2019 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

CCR LANDFILL AND LOWER AQC IMPOUNDMENT
LA CYGNE GENERATING STATION
LA CYGNE, KANSAS

Presented To:
Evergy Metro, Inc. (f/k/a Kansas City Power & Light Co.)

SCS ENGINEERS

27217233.19 | January 2020, Revised December 16, 2022

8575 W 110th Street, Suite 100
Overland Park, Kansas 66210
913-681-0030

CERTIFICATIONS

I, John R. Rockhold, being a qualified groundwater scientist and Professional Geologist in the State of Kansas, do hereby certify that the 2019 Annual Groundwater Monitoring and Corrective Action Report for the CCR Landfill and Lower AQC Impoundment at the La Cygne Generating Station was prepared by me or under my direct supervision and fulfills the requirements of 40 CFR 257.90(e).

29

12-16-22

John R. Rockhold, P.G.

SCS Engineers

I, Douglas L. Doerr, being a qualified licensed Professional Engineer in the State of Kansas, do hereby certify that the 2019 Annual Groundwater Monitoring and Corrective Action Report for the CCR Landfill and Lower AQC Impoundment at the La Cygne Generating Station was prepared by me or under my direct supervision and fulfills the requirements of 40 CFR 257.90(e).

14136

12-16-22

Douglas L. Doerr, P.E.

SCS Engineers

Revision Number	Revision Date	Revision Section	Summary of Revisions
0	January 2020	NA	Original
1	December 16, 2022	Addendum 1	Added Addendum 1

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Section **Page**

Appendices

1 INTRODUCTION

This 2019 Annual Groundwater Monitoring and Corrective Action Report was prepared to support compliance with the groundwater monitoring requirements of the "Coal Combustion Residuals (CCR) Final Rule" (Rule) published by the United States Environmental Protection Agency (USEPA) in the *Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule*, dated April 17, 2015 (USEPA, 2015). Specifically, this report was prepared for Evergy Metro, Inc. (f/k/a Kansas City Power & Light Company) to fulfill the requirements of 40 CFR 257.90 (e). The applicable sections of the Rule are provided below in *italics*, followed by applicable information relative to the 2019 Annual Groundwater Monitoring and Corrective Action Report for the CCR Landfill and Lower AQC Impoundment at the La Cygne Generating Station.

2 § 257.90(E) ANNUAL REPORT REQUIREMENTS

Annual groundwater monitoring and corrective action report. *For existing CCR landfills and existing CCR surface impoundments, no later than January 31, 2018, and annually thereafter, the owner or operator must prepare an annual groundwater monitoring and corrective action report. For new CCR landfills, new CCR surface impoundments, and all lateral expansions of CCR units, the owner or operator must prepare the initial annual groundwater monitoring and corrective action report no later than January 31 of the year following the calendar year a groundwater monitoring system has been established for such CCR unit as required by this subpart, and annually thereafter. For the preceding calendar year, the annual report must document the status of the groundwater monitoring and corrective action program for the CCR unit, summarize key actions completed, describe any problems encountered, discuss actions to resolve the problems, and project key activities for the upcoming year. For purposes of this section, the owner or operator has prepared the annual report when the report is placed in the facility's operating record as required by § 257.105(h)(1). At a minimum, the annual groundwater monitoring and corrective action report must contain the following information, to the extent available:*

2.1 § 257.90(E)(1) SITE MAP

A map, aerial image, or diagram showing the CCR unit and all background (or upgradient) and downgradient monitoring wells, to include the well identification numbers, that are part of the groundwater monitoring program for the CCR unit;

> A site map with an aerial image showing the CCR Landfill and Lower AQC Impoundment and all background (or upgradient) and downgradient monitoring wells with identification numbers for the CCR Landfill and Lower AQC Impoundment groundwater monitoring program is provided as **Figure 1** in **Appendix A.**

2.2 § 257.90(E)(2) MONITORING SYSTEM CHANGES

Identification of any monitoring wells that were installed or decommissioned during the preceding year, along with a narrative description of why those actions were taken;

> No new monitoring wells were installed and no wells were decommissioned as part of the CCR groundwater monitoring program for the CCR Landfill and Lower AQC Impoundment in 2019.

2.3 § 257.90(E)(3) SUMMARY OF SAMPLING EVENTS

In addition to all the monitoring data obtained under §§ 257.90 through 257.98, a summary including the number of groundwater samples that were collected for analysis for each background and downgradient well, the dates the samples were collected, and whether the sample was required by the detection monitoring or assessment monitoring programs;

Only detection monitoring was conducted during the reporting period (2019). Samples collected in 2019 were collected and analyzed for Appendix III detection monitoring constituents as indicated in **Appendix B**, **Table 1** (Appendix III Detection Monitoring Results, and **Table 2** (Detection Monitoring Field Measurements). The dates of sample collection, the monitoring program requiring the sample, and the results of the analyses are also provided in these tables. These tables include Fall 2018 semiannual detection monitoring event verification data taken in 2019; Spring 2019 semiannual detection monitoring data; and the initial Fall 2019 semiannual detection monitoring data.

2.4 § 257.90(E)(4) MONITORING TRANSITION NARRATIVE

A narrative discussion of any transition between monitoring programs (e.g., the date and circumstances for transitioning from detection monitoring to assessment monitoring in addition to identifying the constituent(s) detected at a statistically significant increase over background levels); and

There was no transition between monitoring programs in 2019. Only detection monitoring was conducted in 2019.

2.5 § 257.90(e)(5) OTHER REQUIREMENTS

Other information required to be included in the annual report as specified in §§ 257.90 through 257.98.

A summary of potentially required information and the corresponding section of the Rule is provided in the following sections. In addition, the information, if applicable, is provided.

2.5.1 § 257.90(e) Program Status

Status of Groundwater Monitoring and Corrective Action Program.

The groundwater monitoring and corrective action program is in detection monitoring.

Summary of Key Actions Completed.

a. completion of the Fall 2018 verification sampling and analyses per the certified statistical method,

b. completion of the statistical evaluation of the Fall 2018 semiannual detection monitoring sampling and analysis event per the certified statistical method,

c. completion of the 2018 Annual Groundwater Monitoring and Corrective Action Report,

d. completion of a successful alternative source demonstration for the Fall 2018 semiannual detection monitoring sampling and analysis event,

e. completion of the Spring 2019 semiannual detection monitoring sampling and analysis event, and subsequent verification sampling per the certified statistical method,

f. completion of the statistical evaluation of the Spring 2019 semiannual detection monitoring sampling and analysis event per the certified statistical method,

g. completion of a successful alternative source demonstration for the Spring 2019 semiannual detection monitoring sampling and analysis event, and

h. initiation of the Fall 2019 semiannual detection monitoring sampling and analysis event.

Description of Any Problems Encountered.

No noteworthy problems were encountered.

Discussion of Actions to Resolve the Problems.

Not applicable because no noteworthy problems were encountered.

Projection of Key Activities for the Upcoming Year (2020).

Completion of verification sampling and data analysis, and the statistical evaluation of Fall 2019 detection monitoring sampling and analysis event. Semiannual Spring and Fall 2020 groundwater sampling and analysis. Completion of the statistical evaluation of the Spring 2020 detection monitoring sampling and analysis event, and, if required, alternative source demonstration(s).

2.5.2 § 257.94(d)(3) Demonstration for Alternative Detection Monitoring Frequency

The owner or operator must obtain a certification from a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority stating that the demonstration for an alternative groundwater sampling and analysis frequency meets the requirements of this section. The owner or operator must include the demonstration providing the basis for the alternative monitoring frequency and the certification by a qualified professional engineer or the approval from the Participating State Director or approval from EPA where EPA is the permitting authority in the annual groundwater monitoring and corrective action report required by § 257.90(e).

Not applicable because no alternative monitoring frequency for detection monitoring and certification was pursued.

2.5.3 § 257.94(e)(2) Detection Monitoring Alternate Source Demonstration

Demonstration that a source other than the CCR unit caused the statistically significant increase (SSI) over background levels for a constituent or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. In addition, certification of the demonstration is to be included in the annual report.

The following demonstration reports are included as **Appendix C:**

C.1 CCR Groundwater Monitoring Alternative Source Demonstration Report November 2018 Groundwater Monitoring Event, CCR Landfill and Lower AQC Impoundment, La Cygne Generating Station (June 2019).

C.2. Groundwater Monitoring Alternative Source Demonstration Report May 2019 Groundwater Monitoring Event, CCR Landfill and Lower AQC Impoundment, La Cygne Generating Station (December 2019).

2.5.4 § 257.95(c)(3) Demonstration for Alternative Assessment Monitoring Frequency

The owner or operator must obtain a certification from a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority stating that the demonstration for an alternative groundwater sampling and analysis frequency meets the requirements of this section. The owner or operator must include the demonstration providing the basis for the alternative monitoring frequency and the certification by a qualified professional engineer or the approval from the Participating State Director or the approval from EPA where EPA is the permitting authority in the annual groundwater monitoring and corrective action report required by § 257.90(e).

Not applicable because there was no assessment monitoring conducted.

2.5.5 § 257.95(d)(3) Assessment Monitoring Concentrations and Groundwater Protection Standards

Include the concentrations of Appendix III and detected Appendix IV constituents from the assessment monitoring, the established background concentrations, and the established groundwater protection standards.

Not applicable because there was no assessment monitoring conducted.

2.5.6 § 257.95(g)(3)(ii) Assessment Monitoring Alternate Source Demonstration

Demonstrate that a source other than the CCR unit caused the contamination, or that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. Any such demonstration must be supported by a report that includes the factual or evidentiary basis for any conclusions and must be certified to be accurate by a qualified professional engineer. If a successful demonstration is made, the owner or operator must continue monitoring in accordance with the assessment monitoring program pursuant to this section, and may return to detection monitoring if the constituents in appendices III and IV to this part are at or below background as specified in paragraph (e) of this section. The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by § 257.90(e), in addition to the certification by a qualified professional engineer or the approval from the Participating State Director or approval from EPA where EPA is the permitting authority.

Not applicable because there was no assessment monitoring conducted.

2.5.7 § 257.96(a) Demonstration for Additional Time for Assessment of Corrective Measures

Within 90 days of finding that any constituent listed in appendix IV to this part has been detected at a statistically significant level exceeding the groundwater protection standard defined under § 257.95(h), or immediately upon detection of a release from a CCR unit, the owner or operator must initiate an assessment of corrective measures to prevent further releases, to remediate any releases and to restore affected area to original conditions. The assessment of corrective measures must be completed within 90 days, unless the owner or operator demonstrates the need for additional time to complete the assessment of corrective measures due to site-specific conditions or circumstances. The owner or operator must obtain a certification from a qualified professional engineer attesting that the demonstration is accurate. The 90-day deadline to complete the assessment of corrective measures may be extended for no longer than 60 days. The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by § 257.90(e), in addition to the certification by a qualified professional engineer or the approval from the Participating State Director or approval from EPA where EPA is the permitting authority.

Not applicable because there was no assessment monitoring conducted.

3 GENERAL COMMENTS

This report has been prepared and reviewed under the direction of a qualified groundwater scientist and qualified professional engineer. The information contained in this report is a reflection of the conditions encountered at the La Cygne Generating Station at the time of fieldwork. This report includes a review and compilation of the required information and does not reflect any variations of the subsurface, which may occur between sampling locations. Actual subsurface conditions may vary and the extent of such variations may not become evident without further investigation.

Conclusions drawn by others from the result of this work should recognize the limitation of the methods used. Please note that SCS Engineers does not warrant the work of regulatory agencies or other third parties supplying information used in the assimilation of this report. This report is prepared in accordance with generally accepted environmental engineering and geological practices, within the constraints of the client's directives. It is intended for the exclusive use of Evergy Metro, Inc. for specific application to the La Cygne Generating Station CCR Landfill and Lower AQC Impoundment. No warranties, express or implied, are intended or made.

APPENDIX A

FIGURES

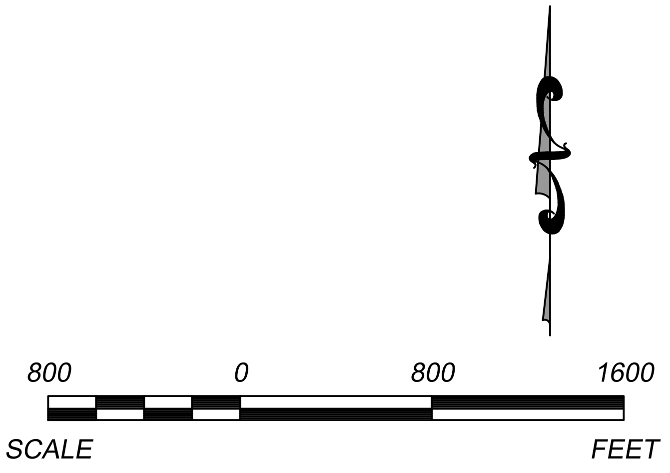
Figure 1: Site Map

LEGEND

▭	CCR UNIT BOUNDARY (APPROXIMATE LIMITS OF CCR LANDFILL AND LOWER AQC IMPOUNDMENT)
▲ MW–601	CCR GROUNDWATER MONITORING SYSTEM WELLS

NOTES:

1. KDHE FACILITY PERMIT AND LANDFILL PERMIT BOUNDARIES VARY FROM THAT SHOWN.
2. GOOGLE EARTH IMAGE DATED OCTOBER 2014. BOUNDARY AND MONITOR WELL LOCATIONS ARE APPROXIMATE.
3. BOUNDARY AND MONITOR WELL LOCATIONS ARE PROVIDED BY AECOM.



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SHEET TITLE

SITE MAP
CCR LANDFILL & LOWER AQC IMPOUNDMENT
CCR GROUNDWATER MONITORING SYSTEM

PROJECT TITLE

2019 CCR GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

CLIENT

EVERGY METRO, INC
LA CYGNE GENERATING STATION
LA CYGNE, KANSAS

SCS ENGINEERS
8575 W. 110th St, Ste. 100
Overland Park, Kansas 66210
PH. (913) 681-0030 FAX. (913) 681-0012

PROJ. NO. 27217233.19
DWN. BY: TGW
Q/A RVW BY: JRR
DSN. BY: TGW
CHK. BY: JRR
PROJ. MGR JRR

CADD FILE: FIG 1 –LA CYGNE LF LAQC IMP.DWG

DATE: 1/07/20

FIGURE NO. 1

N:\KCPL\Projects\Groundwater\DWG\La Cygne\CCR Annual Report\2018\Fig 1 -La Cygne LF LAQC Imp.dwg Jan 08, 2020 - 10:58am Layout Name: Fig 1 By: 4648jdj

APPENDIX B

TABLES

Table 1: Appendix III Detection Monitoring Results

Table 2: Detection Monitoring Field Measurements

Table 1
CCR Landfill and Lower AQC Impoundment
Appendix III Detection Monitoring Results
Evergy La Cygne Generating Station

Well Number	Sample Date	Appendix III Constituents						
		Boron (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	pH (S.U.)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)
MW-10	5/23/2019	0.885	52.9	52.5	0.353	7.32	23.1	588
MW-10	11/7/2019	0.898	56.2	52.2	0.360	7.24	5.64	570
MW-13	1/14/2019	*0.539	---	---	*0.208	**6.87	---	---
MW-13	3/11/2019	*0.470	---	---	*0.194	**7.07	---	---
MW-13	5/23/2019	0.401	355	16.2	0.176	7.03	1520	2460
MW-13	11/7/2019	0.458	340	15.7	0.182	6.79	1450	2430
MW-14R	1/14/2019	*0.859	---	*5.96	---	**7.25	---	---
MW-14R	3/11/2019	*0.591	---	*4.44	---	**7.45	---	---
MW-14R	5/23/2019	0.669	55.2	5.33	0.265	7.35	54.5	563
MW-14R	7/17/2019	---	---	*6.14	---	**7.94	---	---
MW-14R	8/23/2019	---	---	*6.08	---	**7.31	---	---
MW-14R	11/7/2019	0.807	55.8	5.77	0.303	7.20	59.7	509
MW-15	1/14/2019	*0.288	---	---	---	**7.18	---	---
MW-15	5/23/2019	0.228	102	12.0	0.251	7.14	189	748
MW-15	11/7/2019	0.282	104	11.3	0.250	7.03	175	692
MW-601	1/14/2019	---	---	---	---	*7.63	*5.97	---
MW-601	3/11/2019	---	---	---	---	**7.64	*5.89	---
MW-601	5/23/2019	1.85	17.7	162	1.48	7.65	6.76	1000
MW-601	7/17/2019	---	---	---	---	**7.95	*5.75	---
MW-601	8/23/2019	---	---	---	---	**7.66	*6.32	---
MW-601	11/7/2019	1.82	17.2	164	1.55	7.72	6.33	900
MW-602	5/23/2019	2.35	23.1	16.9	1.06	7.45	24.2	615
MW-602	11/7/2019	2.30	24.9	16.6	1.07	7.44	24.5	569

* Verification Sample obtained per certified statistical method and Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance, March 2009.

**Extra Sample for Quality Control Validation or per Standard Sampling Procedure

mg/L - miligrams per liter

pCi/L - picocuries per liter

S.U. - Standard Units

--- Not Sampled

Table 1
CCR Landfill and Lower AQC Impoundment
Appendix III Detection Monitoring Results
Evergy La Cygne Generating Station

Well Number	Sample Date	Appendix III Constituents						
		Boron (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	pH (S.U.)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)
MW-801	5/23/2019	2.22	25.1	89.4	0.922	7.40	<5.00	852
MW-801	11/7/2019	2.19	27.5	92.0	0.951	7.63	<5.00	785
MW-802	5/23/2019	2.47	26.4	34.2	0.816	7.30	<5.00	688
MW-802	11/7/2019	2.44	28.0	33.8	0.952	7.58	<5.00	627
MW-803	5/23/2019	2.12	41.1	49.2	0.551	7.26	24.1	621
MW-803	11/7/2019	2.07	43.1	49.4	0.563	7.26	24.0	563
MW-804	1/14/2019	*1.73	---	---	---	**7.07	---	---
MW-804	3/11/2019	*1.74	---	---	---	**7.38	---	---
MW-804	5/23/2019	1.69	66.8	31.7	0.445	7.15	23.2	558
MW-804	7/17/2019	*1.71	---	---	---	**7.31	---	---
MW-804	8/22/2019	*1.63	---	---	---	**7.16	---	---
MW-804	11/7/2019	1.63	68.2	29.0	0.430	7.34	21.9	501
MW-805	1/14/2019	---	*473	---	---	**6.32	---	---
MW-805	3/11/2019	---	*468	---	---	**6.40	---	---
MW-805	5/23/2019	0.582	442	455	0.173	6.44	666	2180
MW-805	7/17/2019	*0.550	---	---	---	**6.48	---	---
MW-805	8/22/2019	*0.537	---	---	---	**6.40	---	---
MW-805	11/7/2019	0.525	475	492	0.130	6.52	730	2070

* Verification Sample obtained per certified statistical method and Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance, March 2009.

**Extra Sample for Quality Control Validation or per Standard Sampling Procedure

mg/L - miligrams per liter

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S.U. - Standard Units

--- Not Sampled

Table 2
CCR Landfill and Lower AQC Impoundment
Detection Monitoring Field Measurements
Evergy La Cygne Generating Station

Well Number	Sample Date	pH (S.U.)	Specific Conductivity (µS)	Temperature (°C)	Turbidity (NTU)	ORP (mV)	DO (mg/L)	***Water Level (ft btoc)	Groundwater Elevation (ft NGVD)
MW-10	5/23/2019	7.32	1150	20.31	0.00	-143	0.65	2.78	872.17
MW-10	11/7/2019	7.24	895	14.13	0.00	-102	0.35	2.00	872.95
MW-13	1/14/2019	**6.87	2260	10.98	6.30	210	1.78	2.83	874.39
MW-13	3/11/2019	**7.07	2540	13.78	0.90	150	6.07	2.81	874.41
MW-13	5/23/2019	7.03	2900	17.14	0.00	74	1.00	2.58	874.64
MW-13	11/7/2019	6.79	2450	13.68	6.30	41	0.69	3.91	873.31
MW-14R	1/14/2019	**7.25	1080	12.06	4.30	88	1.04	10.60	868.23
MW-14R	3/11/2019	**7.45	911	13.78	8.60	110	4.44	8.93	869.90
MW-14R	5/23/2019	7.35	1040	14.60	0.00	55	7.80	8.03	870.80
MW-14R	7/17/2019	**7.94	989	17.39	0.00	84	0.64	8.33	870.50
MW-14R	8/23/2019	**7.31	922	16.62	0.00	86	0.00	8.75	870.08
MW-14R	11/7/2019	7.20	837	14.09	5.10	-77	1.07	8.07	870.76
MW-15	1/14/2019	**7.18	1290	12.85	0.00	66	1.38	10.20	863.68
MW-15	5/23/2019	7.14	1410	18.19	0.00	102	2.95	9.00	864.88
MW-15	11/7/2019	7.03	1020	14.91	8.20	7	0.94	9.65	864.23
MW-601	1/14/2019	*7.63	1650	9.69	3.40	204	0.00	9.45	869.73
MW-601	3/11/2019	**7.64	1620	13.11	6.20	-24	0.55	9.78	869.40
MW-601	5/23/2019	7.65	1740	15.06	5.80	31	7.50	10.27	868.91
MW-601	7/17/2019	**7.95	1370	26.56	0.00	69	0.43	10.69	868.49
MW-601	8/23/2019	**7.66	1610	17.66	2.60	12	0.00	10.39	868.79
MW-601	11/7/2019	7.72	1820	11.89	4.20	69	1.49	8.90	870.28
MW-602	5/23/2019	7.45	1080	15.69	15.80	65	1.27	3.73	876.16
MW-602	11/7/2019	7.44	866	13.66	20.40	-6	0.85	4.27	875.62

* Verification Sample obtained per certified statistical method and Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance, March 2009.

**Extra Sample for Quality Control Validation or per Standard Sampling Procedure

***Depth to water measured in all monitoring wells within 24 hour period prior to the sampling event

S.U. - Standard Units

µS - microsiemens

°C - Degrees Celsius

ft btoc - Feet Below Top of Casing

ft NGVD - National Geodetic Vertical Datum (NAVD 88)

NTU - Nephelometric Turbidity Unit

Table 2
CCR Landfill and Lower AQC Impoundment
Detection Monitoring Field Measurements
Evergy LaCygne Generating Station

Well Number	Sample Date	pH (S.U.)	Specific Conductivity (µS)	Temperature (°C)	Turbidity (NTU)	ORP (mV)	DO (mg/L)	***Water Level (ft btoc)	Groundwater Elevation (ft NGVD)
MW-801	5/23/2019	7.40	1490	14.52	8.10	-105	0.00	0.47	857.18
MW-801	11/7/2019	7.63	1560	11.54	8.80	9	1.26	0.74	856.91
MW-802	5/23/2019	7.30	1210	16.74	0.00	-125	0.00	0.23	853.24
MW-802	11/7/2019	7.58	1260	12.51	8.20	-30	0.70	0.15	853.32
MW-803	5/23/2019	7.26	1110	14.88	0.00	-48	0.00	8.52	846.48
MW-803	11/7/2019	7.26	912	13.37	6.40	15	1.62	9.72	845.28
MW-804	1/14/2019	**7.07	1050	10.89	1.00	13	1.58	7.46	847.74
MW-804	3/11/2019	**7.38	947	13.02	3.60	105	2.84	7.95	847.25
MW-804	5/23/2019	7.15	1150	17.72	0.00	25	1.97	9.54	845.66
MW-804	7/17/2019	**7.31	930	22.82	0.00	-18	3.90	10.63	844.57
MW-804	8/22/2019	**7.16	920	21.25	0.00	92	0.00	10.81	844.39
MW-804	11/7/2019	7.34	1040	14.35	8.30	4	1.31	8.55	846.65
MW-805	1/14/2019	**6.32	3030	13.54	28.20	159	0.00	5.81	848.82
MW-805	3/11/2019	**6.40	3130	13.08	14.70	87	1.08	5.44	849.19
MW-805	5/23/2019	6.44	3390	17.67	6.10	140	1.96	4.34	850.29
MW-805	7/17/2019	**6.48	2780	26.75	0.00	226	2.90	4.64	849.99
MW-805	8/22/2019	**6.40	3020	20.91	17.50	349	0.00	5.12	849.51
MW-805	11/7/2019	6.52	3360	14.13	1.70	35	1.07	4.89	849.74

* Verification Sample obtained per certified statistical method and Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance, March 2009.

**Extra Sample for Quality Control Validation or per Standard Sampling Procedure

***Depth to water measured in all monitoring wells within 24 hour period prior to the sampling event

S.U. - Standard Units

µS - microsiemens

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Appendix C

Alternative Source Demonstrations

C.1 Groundwater Monitoring Alternative Source Demonstration Report November 2018 Groundwater Monitoring Event, CCR Landfill and Lower AQC Impoundment, La Cygne Generating Station (June 2019)

C.2. Groundwater Monitoring Alternative Source Demonstration Report May 2019 Groundwater Monitoring Event, CCR Landfill and Lower AQC Impoundment, La Cygne Generating Station (December 2019)

C.1 Groundwater Monitoring Alternative Source Demonstration Report November 2018 Groundwater Monitoring Event, CCR Landfill and Lower AQC Impoundment, La Cygne Generating Station (June 2019)

CCR GROUNDWATER MONITORING
ALTERNATIVE SOURCE DEMONSTRATION REPORT
NOVEMBER 2018 GROUNDWATER MONITORING EVENT

CCR LANDFILL AND LOWER AQC IMPOUNDMENT
LA CYGNE GENERATING STATION
LA CYGNE, KANSAS

Presented To:

Kansas City Power & Light Company

Presented By:

SCS ENGINEERS

8575 West 110th Street, Suite 100

Overland Park, Kansas 66210

(913) 681-0030

June 2019

File No. 27217233.19

CERTIFICATIONS

I, John R. Rockhold, being a qualified groundwater scientist and licensed Professional Geologist in the State of Kansas, do hereby certify the accuracy of the information in the CCR Groundwater Monitoring Alternative Source Demonstration Report for the CCR Landfill and Lower AQC Impoundment at the La Cygne Generating Station. The Alternative Source Demonstration was prepared by me or under my direct supervision in accordance with generally accepted hydrogeological practices and the local standard of care.

JOHN R. ROCKHOLD
29
6-27-19

John R. Rockhold, P.G.

SCS Engineers

I, Douglas L. Doerr, being a qualified licensed Professional Engineer in the State of Kansas, do hereby certify the accuracy of the information in the CCR Groundwater Monitoring Alternative Source Demonstration Report for the CCR Landfill and Lower AQC Impoundment at the La Cygne Generating Station. The Alternative Source Demonstration was prepared by me or under my direct supervision in accordance with generally accepted engineering practices and the local standard of care.

DOUGLAS L. DOERR
14136
6-27-19

Douglas L. Doerr, P.E.

SCS Engineers

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Appendices

1 REGULATORY FRAMEWORK

Certain owners or operators of Coal Combustion Residuals (CCR) units are required to complete groundwater monitoring activities to evaluate whether a release from the unit has occurred. Included in the activities is the completion of a statistical analysis of the groundwater quality data as prescribed in § 257.93(h) of the CCR Final Rule. If the initial analysis indicates a statistically significant increase (SSI) over background levels, the owner or operator may perform an alternative source demonstration (ASD). In accordance with § 257.94(e)(2), the owner or operator of the CCR unit may demonstrate that a source other than the CCR unit caused the SSI over background levels for a constituent, or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. The owner or operator must complete the written demonstration within 90 days of detecting a SSI over background levels to include obtaining a certification from a qualified professional engineer verifying the accuracy of the information in the report. If a successful demonstration is completed within the 90-day period, the owner or operator of the CCR unit may continue with a detection monitoring program under § 257.94. If a successful demonstration is not completed within the 90-day period, the owner or operator of the CCR unit must initiate an assessment monitoring program as required under § 257.95. The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by § 257.90(e), in addition to the certification by a qualified professional engineer.

2 STATISTICAL RESULTS

Statistical analysis of monitoring data from the groundwater monitoring system for the CCR Landfill and Lower AQC Impoundment at the La Cygne Generating Station has been completed in substantial compliance with the “Statistical Method Certification by A Qualified Professional Engineer” dated October 12, 2017. Detection monitoring groundwater samples were collected on November 30, 2018. Review and validation of the results from the November 2018 Detection Monitoring Event was completed on January 12, 2019, which constitutes completion and finalization of detection monitoring laboratory analyses. A statistical analysis was then conducted to determine whether there was a SSI over background values for each constituent listed in Appendix III to Part 257-Constituents for Detection Monitoring. Two rounds of verification sampling were conducted for certain constituents on January 14, 2019 and March 11, 2019.

The completed statistical evaluation identified four Appendix III constituents above their respective prediction limits in monitoring wells MW-13, MW-601, MW-804, and MW-805.

The prediction limit for boron in monitoring well MW-804 is 1.653 mg/L. The detection monitoring sample was reported at 1.75 mg/L. The first verification re-sample was collected on January 14, 2019 with a result of 1.73 mg/L. The second verification re-sample was collected on March 11, 2019 with a result of 1.74 mg/L.

The prediction limit for calcium in monitoring well MW-805 is 448.6 mg/L. The detection monitoring sample was reported at 455 mg/L. The first verification re-sample was collected on January 14, 2019 with a result of 473 mg/L. The second verification re-sample was collected on March 11, 2019 with a result of 468 mg/L.

The prediction limit for fluoride in upgradient monitoring well MW-13 is 0.1905 mg/L. The detection monitoring sample was reported at 0.191 mg/L. The first verification re-sample was collected on January 14, 2019 with a result of 0.208 mg/L. The second verification re-sample was collected on March 11, 2019 with a result of 0.194 mg/L.

The prediction limit for sulfate in upgradient monitoring well MW-601 is 5.0 mg/L. The detection monitoring sample was reported at 5.98 mg/L. The first verification re-sample was collected on January 14, 2019 with a result of 5.97 mg/L. The second verification re-sample was collected on March 11, 2019 with a result of 5.89 mg/L.

Therefore, in accordance with the Statistical Method Certification, the detection monitoring samples for boron from monitoring well MW-804, for calcium from monitoring well MW-805, for fluoride from upgradient monitoring well MW-13, and for sulfate from upgradient monitoring well MW-601 exceed their respective prediction limits and are confirmed statistically significant increases (SSIs) over background.

Determination: A statistical evaluation was completed for all Appendix III detection monitoring constituents in accordance with the certified statistical method. The statistical evaluation identified four SSIs above the background prediction limit for boron in monitoring well MW-804, for calcium in monitoring well MW-805, for fluoride in upgradient monitoring well MW-13, and for sulfate in upgradient monitoring well MW-601.

3 ALTERNATIVE SOURCE DEMONSTRATION

An Alternative Source Demonstration is a means to provide supporting lines of evidence that something other than a release from a regulated CCR unit caused an SSI. For the above identified SSIs for the CCR Landfill and Lower AQC Impoundment at the La Cygne Generating Station, there are multiple lines of supporting evidence to indicate they are not caused by a release from the CCR Landfill and Lower AQC Impoundment. Select multiple lines of supporting evidence are described as follows.

3.1 UPGRADIENT WELL LOCATION

Figure 1 in **Appendix A** shows a potentiometric surface contour map indicating the direction of groundwater flow at and near the CCR Landfill and Lower AQC Impoundment at the time of sampling. The groundwater flow directions indicated are for the November 2018 groundwater monitoring event and are typical flow directions for this unit. As seen in the map, monitoring wells MW-13 and MW-601 are located upgradient from the CCR Landfill and Lower AQC Impoundment indicating the SSI for fluoride in MW-13 and the SSI for sulfate in MW-601 are not caused by a release from the CCR Landfill and Lower AQC Impoundment. This demonstrates that a source other than the CCR Landfill and Lower AQC Impoundment caused the SSIs above background levels for fluoride and sulfate, or that the respective SSIs resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality.

3.2 BOX AND WHISKERS PLOTS

A commonly accepted method to demonstrate and visualize the distribution of data in a given data set is to construct box and whiskers plots. The basic box plotted graphically locates the median, 25th and 75th percentiles of the data set; the "whiskers" extend to the minimum and maximum values of the data set. The range between the ends of a box plot represents the Interquartile Range, which can be used as an estimate of spread or variability. The mean is denoted by a "+".

When comparing multiple wells or well groups, box plots for each well can be lined up on the same axis to roughly compare the variability in each well. This may be used as an exploratory screening for the test of homogeneity of variance across multiple wells.

Box and whiskers plots were prepared for boron for upgradient wells MW-601, MW-602, MW-10, and MW-13 and downgradient well MW-804. Although the boron SSI was only identified in downgradient well MW-804 the box and whiskers plot shows that it is well within the overall boron range for upgradient wells (MW-601, MW-602, MW-10 and MW-13). The comparison indicates the boron levels in upgradient wells MW-601 and MW-602 are greater than the boron level in MW-804. This demonstrates that a source other than the CCR Landfill and Lower AQC Impoundment caused the SSI above background levels for boron, or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality.

An SSI was identified for calcium in downgradient well MW-805. Box and whiskers plots were prepared for upgradient monitoring wells MW-13 and MW-602 and for downgradient well MW-805. Although the box and whiskers plots show the downgradient calcium concentration in MW-805 is a little higher than that of upgradient well MW-13 and significantly greater than the concentration in MW-602, the significant difference between upgradient wells shown by this plot demonstrates the potential natural variability even between upgradient wells over short distances (MW-13 and MW-602). This large difference in upgradient concentrations over a short distance provides evidence that the background data set is likely not large enough to include the whole naturally occurring population and that the concentration in MW-805 could be in the naturally occurring population.

This premise and additional evaluations are further discussed in Sections 3.4 and 3.5.

Box and whiskers plots are provided in **Appendix B**.

3.3 TIME SERIES PLOTS

Time series plots provide a graphical method to view changes in data at a particular well (monitoring point) or wells over time. Time series plots display the variability in concentration levels over time and can be used to indicate possible outliers or data errors. More than one well can be compared on the same plot to look for differences between wells. Non-detect data is plotted as censored data at one-half of the laboratory reporting limit. Time series plots can also be used to examine the data for trends.

Time series plots for boron were prepared for the CCR monitoring system upgradient wells MW-601, MW-602, MW-10, and MW-13 and downgradient well MW-804. Although the boron SSI was only identified in downgradient well MW-804, the time series plots show that boron is well within the overall boron range for upgradient wells (MW-601, MW-602, MW-10 and MW-13). The comparison indicates the boron levels in upgradient wells MW-601 and MW-602 are greater than the boron level in MW-804. This demonstrates that a source other than the Landfill or Lower AQC Impoundment caused the boron SSI or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality.

Time series plots are provided in **Appendix C**.

3.4 SEN'S SLOPE/MANN-KENDALL TREND ANALYSIS

Sen's Slope/Mann-Kendall statistical analysis is often used when updating background to provide additional information to determine the appropriate background data set for the intrawell prediction limit analysis. Additionally, Sen's Slope/Mann-Kendall can be used when running routine statistics to determine if a prediction limit exceedance also exhibits an increasing trend. The analysis can determine if the overall data set exhibits a statistically significant increasing trend over time and can help to determine if updating the background data set is appropriate.

A trend is the general increase or decrease in observed values of a variable over time. A trend analysis can be used to determine the significance of an apparent trend and to estimate the magnitude of that trend. The Mann-Kendall test is nonparametric, meaning that it does not depend on an assumption of a particular underlying distribution. The test uses only the relative magnitude of data rather than actual values. Therefore, missing values are allowed, and values that are recorded as non-detects by the laboratory can still be used in the statistical analysis by assigning values equal to half their detection limits. Sen's Slope is a simple nonparametric procedure developed to estimate the true slope. The advantage of this method over linear regression is that it is not greatly affected by gross data errors or outliers, and can be computed when data are missing.

Sen's Slope/Mann-Kendall statistical analysis was performed on calcium for monitoring well MW-805. The analysis was performed at the 98 percent confidence level (α + 0.01 per tail [upward & downward]) and indicated the overall data set did not exhibit a statistically significant increase trend.

Sen's Slope/Mann-Kendall trend analysis output plots are provided in **Appendix D.**

3.5 MANN-WHITNEY / WILCOXON RANK SUM

The Mann-Whitney test, also known as Wilcoxon Rank Sum, may be used to test whether the measurements from one population are significantly higher or lower than another population. This test is often used when updating background data sets. It compares the background data set to the data planned to be added to the background data set.

Based on previous discussions of the existing background data set for calcium not necessarily representing the entire population of naturally occurring calcium (true background), the Mann-Whitney test was performed for calcium for upgradient monitoring well MW-13 and downgradient well MW-805. Typically, if the background median and the compliance median (in this case the data planned to be added to the background data set) are not significantly different, than the compliance data can be added to create a new background data set.

The results of the Mann-Whitney test indicate that the calcium background data set for MW-13 and MW-805 did not differ significantly from the new data (3 points for MW-13 and 4 points for MW-805) at an α of 0.01. Therefore, this further substantiates that the limited background data sets are not representative of the entire population of naturally occurring calcium. Furthermore, it is advisable to update the background data set with the new data to better represent the entire naturally occurring calcium population for the purposes of this ASD.

Mann-Whitney test outputs are provided in **Appendix E.**

3.6 PREDICTION LIMIT WITH UPDATED BACKGROUND

Based on the Sen's Slope/Mann-Kendall statistical analysis discussed above, there is not a statistically significant increasing trend for calcium in MW-805. As such, the limited background data set (8 points) is not believed to accurately represent the entire population of naturally occurring calcium. Furthermore, the Mann-Whitney test indicates that the median of the next four data points is not significantly different from the median of the background data set for calcium for MW-805. Therefore, the background data set for calcium for MW-805 was updated with the four additional data points and prediction limit testing was performed using the new background data set. The prediction limit testing with the updated background data set did not identify the November 2018 calcium concentration in MW-805 or the two retesting sample levels (January 2019 and March 2019) as SSIs over background. This demonstrates that a source other than the CCR Landfill and Lower AQC Impoundment caused the initial SSI above background levels for calcium in MW-805, or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality.

Prediction limit test outputs are provided in **Appendix F**.

3.7 PIPER PLOTS

Piper diagrams are a form of tri-linear diagram, and a widely accepted method to provide a visual representation of the ion concentration of groundwater. Piper diagrams portray water compositions and facilitate the interpretation and presentation of chemical analyses. They may be used to visually compare the chemical composition of water quality across wells, and aid in determining whether the waters are similar or dis-similar, and can over time indicate whether the waters are mixing.

A piper diagram has two triangular plots on the right and left side of a 4-sided center field. The three major cations are plotted in the left triangle and anions in the right. Each of the three cation/anion variables, in milliequivalents, is divided by the sum of the three values, to produce a percent of total cation/anions. These percentages determine the location of the associated symbol. The data points in the center field are located by extending the points in the lower triangles to the point of intersection. In order for a piper diagram to be produced, the selected data file must contain the following constituents: Sodium (Na), Potassium (K), Calcium (Ca), Magnesium (Mg), Chloride (Cl), Sulfate (SO4), Carbonate (CO3), and Bicarbonate (HCO3).

A piper diagram was generated for samples from upgradient wells MW-13 and MW-601 and from downgradient well MW-805. The sample from downgradient well MW-805 plots near the samples from upgradient well MW-13. The samples are in the same hydrochemical facies indicating similar geochemical characteristics between an upgradient well and a downgradient well. Additionally of note, upgradient well MW-601 plots in a totally different hydrochemical facies indicating that significant natural variability occurs between relatively close upgradient wells and is likely to occur across the site. This demonstrates that a source other than the CCR Landfill and Lower AQC Impoundment caused the SSI for calcium in MW-805, or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality.

The piper diagram plots are provided in **Appendix G**.

4 CONCLUSION

Our opinion is that a sufficient body of evidence is available and presented above to demonstrate that a source other than the CCR Landfill and Lower AQC Impoundment caused the SSIs for boron, calcium, fluoride and sulfate, or that the SSIs resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. Based on the successful ASD, the owner or operator of the CCR Landfill and Lower AQC Impoundment may continue with the detection monitoring program under § 257.94.

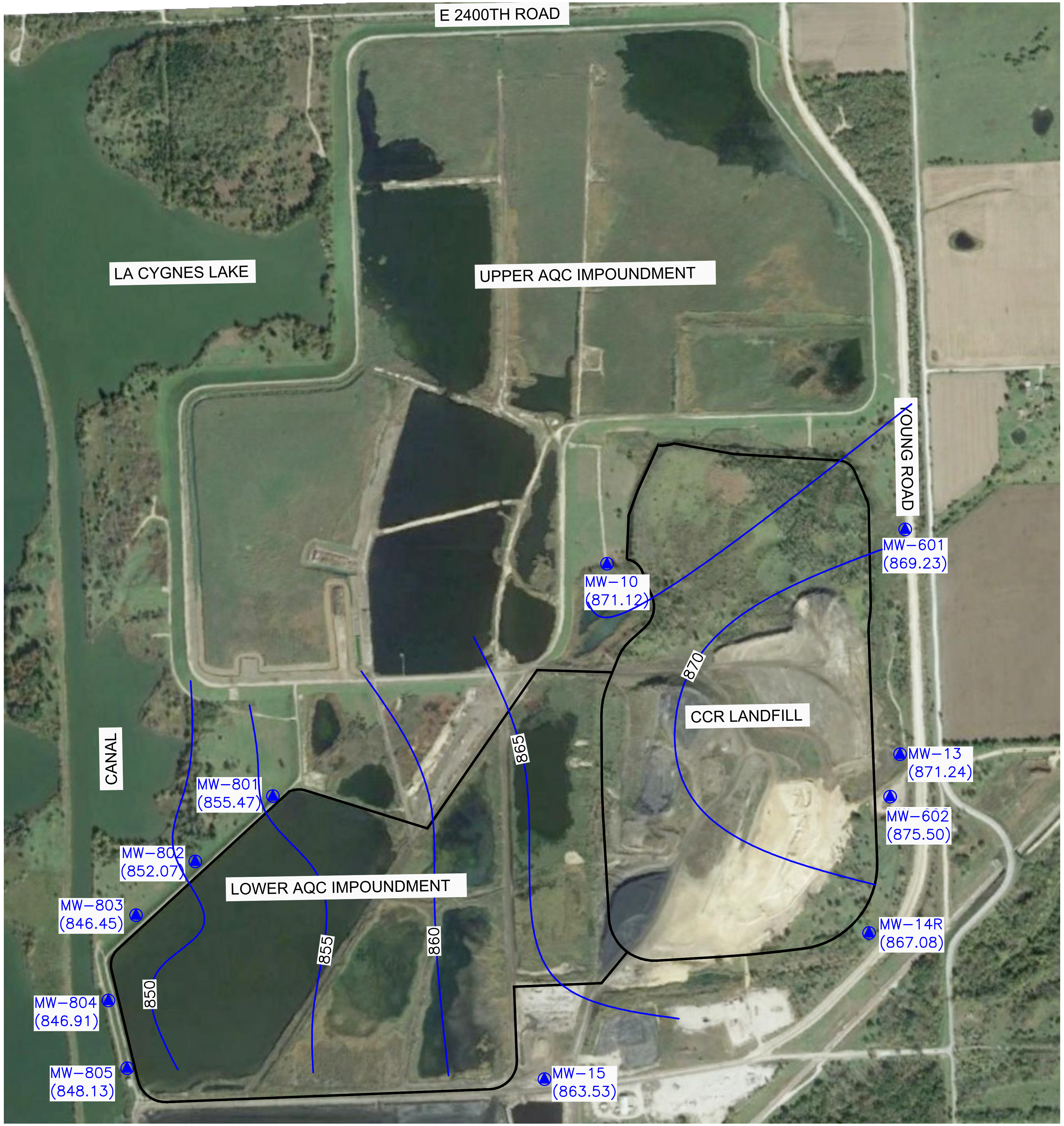
5 GENERAL COMMENTS

This report has been prepared and reviewed under the direction of a qualified groundwater scientist and qualified professional engineer. Please note that SCS Engineers does not warrant the work of regulatory agencies or other third parties supplying information used in the assimilation of this report. This report is prepared in accordance with generally accepted environmental engineering and geological practices, within the constraints of the client's directives. It is intended for the exclusive use of KCP&L for specific application to the La Cygne Generating Station. No warranties, express or implied, are intended or made.

The signatures of the certifying registered geologist and professional engineer on this document represent that to the best of their knowledge, information, and belief in the exercise of their professional judgement in accordance with the standard of practice, it is their professional opinions that the aforementioned information is accurate as of the date of such signature. Any opinion or decisions by them are made on the basis of their experience, qualifications, and professional judgement and are not to be construed as warranties or guaranties. In addition, opinions relating to regulatory, environmental, geologic, geochemical and geotechnical conditions interpretations or other estimates are based on available data, and actual conditions may vary from those encountered at the times and locations where data are obtained, despite the use of due care.

Appendix A

Figure 1



LEGEND

▭	CCR UNIT BOUNDARY (APPROXIMATE LIMITS OF CCR LANDFILL AND LOWER AQC IMPOUNDMENT)
MW−601 (868.92)	CCR GROUNDWATER MONITORING SYSTEM WELLS (GROUNDWATER ELEVATION)
−875−	GROUNDWATER SURFACE ELEVATIONS (REPRESENTATIVE FOR THIS UNIT)

NOTES:

1. KDHE FACILITY PERMIT AND LANDFILL PERMIT BOUNDARIES VARY FROM THAT SHOWN.
2. GOOGLE EARTH IMAGE DATED OCTOBER 2014. BOUNDARY AND MONITOR WELL LOCATIONS ARE APPROXIMATE.
3. BOUNDARY AND MONITOR WELL LOCATIONS ARE PROVIDED BY AECOM.

800 0 800 1600

SCALE FEET

REV.	DATE		CK. BY
△	-		-
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△	-		-
△	-		-

SHEET TITLE
POTENTIOMETRIC SURFACE MAP (NOVEMBER 2018)
CCR LANDFILL & LOWER AQC IMPOUNDMENT

PROJECT TITLE
ALTERNATIVE SOURCE DEMONSTRATION

CLIENT
KANSAS CITY POWER & LIGHT COMPANY
LA CYGNE GENERATING STATION
LA CYGNE, KANSAS

SCS ENGINEERS
8575 W. 110th St, Ste. 100
Overland Park, Kansas 66210
PH. (913) 681-0030 FAX. (913) 681-0012

PROJ. NO. 27217233.18
DWN. BY: TGW
Q/A RVW BY: JRR
DSN. BY: TGW
CHK. BY: JRR
PROJ. MGR JRR

CADD FILE:
LA CYGNE LF LAQC IMP & UAQC FIG 1_COMBINED.DWG

DATE:
5/22/19

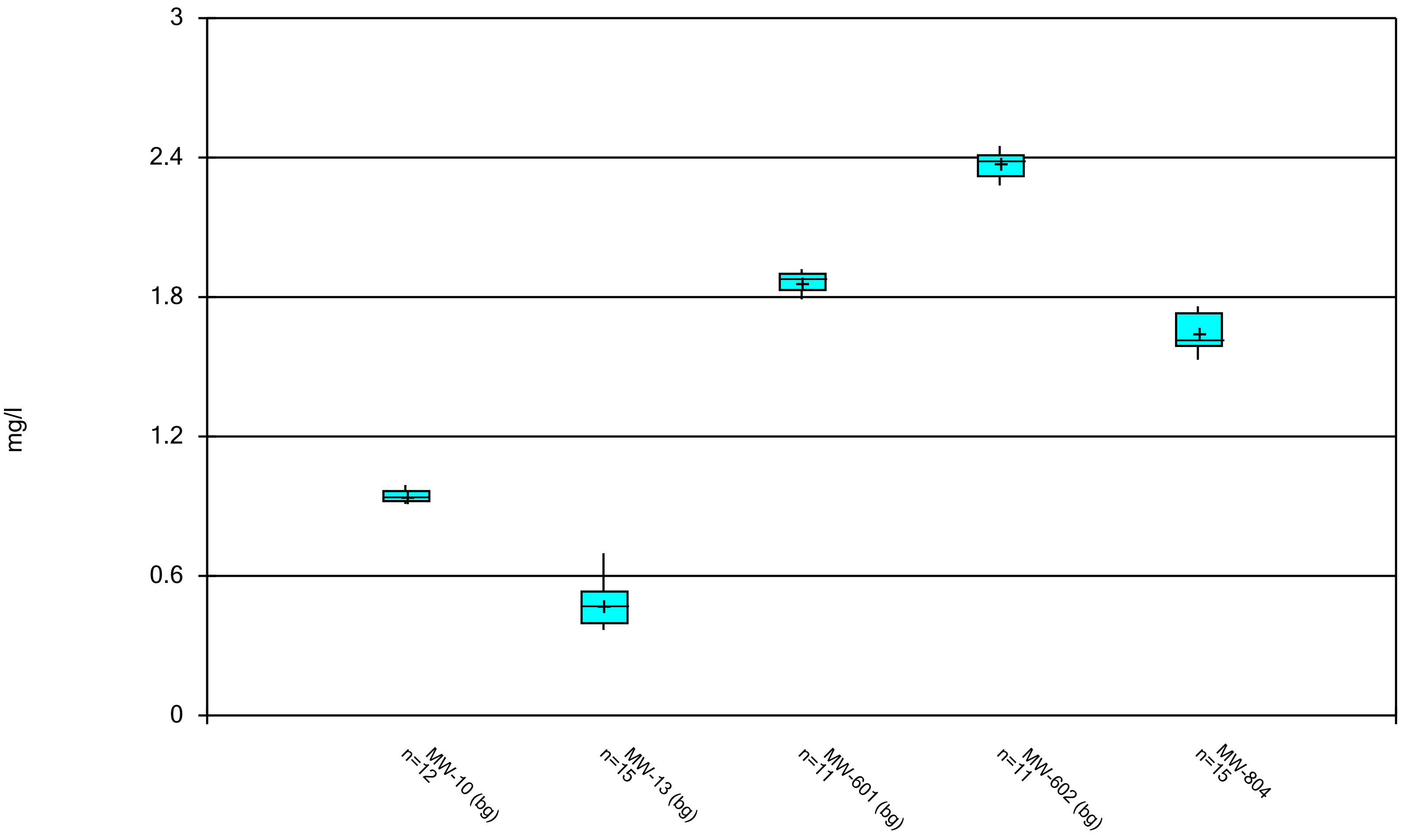
FIGURE NO.
1

N:\KCPL\Projects\Groundwater\DWG\La Cygne\2018\GW\La Cygne LF LAQC Imp & UAQC Fig 1_Combined.dwg May 23, 2019 - 4:24pm Layout Name: Fig 1 LAQC By: 4470daw

Appendix B

Box and Whiskers Plots

Box & Whiskers Plot



Constituent: BORON Analysis Run 4/3/2019 5:08 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Box & Whiskers Plot

Constituent: BORON (mg/l)   Analysis Run 4/3/2019 5:09 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

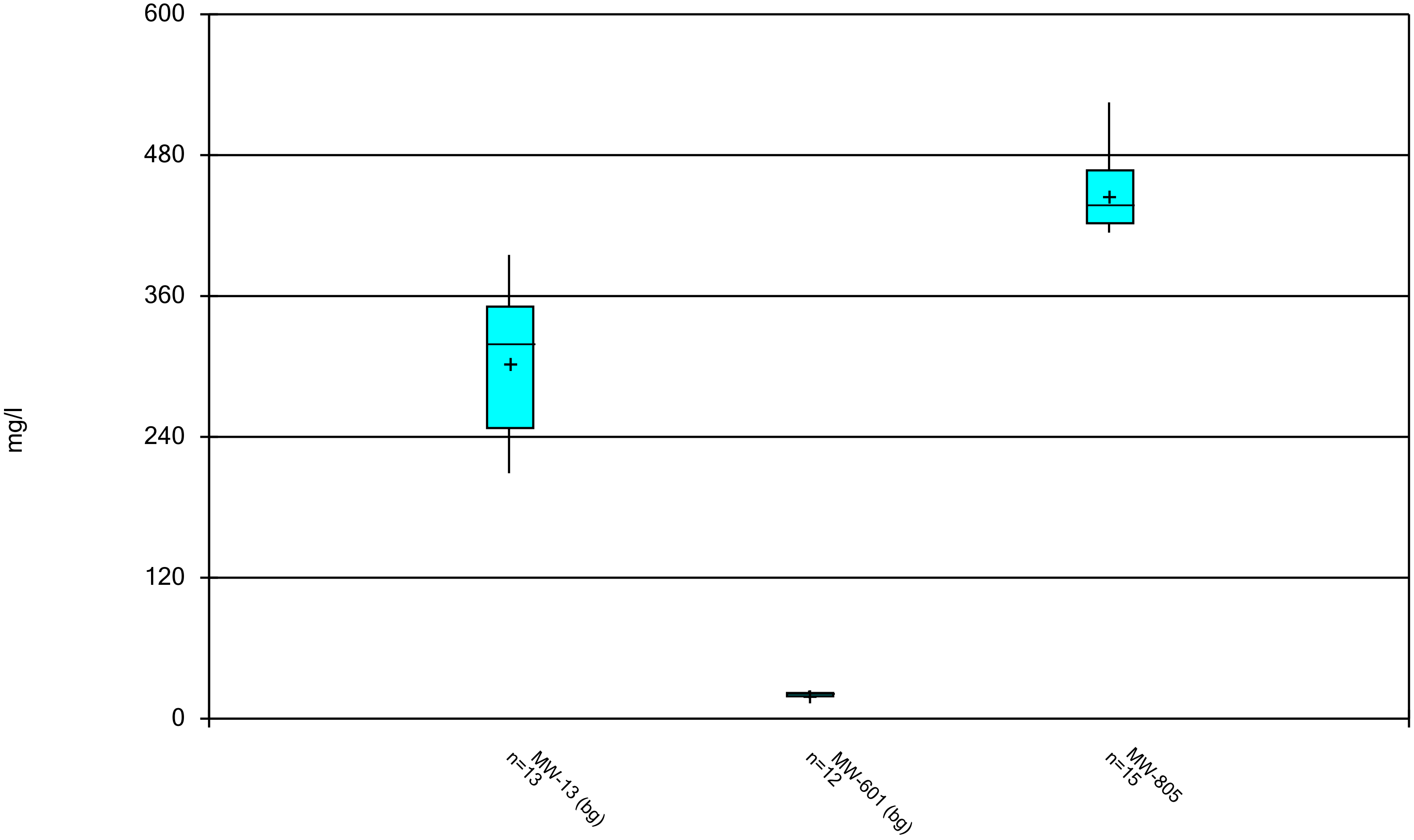
	MW-10 (bg)	MW-13 (bg)	MW-601 (bg)	MW-602 (bg)	MW-804
6/6/2016	0.923				
6/8/2016					1.65
6/9/2016		0.375	1.79		
6/10/2016				2.28	
8/9/2016			1.91	2.39	
8/10/2016					1.58
8/11/2016	0.966	0.397			
10/11/2016					1.59
10/12/2016	0.964				
10/13/2016		0.381	1.81	2.39	
12/7/2016			1.92		1.62
12/9/2016	0.94			2.34	
12/13/2016		0.403			
2/7/2017					1.59
2/8/2017	0.966		1.88	2.41	
2/10/2017		0.483			
4/4/2017					1.59
4/6/2017	0.933	0.449	1.89		
4/7/2017				2.44	
6/13/2017					1.57
6/15/2017	0.942	0.368	1.85	2.41	
8/8/2017		0.422			1.61
8/9/2017			1.9		
8/10/2017	0.921			2.45	
10/4/2017	0.991				
10/5/2017		0.47		2.31	1.53
10/6/2017			1.83		
12/12/2017	0.961				
5/23/2018	0.91	0.57	1.88	2.39	1.72
7/11/2018		0.533			1.67
8/16/2018		0.513			1.76
11/30/2018	0.914	0.698	1.85	2.32	1.75
1/14/2019		0.539			1.73
3/11/2019		0.47			1.74
Median	0.941	0.47	1.88	2.39	1.62
LowerQ.	0.922	0.397	1.83	2.32	1.59
UpperQ.	0.965	0.533	1.9	2.41	1.73
Min	0.91	0.368	1.79	2.28	1.53
Max	0.991	0.698	1.92	2.45	1.76
Mean	0.9443	0.4714	1.865	2.375	1.647

Box & Whiskers Plot

LaCygne   Client: SCS Engineers   Data: LaC GW Data   Printed 4/3/2019, 5:09 PM

Constituent	Well	N	Mean	Std. Dev.	Std. Err.	Median	Min.	Max.	%NDs
BORON (mg/l)	MW-10 (bg)	12	0.9443	0.02528	0.007299	0.941	0.91	0.991	0
BORON (mg/l)	MW-13 (bg)	15	0.4714	0.08969	0.02316	0.47	0.368	0.698	0
BORON (mg/l)	MW-601 (bg)	11	1.865	0.04204	0.01268	1.88	1.79	1.92	0
BORON (mg/l)	MW-602 (bg)	11	2.375	0.0552	0.01664	2.39	2.28	2.45	0
BORON (mg/l)	MW-804	15	1.647	0.07594	0.01961	1.62	1.53	1.76	0

Box & Whiskers Plot



Constituent: CALCIUM Analysis Run 5/21/2019 2:17 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Box & Whiskers Plot

Constituent: CALCIUM (mg/l)   Analysis Run 5/21/2019 2:18 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-13 (bg)	MW-601 (bg)	MW-805
6/7/2016			422
6/9/2016	363	21.7	
8/9/2016		20.3	
8/10/2016			437
8/11/2016	371		
10/11/2016			422
10/13/2016	395	23.9	
12/6/2016			422
12/7/2016		22.5	
12/13/2016	336		
2/6/2017			435
2/8/2017		20.1	
2/10/2017	297		
4/4/2017			444
4/6/2017	320	21.3	
6/13/2017			430
6/15/2017	339	22	
8/8/2017	319		414
8/9/2017		20.9	
10/5/2017	274		467
10/6/2017		21.1	
12/12/2017			525
1/9/2018			439
5/23/2018	248	17.6	434
9/17/2018	214		
11/30/2018	209	17.5	455
1/14/2019	247	17.9	473
3/11/2019			468
Median	319	21	437
LowerQ.	247.5	19	422
UpperQ.	351	21.85	467
Min	209	17.5	414
Max	395	23.9	525
Mean	302.5	20.57	445.8

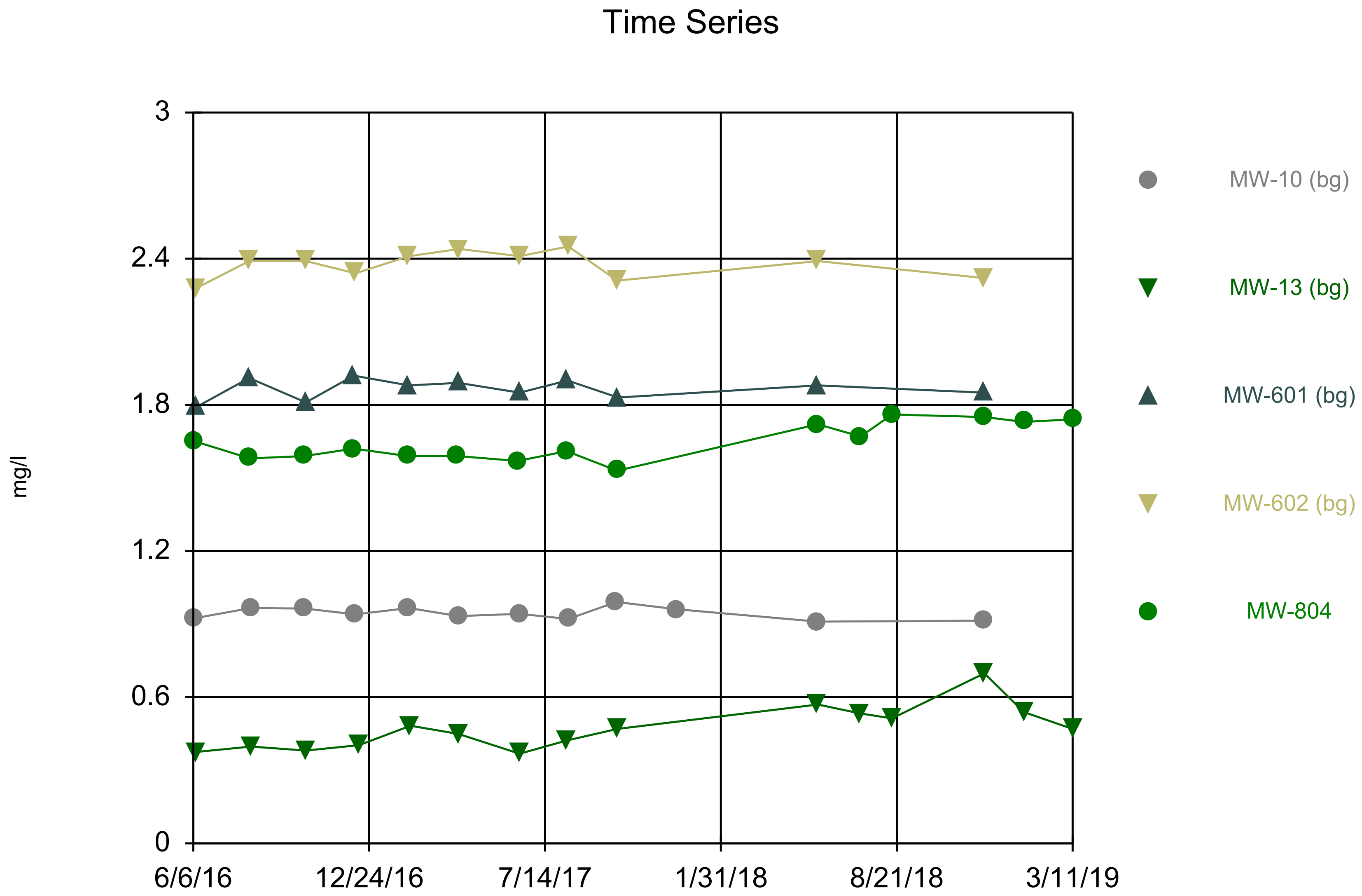
Box & Whiskers Plot

LaCygne Client: SCS Engineers Data: LaC GW Data Printed 5/21/2019, 2:18 PM

Constituent	Well	N	Mean	Std. Dev.	Std. Err.	Median	Min.	Max.	%NDs
CALCIUM (mg/l)	MW-13 (bg)	13	302.5	60.15	16.68	319	209	395	0
CALCIUM (mg/l)	MW-601 (bg)	12	20.57	2.016	0.5821	21	17.5	23.9	0
CALCIUM (mg/l)	MW-805	15	445.8	28.51	7.362	437	414	525	0

Appendix C

Time Series Plots



Constituent: BORON Analysis Run 4/3/2019 5:09 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Time Series

Constituent: BORON (mg/l)   Analysis Run 4/3/2019 5:10 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

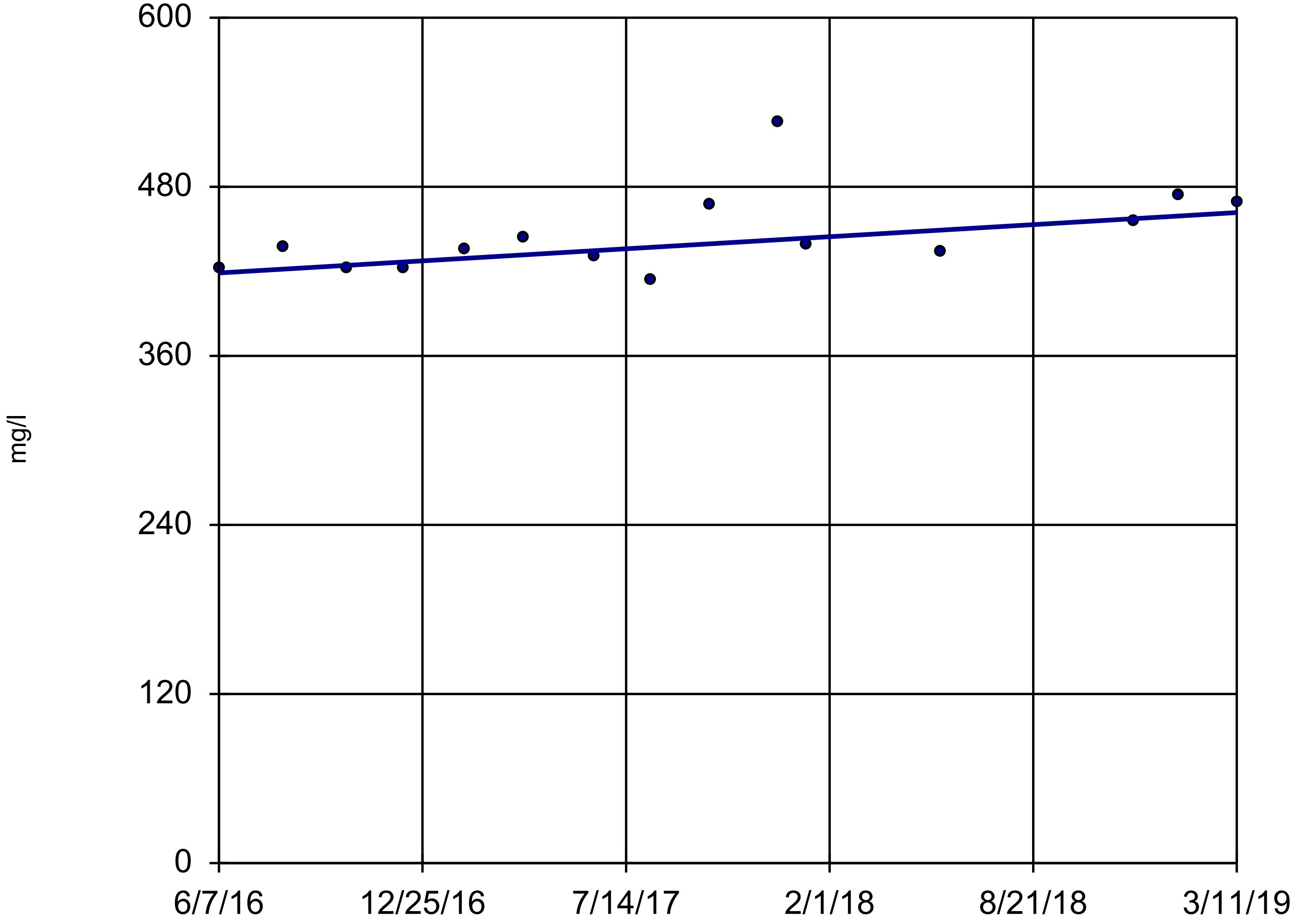
	MW-10 (bg)	MW-13 (bg)	MW-601 (bg)	MW-602 (bg)	MW-804
6/6/2016	0.923				
6/8/2016					1.65
6/9/2016		0.375	1.79		
6/10/2016				2.28	
8/9/2016			1.91	2.39	
8/10/2016					1.58
8/11/2016	0.966	0.397			
10/11/2016					1.59
10/12/2016	0.964				
10/13/2016		0.381	1.81	2.39	
12/7/2016			1.92		1.62
12/9/2016	0.94			2.34	
12/13/2016		0.403			
2/7/2017					1.59
2/8/2017	0.966		1.88	2.41	
2/10/2017		0.483			
4/4/2017					1.59
4/6/2017	0.933	0.449	1.89		
4/7/2017				2.44	
6/13/2017					1.57
6/15/2017	0.942	0.368	1.85	2.41	
8/8/2017		0.422			1.61
8/9/2017			1.9		
8/10/2017	0.921			2.45	
10/4/2017	0.991				
10/5/2017		0.47		2.31	1.53
10/6/2017			1.83		
12/12/2017	0.961				
5/23/2018	0.91	0.57	1.88	2.39	1.72
7/11/2018		0.533			1.67
8/16/2018		0.513			1.76
11/30/2018	0.914	0.698	1.85	2.32	1.75
1/14/2019		0.539			1.73
3/11/2019		0.47			1.74

Appendix D

Sen's Slope/Mann-Kendal Trend Analysis

Sen's Slope Estimator

MW-805



n = 15

Slope = 15.55
units per year.

