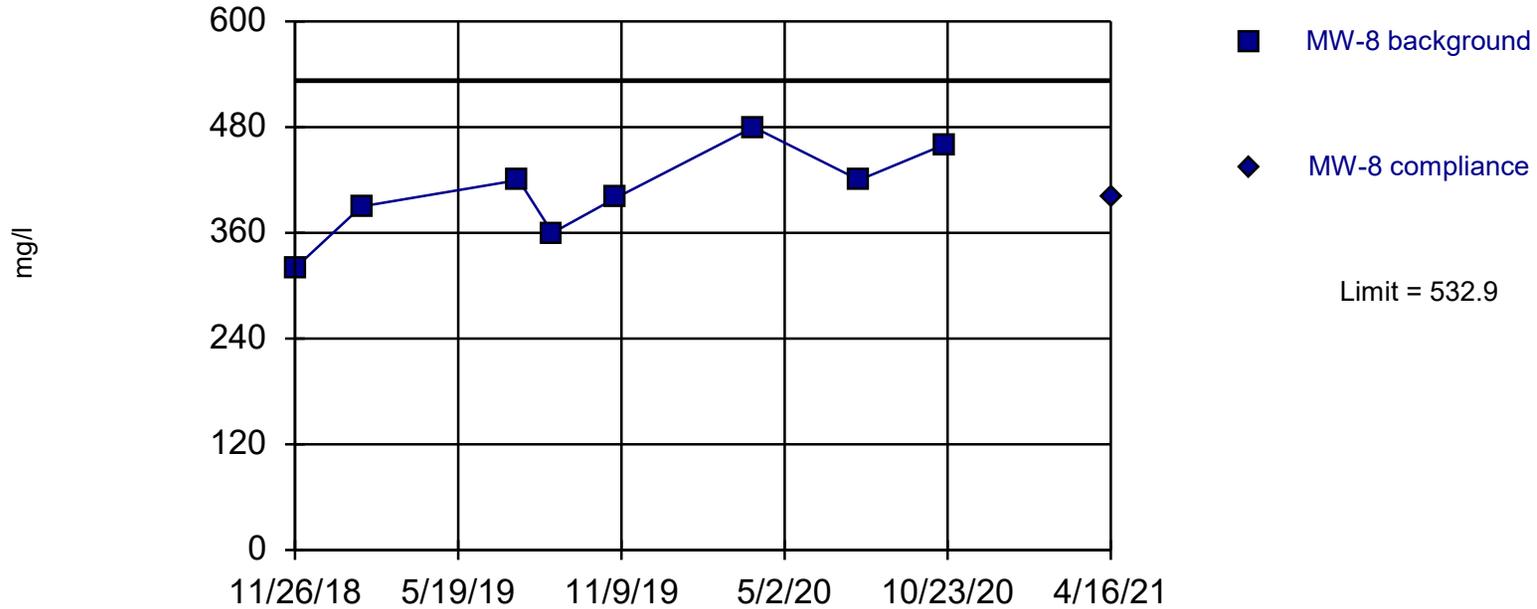
pH
Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limits are highest and lowest of 17 background values. Well-constituent pair annual alpha = 0.02359. Individual comparison alpha = 0.01183 (1 of 2). Seasonality was not detected with 95% confidence.

Within Limit

Total Dissolved Solids Intrawell Parametric



Background Data Summary: Mean=406.3, Std. Dev.=51.53, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9779, critical = 0.749. Kappa = 2.458 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.