Mann-Kendall
statistic = 48
critical = 48

Trend not significant at 98%
confidence level
(α = 0.01 per
tail).

Constituent: CALCIUM Analysis Run 5/16/2019 3:44 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Sen's Slope Estimator

Constituent: CALCIUM (mg/l)   Analysis Run 5/16/2019 3:47 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-805
6/7/2016	422
8/10/2016	437
10/11/2016	422
12/6/2016	422
2/6/2017	435
4/4/2017	444
6/13/2017	430
8/8/2017	414
10/5/2017	467
12/12/2017	525
1/9/2018	439
5/23/2018	434
11/30/2018	455
1/14/2019	473
3/11/2019	468

Trend Test

LaCygne   Client: SCS Engineers   Data: LaC GW Data   Printed 5/16/2019, 3:47 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
CALCIUM (mg/l)	MW-805	15.55	48	48	No	15	0	n/a	n/a	0.02	NP

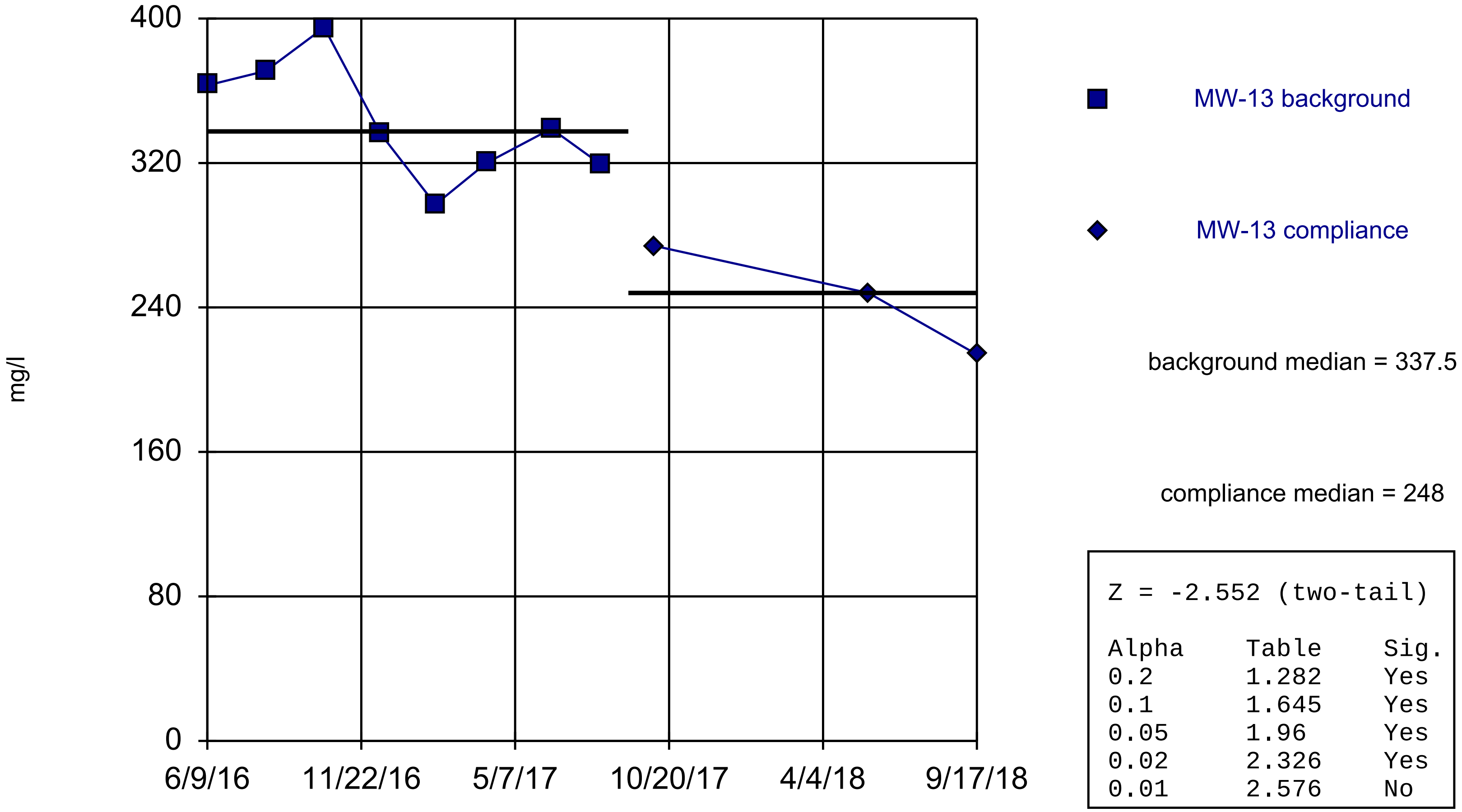
Appendix E

Mann-Whitney Test Outputs

Sanitas™ v.9.6.14 Sanitas software licensed to SCS Engineers. UG

Mann-Whitney (Wilcoxon Rank Sum)

MW-13 (bg)



background median = 337.5

compliance median = 248

```
Z = -2.552 (two-tail)

Alpha      Table      Sig.
0.2        1.282      Yes
0.1        1.645      Yes
0.05       1.96       Yes
0.02       2.326      Yes
0.01       2.576      No
```

Constituent: CALCIUM   Analysis Run 5/22/2019 12:30 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

Mann-Whitney (Wilcoxon Rank Sum)

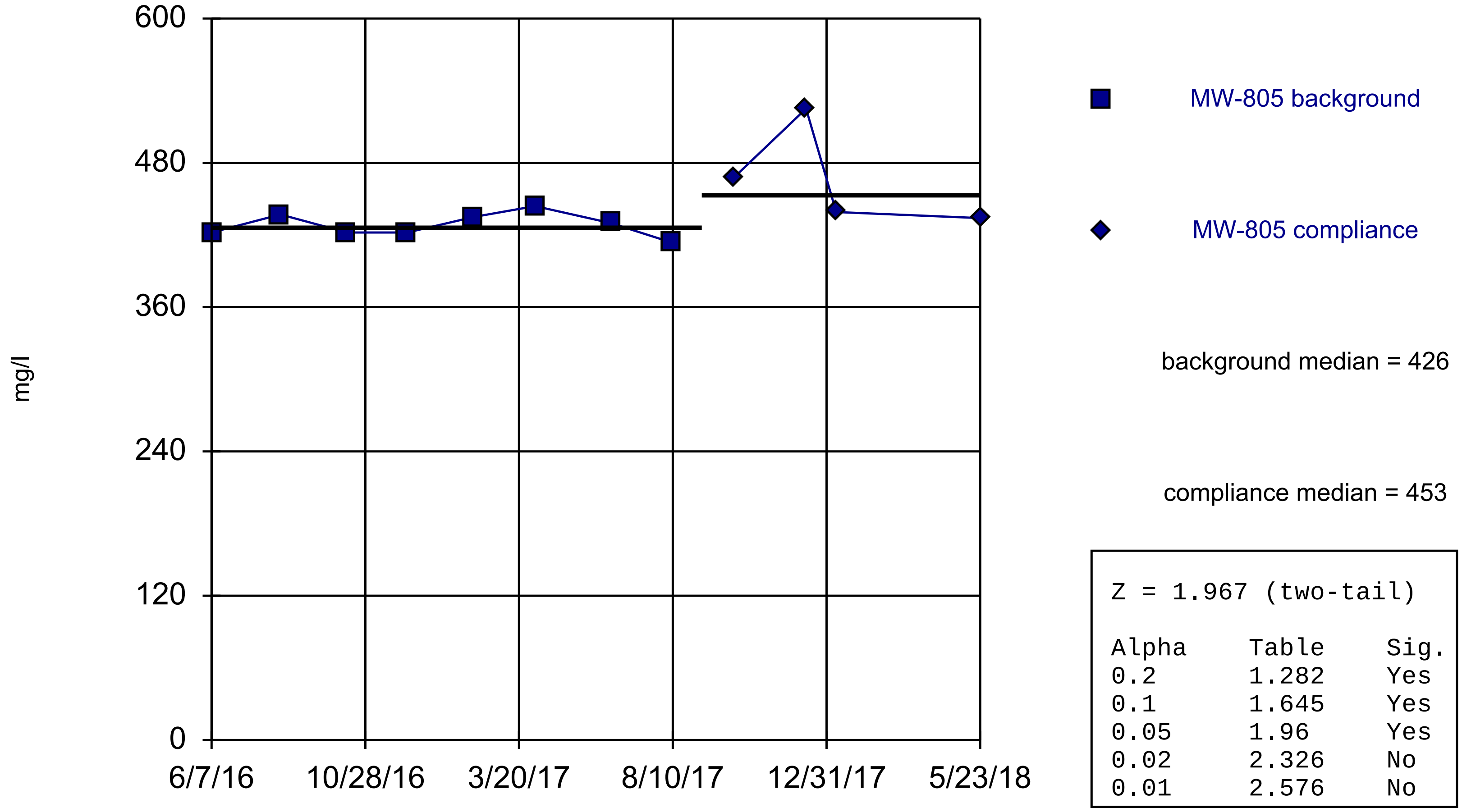
Constituent: CALCIUM (mg/l)   Analysis Run 5/22/2019 12:33 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-13	MW-13
6/9/2016	363	
8/11/2016	371	
10/13/2016	395	
12/13/2016	336	
2/10/2017	297	
4/6/2017	320	
6/15/2017	339	
8/8/2017	319	
10/5/2017		274
5/23/2018		248
9/17/2018		214

Mann-Whitney (Wilcoxon Rank Sum)

MW-805



background median = 426

compliance median = 453

```
Z = 1.967 (two-tail)

Alpha      Table     Sig.
0.2        1.282     Yes
0.1        1.645     Yes
0.05       1.96      Yes
0.02       2.326     No
0.01       2.576     No
```

Constituent: CALCIUM   Analysis Run 5/22/2019 12:30 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

Mann-Whitney (Wilcoxon Rank Sum)

Constituent: CALCIUM (mg/l)   Analysis Run 5/22/2019 12:33 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-805	MW-805
6/7/2016	422	
8/10/2016	437	
10/11/2016	422	
12/6/2016	422	
2/6/2017	435	
4/4/2017	444	
6/13/2017	430	
8/8/2017	414	
10/5/2017		467
12/12/2017		525
1/9/2018		439
5/23/2018		434

Welch's t-test/Mann-Whitney

LaCygne Client: SCS Engineers Data: LaC GW Data Printed 5/22/2019, 12:33 PM

Constituent	Well	Calc.	0.1	0.05	0.025	0.01	Method
CALCIUM (mg/l)	**MW-13 (bg)**	**-2.552**	**Yes**	**Yes**	**Yes**	**No**	**Mann-W**
CALCIUM (mg/l)	MW-805	1.967	Yes	Yes	No	No	Mann-W

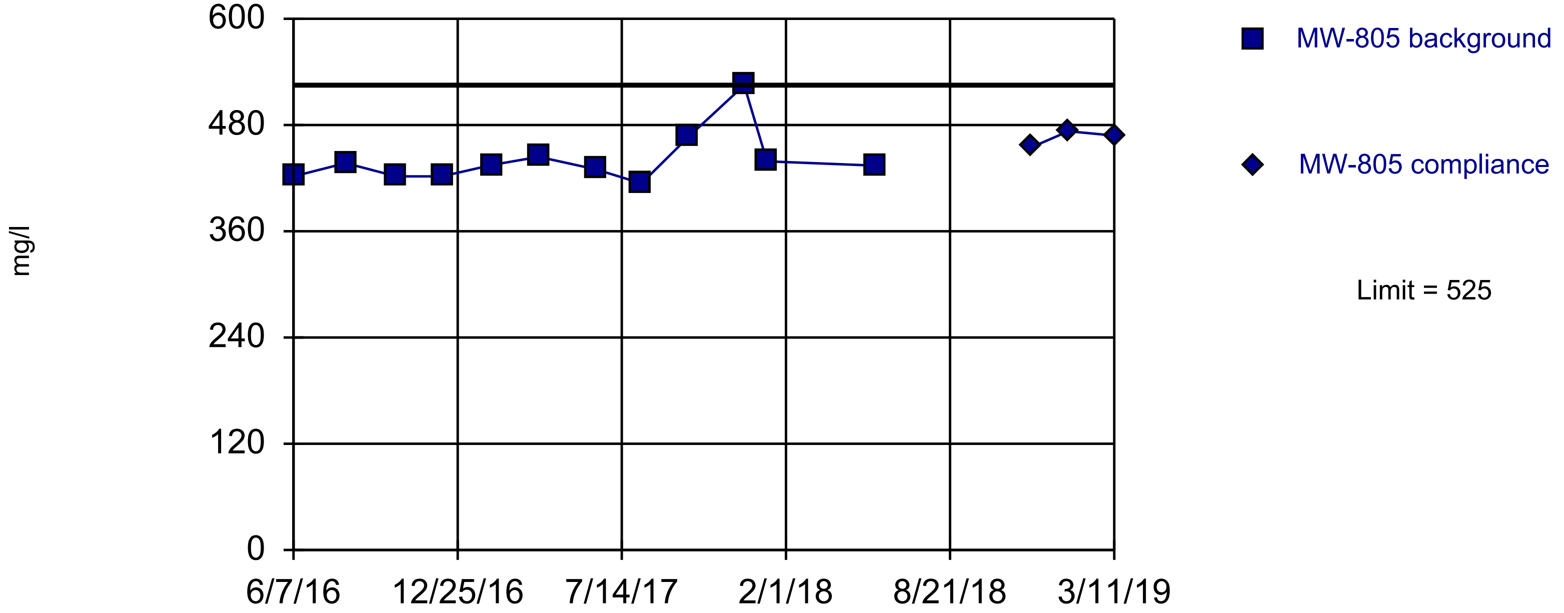
Appendix F

Prediction Limit with Updated Background

Within Limit

Prediction Limit

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 12 background values. Well-constituent pair annual alpha = 0.004342. Individual comparison alpha = 0.002173 (1 of 3). Seasonality was not detected with 95% confidence.

Constituent: CALCIUM Analysis Run 5/17/2019 11:25 AM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: CALCIUM (mg/l)   Analysis Run 5/17/2019 11:29 AM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-805	MW-805
6/7/2016	422	
8/10/2016	437	
10/11/2016	422	
12/6/2016	422	
2/6/2017	435	
4/4/2017	444	
6/13/2017	430	
8/8/2017	414	
10/5/2017	467	
12/12/2017	525	
1/9/2018	439	
5/23/2018	434	
11/30/2018		455
1/14/2019		473
3/11/2019		468

Prediction Limit

LaCygne Client: SCS Engineers Data: LaC GW Data Printed 5/17/2019, 11:29 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
CALCIUM (mg/l)	MW-805	525	n/a	3/11/2019	468	No	12	0	n/a	0.002173	NP Intra (normality) ...

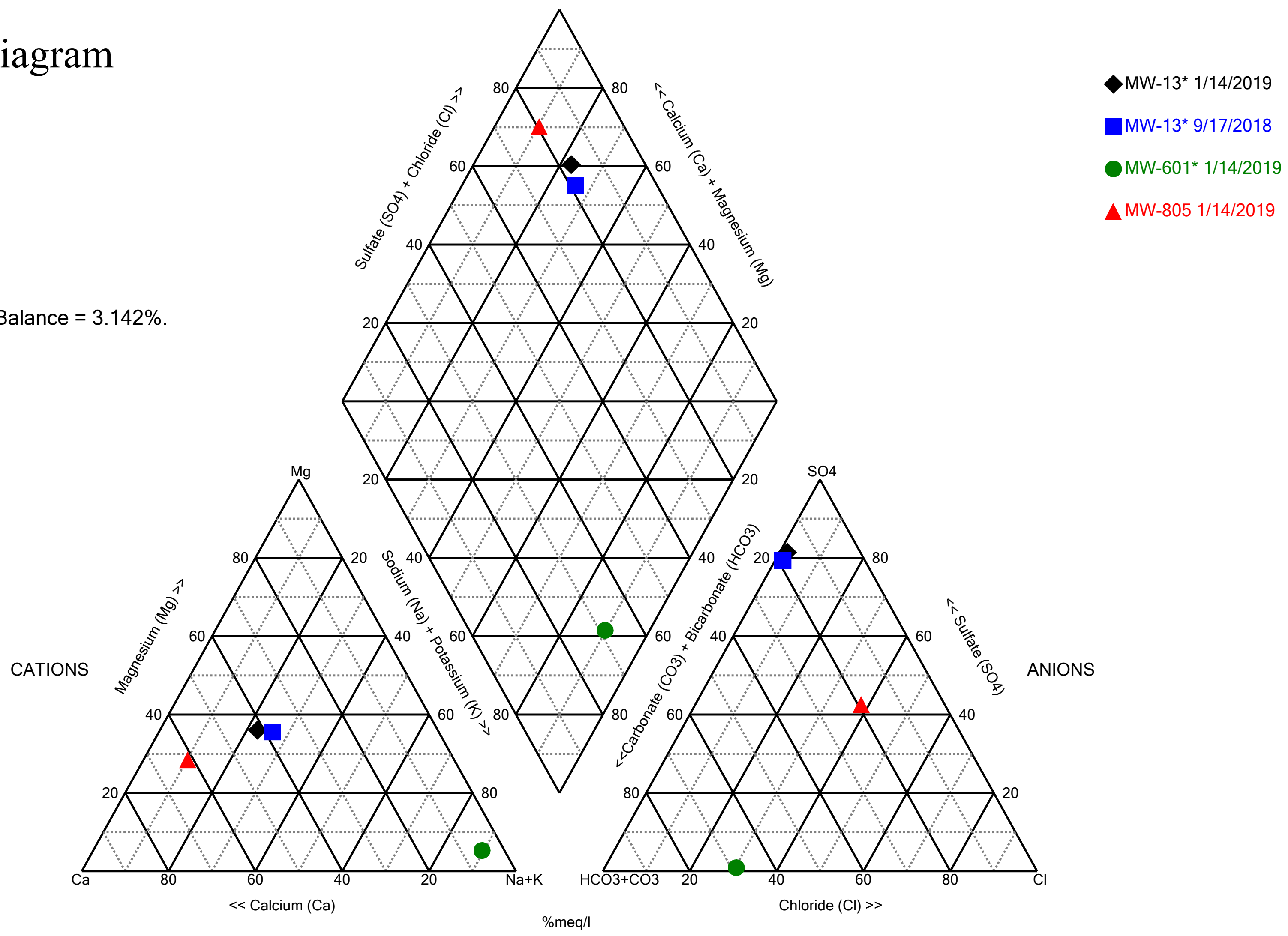
Appendix G

Piper Plots

Sanitas™ v.9.6.14 Sanitas software licensed to SCS Engineers. UG

Piper Diagram

Cation-Anion Balance = 3.142%.



Analysis Run 5/22/2019 12:58 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Piper Diagram

Analysis Run 5/22/2019 12:59 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Totals (ppm)	Na	K	Ca	Mg	Cl	SO4	HCO3	CO3
MW-13* 9/17/2018	165	3.55	214	120	13.1	1010	295	10
MW-13* 1/14/2019	151	3.3	247	128	12.5	1120	289	10
MW-601* 1/14/2019	361	4.21	17.9	10.9	157	5.97	626	10
MW-805 1/14/2019	90.2	2.31	473	133	477	735	425	10

C.2. Groundwater Monitoring Alternative Source Demonstration Report May 2019 Groundwater Monitoring Event, CCR Landfill and Lower AQC Impoundment, La Cygne Generating Station (December 2019)

CCR GROUNDWATER MONITORING
ALTERNATIVE SOURCE DEMONSTRATION REPORT
MAY 2019 GROUNDWATER MONITORING EVENT

CCR LANDFILL AND LOWER AQC IMPOUNDMENT
LA CYGNE GENERATING STATION
LA CYGNE, KANSAS

Presented To:

Evergy Metro, Inc.

Presented By:

SCS ENGINEERS
8575 West 110th Street, Suite 100
Overland Park, Kansas 66210
(913) 681-0030

December 2019

File No. 27217233.19

CERTIFICATIONS

I, John R. Rockhold, being a qualified groundwater scientist and licensed Professional Geologist in the State of Kansas, do hereby certify the accuracy of the information in the CCR Groundwater Monitoring Alternative Source Demonstration Report for the CCR Landfill and Lower AQC Impoundment at the La Cygne Generating Station. The Alternative Source Demonstration was prepared by me or under my direct supervision in accordance with generally accepted hydrogeological practices and the local standard of care.

29
12-3-19

John R. Rockhold, P.G.

SCS Engineers

I, Douglas L. Doerr, being a qualified licensed Professional Engineer in the State of Kansas, do hereby certify the accuracy of the information in the CCR Groundwater Monitoring Alternative Source Demonstration Report for the CCR Landfill and Lower AQC Impoundment at the La Cygne Generating Station. The Alternative Source Demonstration was prepared by me or under my direct supervision in accordance with generally accepted engineering practices and the local standard of care.

14136
12-3-19

Douglas L. Doerr, P.E.

SCS Engineers

Table of Contents

Section **Page**

Appendices

1 REGULATORY FRAMEWORK

Certain owners or operators of Coal Combustion Residuals (CCR) units are required to complete groundwater monitoring activities to evaluate whether a release from the unit has occurred. Included in the activities is the completion of a statistical analysis of the groundwater quality data as prescribed in § 257.93(h) of the CCR Final Rule. If the initial analysis indicates a statistically significant increase (SSI) over background levels, the owner or operator may perform an alternative source demonstration (ASD). In accordance with § 257.94(e)(2), the owner or operator of the CCR unit may demonstrate that a source other than the CCR unit caused the SSI over background levels for a constituent, or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. The owner or operator must complete the written demonstration within 90 days of detecting a SSI over background levels to include obtaining a certification from a qualified professional engineer verifying the accuracy of the information in the report. If a successful demonstration is completed within the 90-day period, the owner or operator of the CCR unit may continue with a detection monitoring program under § 257.94. If a successful demonstration is not completed within the 90-day period, the owner or operator of the CCR unit must initiate an assessment monitoring program as required under § 257.95. The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by § 257.90(e), in addition to the certification by a qualified professional engineer.

2 STATISTICAL RESULTS

Statistical analysis of monitoring data from the groundwater monitoring system for the CCR Landfill and Lower AQC Impoundment at the La Cygne Generating Station has been completed in substantial compliance with the "Statistical Method Certification by A Qualified Professional Engineer" dated October 12, 2017. Detection monitoring groundwater samples were collected on May 23, 2019. Review and validation of the results from the May 2019 Detection Monitoring Event was completed on July 5, 2019, which constitutes completion and finalization of detection monitoring laboratory analyses. A statistical analysis was then conducted to determine whether there was a statistically significant increase (SSI) over background values for each constituent listed in Appendix III to Part 257-Constituents for Detection Monitoring. Two rounds of verification sampling were conducted for certain constituents on July 17, 2019 and August 23, 2019.

The completed statistical evaluation identified two Appendix III constituents above their respective prediction limit in monitoring wells MW-601 and MW-14R.

Constituent/Monitoring Well	*UPL	Observation May 23, 2019	1st Verification July 17, 2019	2nd Verification August 23, 2019
Sulfate				
MW-601	5	6.76	5.75	6.32
Chloride				
MW-14R	5.237	5.33	6.14	6.08

*UPL – Upper Prediction Limit

Determination: A statistical evaluation was completed for all Appendix III detection monitoring constituents in accordance with the certified statistical method. The statistical evaluation confirmed two SSIs above the background prediction limits. These include sulfate in upgradient monitoring well MW-601 and chloride in monitoring well MW-14R.

3 ALTERNATIVE SOURCE DEMONSTRATION

An Alternative Source Demonstration is a means to provide supporting lines of evidence that something other than a release from a regulated CCR unit caused an SSI. For the above identified SSIs for the CCR Landfill and Lower AQC Impoundment at the La Cygne Generating Station, there are multiple lines of supporting evidence to indicate they are not caused by a release from the CCR Landfill and Lower AQC Impoundment. Select multiple lines of supporting evidence are described as follows.

3.1 UPGRADIENT WELL LOCATION

Figure 1 in **Appendix A** shows a potentiometric surface contour map indicating the direction of groundwater flow at and near the CCR Landfill and Lower AQC Impoundment at the time of sampling. The groundwater flow directions indicated are for the May 2019 groundwater monitoring event and are typical flow directions for this unit. As seen in the map, monitoring wells MW-14R and MW-601 are located upgradient or cross-gradient from the CCR Landfill and Lower AQC Impoundment indicating the SSI for chloride in MW-14R and the SSI for sulfate in MW-601 are not caused by a release from the CCR Landfill and Lower AQC Impoundment. This demonstrates that a source other than the CCR Landfill and Lower AQC Impoundment caused the SSIs above background levels for chloride and sulfate, or that the respective SSIs resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality.

3.2 BOX AND WHISKERS PLOTS

A commonly accepted method to demonstrate and visualize the distribution of data in a given data set is to construct box and whiskers plots. The basic box plotted graphically locates the median, 25th and 75th percentiles of the data set; the "whiskers" extend to the minimum and maximum values of the data set. The range between the ends of a box plot represents the Interquartile Range, which can be used as an estimate of spread or variability. The mean is denoted by a "+".

When comparing multiple wells or well groups, box plots for each well can be lined up on the same axis to roughly compare the variability in each well. This may be used as an exploratory screening for the test of homogeneity of variance across multiple wells.

Box and whiskers plots were prepared for chloride and sulfate for upgradient wells MW-601, MW-602, MW-10, and MW-13 and cross-downgradient well MW-14R. The chloride concentrations in the upgradient wells are greater than the chloride concentration in monitoring well MW-14R. The sulfate concentrations in the other upgradient wells are greater than the concentration in upgradient well MW-601. The comparison indicates the chloride concentration in MW-14R and the sulfate concentration in MW-601 are not caused by the CCR Landfill or the Lower AQC Impoundment. This demonstrates that a source other than the CCR Landfill and Lower AQC Impoundment caused the SSI above background levels for chloride and sulfate, or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. Box and whiskers plots are provided in **Appendix B**.

3.3 TIME SERIES PLOTS

Time series plots provide a graphical method to view changes in data at a particular well (monitoring point) or wells over time. Time series plots display the variability in concentration levels over time and can be used to indicate possible outliers or data errors. More than one well can be compared on the same plot to look for differences between wells. Non-detect data is plotted as censored data at one-half of the laboratory reporting limit. Time series plots can also be used to examine the data for trends.

Time series plots for chloride and sulfate were prepared for the CCR monitoring system upgradient wells MW-601, MW-602, MW-10, and MW-13 and cross-downgradient well MW-14R. The chloride concentrations in the upgradient wells are greater than the chloride concentration in monitoring well MW-14R. The sulfate concentrations in the other upgradient wells are greater than the concentration in upgradient well MW-601. The comparison indicates the chloride concentration in MW-14R and the sulfate concentration in MW-601 are not caused by the CCR Landfill or the Lower AQC Impoundment. This demonstrates that a source other than the CCR Landfill and Lower AQC Impoundment caused the SSI above background levels for chloride and sulfate, or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. Time series plots are provided in **Appendix C**.

4 CONCLUSION

Our opinion is that a sufficient body of evidence is available and presented above to demonstrate that a source other than the CCR Landfill and Lower AQC Impoundment caused the SSIs for chloride and sulfate, or that the SSIs resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. Based on the successful ASD, the owner or operator of the CCR Landfill and Lower AQC Impoundment may continue with the detection monitoring program under § 257.94.

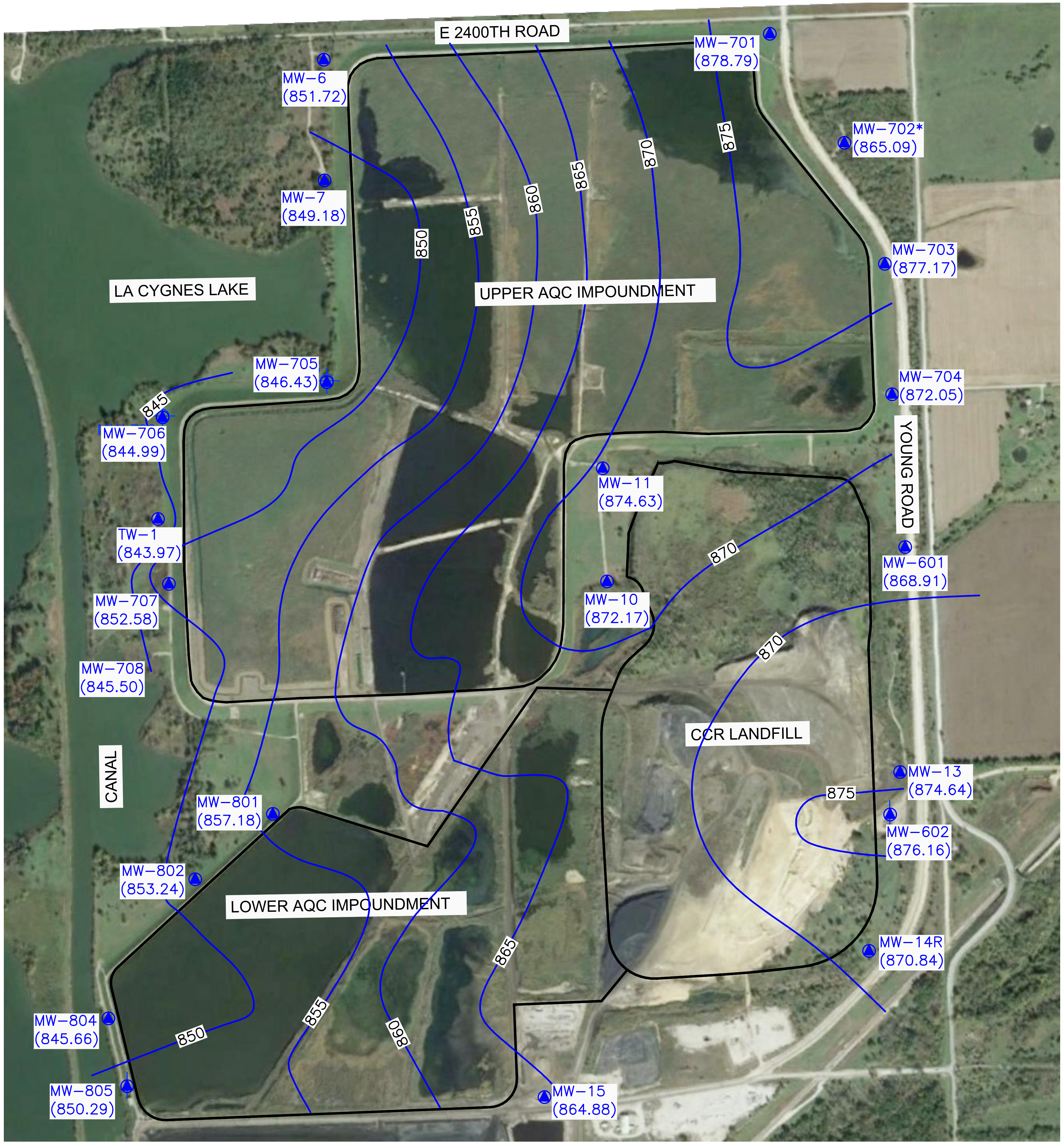
5 GENERAL COMMENTS

This report has been prepared and reviewed under the direction of a qualified groundwater scientist and qualified professional engineer. Please note that SCS Engineers does not warrant the work of regulatory agencies or other third parties supplying information used in the assimilation of this report. This report is prepared in accordance with generally accepted environmental engineering and geological practices, within the constraints of the client's directives. It is intended for the exclusive use of Evergy Metro, Inc. for specific application to the La Cygne Generating Station. No warranties, express or implied, are intended or made.

The signatures of the certifying registered geologist and professional engineer on this document represent that to the best of their knowledge, information, and belief in the exercise of their professional judgement in accordance with the standard of practice, it is their professional opinions that the aforementioned information is accurate as of the date of such signature. Any opinion or decisions by them are made on the basis of their experience, qualifications, and professional judgement and are not to be construed as warranties or guaranties. In addition, opinions relating to regulatory, environmental, geologic, geochemical and geotechnical conditions interpretations or other estimates are based on available data, and actual conditions may vary from those encountered at the times and locations where data are obtained, despite the use of due care.

Appendix A

Figure 1

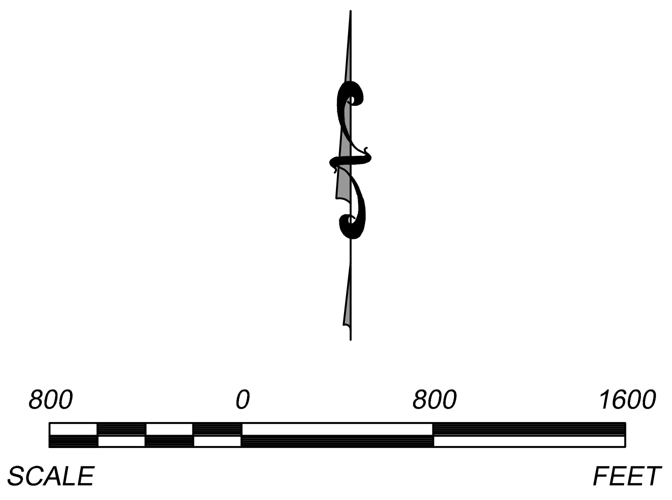


LEGEND

▭	CCR UNIT BOUNDARY (APPROXIMATE LIMITS OF UPPER AQC IMPOUNDMENT)
MW−703 (877.00)	CCR GROUNDWATER MONITORING SYSTEM WELLS (GROUNDWATER ELEVATION)
−875−	GROUNDWATER POTENTIOMETRIC SURFACE ELEVATIONS (REPRESENTATIVE FOR THIS UNIT)
MW−702*	INDICATES WELL NOT USED IN POTENTIOMETRIC SURFACE MAP CREATION

NOTES:

1. KDHE FACILITY PERMIT AND LANDFILL PERMIT BOUNDARIES VARY FROM THAT SHOWN.
2. GOOGLE EARTH IMAGE DATED OCTOBER 2014. BOUNDARY AND MONITOR WELL LOCATIONS ARE APPROXIMATE.
3. BOUNDARY AND MONITOR WELL LOCATIONS ARE PROVIDED BY AECOM.



REV.	DATE	CK. BY
△	-	-
△	-	-
△	-	-
△	-	-
△	-	-
△	-	-

SHEET TITLE
POTENTIOMETRIC SURFACE MAP (MAY 2019)
COMBINED AQC IMPOUNDMENT & LF

PROJECT TITLE
ALTERNATIVE SOURCE
DEMONSTRATION

CLIENT
KANSAS CITY POWER & LIGHT COMPANY
LA CYGNE GENERATING STATION
LA CYGNE, KANSAS

SCS ENGINEERS
7311 W. 130th St, Ste. 100
Overland Park, Kansas 66213
PH. (913) 681-0030 FAX. (913) 681-0012

PROJ. NO. 27217233.00
DSN. BY: DAW
DWN. BY: DAW
CHK. BY: JF
Q/A RVW BY: JRR
PROJ. MGR JRR

CADD FILE: LA CYGNE LF LAQC IMP & UAQC FIG 1_MAY 2019 − COMBINED.DWG

DATE: 11/1/19

FIGURE NO. 1

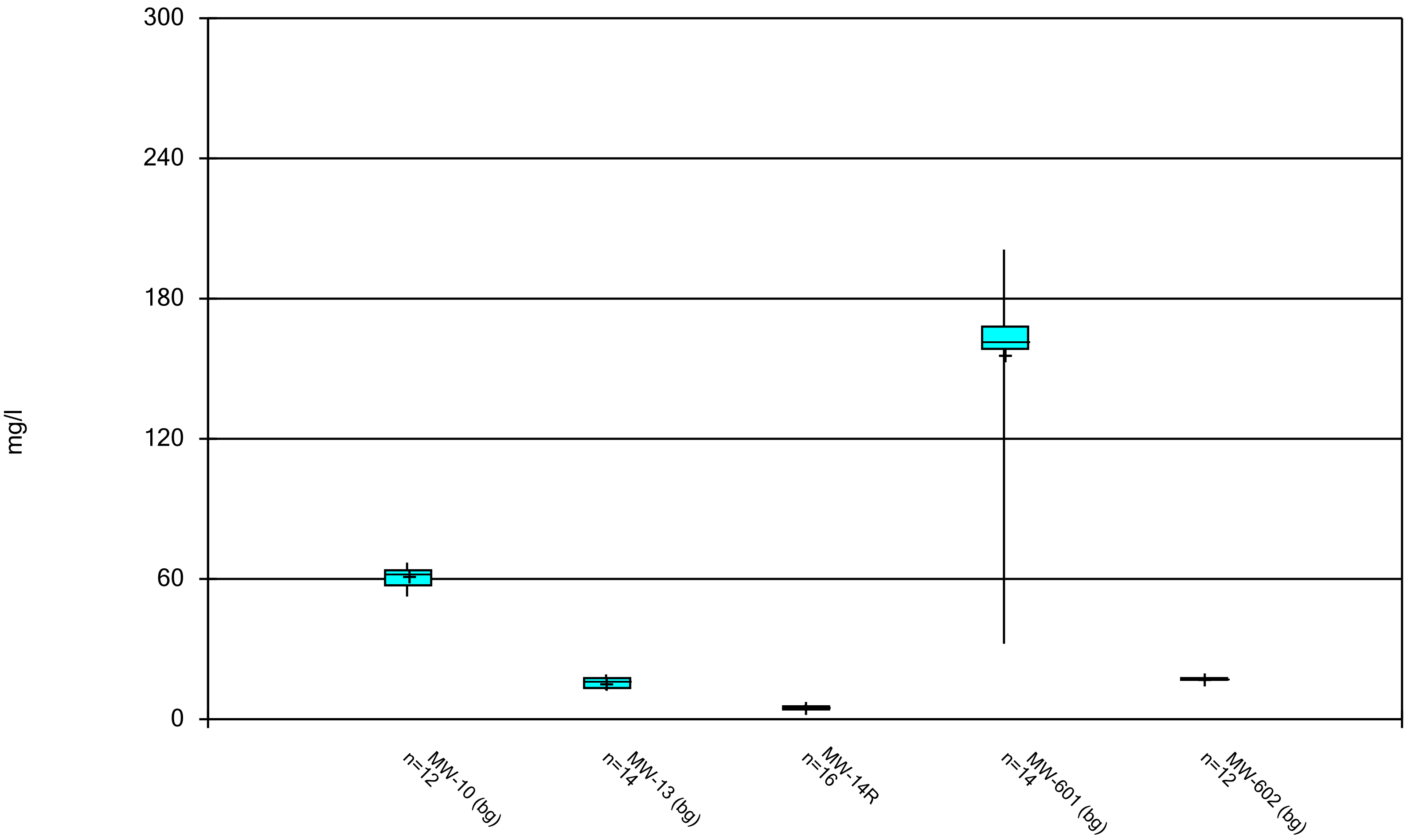
N:\KCPL\Projects\Groundwater\DWG\La Cygne\2019\La Cygne LF LAQC Imp & UAQC Fig 1_MAY 2019 - COMBINED.dwg Dec 03, 2019 - 11:23am Layout Name: Fig 1 Combined By: 4470daw

Appendix B

Box and Whiskers Plots

Sanitas™ v.9.6.23 Sanitas software licensed to SCS Engineers. UG

Box & Whiskers Plot



Constituent: CHLORIDE Analysis Run 10/31/2019 2:09 PM View: Bottom Ash III

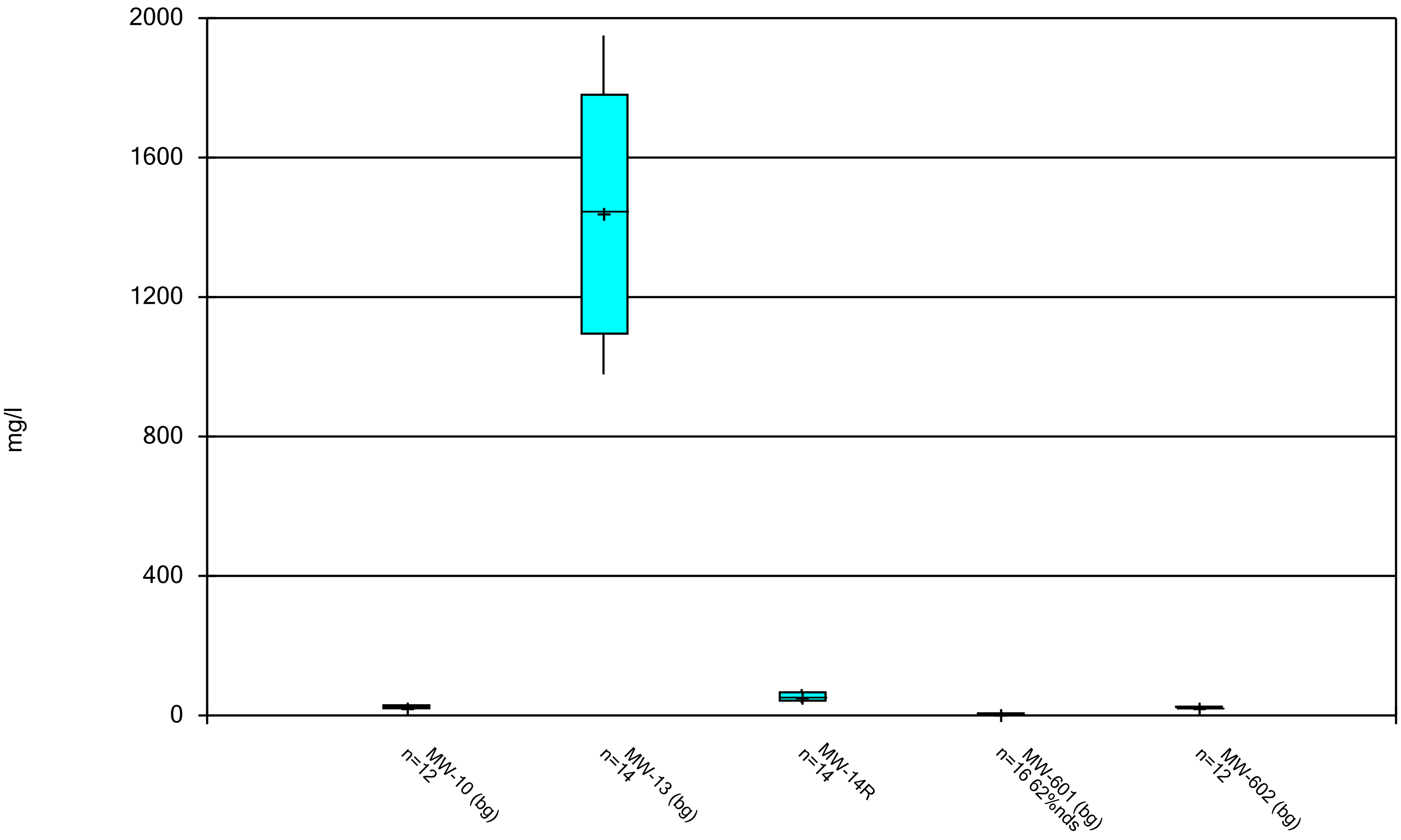
LaCygne Client: SCS Engineers Data: LaC GW Data

Box & Whiskers Plot

Constituent: CHLORIDE (mg/l) Analysis Run 10/31/2019 2:10 PM View: Bottom Ash III
LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-10 (bg)	MW-13 (bg)	MW-14R	MW-601 (bg)	MW-602 (bg)
6/6/2016	56.7				
6/9/2016		18	4.95	161	
6/10/2016					16.9
8/9/2016				161	17.3
8/11/2016	60.2	18.5	5.05		
10/12/2016	62.7				
10/13/2016		19.2	4.22	201	16.8
12/7/2016				169	
12/9/2016	66.6		3.86		16.4
12/13/2016		16.4			
2/8/2017	67			168	17.6
2/9/2017			3.98		
2/10/2017		15.6			
4/6/2017	63.7	16.8		156	
4/7/2017			4.11		17.2
6/15/2017	63.6	17.2	4.25	167	17.2
8/8/2017		16.2			
8/9/2017				168	
8/10/2017	63.8		4.38		17.8
10/4/2017	62.8				
10/5/2017		13.6	4.12		17.9
10/6/2017				166	
5/23/2018	57.9	14.3	5.17	160	17.6
9/17/2018		13.1			
11/30/2018	55.5	12.8	5.69	160	16.5
1/14/2019		12.5	5.96	157	
3/11/2019			4.44		
5/23/2019	52.5	16.2	5.33	162	16.9
7/17/2019			6.14	32.3 (i)	
8/23/2019			6.08		
Median	62.75	16.2	4.695	161.5	17.2
LowerQ.	57.3	13.35	4.17	158.5	16.85
UpperQ.	63.75	17.6	5.51	168	17.6
Min	52.5	12.5	3.86	32.3	16.4
Max	67	19.2	6.14	201	17.9
Mean	61.08	15.74	4.858	156.3	17.18

Box & Whiskers Plot



Constituent: SULFATE Analysis Run 10/31/2019 2:09 PM View: Bottom Ash III

LaCygne Client: SCS Engineers Data: LaC GW Data

Box & Whiskers Plot

Constituent: SULFATE (mg/l) Analysis Run 10/31/2019 2:10 PM View: Bottom Ash III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-10 (bg)	MW-13 (bg)	MW-14R	MW-601 (bg)	MW-602 (bg)
6/6/2016	15.9				
6/9/2016		1830	75.8	<5	
6/10/2016					25.1
8/9/2016				<5	25.2
8/11/2016	19.9	1730	74.2		
10/12/2016	21.6				
10/13/2016		1830	40.1	<5	23.4
12/7/2016				<5	
12/9/2016	26.8		34.9		24.2
12/13/2016		1270			
2/8/2017	30.7			<5	27.5
2/9/2017			50.4		
2/10/2017		1950			
4/6/2017	31.6	1480		<5	
4/7/2017			44.3		23.8
6/15/2017	31.1	1630	44.2	<5	24.4
8/8/2017		1410			
8/9/2017				<5	
8/10/2017	27.6		44		24.8
10/4/2017	25.5				
10/5/2017		1330	40.7		26.9
10/6/2017				<5	
5/23/2018	26.7	1070	54.5	<5	23.9
9/17/2018		1010			
11/30/2018	17.8	978	65.4	5.98	24.2
1/14/2019		1120	66.9	5.97	
3/11/2019				5.89	
5/23/2019	23.1	1520	54.5	6.76	24.2
7/17/2019			59.6 (i)	5.75	
8/23/2019				6.32	
Median	26.1	1445	52.45	2.5	24.3
LowerQ.	20.75	1095	42.35	2.5	24.05
UpperQ.	29.15	1780	66.15	5.93	25.15
Min	15.9	978	34.9	2.5	23.4
Max	31.6	1950	75.8	6.76	27.5
Mean	24.86	1440	53.54	3.854	24.8

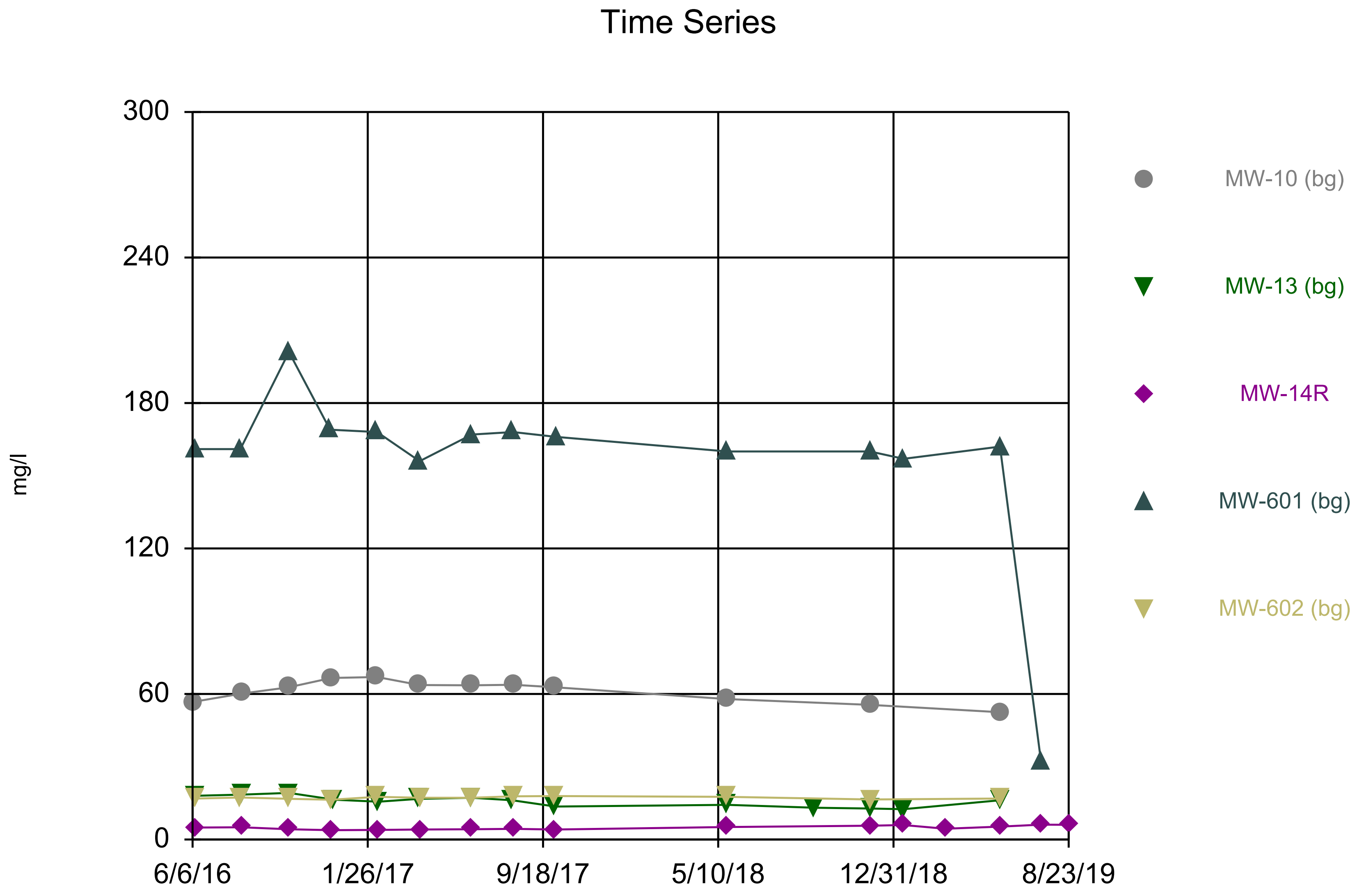
Box & Whiskers Plot

LaCygne Client: SCS Engineers Data: LaC GW Data Printed 10/31/2019, 2:10 PM

Constituent	Well	N	Mean	Std. Dev.	Std. Err.	Median	Min.	Max.	%NDs
CHLORIDE (mg/l)	MW-10 (bg)	12	61.08	4.538	1.31	62.75	52.5	67	0
CHLORIDE (mg/l)	MW-13 (bg)	14	15.74	2.177	0.5817	16.2	12.5	19.2	0
CHLORIDE (mg/l)	MW-14R	16	4.858	0.7941	0.1985	4.695	3.86	6.14	0
CHLORIDE (mg/l)	MW-601 (bg)	14	156.3	37.34	9.979	161.5	32.3	201	0
CHLORIDE (mg/l)	MW-602 (bg)	12	17.18	0.4901	0.1415	17.2	16.4	17.9	0
SULFATE (mg/l)	MW-10 (bg)	12	24.86	5.24	1.513	26.1	15.9	31.6	0
SULFATE (mg/l)	MW-13 (bg)	14	1440	324.9	86.83	1445	978	1950	0
SULFATE (mg/l)	MW-14R	14	53.54	13.15	3.513	52.45	34.9	75.8	0
SULFATE (mg/l)	MW-601 (bg)	16	3.854	1.818	0.4546	2.5	2.5	6.76	62.5
SULFATE (mg/l)	MW-602 (bg)	12	24.8	1.242	0.3584	24.3	23.4	27.5	0

Appendix C

Time Series Plots



Constituent: CHLORIDE   Analysis Run 10/31/2019 2:10 PM   View: Bottom Ash III
LaCygne   Client: SCS Engineers   Data: LaC GW Data

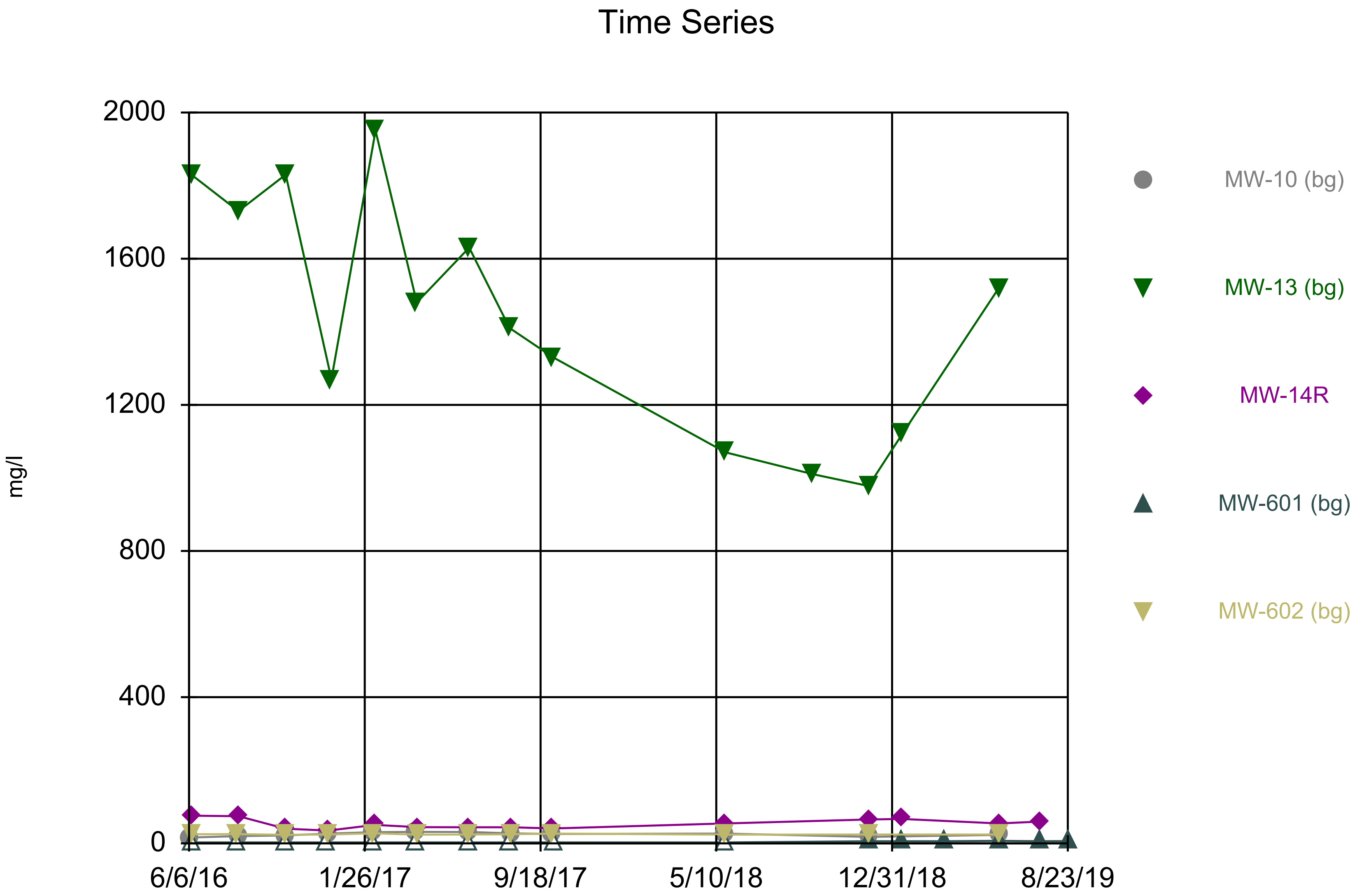
Time Series

Constituent: CHLORIDE (mg/l)   Analysis Run 10/31/2019 2:12 PM   View: Bottom Ash III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-10 (bg)	MW-13 (bg)	MW-14R	MW-601 (bg)	MW-602 (bg)
6/6/2016	56.7				
6/9/2016		18	4.95	161	
6/10/2016					16.9
8/9/2016				161	17.3
8/11/2016	60.2	18.5	5.05		
10/12/2016	62.7				
10/13/2016		19.2	4.22	201	16.8
12/7/2016				169	
12/9/2016	66.6		3.86		16.4
12/13/2016		16.4			
2/8/2017	67			168	17.6
2/9/2017			3.98		
2/10/2017		15.6			
4/6/2017	63.7	16.8		156	
4/7/2017			4.11		17.2
6/15/2017	63.6	17.2	4.25	167	17.2
8/8/2017		16.2			
8/9/2017				168	
8/10/2017	63.8		4.38		17.8
10/4/2017	62.8				
10/5/2017		13.6	4.12		17.9
10/6/2017				166	
5/23/2018	57.9	14.3	5.17	160	17.6
9/17/2018		13.1			
11/30/2018	55.5	12.8	5.69	160	16.5
1/14/2019		12.5	5.96	157	
3/11/2019			4.44		
5/23/2019	52.5	16.2	5.33	162	16.9
7/17/2019			6.14	32.3 (i)	
8/23/2019			6.08		

Sanitas™ v.9.6.23 Sanitas software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.



Constituent: SULFATE Analysis Run 10/31/2019 2:10 PM View: Bottom Ash III
LaCygne Client: SCS Engineers Data: LaC GW Data

Time Series

Constituent: SULFATE (mg/l) Analysis Run 10/31/2019 2:12 PM View: Bottom Ash III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-10 (bg)	MW-13 (bg)	MW-14R	MW-601 (bg)	MW-602 (bg)
6/6/2016	15.9				
6/9/2016		1830	75.8	<5	
6/10/2016					25.1
8/9/2016				<5	25.2
8/11/2016	19.9	1730	74.2		
10/12/2016	21.6				
10/13/2016		1830	40.1	<5	23.4
12/7/2016				<5	
12/9/2016	26.8		34.9		24.2
12/13/2016		1270			
2/8/2017	30.7			<5	27.5
2/9/2017			50.4		
2/10/2017		1950			
4/6/2017	31.6	1480		<5	
4/7/2017			44.3		23.8
6/15/2017	31.1	1630	44.2	<5	24.4
8/8/2017		1410			
8/9/2017				<5	
8/10/2017	27.6		44		24.8
10/4/2017	25.5				
10/5/2017		1330	40.7		26.9
10/6/2017				<5	
5/23/2018	26.7	1070	54.5	<5	23.9
9/17/2018		1010			
11/30/2018	17.8	978	65.4	5.98	24.2
1/14/2019		1120	66.9	5.97	
3/11/2019				5.89	
5/23/2019	23.1	1520	54.5	6.76	24.2
7/17/2019			59.6 (i)	5.75	
8/23/2019				6.32	

Addendum 1

2019 Annual Groundwater Monitoring and Corrective Action Report
Addendum 1

SCS ENGINEERS
Environmental Consulting & Contracting

December 16, 2022
File No. 27217233.19

JOHN R. ROCKHOLD
LICENSED
29
12-16-22
KANSAS
PROFESSIONAL GEOLOGIST

To: Evergy Metro, Inc.
Jared Morrison – Director, Water and Waste Programs

From: SCS Engineers
Douglas L. Doerr, P.E.
John R. Rockhold, P.G.

Subject: 2019 Annual Groundwater Monitoring and Corrective Action Report Addendum 1
Evergy Metro, Inc.
CCR Landfill and Lower AQC Impoundment
La Cygne Generating Station - La Cygne, Kansas

The CCR Landfill and Lower AQC Impoundment at the La Cygne Generating Station are subject to the groundwater monitoring and corrective action requirements of the “Coal Combustion Residuals (CCR) Final Rule” (Rule); as described in CFR 40 257.90 through CFR 40 257.98. An Annual Groundwater Monitoring and Corrective Action (GWMCA) Report documenting activities completed in 2019 for the CCR Landfill and Lower AQC Impoundment was completed and placed in the facility’s operating record on January 30, 2020, as required by the Rule. The Annual GWMCA report was to fulfill the requirements specified in 40 CFR 257.90(e).

This Addendum has been prepared to supplement the operating record in recognition of comments received by Evergy from the U.S. Environmental Protection Agency (USEPA) on January 11, 2022. In addition to the information listed in 40 CFR 257.90(e), the USEPA indicated in their comments that the GWMCA Report contain the following:

- Results of laboratory analysis of groundwater or other environmental media samples for 40 CFR 257 Appendix III and Appendix IV constituents or other constituents, such as those supporting characterization of site conditions that may ultimately affect a remedy’
- Required statistical analysis performed on laboratory analysis results; and
- Calculated groundwater flow rate and direction.

This information is not specifically referred to in 40 CFR 257.90(e) for inclusion in the GWMCA Reports; however, it is routinely collected, determined and maintained in Evergy’s files and is being provided in the attachments to this addendum.

The attachments to this addendum are as follows:

- Attachment 1 – Laboratory Analytical Reports:

  Includes laboratory data packages with supporting information such as case narrative, sample and method summary, analytical results, quality control, and chain-of-custody documentation. The laboratory data packages for the following sampling events are provided:

  - January 2019 – First verification sampling for the Fall 2018 detection monitoring sampling event.
  - March 2019 – Second verification sampling for the Fall 2018 detection monitoring sampling event.
  - May 2019 – Spring 2019 semiannual detection monitoring sampling event.
  - July 2019 – First verification sampling for the Spring 2019 detection monitoring sampling event.
  - August 2019 - Second verification sampling for the Spring 2019 detection monitoring sampling event.
  - November 2019 - Fall 2019 semiannual detection monitoring sampling event.

- Attachment 2 - Statistical Analyses:

  Includes summary of statistical results, prediction limit plots, prediction limit background data, detection sample results, first and second verification re-sample results (when applicable), extra sample results for pH (collected as part of the approved sampling procedures), input parameters, and a Prediction Limit summary table. Statistical analyses completed in 2019 included the following:

  - Fall 2018 semiannual detection monitoring statistical analyses.
  - Spring 2019 semiannual detection monitoring statistical analyses.

- Attachment 3 - Revised Groundwater Potentiometric Surface Maps:

  Includes revised groundwater potentiometric surface maps with the measured groundwater elevations at each well and the generalized groundwater flow direction and the calculated groundwater flow rate. Maps for the following sampling events are provided:

  - May 2019 - Spring 2019 semiannual detection monitoring sampling event.
  - November 2019 - Fall 2019 semiannual detection monitoring sampling event.

ATTACHMENT 1

Laboratory Analytical Reports

ATTACHMENT 1-1

January 2019 Sampling Event Laboratory Report

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

January 23, 2019

SCS Engineers - KS

Sample Delivery Group:	L1061523
Samples Received:	01/16/2019
Project Number:	27217233.18
Description:	KCPL - LaCygne Generating Station

Report To:

Jason Franks
8575 West 110th Street
Suite 100
Overland Park, KS 66210

Entire Report Reviewed By:

Jeff Carr
Project Manager

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

SAMPLE SUMMARY

MW-13 L1061523-01 GW

Collected by	Collected date/time	Received date/time
Jason R. Franks	01/14/19 16:25	01/16/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9056A	WG1225451	1	01/22/19 14:30	01/22/19 14:30	ST
Metals (ICP) by Method 6010B	WG1224609	1	01/23/19 08:04	01/23/19 10:54	TRB

DUPLICATE 1 L1061523-02 GW

Collected by	Collected date/time	Received date/time
Jason R. Franks	01/14/19 16:25	01/16/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9056A	WG1225451	1	01/22/19 15:16	01/22/19 15:16	ST
Metals (ICP) by Method 6010B	WG1224609	1	01/23/19 08:04	01/23/19 11:25	TRB

MW-14R L1061523-03 GW

Collected by	Collected date/time	Received date/time
Jason R. Franks	01/14/19 16:35	01/16/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9056A	WG1225457	1	01/19/19 18:09	01/19/19 18:09	ELN
Metals (ICP) by Method 6010B	WG1224609	1	01/23/19 08:04	01/23/19 11:04	TRB

DUPLICATE 2 L1061523-04 GW

Collected by	Collected date/time	Received date/time
Jason R. Franks	01/14/19 16:40	01/16/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9056A	WG1225451	1	01/22/19 15:32	01/22/19 15:32	ST
Metals (ICP) by Method 6010B	WG1224609	1	01/23/19 08:04	01/23/19 11:28	TRB

MW-15 L1061523-05 GW

Collected by	Collected date/time	Received date/time
Jason R. Franks	01/14/19 15:50	01/16/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Metals (ICP) by Method 6010B	WG1224609	1	01/23/19 08:04	01/23/19 11:30	TRB

MW-601 L1061523-06 GW

Collected by	Collected date/time	Received date/time
Jason R. Franks	01/14/19 16:00	01/16/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9056A	WG1225463	1	01/22/19 19:04	01/22/19 19:04	ELN

DUPLICATE 3 L1061523-07 GW

Collected by	Collected date/time	Received date/time
Jason R. Franks	01/14/19 16:00	01/16/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9056A	WG1225451	1	01/22/19 15:47	01/22/19 15:47	ST

MW-701 L1061523-08 GW

Collected by	Collected date/time	Received date/time
Jason R. Franks	01/15/19 12:05	01/16/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Metals (ICP) by Method 6010B	WG1224609	1	01/23/19 08:04	01/23/19 11:18	TRB

DUPLICATE 4 L1061523-09 GW

Collected by	Collected date/time	Received date/time
Jason R. Franks	01/15/19 12:05	01/16/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Metals (ICP) by Method 6010B	WG1224609	1	01/23/19 08:04	01/23/19 11:33	TRB

MW-702 L1061523-10 GW

Collected by	Collected date/time	Received date/time
Jason R. Franks	01/14/19 15:05	01/16/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9056A	WG1225451	1	01/22/19 16:03	01/22/19 16:03	ST

MW-706 L1061523-11 GW

Collected by	Collected date/time	Received date/time
Jason R. Franks	01/15/19 11:55	01/16/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9056A	WG1225451	1	01/22/19 16:33	01/22/19 16:33	ST

MW-804 L1061523-12 GW

Collected by	Collected date/time	Received date/time
Jason R. Franks	01/14/19 14:05	01/16/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Metals (ICP) by Method 6010B	WG1224609	1	01/23/19 08:04	01/23/19 11:36	TRB

MW-805 L1061523-13 GW

Collected by	Collected date/time	Received date/time
Jason R. Franks	01/14/19 14:05	01/16/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Metals (ICP) by Method 6010B	WG1224609	1	01/23/19 08:04	01/23/19 11:38	TRB

MW-902 L1061523-14 GW

Collected by	Collected date/time	Received date/time
Jason R. Franks	01/14/19 13:15	01/16/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG1224723	1	01/19/19 18:11	01/19/19 20:53	AJS

DUPLICATE 5 L1061523-15 GW

Collected by	Collected date/time	Received date/time
Jason R. Franks	01/14/19 13:15	01/16/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG1224723	1	01/19/19 18:11	01/19/19 20:53	AJS

MW-903 L1061523-16 GW

Collected by	Collected date/time	Received date/time
Jason R. Franks	01/14/19 13:15	01/16/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Metals (ICP) by Method 6010B	WG1224609	1	01/23/19 08:04	01/23/19 11:41	TRB

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jeff Carr
Project Manager

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Fluoride	208		100	1	01/22/2019 14:30	WG1225451

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	539		200	1	01/23/2019 10:54	WG1224609

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Fluoride	214		100	1	01/22/2019 15:16	WG1225451

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	558		200	1	01/23/2019 11:25	WG1224609

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	5960		1000	1	01/19/2019 18:09	WG1225457

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	859		200	1	01/23/2019 11:04	WG1224609

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	5960		1000	1	01/22/2019 15:32	WG1225451

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	884		200	1	01/23/2019 11:28	WG1224609

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	288		200	1	01/23/2019 11:30	WG1224609

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfate	5970		5000	1	01/22/2019 19:04	WG1225463

Wet Chemistry by Method 9056A

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Sulfate	6650		5000	1	01/22/2019 15:47	WG1225451

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Calcium	40200		1000	1	01/23/2019 11:18	WG1224609

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Calcium	40500		1000	1	01/23/2019 11:33	WG1224609

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Fluoride	1200		100	1	01/22/2019 16:03	WG1225451

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfate	7730		5000	1	01/22/2019 16:33	WG1225451

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	1730		200	1	01/23/2019 11:36	WG1224609

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Calcium	473000		1000	1	01/23/2019 11:38	WG1224609

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	492000		10000	1	01/19/2019 20:53	WG1224723

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	490000		10000	1	01/19/2019 20:53	WG1224723

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Calcium	377000		1000	1	01/23/2019 11:41	WG1224609

Method Blank (MB)

(MB) R3377316-1 01/19/19 20:53

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Dissolved Solids	U		2820	10000

Laboratory Control Sample (LCS)

(LCS) R3377316-2 01/19/19 20:53

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800000	8810000	100	85.0-115	

Method Blank (MB)

(MB) R3377912-1 01/22/19 10:37

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Chloride	U		51.9	1000
Fluoride	U		9.90	100
Sulfate	U		77.4	5000

L1061734-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1061734-03 01/22/19 19:38 • (DUP) R3377912-6 01/22/19 19:54

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Chloride	2790	2800	1	0.565		15
Fluoride	ND	89.4	1	0.673	J	15
Sulfate	104000	104000	1	0.162	E	15

L1061734-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1061734-03 01/23/19 09:13 • (DUP) R3377912-8 01/23/19 09:28

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Sulfate	98700	98500	5	0.272		15

L1061523-10 Original Sample (OS) • Duplicate (DUP)

(OS) L1061523-10 01/22/19 16:03 • (DUP) R3377912-5 01/22/19 16:18

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Chloride	44000	44000	1	0.114		15
Fluoride	1200	1210	1	0.612		15
Sulfate	ND	1690	1	0.000		15

Laboratory Control Sample (LCS)

(LCS) R3377912-2 01/22/19 11:08

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Chloride	40000	38600	96.4	80.0-120	
Fluoride	8000	7960	99.5	80.0-120	

Laboratory Control Sample (LCS)

(LCS) R3377912-2 01/22/19 11:08

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Sulfate	40000	39000	97.4	80.0-120	

L1061734-03 Original Sample (OS) • Matrix Spike (MS)

(OS) L1061734-03 01/22/19 19:38 • (MS) R3377912-7 01/22/19 20:40

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	2790	53800	102	1	80.0-120	
Fluoride	5000	ND	5060	99.5	1	80.0-120	
Sulfate	50000	104000	151000	93.3	1	80.0-120	E

L1061523-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1061523-01 01/22/19 14:30 • (MS) R3377912-3 01/22/19 14:46 • (MSD) R3377912-4 01/22/19 15:01

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	12600	62900	62300	101	99.4	1	80.0-120			1.05	15
Fluoride	5000	208	4760	4680	91.0	89.4	1	80.0-120			1.69	15
Sulfate	50000	1140000	1150000	1150000	32.3	29.1	1	80.0-120	E V	E V	0.138	15

Method Blank (MB)

(MB) R3377661-1 01/19/19 17:17

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Chloride	U		51.9	1000

L1061779-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1061779-01 01/19/19 20:31 • (DUP) R3377661-5 01/19/19 20:41

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Chloride	18600	18700	1	0.287		15

L1061818-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1061818-01 01/20/19 00:08 • (DUP) R3377661-6 01/20/19 00:19

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Chloride	17600	17600	1	0.140		15

Laboratory Control Sample (LCS)

(LCS) R3377661-2 01/19/19 17:27

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Chloride	40000	37900	94.9	80.0-120	

L1061523-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1061523-03 01/19/19 18:09 • (MS) R3377661-3 01/19/19 18:20 • (MSD) R3377661-4 01/19/19 18:31

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Chloride	50000	5960	54400	54200	97.0	96.5	1	80.0-120			0.392	15

L1061818-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1061818-01 01/20/19 00:08 • (MS) R3377661-7 01/20/19 00:30

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	ug/l	ug/l	ug/l	%		%	
Chloride	50000	17600	64900	94.7	1	80.0-120	

Method Blank (MB)

(MB) R3377995-1 01/22/19 17:08

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Sulfate	U		77.4	5000

Laboratory Control Sample (LCS)

(LCS) R3377995-2 01/22/19 17:18

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Sulfate	40000	38400	96.0	80.0-120	

L1061523-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1061523-06 01/22/19 19:04 • (MS) R3377995-3 01/22/19 19:14 • (MSD) R3377995-4 01/22/19 19:25

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Sulfate	50000	5970	50000	50200	88.2	88.5	1	80.0-120			0.360	15

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Method Blank (MB)

(MB) R3378022-1 01/23/19 10:46

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Boron	20.0	J	12.6	200
Calcium	U		46.3	1000

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3378022-2 01/23/19 10:49 • (LCSD) R3378022-3 01/23/19 10:51

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	%	%	%			%	%
Boron	1000	1010	999	101	99.9	80.0-120			1.37	20
Calcium	10000	9950	9750	99.5	97.5	80.0-120			1.99	20

L1061523-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1061523-01 01/23/19 10:54 • (MS) R3378022-5 01/23/19 10:59 • (MSD) R3378022-6 01/23/19 11:01

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Boron	1000	539	1570	1530	103	99.0	1	75.0-125			2.40	20
Calcium	10000	246000	255000	255000	92.7	89.0	1	75.0-125			0.148	20

L1061523-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1061523-03 01/23/19 11:04 • (MS) R3378022-7 01/23/19 11:06 • (MSD) R3378022-8 01/23/19 11:09

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Boron	1000	859	1890	1900	103	104	1	75.0-125			0.267	20
Calcium	10000	52900	67500	67700	145	148	1	75.0-125	V	V	0.305	20

L1061523-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1061523-08 01/23/19 11:18 • (MS) R3378022-9 01/23/19 11:20 • (MSD) R3378022-10 01/23/19 11:23

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Boron	1000	987	1970	1960	98.6	97.6	1	75.0-125			0.488	20
Calcium	10000	40200	48600	48600	84.0	83.8	1	75.0-125			0.0320	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
V	The sample concentration is too high to evaluate accurate spike recoveries.

ACCREDITATIONS & LOCATIONS

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1,6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1,4]	2006
Louisiana [1]	LA180010	Texas	T 104704245-17-14
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

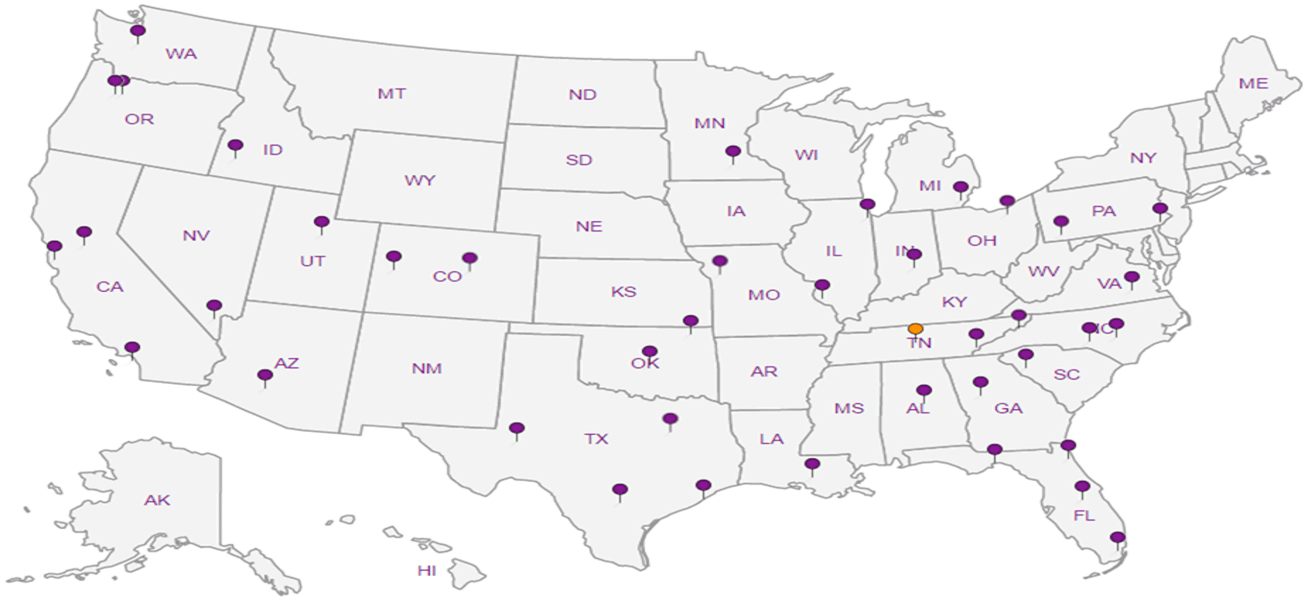
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



SCS Engineers - KS

8575 West 110th Street
Suite 100
Overland Park, KS 66210

Billing Information:

Accounts Payable
8575 West 110th Street
Suite 100
Overland Park, KS 66210

Pres Chk L2

Report to:
Jason Franks

Email To: **jfranks@scsengineers.com; jay.martin@kcpl.com;**

Project Description: **KCPL - LaCygne Generating Station**

City/State Collected: La Cygne

Phone: **913-681-0030**
Fax: **913-681-0012**

Client Project # **27217233.18**

Lab Project # **AQUAOPKS-LACYGNE**

Collected by (print): JASON R. FRANKS

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Chain of Custody Page 1 of 3

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L # L1061523

I066

Acctnum: **AQUAOPKS**
Template: **T136276**
Prelogin: **P689385**
TSR: **206 - Jeff Carr**
PB:
Shipped Via:

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Boron - 6010 250mlHDPE-HNO3	Calcium - 6010 250mlHDPE-HNO3	Chloride 125mlHDPE-NoPres	Fluoride ~~250~~mlHDPE-NoPres	Sulfate ~~250~~ 125 mlHDPE-NoPres	TDS ~~125~~mlHDPE-NoPres					Remarks	Sample # (lab only)
MW-13	GRAB	GW	–	1/14/19	1625	2	X			X								-01
DUPLICATE 1		GW	–		1625	2	X			X								-02
MW13 MS/MSD		GW	–		1625	2	X			X								-01
MW-14R		GW	–		1635	2	X		X									-03
DUPLICATE 2		GW	–		1640	2	X		X									-04
MW14R MS/MSD		GW	–		1645	2	X		X									-03
MW-15		GW	–		1550	1	X											-05
MW-601		GW	–		1600	1					X							-06
DUPLICATE 3		GW	–		1600	1					X							-07
MW601 MS/MSD		GW	–		1600	1					X							-06

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other________

Remarks:

pH ______ Temp ______

Flow ______ Other ______

Samples returned via:
__ UPS __ FedEx __ Courier ______

Tracking # 4510 1661 7621

Sample Receipt Checklist
COC Seal Present/Intact: ✓NP __Y __N
COC Signed/Accurate: ✓Y __N
Bottles arrive intact: ✓Y __N
Correct bottles used: ✓Y __N
Sufficient volume sent: ✓Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: ✓Y __N
RAD SCREEN: <0.5 mR/hr

Relinquished by : (Signature) Date: 1/15/19 Time: 1430 Received by: (Signature)

Trip Blank Received: ~~Yes~~ / [✓ No]
HCL / MeoH
TBR

Relinquished by : (Signature) Date: Time: Received by: (Signature)

Temp: 1.0+.1=1.1 °C Bottles Received: 27

If preservation required by Login: Date/Time

Relinquished by : (Signature) Date: Time: Received for lab by: (Signature)

Date: 01/16/19 Time: 08:30

Hold:

Condition: NCF / [✓ OK]

Chain of Custody Page 2 of 3

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

SCS Engineers - KS

8575 West 110th Street
Suite 100
Overland Park, KS 66210

Billing Information:

Accounts Payable
8575 West 110th Street
Suite 100
Overland Park, KS 66210

Report to:
Jason Franks

Email To: jfranks@scsengineers.com;
jay.martin@kcpl.com;

Project Description: **KCPL - LaCygne Generating Station**

City/State Collected: La Cygne, KS

Phone: **913-681-0030**
Fax: **913-681-0012**

Client Project # **27217233.18**

Lab Project # **AQUAOPKS-LACYGNE**

Collected by (print): JASON R. FRANKS

Site/Facility ID #

P.O. #

Collected by (signature):

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Immediately Packed on Ice N ___ Y ✓

L# L061523

Table #

Acctnum: **AQUAOPKS**
Template: **T136276**
Prelogin: **P689385**
TSR: **206 - Jeff Carr**
PB:

Shipped Via:

Analysis / Container / Preservative

Pres Chk: L2 L2

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Boron - 6010 250mlHDPE-HNO3	Calcium - 6010 250mlHDPE-HNO3	Chloride 125mlHDPE-NoPres	Fluoride 125mlHDPE-NoPres	Sulfate 125mlHDPE-NoPres	TDS ~~125~~mlHDPE-NoPres					Remarks	Sample # (lab only)
MW-701	GRAB	GW	–	1/15/19	1205	1		X										-08
DUPLICATE 4		GW	–	1/15/19	1205	1		X										-09
MW 701 MS/MSD		GW	–	1/15/19	1205	1		X										-08
MW-702		GW	–	1/14/19	1505	1				X								-10
MW-706		GW	–	1/15/19	1155	1					X							-11
MW-804		GW	–	1/14/19	1405	1	X											-12
MW-805		GW	–	1/14/19	1408	1		X										-13
MW-902		GW	–	1/14/19	1315	1						X						-14
DUPLICATE 5		GW	–	1/14/19	1315	1						X						-15
MW 902 MS/MSD		GW	–	1/14/19	1315	1						X						-14

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other ______

Remarks:

pH ______ Temp ______
Flow ______ Other ______

Samples returned via:
__ UPS __ FedEx __ Courier ______

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: ✓ NP __Y __N
COC Signed/Accurate: ✓Y __N
Bottles arrive intact: ✓Y __N
Correct bottles used: ✓Y __N
Sufficient volume sent: ✓Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: ✓Y __N

Relinquished by : (Signature)	Date: 1/15/19	Time: 1430	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Trip Blank Received: Yes / [✓ No]
HCL / MeoH
TBR

Temp: 1.0+.1=1.1 °C
Bottles Received: 27

Date: 01/16/19
Time: 08:30

If preservation required by Login: Date/Time

Hold:

Condition: NCF / [✓ OK]

Chain of Custody Page 3 of 3

SCS Engineers - KS

8575 West 110th Street
Suite 100
Overland Park, KS 66210

Billing Information:
Accounts Payable
8575 West 110th Street
Suite 100
Overland Park, KS 66210

Pres Chk

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

Report to: **Jason Franks**

Email To: jfranks@scsengineers.com;
jay.martin@kcpl.com;
[illegible]

Project Description: **KCPL - LaCygne Generating Station**

City/State Collected: La Cygne, KS

Phone: 913-681-0030
Fax: 913-681-0012

Client Project # 27217233.18

Lab Project # AQUAOPKS-LACYGNE

Collected by (print): Jason R. Franks

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
- ___ Same Day
- ___ Next Day
- ___ Two Day
- ___ Three Day
- ___ Five Day
- ___ 5 Day (Rad Only)
- ___ 10 Day (Rad Only)

Quote #

Date Results Needed

L# L1061523

Table #

Acctnum: **AQUAOPKS**
Template: **T136276**
Prelogin: **P689385**
TSR: **206 - Jeff Carr**
PB:
Shipped Via:

Analysis / Container / Preservative

L2

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Boron - 6010 250mlHDPE-HNO3	Calcium - 6010 250mlHDPE-HNO3	Chloride 125mlHDPE-NoPres	Fluoride 125mlHDPE-NoPres	Sulfate 125mlHDPE-NoPres	TDS 250mlHDPE-NoPres	Remarks	Sample # (lab only)
MW-903	GRAB	GW	–	1/14/19	1315	1		X						-15

* Matrix:
- SS - Soil
- AIR - Air
- F - Filter
- GW - Groundwater
- B - Bioassay
- WW - WasteWater
- DW - Drinking Water
- OT - Other________

Remarks:

pH ______ Temp ______
Flow ______ Other ______

Samples returned via:
__ UPS __ FedEx __ Courier ______

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: ✓NP __Y __N
COC Signed/Accurate: ✓Y __N
Bottles arrive intact: ✓Y __N
Correct bottles used: ✓Y __N
Sufficient volume sent: ✓Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature) Jason R. Franks | Date: 1/15/19 | Time: 1430 | Received by: (Signature)

Trip Blank Received: Yes / [✓ NO]
HCL / MeoH
TBR

Relinquished by : (Signature) | Date: | Time: | Received by: (Signature)

Temp: 1.0+.1=1.1 °C | Bottles Received: 27

If preservation required by Login: Date/Time

Relinquished by : (Signature) | Date: | Time: | Received for lab by: (Signature)

Date: 01/16/19 | Time: 08:30

Hold:

Condition: NCF / [✓ OK]

ATTACHMENT 1-2

March 2019 Sampling Event Laboratory Report

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

March 21, 2019

SCS Engineers - KS

Sample Delivery Group:	L1078452
Samples Received:	03/13/2019
Project Number:	27217233.18
Description:	KCPL - LaCygne Generating Station
Report To:	Jason Franks 8575 West 110th Street Suite 100 Overland Park, KS 66210

Entire Report Reviewed By:

Jeff Carr
Project Manager

12065 Lebanon Rd   Mount Juliet, TN 37122   615-758-5858   800-767-5859   www.pacenational.com

TABLE OF CONTENTS

MW-13 L1078452-01 GW

Collected by	Collected date/time	Received date/time
Whit Martin	03/11/19 13:50	03/13/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1251927	1	03/20/19 01:33	03/20/19 01:33	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1249634	1	03/16/19 14:14	03/20/19 17:07	CCE	Mt. Juliet, TN

DUPLICATE 1 L1078452-02 GW

Collected by	Collected date/time	Received date/time
Whit Martin	03/11/19 13:50	03/13/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1251927	1	03/20/19 02:21	03/20/19 02:21	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1249634	1	03/16/19 14:14	03/20/19 18:13	CCE	Mt. Juliet, TN

MW-14R L1078452-03 GW

Collected by	Collected date/time	Received date/time
Whit Martin	03/11/19 13:00	03/13/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1251930	1	03/20/19 01:39	03/20/19 01:39	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1249634	1	03/16/19 14:14	03/20/19 17:18	CCE	Mt. Juliet, TN

DUPLICATE 2 L1078452-04 GW

Collected by	Collected date/time	Received date/time
Whit Martin	03/11/19 13:00	03/13/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1251927	1	03/20/19 02:37	03/20/19 02:37	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1249634	1	03/16/19 14:14	03/20/19 18:16	CCE	Mt. Juliet, TN

MW-601 L1078452-05 GW

Collected by	Collected date/time	Received date/time
Whit Martin	03/11/19 11:55	03/13/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1251930	1	03/20/19 02:39	03/20/19 02:39	ELN	Mt. Juliet, TN

DUPLICATE 3 L1078452-06 GW

Collected by	Collected date/time	Received date/time
Whit Martin	03/11/19 11:55	03/13/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1251927	1	03/20/19 03:09	03/20/19 03:09	ELN	Mt. Juliet, TN

MW-701 L1078452-07 GW

Collected by	Collected date/time	Received date/time
Whit Martin	03/11/19 14:55	03/13/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1249634	1	03/16/19 14:14	03/20/19 17:32	CCE	Mt. Juliet, TN

DUPLICATE 4 L1078452-08 GW

Collected by	Collected date/time	Received date/time
Whit Martin	03/11/19 14:55	03/13/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1249634	1	03/16/19 14:14	03/20/19 18:19	CCE	Mt. Juliet, TN

MW-706 L1078452-09 GW

Collected by	Collected date/time	Received date/time
Whit Martin	03/11/19 15:50	03/13/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1251927	1	03/20/19 03:56	03/20/19 03:56	ELN	Mt. Juliet, TN

MW-804 L1078452-10 GW

Collected by	Collected date/time	Received date/time
Whit Martin	03/11/19 10:55	03/13/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1249634	1	03/16/19 14:14	03/20/19 18:21	CCE	Mt. Juliet, TN

MW-805 L1078452-11 GW

Collected by	Collected date/time	Received date/time
Whit Martin	03/11/19 10:15	03/13/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1249634	1	03/16/19 14:14	03/20/19 18:24	CCE	Mt. Juliet, TN

MW-903 L1078452-12 GW

Collected by	Collected date/time	Received date/time
Whit Martin	03/11/19 09:05	03/13/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1249634	1	03/16/19 14:14	03/20/19 18:27	CCE	Mt. Juliet, TN

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jeff Carr
Project Manager

Wet Chemistry by Method 9056A

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Fluoride	194		100	1	03/20/2019 01:33	WG1251927

Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Boron	470		200	1	03/20/2019 17:07	WG1249634

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Fluoride	202		100	1	03/20/2019 02:21	WG1251927

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	475		200	1	03/20/2019 18:13	WG1249634

Wet Chemistry by Method 9056A

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Chloride	4440		1000	1	03/20/2019 01:39	WG1251930

Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Boron	591		200	1	03/20/2019 17:18	WG1249634

Wet Chemistry by Method 9056A

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Chloride	4740		1000	1	03/20/2019 02:37	WG1251927

Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Boron	604		200	1	03/20/2019 18:16	WG1249634

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfate	5890		5000	1	03/20/2019 02:39	WG1251930

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfate	5740		5000	1	03/20/2019 03:09	WG1251927

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Calcium	44200		1000	1	03/20/2019 17:32	WG1249634

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Calcium	44200		1000	1	03/20/2019 18:19	WG1249634

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfate	6960		5000	1	03/20/2019 03:56	WG1251927

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	1740		200	1	03/20/2019 18:21	WG1249634

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Calcium	468000		1000	1	03/20/2019 18:24	WG1249634

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Calcium	375000		1000	1	03/20/2019 18:27	WG1249634

Method Blank (MB)

(MB) R3393205-1 03/19/19 18:05

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Chloride	U		51.9	1000
Fluoride	U		9.90	100
Sulfate	U		77.4	5000

L1078397-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1078397-03 03/19/19 18:56 • (DUP) R3393205-3 03/19/19 19:11

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	4380	4380	1	0.0206		15
Fluoride	301	299	1	0.500		15
Sulfate	44200	44300	1	0.134		15

L1078452-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1078452-04 03/20/19 02:37 • (DUP) R3393205-10 03/20/19 02:53

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	4740	4710	1	0.722		15
Fluoride	258	253	1	2.07		15
Sulfate	52100	52000	1	0.195		15

Laboratory Control Sample (LCS)

(LCS) R3393205-2 03/19/19 18:21

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	40700	102	80.0-120	
Fluoride	8000	8300	104	80.0-120	
Sulfate	40000	41100	103	80.0-120	

L1078397-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1078397-03 03/19/19 18:56 • (MS) R3393205-4 03/19/19 19:27 • (MSD) R3393205-5 03/19/19 19:43

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Chloride	50000	4380	55100	55700	101	103	1	80.0-120			1.19	15
Fluoride	5000	301	5350	5430	101	103	1	80.0-120			1.37	15
Sulfate	50000	44200	93500	94100	98.6	99.8	1	80.0-120			0.615	15

L1078397-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1078397-08 03/19/19 23:10 • (MS) R3393205-6 03/19/19 23:26 • (MSD) R3393205-7 03/19/19 23:42

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Chloride	50000	29300	79400	79000	100	99.4	1	80.0-120			0.470	15
Fluoride	5000	210	5290	5280	102	101	1	80.0-120			0.231	15
Sulfate	50000	257000	288000	288000	62.2	62.4	1	80.0-120	E V	E V	0.0316	15

L1078452-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1078452-01 03/20/19 01:33 • (MS) R3393205-8 03/20/19 01:49 • (MSD) R3393205-9 03/20/19 02:05

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Chloride	50000	15700	66200	66200	101	101	1	80.0-120			0.00423	15
Fluoride	5000	194	4910	4900	94.4	94.2	1	80.0-120			0.151	15
Sulfate	50000	1420000	1360000	1360000	0.000	0.000	1	80.0-120	E V	E V	0.0425	15

Method Blank (MB)

(MB) R3393348-1 03/20/19 00:36

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Chloride	U		51.9	1000
Sulfate	U		77.4	5000

L1078452-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1078452-03 03/20/19 01:39 • (DUP) R3393348-3 03/20/19 01:54

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	4440	4440	1	0.00901		15
Sulfate	51600	51700	1	0.0116		15

Laboratory Control Sample (LCS)

(LCS) R3393348-2 03/20/19 00:51

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	40000	99.9	80.0-120	
Sulfate	40000	40500	101	80.0-120	

L1078452-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1078452-03 03/20/19 01:39 • (MS) R3393348-4 03/20/19 02:09 • (MSD) R3393348-5 03/20/19 02:24

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	4440	55400	55600	102	102	1	80.0-120			0.206	15
Sulfate	50000	51600	102000	102000	100	101	1	80.0-120	E	E	0.167	15

L1078452-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1078452-05 03/20/19 02:39 • (MS) R3393348-6 03/20/19 02:54 • (MSD) R3393348-7 03/20/19 03:09

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	166000	209000	209000	84.5	84.2	1	80.0-120	E	E	0.0679	15
Sulfate	50000	5890	56200	56200	101	101	1	80.0-120			0.0114	15

Method Blank (MB)

(MB) R3393602-1 03/20/19 17:00

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Boron	U		12.6	200
Calcium	U		46.3	1000

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3393602-2 03/20/19 17:02 • (LCSD) R3393602-3 03/20/19 17:05

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Boron	1000	991	982	99.1	98.2	80.0-120			0.996	20
Calcium	10000	10100	10100	101	101	80.0-120			0.241	20

L1078452-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1078452-01 03/20/19 17:07 • (MS) R3393602-5 03/20/19 17:13

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Boron	1000	470	1470	99.9	1	75.0-125	
Calcium	10000	310000	315000	51.6	1	75.0-125	V

L1078452-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1078452-03 03/20/19 17:18 • (MS) R3393602-7 03/20/19 17:21 • (MSD) R3393602-8 03/20/19 17:23

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Boron	1000	591	1590	1570	100	98.3	1	75.0-125			1.13	20
Calcium	10000	61300	70000	70400	86.6	90.9	1	75.0-125			0.616	20

L1078452-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1078452-07 03/20/19 17:32 • (MS) R3393602-9 03/20/19 17:34 • (MSD) R3393602-10 03/20/19 17:37

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Boron	1000	1020	1990	1990	97.4	97.6	1	75.0-125			0.0895	20
Calcium	10000	44200	53400	53800	92.6	96.1	1	75.0-125			0.641	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
V	The sample concentration is too high to evaluate accurate spike recoveries.

ACCREDITATIONS & LOCATIONS

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1,6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1,4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

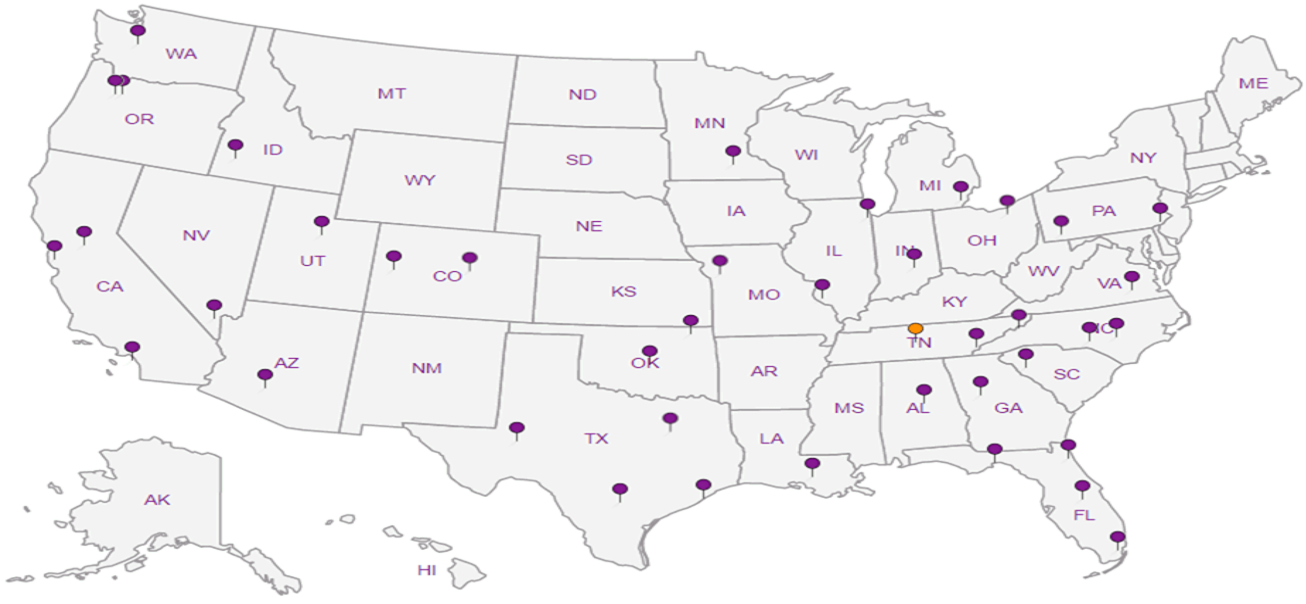
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



SCS Engineers - KS

8575 West 110th Street
Suite 100
Overland Park, KS 66210

Report to:
Jason Franks

Billing Information:

Accounts Payable
8575 West 110th Street
Suite 100
Overland Park, KS 66210

Pres Chk

Email To: **jfranks@scsengineers.com;**
jay.martin@kcpl.com;

Chain of Custody Page ___ of ___

National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# 1078452

I026

Acctnum: **AQUAOPKS**
Template: **T136276**
Prelogin: **P698300**
TSR: **206 - Jeff Carr**
PB:
Shipped Via:

Project Description: **KCPL - LaCygne Generating Station**

City/State Collected:

Phone: **913-681-0030**
Fax: **913-681-0012**

Client Project #
27217233.18

Lab Project #
AQUAOPKS-LACYGNE

Collected by (print): Whit Martin

Site/Facility ID #

P.O. #

Collected by (signature): Whit Martin

Quote #

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Date Results Needed: Std

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Boron - 6010 250mlHDPE-HNO3 <2	Calcium - 6010 250mlHDPE-HNO3 <2	Chloride 125mlHDPE-NoPres	Fluoride 125mlHDPE-NoPres	Sulfate 125mlHDPE-NoPres						Remarks	Sample # (lab only)
MW-13	Grab	GW		3/11/19	1350	2	X			X								-01
DUPLICATE 1	Grab	GW		3/11/19	1350	2	X			X								-02
MW-13 MS/MSD	Grab	GW		3/11/19	1355	2	X			X								-01
MW-14R	Grab	GW		3/11/19	1300	2	X		X									-03
DUPLICATE 2	Grab	GW		3/11/19	1300	2	X		X									-04
MW-14R MS/MSD	Grab	GW		3/11/19	1305	2	X		X									-03
MW-601	Grab	GW		3/11/19	1155	1					X							-05
DUPLICATE 3	Grab	GW		3/11/19	1155	1					X							-06
MW-601 MS/MSD	Grab	GW		3/11/19	1200	1					X							-05
MW-701	Grab	GW		3/11/19	1455	1		X										-07

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_________

Remarks:

pH _______ Temp _______
Flow _______ Other _______

Samples returned via:
__ UPS __ FedEx __ Courier __ ______

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: [✓ NP] __Y __N
COC Signed/Accurate: [✓ Y] __N
Bottles arrive intact: [✓ Y] __N
Correct bottles used: [✓ Y] __N
Sufficient volume sent: [✓ Y] __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: [✓ Y] __N
RAD SCREEN: <0.5 mR/hr

Relinquished by : (Signature) Whit Martin
Date: 3/12/19
Time: 1555
Received by: (Signature)

Trip Blank Received: Yes / No
HCL / MeoH
TBR

Relinquished by : (Signature)
Date:
Time:
Received by: (Signature)

Temp: 0.3+.1=0.4 °C
Bottles Received: 22

If preservation required by Login: Date/Time

Relinquished by : (Signature)
Date:
Time:
Received for lab by: (Signature) Mattie T.

Date: 3/13
Time: 8:45

Hold:

Condition: NCF / [✓ OK]

SCS Engineers - KS

8575 West 110th Street
Suite 100
Overland Park, KS 66210

Billing Information:

Accounts Payable
8575 West 110th Street
Suite 100
Overland Park, KS 66210

Pres Chk

Chain of Custody Page ___ of ___

National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

Report to:
Jason Franks

Email To: **jfranks@scsengineers.com; jay.martin@kcpl.com;**

Project Description: **KCPL - LaCygne Generating Station**

City/State Collected:

Phone: **913-681-0030**
Fax: **913-681-0012**

Client Project #
27217233.18

Lab Project #
AQUAOPKS-LACYGNE

L # 1078452

Table #

Acctnum: **AQUAOPKS**
Template: **T136276**
Prelogin: **P698300**
TSR: **206 - Jeff Carr**
PB:
Shipped Via:

Collected by (print): Whit Martin

Site/Facility ID #

P.O. #

Collected by (signature): Whit Martin

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed: Std

Immediately Packed on Ice N ___ Y X

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Boron - 6010 250mlHDPE-HNO3 <2	Calcium - 6010 250mlHDPE-HNO3 <2	Chloride 125mlHDPE-NoPres	Fluoride 125mlHDPE-NoPres	Sulfate 125mlHDPE-NoPres						Remarks	Sample # (lab only)
DUPLICATE 4	Grab	GW		3/11/19	1455	1		X										-08
MW-701 MS/MSD	Grab	GW		3/11/19	1500	1		X										-07
MW-706	Grab	GW		3/11/19	1550	1					X							-09
MW-804	Grab	GW		3/11/19	1055	1	X											-10
MW-805	Grab	GW		3/11/19	1015	1		X										-11
MW-903	Grab	GW		3/11/19	0905	1		X										-12

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other________

Remarks:

pH ______ Temp ______
Flow ______ Other ______

Samples returned via:
__ UPS __ FedEx __ Courier __ ______

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: ✓ NP __Y __N
COC Signed/Accurate: ✓ Y __N
Bottles arrive intact: ✓ Y __N
Correct bottles used: ✓ Y __N
Sufficient volume sent: ✓ Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: ✓ Y __N
RAD SCREEN: <0.5 mR/hr

Relinquished by : (Signature) Whit Martin	Date: 3/12/19	Time: 1555	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) Malik T.

Trip Blank Received: Yes / No
HCL / MeoH
TBR

Temp: 0.3+.1=0.4 °C
Bottles Received: 22

Date: 3/13
Time: 8:45

If preservation required by Login: Date/Time

Hold:

Condition: NCF / [✓ OK]

ATTACHMENT 1-3

May 2019 Sampling Event Laboratory Report

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

June 06, 2019

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

SCS Engineers - KS

Sample Delivery Group:	L1102791
Samples Received:	05/25/2019
Project Number:	27217233.19
Description:	KCPL - LaCygne Generating Station
Report To:	Jason Franks 8575 West 110th Street Suite 100 Overland Park, KS 66210

Entire Report Reviewed By:

Jeff Carr
Project Manager

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MW-10 L1102791-01 GW

Collected by	Collected date/time	Received date/time
Jason R. Franks	05/23/19 16:45	05/25/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1288044	1	05/30/19 12:38	05/30/19 13:18	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1290608	1	06/04/19 16:54	06/04/19 16:54	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1287649	1	05/30/19 07:24	06/05/19 00:08	TRB	Mt. Juliet, TN

MW-13 L1102791-02 GW

Collected by	Collected date/time	Received date/time
Jason R. Franks	05/23/19 16:25	05/25/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1288044	1	05/30/19 12:38	05/30/19 13:18	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1290608	1	06/04/19 17:37	06/04/19 17:37	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1290608	20	06/04/19 23:26	06/04/19 23:26	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1287649	1	05/30/19 07:24	06/05/19 00:10	TRB	Mt. Juliet, TN

MW-14R L1102791-03 GW

Collected by	Collected date/time	Received date/time
Jason R. Franks	05/23/19 14:45	05/25/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1288044	1	05/30/19 12:38	05/30/19 13:18	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1290608	1	06/04/19 17:48	06/04/19 17:48	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1287649	1	05/30/19 07:24	06/05/19 00:13	TRB	Mt. Juliet, TN

MW-15 L1102791-04 GW

Collected by	Collected date/time	Received date/time
Jason R. Franks	05/23/19 15:55	05/25/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1288044	1	05/30/19 12:38	05/30/19 13:18	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1290608	1	06/04/19 17:59	06/04/19 17:59	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1290608	5	06/04/19 18:10	06/04/19 18:10	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1287649	1	05/30/19 07:24	06/05/19 00:21	TRB	Mt. Juliet, TN

MW-601 L1102791-05 GW

Collected by	Collected date/time	Received date/time
Jason R. Franks	05/23/19 14:05	05/25/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1288048	1	05/30/19 13:49	05/30/19 14:40	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1290608	1	06/04/19 18:42	06/04/19 18:42	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1290608	5	06/05/19 10:30	06/05/19 10:30	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1287649	1	05/30/19 07:24	06/05/19 00:24	TRB	Mt. Juliet, TN

MW-602 L1102791-06 GW

Collected by	Collected date/time	Received date/time
Jason R. Franks	05/23/19 15:30	05/25/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1288048	1	05/30/19 13:49	05/30/19 14:40	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1290608	1	06/04/19 18:53	06/04/19 18:53	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1287649	1	05/30/19 07:24	06/05/19 00:26	TRB	Mt. Juliet, TN

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Collected by	Collected date/time	Received date/time
Jason R. Franks	05/23/19 15:35	05/25/19 08:00

MW-801 L1102791-07 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1288048	1	05/30/19 13:49	05/30/19 14:40	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1290621	1	06/06/19 04:07	06/06/19 04:07	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1287649	1	05/30/19 07:24	06/04/19 23:25	TRB	Mt. Juliet, TN

Collected by	Collected date/time	Received date/time
Jason R. Franks	05/23/19 16:20	05/25/19 08:00

MW-802 L1102791-08 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1288048	1	05/30/19 13:49	05/30/19 14:40	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1290621	1	06/06/19 04:50	06/06/19 04:50	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1287649	1	05/30/19 07:24	06/05/19 00:29	TRB	Mt. Juliet, TN

Collected by	Collected date/time	Received date/time
Jason R. Franks	05/23/19 16:55	05/25/19 08:00

MW-803 L1102791-09 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1288048	1	05/30/19 13:49	05/30/19 14:40	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1290621	1	06/06/19 05:12	06/06/19 05:12	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1287649	1	05/30/19 07:24	06/05/19 00:31	TRB	Mt. Juliet, TN

Collected by	Collected date/time	Received date/time
Jason R. Franks	05/23/19 14:40	05/25/19 08:00

MW-804 L1102791-10 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1288048	1	05/30/19 13:49	05/30/19 14:40	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1290621	1	06/06/19 05:23	06/06/19 05:23	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1287649	1	05/30/19 07:24	06/05/19 00:34	TRB	Mt. Juliet, TN

Collected by	Collected date/time	Received date/time
Jason R. Franks	05/23/19 14:20	05/25/19 08:00

MW-805 L1102791-11 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1288048	1	05/30/19 13:49	05/30/19 14:40	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1290621	1	06/06/19 05:56	06/06/19 05:56	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1290621	10	06/06/19 12:07	06/06/19 12:07	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1287651	1	05/29/19 15:30	05/30/19 14:30	CCE	Mt. Juliet, TN

Collected by	Collected date/time	Received date/time
Jason R. Franks	05/23/19 15:35	05/25/19 08:00

DUPLICATE 2 L1102791-12 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1288048	1	05/30/19 13:49	05/30/19 14:40	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1290621	1	06/06/19 06:18	06/06/19 06:18	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1287651	1	05/29/19 15:30	05/30/19 14:33	CCE	Mt. Juliet, TN

CASE NARRATIVE

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jeff Carr
Project Manager

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	588000		13300	1	05/30/2019 13:18	WG1288044

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	52500		1000	1	06/04/2019 16:54	WG1290608
Fluoride	353		100	1	06/04/2019 16:54	WG1290608
Sulfate	23100		5000	1	06/04/2019 16:54	WG1290608

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	885		200	1	06/05/2019 00:08	WG1287649
Calcium	52900		1000	1	06/05/2019 00:08	WG1287649

MW-13

Collected date/time: 05/23/19 16:25

SAMPLE RESULTS - 02

L1102791

Gravimetric Analysis by Method 2540 C-2011

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Dissolved Solids	2460000		50000	1	05/30/2019 13:18	WG1288044

Wet Chemistry by Method 9056A

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Chloride	16200		1000	1	06/04/2019 17:37	WG1290608
Fluoride	176		100	1	06/04/2019 17:37	WG1290608
Sulfate	1520000		100000	20	06/04/2019 23:26	WG1290608

Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Boron	401		200	1	06/05/2019 00:10	WG1287649
Calcium	355000		1000	1	06/05/2019 00:10	WG1287649

1 Cp
2 Tc
3 Ss
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Gravimetric Analysis by Method 2540 C-2011

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Dissolved Solids	563000		10000	1	05/30/2019 13:18	WG1288044

Wet Chemistry by Method 9056A

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Chloride	5330		1000	1	06/04/2019 17:48	WG1290608
Fluoride	265		100	1	06/04/2019 17:48	WG1290608
Sulfate	54500		5000	1	06/04/2019 17:48	WG1290608

Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Boron	669		200	1	06/05/2019 00:13	WG1287649
Calcium	55200		1000	1	06/05/2019 00:13	WG1287649

Gravimetric Analysis by Method 2540 C-2011

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Dissolved Solids	748000		13300	1	05/30/2019 13:18	WG1288044

Wet Chemistry by Method 9056A

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Chloride	12000		1000	1	06/04/2019 17:59	WG1290608
Fluoride	251		100	1	06/04/2019 17:59	WG1290608
Sulfate	189000		25000	5	06/04/2019 18:10	WG1290608

Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Boron	228		200	1	06/05/2019 00:21	WG1287649
Calcium	102000		1000	1	06/05/2019 00:21	WG1287649

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	1000000		20000	1	05/30/2019 14:40	WG1288048

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	162000		5000	5	06/05/2019 10:30	WG1290608
Fluoride	1480		100	1	06/04/2019 18:42	WG1290608
Sulfate	6760		5000	1	06/04/2019 18:42	WG1290608

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	1850		200	1	06/05/2019 00:24	WG1287649
Calcium	17700		1000	1	06/05/2019 00:24	WG1287649

SAMPLE RESULTS - 06

L1102791

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	615000		13300	1	05/30/2019 14:40	WG1288048

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	16900		1000	1	06/04/2019 18:53	WG1290608
Fluoride	1060		100	1	06/04/2019 18:53	WG1290608
Sulfate	24200		5000	1	06/04/2019 18:53	WG1290608

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	2350		200	1	06/05/2019 00:26	WG1287649
Calcium	23100		1000	1	06/05/2019 00:26	WG1287649

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	852000		20000	1	05/30/2019 14:40	WG1288048

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	89400		1000	1	06/06/2019 04:07	WG1290621
Fluoride	922		100	1	06/06/2019 04:07	WG1290621
Sulfate	ND		5000	1	06/06/2019 04:07	WG1290621

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	2220	O1	200	1	06/04/2019 23:25	WG1287649
Calcium	25100		1000	1	06/04/2019 23:25	WG1287649

Gravimetric Analysis by Method 2540 C-2011

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Dissolved Solids	688000		13300	1	05/30/2019 14:40	WG1288048

Wet Chemistry by Method 9056A

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Chloride	34200		1000	1	06/06/2019 04:50	WG1290621
Fluoride	816		100	1	06/06/2019 04:50	WG1290621
Sulfate	ND		5000	1	06/06/2019 04:50	WG1290621

Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Boron	2470		200	1	06/05/2019 00:29	WG1287649
Calcium	26400		1000	1	06/05/2019 00:29	WG1287649

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	621000		13300	1	05/30/2019 14:40	WG1288048

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	49200		1000	1	06/06/2019 05:12	WG1290621
Fluoride	551		100	1	06/06/2019 05:12	WG1290621
Sulfate	24100		5000	1	06/06/2019 05:12	WG1290621

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	2120		200	1	06/05/2019 00:31	WG1287649
Calcium	41100		1000	1	06/05/2019 00:31	WG1287649

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	558000		10000	1	05/30/2019 14:40	WG1288048

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	31700		1000	1	06/06/2019 05:23	WG1290621
Fluoride	445		100	1	06/06/2019 05:23	WG1290621
Sulfate	23200		5000	1	06/06/2019 05:23	WG1290621

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	1690		200	1	06/05/2019 00:34	WG1287649
Calcium	66800		1000	1	06/05/2019 00:34	WG1287649

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	2180000		50000	1	05/30/2019 14:40	WG1288048

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	455000		10000	10	06/06/2019 12:07	WG1290621
Fluoride	173		100	1	06/06/2019 05:56	WG1290621
Sulfate	666000		50000	10	06/06/2019 12:07	WG1290621

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	582		200	1	05/30/2019 14:30	WG1287651
Calcium	442000		1000	1	05/30/2019 14:30	WG1287651

DUPLICATE 2

Collected date/time: 05/23/19 15:35

Gravimetric Analysis by Method 2540 C-2011

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Dissolved Solids	810000		20000	1	05/30/2019 14:40	WG1288048

Wet Chemistry by Method 9056A

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Chloride	88400		1000	1	06/06/2019 06:18	WG1290621
Fluoride	915		100	1	06/06/2019 06:18	WG1290621
Sulfate	ND		5000	1	06/06/2019 06:18	WG1290621

Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Boron	2240		200	1	05/30/2019 14:33	WG1287651
Calcium	25200		1000	1	05/30/2019 14:33	WG1287651

Method Blank (MB)

(MB) R3417308-1 05/30/19 13:18

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Dissolved Solids	U		2820	10000

L1102427-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1102427-01 05/30/19 13:18 • (DUP) R3417308-3 05/30/19 13:18

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	49000	54000	1	9.71	J3	5

Laboratory Control Sample (LCS)

(LCS) R3417308-2 05/30/19 13:18

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800000	8880000	101	85.0-115	

Method Blank (MB)

(MB) R3417281-1 05/30/19 14:40

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Dissolved Solids	U		2820	10000

L1102792-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1102792-02 05/30/19 14:40 • (DUP) R3417281-3 05/30/19 14:40

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	936000	944000	1	0.851		5

Laboratory Control Sample (LCS)

(LCS) R3417281-2 05/30/19 14:40

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800000	8930000	101	85.0-115	

Method Blank (MB)

(MB) R3417955-1 06/04/19 10:13

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Chloride	U		51.9	1000
Fluoride	U		9.90	100
Sulfate	U		77.4	5000

L1102791-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1102791-01 06/04/19 16:54 • (DUP) R3417955-3 06/04/19 17:04

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	52500	52300	1	0.425		15
Fluoride	353	352	1	0.284		15
Sulfate	23100	23000	1	0.462		15

L1102768-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1102768-05 06/05/19 10:52 • (DUP) R3417955-8 06/05/19 11:03

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	1070000	1060000	50	0.290		15
Fluoride	U	0.000	50	0.000		15
Sulfate	2150000	2140000	50	0.411		15

Laboratory Control Sample (LCS)

(LCS) R3417955-2 06/04/19 10:24

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	41000	102	80.0-120	
Fluoride	8000	8330	104	80.0-120	
Sulfate	40000	42000	105	80.0-120	

L1102791-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1102791-01 06/04/19 16:54 • (MS) R3417955-4 06/04/19 17:15 • (MSD) R3417955-5 06/04/19 17:26

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Chloride	50000	52500	101000	100000	97.1	95.2	1	80.0-120	E	E	0.964	15
Fluoride	5000	353	5630	5620	106	105	1	80.0-120			0.187	15
Sulfate	50000	23100	72000	72100	97.7	98.0	1	80.0-120			0.210	15

L1102791-06 Original Sample (OS) • Matrix Spike (MS)

(OS) L1102791-06 06/04/19 18:53 • (MS) R3417955-6 06/04/19 19:04

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	ug/l	ug/l	ug/l	%		%	
Chloride	50000	16900	66300	98.7	1	80.0-120	
Fluoride	5000	1060	6420	107	1	80.0-120	
Sulfate	50000	24200	73100	97.7	1	80.0-120	

Method Blank (MB)

(MB) R3418444-1 06/06/19 03:03

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Chloride	U		51.9	1000
Fluoride	U		9.90	100
Sulfate	U		77.4	5000

L1102791-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1102791-08 06/06/19 04:50 • (DUP) R3418444-5 06/06/19 05:01

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	34200	34200	1	0.0410		15
Fluoride	816	812	1	0.455		15
Sulfate	ND	0.000	1	0.000		15

L1102792-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1102792-05 06/06/19 08:17 • (DUP) R3418444-6 06/06/19 08:28

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	41800	40800	1	2.50		15
Fluoride	1210	1220	1	0.255		15
Sulfate	ND	2370	1	2.78	J	15

Laboratory Control Sample (LCS)

(LCS) R3418444-2 06/06/19 03:14

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	40200	100	80.0-120	
Fluoride	8000	8280	104	80.0-120	
Sulfate	40000	40600	101	80.0-120	

L1102791-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1102791-07 06/06/19 04:07 • (MS) R3418444-3 06/06/19 04:17 • (MSD) R3418444-4 06/06/19 04:28

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	89400	136000	136000	92.4	93.0	1	80.0-120	E	E	0.201	15
Fluoride	5000	922	6150	6160	104	105	1	80.0-120			0.242	15
Sulfate	50000	ND	51700	51800	96.6	96.8	1	80.0-120			0.190	15

L1102792-05 Original Sample (OS) • Matrix Spike (MS)

(OS) L1102792-05 06/06/19 08:17 • (MS) R3418444-7 06/06/19 08:39

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	41800	89200	94.8	1	80.0-120	
Fluoride	5000	1210	6480	105	1	80.0-120	
Sulfate	50000	ND	51600	98.4	1	80.0-120	

Method Blank (MB)

(MB) R3417816-1 06/04/19 23:18

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Boron	U		12.6	200
Calcium	U		46.3	1000

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3417816-2 06/04/19 23:20 • (LCSD) R3417816-3 06/04/19 23:23

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Boron	1000	978	983	97.8	98.3	80.0-120			0.543	20
Calcium	10000	10000	9940	100	99.4	80.0-120			0.630	20

L1102791-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1102791-07 06/04/19 23:25 • (MS) R3417816-5 06/04/19 23:30 • (MSD) R3417816-6 06/04/19 23:33

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Boron	1000	2220	3160	3180	93.8	96.5	1	75.0-125			0.858	20
Calcium	10000	25100	34100	34400	90.0	93.0	1	75.0-125			0.883	20

Method Blank (MB)

(MB) R3416282-1 05/30/19 12:44

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Boron	U		12.6	200
Calcium	67.5	J	46.3	1000

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3416282-2 05/30/19 12:47 • (LCSD) R3416282-3 05/30/19 12:49

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Boron	1000	985	974	98.5	97.4	80.0-120			1.11	20
Calcium	10000	9970	9920	99.7	99.2	80.0-120			0.512	20

L1102792-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1102792-07 05/30/19 12:52 • (MS) R3416282-5 05/30/19 12:57 • (MSD) R3416282-6 05/30/19 13:00

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Boron	1000	2030	2950	2960	92.2	93.1	1	75.0-125			0.281	20
Calcium	10000	21900	31200	31500	92.2	95.2	1	75.0-125			0.960	20

L1102793-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1102793-01 05/30/19 15:03 • (MS) R3416282-7 05/30/19 15:05 • (MSD) R3416282-8 05/30/19 15:08

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Boron	1000	1180	2120	2150	94.5	97.4	1	75.0-125			1.38	20
Calcium	10000	52300	60900	60800	85.5	85.2	1	75.0-125			0.0488	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
O1	The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference.

ACCREDITATIONS & LOCATIONS

ONE LAB. NATIONWIDE.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1,6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1,4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

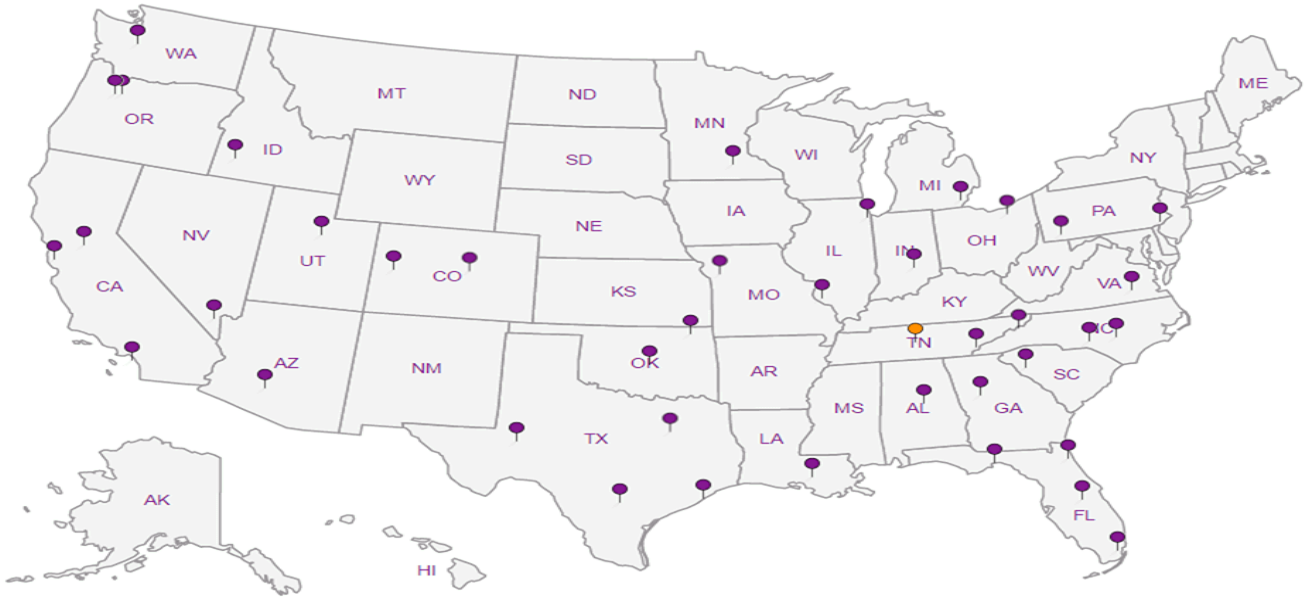
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



SCS Engineers - KS

8575 West 110th Street, Ste. 100
Overland Park, KS 66210

Billing Information:

Accounts Payable
8575 West 110th Street, Ste. 100
Overland Park, KS 66210

Pres Chk: <2

Analysis / Container / Preservative

Chain of Custody Page 1 of 2

ESC LAB SCIENCES

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

Report to:
Jason Franks

Email To: **jfranks@scsengineers.com;**
jay.martin@kcpl.com;

Project Description: **KCPL - LaCygne Generating Station**

City/State Collected: **La Cygne, Kansas**

L# L1162791

J154

Phone: **913-681-0030**
Fax: **913-681-0012**

Client Project #
27217233.19

Lab Project #
AQUAOPKS-LACYGNE

Acctnum: **AQUAOPKS**

Template: **T136276**

Prelogin:

TSR: **206 - Jeff Carr**

PB:

Shipped Via:

Collected by (print):
Jason R. Franks

Site/Facility ID #

P.O. #

Collected by (signature): Jason R. Franks

Immediately Packed on Ice N ____ Y X

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day

Quote #

Date Results Needed

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Anions (Cld, F, SO4) 125mlHDPE-NoPres	B, Ca - 6010 250mlHDPE-HNO3	TDS 250mlHDPE-NoPres								Remarks	Sample # (lab only)
MW-10	Grab	GW	NA	05/23/19	1645	3	X	X	X									-01
MW-13	Grab	GW	NA	05/23/19	1625	3	X	X	X									02
MW-14R	Grab	GW	NA	05/23/19	1445	3	X	X	X									03
MW-15	Grab	GW	NA	05/23/19	1555	3	X	X	X									04
MW-601	Grab	GW	NA	05/23/19	1405	3	X	X	X									05
MW-602	Grab	GW	NA	05/23/19	1530	3	X	X	X									06
MW-801	Grab	GW	NA	05/23/19	1535	3	X	X	X									07
MW-802	Grab	GW	NA	05/23/19	1620	3	X	X	X									08
MW-803	Grab	GW	NA	05/23/19	1655	3	X	X	X									09
MW-804	Grab	GW	NA	05/23/19	1440	3	X	X	X									10

* Matrix:
SS - Soil **AIR** - Air **F** - Filter
GW - Groundwater **B** - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other________

Remarks:

RAD SCREEN: <0.5 mR/hr

pH _______ Temp _______

Flow _______ Other _______

Samples returned via:
__ UPS __ FedEx __ Courier SWA

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: ✓NP __Y __N
COC Signed/Accurate: ✓Y __N
Bottles arrive intact: ✓Y __N
Correct bottles used: ✓Y __N
Sufficient volume sent: ✓Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: ✓Y __N

Relinquished by : (Signature) Jason R. Franks
Date: 05/24/19
Time: 1500
Received by: (Signature) 5-24-19 1500

Trip Blank Received: Yes [✓ No] 0
HCL / MeoH
TBR

Relinquished by : (Signature) Alan Nelson
Date: 5/24/19
Time: 1600
Received by: (Signature)

Temp: 1.1±0=1.1 #3 SR °C
Bottles Received: 39

If preservation required by Login: Date/Time

Relinquished by : (Signature)
Date: 5/24/19
Time: 1700
Received for lab by: (Signature) ~~SWA~~

Date: 5/25/19
Time: 0800

Hold:

Condition: NCF / [✓ OK]

SCS Engineers - KS

8575 West 110th Street, Ste. 100
Overland Park, KS 66210

Billing Information:

Accounts Payable
8575 West 110th Street, Ste. 100
Overland Park, KS 66210

Pres Chk

Chain of Custody Page 2 of 2

ESC LAB SCIENCES

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

Report to: **Jason Franks**

Email To: jfranks@scsengineers.com;
jay.martin@kcpl.com;

Project Description: **KCPL - LaCygne Generating Station**

City/State Collected: **La Cygne, Kansas**

Phone: **913-681-0030**
Fax: **913-681-0012**

Client Project # **27217233.19**

Lab Project # **AQUAOPKS-LACYGNE**

Collected by (print): **Jason R. Franks**

Site/Facility ID #

P.O. #

Collected by (signature):

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Immediately Packed on Ice N ___ Y X

L# L1102791

Table #

Acctnum: **AQUAOPKS**

Template: **T136276**

Prelogin:

TSR: **206 - Jeff Carr**

PB:

Shipped Via:

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Anions (Cld, F, SO4) 125mlHDPE-NoPres	B, Ca - 6010 250mlHDPE-HNO3	TDS 250mlHDPE-NoPres							Remarks	Sample # (lab only)
MW-805	Grab	GW	NA	05/23/19	1420	3	X	X	X								11
DUPLICATE 2	Grab	GW	NA	05/23/19	1535	3	X	X	X								12
801 MS/MSD	Grab	GW	NA	05/23/19	1540	3	X	X	X								07

* Matrix:
SS - Soil **AIR** - Air **F** - Filter
GW - Groundwater **B** - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other________

Remarks:

RAD SCREEN: <0.5 mR/hr

pH ______ Temp ______

Flow ______ Other ______

Samples returned via:
__ UPS __ FedEx __ Courier Shrt

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: ✓NP __Y __N
COC Signed/Accurate: ✓Y __N
Bottles arrive intact: ✓Y __N
Correct bottles used: ✓Y __N
Sufficient volume sent: ✓Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: ✓Y __N

Relinquished by : (Signature) Jason R. Franks
Date: 05/24/19
Time: 1500
Received by: (Signature) 5-24-19 1500

Trip Blank Received: Yes / [✓ No]
HCL / MeoH
TBR

Relinquished by : (Signature) Alan Nelson
Date: 5/24/19
Time: 1600
Received by: (Signature)

Temp: °C 1.1±0=1.1
Bottles Received: 39

If preservation required by Login: Date/Time

Relinquished by : (Signature)
Date: 5/24/19
Time: 1700
Received for lab by: (Signature) ~~SWA~~

Date: 5/25/19
Time: 0800

Hold:

Condition: NCF / [✓ OK]

ATTACHMENT 1-4

July 2019 Sampling Event Laboratory Report

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

July 25, 2019

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

SCS Engineers - KS

Sample Delivery Group:	L1120582
Samples Received:	07/19/2019
Project Number:	27217233.19
Description:	KCPL - LaCygne Generating Station

Report To:

Jason Franks
8575 West 110th Street
Suite 100
Overland Park, KS 66210

Entire Report Reviewed By:

Jeff Carr
Project Manager

TABLE OF CONTENTS

MW-14R L1120582-01 GW

Collected by	Collected date/time	Received date/time
Whit Martin	07/17/19 10:35	07/19/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1316426	1	07/24/19 15:58	07/24/19 15:58	ST	Mt. Juliet, TN

DUPLICATE 1 L1120582-02 GW

Collected by	Collected date/time	Received date/time
Whit Martin	07/17/19 10:35	07/19/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1316426	1	07/24/19 16:57	07/24/19 16:57	ST	Mt. Juliet, TN

MW-601 L1120582-03 GW

Collected by	Collected date/time	Received date/time
Whit Martin	07/17/19 11:20	07/19/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1316426	1	07/24/19 17:12	07/24/19 17:12	ST	Mt. Juliet, TN

MW-701 L1120582-04 GW

Collected by	Collected date/time	Received date/time
Whit Martin	07/17/19 12:45	07/19/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1314696	1	07/22/19 11:47	07/23/19 20:12	EL	Mt. Juliet, TN

MW-704 L1120582-05 GW

Collected by	Collected date/time	Received date/time
Whit Martin	07/17/19 12:05	07/19/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1316426	1	07/24/19 18:12	07/24/19 18:12	ST	Mt. Juliet, TN

MW-706 L1120582-06 GW

Collected by	Collected date/time	Received date/time
Whit Martin	07/17/19 13:55	07/19/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1316426	1	07/24/19 18:27	07/24/19 18:27	ST	Mt. Juliet, TN

MW-707B L1120582-07 GW

Collected by	Collected date/time	Received date/time
Whit Martin	07/17/19 13:10	07/19/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1316426	50	07/24/19 18:42	07/24/19 18:42	ST	Mt. Juliet, TN

DUPLICATE 3 L1120582-08 GW

Collected by	Collected date/time	Received date/time
Whit Martin	07/17/19 13:15	07/19/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1316426	100	07/25/19 01:38	07/25/19 01:38	LDC	Mt. Juliet, TN

MW-804 L1120582-09 GW

Collected by	Collected date/time	Received date/time
Whit Martin	07/17/19 12:07	07/19/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1314696	1	07/22/19 11:47	07/23/19 19:22	EL	Mt. Juliet, TN

DUPLICATE 2 L1120582-10 GW

Collected by	Collected date/time	Received date/time
Whit Martin	07/17/19 12:15	07/19/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1314696	1	07/22/19 11:47	07/23/19 20:21	EL	Mt. Juliet, TN

MW-805 L1120582-11 GW

Collected by	Collected date/time	Received date/time
Whit Martin	07/17/19 11:20	07/19/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1314696	1	07/22/19 11:47	07/23/19 20:24	EL	Mt. Juliet, TN

MW-903 L1120582-12 GW

Collected by	Collected date/time	Received date/time
Whit Martin	07/17/19 09:45	07/19/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1314696	1	07/22/19 11:47	07/23/19 19:33	EL	Mt. Juliet, TN

DUPLICATE 4 L1120582-13 GW

Collected by	Collected date/time	Received date/time
Whit Martin	07/17/19 09:45	07/19/19 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1314696	1	07/22/19 11:47	07/23/19 20:27	EL	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jeff Carr
Project Manager

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	6140		1000	1	07/24/2019 15:58	WG1316426

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	6010		1000	1	07/24/2019 16:57	WG1316426

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfate	5750		5000	1	07/24/2019 17:12	WG1316426

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Calcium	45000		1000	1	07/23/2019 20:12	WG1314696

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	89700		1000	1	07/24/2019 18:12	WG1316426

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfate	8270		5000	1	07/24/2019 18:27	WG1316426

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfate	4920000	V	250000	50	07/24/2019 18:42	WG1316426

Wet Chemistry by Method 9056A

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Sulfate	4880000		500000	100	07/25/2019 01:38	WG1316426

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	1710	O1	200	1	07/23/2019 19:22	WG1314696

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	1720		200	1	07/23/2019 20:21	WG1314696

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	550		200	1	07/23/2019 20:24	WG1314696

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Calcium	373000	V	1000	1	07/23/2019 19:33	WG1314696

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Calcium	379000		1000	1	07/23/2019 20:27	WG1314696

Method Blank (MB)

(MB) R3433988-1 07/24/19 14:56

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Chloride	U		51.9	1000
Sulfate	U		77.4	5000

L1120582-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1120582-01 07/24/19 15:58 • (DUP) R3433988-3 07/24/19 16:13

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	6140	5950	1	3.25		15
Sulfate	59300	59300	1	0.0944		15

L1120583-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1120583-09 07/24/19 22:25 • (DUP) R3433988-8 07/24/19 22:40

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	25600	25700	1	0.319		15

L1120583-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1120583-09 07/25/19 02:08 • (DUP) R3433988-9 07/25/19 02:23

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Sulfate	1140000	1200000	20	5.12		15

Laboratory Control Sample (LCS)

(LCS) R3433988-2 07/24/19 15:11

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	40200	100	80.0-120	
Sulfate	40000	41600	104	80.0-120	

L1120582-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1120582-01 07/24/19 15:58 • (MS) R3433988-4 07/24/19 16:27 • (MSD) R3433988-5 07/24/19 16:42

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	6140	56400	56200	100	100	1	80.0-120			0.223	15
Sulfate	50000	59300	106000	106000	93.3	93.5	1	80.0-120	E	E	0.132	15

L1120582-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1120582-07 07/24/19 18:42 • (MS) R3433988-6 07/24/19 18:57 • (MSD) R3433988-7 07/24/19 19:12

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	1000	198000	2750000	2730000	5110	5070	50	80.0-120	J5	J5	0.672	15
Sulfate	1000	4920000	7170000	7140000	4510	4450	50	80.0-120	E V	E V	0.422	15

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Method Blank (MB)

(MB) R3433521-1 07/23/19 19:14

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Boron	U		12.6	200
Calcium	U		46.3	1000

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3433521-2 07/23/19 19:16 • (LCSD) R3433521-3 07/23/19 19:19

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	%	%	%			%	%
Boron	1000	1020	1020	102	102	80.0-120			0.807	20
Calcium	10000	10100	10200	101	102	80.0-120			0.807	20

L1120582-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1120582-09 07/23/19 19:22 • (MS) R3433521-5 07/23/19 19:27 • (MSD) R3433521-6 07/23/19 19:30

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Boron	1000	1710	2700	2680	99.5	97.9	1	75.0-125			0.600	20
Calcium	10000	66300	75700	75100	93.8	87.9	1	75.0-125			0.781	20

L1120582-12 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1120582-12 07/23/19 19:33 • (MS) R3433521-7 07/23/19 19:35 • (MSD) R3433521-8 07/23/19 19:38

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Boron	1000	539	1550	1570	102	103	1	75.0-125			1.15	20
Calcium	10000	373000	378000	380000	47.5	77.4	1	75.0-125	V		0.788	20

GLOSSARY OF TERMS

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
O1	The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference.
V	The sample concentration is too high to evaluate accurate spike recoveries.

ACCREDITATIONS & LOCATIONS

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1][6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1][4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

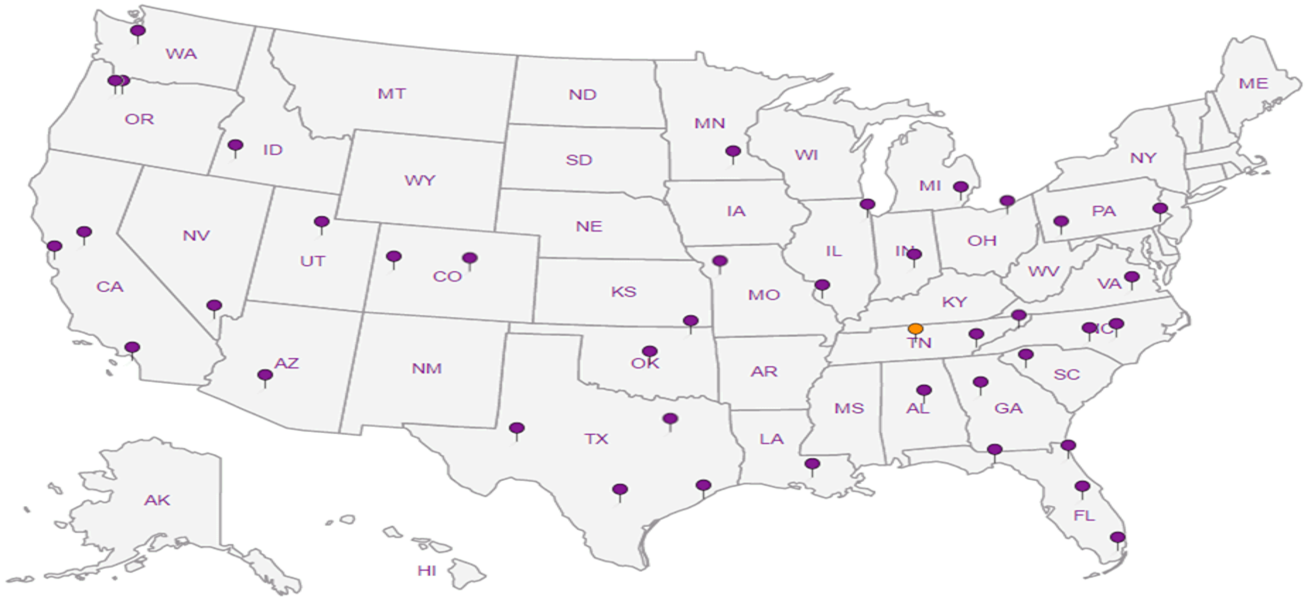
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



SCS Engineers - KS

8575 West 110th Street
Suite 100
Overland Park, KS 66210

Billing Information:
Accounts Payable
8575 West 110th Street
Suite 100
Overland Park, KS 66210

Pres Chk 2

Chain of Custody Page 1 of 2

National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

Report to: **Jason Franks**

Email To: **jfranks@scsengineers.com;**
jay.martin@kcpl.com;

Project Description: **KCPL - LaCygne Generating Station**

City/State Collected:

Phone: **913-681-0030**
Fax: **913-681-0012**

Client Project # **27217233.19**

Lab Project # **AQUAOPKS-LACYGNE**

L# L1120582
H094

Collected by (print): Whit Martin

Site/Facility ID #

P.O. #

Collected by (signature): Whit Martin

Immediately Packed on Ice N___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed: Std

Acctnum: **AQUAOPKS**
Template: **T136276**
Prelogin: **P719479**
TSR: **206 - Jeff Carr**
PB:
Shipped Via:

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Boron - 6010 250mlHDPE-HNO3	Calcium - 6010 250mlHDPE-HNO3	Chloride 125mlHDPE-NoPres	Sulfate 125mlHDPE-NoPres							Remarks	Sample # (lab only)
MW-14R	Grab	GW		7/17/19	1035	1			X									-01
DUPLICATE 1	Grab	GW		7/17/19	1035	1			X									02
MW-14R MS/MSD	Grab	GW		7/17/19	1040	1			X									01
MW-601	Grab	GW		7/17/19	1120	1				X								03
MW-701	Grab	GW		7/17/19	1245	1		X										04
MW-704	Grab	GW		7/17/19	1205	1			X									05
MW-706	Grab	GW		7/17/19	1355	1				X								06
MW-707B	Grab	GW		7/17/19	1310	1				X								07
DUPLICATE 3	Grab	GW		7/17/19	1315	1				X								08
MW-707B MS/MSD	Grab	GW		7/17/19	1320	1				X								07

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other________

Remarks:

pH ______ Temp ______

Flow ______ Other ______

Samples returned via: J SWA
__ UPS __ FedEx __ Courier

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: ✓NP __Y __N
COC Signed/Accurate: ✓Y __N
Bottles arrive intact: ✓Y __N
Correct bottles used: ✓Y __N
Sufficient volume sent: ✓Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: ✓Y __N

RAD SCREEN: <0.5 mR/hr

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)		
Whit Martin	7-18-19	1419	Alan Nelson 7-18-19 1420	Trip Blank Received: Yes [✓ No] HCL / MeoH TBR	If preservation required by Login: Date/Time
Alan Nelson	7-18-19	1800		Temp: °C 5.6+.1=5.7 Bottles Received: 17	
			Received for lab by: (Signature)	Date: 7/19/19 Time: 8:00	Hold:

Condition: NCF / [✓ OK]

SCS Engineers - KS

8575 West 110th Street
Suite 100
Overland Park, KS 66210

Billing Information:
Accounts Payable
8575 West 110th Street
Suite 100
Overland Park, KS 66210

Pres Chk: c2 c2

Analysis / Container / Preservative

Chain of Custody Page 2 of 2

National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

Report to: **Jason Franks**

Email To: **jfranks@scsengineers.com; jay.martin@kcpl.com;**

Project Description: **KCPL - LaCygne Generating Station**

City/State Collected:

Phone: **913-681-0030**
Fax: **913-681-0012**

Client Project # **27217233.19**

Lab Project # **AQUAOPKS-LACYGNE**

Collected by (print): Whit Martin

Site/Facility ID #

P.O. #

Collected by (signature): Whit Martin

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed: Std

L #

Table #

Acctnum: **AQUAOPKS**
Template: **T136276**
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PB:
Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Boron - 6010 250mlHDPE-HNO3	Calcium - 6010 250mlHDPE-HNO3	Chloride 125mlHDPE-NoPres	Sulfate 125mlHDPE-NoPres							Remarks	Sample # (lab only)
MW-804	Grab	GW		7/17/19	1207	1	X											-08
DUPLICATE 2	Grab	GW		7/17/19	1215	1	X											69
MW-804 MS/MSD	Grab	GW		7/17/19	1210	1	X											08
MW-805	Grab	GW		7/17/19	1120	1	X											10
MW-903	Grab	GW		7/17/19	0945	1		X										11
DUPLICATE 4	Grab	GW		7/17/19	0945	1		X										10
MW-903 MS/MSD	Grab	GW		7/17/19	0950	1		X										

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_________

Remarks:

pH ______ Temp ______
Flow ______ Other ______

Samples returned via:
__ UPS __ FedEx __ Courier __ ______

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: ✓NP __Y __N
COC Signed/Accurate: ✓Y __N
Bottles arrive intact: ✓Y __N
Correct bottles used: ✓Y __N
Sufficient volume sent: ✓Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: ✓Y __N

RAD SCREEN: <0.5 mR/hr

Relinquished by : (Signature) Whit Martin
Date: 7/18/19
Time: 1419
Received by: (Signature) Alan Nelson 7-18-19 1420

Trip Blank Received: Yes / No
HCL / MeoH
TBR

Relinquished by : (Signature) Alan Nelson
Date: 7-18-19
Time: 1800
Received by: (Signature)

Temp: °C 5.6+.1=5.7 A5 5c
Bottles Received:

If preservation required by Login: Date/Time

Relinquished by : (Signature)
Date:
Time:
Received for lab by: (Signature)
Date:
Time:

Hold:

Condition: NCF / [✓ OK]

ATTACHMENT 1-5

August 2019 Sampling Event Laboratory Report

ANALYTICAL REPORT

September 03, 2019

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

SCS Engineers - KS

Sample Delivery Group:	L1132586
Samples Received:	08/24/2019
Project Number:	27217233.19
Description:	KCPL - LaCygne Generating Station

Report To:

Jason Franks
8575 West 110th Street
Suite 100
Overland Park, KS 66210

Entire Report Reviewed By:

Jason Romer
Project Manager

TABLE OF CONTENTS

MW-14R L1132586-01 GW

Collected by	Collected date/time	Received date/time
Jason Franks	08/23/19 12:25	08/24/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1334824	1	08/26/19 19:31	08/26/19 19:31	LDC	Mt. Juliet, TN

DUPLICATE 1 L1132586-02 GW

Collected by	Collected date/time	Received date/time
Jason Franks	08/23/19 12:25	08/24/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1334824	1	08/26/19 20:57	08/26/19 20:57	LDC	Mt. Juliet, TN

MW-601 L1132586-03 GW

Collected by	Collected date/time	Received date/time
Jason Franks	08/23/19 13:05	08/24/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1334824	1	08/27/19 09:07	08/27/19 09:07	LDC	Mt. Juliet, TN

MW-701 L1132586-04 GW

Collected by	Collected date/time	Received date/time
Jason Franks	08/23/19 11:50	08/24/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1334773	1	08/26/19 09:59	08/27/19 11:40	EL	Mt. Juliet, TN

MW-704 L1132586-05 GW

Collected by	Collected date/time	Received date/time
Jason Franks	08/23/19 11:20	08/24/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1334824	5	08/26/19 21:26	08/26/19 21:26	LDC	Mt. Juliet, TN

MW-706 L1132586-06 GW

Collected by	Collected date/time	Received date/time
Jason Franks	08/23/19 10:40	08/24/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1334824	1	08/26/19 21:41	08/26/19 21:41	LDC	Mt. Juliet, TN

DUPLICATE 3 L1132586-07 GW

Collected by	Collected date/time	Received date/time
Jason Franks	08/23/19 10:40	08/24/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1334824	1	08/27/19 09:21	08/27/19 09:21	LDC	Mt. Juliet, TN

MW-804 L1132586-08 GW

Collected by	Collected date/time	Received date/time
Jason Franks	08/22/19 16:05	08/24/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1334773	1	08/26/19 09:59	08/27/19 10:33	EL	Mt. Juliet, TN

DUPLICATE 2 L1132586-09 GW

Collected by	Collected date/time	Received date/time
Jason Franks	08/22/19 16:05	08/24/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1334773	1	08/26/19 09:59	08/27/19 11:43	EL	Mt. Juliet, TN

MW-805 L1132586-10 GW

Collected by	Collected date/time	Received date/time
Jason Franks	08/22/19 15:35	08/24/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1334773	1	08/26/19 09:59	08/27/19 11:46	EL	Mt. Juliet, TN

MW-903 L1132586-11 GW

Collected by	Collected date/time	Received date/time
Jason Franks	08/22/19 15:00	08/24/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1334773	1	08/26/19 09:59	08/27/19 10:44	EL	Mt. Juliet, TN

DUPLICATE 4 L1132586-12 GW

Collected by	Collected date/time	Received date/time
Jason Franks	08/22/19 15:00	08/24/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1334774	1	08/28/19 12:40	08/28/19 23:51	EL	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jason Romer
Project Manager

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	6080		1000	1	08/26/2019 19:31	WG1334824

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	6080		1000	1	08/26/2019 20:57	WG1334824

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfate	6320		5000	1	08/27/2019 09:07	WG1334824

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Calcium	39900		1000	1	08/27/2019 11:40	WG1334773

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	89200		5000	5	08/26/2019 21:26	WG1334824

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfate	8790		5000	1	08/26/2019 21:41	WG1334824

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Sulfate	8550		5000	1	08/27/2019 09:21	WG1334824

Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Boron	1630		200	1	08/27/2019 10:33	WG1334773

DUPLICATE 2

Collected date/time: 08/22/19 16:05

SAMPLE RESULTS - 09

L1132586

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Boron	1640		200	1	08/27/2019 11:43	WG1334773

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	537		200	1	08/27/2019 11:46	WG1334773

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Calcium	366000	V	1000	1	08/27/2019 10:44	WG1334773

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Calcium	358000	O1 V	1000	1	08/28/2019 23:51	WG1334774

Method Blank (MB)

(MB) R3444477-1 08/26/19 14:56

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Chloride	U		51.9	1000
Sulfate	U		77.4	5000

L1132563-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1132563-07 08/26/19 16:09 • (DUP) R3444477-3 08/26/19 16:24

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Chloride	38700	38400	1	0.568		15
Sulfate	86800	86700	1	0.133		15

L1132586-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1132586-01 08/26/19 19:31 • (DUP) R3444477-4 08/26/19 19:45

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Chloride	6080	6030	1	0.755		15
Sulfate	60600	60400	1	0.232		15

Laboratory Control Sample (LCS)

(LCS) R3444477-2 08/26/19 15:10

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Chloride	40000	39500	98.8	80.0-120	
Sulfate	40000	39700	99.2	80.0-120	

L1132586-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1132586-01 08/26/19 19:31 • (MS) R3444477-5 08/26/19 20:00 • (MSD) R3444477-6 08/26/19 20:14

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Chloride	50000	6080	52700	52900	93.2	93.7	1	80.0-120			0.414	15
Sulfate	50000	60600	99100	98900	77.0	76.7	1	80.0-120	J6	J6	0.128	15

L1132586-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1132586-06 08/26/19 21:41 • (MS) R3444477-7 08/26/19 21:55 • (MSD) R3444477-8 08/26/19 22:10

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	249000	283000	284000	68.8	69.7	1	80.0-120	E V	E V	0.154	15
Sulfate	50000	8790	51600	51800	85.6	86.1	1	80.0-120			0.464	15

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Method Blank (MB)

(MB) R3444820-1 08/27/19 10:26

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Boron	U		12.6	200
Calcium	U		46.3	1000

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3444820-2 08/27/19 10:28 • (LCSD) R3444820-3 08/27/19 10:31

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	%	%	%			%	%
Boron	1000	1000	980	100	98.0	80.0-120			2.04	20
Calcium	10000	10100	9800	101	98.0	80.0-120			2.82	20

L1132586-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1132586-08 08/27/19 10:33 • (MS) R3444820-5 08/27/19 10:39 • (MSD) R3444820-6 08/27/19 10:41

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Boron	1000	1630	2630	2650	100	102	1	75.0-125			0.830	20
Calcium	10000	60300	73100	73700	128	134	1	75.0-125	V	V	0.767	20

L1132586-11 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1132586-11 08/27/19 10:44 • (MS) R3444820-7 08/27/19 10:46 • (MSD) R3444820-8 08/27/19 10:49

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Boron	1000	510	1530	1520	102	101	1	75.0-125			0.0864	20
Calcium	10000	366000	371000	368000	50.2	20.9	1	75.0-125	V	V	0.792	20

Method Blank (MB)

(MB) R3445287-1 08/28/19 23:42

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Calcium	U		46.3	1000

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3445287-2 08/28/19 23:45 • (LCSD) R3445287-3 08/28/19 23:48

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Calcium	10000	9530	9600	95.3	96.0	80.0-120			0.785	20

L1132586-12 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1132586-12 08/28/19 23:51 • (MS) R3445287-5 08/28/19 23:56 • (MSD) R3445287-6 08/28/19 23:59

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Calcium	10000	358000	360000	364000	15.4	62.6	1	75.0-125	V	V	1.30	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
O1	The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference.
V	The sample concentration is too high to evaluate accurate spike recoveries.

ACCREDITATIONS & LOCATIONS

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1,6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1,4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

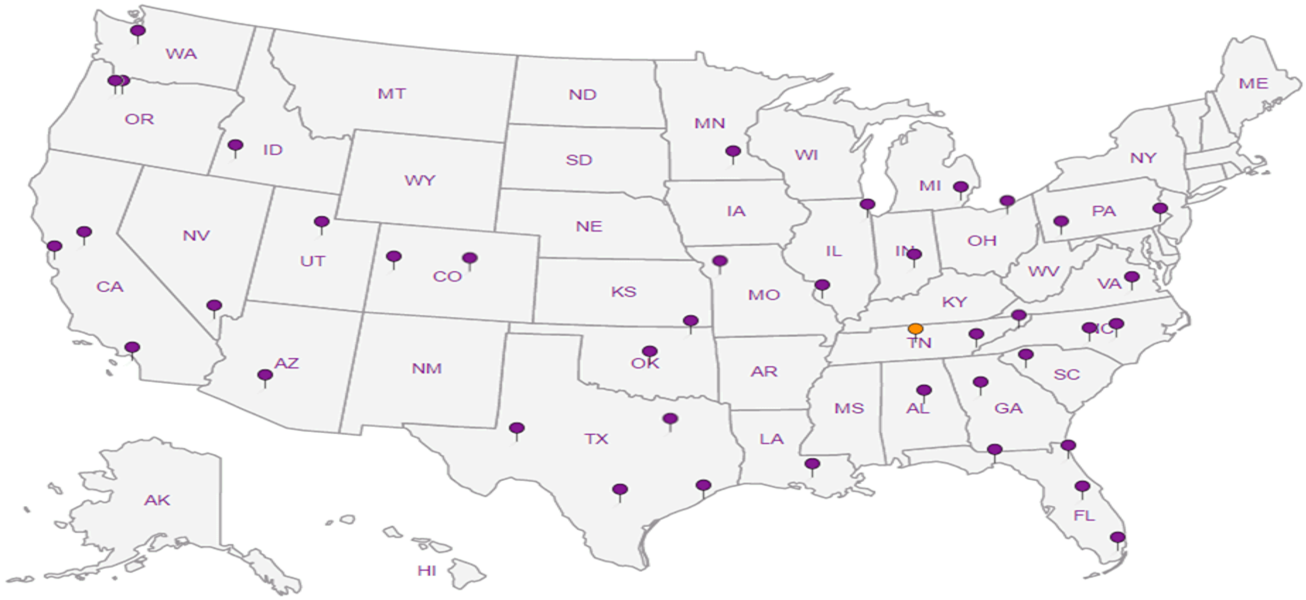
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



SCS Engineers - KS

8575 West 110th Street
Suite 100
Overland Park, KS 66210

Billing Information:

Accounts Payable
8575 West 110th Street
Suite 100
Overland Park, KS 66210

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page 1 of 2

National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

Report to:
Jason Franks

Email To: **jfranks@scsengineers.com; jay.martin@kcpl.com;**

Project Description: **KCPL - LaCygne Generating Stat**

City/State Collected: LaCygne KS

Please Circle: PT MT CT ET

Phone: **913-681-0030**
Fax: **913-681-0012**

Client Project # **27217233.19**

Lab Project # **AQUAOPKS-LACYGNE**

Collected by (print): JASON FRANKS

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ____ Y ✓

Rush? (Lab MUST Be Notified)
- ____ Same Day
- ____ Five Day
- ____ Next Day
- ____ 5 Day (Rad Only)
- ____ Two Day
- ____ 10 Day (Rad Only)
- ____ Three Day

Quote #

Date Results Needed

SDG # 1132586

D120

Acctnum: **AQUAOPKS**
Template: **T136276**
Prelogin: **P725643**
PM: **206 - Jeff Carr**
PB:
Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Boron - 6010 250mlHDPE-HNO3	Calcium - 6010 250mlHDPE-HNO3 Ca	Chloride 125mlHDPE-NoPres	Sulfate 125mlHDPE-NoPres	Remarks	Sample # (lab only)
MW-14R	GRAB	GW		8/23/19	1225	1			X			-1
DUPLICATE 1		GW			1225	1			X			-2
MW-14R MS/MSD		GW			1225	1			X			
MW-601		GW			1305	1				X		-3
MW-701		GW			1150	1		X				-4
MW-704		GW			1120	1			X			-5
MW-706		GW			1040	1				X		-6
DUPLICATE 3		GW			1040	1				X		-7
MW-706 MS/MSD		GW			1040	1				X		
MW-804		GW		8/22/19	1605	1	X					-8

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other__________

Remarks:

pH ________ Temp ________

Flow ________ Other ________

Samples returned via:
__ UPS __ FedEx __ Courier __________

Tracking # 4510 1661 8644

Sample Receipt Checklist
COC Seal Present/Intact: ✓NP __Y __N
COC Signed/Accurate: ✓Y __N
Bottles arrive intact: ✓Y __N
Correct bottles used: ✓Y __N
Sufficient volume sent: ✓Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: ✓Y __N
RAD Screen <0.5 mR/hr: ✓Y __N

Relinquished by : (Signature)	Date: 8/23/19	Time: 1436	Received by: (Signature) 8-23-19 1436	Trip Blank Received: Yes / [✓ No] HCL / MeoH TBR
Relinquished by : (Signature) Alan Wilson	Date: 8/23/19	Time: 1800	Received by: (Signature)	Temp: A3BF °C 4.3±0=4.3 Bottles Received: 16
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 824 Time: 0845

If preservation required by Login: Date/Time

Hold:

Condition: NCF / [✓ OK]

SCS Engineers - KS

8575 West 110th Street
Suite 100
Overland Park, KS 66210

Billing Information:

Accounts Payable
8575 West 110th Street
Suite 100
Overland Park, KS 66210

Pres Chk

Chain of Custody Page 2 of 2

National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

Report to: **Jason Franks**

Email To: **jfranks@scsengineers.com; jay.martin@kcpl.com;**

Project Description: **KCPL - LaCygne Generating Stat**

City/State Collected: La Cygne, KS

Please Circle: PT MT CT ET

Phone: **913-681-0030**
Fax: **913-681-0012**

Client Project # **27217233.19**

Lab Project # **AQUAOPKS-LACYGNE**

Collected by (print): JASON R FRANK

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N____ Y ✓

Rush? (Lab MUST Be Notified)
____ Same Day
____ Next Day
____ Two Day
____ Three Day
____ Five Day
____ 5 Day (Rad Only)
____ 10 Day (Rad Only)

Quote #

Date Results Needed

SDG # 1132586

Table #

Acctnum: **AQUAOPKS**
Template: **T136276**
Prelogin: **P725643**
PM: **206 - Jeff Carr**
PB:
Shipped Via:

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Boron - 6010 250mlHDPE-HNO3	Calcium - 6010 250mlHDPE-HNO3 <2	Chloride 125mlHDPE-NoPres	Sulfate 125mlHDPE-NoPres							Remarks	Sample # (lab only)
DUPLICATE 2	GRAB	GW		8/22/19	1605	1	X											-9
MW-804 MS/MSD		GW			1605	1	X											
MW-805		GW			1535	1	X											-10
MW-903		GW			1500	1		X										-11
DUPLICATE 4		GW			1500	1		X										-12
MW-903 MS/MSD		GW			1500	1		X										

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other________

Remarks:

pH ______ Temp ________
Flow ______ Other ________

Samples returned via:
__ UPS __ FedEx __ Courier ________

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: ✓NP __Y __N
COC Signed/Accurate: ✓Y __N
Bottles arrive intact: ✓Y __N
Correct bottles used: ✓Y __N
Sufficient volume sent: ✓Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: ✓Y __N
RAD Screen <0.5 mR/hr: ✓Y __N

Relinquished by : (Signature) Date: 8/23/19 Time: 1436 Received by: (Signature) 8-23-19 1436

Trip Blank Received: Yes / [✓ No] 6
HCL / MeoH
TBR

Relinquished by : (Signature) Date: 8/23/19 Time: 1800 Received by: (Signature)

Temp: A3BF °C 4.7±0=4.3 Bottles Received: 16

If preservation required by Login: Date/Time

Relinquished by : (Signature) Date: Time: Received for lab by: (Signature)

Date: 8/24 Time: 0845

Hold:

Condition: NCF / [✓ OK]

ATTACHMENT 1-6

November 2019 Sampling Event Laboratory Report

ANALYTICAL REPORT

November 18, 2019

SCS Engineers - KS

Sample Delivery Group:	L1159236
Samples Received:	11/09/2019
Project Number:	27217233.19
Description:	Evergy - LaCygne Generating Station

Report To:

Jason Franks
8575 West 110th Street
Suite 100
Overland Park, KS 66210

Entire Report Reviewed By:

Jeff Carr
Project Manager

TABLE OF CONTENTS

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

MW-10 L1159236-01 GW

Collected by	Collected date/time	Received date/time
Jason R Franks	11/07/19 12:25	11/09/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1378170	1	11/13/19 07:13	11/13/19 08:12	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1379280	1	11/13/19 04:31	11/13/19 04:31	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1380944	1	11/15/19 15:48	11/16/19 11:20	TRB	Mt. Juliet, TN

MW-13 L1159236-02 GW

Collected by	Collected date/time	Received date/time
Jason R Franks	11/07/19 13:50	11/09/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1380360	1	11/14/19 23:01	11/14/19 23:39	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1379280	1	11/13/19 04:46	11/13/19 04:46	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1379280	50	11/13/19 05:02	11/13/19 05:02	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1380944	1	11/15/19 15:48	11/16/19 11:22	TRB	Mt. Juliet, TN

MW-14R L1159236-03 GW

Collected by	Collected date/time	Received date/time
Jason R Franks	11/07/19 15:00	11/09/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1378170	1	11/13/19 07:13	11/13/19 08:12	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1379280	1	11/13/19 05:18	11/13/19 05:18	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1380944	1	11/15/19 15:48	11/16/19 11:25	TRB	Mt. Juliet, TN

MW-15 L1159236-04 GW

Collected by	Collected date/time	Received date/time
Jason R Franks	11/07/19 15:30	11/09/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1378170	1	11/13/19 07:13	11/13/19 08:12	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1379280	1	11/13/19 06:06	11/13/19 06:06	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1379280	5	11/13/19 10:10	11/13/19 10:10	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1380944	1	11/15/19 15:48	11/16/19 11:28	TRB	Mt. Juliet, TN

MW-601 L1159236-05 GW

Collected by	Collected date/time	Received date/time
Jason R Franks	11/07/19 12:30	11/09/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1378171	1	11/10/19 18:30	11/10/19 19:05	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1379280	1	11/13/19 06:22	11/13/19 06:22	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1379280	5	11/13/19 06:38	11/13/19 06:38	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1380944	1	11/15/19 15:48	11/16/19 11:31	TRB	Mt. Juliet, TN

MW-602 L1159236-06 GW

Collected by	Collected date/time	Received date/time
Jason R Franks	11/07/19 14:30	11/09/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1378171	1	11/10/19 18:30	11/10/19 19:05	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1379280	1	11/13/19 06:54	11/13/19 06:54	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1380944	1	11/15/19 15:48	11/16/19 11:33	TRB	Mt. Juliet, TN

MW-801 L1159236-07 GW

Collected by	Collected date/time	Received date/time
Jason R Franks	11/07/19 15:00	11/09/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1378171	1	11/10/19 18:30	11/10/19 19:05	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1379280	1	11/13/19 07:10	11/13/19 07:10	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1380944	1	11/15/19 15:48	11/16/19 10:56	TRB	Mt. Juliet, TN

MW-802 L1159236-08 GW

Collected by	Collected date/time	Received date/time
Jason R Franks	11/07/19 15:45	11/09/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1378171	1	11/10/19 18:30	11/10/19 19:05	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1379280	1	11/13/19 07:57	11/13/19 07:57	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1380944	1	11/15/19 15:48	11/16/19 11:36	TRB	Mt. Juliet, TN

MW-803 L1159236-09 GW

Collected by	Collected date/time	Received date/time
Jason R Franks	11/07/19 16:05	11/09/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1378171	1	11/10/19 18:30	11/10/19 19:05	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1379280	1	11/13/19 08:13	11/13/19 08:13	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1380944	1	11/15/19 15:48	11/16/19 11:39	TRB	Mt. Juliet, TN

MW-804 L1159236-10 GW

Collected by	Collected date/time	Received date/time
Jason R Franks	11/07/19 16:20	11/09/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1378171	1	11/10/19 18:30	11/10/19 19:05	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1379280	1	11/13/19 08:29	11/13/19 08:29	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1380944	1	11/15/19 15:48	11/16/19 11:42	TRB	Mt. Juliet, TN

MW-805 L1159236-11 GW

Collected by	Collected date/time	Received date/time
Jason R Franks	11/07/19 16:55	11/09/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1378171	1	11/10/19 18:30	11/10/19 19:05	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1379280	1	11/13/19 09:33	11/13/19 09:33	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1379280	10	11/13/19 09:49	11/13/19 09:49	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1380944	1	11/15/19 15:48	11/16/19 11:44	TRB	Mt. Juliet, TN

DUPLICATE 2 L1159236-12 GW

Collected by	Collected date/time	Received date/time
Jason R Franks	11/07/19 15:00	11/09/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1378171	1	11/10/19 18:30	11/10/19 19:05	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1379464	1	11/13/19 08:44	11/13/19 08:44	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1380944	1	11/15/19 15:48	11/16/19 11:52	TRB	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jeff Carr
Project Manager

Gravimetric Analysis by Method 2540 C-2011

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Dissolved Solids	570000		10000	1	11/13/2019 08:12	WG1378170

Wet Chemistry by Method 9056A

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Chloride	52200		1000	1	11/13/2019 04:31	WG1379280
Fluoride	360		100	1	11/13/2019 04:31	WG1379280
Sulfate	5640		5000	1	11/13/2019 04:31	WG1379280

Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Boron	898		200	1	11/16/2019 11:20	WG1380944
Calcium	56200		1000	1	11/16/2019 11:20	WG1380944

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

MW-13

Collected date/time: 11/07/19 13:50

SAMPLE RESULTS - 02

L1159236

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Gravimetric Analysis by Method 2540 C-2011

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Dissolved Solids	2430000		25000	1	11/14/2019 23:39	WG1380360

Wet Chemistry by Method 9056A

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Chloride	15700		1000	1	11/13/2019 04:46	WG1379280
Fluoride	182		100	1	11/13/2019 04:46	WG1379280
Sulfate	1450000		250000	50	11/13/2019 05:02	WG1379280

Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Boron	458		200	1	11/16/2019 11:22	WG1380944
Calcium	340000		1000	1	11/16/2019 11:22	WG1380944

MW-14R

Collected date/time: 11/07/19 15:00

SAMPLE RESULTS - 03

L1159236

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	509000		10000	1	11/13/2019 08:12	WG1378170

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	5770		1000	1	11/13/2019 05:18	WG1379280
Fluoride	303		100	1	11/13/2019 05:18	WG1379280
Sulfate	59700		5000	1	11/13/2019 05:18	WG1379280

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	807		200	1	11/16/2019 11:25	WG1380944
Calcium	55800		1000	1	11/16/2019 11:25	WG1380944

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	692000		13300	1	11/13/2019 08:12	WG1378170

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	11300		1000	1	11/13/2019 06:06	WG1379280
Fluoride	250		100	1	11/13/2019 06:06	WG1379280
Sulfate	175000		25000	5	11/13/2019 10:10	WG1379280

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	282		200	1	11/16/2019 11:28	WG1380944
Calcium	104000		1000	1	11/16/2019 11:28	WG1380944

SAMPLE RESULTS - 05

L1159236

Gravimetric Analysis by Method 2540 C-2011

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Dissolved Solids	900000		20000	1	11/10/2019 19:05	WG1378171

Wet Chemistry by Method 9056A

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Chloride	164000		5000	5	11/13/2019 06:38	WG1379280
Fluoride	1550		100	1	11/13/2019 06:22	WG1379280
Sulfate	6330		5000	1	11/13/2019 06:22	WG1379280

Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Boron	1820		200	1	11/16/2019 11:31	WG1380944
Calcium	17200		1000	1	11/16/2019 11:31	WG1380944

SAMPLE RESULTS - 06

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	569000		10000	1	11/10/2019 19:05	WG1378171

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	16600		1000	1	11/13/2019 06:54	WG1379280
Fluoride	1070		100	1	11/13/2019 06:54	WG1379280
Sulfate	24500		5000	1	11/13/2019 06:54	WG1379280

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	2300		200	1	11/16/2019 11:33	WG1380944
Calcium	24900		1000	1	11/16/2019 11:33	WG1380944

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	785000		13300	1	11/10/2019 19:05	WG1378171

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	92000		1000	1	11/13/2019 07:10	WG1379280
Fluoride	951		100	1	11/13/2019 07:10	WG1379280
Sulfate	ND		5000	1	11/13/2019 07:10	WG1379280

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	2190	O1	200	1	11/16/2019 10:56	WG1380944
Calcium	27500	O1	1000	1	11/16/2019 10:56	WG1380944

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	627000		13300	1	11/10/2019 19:05	WG1378171

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	33800		1000	1	11/13/2019 07:57	WG1379280
Fluoride	952		100	1	11/13/2019 07:57	WG1379280
Sulfate	ND		5000	1	11/13/2019 07:57	WG1379280

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	2440		200	1	11/16/2019 11:36	WG1380944
Calcium	28000		1000	1	11/16/2019 11:36	WG1380944

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	563000		10000	1	11/10/2019 19:05	WG1378171

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	49400		1000	1	11/13/2019 08:13	WG1379280
Fluoride	563		100	1	11/13/2019 08:13	WG1379280
Sulfate	24000		5000	1	11/13/2019 08:13	WG1379280

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	2070		200	1	11/16/2019 11:39	WG1380944
Calcium	43100		1000	1	11/16/2019 11:39	WG1380944

MW-804

Collected date/time: 11/07/19 16:20

SAMPLE RESULTS - 10

L1159236

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Gravimetric Analysis by Method 2540 C-2011

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Dissolved Solids	501000		10000	1	11/10/2019 19:05	WG1378171

Wet Chemistry by Method 9056A

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Chloride	29000		1000	1	11/13/2019 08:29	WG1379280
Fluoride	430		100	1	11/13/2019 08:29	WG1379280
Sulfate	21900		5000	1	11/13/2019 08:29	WG1379280

Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Boron	1630		200	1	11/16/2019 11:42	WG1380944
Calcium	68200		1000	1	11/16/2019 11:42	WG1380944

Gravimetric Analysis by Method 2540 C-2011

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Dissolved Solids	2070000		50000	1	11/10/2019 19:05	WG1378171

Wet Chemistry by Method 9056A

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Chloride	492000		10000	10	11/13/2019 09:49	WG1379280
Fluoride	130		100	1	11/13/2019 09:33	WG1379280
Sulfate	730000		50000	10	11/13/2019 09:49	WG1379280

Metals (ICP) by Method 6010B

	Result	Qualifier	RDL	Dilution	Analysis	Batch
Analyte	ug/l		ug/l		date / time	
Boron	525		200	1	11/16/2019 11:44	WG1380944
Calcium	475000		1000	1	11/16/2019 11:44	WG1380944

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	740000		13300	1	11/10/2019 19:05	WG1378171

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	91700		1000	1	11/13/2019 08:44	WG1379464
Fluoride	1080		100	1	11/13/2019 08:44	WG1379464
Sulfate	ND		5000	1	11/13/2019 08:44	WG1379464

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	2210		200	1	11/16/2019 11:52	WG1380944
Calcium	27600		1000	1	11/16/2019 11:52	WG1380944

Method Blank (MB)

(MB) R3472026-1 11/13/19 08:12

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Dissolved Solids	U		2820	10000

L1159196-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1159196-03 11/13/19 08:12 • (DUP) R3472026-3 11/13/19 08:12

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1870000	1900000	1	1.33		5

L1159236-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1159236-02 11/13/19 08:12 • (DUP) R3472026-4 11/13/19 08:12

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	2030000	2370000	1	15.2	J3	5

Laboratory Control Sample (LCS)

(LCS) R3472026-2 11/13/19 08:12

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800000	8580000	97.5	85.0-115	

Method Blank (MB)

(MB) R3470717-1 11/10/19 19:05

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Dissolved Solids	U		2820	10000

L1159236-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1159236-05 11/10/19 19:05 • (DUP) R3470717-3 11/10/19 19:05

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	900000	890000	1	1.12		5

L1159238-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1159238-08 11/10/19 19:05 • (DUP) R3470717-4 11/10/19 19:05

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	914000	958000	1	4.70		5

Laboratory Control Sample (LCS)

(LCS) R3470717-2 11/10/19 19:05

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800000	8410000	95.6	85.0-115	

Method Blank (MB)

(MB) R3472419-1 11/14/19 23:39

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Dissolved Solids	U		2820	10000

L1159236-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1159236-02 11/14/19 23:39 • (DUP) R3472419-3 11/14/19 23:39

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	2430000	2510000	1	3.04		5

Laboratory Control Sample (LCS)

(LCS) R3472419-2 11/14/19 23:39

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800000	8860000	101	85.0-115	

Method Blank (MB)

(MB) R3471427-1 11/12/19 23:17

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Chloride	U		51.9	1000
Fluoride	U		9.90	100
Sulfate	U		77.4	5000

L1159196-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1159196-01 11/13/19 01:20 • (DUP) R3471427-3 11/13/19 01:36

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	23200	23100	1	0.397		15
Fluoride	481	480	1	0.167		15
Sulfate	21200	21100	1	0.387		15

L1159236-10 Original Sample (OS) • Duplicate (DUP)

(OS) L1159236-10 11/13/19 08:29 • (DUP) R3471427-8 11/13/19 09:17

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	29000	29000	1	0.0934		15
Fluoride	430	434	1	0.810		15
Sulfate	21900	21900	1	0.227		15

Laboratory Control Sample (LCS)

(LCS) R3471427-2 11/12/19 23:33

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	38700	96.9	80.0-120	
Fluoride	8000	8000	100	80.0-120	
Sulfate	40000	38900	97.2	80.0-120	

L1159196-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1159196-04 11/13/19 03:11 • (MS) R3471427-4 11/13/19 03:27 • (MSD) R3471427-5 11/13/19 03:43

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	32600	81300	80400	97.4	95.6	1	80.0-120			1.10	15
Fluoride	5000	369	5100	5170	94.7	96.1	1	80.0-120			1.33	15
Sulfate	50000	78300	125000	125000	92.6	94.0	1	80.0-120	E	E	0.553	15

L1159236-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1159236-07 11/13/19 07:10 • (MS) R3471427-6 11/13/19 07:26 • (MSD) R3471427-7 11/13/19 07:41

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	92000	136000	137000	89.0	89.9	1	80.0-120	E	E	0.344	15
Fluoride	5000	951	5760	5850	96.2	98.0	1	80.0-120			1.52	15
Sulfate	50000	ND	47800	47900	93.6	93.8	1	80.0-120			0.216	15

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Method Blank (MB)

(MB) R3471519-1 11/13/19 01:32

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Chloride	U		51.9	1000
Fluoride	U		9.90	100
Sulfate	U		77.4	5000

L1159877-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1159877-01 11/13/19 02:15 • (DUP) R3471519-3 11/13/19 02:30

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Chloride	11300	11100	1	1.02		15
Fluoride	502	502	1	0.0199		15
Sulfate	24100	24000	1	0.451		15

L1159852-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1159852-01 11/13/19 10:25 • (DUP) R3471519-6 11/13/19 10:39

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Chloride	1240	1230	1	1.45		15
Fluoride	ND	67.7	1	0.000		15
Sulfate	ND	1430	1	0.000		15

Laboratory Control Sample (LCS)

(LCS) R3471519-2 11/13/19 01:46

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Chloride	40000	39400	98.5	80.0-120	
Fluoride	8000	7970	99.6	80.0-120	
Sulfate	40000	40300	101	80.0-120	

L1159877-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1159877-01 11/13/19 02:15 • (MS) R3471519-4 11/13/19 02:44 • (MSD) R3471519-5 11/13/19 02:58

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	11300	58100	58900	93.7	95.2	1	80.0-120			1.34	15
Fluoride	5000	502	5140	5210	92.7	94.1	1	80.0-120			1.42	15
Sulfate	50000	24100	70800	71400	93.3	94.6	1	80.0-120			0.866	15

L1159852-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1159852-01 11/13/19 10:25 • (MS) R3471519-7 11/13/19 10:54

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	1240	51400	100	1	80.0-120	
Fluoride	5000	ND	5050	99.5	1	80.0-120	
Sulfate	50000	ND	52600	102	1	80.0-120	

Method Blank (MB)

(MB) R3472666-1 11/16/19 10:48

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Boron	U		12.6	200
Calcium	U		46.3	1000

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3472666-2 11/16/19 10:51 • (LCSD) R3472666-3 11/16/19 10:53

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Boron	1000	946	951	94.6	95.1	80.0-120			0.489	20
Calcium	10000	9710	9740	97.1	97.4	80.0-120			0.322	20

L1159236-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1159236-07 11/16/19 10:56 • (MS) R3472666-5 11/16/19 11:01 • (MSD) R3472666-6 11/16/19 11:04

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Boron	1000	2190	3100	3080	90.7	88.5	1	75.0-125			0.705	20
Calcium	10000	27500	37500	37400	101	99.2	1	75.0-125			0.355	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J3	The associated batch QC was outside the established quality control range for precision.
O1	The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference.

ACCREDITATIONS & LOCATIONS

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1,6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1,4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

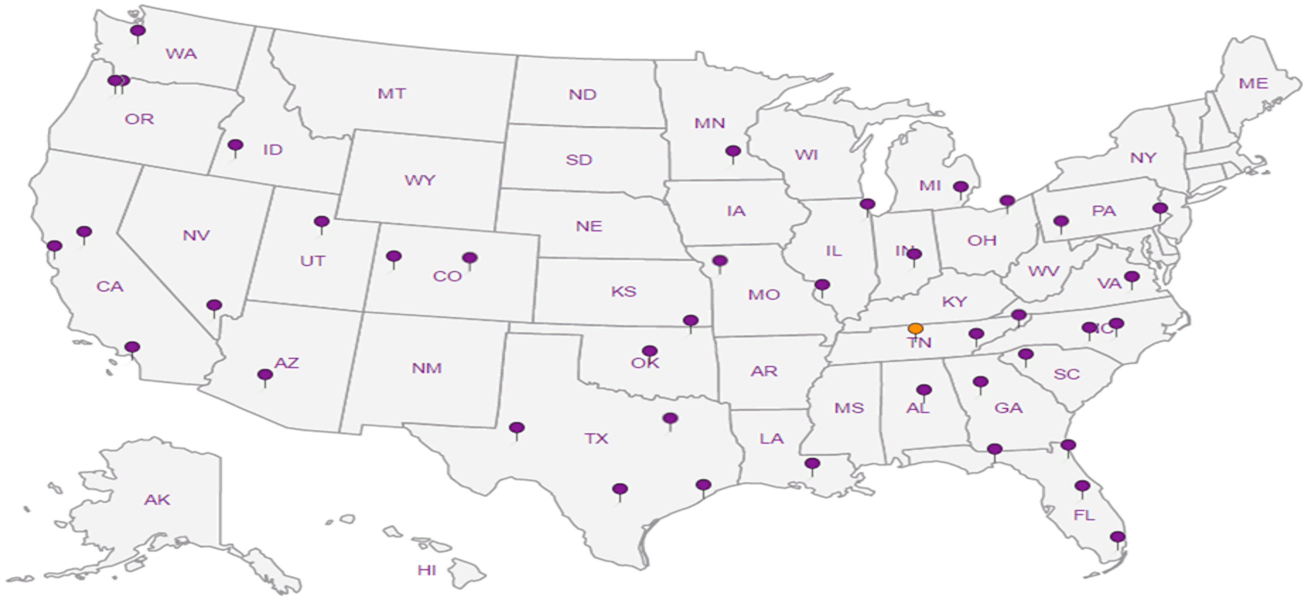
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



SCS Engineers - KS

8575 West 110th Street
Suite 100
Overland Park, KS 66210

Billing Information:

Accounts Payable
8575 West 110th Street
Suite 100
Overland Park, KS 66210

Pres Chk

Report to:
Jason Franks

Email To: **jfranks@scsengineers.com;**
jay.martin@kcpl.com;

Project Description: EVERGY ~~KCPL~~ **- LaCygne Generating Stat**

City/State Collected: La Cygne, KS

Please Circle: PT MT [✓ CT] ET

Phone: **913-681-0030**
Fax: **913-681-0012**

Client Project # **27217233.19**

Lab Project # **AQUAOPKS-LACYGNE**

Collected by (print): JASON R. FRANKS

Site/Facility ID #

P.O. #

Collected by (signature): J R. F

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Immediately Packed on Ice N ___ Y ✓

Analysis / Container / Preservative

Chain of Custody Page 1 of 2

National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

SDG # L1159236

Ta B227

Acctnum: AQUA

Template: **T157983**

Prelogin: **P736954**

PM: **206 - Jeff Carr**

PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Anions (Cld, F, SO4) 125mlHDPE-NoPres	B, Ca - 6010 250mlHDPE-HNO3	TDS 250mlHDPE-NoPres								Remarks	Sample # (lab only)
MW-10	GRAB	GW	–	11/7/19	1225	3	X	X	X									-01
MW-13		GW	–		1350	3	X	X	X									-02
MW-14R		GW	–		1500	3	X	X	X									-03
MW-15		GW	–		1530	3	X	X	X									-04
MW-601		GW	–		1230	3	X	X	X									-05
MW-602		GW	–		1430	3	X	X	X									-06
MW-801		GW	–		1500	3	X	X	X									-07
MW-802		GW	–		1545	3	X	X	X									-08
MW-803		GW	–		1605	3	X	X	X									-09
MW-804		GW	–		1620	3	X	X	X									-10

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other ________

Remarks:

pH _______ Temp _______

Flow _______ Other _______

Sample Receipt Checklist
COC Seal Present/Intact: ☒ NP __Y __N
COC Signed/Accurate: ✓Y __N
Bottles arrive intact: ✓Y __N
Correct bottles used: ✓Y __N
Sufficient volume sent: ✓Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: ✓Y __N
RAD Screen <0.5 mR/hr: ☒Y __N

Samples returned via:
__ UPS __ FedEx __ Courier ________

Tracking #

Relinquished by : (Signature) J R. F | Date: 11/8/19 | Time: 1547 | Received by: (Signature) Alan Nelson 11-8-19 1547

Trip Blank Received: Yes / No
HCL / MeoH
TBR

Relinquished by : (Signature) Alan Nelson | Date: 11/8/19 | Time: 1800 | Received by: (Signature)

Temp: 2.3-.2=2.1 AI CK °C Bottles Received: 39

If preservation required by Login: Date/Time

Relinquished by : (Signature) | Date: | Time: | Received for lab by: (Signature)

Date: 11/9 Time: 0845

Hold:

Condition: NCF / [✓ OK]

SCS Engineers - KS

8575 West 110th Street
Suite 100
Overland Park, KS 66210

Billing Information:

Accounts Payable
8575 West 110th Street
Suite 100
Overland Park, KS 66210

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page 2 of 2

National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

Report to: **Jason Franks**

Email To: **jfranks@scsengineers.com; jay.martin@kcpl.com;**

Project Description: **~~KCPL~~ EVERGY - LaCygne Generating Stat**

City/State Collected: LA CYGNE, KS

Please Circle: PT MT [✓ CT] ET

Phone: **913-681-0030**
Fax: **913-681-0012**

Client Project # **27217233.19**

Lab Project # **AQUAOPKS-LACYGNE**

SDG # L1159236

Table #

Acctnum: **AQUAOPKS**
Template: **T157983**
Prelogin: **P736954**
PM: **206 - Jeff Carr**
PB:
Shipped Via:

Collected by (print): JASON R. FRANKS

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ____ Y ✓

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day

Quote #

Date Results Needed

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Anions (Cld, F, SO4) 125mlHDPE-NoPres	B, Ca - 6010 250mlHDPE-HNO3	TDS 250mlHDPE-NoPres							Remarks	Sample # (lab only)
MW-805	GRAB	**GW**	–	11/7/19	1655	**3**	**X**	**X**	**X**								-11
DUPLICATE 2	|	**GW**	–		1500	**3**	**X**	**X**	**X**								-12
801 **MS/MSD**	|	**GW**	–	|	1500	**3**	**X**	**X**	**X**								-07

* Matrix:
SS - Soil **AIR** - Air **F** - Filter
GW - Groundwater **B** - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other________

Remarks:

pH _______ Temp _______

Flow _______ Other _______

Samples returned via:
__ UPS __ FedEx __ Courier __________

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: ☒ NP __Y __N
COC Signed/Accurate: ✓Y __N
Bottles arrive intact: ✓Y __N
Correct bottles used: ✓Y __N
Sufficient volume sent: ✓Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: ✓Y __N
RAD Screen <0.5 mR/hr: ☒Y __N

Relinquished by : (Signature)	Date: 11/8/19	Time: 1547	Received by: (Signature) 11-8-19 1547	Trip Blank Received: Yes / No HCL / MeoH TBR	
Relinquished by : (Signature)	Date: 11/8/19	Time: 1800	Received by: (Signature)	Temp: 2.3-.2=2.1 °C A3 CK Bottles Received: 39	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 11/9 Time: 0845	Hold:

Condition: NCF / [✓ OK]

ATTACHMENT 2

Statistical Analyses

ATTACHMENT 2-1

Fall 2018 Semiannual Detection Monitoring Statistical Analyses

MEMORANDUM

April 11, 2019

To: **La Cygne Generating Station**
25166 East 2200 Road
La Cygne, Kansas 66040
Kansas City Power & Light Company

JOHN R. ROCKHOLD
LICENSED
29
4-11-19
KANSAS
PROFESSIONAL GEOLOGIST

From: **SCS Engineers**

RE: **Determination of Statistically Significant Increases –**
CCR Landfill and Lower AQC Impoundment
Fall 2018 Semiannual Detection Monitoring 40 CFR 257.94

Statistical analysis of monitoring data from the groundwater monitoring system for the CCR Landfill and Lower AQC Impoundment at the La Cygne Generating Station has been completed in substantial compliance with the “Statistical Method Certification by A Qualified Professional Engineer” dated October 12, 2017. Detection monitoring groundwater samples were collected on November 30, 2018. Review and validation of the results from the November 2018 Detection Monitoring Event was completed on January 12, 2019, which constitutes completion and finalization of detection monitoring laboratory analyses. A statistical analysis was then conducted to determine whether there was a statistically significant increase (SSI) over background values for each constituent listed in Appendix III to Part 257-Constituents for Detection Monitoring. Two rounds of verification sampling were conducted for certain constituents on January 14, 2019 and March 11, 2019.

The completed statistical evaluation identified four Appendix III constituents above their respective prediction limit in monitoring wells MW-13, MW-601, MW-804, and MW-805.

The prediction limit for boron in monitoring well MW-804 is 1.653 mg/L. The detection monitoring sample was reported at 1.75 mg/L. The first verification re-sample was collected on January 14, 2019 with a result of 1.73 mg/L. The second verification re-sample was collected on March 11, 2019 with a result of 1.74 mg/L.

The prediction limit for calcium in monitoring well MW-805 is 448.6 mg/L. The detection monitoring sample was reported at 455 mg/L. The first verification re-sample was collected on January 14, 2019 with a result of 473 mg/L. The second verification re-sample was collected on March 11, 2019 with a result of 468 mg/L.

The prediction limit for fluoride in upgradient monitoring well MW-13 is 0.1905 mg/L. The detection monitoring sample was reported at 0.191 mg/L. The first verification re-sample was collected on January 14, 2019 with a result of 0.208 mg/L. The second verification re-sample was collected on March 11, 2019 with a result of 0.194 mg/L.

The prediction limit for sulfate in upgradient monitoring well MW-601 is 5.0 mg/L. The detection monitoring sample was reported at 5.98 mg/L. The first verification re-sample was collected on

January 14, 2019 with a result of 5.97 mg/L. The second verification re-sample was collected on March 11, 2019 with a result of 5.89 mg/L.

Therefore, in accordance with the Statistical Method Certification, the detection monitoring samples for boron from monitoring well MW-804, for calcium from monitoring well MW-805, for fluoride in upgradient monitoring well MW-13, and for sulfate in upgradient monitoring well MW-601 exceed their respective prediction limits and are confirmed statistically significant increases (SSIs) over background.

Determination: A statistical evaluation was completed for all Appendix III detection monitoring constituents in accordance with the certified statistical method. The statistical evaluation identified four SSIs above the background prediction limit for boron in monitoring well MW-804, for calcium in monitoring well MW-805, for fluoride in upgradient monitoring well MW-13, and for sulfate in upgradient monitoring well MW-601.

Attached to this memorandum are the following backup information:

Attachment 1: Sanitas™ Output:

Statistical evaluation output from Sanitas™ for the prediction limit analysis. This includes prediction limit plots, prediction limit background data, detection sample result, 1st verification re-sample result (when applicable), 2nd verification re-sample result (when applicable), extra sample results for pH because pH is collected as part of the sampling procedure, and a Prediction Limit summary table. Output documentation includes the analytical data used for the statistical analyses.

Attachment 2: Sanitas™ Configuration Settings:

Screen shots of the applicable Sanitas™ configuration settings for the statistical prediction limit analysis. This includes data configuration, output configuration, prediction limit configuration and other tests configuration.

Revision Number	Revision Date	Attachment Revised	Summary of Revisions

ATTACHMENT 1

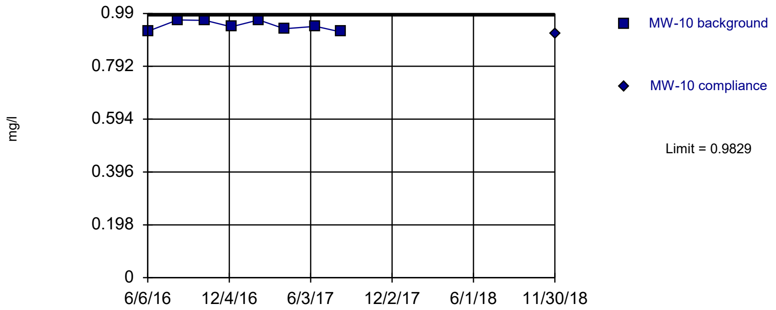
Sanitas^{TM} Output

Sanitas™ v.9.6.12 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.9444, Std. Dev.=0.01881, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8672, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

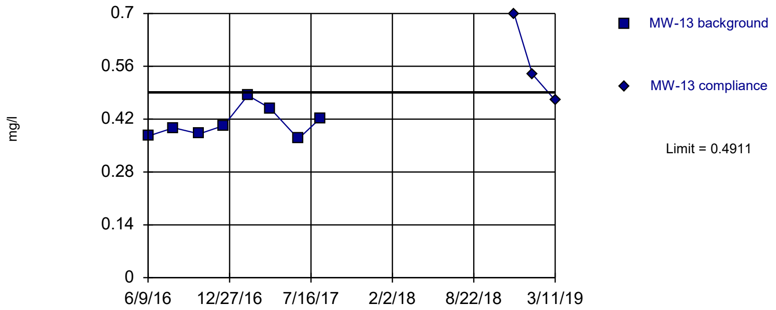
Constituent: BORON Analysis Run 3/29/2019 4:42 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Sanitas™ v.9.6.12 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.4098, Std. Dev.=0.03972, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9147, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: BORON Analysis Run 3/29/2019 4:42 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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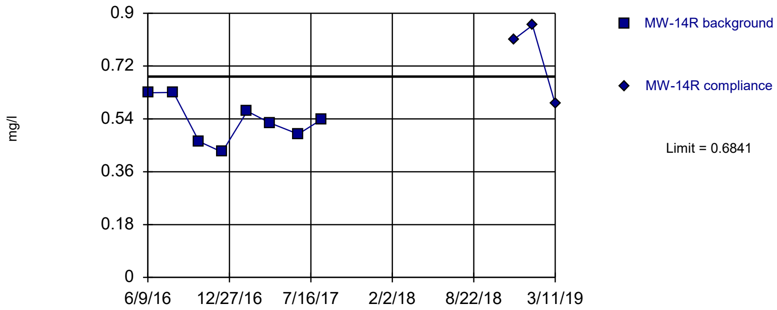
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.5333, Std. Dev.=0.07362, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9474, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: BORON Analysis Run 3/29/2019 4:42 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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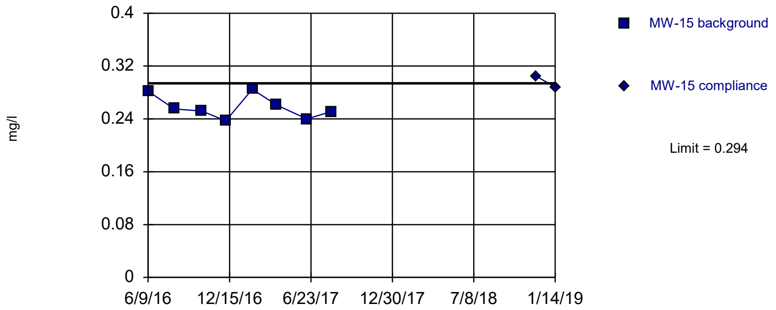
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.2579, Std. Dev.=0.01762, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9011, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: BORON Analysis Run 3/29/2019 4:42 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: BORON (mg/l) Analysis Run 3/29/2019 4:46 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-10	MW-10
6/6/2016	0.923	
8/11/2016	0.966	
10/12/2016	0.964	
12/9/2016	0.94	
2/8/2017	0.966	
4/6/2017	0.933	
6/15/2017	0.942	
8/10/2017	0.921	
11/30/2018		0.914

Prediction Limit

Constituent: BORON (mg/l)   Analysis Run 3/29/2019 4:46 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-13	MW-13	
6/9/2016	0.375		
8/11/2016	0.397		
10/13/2016	0.381		
12/13/2016	0.403		
2/10/2017	0.483		
4/6/2017	0.449		
6/15/2017	0.368		
8/8/2017	0.422		
11/30/2018		0.698	
1/14/2019		0.539	1st verification re-sample
3/11/2019		0.47	2nd verification re-sample

Prediction Limit

Constituent: BORON (mg/l) Analysis Run 3/29/2019 4:46 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-14R	MW-14R	
6/9/2016	0.629		
8/11/2016	0.63		
10/13/2016	0.463		
12/9/2016	0.427		
2/9/2017	0.566		
4/7/2017	0.526		
6/15/2017	0.488		
8/10/2017	0.537		
11/30/2018		0.812	
1/14/2019		0.859	1st verification re-sample
3/11/2019		0.591	2nd verification re-sample

Prediction Limit

Constituent: BORON (mg/l)   Analysis Run 3/29/2019 4:46 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-15	MW-15	
6/9/2016	0.282		
8/9/2016	0.255		
10/12/2016	0.252		
12/7/2016	0.237		
2/7/2017	0.285		
4/5/2017	0.261		
6/14/2017	0.24		
8/10/2017	0.251		
11/30/2018		0.305	
1/14/2019		0.288	1st verification re-sample

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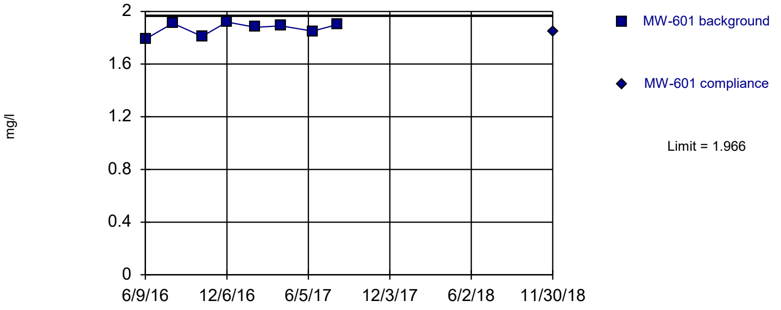
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1.869, Std. Dev.=0.04764, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9002, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: BORON Analysis Run 3/29/2019 4:42 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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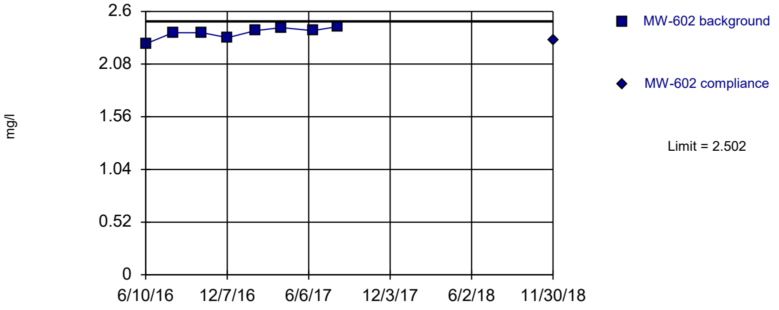
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=2.389, Std. Dev.=0.0554, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9009, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

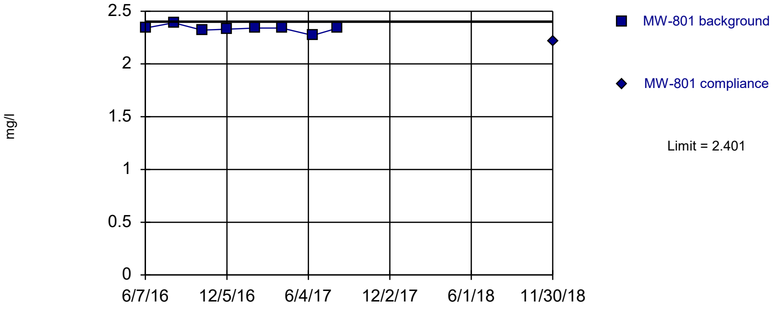
Constituent: BORON Analysis Run 3/29/2019 4:42 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Sanitas™ v.9.6.12 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=2.334, Std. Dev.=0.03292, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8582, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: BORON Analysis Run 3/29/2019 4:42 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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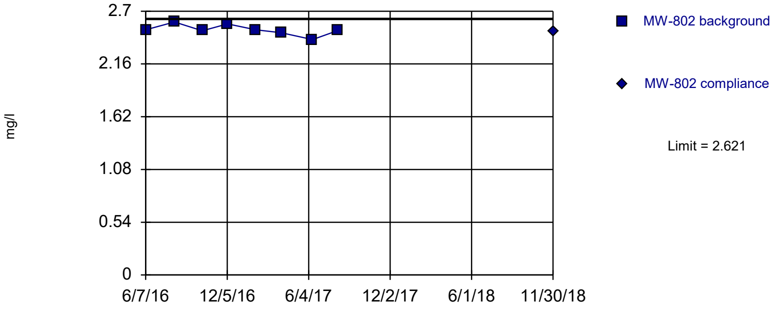
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=2.509, Std. Dev.=0.05489, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9257, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: BORON Analysis Run 3/29/2019 4:42 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: BORON (mg/l) Analysis Run 3/29/2019 4:46 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-601	MW-601
6/9/2016	1.79	
8/9/2016	1.91	
10/13/2016	1.81	
12/7/2016	1.92	
2/8/2017	1.88	
4/6/2017	1.89	
6/15/2017	1.85	
8/9/2017	1.9	
11/30/2018		1.85

Prediction Limit

Constituent: BORON (mg/l) Analysis Run 3/29/2019 4:46 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-602	MW-602
6/10/2016	2.28	
8/9/2016	2.39	
10/13/2016	2.39	
12/9/2016	2.34	
2/8/2017	2.41	
4/7/2017	2.44	
6/15/2017	2.41	
8/10/2017	2.45	
11/30/2018		2.32

Prediction Limit

Constituent: BORON (mg/l) Analysis Run 3/29/2019 4:46 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-801	MW-801
6/7/2016	2.34	
8/9/2016	2.39	
10/11/2016	2.32	
12/6/2016	2.33	
2/7/2017	2.34	
4/6/2017	2.34	
6/14/2017	2.27	
8/9/2017	2.34	
11/30/2018		2.21

Prediction Limit

Constituent: BORON (mg/l)   Analysis Run 3/29/2019 4:46 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-802	MW-802
6/7/2016	2.51	
8/10/2016	2.59	
10/11/2016	2.5	
12/6/2016	2.57	
2/7/2017	2.51	
4/4/2017	2.48	
6/13/2017	2.41	
8/7/2017	2.5	
11/30/2018		2.49

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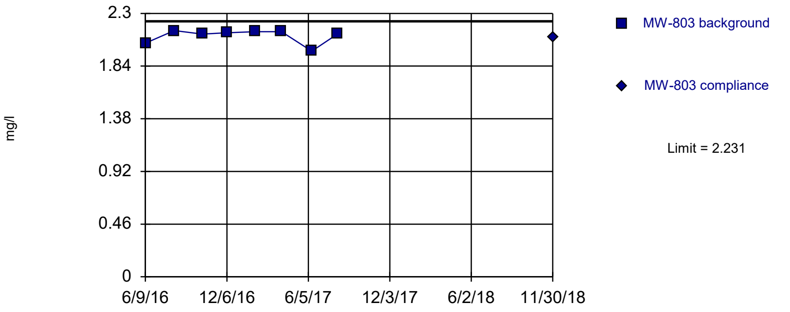
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=2.101, Std. Dev.=0.06312, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.75, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: BORON Analysis Run 3/29/2019 4:42 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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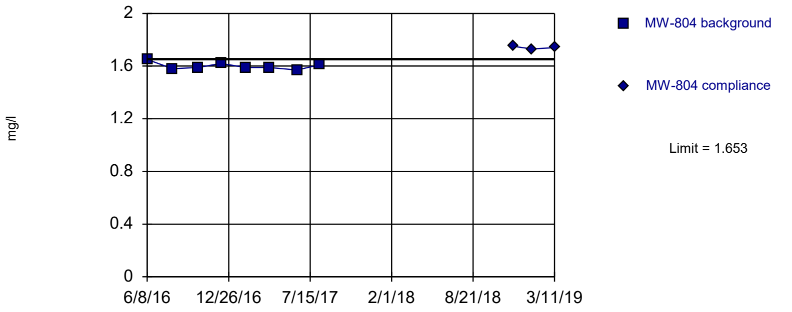
Exceeds Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1.6, Std. Dev.=0.02563, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.906, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

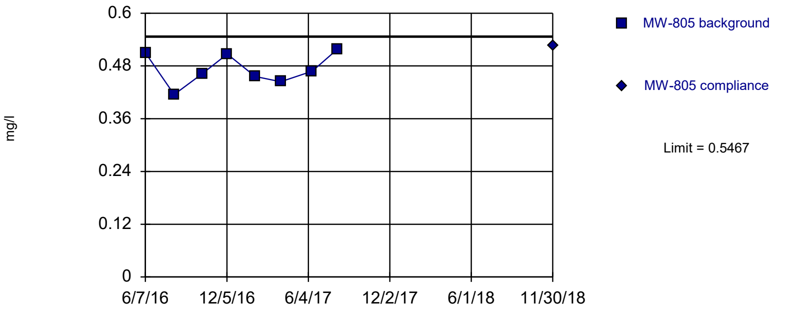
Constituent: BORON Analysis Run 3/29/2019 4:42 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Sanitas™ v.9.6.12 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.4725, Std. Dev.=0.03623, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9301, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

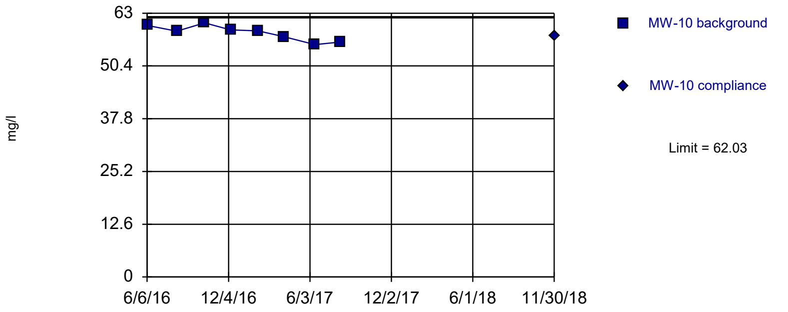
Constituent: BORON Analysis Run 3/29/2019 4:42 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Sanitas™ v.9.6.12 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=58.29, Std. Dev.=1.828, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9433, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: CALCIUM Analysis Run 3/29/2019 4:42 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: BORON (mg/l)   Analysis Run 3/29/2019 4:46 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-803	MW-803
6/9/2016	2.04	
8/12/2016	2.15	
10/13/2016	2.12	
12/6/2016	2.13	
2/8/2017	2.14	
4/7/2017	2.14	
6/13/2017	1.97	
8/9/2017	2.12	
11/30/2018		2.09

Prediction Limit

Constituent: BORON (mg/l) Analysis Run 3/29/2019 4:46 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-804	MW-804	
6/8/2016	1.65		
8/10/2016	1.58		
10/11/2016	1.59		
12/7/2016	1.62		
2/7/2017	1.59		
4/4/2017	1.59		
6/13/2017	1.57		
8/8/2017	1.61		
11/30/2018		1.75	
1/14/2019		1.73	1st verification re-sample
3/11/2019		1.74	2nd verification re-sample

Prediction Limit

Constituent: BORON (mg/l)   Analysis Run 3/29/2019 4:46 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-805	MW-805
6/7/2016	0.51	
8/10/2016	0.415	
10/11/2016	0.462	
12/6/2016	0.507	
2/6/2017	0.456	
4/4/2017	0.444	
6/13/2017	0.468	
8/8/2017	0.518	
11/30/2018		0.525

Prediction Limit

Constituent: CALCIUM (mg/l) Analysis Run 3/29/2019 4:46 PM View: LF LAQC III

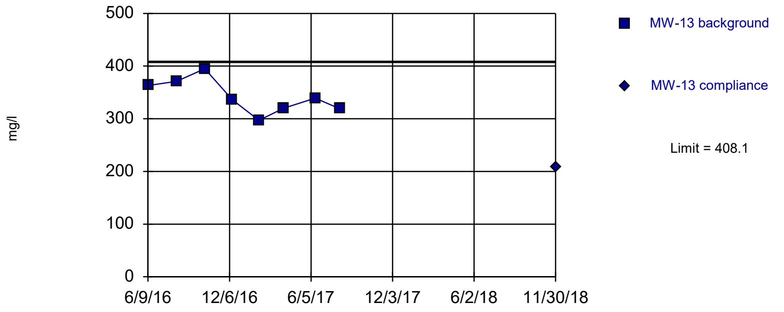
LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-10	MW-10
6/6/2016	60.1	
8/11/2016	58.7	
10/12/2016	60.7	
12/9/2016	59	
2/8/2017	58.8	
4/6/2017	57.4	
6/15/2017	55.5	
8/10/2017	56.1	
11/30/2018		57.5

Within Limit

Prediction Limit

Intrawell Parametric



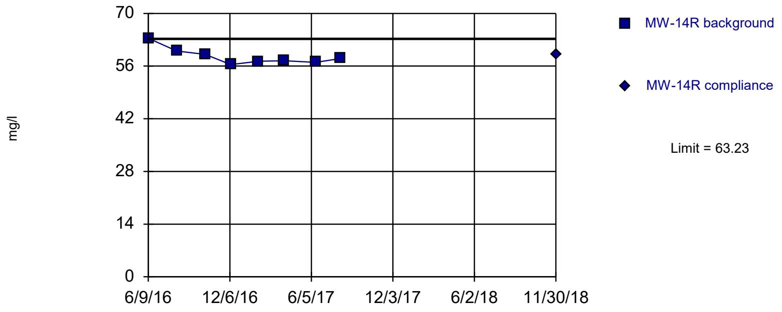
Background Data Summary: Mean=342.5, Std. Dev.=32.01, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9704, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: CALCIUM Analysis Run 3/29/2019 4:42 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Within Limit

Prediction Limit

Intrawell Parametric



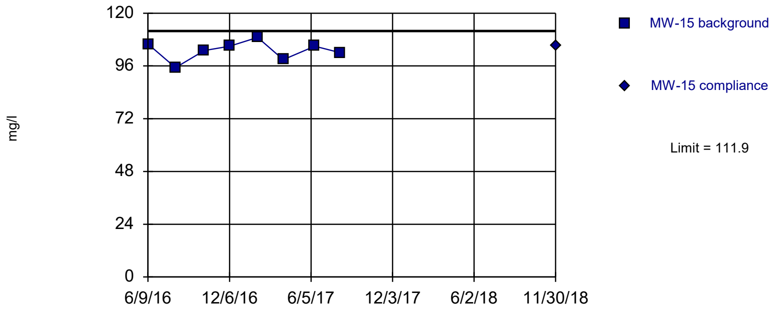
Background Data Summary: Mean=58.58, Std. Dev.=2.272, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8472, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: CALCIUM Analysis Run 3/29/2019 4:42 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Within Limit

Prediction Limit

Intrawell Parametric



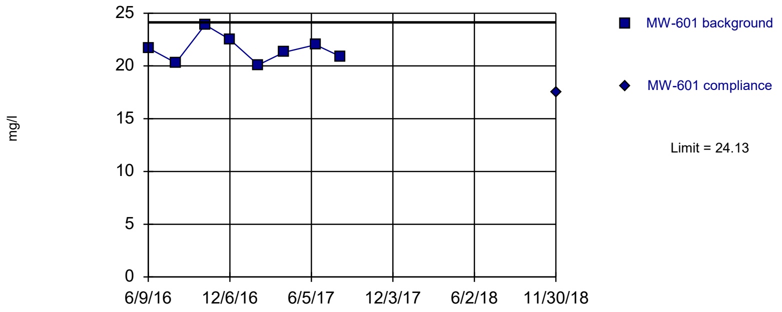
Background Data Summary: Mean=103, Std. Dev.=4.337, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9585, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: CALCIUM Analysis Run 3/29/2019 4:42 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=21.59, Std. Dev.=1.241, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9551, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: CALCIUM Analysis Run 3/29/2019 4:42 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: CALCIUM (mg/l) Analysis Run 3/29/2019 4:46 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-13	MW-13
6/9/2016	363	
8/11/2016	371	
10/13/2016	395	
12/13/2016	336	
2/10/2017	297	
4/6/2017	320	
6/15/2017	339	
8/8/2017	319	
11/30/2018		209

Prediction Limit

Constituent: CALCIUM (mg/l)   Analysis Run 3/29/2019 4:46 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-14R	MW-14R
6/9/2016	63.4	
8/11/2016	60	
10/13/2016	59.1	
12/9/2016	56.4	
2/9/2017	57.3	
4/7/2017	57.4	
6/15/2017	57	
8/10/2017	58	
11/30/2018		59

Prediction Limit

Constituent: CALCIUM (mg/l) Analysis Run 3/29/2019 4:46 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-15	MW-15
6/9/2016	106	
8/9/2016	95.2	
10/12/2016	103	
12/7/2016	105	
2/7/2017	109	
4/5/2017	98.9	
6/14/2017	105	
8/10/2017	102	
11/30/2018		105

Prediction Limit

Constituent: CALCIUM (mg/l) Analysis Run 3/29/2019 4:46 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-601	MW-601
6/9/2016	21.7	
8/9/2016	20.3	
10/13/2016	23.9	
12/7/2016	22.5	
2/8/2017	20.1	
4/6/2017	21.3	
6/15/2017	22	
8/9/2017	20.9	
11/30/2018		17.5

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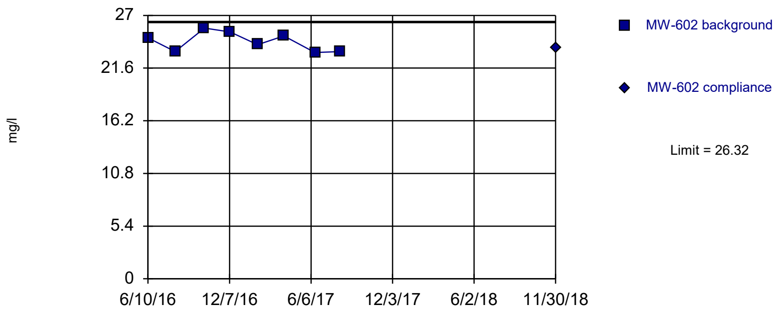
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=24.3, Std. Dev.=0.9842, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8954, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: CALCIUM Analysis Run 3/29/2019 4:42 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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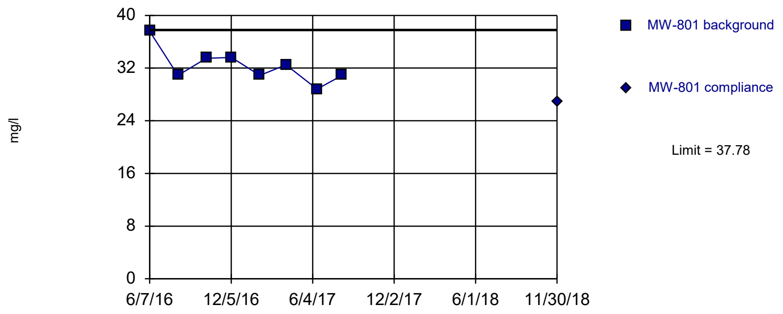
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=32.34, Std. Dev.=2.656, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9153, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: CALCIUM Analysis Run 3/29/2019 4:42 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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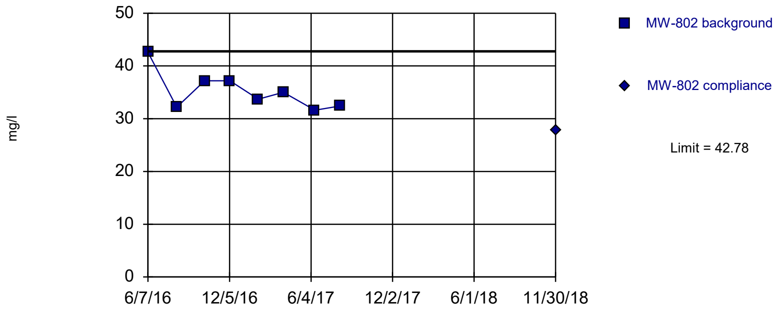
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=35.24, Std. Dev.=3.681, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8826, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

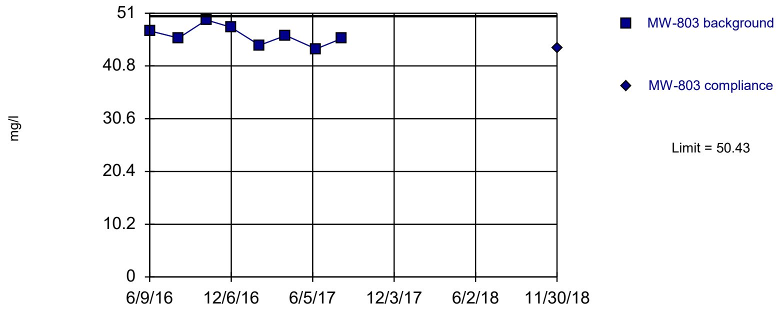
Constituent: CALCIUM Analysis Run 3/29/2019 4:42 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Sanitas™ v.9.6.12 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=46.69, Std. Dev.=1.826, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.981, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: CALCIUM Analysis Run 3/29/2019 4:42 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: CALCIUM (mg/l) Analysis Run 3/29/2019 4:46 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-602	MW-602
6/10/2016	24.7	
8/9/2016	23.3	
10/13/2016	25.7	
12/9/2016	25.3	
2/8/2017	24	
4/7/2017	24.9	
6/15/2017	23.2	
8/10/2017	23.3	
11/30/2018		23.7

Prediction Limit

Constituent: CALCIUM (mg/l) Analysis Run 3/29/2019 4:46 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-801	MW-801
6/7/2016	37.6	
8/9/2016	30.9	
10/11/2016	33.5	
12/6/2016	33.6	
2/7/2017	30.9	
4/6/2017	32.5	
6/14/2017	28.8	
8/9/2017	30.9	
11/30/2018		26.8

Prediction Limit

Constituent: CALCIUM (mg/l)   Analysis Run 3/29/2019 4:46 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-802	MW-802
6/7/2016	42.6	
8/10/2016	32.2	
10/11/2016	37.2	
12/6/2016	37.2	
2/7/2017	33.7	
4/4/2017	35	
6/13/2017	31.6	
8/7/2017	32.4	
11/30/2018		27.8

Prediction Limit

Constituent: CALCIUM (mg/l) Analysis Run 3/29/2019 4:46 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-803	MW-803
6/9/2016	47.6	
8/12/2016	46.2	
10/13/2016	49.7	
12/6/2016	48.3	
2/8/2017	44.8	
4/7/2017	46.7	
6/13/2017	44.1	
8/9/2017	46.1	
11/30/2018		44.2

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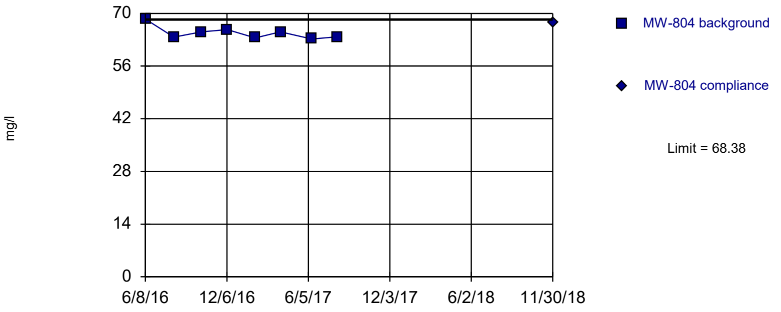
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=64.83, Std. Dev.=1.738, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8428, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: CALCIUM Analysis Run 3/29/2019 4:42 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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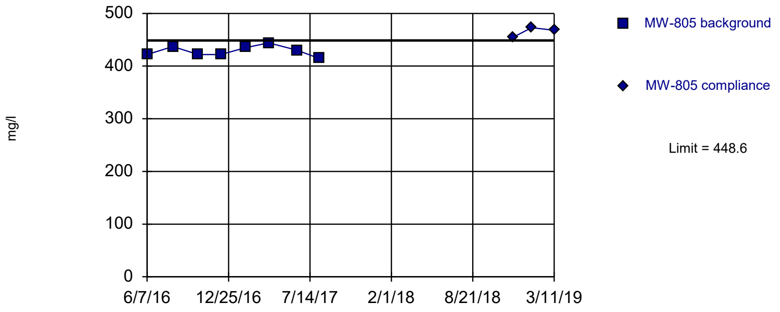
Exceeds Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=428.3, Std. Dev.=9.953, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9462, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: CALCIUM Analysis Run 3/29/2019 4:42 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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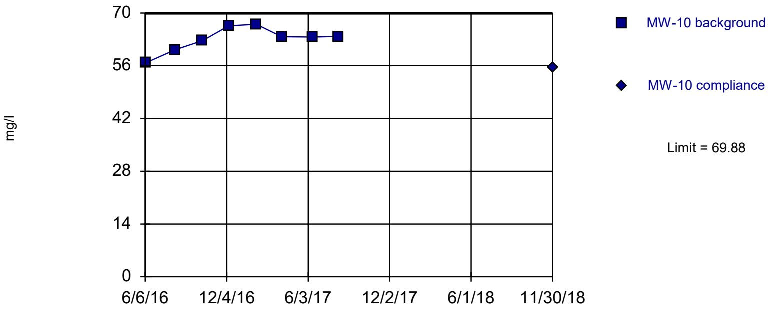
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=63.04, Std. Dev.=3.339, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.916, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: CHLORIDE Analysis Run 3/29/2019 4:42 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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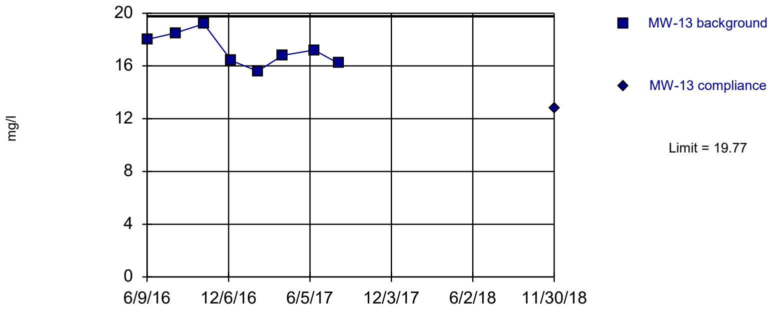
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=17.24, Std. Dev.=1.235, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9636, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: CHLORIDE Analysis Run 3/29/2019 4:42 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: CALCIUM (mg/l)   Analysis Run 3/29/2019 4:47 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-804	MW-804
6/8/2016	68.5	
8/10/2016	63.7	
10/11/2016	65.1	
12/7/2016	65.7	
2/7/2017	63.5	
4/4/2017	65.1	
6/13/2017	63.2	
8/8/2017	63.8	
11/30/2018		67.6

Prediction Limit

Constituent: CALCIUM (mg/l) Analysis Run 3/29/2019 4:47 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-805	MW-805	
6/7/2016	422		
8/10/2016	437		
10/11/2016	422		
12/6/2016	422		
2/6/2017	435		
4/4/2017	444		
6/13/2017	430		
8/8/2017	414		
11/30/2018		455	
1/14/2019		473	1st verification re-sample
3/11/2019		468	2nd verification re-sample

Prediction Limit

Constituent: CHLORIDE (mg/l)   Analysis Run 3/29/2019 4:47 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-10	MW-10
6/6/2016	56.7	
8/11/2016	60.2	
10/12/2016	62.7	
12/9/2016	66.6	
2/8/2017	67	
4/6/2017	63.7	
6/15/2017	63.6	
8/10/2017	63.8	
11/30/2018		55.5

Prediction Limit

Constituent: CHLORIDE (mg/l)   Analysis Run 3/29/2019 4:47 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-13	MW-13
6/9/2016	18	
8/11/2016	18.5	
10/13/2016	19.2	
12/13/2016	16.4	
2/10/2017	15.6	
4/6/2017	16.8	
6/15/2017	17.2	
8/8/2017	16.2	
11/30/2018		12.8

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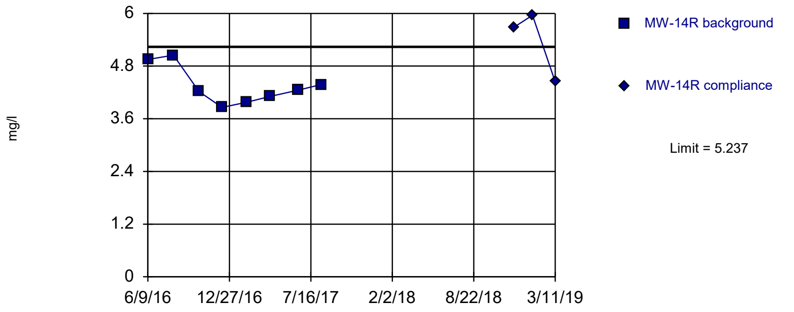
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=4.35, Std. Dev.=0.433, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8819, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: CHLORIDE Analysis Run 3/29/2019 4:42 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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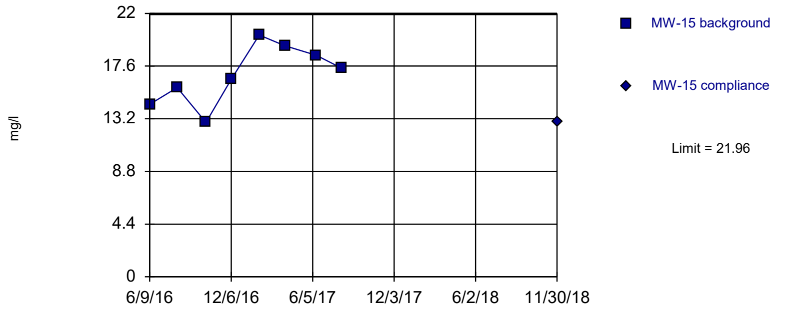
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=16.88, Std. Dev.=2.481, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9777, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: CHLORIDE Analysis Run 3/29/2019 4:42 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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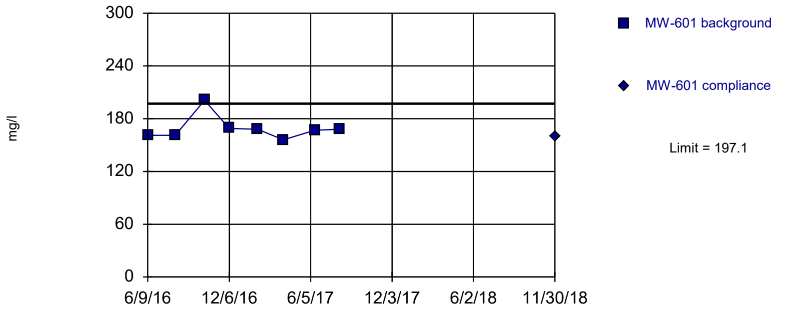
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on natural log transformation): Mean=5.126, Std. Dev.=0.07681, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.7542, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: CHLORIDE Analysis Run 3/29/2019 4:42 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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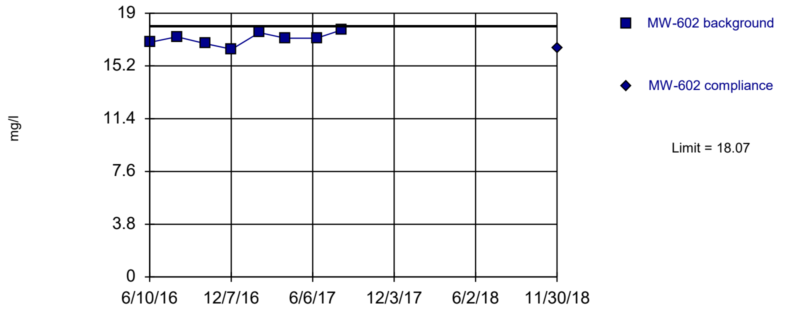
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=17.15, Std. Dev.=0.4472, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.978, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: CHLORIDE Analysis Run 3/29/2019 4:42 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: CHLORIDE (mg/l)   Analysis Run 3/29/2019 4:47 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-14R	MW-14R	
6/9/2016	4.95		
8/11/2016	5.05		
10/13/2016	4.22		
12/9/2016	3.86		
2/9/2017	3.98		
4/7/2017	4.11		
6/15/2017	4.25		
8/10/2017	4.38		
11/30/2018		5.69	
1/14/2019		5.96	1st verification re-sample
3/11/2019		4.44	2nd verification re-sample

Prediction Limit

Constituent: CHLORIDE (mg/l)   Analysis Run 3/29/2019 4:47 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-15	MW-15
6/9/2016	14.4	
8/9/2016	15.8	
10/12/2016	12.9	
12/7/2016	16.5	
2/7/2017	20.2	
4/5/2017	19.3	
6/14/2017	18.5	
8/10/2017	17.4	
11/30/2018		12.9

Prediction Limit

Constituent: CHLORIDE (mg/l) Analysis Run 3/29/2019 4:47 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-601	MW-601
6/9/2016	161	
8/9/2016	161	
10/13/2016	201	
12/7/2016	169	
2/8/2017	168	
4/6/2017	156	
6/15/2017	167	
8/9/2017	168	
11/30/2018		160

Prediction Limit

Constituent: CHLORIDE (mg/l)   Analysis Run 3/29/2019 4:47 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-602	MW-602
6/10/2016	16.9	
8/9/2016	17.3	
10/13/2016	16.8	
12/9/2016	16.4	
2/8/2017	17.6	
4/7/2017	17.2	
6/15/2017	17.2	
8/10/2017	17.8	
11/30/2018		16.5

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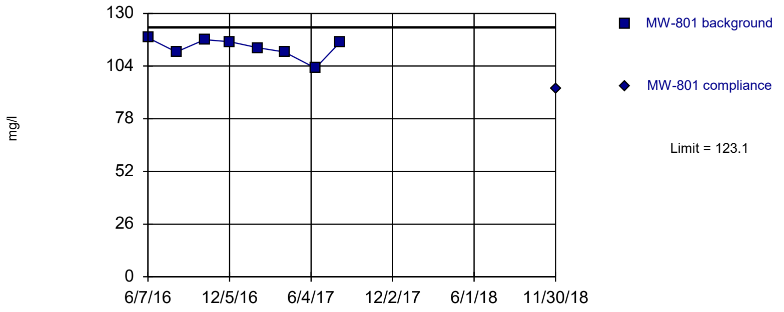
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=113.1, Std. Dev.=4.883, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8653, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: CHLORIDE Analysis Run 3/29/2019 4:42 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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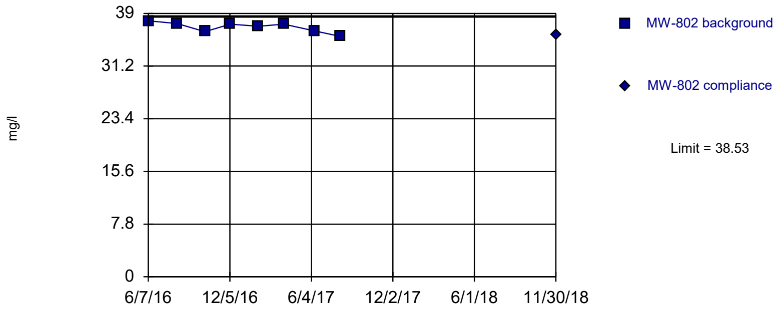
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=36.95, Std. Dev.=0.7728, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9216, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: CHLORIDE Analysis Run 3/29/2019 4:42 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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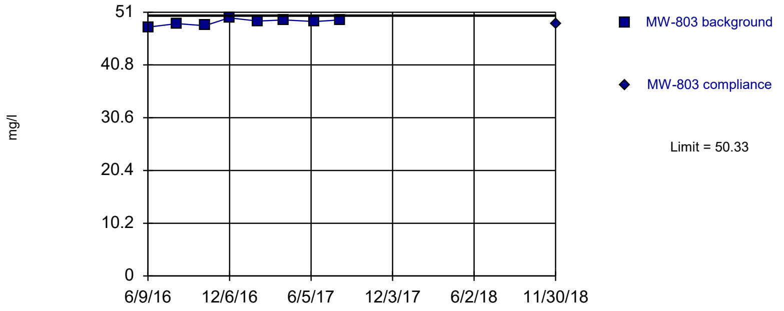
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=49.09, Std. Dev.=0.6081, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9461, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

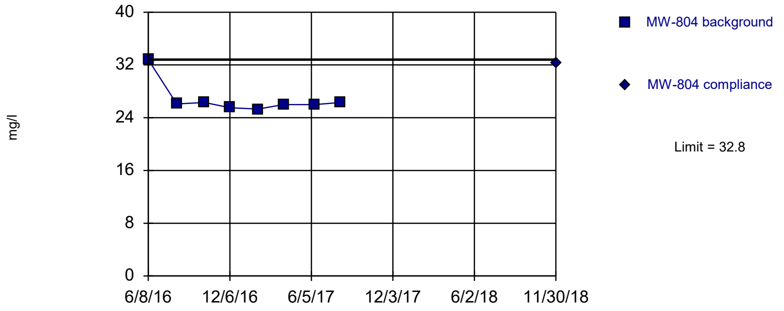
Constituent: CHLORIDE Analysis Run 3/29/2019 4:42 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Sanitas™ v.9.6.12 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

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 8 background values. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: CHLORIDE Analysis Run 3/29/2019 4:42 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: CHLORIDE (mg/l)   Analysis Run 3/29/2019 4:47 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-801	MW-801
6/7/2016	118	
8/9/2016	111	
10/11/2016	117	
12/6/2016	116	
2/7/2017	113	
4/6/2017	111	
6/14/2017	103	
8/9/2017	116	
11/30/2018		92.9

Prediction Limit

Constituent: CHLORIDE (mg/l)   Analysis Run 3/29/2019 4:47 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-802	MW-802
6/7/2016	37.9	
8/10/2016	37.5	
10/11/2016	36.3	
12/6/2016	37.4	
2/7/2017	37.1	
4/4/2017	37.4	
6/13/2017	36.4	
8/7/2017	35.6	
11/30/2018		35.9

Prediction Limit

Constituent: CHLORIDE (mg/l)   Analysis Run 3/29/2019 4:47 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-803	MW-803
6/9/2016	48.1	
8/12/2016	48.8	
10/13/2016	48.4	
12/6/2016	49.9	
2/8/2017	49.3	
4/7/2017	49.5	
6/13/2017	49.2	
8/9/2017	49.5	
11/30/2018		48.7

Prediction Limit

Constituent: CHLORIDE (mg/l)   Analysis Run 3/29/2019 4:47 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-804	MW-804
6/8/2016	32.8	
8/10/2016	26.1	
10/11/2016	26.3	
12/7/2016	25.5	
2/7/2017	25.3	
4/4/2017	26	
6/13/2017	26	
8/8/2017	26.3	
11/30/2018		32.2

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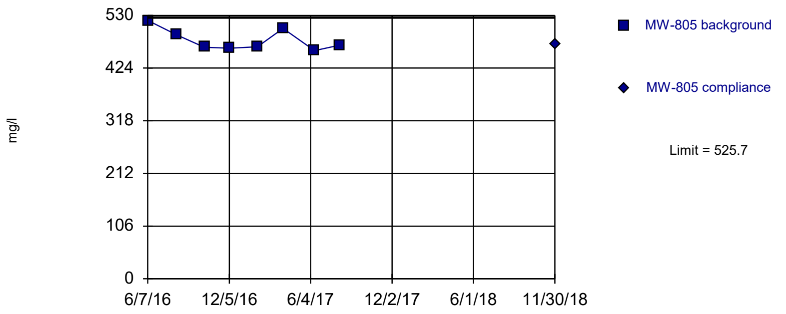
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=480.1, Std. Dev.=22.23, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8461, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: CHLORIDE Analysis Run 3/29/2019 4:42 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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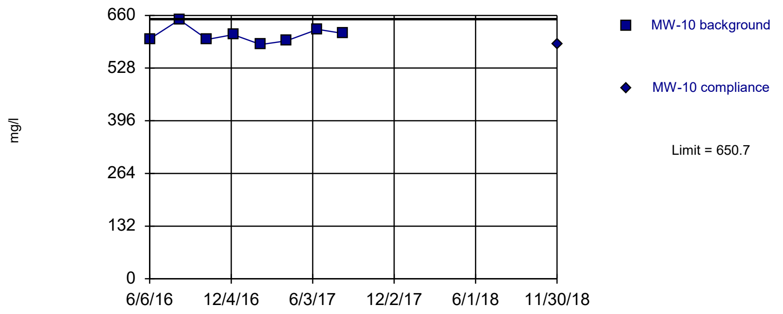
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=610.6, Std. Dev.=19.56, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9309, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: DISSOLVED SOLIDS Analysis Run 3/29/2019 4:42 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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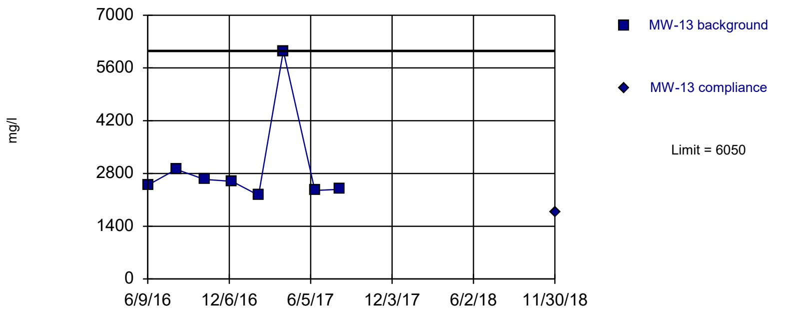
Within Limit

Prediction Limit

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 8 background values. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: DISSOLVED SOLIDS Analysis Run 3/29/2019 4:42 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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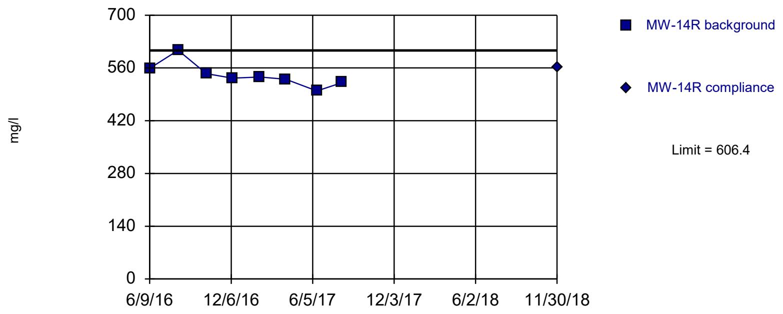
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=541.3, Std. Dev.=31.78, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9091, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: DISSOLVED SOLIDS Analysis Run 3/29/2019 4:42 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: CHLORIDE (mg/l)   Analysis Run 3/29/2019 4:47 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-805	MW-805
6/7/2016	520	
8/10/2016	491	
10/11/2016	466	
12/6/2016	464	
2/6/2017	467	
4/4/2017	504	
6/13/2017	459	
8/8/2017	470	
11/30/2018		471

Prediction Limit

Constituent: DISSOLVED SOLIDS (mg/l)   Analysis Run 3/29/2019 4:47 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-10	MW-10
6/6/2016	601	
8/11/2016	649	
10/12/2016	600	
12/9/2016	612	
2/8/2017	587	
4/6/2017	596	
6/15/2017	625	
8/10/2017	615	
11/30/2018		588

Prediction Limit

Constituent: DISSOLVED SOLIDS (mg/l) Analysis Run 3/29/2019 4:47 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-13	MW-13
6/9/2016	2490	
8/11/2016	2910	
10/13/2016	2640	
12/13/2016	2590	
2/10/2017	2220	
4/6/2017	6050	
6/15/2017	2350	
8/8/2017	2380	
11/30/2018		1760

Prediction Limit

Constituent: DISSOLVED SOLIDS (mg/l)   Analysis Run 3/29/2019 4:47 PM   View: LF LAQC III

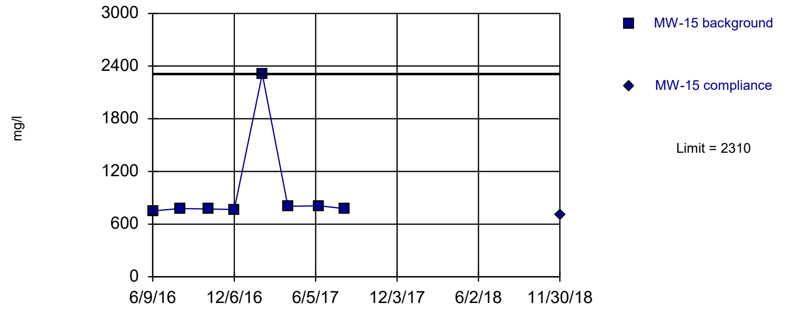
LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-14R	MW-14R
6/9/2016	559	
8/11/2016	607	
10/13/2016	545	
12/9/2016	533	
2/9/2017	536	
4/7/2017	530	
6/15/2017	499	
8/10/2017	521	
11/30/2018		563

Within Limit

Prediction Limit

Intrawell Non-parametric



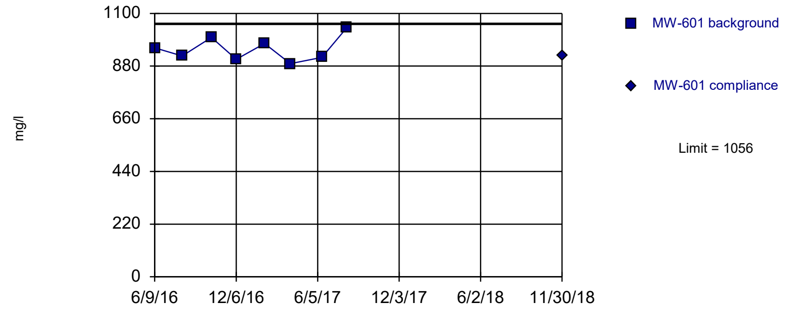
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 8 background values. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: DISSOLVED SOLIDS Analysis Run 3/29/2019 4:42 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Within Limit

Prediction Limit

Intrawell Parametric



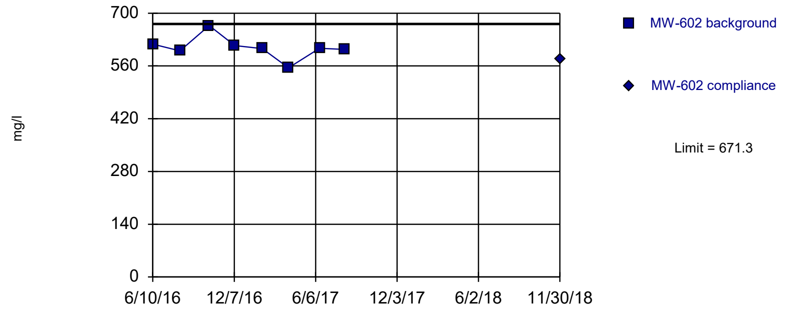
Background Data Summary: Mean=950.8, Std. Dev.=51.42, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9399, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: DISSOLVED SOLIDS Analysis Run 3/29/2019 4:42 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Within Limit

Prediction Limit

Intrawell Parametric



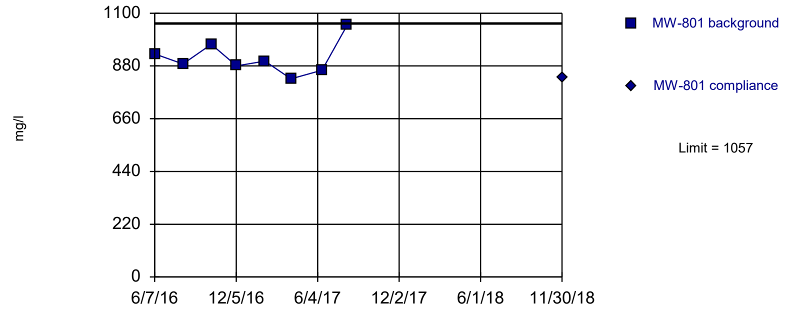
Background Data Summary: Mean=608.9, Std. Dev.=30.48, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8711, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: DISSOLVED SOLIDS Analysis Run 3/29/2019 4:42 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=913.3, Std. Dev.=70.06, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9338, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: DISSOLVED SOLIDS Analysis Run 3/29/2019 4:42 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: DISSOLVED SOLIDS (mg/l)   Analysis Run 3/29/2019 4:47 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-15	MW-15
6/9/2016	751	
8/9/2016	777	
10/12/2016	772	
12/7/2016	767	
2/7/2017	2310	
4/5/2017	803	
6/14/2017	808	
8/10/2017	775	
11/30/2018		709

Prediction Limit

Constituent: DISSOLVED SOLIDS (mg/l)   Analysis Run 3/29/2019 4:47 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-601	MW-601
6/9/2016	956	
8/9/2016	922	
10/13/2016	1000	
12/7/2016	908	
2/8/2017	974	
4/6/2017	890	
6/15/2017	916	
8/9/2017	1040	
11/30/2018		924

Prediction Limit

Constituent: DISSOLVED SOLIDS (mg/l) Analysis Run 3/29/2019 4:47 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-602	MW-602
6/10/2016	618	
8/9/2016	600	
10/13/2016	667	
12/9/2016	614	
2/8/2017	606	
4/7/2017	555	
6/15/2017	607	
8/10/2017	604	
11/30/2018		579

Prediction Limit

Constituent: DISSOLVED SOLIDS (mg/l) Analysis Run 3/29/2019 4:47 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-801	MW-801
6/7/2016	930	
8/9/2016	888	
10/11/2016	970	
12/6/2016	880	
2/7/2017	900	
4/6/2017	826	
6/14/2017	862	
8/9/2017	1050	
11/30/2018		832

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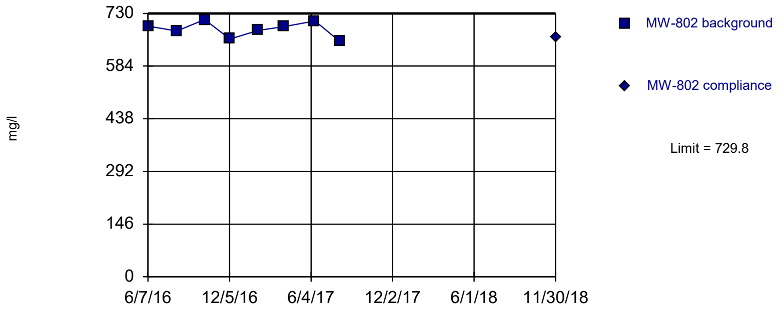
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=685.8, Std. Dev.=21.51, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9383, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: DISSOLVED SOLIDS Analysis Run 3/29/2019 4:43 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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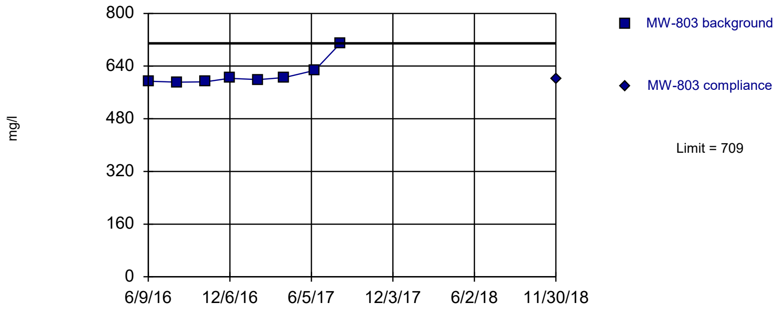
Within Limit

Prediction Limit

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 8 background values. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: DISSOLVED SOLIDS Analysis Run 3/29/2019 4:43 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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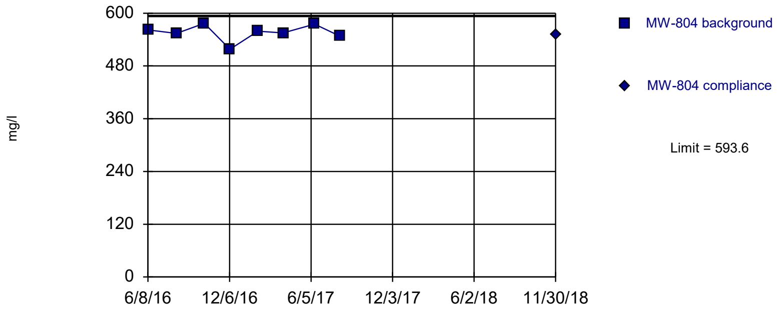
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=556, Std. Dev.=18.36, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8915, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: DISSOLVED SOLIDS Analysis Run 3/29/2019 4:43 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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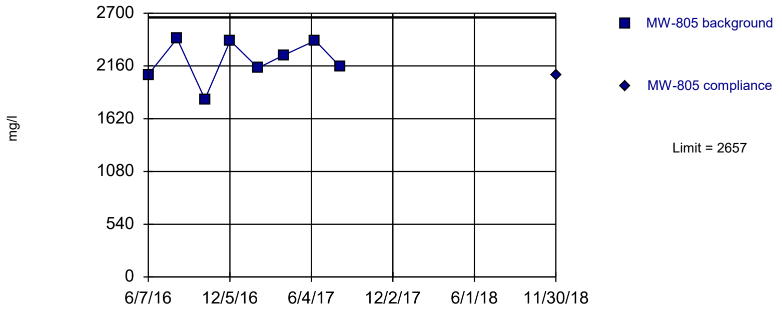
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=2216, Std. Dev.=215.3, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9034, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: DISSOLVED SOLIDS Analysis Run 3/29/2019 4:43 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: DISSOLVED SOLIDS (mg/l)   Analysis Run 3/29/2019 4:47 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-802	MW-802
6/7/2016	695	
8/10/2016	681	
10/11/2016	713	
12/6/2016	659	
2/7/2017	683	
4/4/2017	693	
6/13/2017	709	
8/7/2017	653	
11/30/2018		663

Prediction Limit

Constituent: DISSOLVED SOLIDS (mg/l) Analysis Run 3/29/2019 4:47 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-803	MW-803
6/9/2016	594	
8/12/2016	591	
10/13/2016	592	
12/6/2016	603	
2/8/2017	599	
4/7/2017	605	
6/13/2017	627	
8/9/2017	709	
11/30/2018		601

Prediction Limit

Constituent: DISSOLVED SOLIDS (mg/l) Analysis Run 3/29/2019 4:47 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-804	MW-804
6/8/2016	562	
8/10/2016	554	
10/11/2016	577	
12/7/2016	518	
2/7/2017	559	
4/4/2017	555	
6/13/2017	575	
8/8/2017	548	
11/30/2018		550

Prediction Limit

Constituent: DISSOLVED SOLIDS (mg/l)   Analysis Run 3/29/2019 4:47 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-805	MW-805
6/7/2016	2070	
8/10/2016	2440	
10/11/2016	1820	
12/6/2016	2420	
2/6/2017	2140	
4/4/2017	2270	
6/13/2017	2420	
8/8/2017	2150	
11/30/2018		2070

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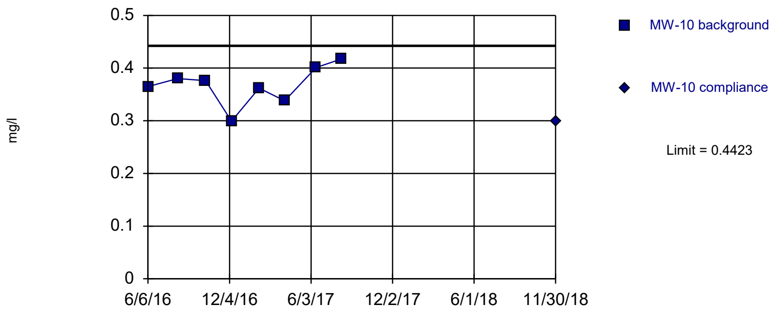
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.3673, Std. Dev.=0.03664, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9622, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: FLUORIDE Analysis Run 3/29/2019 4:43 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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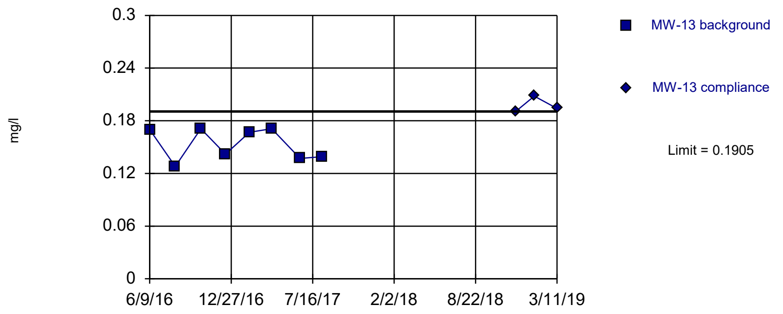
Exceeds Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.1531, Std. Dev.=0.01825, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8151, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: FLUORIDE Analysis Run 3/29/2019 4:43 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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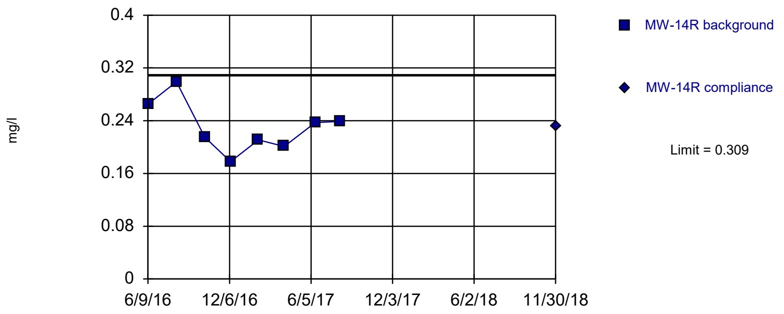
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.2306, Std. Dev.=0.03825, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9683, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: FLUORIDE Analysis Run 3/29/2019 4:43 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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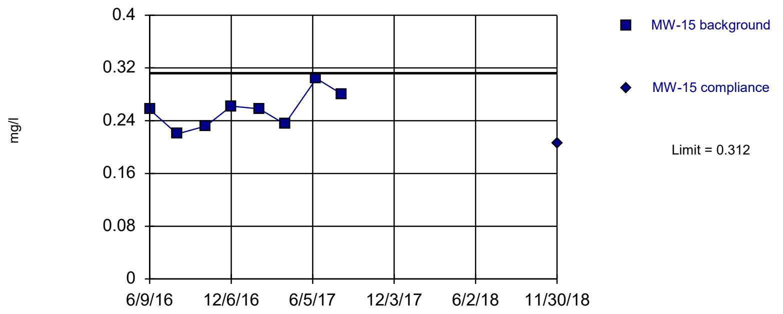
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.256, Std. Dev.=0.02734, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9573, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: FLUORIDE Analysis Run 3/29/2019 4:43 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: FLUORIDE (mg/l) Analysis Run 3/29/2019 4:47 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-10	MW-10
6/6/2016	0.365	
8/11/2016	0.38	
10/12/2016	0.376	
12/9/2016	0.299	
2/8/2017	0.362	
4/6/2017	0.338	
6/15/2017	0.401	
8/10/2017	0.417	
11/30/2018		0.3

Prediction Limit

Constituent: FLUORIDE (mg/l)   Analysis Run 3/29/2019 4:47 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-13	MW-13	
6/9/2016	0.17		
8/11/2016	0.128		
10/13/2016	0.171		
12/13/2016	0.142		
2/10/2017	0.167		
4/6/2017	0.171		
6/15/2017	0.137		
8/8/2017	0.139		
11/30/2018		0.191	
1/14/2019		0.208	1st verification re-sample
3/11/2019		0.194	2nd verification re-sample

Prediction Limit

Constituent: FLUORIDE (mg/l)   Analysis Run 3/29/2019 4:47 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-14R	MW-14R
6/9/2016	0.265	
8/11/2016	0.299	
10/13/2016	0.215	
12/9/2016	0.178	
2/9/2017	0.211	
4/7/2017	0.201	
6/15/2017	0.237	
8/10/2017	0.239	
11/30/2018		0.231

Prediction Limit

Constituent: FLUORIDE (mg/l)   Analysis Run 3/29/2019 4:47 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-15	MW-15
6/9/2016	0.257	
8/9/2016	0.22	
10/12/2016	0.232	
12/7/2016	0.262	
2/7/2017	0.258	
4/5/2017	0.235	
6/14/2017	0.304	
8/10/2017	0.28	
11/30/2018		0.206

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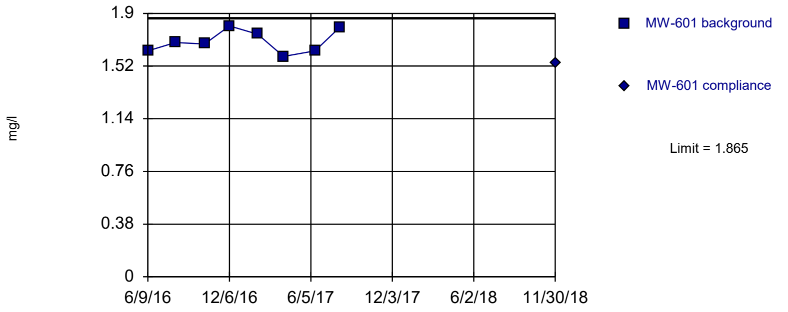
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1.698, Std. Dev.=0.0819, 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 = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: FLUORIDE Analysis Run 3/29/2019 4:43 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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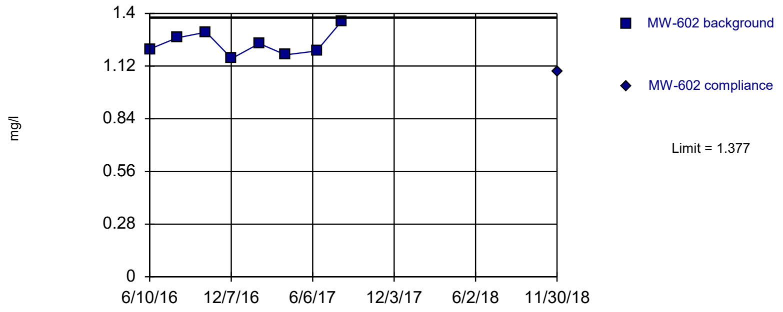
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1.24, Std. Dev.=0.06698, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.952, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: FLUORIDE Analysis Run 3/29/2019 4:43 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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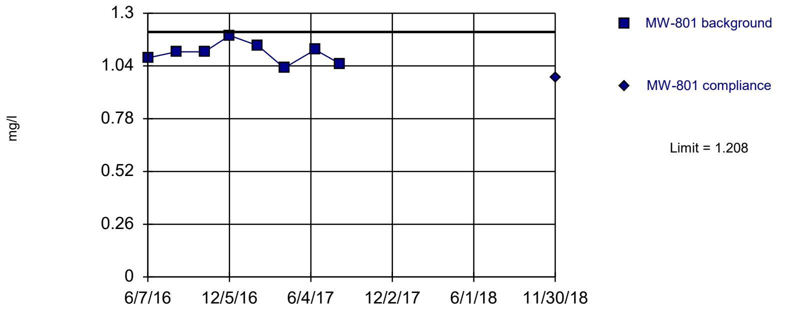
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1.104, Std. Dev.=0.05069, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9728, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: FLUORIDE Analysis Run 3/29/2019 4:43 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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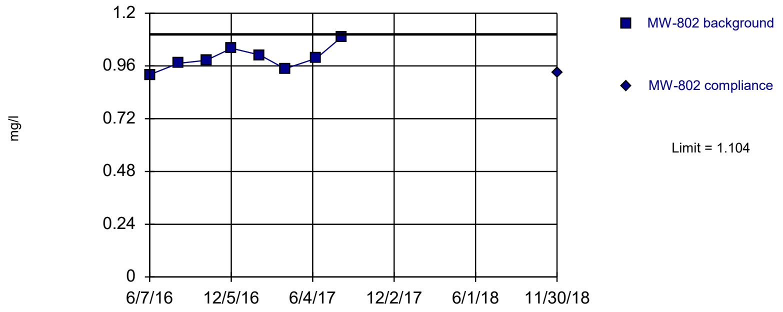
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.995, Std. Dev.=0.0532, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9813, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: FLUORIDE Analysis Run 3/29/2019 4:43 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: FLUORIDE (mg/l)   Analysis Run 3/29/2019 4:47 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-601	MW-601
6/9/2016	1.63	
8/9/2016	1.69	
10/13/2016	1.68	
12/7/2016	1.81	
2/8/2017	1.75	
4/6/2017	1.59	
6/15/2017	1.63	
8/9/2017	1.8	
11/30/2018		1.54

Prediction Limit

Constituent: FLUORIDE (mg/l)   Analysis Run 3/29/2019 4:47 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-602	MW-602
6/10/2016	1.21	
8/9/2016	1.27	
10/13/2016	1.3	
12/9/2016	1.16	
2/8/2017	1.24	
4/7/2017	1.18	
6/15/2017	1.2	
8/10/2017	1.36	
11/30/2018		1.09

Prediction Limit

Constituent: FLUORIDE (mg/l) Analysis Run 3/29/2019 4:47 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-801	MW-801
6/7/2016	1.08	
8/9/2016	1.11	
10/11/2016	1.11	
12/6/2016	1.19	
2/7/2017	1.14	
4/6/2017	1.03	
6/14/2017	1.12	
8/9/2017	1.05	
11/30/2018		0.984

Prediction Limit

Constituent: FLUORIDE (mg/l) Analysis Run 3/29/2019 4:47 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-802	MW-802
6/7/2016	0.92	
8/10/2016	0.972	
10/11/2016	0.986	
12/6/2016	1.04	
2/7/2017	1.01	
4/4/2017	0.947	
6/13/2017	0.995	
8/7/2017	1.09	
11/30/2018		0.932

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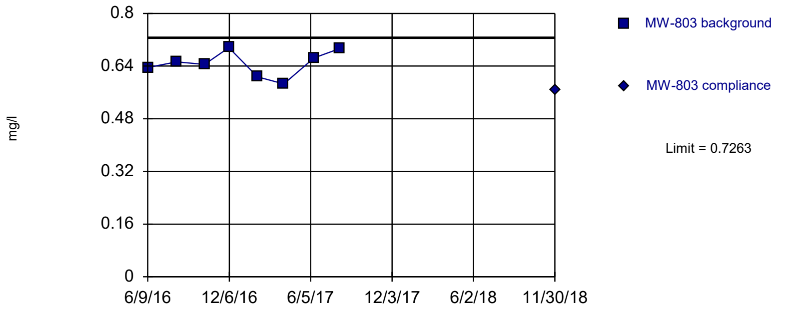
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.6476, Std. Dev.=0.0384, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9552, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: FLUORIDE Analysis Run 3/29/2019 4:43 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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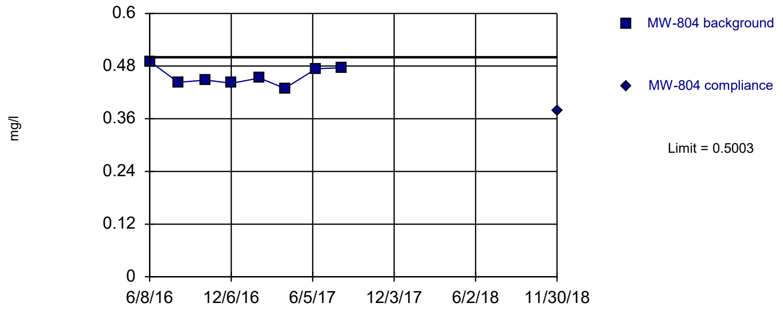
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.4569, Std. Dev.=0.02118, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9387, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: FLUORIDE Analysis Run 3/29/2019 4:43 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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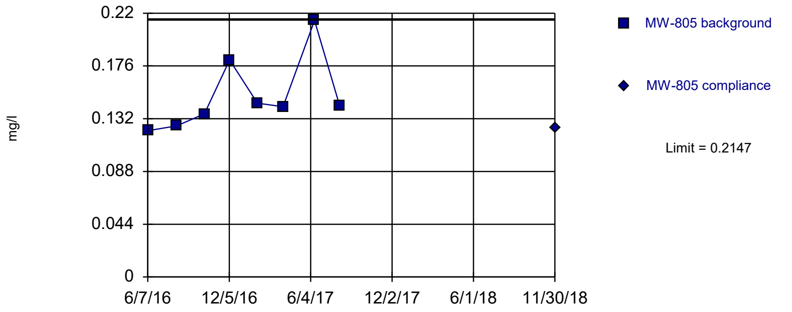
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.1511, Std. Dev.=0.03103, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8279, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: FLUORIDE Analysis Run 3/29/2019 4:43 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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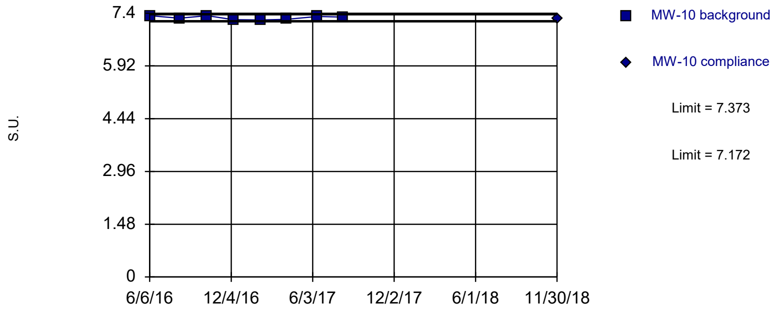
Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.273, Std. Dev.=0.04921, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8934, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: pH Analysis Run 3/29/2019 4:43 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: FLUORIDE (mg/l)   Analysis Run 3/29/2019 4:47 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-803	MW-803
6/9/2016	0.636	
8/12/2016	0.653	
10/13/2016	0.645	
12/6/2016	0.696	
2/8/2017	0.607	
4/7/2017	0.586	
6/13/2017	0.665	
8/9/2017	0.693	
11/30/2018		0.566

Prediction Limit

Constituent: FLUORIDE (mg/l)   Analysis Run 3/29/2019 4:47 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-804	MW-804
6/8/2016	0.491	
8/10/2016	0.443	
10/11/2016	0.448	
12/7/2016	0.441	
2/7/2017	0.453	
4/4/2017	0.429	
6/13/2017	0.474	
8/8/2017	0.476	
11/30/2018		0.378

Prediction Limit

Constituent: FLUORIDE (mg/l) Analysis Run 3/29/2019 4:47 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-805	MW-805
6/7/2016	0.122	
8/10/2016	0.126	
10/11/2016	0.136	
12/6/2016	0.181	
2/6/2017	0.145	
4/4/2017	0.142	
6/13/2017	0.214	
8/8/2017	0.143	
11/30/2018		0.124

Prediction Limit

Constituent: pH (S.U.)   Analysis Run 3/29/2019 4:47 PM   View: LF LAQC III

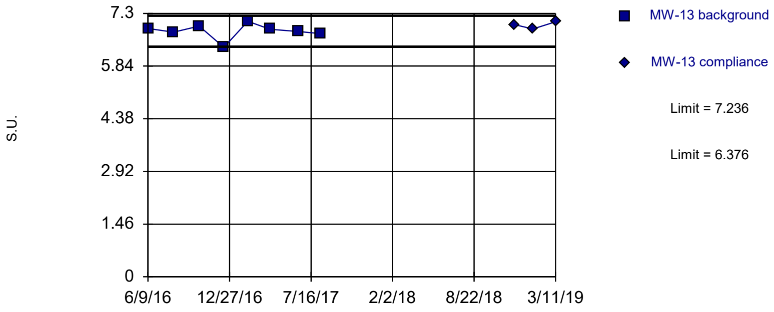
LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-10	MW-10
6/6/2016	7.33	
8/11/2016	7.26	
10/12/2016	7.33	
12/9/2016	7.22	
2/8/2017	7.21	
4/6/2017	7.23	
6/15/2017	7.31	
8/10/2017	7.29	
11/30/2018		7.23

Within Limits

Prediction Limit

Intrawell Parametric



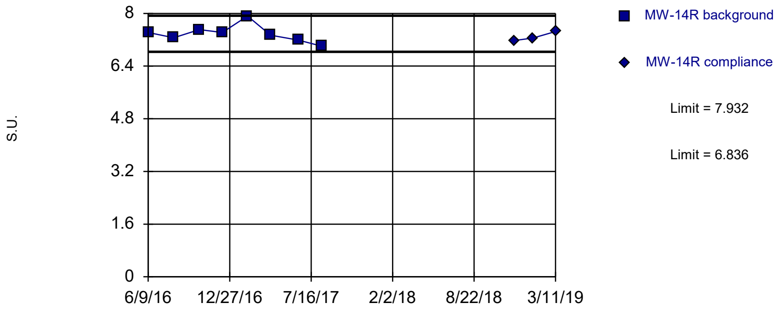
Background Data Summary: Mean=6.806, Std. Dev.=0.2098, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8875, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: pH Analysis Run 3/29/2019 4:43 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Within Limits

Prediction Limit

Intrawell Parametric



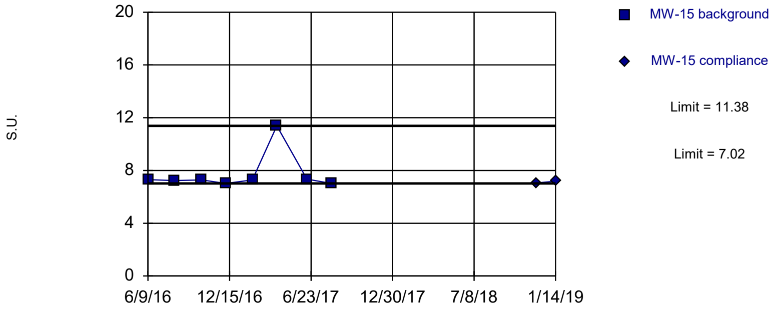
Background Data Summary: Mean=7.384, Std. Dev.=0.2674, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9356, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: pH Analysis Run 3/29/2019 4:43 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Within Limits

Prediction Limit

Intrawell Non-parametric



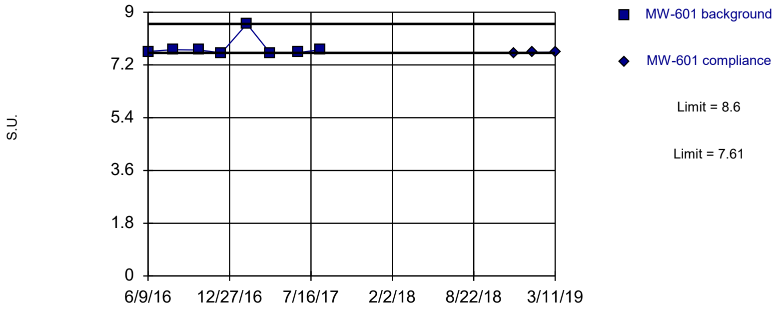
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limits are highest and lowest of 8 background values. Well-constituent pair annual alpha = 0.02358. Individual comparison alpha = 0.01182 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: pH Analysis Run 3/29/2019 4:43 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Within Limits

Prediction Limit

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 8 background values. Well-constituent pair annual alpha = 0.02358. Individual comparison alpha = 0.01182 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: pH Analysis Run 3/29/2019 4:43 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: pH (S.U.)   Analysis Run 3/29/2019 4:47 PM   View: LF LAQC III
LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-13	MW-13	
6/9/2016	6.88		
8/11/2016	6.78		
10/13/2016	6.95		
12/13/2016	6.36		
2/10/2017	7.08		
4/6/2017	6.86		
6/15/2017	6.8		
8/8/2017	6.74		
11/30/2018		6.99	
1/14/2019		6.87	extra sample
3/11/2019		7.07	extra sample

Prediction Limit

Constituent: pH (S.U.)   Analysis Run 3/29/2019 4:47 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-14R	MW-14R	
6/9/2016	7.42		
8/11/2016	7.26		
10/13/2016	7.51		
12/9/2016	7.42		
2/9/2017	7.92		
4/7/2017	7.34		
6/15/2017	7.19		
8/10/2017	7.01		
11/30/2018		7.18	
1/14/2019		7.25	extra sample
3/11/2019		7.45	extra sample

Prediction Limit

Constituent: pH (S.U.)   Analysis Run 3/29/2019 4:47 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-15	MW-15	
6/9/2016	7.31		
8/9/2016	7.23		
10/12/2016	7.28		
12/7/2016	7.02		
2/7/2017	7.28		
4/5/2017	11.38		
6/14/2017	7.34		
8/10/2017	7.02		
11/30/2018		7.05	
1/14/2019		7.18	extra sample

Prediction Limit

Constituent: pH (S.U.)   Analysis Run 3/29/2019 4:47 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-601	MW-601	
6/9/2016	7.66		
8/9/2016	7.72		
10/13/2016	7.71		
12/7/2016	7.61		
2/8/2017	8.6		
4/6/2017	7.61		
6/15/2017	7.62		
8/9/2017	7.72		
11/30/2018		7.58	
1/14/2019		7.63	1st verification re-sample
3/11/2019		7.64	extra sample

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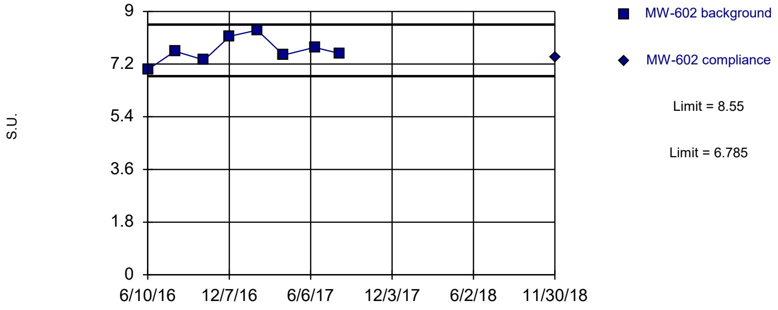
Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.668, Std. Dev.=0.4309, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9706, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: pH Analysis Run 3/29/2019 4:43 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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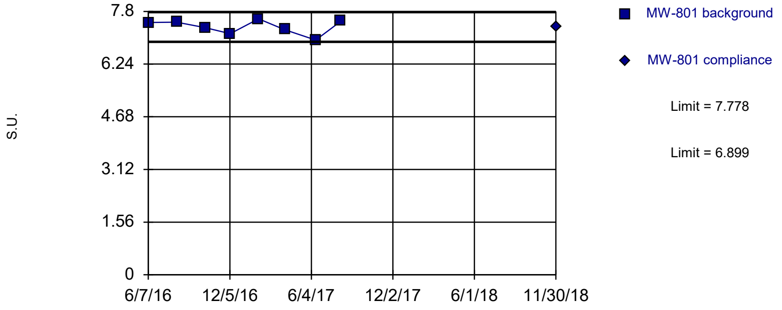
Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.339, Std. Dev.=0.2144, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9231, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: pH Analysis Run 3/29/2019 4:43 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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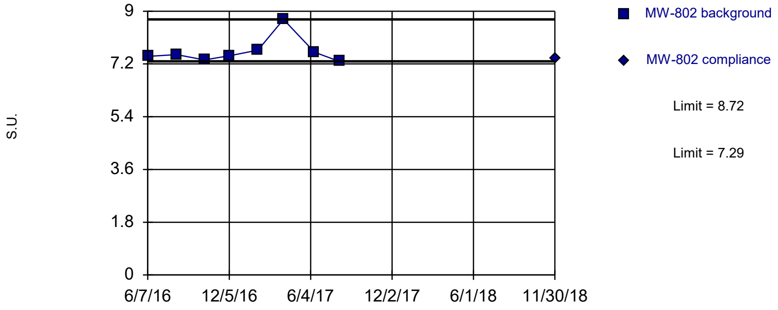
Within Limits

Prediction Limit

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 8 background values. Well-constituent pair annual alpha = 0.02358. Individual comparison alpha = 0.01182 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: pH Analysis Run 3/29/2019 4:43 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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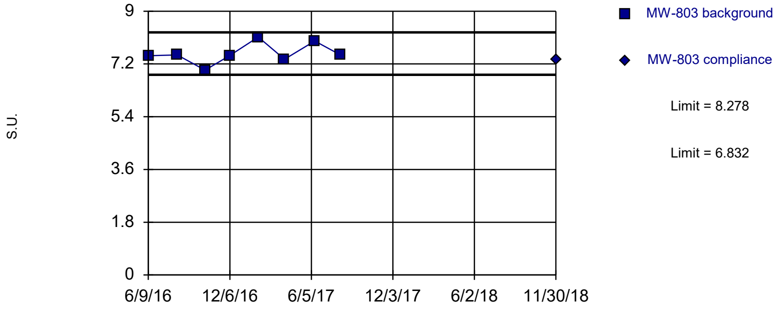
Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.555, Std. Dev.=0.3529, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9061, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: pH Analysis Run 3/29/2019 4:43 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: pH (S.U.)   Analysis Run 3/29/2019 4:47 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-602	MW-602
6/10/2016	7.01	
8/9/2016	7.64	
10/13/2016	7.34	
12/9/2016	8.15	
2/8/2017	8.36	
4/7/2017	7.51	
6/15/2017	7.77	
8/10/2017	7.56	
11/30/2018		7.42

Prediction Limit

Constituent: pH (S.U.) Analysis Run 3/29/2019 4:47 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-801	MW-801
6/7/2016	7.47	
8/9/2016	7.48	
10/11/2016	7.32	
12/6/2016	7.14	
2/7/2017	7.58	
4/6/2017	7.26	
6/14/2017	6.95	
8/9/2017	7.51	
11/30/2018		7.34

Prediction Limit

Constituent: pH (S.U.) Analysis Run 3/29/2019 4:47 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-802	MW-802
6/7/2016	7.46	
8/10/2016	7.52	
10/11/2016	7.34	
12/6/2016	7.48	
2/7/2017	7.67	
4/5/2017	8.72	
6/13/2017	7.6	
8/7/2017	7.29	
11/30/2018		7.38

Prediction Limit

Constituent: pH (S.U.) Analysis Run 3/29/2019 4:47 PM View: LF LAQC III

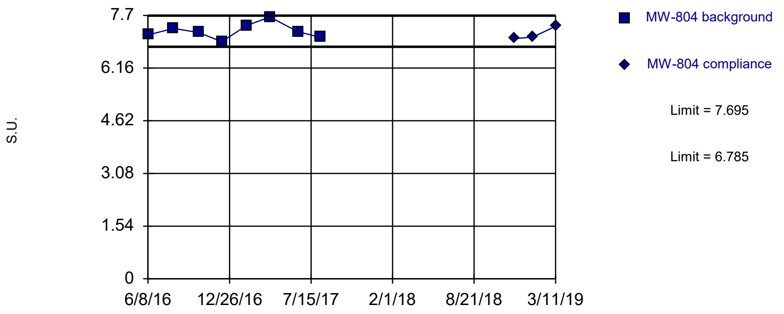
LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-803	MW-803
6/9/2016	7.48	
8/12/2016	7.51	
10/13/2016	6.99	
12/6/2016	7.48	
2/8/2017	8.12	
4/7/2017	7.36	
6/13/2017	7.98	
8/8/2017	7.52	
11/30/2018		7.33

Within Limits

Prediction Limit

Intrawell Parametric



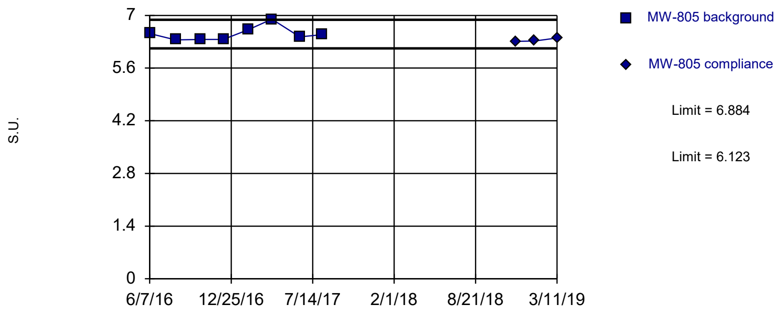
Background Data Summary: Mean=7.24, Std. Dev.=0.2223, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9747, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: pH Analysis Run 3/29/2019 4:43 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Within Limits

Prediction Limit

Intrawell Parametric



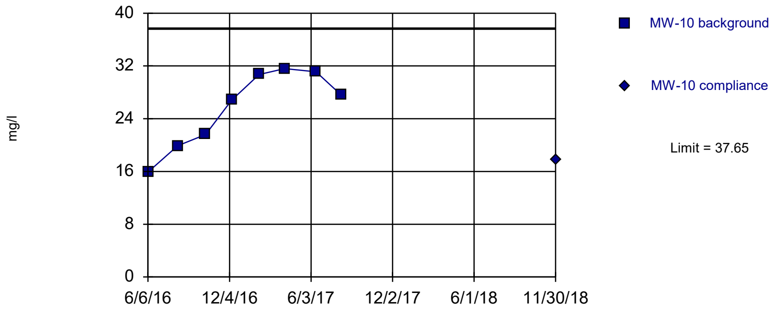
Background Data Summary: Mean=6.504, Std. Dev.=0.1857, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8255, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: pH Analysis Run 3/29/2019 4:43 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Within Limit

Prediction Limit

Intrawell Parametric



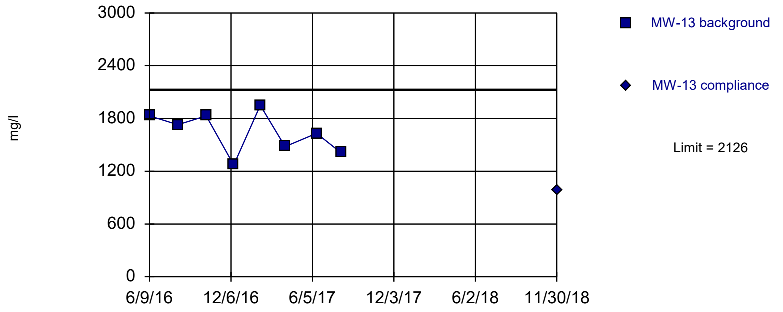
Background Data Summary: Mean=25.65, Std. Dev.=5.859, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8965, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: SULFATE Analysis Run 3/29/2019 4:43 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1641, Std. Dev.=236.6, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9527, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: SULFATE Analysis Run 3/29/2019 4:43 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: pH (S.U.) Analysis Run 3/29/2019 4:47 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-804	MW-804	
6/8/2016	7.13		
8/10/2016	7.32		
10/11/2016	7.2		
12/7/2016	6.93		
2/7/2017	7.41		
4/5/2017	7.65		
6/13/2017	7.22		
8/8/2017	7.06		
11/30/2018		7.02	
1/14/2019		7.07	extra sample
3/11/2019		7.38	extra sample

Prediction Limit

Constituent: pH (S.U.) Analysis Run 3/29/2019 4:47 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-805	MW-805	
6/7/2016	6.52		
8/10/2016	6.35		
10/11/2016	6.36		
12/6/2016	6.36		
2/6/2017	6.62		
4/5/2017	6.9		
6/13/2017	6.43		
8/8/2017	6.49		
11/30/2018		6.31	
1/14/2019		6.32	extra sample
3/11/2019		6.4	extra sample

Prediction Limit

Constituent: SULFATE (mg/l)   Analysis Run 3/29/2019 4:47 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-10	MW-10
6/6/2016	15.9	
8/11/2016	19.9	
10/12/2016	21.6	
12/9/2016	26.8	
2/8/2017	30.7	
4/6/2017	31.6	
6/15/2017	31.1	
8/10/2017	27.6	
11/30/2018		17.8

Prediction Limit

Constituent: SULFATE (mg/l)   Analysis Run 3/29/2019 4:47 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-13	MW-13
6/9/2016	1830	
8/11/2016	1730	
10/13/2016	1830	
12/13/2016	1270	
2/10/2017	1950	
4/6/2017	1480	
6/15/2017	1630	
8/8/2017	1410	
11/30/2018		978

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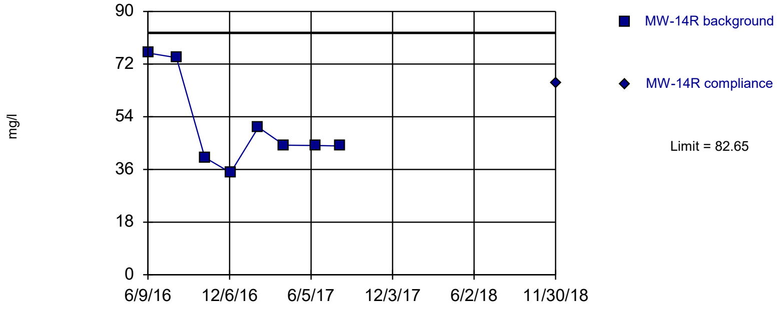
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=50.99, Std. Dev.=15.45, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.804, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: SULFATE Analysis Run 3/29/2019 4:43 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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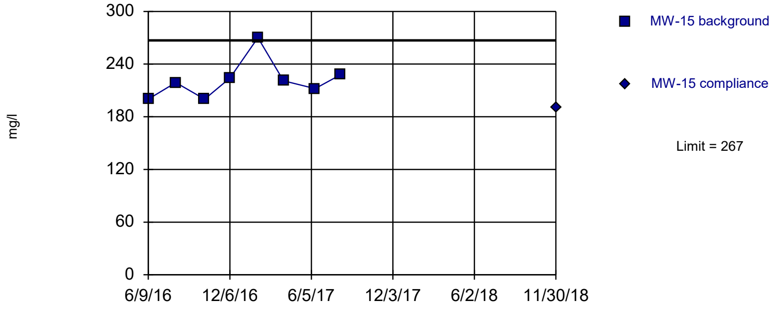
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=221.8, Std. Dev.=22.11, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8343, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: SULFATE Analysis Run 3/29/2019 4:43 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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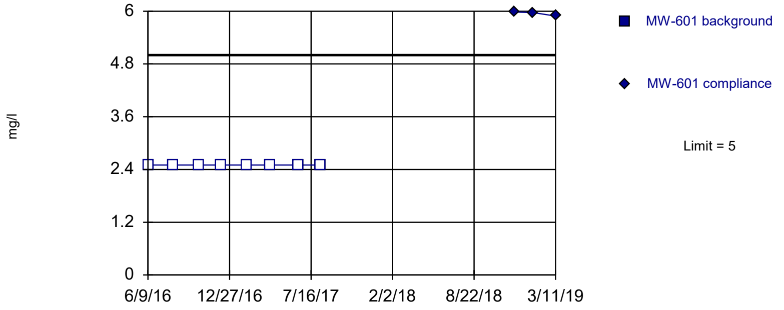
Hollow symbols indicate censored values.

Exceeds Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 8) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: SULFATE Analysis Run 3/29/2019 4:43 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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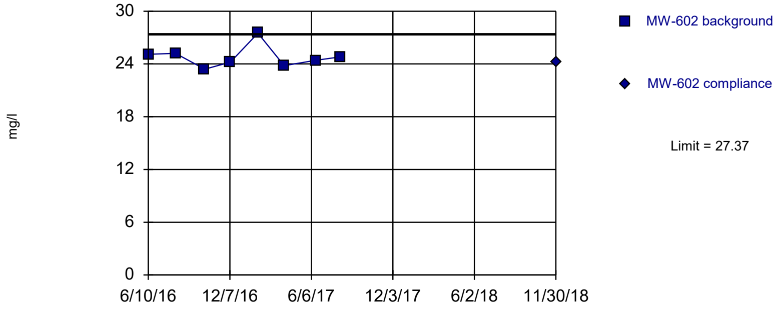
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=24.8, Std. Dev.=1.255, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8741, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: SULFATE Analysis Run 3/29/2019 4:43 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: SULFATE (mg/l)   Analysis Run 3/29/2019 4:47 PM   View: LF LAQC III
LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-14R	MW-14R
6/9/2016	75.8	
8/11/2016	74.2	
10/13/2016	40.1	
12/9/2016	34.9	
2/9/2017	50.4	
4/7/2017	44.3	
6/15/2017	44.2	
8/10/2017	44	
11/30/2018		65.4

Prediction Limit

Constituent: SULFATE (mg/l) Analysis Run 3/29/2019 4:47 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-15	MW-15
6/9/2016	200	
8/9/2016	219	
10/12/2016	200	
12/7/2016	224	
2/7/2017	270	
4/5/2017	221	
6/14/2017	212	
8/10/2017	228	
11/30/2018		191

Prediction Limit

Constituent: SULFATE (mg/l) Analysis Run 3/29/2019 4:47 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-601	MW-601	
6/9/2016	<5		
8/9/2016	<5		
10/13/2016	<5		
12/7/2016	<5		
2/8/2017	<5		
4/6/2017	<5		
6/15/2017	<5		
8/9/2017	<5		
11/30/2018		5.98	
1/14/2019		5.97	1st verification re-sample
3/11/2019		5.89	2nd verification re-sample

Prediction Limit

Constituent: SULFATE (mg/l)   Analysis Run 3/29/2019 4:47 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-602	MW-602
6/10/2016	25.1	
8/9/2016	25.2	
10/13/2016	23.4	
12/9/2016	24.2	
2/8/2017	27.5	
4/7/2017	23.8	
6/15/2017	24.4	
8/10/2017	24.8	
11/30/2018		24.2

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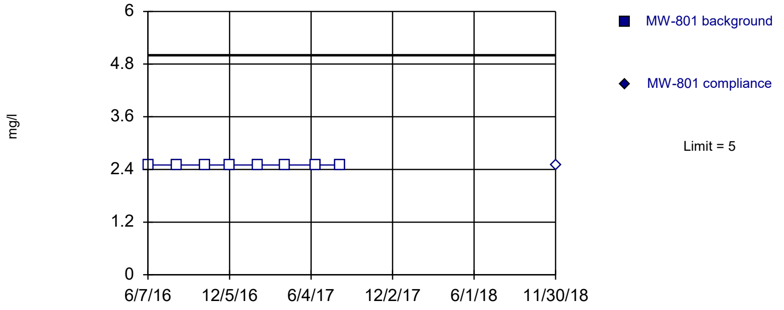
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 8) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: SULFATE Analysis Run 3/29/2019 4:43 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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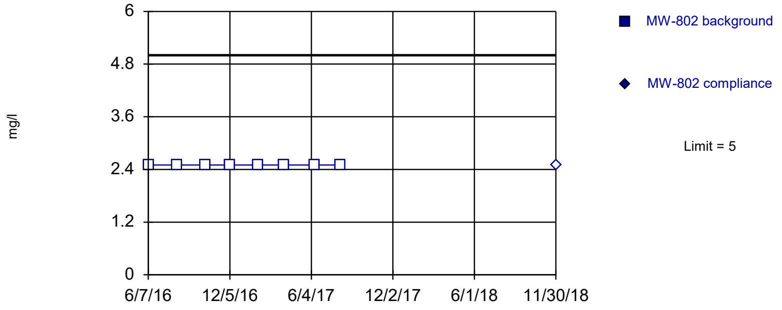
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 8) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: SULFATE Analysis Run 3/29/2019 4:43 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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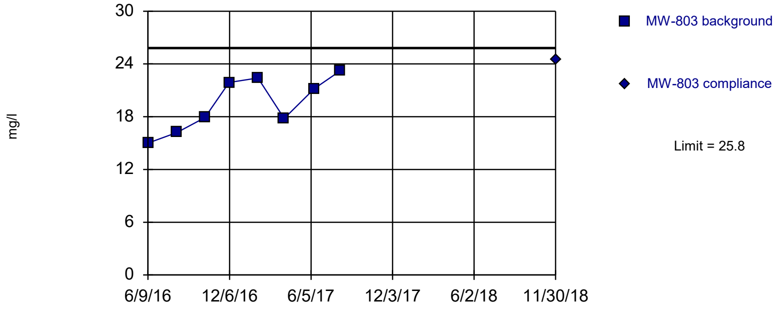
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=19.45, Std. Dev.=3.101, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9093, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: SULFATE Analysis Run 3/29/2019 4:43 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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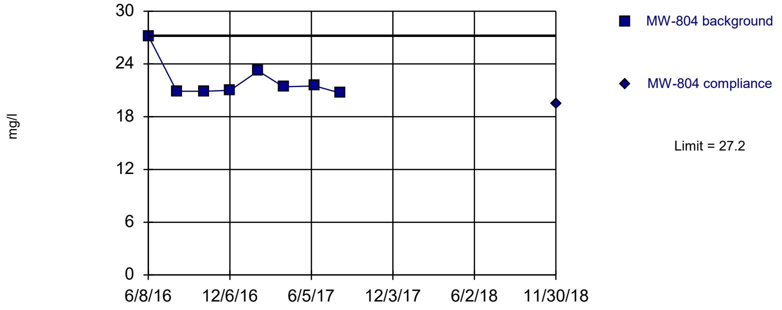
Within Limit

Prediction Limit

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 8 background values. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: SULFATE Analysis Run 3/29/2019 4:43 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: SULFATE (mg/l) Analysis Run 3/29/2019 4:47 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-801	MW-801
6/7/2016	<5	
8/9/2016	<5	
10/11/2016	<5	
12/6/2016	<5	
2/7/2017	<5	
4/6/2017	<5	
6/14/2017	<5	
8/9/2017	<5	
11/30/2018		<5

Prediction Limit

Constituent: SULFATE (mg/l)   Analysis Run 3/29/2019 4:47 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-802	MW-802
6/7/2016	<5	
8/10/2016	<5	
10/11/2016	<5	
12/6/2016	<5	
2/7/2017	<5	
4/4/2017	<5	
6/13/2017	<5	
8/7/2017	<5	
11/30/2018		<5

Prediction Limit

Constituent: SULFATE (mg/l)   Analysis Run 3/29/2019 4:47 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-803	MW-803
6/9/2016	15	
8/12/2016	16.2	
10/13/2016	17.9	
12/6/2016	21.9	
2/8/2017	22.4	
4/7/2017	17.8	
6/13/2017	21.2	
8/9/2017	23.2	
11/30/2018		24.5

Prediction Limit

Constituent: SULFATE (mg/l)   Analysis Run 3/29/2019 4:47 PM   View: LF LAQC III

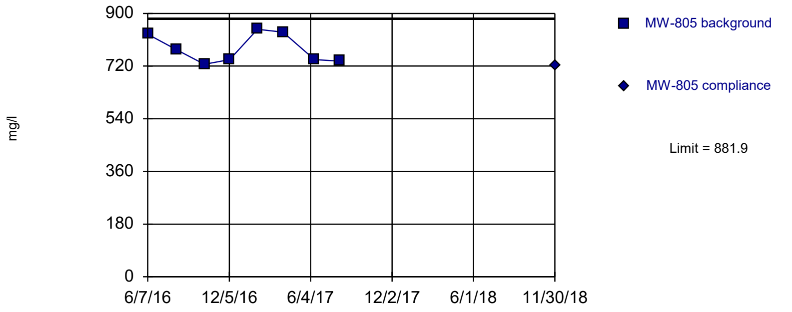
LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-804	MW-804
6/8/2016	27.2	
8/10/2016	20.9	
10/11/2016	20.9	
12/7/2016	21	
2/7/2017	23.2	
4/4/2017	21.4	
6/13/2017	21.5	
8/8/2017	20.7	
11/30/2018		19.4

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=779.3, Std. Dev.=50.08, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8342, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: SULFATE Analysis Run 3/29/2019 4:43 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: SULFATE (mg/l) Analysis Run 3/29/2019 4:47 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-805	MW-805
6/7/2016	829	
8/10/2016	776	
10/11/2016	726	
12/6/2016	742	
2/6/2017	846	
4/4/2017	836	
6/13/2017	742	
8/8/2017	737	
11/30/2018		722

Prediction Limit

LaCygne Client: SCS Engineers Data: LaC GW Data Printed 3/29/2019, 4:47 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
BORON (mg/l)	MW-10	0.9829	n/a	11/30/2018	0.914	No	8	0	No	0.001075	Param Intra 1 of 3
BORON (mg/l)	MW-13	0.4911	n/a	3/11/2019	0.47	No	8	0	No	0.001075	Param Intra 1 of 3
BORON (mg/l)	MW-14R	0.6841	n/a	3/11/2019	0.591	No	8	0	No	0.001075	Param Intra 1 of 3
BORON (mg/l)	MW-15	0.294	n/a	1/14/2019	0.288	No	8	0	No	0.001075	Param Intra 1 of 3
BORON (mg/l)	MW-601	1.966	n/a	11/30/2018	1.85	No	8	0	No	0.001075	Param Intra 1 of 3
BORON (mg/l)	MW-602	2.502	n/a	11/30/2018	2.32	No	8	0	No	0.001075	Param Intra 1 of 3
BORON (mg/l)	MW-801	2.401	n/a	11/30/2018	2.21	No	8	0	No	0.001075	Param Intra 1 of 3
BORON (mg/l)	MW-802	2.621	n/a	11/30/2018	2.49	No	8	0	No	0.001075	Param Intra 1 of 3
BORON (mg/l)	MW-803	2.231	n/a	11/30/2018	2.09	No	8	0	No	0.001075	Param Intra 1 of 3
BORON (mg/l)	**MW-804**	**1.653**	**n/a**	**3/11/2019**	**1.74**	**Yes**	**8**	**0**	**No**	**0.001075**	**Param Intra 1 of 3**
BORON (mg/l)	MW-805	0.5467	n/a	11/30/2018	0.525	No	8	0	No	0.001075	Param Intra 1 of 3
CALCIUM (mg/l)	MW-10	62.03	n/a	11/30/2018	57.5	No	8	0	No	0.001075	Param Intra 1 of 3
CALCIUM (mg/l)	MW-13	408.1	n/a	11/30/2018	209	No	8	0	No	0.001075	Param Intra 1 of 3
CALCIUM (mg/l)	MW-14R	63.23	n/a	11/30/2018	59	No	8	0	No	0.001075	Param Intra 1 of 3
CALCIUM (mg/l)	MW-15	111.9	n/a	11/30/2018	105	No	8	0	No	0.001075	Param Intra 1 of 3
CALCIUM (mg/l)	MW-601	24.13	n/a	11/30/2018	17.5	No	8	0	No	0.001075	Param Intra 1 of 3
CALCIUM (mg/l)	MW-602	26.32	n/a	11/30/2018	23.7	No	8	0	No	0.001075	Param Intra 1 of 3
CALCIUM (mg/l)	MW-801	37.78	n/a	11/30/2018	26.8	No	8	0	No	0.001075	Param Intra 1 of 3
CALCIUM (mg/l)	MW-802	42.78	n/a	11/30/2018	27.8	No	8	0	No	0.001075	Param Intra 1 of 3
CALCIUM (mg/l)	MW-803	50.43	n/a	11/30/2018	44.2	No	8	0	No	0.001075	Param Intra 1 of 3
CALCIUM (mg/l)	MW-804	68.38	n/a	11/30/2018	67.6	No	8	0	No	0.001075	Param Intra 1 of 3
CALCIUM (mg/l)	**MW-805**	**448.6**	**n/a**	**3/11/2019**	**468**	**Yes**	**8**	**0**	**No**	**0.001075**	**Param Intra 1 of 3**
CHLORIDE (mg/l)	MW-10	69.88	n/a	11/30/2018	55.5	No	8	0	No	0.001075	Param Intra 1 of 3
CHLORIDE (mg/l)	MW-13	19.77	n/a	11/30/2018	12.8	No	8	0	No	0.001075	Param Intra 1 of 3
CHLORIDE (mg/l)	MW-14R	5.237	n/a	3/11/2019	4.44	No	8	0	No	0.001075	Param Intra 1 of 3
CHLORIDE (mg/l)	MW-15	21.96	n/a	11/30/2018	12.9	No	8	0	No	0.001075	Param Intra 1 of 3
CHLORIDE (mg/l)	MW-601	197.1	n/a	11/30/2018	160	No	8	0	ln(x)	0.001075	Param Intra 1 of 3
CHLORIDE (mg/l)	MW-602	18.07	n/a	11/30/2018	16.5	No	8	0	No	0.001075	Param Intra 1 of 3
CHLORIDE (mg/l)	MW-801	123.1	n/a	11/30/2018	92.9	No	8	0	No	0.001075	Param Intra 1 of 3
CHLORIDE (mg/l)	MW-802	38.53	n/a	11/30/2018	35.9	No	8	0	No	0.001075	Param Intra 1 of 3
CHLORIDE (mg/l)	MW-803	50.33	n/a	11/30/2018	48.7	No	8	0	No	0.001075	Param Intra 1 of 3
CHLORIDE (mg/l)	MW-804	32.8	n/a	11/30/2018	32.2	No	8	0	n/a	0.005912	NP Intra (normality) ...
CHLORIDE (mg/l)	MW-805	525.7	n/a	11/30/2018	471	No	8	0	No	0.001075	Param Intra 1 of 3
DISSOLVED SOLIDS (mg/l)	MW-10	650.7	n/a	11/30/2018	588	No	8	0	No	0.001075	Param Intra 1 of 3
DISSOLVED SOLIDS (mg/l)	MW-13	6050	n/a	11/30/2018	1760	No	8	0	n/a	0.005912	NP Intra (normality) ...
DISSOLVED SOLIDS (mg/l)	MW-14R	606.4	n/a	11/30/2018	563	No	8	0	No	0.001075	Param Intra 1 of 3
DISSOLVED SOLIDS (mg/l)	MW-15	2310	n/a	11/30/2018	709	No	8	0	n/a	0.005912	NP Intra (normality) ...
DISSOLVED SOLIDS (mg/l)	MW-601	1056	n/a	11/30/2018	924	No	8	0	No	0.001075	Param Intra 1 of 3
DISSOLVED SOLIDS (mg/l)	MW-602	671.3	n/a	11/30/2018	579	No	8	0	No	0.001075	Param Intra 1 of 3
DISSOLVED SOLIDS (mg/l)	MW-801	1057	n/a	11/30/2018	832	No	8	0	No	0.001075	Param Intra 1 of 3
DISSOLVED SOLIDS (mg/l)	MW-802	729.8	n/a	11/30/2018	663	No	8	0	No	0.001075	Param Intra 1 of 3
DISSOLVED SOLIDS (mg/l)	MW-803	709	n/a	11/30/2018	601	No	8	0	n/a	0.005912	NP Intra (normality) ...
DISSOLVED SOLIDS (mg/l)	MW-804	593.6	n/a	11/30/2018	550	No	8	0	No	0.001075	Param Intra 1 of 3
DISSOLVED SOLIDS (mg/l)	MW-805	2657	n/a	11/30/2018	2070	No	8	0	No	0.001075	Param Intra 1 of 3
FLUORIDE (mg/l)	MW-10	0.4423	n/a	11/30/2018	0.3	No	8	0	No	0.001075	Param Intra 1 of 3
FLUORIDE (mg/l)	**MW-13**	**0.1905**	**n/a**	**3/11/2019**	**0.194**	**Yes**	**8**	**0**	**No**	**0.001075**	**Param Intra 1 of 3**
FLUORIDE (mg/l)	MW-14R	0.309	n/a	11/30/2018	0.231	No	8	0	No	0.001075	Param Intra 1 of 3
FLUORIDE (mg/l)	MW-15	0.312	n/a	11/30/2018	0.206	No	8	0	No	0.001075	Param Intra 1 of 3
FLUORIDE (mg/l)	MW-601	1.865	n/a	11/30/2018	1.54	No	8	0	No	0.001075	Param Intra 1 of 3
FLUORIDE (mg/l)	MW-602	1.377	n/a	11/30/2018	1.09	No	8	0	No	0.001075	Param Intra 1 of 3

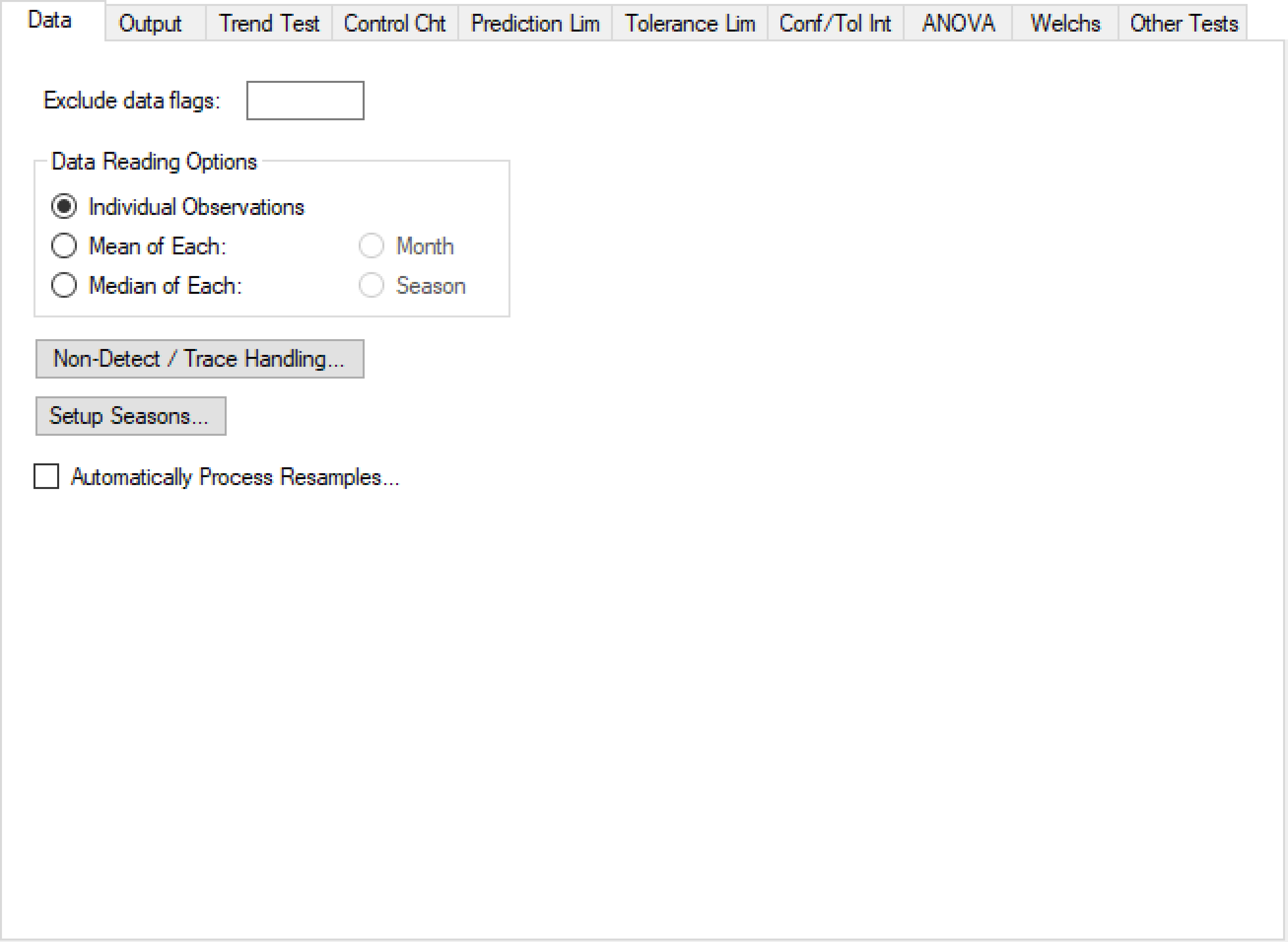
Prediction Limit

LaCygne Client: SCS Engineers Data: LaC GW Data Printed 3/29/2019, 4:47 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
FLUORIDE (mg/l)	MW-801	1.208	n/a	11/30/2018	0.984	No	8	0	No	0.001075	Param Intra 1 of 3
FLUORIDE (mg/l)	MW-802	1.104	n/a	11/30/2018	0.932	No	8	0	No	0.001075	Param Intra 1 of 3
FLUORIDE (mg/l)	MW-803	0.7263	n/a	11/30/2018	0.566	No	8	0	No	0.001075	Param Intra 1 of 3
FLUORIDE (mg/l)	MW-804	0.5003	n/a	11/30/2018	0.378	No	8	0	No	0.001075	Param Intra 1 of 3
FLUORIDE (mg/l)	MW-805	0.2147	n/a	11/30/2018	0.124	No	8	0	No	0.001075	Param Intra 1 of 3
pH (S.U.)	MW-10	7.373	7.172	11/30/2018	7.23	No	8	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-13	7.236	6.376	3/11/2019	7.07	No	8	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-14R	7.932	6.836	3/11/2019	7.45	No	8	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-15	11.38	7.02	1/14/2019	7.18	No	8	0	n/a	0.01182	NP Intra (normality) ...
pH (S.U.)	MW-601	8.6	7.61	3/11/2019	7.64	No	8	0	n/a	0.01182	NP Intra (normality) ...
pH (S.U.)	MW-602	8.55	6.785	11/30/2018	7.42	No	8	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-801	7.778	6.899	11/30/2018	7.34	No	8	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-802	8.72	7.29	11/30/2018	7.38	No	8	0	n/a	0.01182	NP Intra (normality) ...
pH (S.U.)	MW-803	8.278	6.832	11/30/2018	7.33	No	8	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-804	7.695	6.785	3/11/2019	7.38	No	8	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-805	6.884	6.123	3/11/2019	6.4	No	8	0	No	0.000...	Param Intra 1 of 3
SULFATE (mg/l)	MW-10	37.65	n/a	11/30/2018	17.8	No	8	0	No	0.001075	Param Intra 1 of 3
SULFATE (mg/l)	MW-13	2126	n/a	11/30/2018	978	No	8	0	No	0.001075	Param Intra 1 of 3
SULFATE (mg/l)	MW-14R	82.65	n/a	11/30/2018	65.4	No	8	0	No	0.001075	Param Intra 1 of 3
SULFATE (mg/l)	MW-15	267	n/a	11/30/2018	191	No	8	0	No	0.001075	Param Intra 1 of 3
SULFATE (mg/l)	**MW-601**	**5**	**n/a**	**3/11/2019**	**5.89**	**Yes**	**8**	**100**	**n/a**	**0.005912**	**NP Intra (NDs) 1 of 3**
SULFATE (mg/l)	MW-602	27.37	n/a	11/30/2018	24.2	No	8	0	No	0.001075	Param Intra 1 of 3
SULFATE (mg/l)	MW-801	5	n/a	11/30/2018	2.5ND	No	8	100	n/a	0.005912	NP Intra (NDs) 1 of 3
SULFATE (mg/l)	MW-802	5	n/a	11/30/2018	2.5ND	No	8	100	n/a	0.005912	NP Intra (NDs) 1 of 3
SULFATE (mg/l)	MW-803	25.8	n/a	11/30/2018	24.5	No	8	0	No	0.001075	Param Intra 1 of 3
SULFATE (mg/l)	MW-804	27.2	n/a	11/30/2018	19.4	No	8	0	n/a	0.005912	NP Intra (normality) ...
SULFATE (mg/l)	MW-805	881.9	n/a	11/30/2018	722	No	8	0	No	0.001075	Param Intra 1 of 3

ATTACHMENT 2

Sanitas^{TM} Configuration Settings



Exclude data flags:

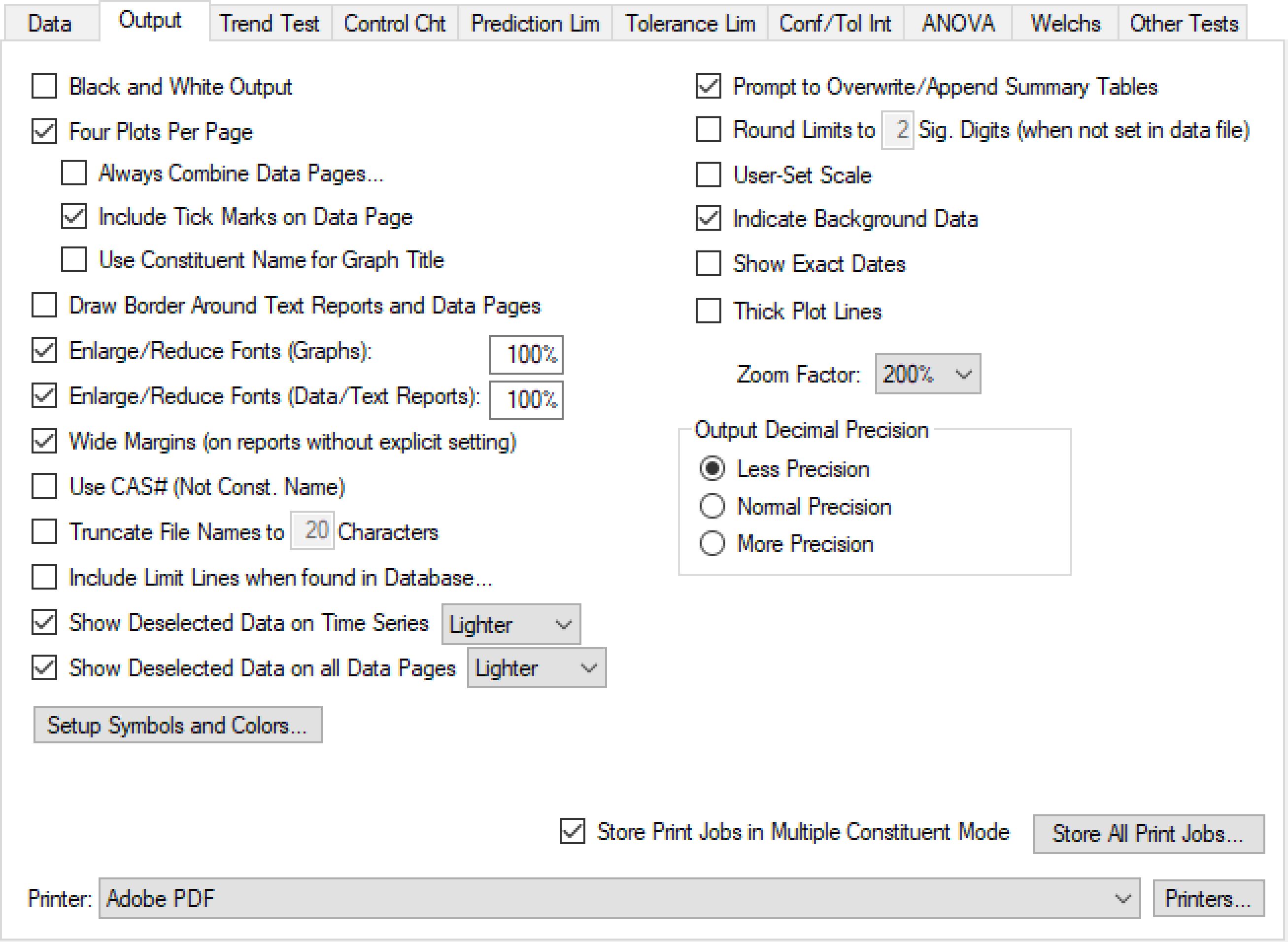
Data Reading Options

● Individual Observations

○ Mean of Each: ○ Month

○ Median of Each: ○ Season

☐ Automatically Process Resamples...



☐ Black and White Output

☑ Four Plots Per Page

  ☐ Always Combine Data Pages...

  ☑ Include Tick Marks on Data Page

  ☐ Use Constituent Name for Graph Title

☐ Draw Border Around Text Reports and Data Pages

☑ Enlarge/Reduce Fonts (Graphs): 100%

☑ Enlarge/Reduce Fonts (Data/Text Reports): 100%

☑ Wide Margins (on reports without explicit setting)

☐ Use CAS# (Not Const. Name)

☐ Truncate File Names to 20 Characters

☐ Include Limit Lines when found in Database...

☑ Show Deselected Data on Time Series Lighter

☑ Show Deselected Data on all Data Pages Lighter

☑ Prompt to Overwrite/Append Summary Tables

☐ Round Limits to 2 Sig. Digits (when not set in data file)

☐ User-Set Scale

☑ Indicate Background Data

☐ Show Exact Dates

☐ Thick Plot Lines

Zoom Factor: 200%

Output Decimal Precision

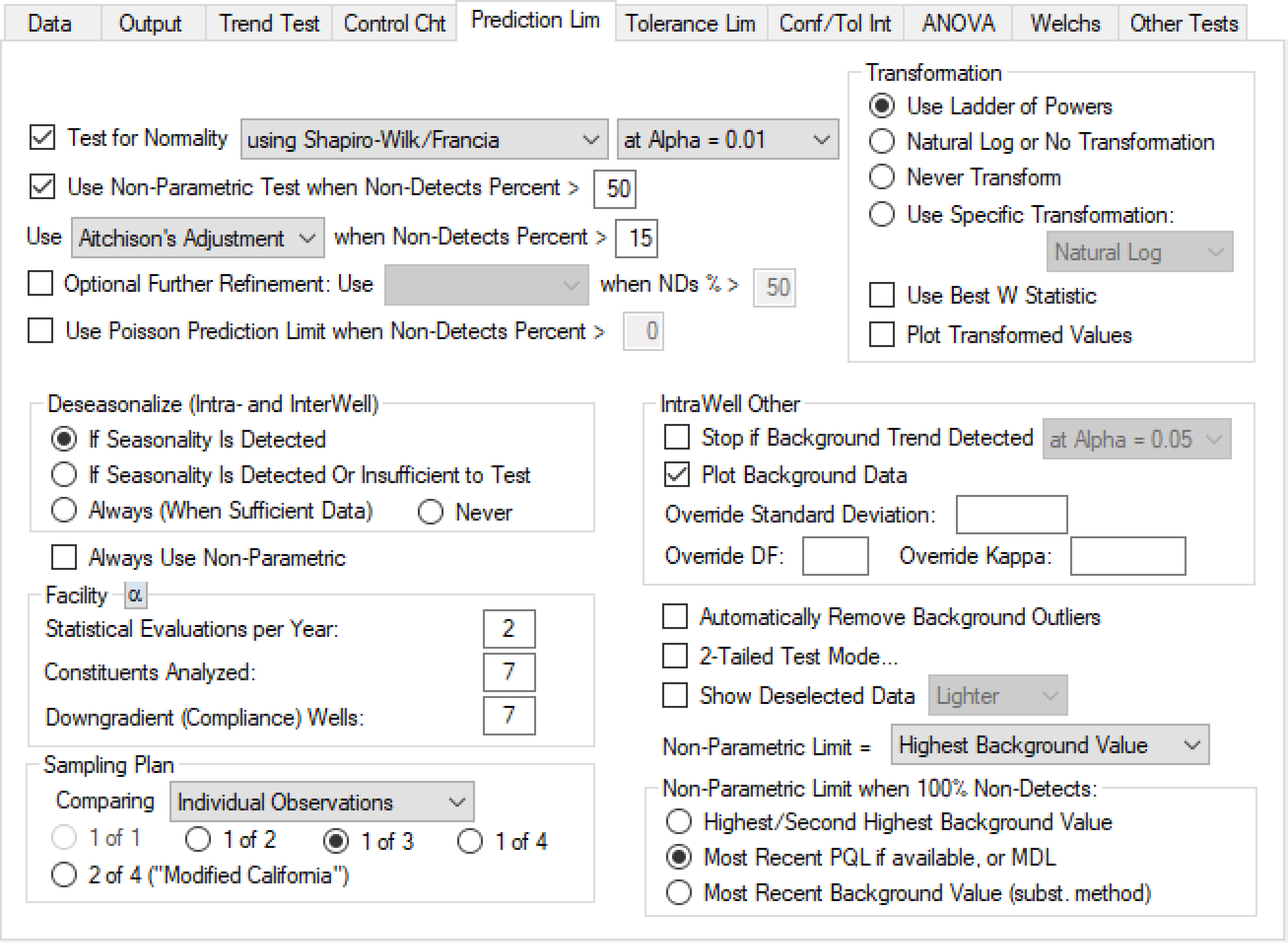
● Less Precision

○ Normal Precision

○ More Precision

☑ Store Print Jobs in Multiple Constituent Mode

Printer: Adobe PDF



☑ Test for Normality using Shapiro-Wilk/Francia at Alpha = 0.01

☑ Use Non-Parametric Test when Non-Detects Percent > 50

Use Aitchison's Adjustment when Non-Detects Percent > 15

☐ Optional Further Refinement: Use when NDs % > 50

☐ Use Poisson Prediction Limit when Non-Detects Percent > 0

Transformation
● Use Ladder of Powers
○ Natural Log or No Transformation
○ Never Transform
○ Use Specific Transformation: Natural Log
☐ Use Best W Statistic
☐ Plot Transformed Values

Deseasonalize (Intra- and InterWell)
● If Seasonality Is Detected
○ If Seasonality Is Detected Or Insufficient to Test
○ Always (When Sufficient Data) ○ Never

☐ Always Use Non-Parametric

Facility α
Statistical Evaluations per Year: 2
Constituents Analyzed: 7
Downgradient (Compliance) Wells: 7

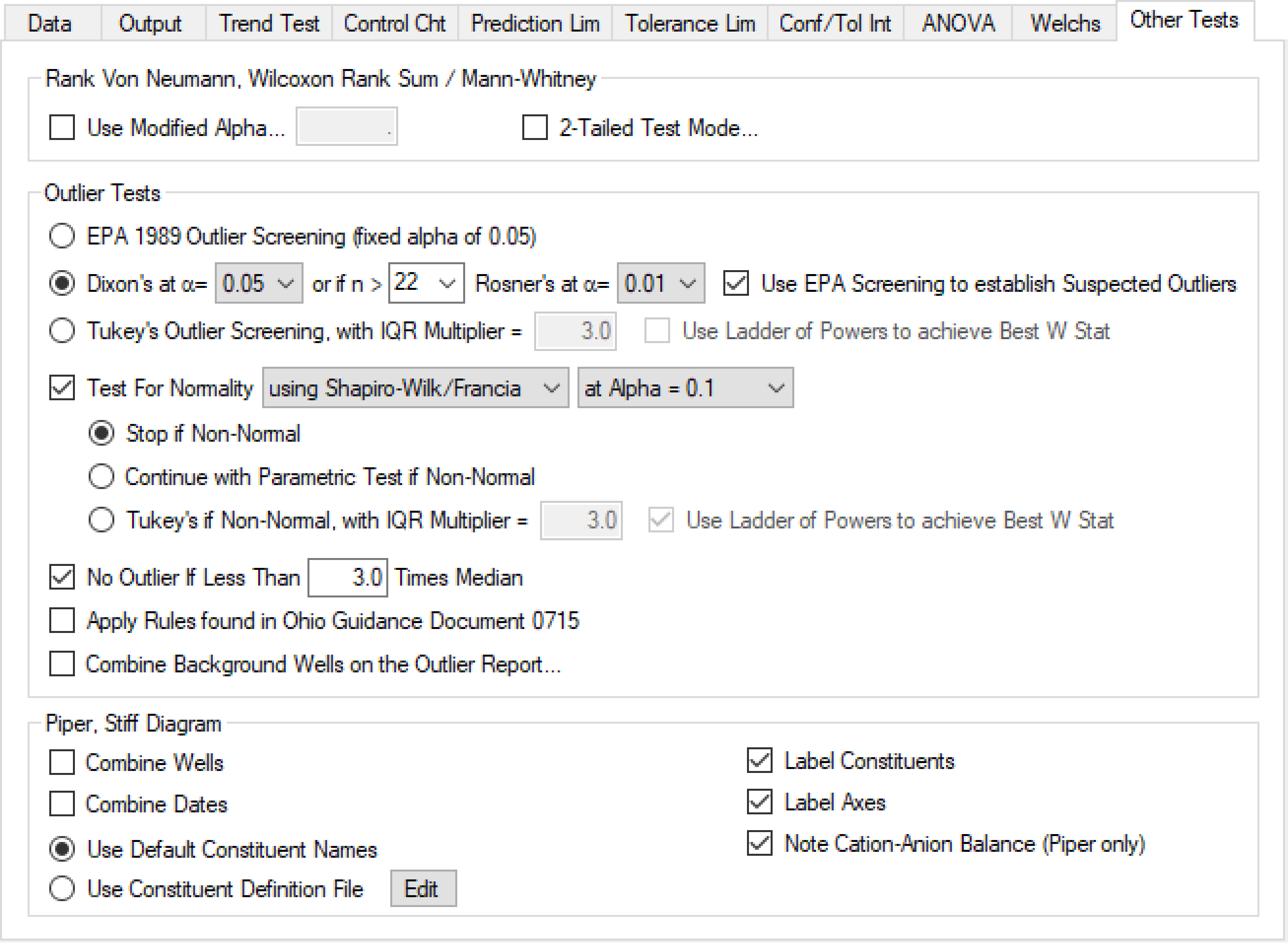
Sampling Plan
Comparing Individual Observations
○ 1 of 1 ○ 1 of 2 ● 1 of 3 ○ 1 of 4
○ 2 of 4 ("Modified California")

IntraWell Other
☐ Stop if Background Trend Detected at Alpha = 0.05
☑ Plot Background Data
Override Standard Deviation:
Override DF: Override Kappa:

☐ Automatically Remove Background Outliers
☐ 2-Tailed Test Mode...
☐ Show Deselected Data Lighter

Non-Parametric Limit = Highest Background Value

Non-Parametric Limit when 100% Non-Detects:
○ Highest/Second Highest Background Value
● Most Recent PQL if available, or MDL
○ Most Recent Background Value (subst. method)



Rank Von Neumann, Wilcoxon Rank Sum / Mann-Whitney

☐ Use Modified Alpha...   ☐ 2-Tailed Test Mode...

Outlier Tests

○ EPA 1989 Outlier Screening (fixed alpha of 0.05)

● Dixon's at α= 0.05 or if n > 22 Rosner's at α= 0.01 ☑ Use EPA Screening to establish Suspected Outliers

○ Tukey's Outlier Screening, with IQR Multiplier = 3.0 ☐ Use Ladder of Powers to achieve Best W Stat

☑ Test For Normality using Shapiro-Wilk/Francia at Alpha = 0.1

- ● Stop if Non-Normal
- ○ Continue with Parametric Test if Non-Normal
- ○ Tukey's if Non-Normal, with IQR Multiplier = 3.0 ☑ Use Ladder of Powers to achieve Best W Stat

☑ No Outlier If Less Than 3.0 Times Median

☐ Apply Rules found in Ohio Guidance Document 0715

☐ Combine Background Wells on the Outlier Report...

Piper, Stiff Diagram

☐ Combine Wells

☐ Combine Dates

● Use Default Constituent Names

○ Use Constituent Definition File

☑ Label Constituents

☑ Label Axes

☑ Note Cation-Anion Balance (Piper only)

ATTACHMENT 2-2

Spring 2019 Semiannual Detection Monitoring Statistical Analyses

MEMORANDUM

October 1, 2019

To: **La Cygne Generating Station**
25166 East 2200 Road
La Cygne, Kansas 66040
Kansas City Power & Light Company

JOHN R. ROCKHOLD
LICENSED
29
10-01-19
KANSAS
PROFESSIONAL GEOLOGIST

From: **SCS Engineers**

RE: **Determination of Statistically Significant Increases –**
CCR Landfill and Lower AQC Impoundment
Spring 2019 Semiannual Detection Monitoring 40 CFR 257.94

Statistical analysis of monitoring data from the groundwater monitoring system for the CCR Landfill and Lower AQC Impoundment at the La Cygne Generating Station has been completed in substantial compliance with the "Statistical Method Certification by A Qualified Professional Engineer" dated October 12, 2017. Detection monitoring groundwater samples were collected on May 23, 2019. Review and validation of the results from the May 2019 Detection Monitoring Event was completed on July 5, 2019, which constitutes completion and finalization of detection monitoring laboratory analyses. A statistical analysis was then conducted to determine whether there was a statistically significant increase (SSI) over background values for each constituent listed in Appendix III to Part 257-Constituents for Detection Monitoring. Two rounds of verification sampling were conducted for certain constituents on July 17, 2019 and August 23, 2019.

The completed statistical evaluation identified two Appendix III constituents above their respective prediction limit in monitoring wells MW-601 and MW-14R.

Constituent/Monitoring Well	*UPL	Observation May 23, 2019	1st Verification July 17, 2019	2nd Verification August 23, 2019
Sulfate				
MW-601	5	6.76	5.75	6.32
Chloride				
MW-14R	5.237	5.33	6.14	6.08

*UPL – Upper Prediction Limit

Determination: A statistical evaluation was completed for all Appendix III detection monitoring constituents in accordance with the certified statistical method. The statistical evaluation confirmed two SSIs above the background prediction limits. These include sulfate in upgradient monitoring well MW-601 and chloride in monitoring well MW-14R.

Attached to this memorandum are the following backup information:

Attachment 1: Sanitas^{TM} Output:

Statistical evaluation output from Sanitas^{TM} for the prediction limit analysis. This includes prediction limit plots, prediction limit background data, detection sample result, 1st verification re-sample result (when applicable), 2nd verification re-sample result (when applicable), extra sample results for pH because pH is collected as part of the sampling procedure, and a Prediction Limit summary table. Output documentation includes the analytical data used for the statistical analyses.

Attachment 2: Sanitas^{TM} Configuration Settings:

Screen shots of the applicable Sanitas^{TM} configuration settings for the statistical prediction limit analysis. This includes data configuration, output configuration, prediction limit configuration and other tests configuration.

Revision Number	**Revision Date**	**Attachment Revised**	**Summary of Revisions**

La Cygne Generating Station
Determination of Statistically Significant Increases
CCR Landfill and Lower AQC Impoundment
October 1, 2019

ATTACHMENT 1

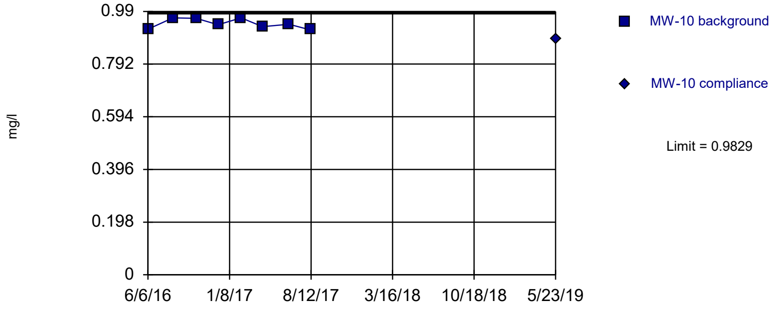
Sanitas^{TM} Output

Sanitas™ v.9.6.23 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.9444, Std. Dev.=0.01881, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8672, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: BORON Analysis Run 9/25/2019 1:34 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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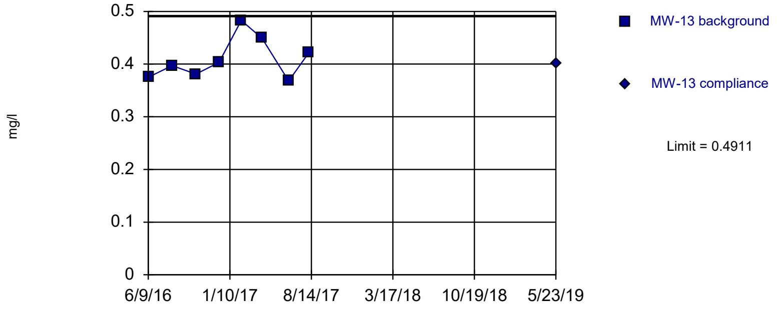
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.4098, Std. Dev.=0.03972, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9147, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: BORON Analysis Run 9/25/2019 1:34 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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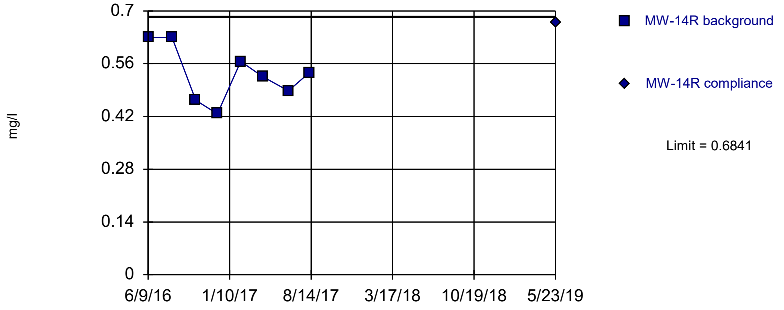
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.5333, Std. Dev.=0.07362, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9474, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: BORON Analysis Run 9/25/2019 1:34 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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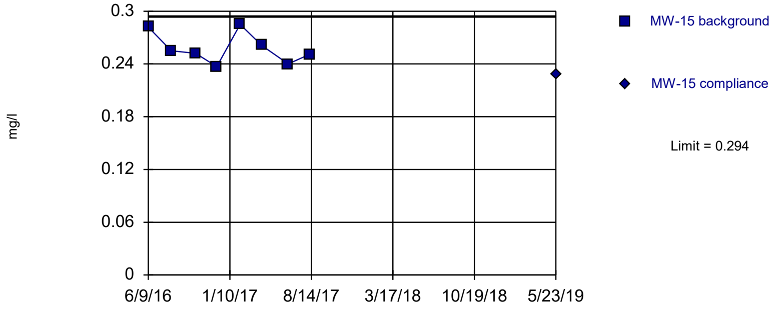
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.2579, Std. Dev.=0.01762, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9011, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: BORON Analysis Run 9/25/2019 1:34 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: BORON (mg/l)   Analysis Run 9/25/2019 1:55 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-10	MW-10
6/6/2016	0.923	
8/11/2016	0.966	
10/12/2016	0.964	
12/9/2016	0.94	
2/8/2017	0.966	
4/6/2017	0.933	
6/15/2017	0.942	
8/10/2017	0.921	
5/23/2019		0.885

Prediction Limit

Constituent: BORON (mg/l)   Analysis Run 9/25/2019 1:55 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-13	MW-13
6/9/2016	0.375	
8/11/2016	0.397	
10/13/2016	0.381	
12/13/2016	0.403	
2/10/2017	0.483	
4/6/2017	0.449	
6/15/2017	0.368	
8/8/2017	0.422	
5/23/2019		0.401

Prediction Limit

Constituent: BORON (mg/l) Analysis Run 9/25/2019 1:55 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-14R	MW-14R
6/9/2016	0.629	
8/11/2016	0.63	
10/13/2016	0.463	
12/9/2016	0.427	
2/9/2017	0.566	
4/7/2017	0.526	
6/15/2017	0.488	
8/10/2017	0.537	
5/23/2019		0.669

Prediction Limit

Constituent: BORON (mg/l)   Analysis Run 9/25/2019 1:55 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-15	MW-15
6/9/2016	0.282	
8/9/2016	0.255	
10/12/2016	0.252	
12/7/2016	0.237	
2/7/2017	0.285	
4/5/2017	0.261	
6/14/2017	0.24	
8/10/2017	0.251	
5/23/2019		0.228

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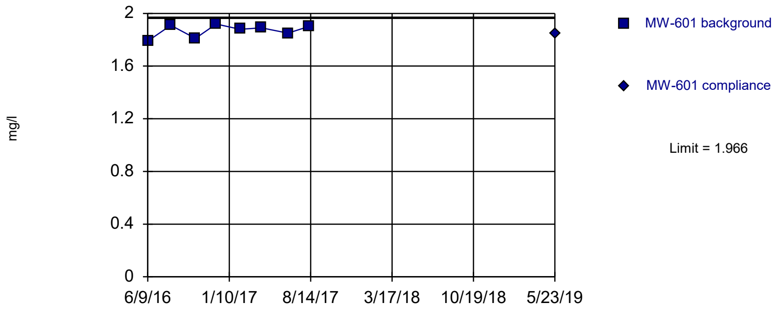
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1.869, Std. Dev.=0.04764, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9002, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: BORON Analysis Run 9/25/2019 1:34 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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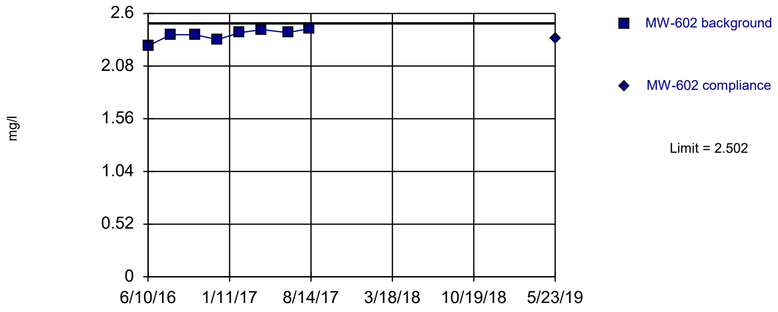
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=2.389, Std. Dev.=0.0554, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9009, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: BORON Analysis Run 9/25/2019 1:34 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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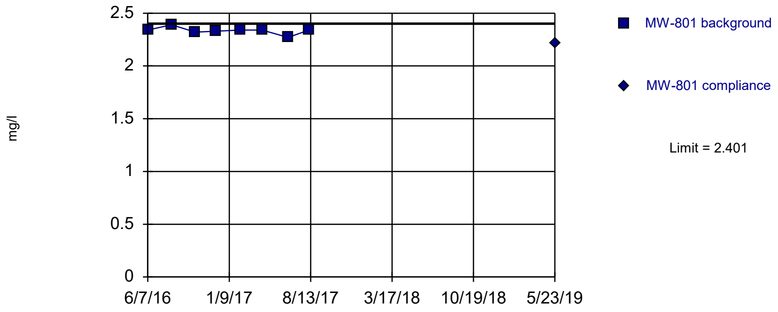
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=2.334, Std. Dev.=0.03292, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8582, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: BORON Analysis Run 9/25/2019 1:34 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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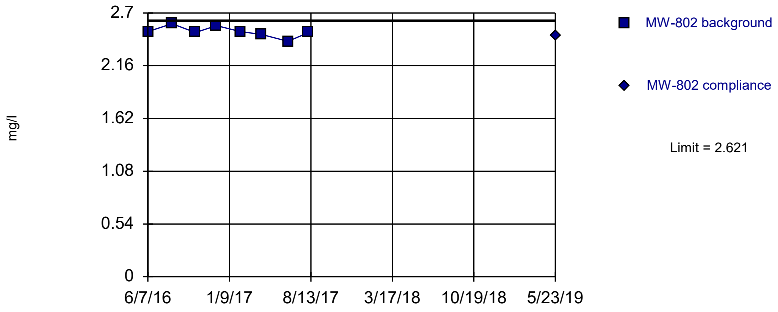
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=2.509, Std. Dev.=0.05489, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9257, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: BORON Analysis Run 9/25/2019 1:34 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: BORON (mg/l)   Analysis Run 9/25/2019 1:55 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-601	MW-601
6/9/2016	1.79	
8/9/2016	1.91	
10/13/2016	1.81	
12/7/2016	1.92	
2/8/2017	1.88	
4/6/2017	1.89	
6/15/2017	1.85	
8/9/2017	1.9	
5/23/2019		1.85

Prediction Limit

Constituent: BORON (mg/l)   Analysis Run 9/25/2019 1:55 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-602	MW-602
6/10/2016	2.28	
8/9/2016	2.39	
10/13/2016	2.39	
12/9/2016	2.34	
2/8/2017	2.41	
4/7/2017	2.44	
6/15/2017	2.41	
8/10/2017	2.45	
5/23/2019		2.35

Prediction Limit

Constituent: BORON (mg/l) Analysis Run 9/25/2019 1:55 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-801	MW-801
6/7/2016	2.34	
8/9/2016	2.39	
10/11/2016	2.32	
12/6/2016	2.33	
2/7/2017	2.34	
4/6/2017	2.34	
6/14/2017	2.27	
8/9/2017	2.34	
5/23/2019		2.22

Prediction Limit

Constituent: BORON (mg/l)   Analysis Run 9/25/2019 1:55 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-802	MW-802
6/7/2016	2.51	
8/10/2016	2.59	
10/11/2016	2.5	
12/6/2016	2.57	
2/7/2017	2.51	
4/4/2017	2.48	
6/13/2017	2.41	
8/7/2017	2.5	
5/23/2019		2.47

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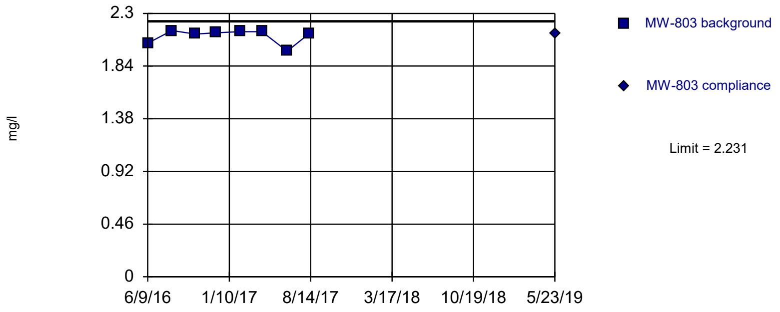
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=2.101, Std. Dev.=0.06312, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.75, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

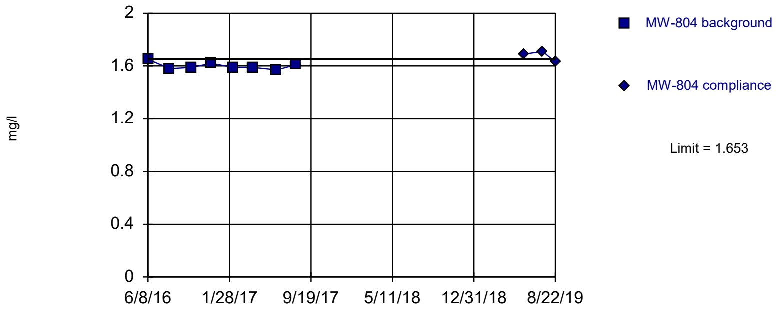
Constituent: BORON Analysis Run 9/25/2019 1:34 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Sanitas™ v.9.6.23 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1.6, Std. Dev.=0.02563, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.906, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

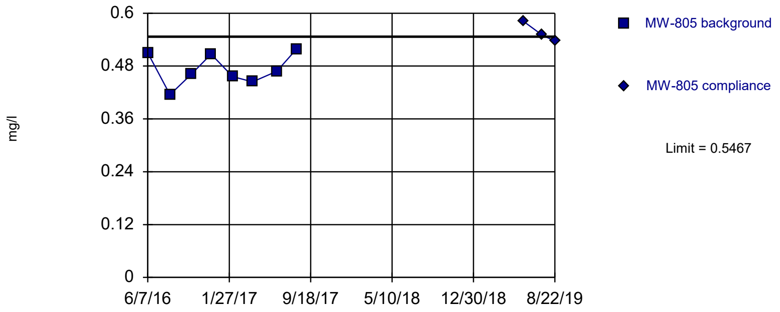
Constituent: BORON Analysis Run 9/25/2019 1:34 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Sanitas™ v.9.6.23 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.4725, Std. Dev.=0.03623, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9301, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: BORON Analysis Run 9/25/2019 1:34 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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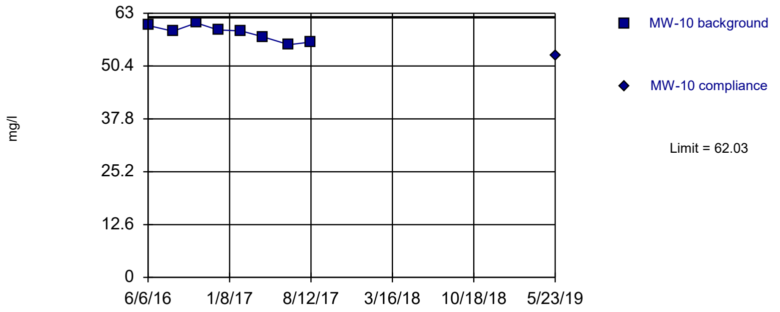
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=58.29, Std. Dev.=1.828, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9433, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: CALCIUM Analysis Run 9/25/2019 1:34 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: BORON (mg/l)   Analysis Run 9/25/2019 1:55 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-803	MW-803
6/9/2016	2.04	
8/12/2016	2.15	
10/13/2016	2.12	
12/6/2016	2.13	
2/8/2017	2.14	
4/7/2017	2.14	
6/13/2017	1.97	
8/9/2017	2.12	
5/23/2019		2.12

Prediction Limit

Constituent: BORON (mg/l)   Analysis Run 9/25/2019 1:55 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-804	MW-804	
6/8/2016	1.65		
8/10/2016	1.58		
10/11/2016	1.59		
12/7/2016	1.62		
2/7/2017	1.59		
4/4/2017	1.59		
6/13/2017	1.57		
8/8/2017	1.61		
5/23/2019		1.69	
7/17/2019		1.71	1st verification sample
8/22/2019		1.63	2nd verification sample

Prediction Limit

Constituent: BORON (mg/l)   Analysis Run 9/25/2019 1:55 PM   View: LF LAQC III
LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-805	MW-805	
6/7/2016	0.51		
8/10/2016	0.415		
10/11/2016	0.462		
12/6/2016	0.507		
2/6/2017	0.456		
4/4/2017	0.444		
6/13/2017	0.468		
8/8/2017	0.518		
5/23/2019		0.582	
7/17/2019		0.55	1st verification sample
8/22/2019		0.537	2nd verification sample

Prediction Limit

Constituent: CALCIUM (mg/l)   Analysis Run 9/25/2019 1:55 PM   View: LF LAQC III
LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-10	MW-10
6/6/2016	60.1	
8/11/2016	58.7	
10/12/2016	60.7	
12/9/2016	59	
2/8/2017	58.8	
4/6/2017	57.4	
6/15/2017	55.5	
8/10/2017	56.1	
5/23/2019		52.9

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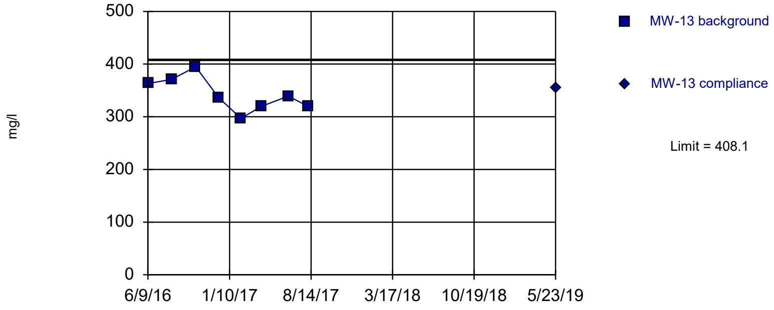
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=342.5, Std. Dev.=32.01, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9704, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: CALCIUM Analysis Run 9/25/2019 1:34 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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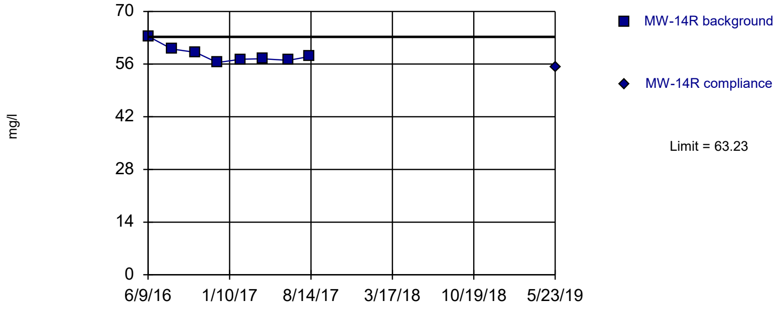
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=58.58, Std. Dev.=2.272, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8472, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: CALCIUM Analysis Run 9/25/2019 1:34 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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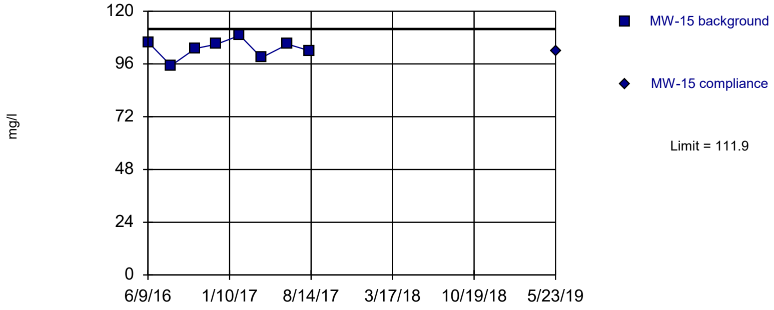
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=103, Std. Dev.=4.337, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9585, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: CALCIUM Analysis Run 9/25/2019 1:34 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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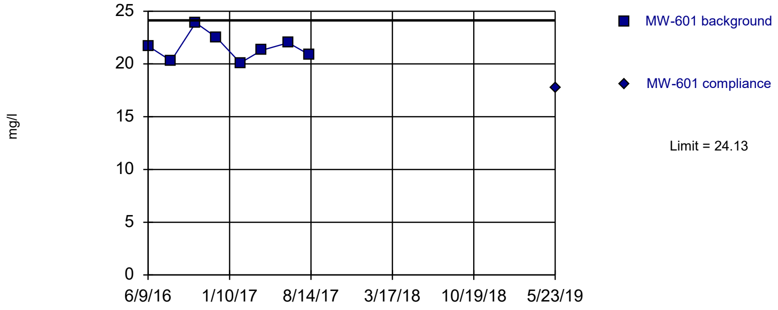
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=21.59, Std. Dev.=1.241, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9551, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: CALCIUM Analysis Run 9/25/2019 1:34 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: CALCIUM (mg/l)   Analysis Run 9/25/2019 1:55 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-13	MW-13
6/9/2016	363	
8/11/2016	371	
10/13/2016	395	
12/13/2016	336	
2/10/2017	297	
4/6/2017	320	
6/15/2017	339	
8/8/2017	319	
5/23/2019		355

Prediction Limit

Constituent: CALCIUM (mg/l) Analysis Run 9/25/2019 1:55 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-14R	MW-14R
6/9/2016	63.4	
8/11/2016	60	
10/13/2016	59.1	
12/9/2016	56.4	
2/9/2017	57.3	
4/7/2017	57.4	
6/15/2017	57	
8/10/2017	58	
5/23/2019		55.2

Prediction Limit

Constituent: CALCIUM (mg/l)   Analysis Run 9/25/2019 1:55 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-15	MW-15
6/9/2016	106	
8/9/2016	95.2	
10/12/2016	103	
12/7/2016	105	
2/7/2017	109	
4/5/2017	98.9	
6/14/2017	105	
8/10/2017	102	
5/23/2019		102

Prediction Limit

Constituent: CALCIUM (mg/l) Analysis Run 9/25/2019 1:55 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-601	MW-601
6/9/2016	21.7	
8/9/2016	20.3	
10/13/2016	23.9	
12/7/2016	22.5	
2/8/2017	20.1	
4/6/2017	21.3	
6/15/2017	22	
8/9/2017	20.9	
5/23/2019		17.7

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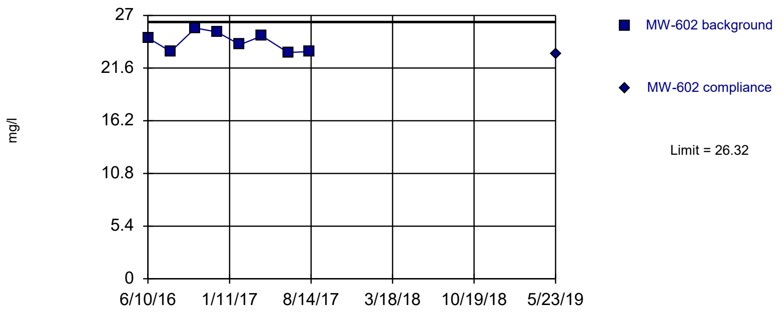
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=24.3, Std. Dev.=0.9842, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8954, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: CALCIUM Analysis Run 9/25/2019 1:34 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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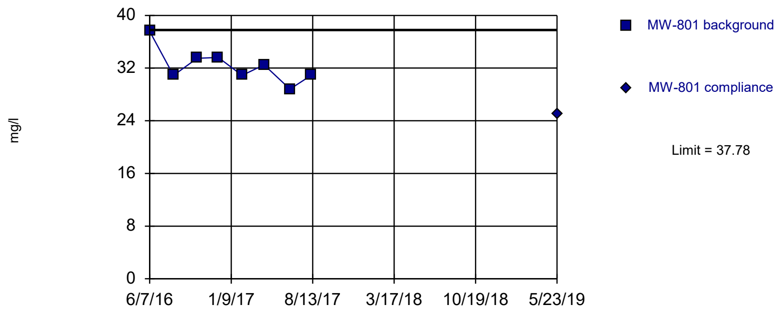
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=32.34, Std. Dev.=2.656, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9153, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: CALCIUM Analysis Run 9/25/2019 1:34 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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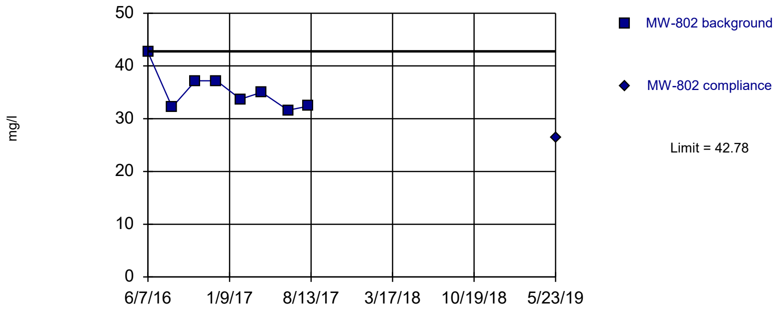
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=35.24, Std. Dev.=3.681, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8826, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: CALCIUM Analysis Run 9/25/2019 1:34 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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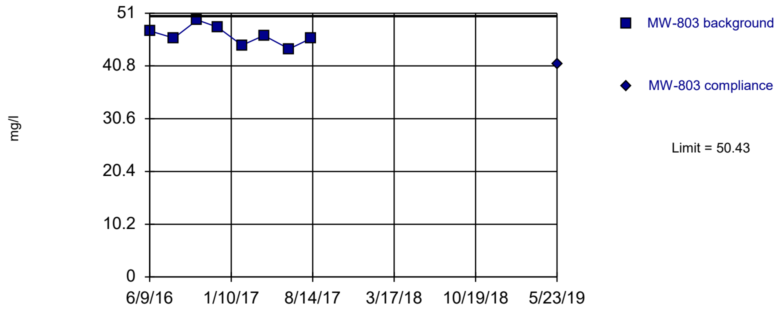
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=46.69, Std. Dev.=1.826, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.981, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: CALCIUM Analysis Run 9/25/2019 1:34 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: CALCIUM (mg/l) Analysis Run 9/25/2019 1:55 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-602	MW-602
6/10/2016	24.7	
8/9/2016	23.3	
10/13/2016	25.7	
12/9/2016	25.3	
2/8/2017	24	
4/7/2017	24.9	
6/15/2017	23.2	
8/10/2017	23.3	
5/23/2019		23.1

Prediction Limit

Constituent: CALCIUM (mg/l) Analysis Run 9/25/2019 1:55 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-801	MW-801
6/7/2016	37.6	
8/9/2016	30.9	
10/11/2016	33.5	
12/6/2016	33.6	
2/7/2017	30.9	
4/6/2017	32.5	
6/14/2017	28.8	
8/9/2017	30.9	
5/23/2019		25.1

Prediction Limit

Constituent: CALCIUM (mg/l)   Analysis Run 9/25/2019 1:55 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-802	MW-802
6/7/2016	42.6	
8/10/2016	32.2	
10/11/2016	37.2	
12/6/2016	37.2	
2/7/2017	33.7	
4/4/2017	35	
6/13/2017	31.6	
8/7/2017	32.4	
5/23/2019		26.4

Prediction Limit

Constituent: CALCIUM (mg/l) Analysis Run 9/25/2019 1:55 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-803	MW-803
6/9/2016	47.6	
8/12/2016	46.2	
10/13/2016	49.7	
12/6/2016	48.3	
2/8/2017	44.8	
4/7/2017	46.7	
6/13/2017	44.1	
8/9/2017	46.1	
5/23/2019		41.1

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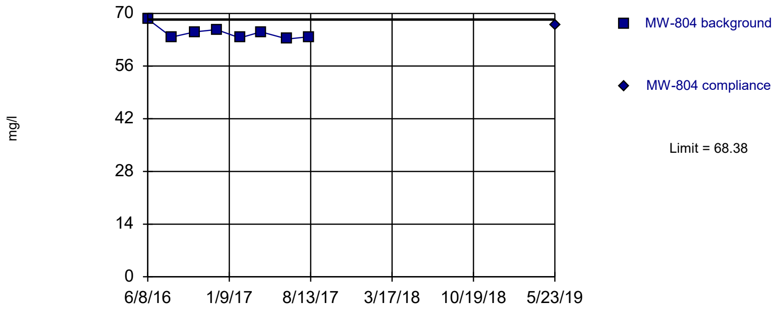
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=64.83, Std. Dev.=1.738, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8428, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

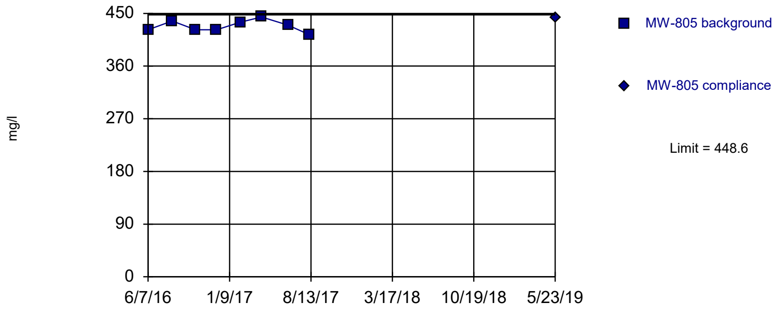
Constituent: CALCIUM Analysis Run 9/25/2019 1:34 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Sanitas™ v.9.6.23 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=428.3, Std. Dev.=9.953, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9462, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

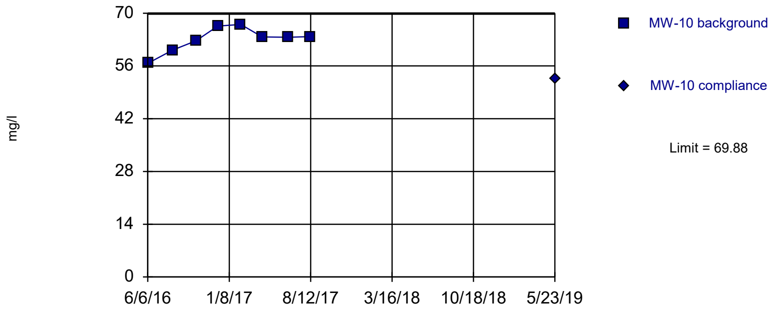
Constituent: CALCIUM Analysis Run 9/25/2019 1:34 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Sanitas™ v.9.6.23 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=63.04, Std. Dev.=3.339, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.916, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

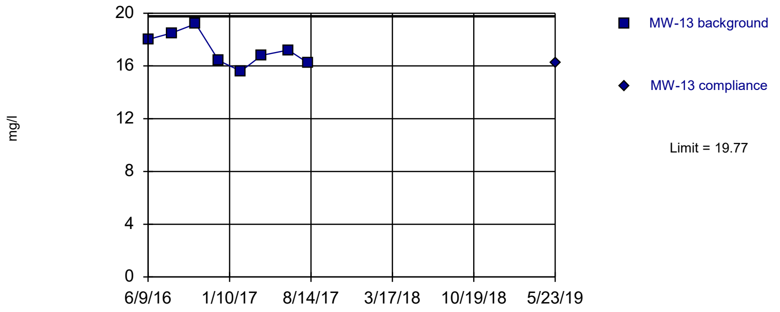
Constituent: CHLORIDE Analysis Run 9/25/2019 1:34 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Sanitas™ v.9.6.23 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=17.24, Std. Dev.=1.235, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9636, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: CHLORIDE Analysis Run 9/25/2019 1:34 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: CALCIUM (mg/l) Analysis Run 9/25/2019 1:55 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-804	MW-804
6/8/2016	68.5	
8/10/2016	63.7	
10/11/2016	65.1	
12/7/2016	65.7	
2/7/2017	63.5	
4/4/2017	65.1	
6/13/2017	63.2	
8/8/2017	63.8	
5/23/2019		66.8

Prediction Limit

Constituent: CALCIUM (mg/l) Analysis Run 9/25/2019 1:55 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-805	MW-805
6/7/2016	422	
8/10/2016	437	
10/11/2016	422	
12/6/2016	422	
2/6/2017	435	
4/4/2017	444	
6/13/2017	430	
8/8/2017	414	
5/23/2019		442

Prediction Limit

Constituent: CHLORIDE (mg/l) Analysis Run 9/25/2019 1:55 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-10	MW-10
6/6/2016	56.7	
8/11/2016	60.2	
10/12/2016	62.7	
12/9/2016	66.6	
2/8/2017	67	
4/6/2017	63.7	
6/15/2017	63.6	
8/10/2017	63.8	
5/23/2019		52.5

Prediction Limit

Constituent: CHLORIDE (mg/l)   Analysis Run 9/25/2019 1:55 PM   View: LF LAQC III

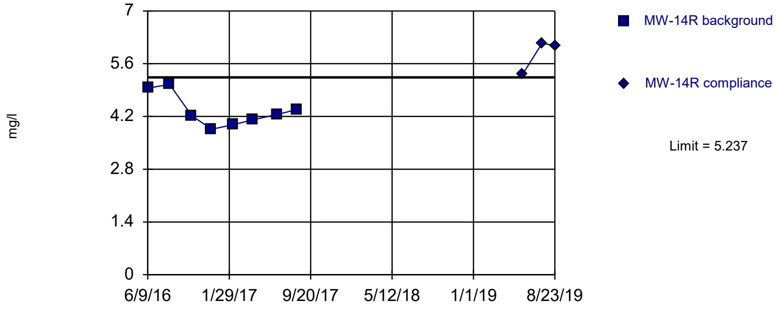
LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-13	MW-13
6/9/2016	18	
8/11/2016	18.5	
10/13/2016	19.2	
12/13/2016	16.4	
2/10/2017	15.6	
4/6/2017	16.8	
6/15/2017	17.2	
8/8/2017	16.2	
5/23/2019		16.2

Exceeds Limit

Prediction Limit

Intrawell Parametric



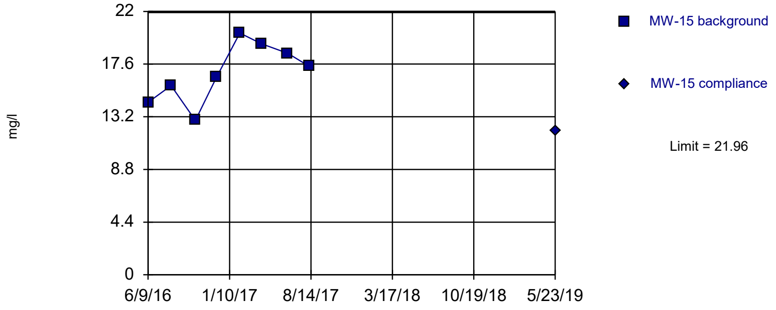
Background Data Summary: Mean=4.35, Std. Dev.=0.433, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8819, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: CHLORIDE Analysis Run 9/25/2019 1:34 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Within Limit

Prediction Limit

Intrawell Parametric



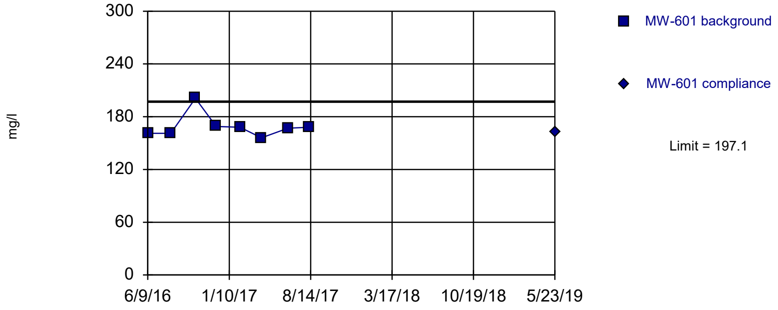
Background Data Summary: Mean=16.88, Std. Dev.=2.481, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9777, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: CHLORIDE Analysis Run 9/25/2019 1:34 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Within Limit

Prediction Limit

Intrawell Parametric



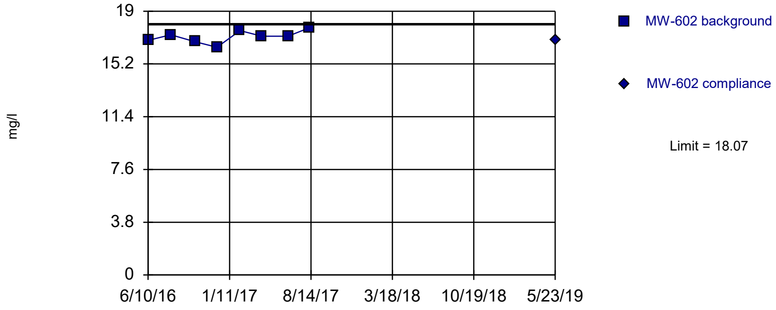
Background Data Summary (based on natural log transformation): Mean=5.126, Std. Dev.=0.07681, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.7542, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: CHLORIDE Analysis Run 9/25/2019 1:34 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=17.15, Std. Dev.=0.4472, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.978, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: CHLORIDE Analysis Run 9/25/2019 1:35 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: CHLORIDE (mg/l)   Analysis Run 9/25/2019 1:55 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-14R	MW-14R	
6/9/2016	4.95		
8/11/2016	5.05		
10/13/2016	4.22		
12/9/2016	3.86		
2/9/2017	3.98		
4/7/2017	4.11		
6/15/2017	4.25		
8/10/2017	4.38		
5/23/2019		5.33	
7/17/2019		6.14	1st verification sample
8/23/2019		6.08	2nd verification sample

Prediction Limit

Constituent: CHLORIDE (mg/l) Analysis Run 9/25/2019 1:55 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-15	MW-15
6/9/2016	14.4	
8/9/2016	15.8	
10/12/2016	12.9	
12/7/2016	16.5	
2/7/2017	20.2	
4/5/2017	19.3	
6/14/2017	18.5	
8/10/2017	17.4	
5/23/2019		12

Prediction Limit

Constituent: CHLORIDE (mg/l)   Analysis Run 9/25/2019 1:55 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-601	MW-601
6/9/2016	161	
8/9/2016	161	
10/13/2016	201	
12/7/2016	169	
2/8/2017	168	
4/6/2017	156	
6/15/2017	167	
8/9/2017	168	
5/23/2019		162

Prediction Limit

Constituent: CHLORIDE (mg/l)   Analysis Run 9/25/2019 1:55 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-602	MW-602
6/10/2016	16.9	
8/9/2016	17.3	
10/13/2016	16.8	
12/9/2016	16.4	
2/8/2017	17.6	
4/7/2017	17.2	
6/15/2017	17.2	
8/10/2017	17.8	
5/23/2019		16.9

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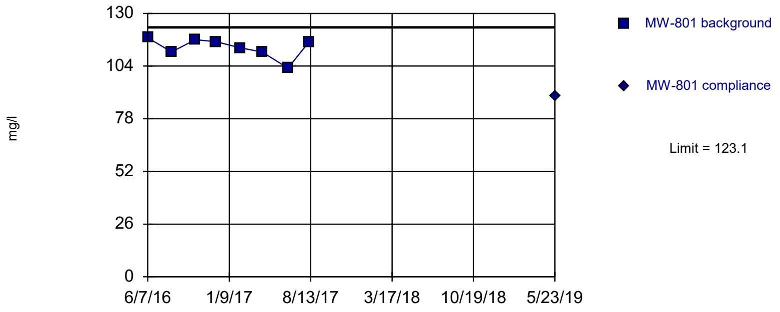
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=113.1, Std. Dev.=4.883, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8653, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: CHLORIDE Analysis Run 9/25/2019 1:35 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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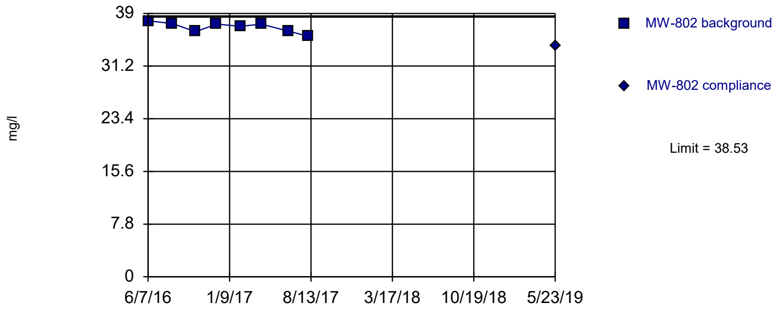
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=36.95, Std. Dev.=0.7728, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9216, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: CHLORIDE Analysis Run 9/25/2019 1:35 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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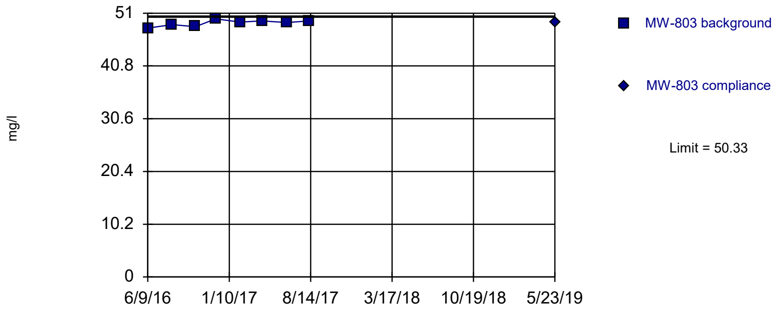
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=49.09, Std. Dev.=0.6081, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9461, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: CHLORIDE Analysis Run 9/25/2019 1:35 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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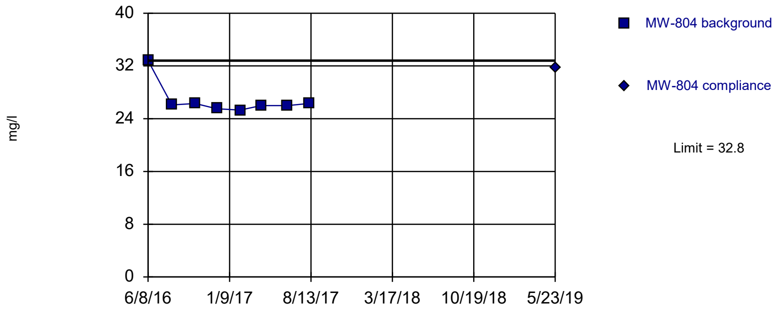
Within Limit

Prediction Limit

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 8 background values. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: CHLORIDE Analysis Run 9/25/2019 1:35 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: CHLORIDE (mg/l) Analysis Run 9/25/2019 1:55 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-801	MW-801
6/7/2016	118	
8/9/2016	111	
10/11/2016	117	
12/6/2016	116	
2/7/2017	113	
4/6/2017	111	
6/14/2017	103	
8/9/2017	116	
5/23/2019		89.4

Prediction Limit

Constituent: CHLORIDE (mg/l) Analysis Run 9/25/2019 1:55 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-802	MW-802
6/7/2016	37.9	
8/10/2016	37.5	
10/11/2016	36.3	
12/6/2016	37.4	
2/7/2017	37.1	
4/4/2017	37.4	
6/13/2017	36.4	
8/7/2017	35.6	
5/23/2019		34.2

Prediction Limit

Constituent: CHLORIDE (mg/l) Analysis Run 9/25/2019 1:55 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-803	MW-803
6/9/2016	48.1	
8/12/2016	48.8	
10/13/2016	48.4	
12/6/2016	49.9	
2/8/2017	49.3	
4/7/2017	49.5	
6/13/2017	49.2	
8/9/2017	49.5	
5/23/2019		49.2

Prediction Limit

Constituent: CHLORIDE (mg/l)   Analysis Run 9/25/2019 1:55 PM   View: LF LAQC III
LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-804	MW-804
6/8/2016	32.8	
8/10/2016	26.1	
10/11/2016	26.3	
12/7/2016	25.5	
2/7/2017	25.3	
4/4/2017	26	
6/13/2017	26	
8/8/2017	26.3	
5/23/2019		31.7

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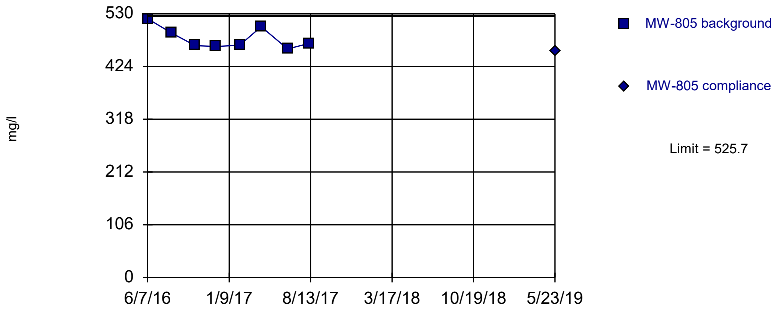
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=480.1, Std. Dev.=22.23, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8461, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: CHLORIDE Analysis Run 9/25/2019 1:35 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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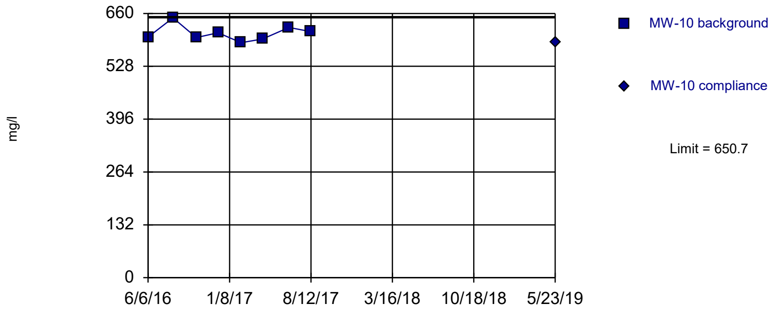
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=610.6, Std. Dev.=19.56, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9309, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: DISSOLVED SOLIDS Analysis Run 9/25/2019 1:35 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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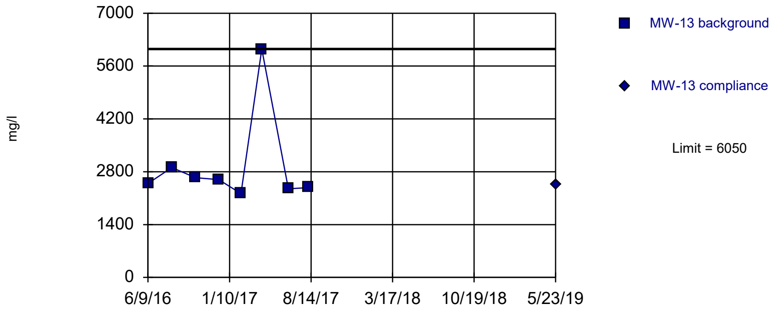
Within Limit

Prediction Limit

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 8 background values. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: DISSOLVED SOLIDS Analysis Run 9/25/2019 1:35 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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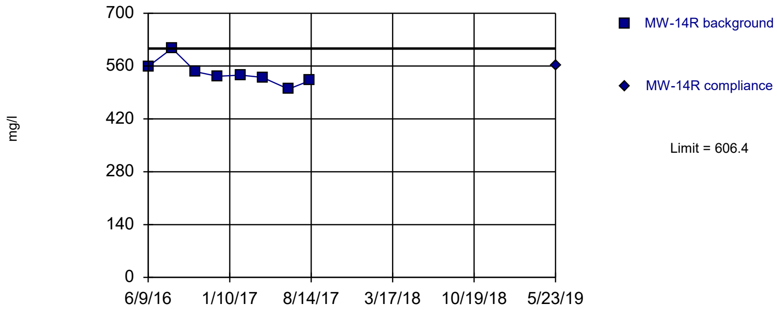
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=541.3, Std. Dev.=31.78, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9091, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: DISSOLVED SOLIDS Analysis Run 9/25/2019 1:35 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: CHLORIDE (mg/l)   Analysis Run 9/25/2019 1:56 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-805	MW-805
6/7/2016	520	
8/10/2016	491	
10/11/2016	466	
12/6/2016	464	
2/6/2017	467	
4/4/2017	504	
6/13/2017	459	
8/8/2017	470	
5/23/2019		455

Prediction Limit

Constituent: DISSOLVED SOLIDS (mg/l) Analysis Run 9/25/2019 1:56 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-10	MW-10
6/6/2016	601	
8/11/2016	649	
10/12/2016	600	
12/9/2016	612	
2/8/2017	587	
4/6/2017	596	
6/15/2017	625	
8/10/2017	615	
5/23/2019		588

Prediction Limit

Constituent: DISSOLVED SOLIDS (mg/l) Analysis Run 9/25/2019 1:56 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-13	MW-13
6/9/2016	2490	
8/11/2016	2910	
10/13/2016	2640	
12/13/2016	2590	
2/10/2017	2220	
4/6/2017	6050	
6/15/2017	2350	
8/8/2017	2380	
5/23/2019		2460

Prediction Limit

Constituent: DISSOLVED SOLIDS (mg/l)   Analysis Run 9/25/2019 1:56 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-14R	MW-14R
6/9/2016	559	
8/11/2016	607	
10/13/2016	545	
12/9/2016	533	
2/9/2017	536	
4/7/2017	530	
6/15/2017	499	
8/10/2017	521	
5/23/2019		563

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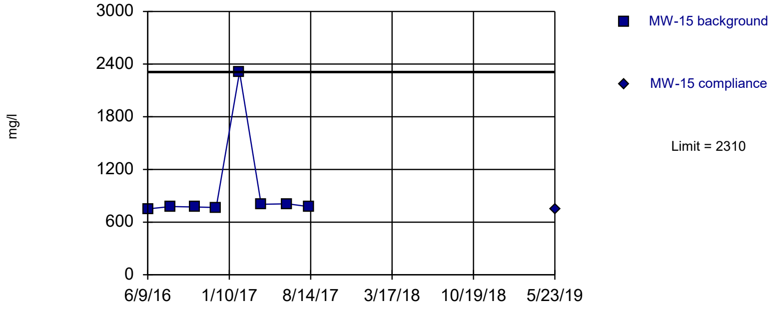
Within Limit

Prediction Limit

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 8 background values. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: DISSOLVED SOLIDS Analysis Run 9/25/2019 1:35 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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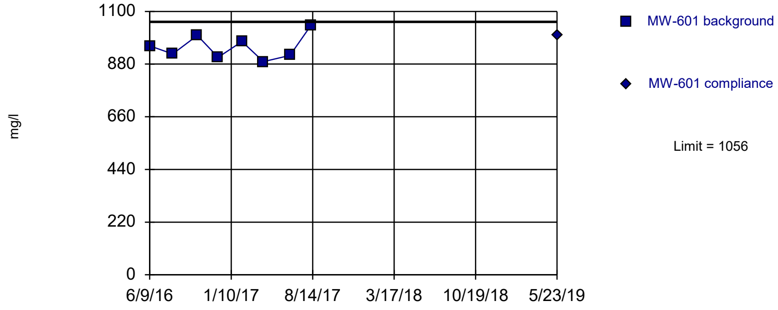
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=950.8, Std. Dev.=51.42, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9399, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: DISSOLVED SOLIDS Analysis Run 9/25/2019 1:35 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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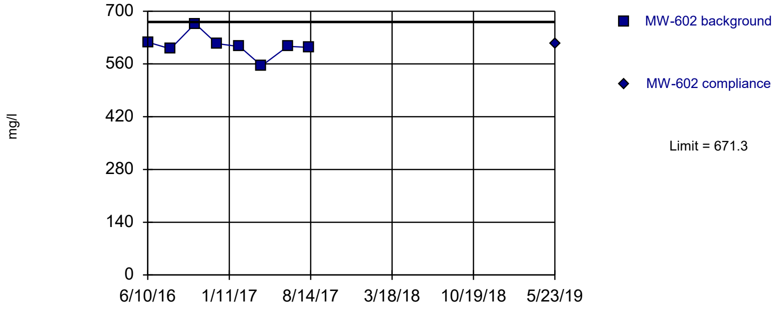
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=608.9, Std. Dev.=30.48, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8711, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: DISSOLVED SOLIDS Analysis Run 9/25/2019 1:35 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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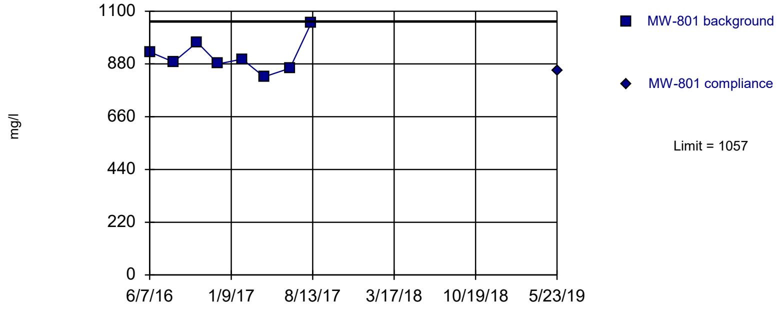
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=913.3, Std. Dev.=70.06, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9338, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: DISSOLVED SOLIDS Analysis Run 9/25/2019 1:35 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: DISSOLVED SOLIDS (mg/l)   Analysis Run 9/25/2019 1:56 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-15	MW-15
6/9/2016	751	
8/9/2016	777	
10/12/2016	772	
12/7/2016	767	
2/7/2017	2310	
4/5/2017	803	
6/14/2017	808	
8/10/2017	775	
5/23/2019		748

Prediction Limit

Constituent: DISSOLVED SOLIDS (mg/l)   Analysis Run 9/25/2019 1:56 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-601	MW-601
6/9/2016	956	
8/9/2016	922	
10/13/2016	1000	
12/7/2016	908	
2/8/2017	974	
4/6/2017	890	
6/15/2017	916	
8/9/2017	1040	
5/23/2019		1000

Prediction Limit

Constituent: DISSOLVED SOLIDS (mg/l) Analysis Run 9/25/2019 1:56 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-602	MW-602
6/10/2016	618	
8/9/2016	600	
10/13/2016	667	
12/9/2016	614	
2/8/2017	606	
4/7/2017	555	
6/15/2017	607	
8/10/2017	604	
5/23/2019		615

Prediction Limit

Constituent: DISSOLVED SOLIDS (mg/l)   Analysis Run 9/25/2019 1:56 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-801	MW-801
6/7/2016	930	
8/9/2016	888	
10/11/2016	970	
12/6/2016	880	
2/7/2017	900	
4/6/2017	826	
6/14/2017	862	
8/9/2017	1050	
5/23/2019		852

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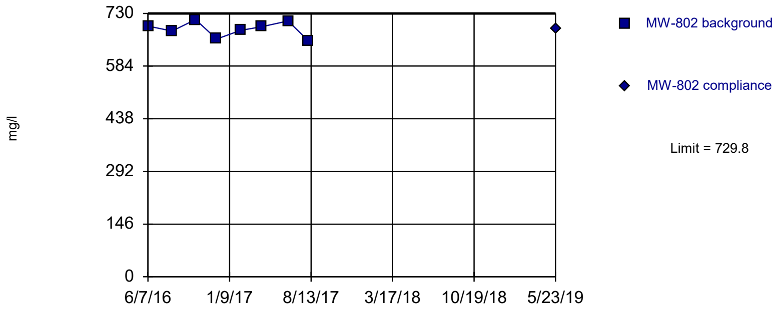
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=685.8, Std. Dev.=21.51, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9383, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: DISSOLVED SOLIDS Analysis Run 9/25/2019 1:35 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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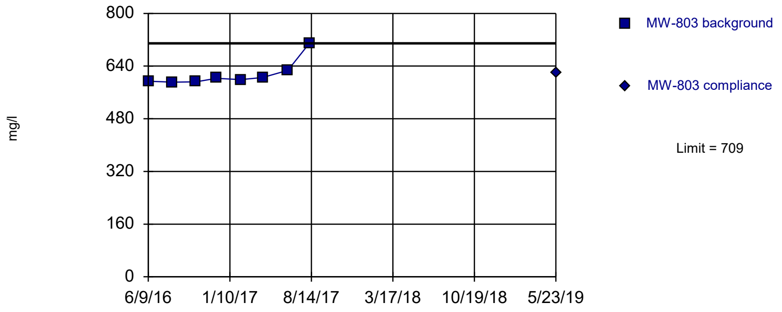
Within Limit

Prediction Limit

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 8 background values. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: DISSOLVED SOLIDS Analysis Run 9/25/2019 1:35 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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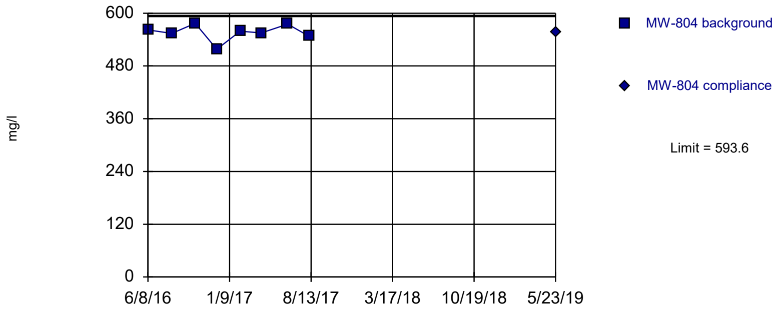
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=556, Std. Dev.=18.36, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8915, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: DISSOLVED SOLIDS Analysis Run 9/25/2019 1:35 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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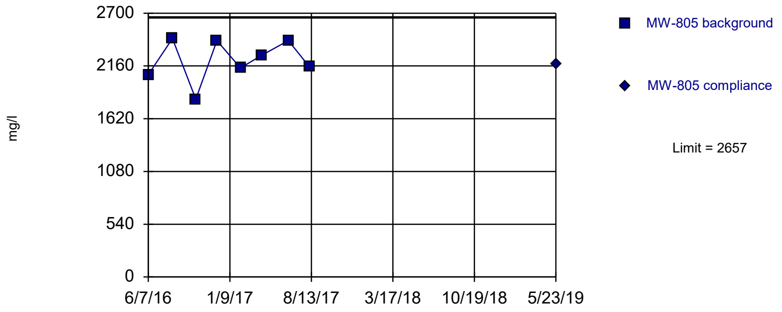
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=2216, Std. Dev.=215.3, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9034, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: DISSOLVED SOLIDS Analysis Run 9/25/2019 1:35 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: DISSOLVED SOLIDS (mg/l) Analysis Run 9/25/2019 1:56 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-802	MW-802
6/7/2016	695	
8/10/2016	681	
10/11/2016	713	
12/6/2016	659	
2/7/2017	683	
4/4/2017	693	
6/13/2017	709	
8/7/2017	653	
5/23/2019		688

Prediction Limit

Constituent: DISSOLVED SOLIDS (mg/l)   Analysis Run 9/25/2019 1:56 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-803	MW-803
6/9/2016	594	
8/12/2016	591	
10/13/2016	592	
12/6/2016	603	
2/8/2017	599	
4/7/2017	605	
6/13/2017	627	
8/9/2017	709	
5/23/2019		621

Prediction Limit

Constituent: DISSOLVED SOLIDS (mg/l) Analysis Run 9/25/2019 1:56 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-804	MW-804
6/8/2016	562	
8/10/2016	554	
10/11/2016	577	
12/7/2016	518	
2/7/2017	559	
4/4/2017	555	
6/13/2017	575	
8/8/2017	548	
5/23/2019		558

Prediction Limit

Constituent: DISSOLVED SOLIDS (mg/l) Analysis Run 9/25/2019 1:56 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-805	MW-805
6/7/2016	2070	
8/10/2016	2440	
10/11/2016	1820	
12/6/2016	2420	
2/6/2017	2140	
4/4/2017	2270	
6/13/2017	2420	
8/8/2017	2150	
5/23/2019		2180

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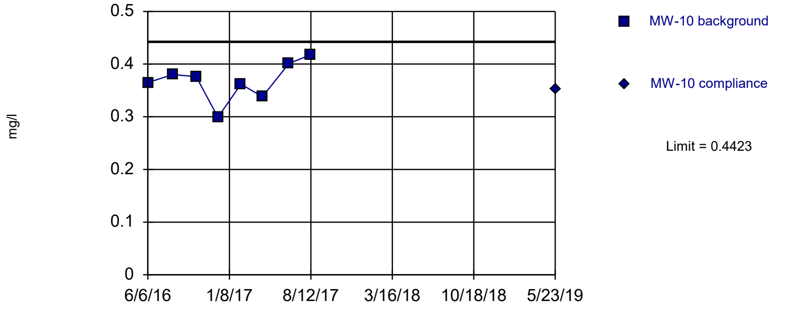
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.3673, Std. Dev.=0.03664, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9622, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: FLUORIDE Analysis Run 9/25/2019 1:35 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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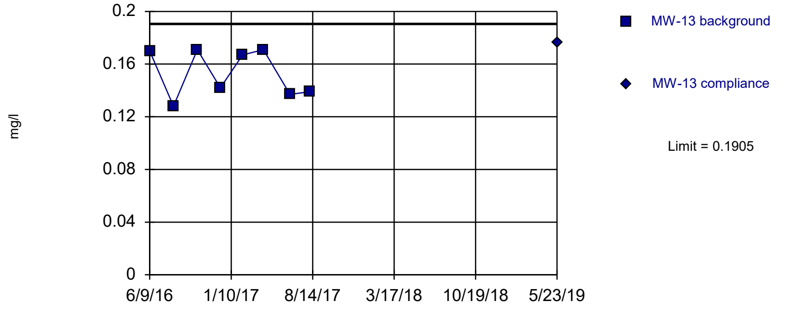
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.1531, Std. Dev.=0.01825, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8151, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: FLUORIDE Analysis Run 9/25/2019 1:35 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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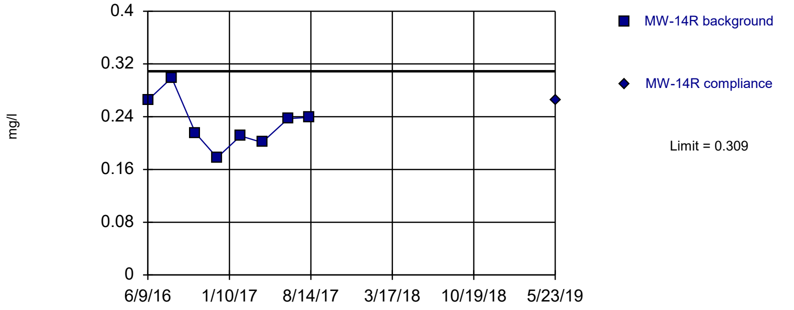
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.2306, Std. Dev.=0.03825, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9683, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: FLUORIDE Analysis Run 9/25/2019 1:35 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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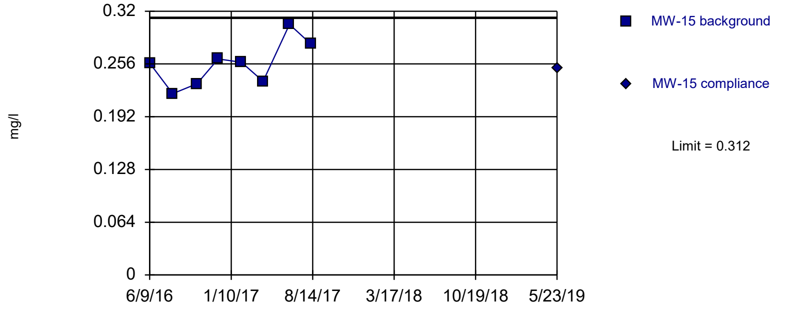
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.256, Std. Dev.=0.02734, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9573, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: FLUORIDE Analysis Run 9/25/2019 1:35 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: FLUORIDE (mg/l)   Analysis Run 9/25/2019 1:56 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-10	MW-10
6/6/2016	0.365	
8/11/2016	0.38	
10/12/2016	0.376	
12/9/2016	0.299	
2/8/2017	0.362	
4/6/2017	0.338	
6/15/2017	0.401	
8/10/2017	0.417	
5/23/2019		0.353

Prediction Limit

Constituent: FLUORIDE (mg/l)   Analysis Run 9/25/2019 1:56 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-13	MW-13
6/9/2016	0.17	
8/11/2016	0.128	
10/13/2016	0.171	
12/13/2016	0.142	
2/10/2017	0.167	
4/6/2017	0.171	
6/15/2017	0.137	
8/8/2017	0.139	
5/23/2019		0.176

Prediction Limit

Constituent: FLUORIDE (mg/l) Analysis Run 9/25/2019 1:56 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-14R	MW-14R
6/9/2016	0.265	
8/11/2016	0.299	
10/13/2016	0.215	
12/9/2016	0.178	
2/9/2017	0.211	
4/7/2017	0.201	
6/15/2017	0.237	
8/10/2017	0.239	
5/23/2019		0.265

Prediction Limit

Constituent: FLUORIDE (mg/l)   Analysis Run 9/25/2019 1:56 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-15	MW-15
6/9/2016	0.257	
8/9/2016	0.22	
10/12/2016	0.232	
12/7/2016	0.262	
2/7/2017	0.258	
4/5/2017	0.235	
6/14/2017	0.304	
8/10/2017	0.28	
5/23/2019		0.251

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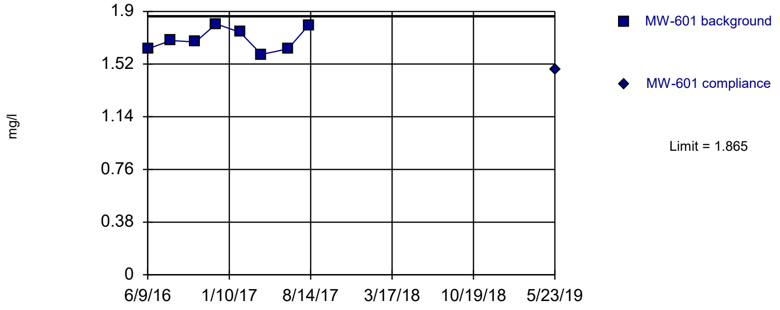
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1.698, Std. Dev.=0.0819, 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 = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: FLUORIDE Analysis Run 9/25/2019 1:35 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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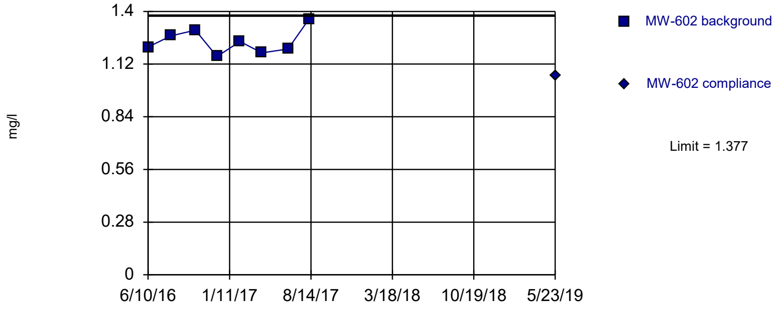
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1.24, Std. Dev.=0.06698, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.952, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: FLUORIDE Analysis Run 9/25/2019 1:35 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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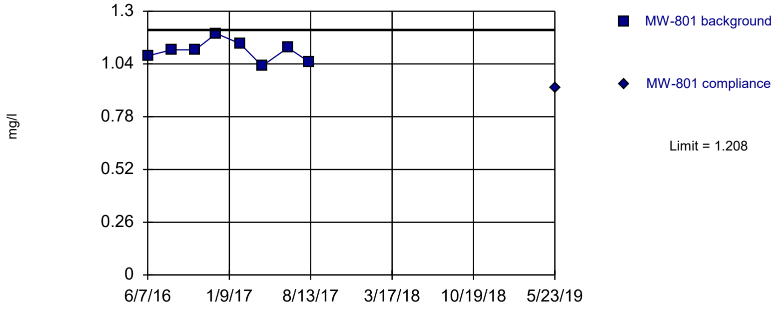
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1.104, Std. Dev.=0.05069, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9728, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: FLUORIDE Analysis Run 9/25/2019 1:35 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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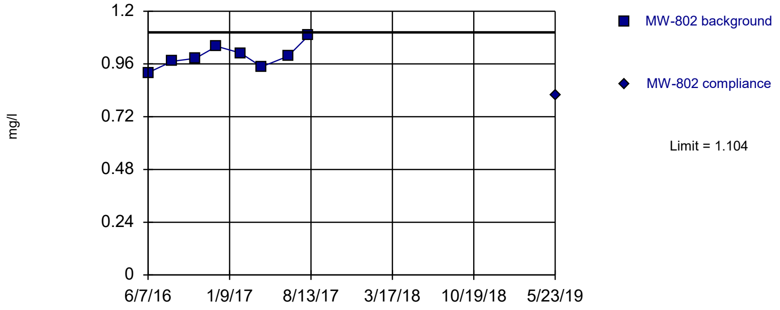
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.995, Std. Dev.=0.0532, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9813, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: FLUORIDE Analysis Run 9/25/2019 1:35 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: FLUORIDE (mg/l)   Analysis Run 9/25/2019 1:56 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-601	MW-601
6/9/2016	1.63	
8/9/2016	1.69	
10/13/2016	1.68	
12/7/2016	1.81	
2/8/2017	1.75	
4/6/2017	1.59	
6/15/2017	1.63	
8/9/2017	1.8	
5/23/2019		1.48

Prediction Limit

Constituent: FLUORIDE (mg/l) Analysis Run 9/25/2019 1:56 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-602	MW-602
6/10/2016	1.21	
8/9/2016	1.27	
10/13/2016	1.3	
12/9/2016	1.16	
2/8/2017	1.24	
4/7/2017	1.18	
6/15/2017	1.2	
8/10/2017	1.36	
5/23/2019		1.06

Prediction Limit

Constituent: FLUORIDE (mg/l) Analysis Run 9/25/2019 1:56 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-801	MW-801
6/7/2016	1.08	
8/9/2016	1.11	
10/11/2016	1.11	
12/6/2016	1.19	
2/7/2017	1.14	
4/6/2017	1.03	
6/14/2017	1.12	
8/9/2017	1.05	
5/23/2019		0.922

Prediction Limit

Constituent: FLUORIDE (mg/l)   Analysis Run 9/25/2019 1:56 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-802	MW-802
6/7/2016	0.92	
8/10/2016	0.972	
10/11/2016	0.986	
12/6/2016	1.04	
2/7/2017	1.01	
4/4/2017	0.947	
6/13/2017	0.995	
8/7/2017	1.09	
5/23/2019		0.816

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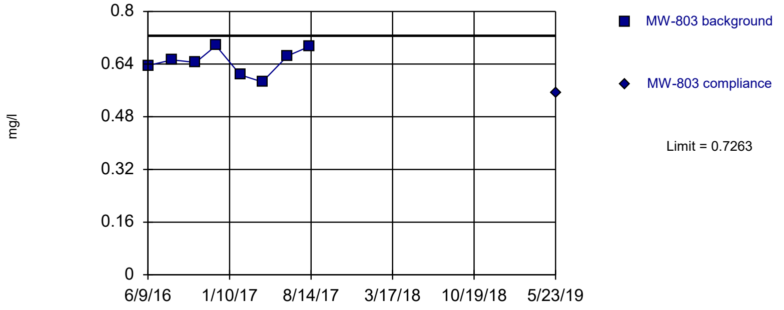
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.6476, Std. Dev.=0.0384, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9552, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: FLUORIDE Analysis Run 9/25/2019 1:35 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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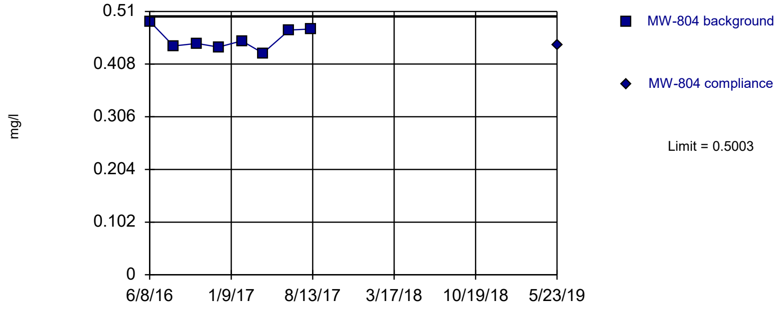
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.4569, Std. Dev.=0.02118, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9387, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: FLUORIDE Analysis Run 9/25/2019 1:35 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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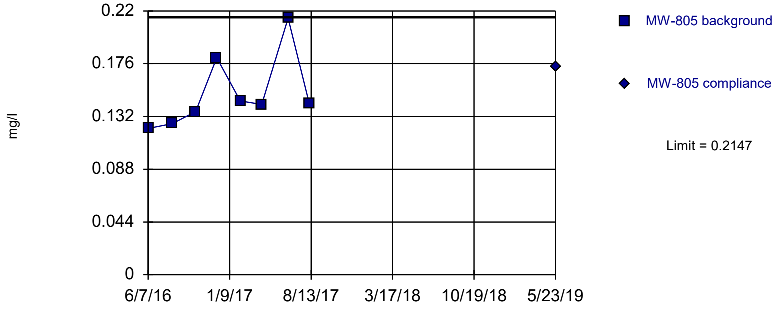
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.1511, Std. Dev.=0.03103, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8279, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: FLUORIDE Analysis Run 9/25/2019 1:35 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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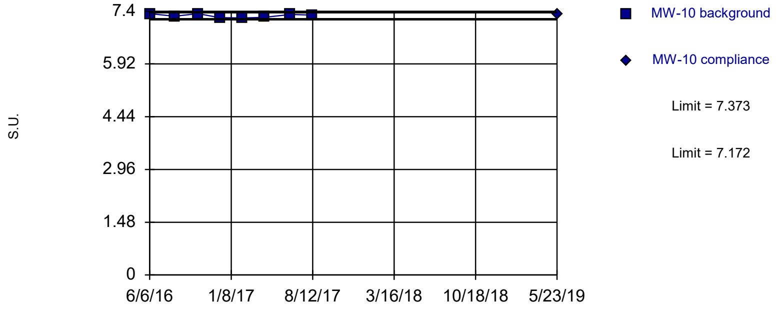
Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.273, Std. Dev.=0.04921, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8934, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: pH Analysis Run 9/25/2019 1:35 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: FLUORIDE (mg/l)   Analysis Run 9/25/2019 1:56 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-803	MW-803
6/9/2016	0.636	
8/12/2016	0.653	
10/13/2016	0.645	
12/6/2016	0.696	
2/8/2017	0.607	
4/7/2017	0.586	
6/13/2017	0.665	
8/9/2017	0.693	
5/23/2019		0.551

Prediction Limit

Constituent: FLUORIDE (mg/l) Analysis Run 9/25/2019 1:56 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-804	MW-804
6/8/2016	0.491	
8/10/2016	0.443	
10/11/2016	0.448	
12/7/2016	0.441	
2/7/2017	0.453	
4/4/2017	0.429	
6/13/2017	0.474	
8/8/2017	0.476	
5/23/2019		0.445

Prediction Limit

Constituent: FLUORIDE (mg/l) Analysis Run 9/25/2019 1:56 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-805	MW-805
6/7/2016	0.122	
8/10/2016	0.126	
10/11/2016	0.136	
12/6/2016	0.181	
2/6/2017	0.145	
4/4/2017	0.142	
6/13/2017	0.214	
8/8/2017	0.143	
5/23/2019		0.173

Prediction Limit

Constituent: pH (S.U.)   Analysis Run 9/25/2019 1:56 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-10	MW-10
6/6/2016	7.33	
8/11/2016	7.26	
10/12/2016	7.33	
12/9/2016	7.22	
2/8/2017	7.21	
4/6/2017	7.23	
6/15/2017	7.31	
8/10/2017	7.29	
5/23/2019		7.32

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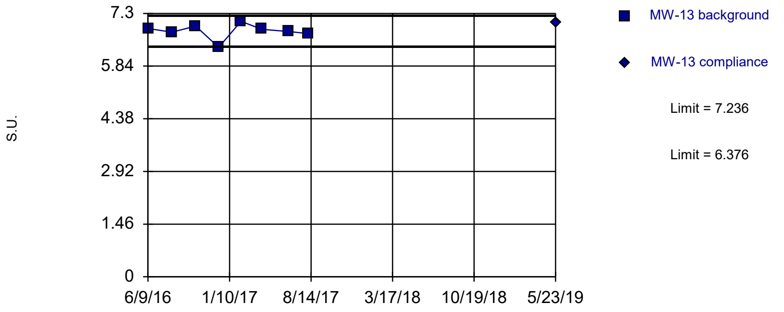
Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=6.806, Std. Dev.=0.2098, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8875, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: pH Analysis Run 9/25/2019 1:35 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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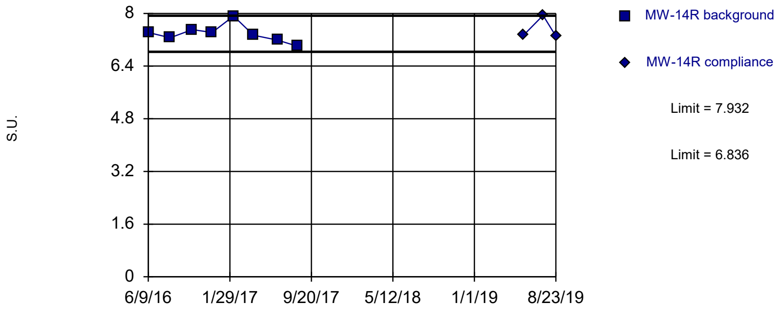
Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.384, Std. Dev.=0.2674, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9356, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: pH Analysis Run 9/25/2019 1:35 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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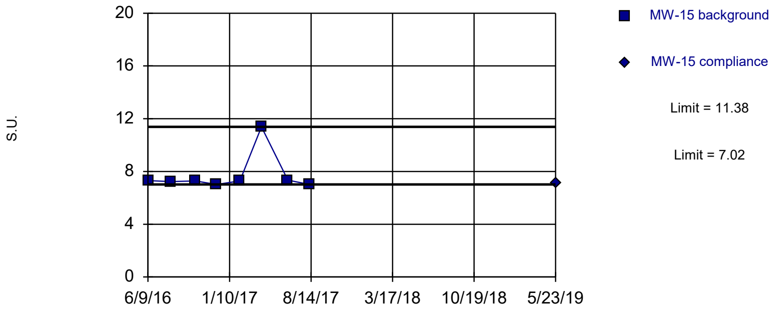
Within Limits

Prediction Limit

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 8 background values. Well-constituent pair annual alpha = 0.02358. Individual comparison alpha = 0.01182 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: pH Analysis Run 9/25/2019 1:35 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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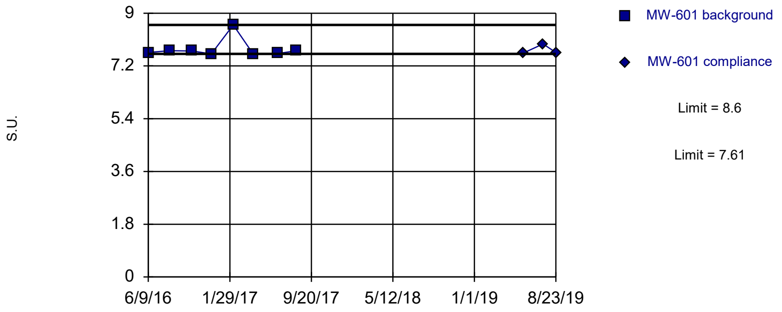
Within Limits

Prediction Limit

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 8 background values. Well-constituent pair annual alpha = 0.02358. Individual comparison alpha = 0.01182 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: pH Analysis Run 9/25/2019 1:35 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: pH (S.U.)   Analysis Run 9/25/2019 1:56 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-13	MW-13
6/9/2016	6.88	
8/11/2016	6.78	
10/13/2016	6.95	
12/13/2016	6.36	
2/10/2017	7.08	
4/6/2017	6.86	
6/15/2017	6.8	
8/8/2017	6.74	
5/23/2019		7.03

Prediction Limit

Constituent: pH (S.U.)   Analysis Run 9/25/2019 1:56 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-14R	MW-14R	
6/9/2016	7.42		
8/11/2016	7.26		
10/13/2016	7.51		
12/9/2016	7.42		
2/9/2017	7.92		
4/7/2017	7.34		
6/15/2017	7.19		
8/10/2017	7.01		
5/23/2019		7.35	
7/17/2019		7.94	extra sample
8/23/2019		7.31	extra sample

Prediction Limit

Constituent: pH (S.U.)   Analysis Run 9/25/2019 1:56 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-15	MW-15
6/9/2016	7.31	
8/9/2016	7.23	
10/12/2016	7.28	
12/7/2016	7.02	
2/7/2017	7.28	
4/5/2017	11.38	
6/14/2017	7.34	
8/10/2017	7.02	
5/23/2019		7.14

Prediction Limit

Constituent: pH (S.U.)   Analysis Run 9/25/2019 1:56 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-601	MW-601	
6/9/2016	7.66		
8/9/2016	7.72		
10/13/2016	7.71		
12/7/2016	7.61		
2/8/2017	8.6		
4/6/2017	7.61		
6/15/2017	7.62		
8/9/2017	7.72		
5/23/2019		7.65	
7/17/2019		7.95	extra sample
8/23/2019		7.66	extra sample

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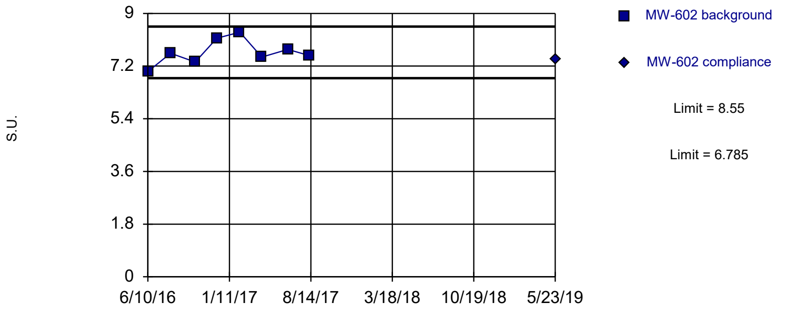
Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.668, Std. Dev.=0.4309, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9706, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: pH Analysis Run 9/25/2019 1:35 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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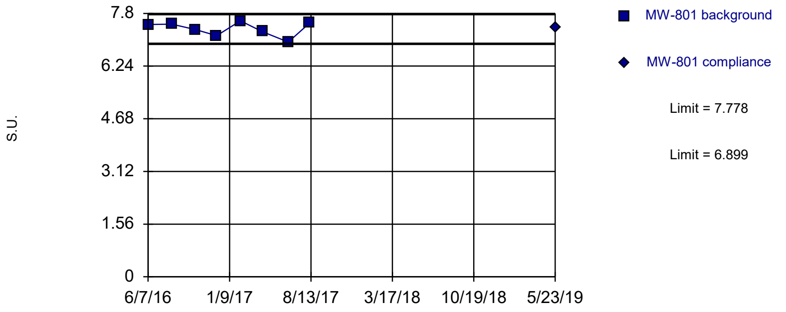
Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.339, Std. Dev.=0.2144, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9231, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: pH Analysis Run 9/25/2019 1:35 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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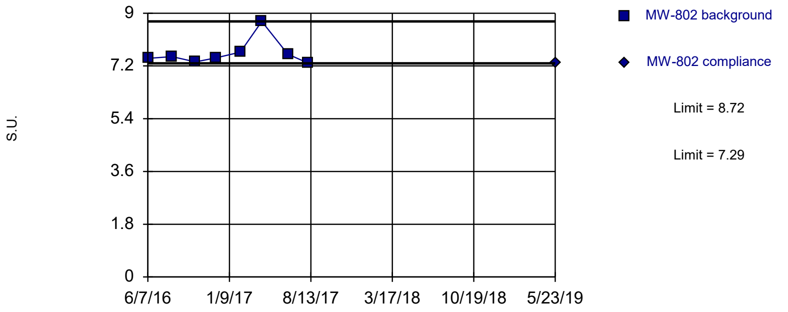
Within Limits

Prediction Limit

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 8 background values. Well-constituent pair annual alpha = 0.02358. Individual comparison alpha = 0.01182 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: pH Analysis Run 9/25/2019 1:35 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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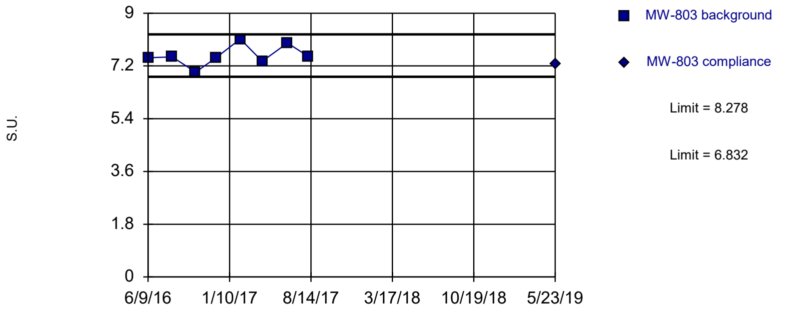
Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.555, Std. Dev.=0.3529, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9061, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: pH Analysis Run 9/25/2019 1:35 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: pH (S.U.)   Analysis Run 9/25/2019 1:56 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-602	MW-602
6/10/2016	7.01	
8/9/2016	7.64	
10/13/2016	7.34	
12/9/2016	8.15	
2/8/2017	8.36	
4/7/2017	7.51	
6/15/2017	7.77	
8/10/2017	7.56	
5/23/2019		7.45

Prediction Limit

Constituent: pH (S.U.)   Analysis Run 9/25/2019 1:56 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-801	MW-801
6/7/2016	7.47	
8/9/2016	7.48	
10/11/2016	7.32	
12/6/2016	7.14	
2/7/2017	7.58	
4/6/2017	7.26	
6/14/2017	6.95	
8/9/2017	7.51	
5/23/2019		7.4

Prediction Limit

Constituent: pH (S.U.) Analysis Run 9/25/2019 1:56 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-802	MW-802
6/7/2016	7.46	
8/10/2016	7.52	
10/11/2016	7.34	
12/6/2016	7.48	
2/7/2017	7.67	
4/5/2017	8.72	
6/13/2017	7.6	
8/7/2017	7.29	
5/23/2019		7.3

Prediction Limit

Constituent: pH (S.U.)   Analysis Run 9/25/2019 1:56 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-803	MW-803
6/9/2016	7.48	
8/12/2016	7.51	
10/13/2016	6.99	
12/6/2016	7.48	
2/8/2017	8.12	
4/7/2017	7.36	
6/13/2017	7.98	
8/8/2017	7.52	
5/23/2019		7.26

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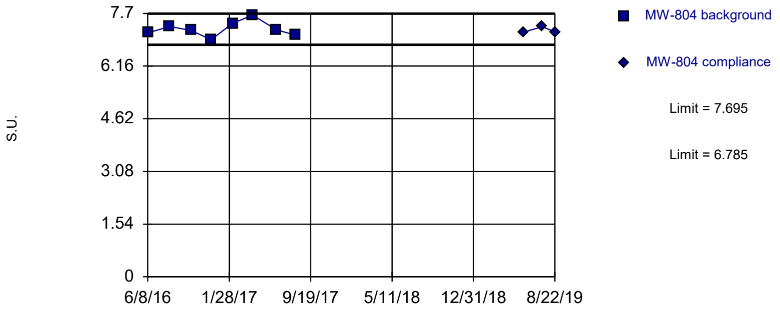
Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.24, Std. Dev.=0.2223, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9747, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: pH Analysis Run 9/25/2019 1:35 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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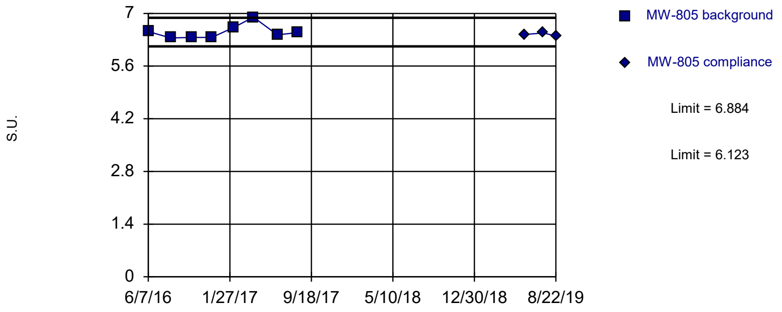
Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=6.504, Std. Dev.=0.1857, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8255, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: pH Analysis Run 9/25/2019 1:35 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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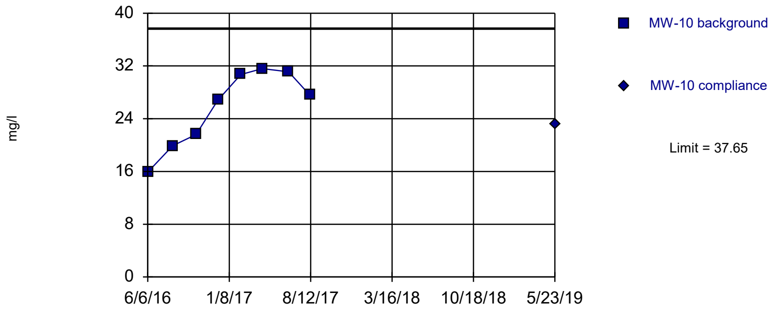
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=25.65, Std. Dev.=5.859, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8965, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: SULFATE Analysis Run 9/25/2019 1:35 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

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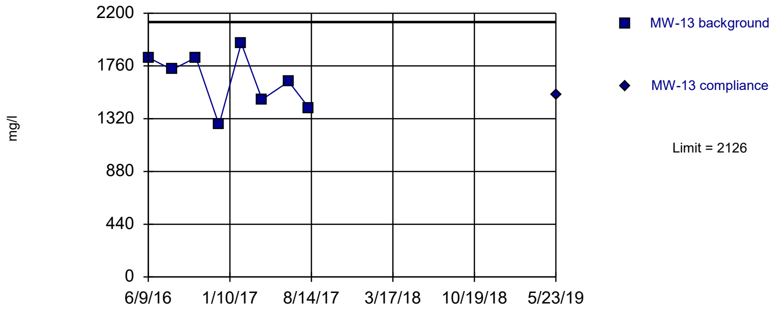
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=1641, Std. Dev.=236.6, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9527, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: SULFATE Analysis Run 9/25/2019 1:35 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: pH (S.U.) Analysis Run 9/25/2019 1:56 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-804	MW-804	
6/8/2016	7.13		
8/10/2016	7.32		
10/11/2016	7.2		
12/7/2016	6.93		
2/7/2017	7.41		
4/5/2017	7.65		
6/13/2017	7.22		
8/8/2017	7.06		
5/23/2019		7.15	
7/17/2019		7.31	extra sample
8/22/2019		7.16	extra sample

Prediction Limit

Constituent: pH (S.U.)   Analysis Run 9/25/2019 1:56 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-805	MW-805	
6/7/2016	6.52		
8/10/2016	6.35		
10/11/2016	6.36		
12/6/2016	6.36		
2/6/2017	6.62		
4/5/2017	6.9		
6/13/2017	6.43		
8/8/2017	6.49		
5/23/2019		6.44	
7/17/2019		6.48	extra sample
8/22/2019		6.4	extra sample

Prediction Limit

Constituent: SULFATE (mg/l) Analysis Run 9/25/2019 1:56 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-10	MW-10
6/6/2016	15.9	
8/11/2016	19.9	
10/12/2016	21.6	
12/9/2016	26.8	
2/8/2017	30.7	
4/6/2017	31.6	
6/15/2017	31.1	
8/10/2017	27.6	
5/23/2019		23.1

Prediction Limit

Constituent: SULFATE (mg/l)   Analysis Run 9/25/2019 1:56 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-13	MW-13
6/9/2016	1830	
8/11/2016	1730	
10/13/2016	1830	
12/13/2016	1270	
2/10/2017	1950	
4/6/2017	1480	
6/15/2017	1630	
8/8/2017	1410	
5/23/2019		1520

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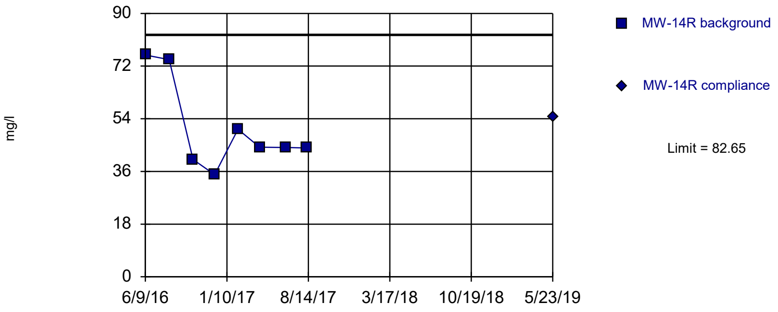
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=50.99, Std. Dev.=15.45, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.804, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: SULFATE Analysis Run 9/25/2019 1:35 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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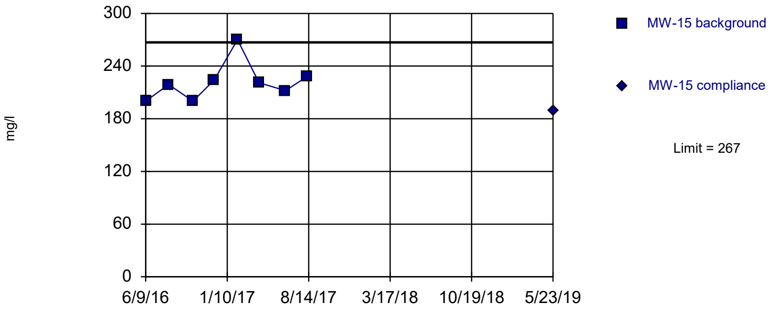
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=221.8, Std. Dev.=22.11, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8343, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: SULFATE Analysis Run 9/25/2019 1:35 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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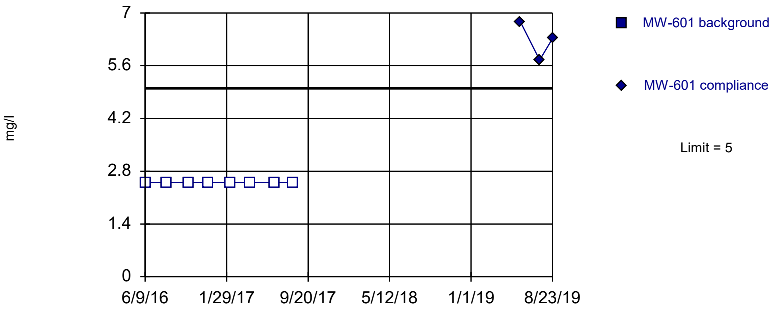
Hollow symbols indicate censored values.

Exceeds Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 8) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: SULFATE Analysis Run 9/25/2019 1:35 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

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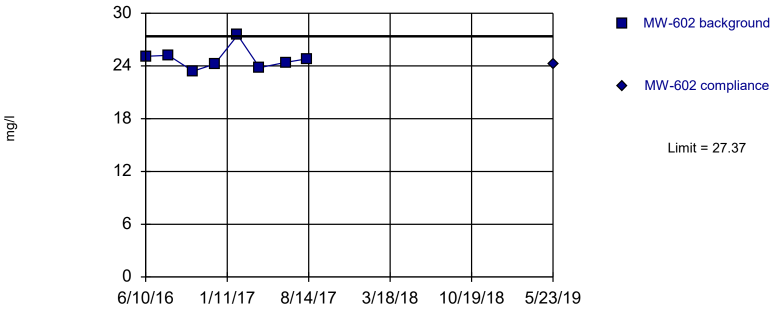
Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=24.8, Std. Dev.=1.255, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8741, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: SULFATE Analysis Run 9/25/2019 1:35 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: SULFATE (mg/l)   Analysis Run 9/25/2019 1:56 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-14R	MW-14R
6/9/2016	75.8	
8/11/2016	74.2	
10/13/2016	40.1	
12/9/2016	34.9	
2/9/2017	50.4	
4/7/2017	44.3	
6/15/2017	44.2	
8/10/2017	44	
5/23/2019		54.5

Prediction Limit

Constituent: SULFATE (mg/l) Analysis Run 9/25/2019 1:56 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-15	MW-15
6/9/2016	200	
8/9/2016	219	
10/12/2016	200	
12/7/2016	224	
2/7/2017	270	
4/5/2017	221	
6/14/2017	212	
8/10/2017	228	
5/23/2019		189

Prediction Limit

Constituent: SULFATE (mg/l) Analysis Run 9/25/2019 1:56 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-601	MW-601	
6/9/2016	<5		
8/9/2016	<5		
10/13/2016	<5		
12/7/2016	<5		
2/8/2017	<5		
4/6/2017	<5		
6/15/2017	<5		
8/9/2017	<5		
5/23/2019		6.76	
7/17/2019		5.75	1st verification sample
8/23/2019		6.32	2nd verification sample

Prediction Limit

Constituent: SULFATE (mg/l) Analysis Run 9/25/2019 1:56 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-602	MW-602
6/10/2016	25.1	
8/9/2016	25.2	
10/13/2016	23.4	
12/9/2016	24.2	
2/8/2017	27.5	
4/7/2017	23.8	
6/15/2017	24.4	
8/10/2017	24.8	
5/23/2019		24.2

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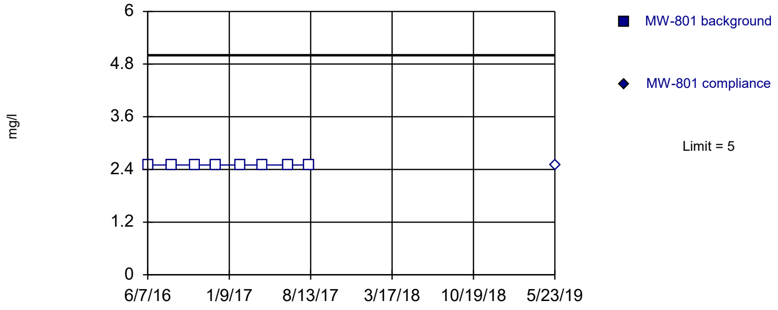
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 8) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

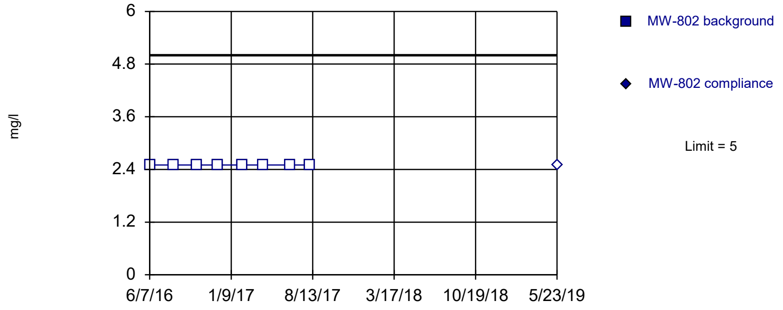
Constituent: SULFATE   Analysis Run 9/25/2019 1:35 PM   View: LF LAQC III
LaCygne   Client: SCS Engineers   Data: LaC GW Data

Sanitas™ v.9.6.23 Sanitas software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 8) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

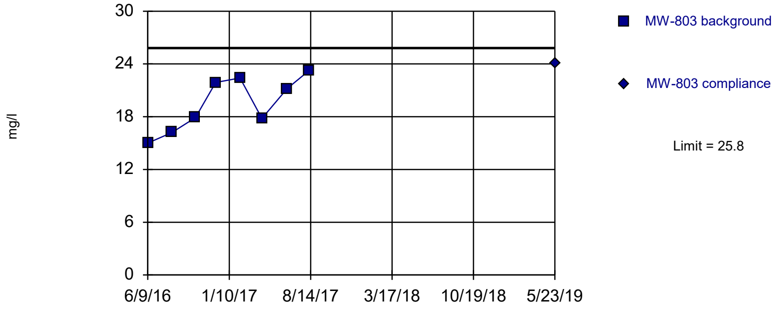
Constituent: SULFATE   Analysis Run 9/25/2019 1:35 PM   View: LF LAQC III
LaCygne   Client: SCS Engineers   Data: LaC GW Data

Sanitas™ v.9.6.23 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=19.45, Std. Dev.=3.101, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9093, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: SULFATE   Analysis Run 9/25/2019 1:35 PM   View: LF LAQC III
LaCygne   Client: SCS Engineers   Data: LaC GW Data

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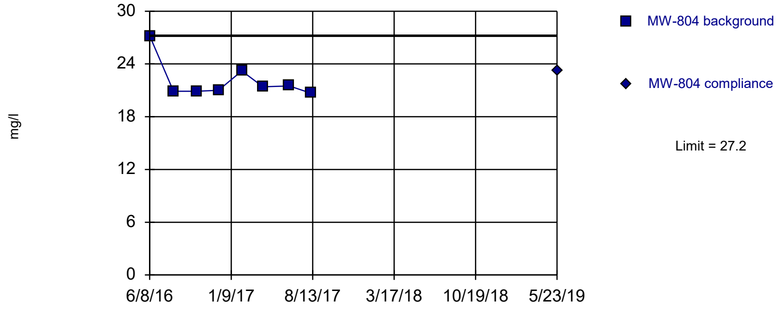
Within Limit

Prediction Limit

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 8 background values. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: SULFATE   Analysis Run 9/25/2019 1:36 PM   View: LF LAQC III
LaCygne   Client: SCS Engineers   Data: LaC GW Data

Prediction Limit

Constituent: SULFATE (mg/l)   Analysis Run 9/25/2019 1:56 PM   View: LF LAQC III
LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-801	MW-801
6/7/2016	<5	
8/9/2016	<5	
10/11/2016	<5	
12/6/2016	<5	
2/7/2017	<5	
4/6/2017	<5	
6/14/2017	<5	
8/9/2017	<5	
5/23/2019		<5

Prediction Limit

Constituent: SULFATE (mg/l)   Analysis Run 9/25/2019 1:56 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-802	MW-802
6/7/2016	<5	
8/10/2016	<5	
10/11/2016	<5	
12/6/2016	<5	
2/7/2017	<5	
4/4/2017	<5	
6/13/2017	<5	
8/7/2017	<5	
5/23/2019		<5

Prediction Limit

Constituent: SULFATE (mg/l)   Analysis Run 9/25/2019 1:56 PM   View: LF LAQC III

LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-803	MW-803
6/9/2016	15	
8/12/2016	16.2	
10/13/2016	17.9	
12/6/2016	21.9	
2/8/2017	22.4	
4/7/2017	17.8	
6/13/2017	21.2	
8/9/2017	23.2	
5/23/2019		24.1

Prediction Limit

Constituent: SULFATE (mg/l)   Analysis Run 9/25/2019 1:56 PM   View: LF LAQC III

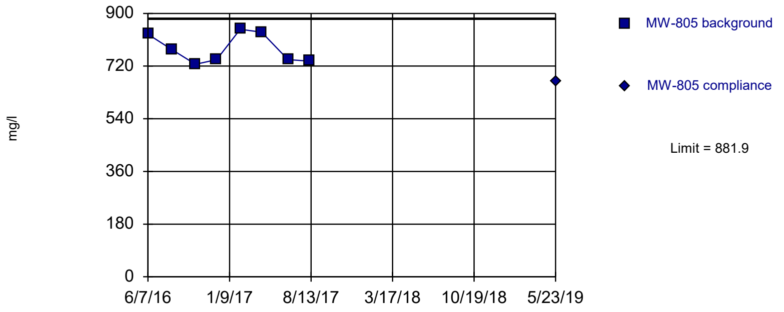
LaCygne   Client: SCS Engineers   Data: LaC GW Data

	MW-804	MW-804
6/8/2016	27.2	
8/10/2016	20.9	
10/11/2016	20.9	
12/7/2016	21	
2/7/2017	23.2	
4/4/2017	21.4	
6/13/2017	21.5	
8/8/2017	20.7	
5/23/2019		23.2

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=779.3, Std. Dev.=50.08, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8342, critical = 0.749. Kappa = 2.049 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: SULFATE Analysis Run 9/25/2019 1:36 PM View: LF LAQC III
LaCygne Client: SCS Engineers Data: LaC GW Data

Prediction Limit

Constituent: SULFATE (mg/l) Analysis Run 9/25/2019 1:56 PM View: LF LAQC III

LaCygne Client: SCS Engineers Data: LaC GW Data

	MW-805	MW-805
6/7/2016	829	
8/10/2016	776	
10/11/2016	726	
12/6/2016	742	
2/6/2017	846	
4/4/2017	836	
6/13/2017	742	
8/8/2017	737	
5/23/2019		666

Prediction Limit

LaCygne   Client: SCS Engineers   Data: LaC GW Data   Printed 9/25/2019, 1:56 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
BORON (mg/l)	MW-10	0.9829	n/a	5/23/2019	0.885	No	8	0	No	0.001075	Param Intra 1 of 3
BORON (mg/l)	MW-13	0.4911	n/a	5/23/2019	0.401	No	8	0	No	0.001075	Param Intra 1 of 3
BORON (mg/l)	MW-14R	0.6841	n/a	5/23/2019	0.669	No	8	0	No	0.001075	Param Intra 1 of 3
BORON (mg/l)	MW-15	0.294	n/a	5/23/2019	0.228	No	8	0	No	0.001075	Param Intra 1 of 3
BORON (mg/l)	MW-601	1.966	n/a	5/23/2019	1.85	No	8	0	No	0.001075	Param Intra 1 of 3
BORON (mg/l)	MW-602	2.502	n/a	5/23/2019	2.35	No	8	0	No	0.001075	Param Intra 1 of 3
BORON (mg/l)	MW-801	2.401	n/a	5/23/2019	2.22	No	8	0	No	0.001075	Param Intra 1 of 3
BORON (mg/l)	MW-802	2.621	n/a	5/23/2019	2.47	No	8	0	No	0.001075	Param Intra 1 of 3
BORON (mg/l)	MW-803	2.231	n/a	5/23/2019	2.12	No	8	0	No	0.001075	Param Intra 1 of 3
BORON (mg/l)	MW-804	1.653	n/a	8/22/2019	1.63	No	8	0	No	0.001075	Param Intra 1 of 3
BORON (mg/l)	MW-805	0.5467	n/a	8/22/2019	0.537	No	8	0	No	0.001075	Param Intra 1 of 3
CALCIUM (mg/l)	MW-10	62.03	n/a	5/23/2019	52.9	No	8	0	No	0.001075	Param Intra 1 of 3
CALCIUM (mg/l)	MW-13	408.1	n/a	5/23/2019	355	No	8	0	No	0.001075	Param Intra 1 of 3
CALCIUM (mg/l)	MW-14R	63.23	n/a	5/23/2019	55.2	No	8	0	No	0.001075	Param Intra 1 of 3
CALCIUM (mg/l)	MW-15	111.9	n/a	5/23/2019	102	No	8	0	No	0.001075	Param Intra 1 of 3
CALCIUM (mg/l)	MW-601	24.13	n/a	5/23/2019	17.7	No	8	0	No	0.001075	Param Intra 1 of 3
CALCIUM (mg/l)	MW-602	26.32	n/a	5/23/2019	23.1	No	8	0	No	0.001075	Param Intra 1 of 3
CALCIUM (mg/l)	MW-801	37.78	n/a	5/23/2019	25.1	No	8	0	No	0.001075	Param Intra 1 of 3
CALCIUM (mg/l)	MW-802	42.78	n/a	5/23/2019	26.4	No	8	0	No	0.001075	Param Intra 1 of 3
CALCIUM (mg/l)	MW-803	50.43	n/a	5/23/2019	41.1	No	8	0	No	0.001075	Param Intra 1 of 3
CALCIUM (mg/l)	MW-804	68.38	n/a	5/23/2019	66.8	No	8	0	No	0.001075	Param Intra 1 of 3
CALCIUM (mg/l)	MW-805	448.6	n/a	5/23/2019	442	No	8	0	No	0.001075	Param Intra 1 of 3
CHLORIDE (mg/l)	MW-10	69.88	n/a	5/23/2019	52.5	No	8	0	No	0.001075	Param Intra 1 of 3
CHLORIDE (mg/l)	MW-13	19.77	n/a	5/23/2019	16.2	No	8	0	No	0.001075	Param Intra 1 of 3
CHLORIDE (mg/l)	**MW-14R**	**5.237**	**n/a**	**8/23/2019**	**6.08**	**Yes**	**8**	**0**	**No**	**0.001075**	**Param Intra 1 of 3**
CHLORIDE (mg/l)	MW-15	21.96	n/a	5/23/2019	12	No	8	0	No	0.001075	Param Intra 1 of 3
CHLORIDE (mg/l)	MW-601	197.1	n/a	5/23/2019	162	No	8	0	ln(x)	0.001075	Param Intra 1 of 3
CHLORIDE (mg/l)	MW-602	18.07	n/a	5/23/2019	16.9	No	8	0	No	0.001075	Param Intra 1 of 3
CHLORIDE (mg/l)	MW-801	123.1	n/a	5/23/2019	89.4	No	8	0	No	0.001075	Param Intra 1 of 3
CHLORIDE (mg/l)	MW-802	38.53	n/a	5/23/2019	34.2	No	8	0	No	0.001075	Param Intra 1 of 3
CHLORIDE (mg/l)	MW-803	50.33	n/a	5/23/2019	49.2	No	8	0	No	0.001075	Param Intra 1 of 3
CHLORIDE (mg/l)	MW-804	32.8	n/a	5/23/2019	31.7	No	8	0	n/a	0.005912	NP Intra (normality) ...
CHLORIDE (mg/l)	MW-805	525.7	n/a	5/23/2019	455	No	8	0	No	0.001075	Param Intra 1 of 3
DISSOLVED SOLIDS (mg/l)	MW-10	650.7	n/a	5/23/2019	588	No	8	0	No	0.001075	Param Intra 1 of 3
DISSOLVED SOLIDS (mg/l)	MW-13	6050	n/a	5/23/2019	2460	No	8	0	n/a	0.005912	NP Intra (normality) ...
DISSOLVED SOLIDS (mg/l)	MW-14R	606.4	n/a	5/23/2019	563	No	8	0	No	0.001075	Param Intra 1 of 3
DISSOLVED SOLIDS (mg/l)	MW-15	2310	n/a	5/23/2019	748	No	8	0	n/a	0.005912	NP Intra (normality) ...
DISSOLVED SOLIDS (mg/l)	MW-601	1056	n/a	5/23/2019	1000	No	8	0	No	0.001075	Param Intra 1 of 3
DISSOLVED SOLIDS (mg/l)	MW-602	671.3	n/a	5/23/2019	615	No	8	0	No	0.001075	Param Intra 1 of 3
DISSOLVED SOLIDS (mg/l)	MW-801	1057	n/a	5/23/2019	852	No	8	0	No	0.001075	Param Intra 1 of 3
DISSOLVED SOLIDS (mg/l)	MW-802	729.8	n/a	5/23/2019	688	No	8	0	No	0.001075	Param Intra 1 of 3
DISSOLVED SOLIDS (mg/l)	MW-803	709	n/a	5/23/2019	621	No	8	0	n/a	0.005912	NP Intra (normality) ...
DISSOLVED SOLIDS (mg/l)	MW-804	593.6	n/a	5/23/2019	558	No	8	0	No	0.001075	Param Intra 1 of 3
DISSOLVED SOLIDS (mg/l)	MW-805	2657	n/a	5/23/2019	2180	No	8	0	No	0.001075	Param Intra 1 of 3
FLUORIDE (mg/l)	MW-10	0.4423	n/a	5/23/2019	0.353	No	8	0	No	0.001075	Param Intra 1 of 3
FLUORIDE (mg/l)	MW-13	0.1905	n/a	5/23/2019	0.176	No	8	0	No	0.001075	Param Intra 1 of 3
FLUORIDE (mg/l)	MW-14R	0.309	n/a	5/23/2019	0.265	No	8	0	No	0.001075	Param Intra 1 of 3
FLUORIDE (mg/l)	MW-15	0.312	n/a	5/23/2019	0.251	No	8	0	No	0.001075	Param Intra 1 of 3
FLUORIDE (mg/l)	MW-601	1.865	n/a	5/23/2019	1.48	No	8	0	No	0.001075	Param Intra 1 of 3
FLUORIDE (mg/l)	MW-602	1.377	n/a	5/23/2019	1.06	No	8	0	No	0.001075	Param Intra 1 of 3

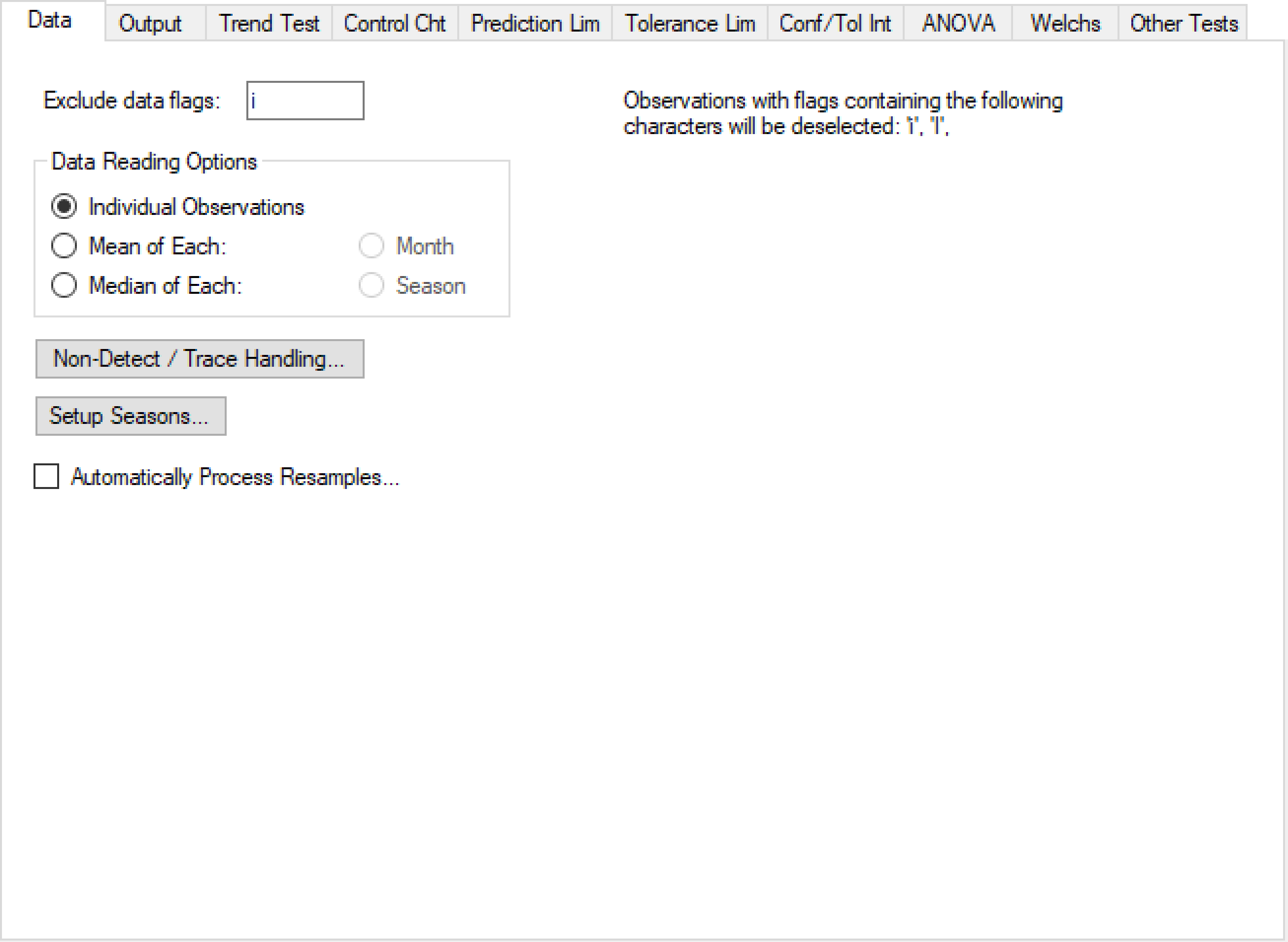
Prediction Limit

LaCygne Client: SCS Engineers Data: LaC GW Data Printed 9/25/2019, 1:56 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
FLUORIDE (mg/l)	MW-801	1.208	n/a	5/23/2019	0.922	No	8	0	No	0.001075	Param Intra 1 of 3
FLUORIDE (mg/l)	MW-802	1.104	n/a	5/23/2019	0.816	No	8	0	No	0.001075	Param Intra 1 of 3
FLUORIDE (mg/l)	MW-803	0.7263	n/a	5/23/2019	0.551	No	8	0	No	0.001075	Param Intra 1 of 3
FLUORIDE (mg/l)	MW-804	0.5003	n/a	5/23/2019	0.445	No	8	0	No	0.001075	Param Intra 1 of 3
FLUORIDE (mg/l)	MW-805	0.2147	n/a	5/23/2019	0.173	No	8	0	No	0.001075	Param Intra 1 of 3
pH (S.U.)	MW-10	7.373	7.172	5/23/2019	7.32	No	8	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-13	7.236	6.376	5/23/2019	7.03	No	8	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-14R	7.932	6.836	8/23/2019	7.31	No	8	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-15	11.38	7.02	5/23/2019	7.14	No	8	0	n/a	0.01182	NP Intra (normality) ...
pH (S.U.)	MW-601	8.6	7.61	8/23/2019	7.66	No	8	0	n/a	0.01182	NP Intra (normality) ...
pH (S.U.)	MW-602	8.55	6.785	5/23/2019	7.45	No	8	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-801	7.778	6.899	5/23/2019	7.4	No	8	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-802	8.72	7.29	5/23/2019	7.3	No	8	0	n/a	0.01182	NP Intra (normality) ...
pH (S.U.)	MW-803	8.278	6.832	5/23/2019	7.26	No	8	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-804	7.695	6.785	8/22/2019	7.16	No	8	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-805	6.884	6.123	8/22/2019	6.4	No	8	0	No	0.000...	Param Intra 1 of 3
SULFATE (mg/l)	MW-10	37.65	n/a	5/23/2019	23.1	No	8	0	No	0.001075	Param Intra 1 of 3
SULFATE (mg/l)	MW-13	2126	n/a	5/23/2019	1520	No	8	0	No	0.001075	Param Intra 1 of 3
SULFATE (mg/l)	MW-14R	82.65	n/a	5/23/2019	54.5	No	8	0	No	0.001075	Param Intra 1 of 3
SULFATE (mg/l)	MW-15	267	n/a	5/23/2019	189	No	8	0	No	0.001075	Param Intra 1 of 3
SULFATE (mg/l)	**MW-601**	**5**	**n/a**	**8/23/2019**	**6.32**	**Yes**	**8**	**100**	**n/a**	**0.005912**	**NP Intra (NDs) 1 of 3**
SULFATE (mg/l)	MW-602	27.37	n/a	5/23/2019	24.2	No	8	0	No	0.001075	Param Intra 1 of 3
SULFATE (mg/l)	MW-801	5	n/a	5/23/2019	2.5ND	No	8	100	n/a	0.005912	NP Intra (NDs) 1 of 3
SULFATE (mg/l)	MW-802	5	n/a	5/23/2019	2.5ND	No	8	100	n/a	0.005912	NP Intra (NDs) 1 of 3
SULFATE (mg/l)	MW-803	25.8	n/a	5/23/2019	24.1	No	8	0	No	0.001075	Param Intra 1 of 3
SULFATE (mg/l)	MW-804	27.2	n/a	5/23/2019	23.2	No	8	0	n/a	0.005912	NP Intra (normality) ...
SULFATE (mg/l)	MW-805	881.9	n/a	5/23/2019	666	No	8	0	No	0.001075	Param Intra 1 of 3

ATTACHMENT 2

Sanitas^{TM} Configuration Settings



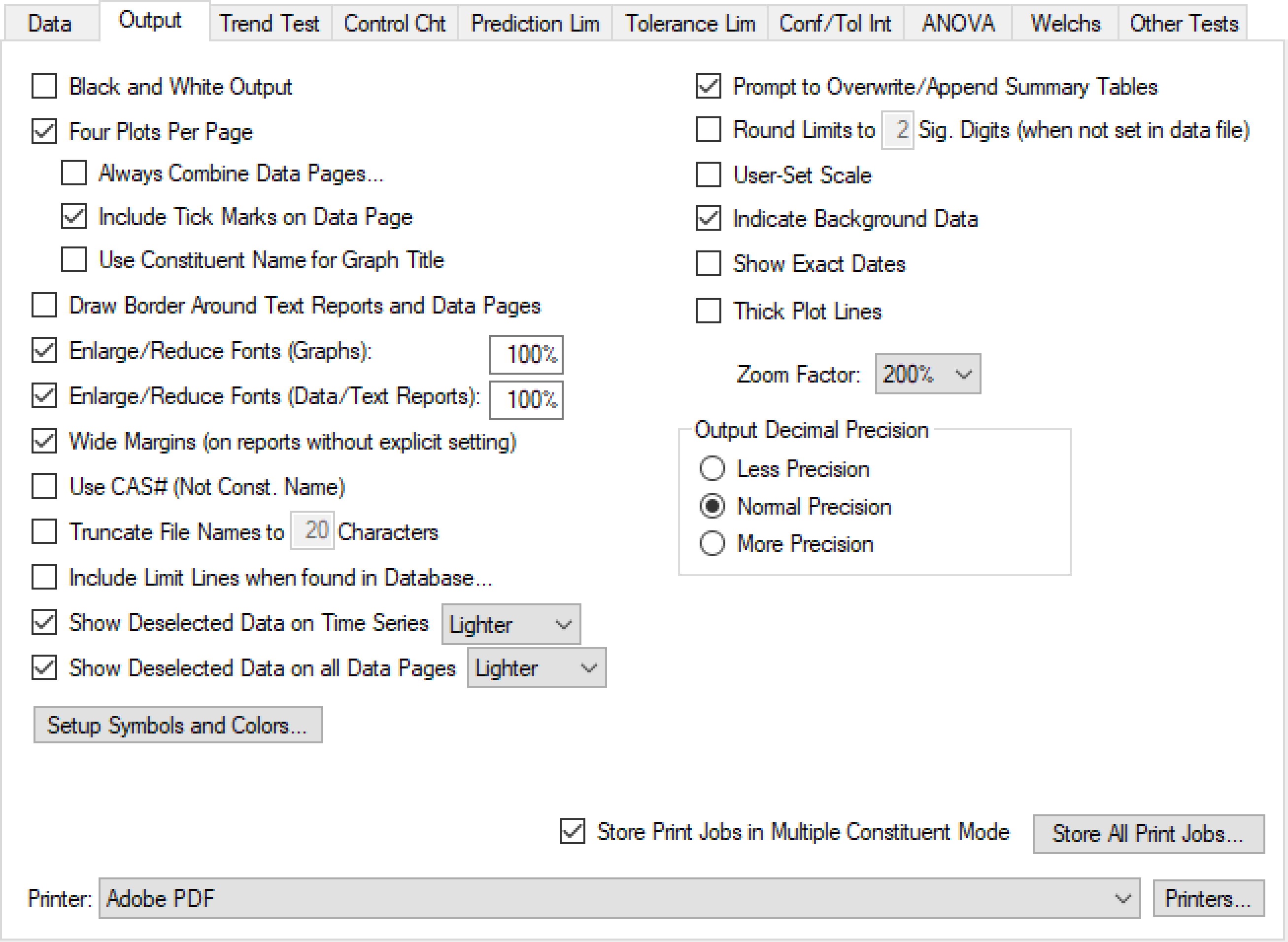
Exclude data flags: i

Observations with flags containing the following characters will be deselected: 'i', 'I',

Data Reading Options

● Individual Observations
○ Mean of Each: ○ Month
○ Median of Each: ○ Season

☐ Automatically Process Resamples...



☐ Black and White Output

☑ Four Plots Per Page

- ☐ Always Combine Data Pages...
- ☑ Include Tick Marks on Data Page
- ☐ Use Constituent Name for Graph Title

☐ Draw Border Around Text Reports and Data Pages

☑ Enlarge/Reduce Fonts (Graphs): 100%

☑ Enlarge/Reduce Fonts (Data/Text Reports): 100%

☑ Wide Margins (on reports without explicit setting)

☐ Use CAS# (Not Const. Name)

☐ Truncate File Names to 20 Characters

☐ Include Limit Lines when found in Database...

☑ Show Deselected Data on Time Series: Lighter

☑ Show Deselected Data on all Data Pages: Lighter

☑ Prompt to Overwrite/Append Summary Tables

☐ Round Limits to 2 Sig. Digits (when not set in data file)

☐ User-Set Scale

☑ Indicate Background Data

☐ Show Exact Dates

☐ Thick Plot Lines

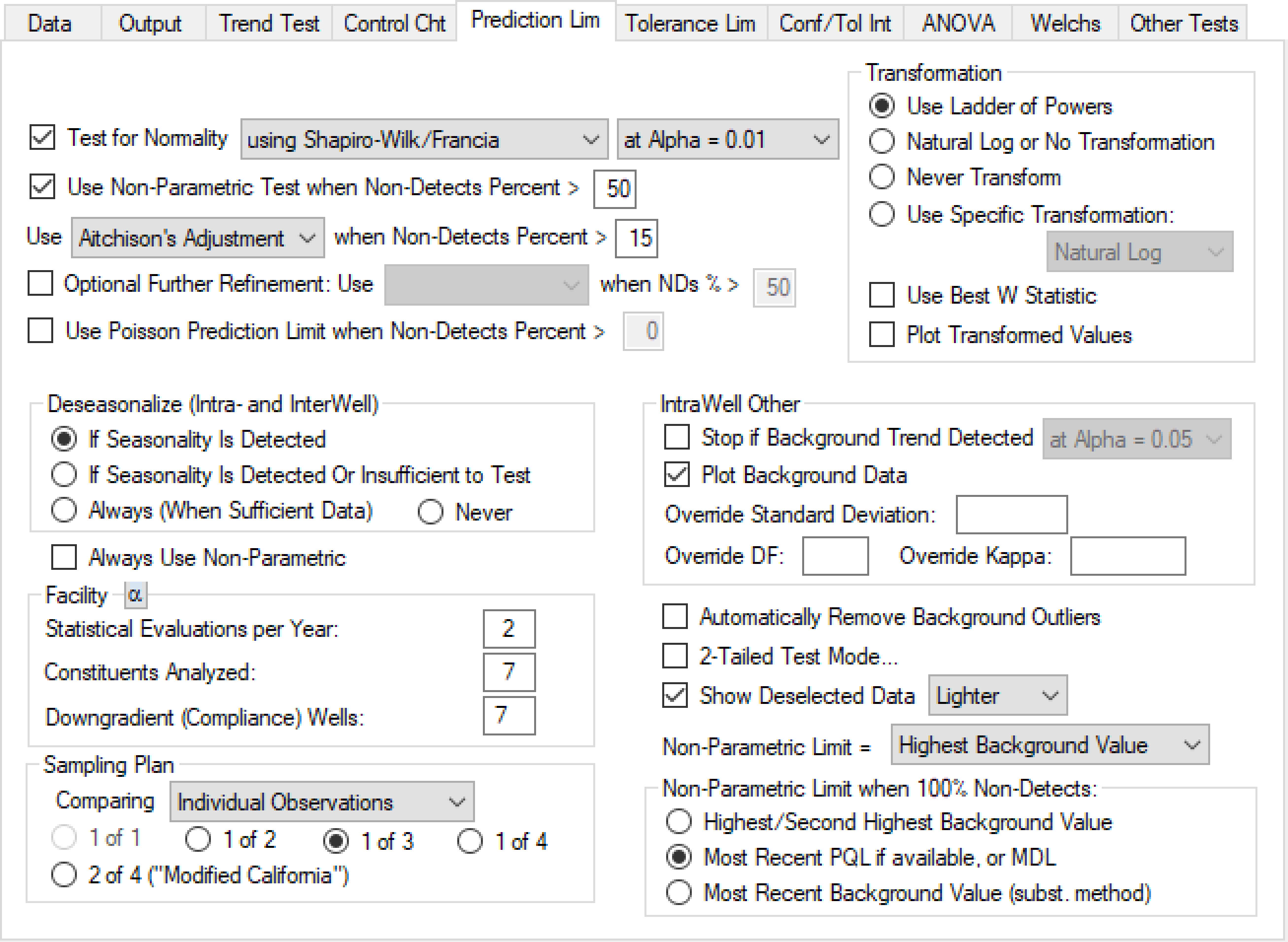
Zoom Factor: 200%

Output Decimal Precision

- ○ Less Precision
- ● Normal Precision
- ○ More Precision

☑ Store Print Jobs in Multiple Constituent Mode

Printer: Adobe PDF



Data | Output | Trend Test | Control Cht | Prediction Lim | Tolerance Lim | Conf/Tol Int | ANOVA | Welchs | Other Tests

☑ Test for Normality using Shapiro-Wilk/Francia at Alpha = 0.01

☑ Use Non-Parametric Test when Non-Detects Percent > 50

Use Aitchison's Adjustment when Non-Detects Percent > 15

☐ Optional Further Refinement: Use when NDs % > 50

☐ Use Poisson Prediction Limit when Non-Detects Percent > 0

Transformation

● Use Ladder of Powers

○ Natural Log or No Transformation

○ Never Transform

○ Use Specific Transformation: Natural Log

☐ Use Best W Statistic

☐ Plot Transformed Values

Deseasonalize (Intra- and InterWell)

● If Seasonality Is Detected

○ If Seasonality Is Detected Or Insufficient to Test

○ Always (When Sufficient Data) ○ Never

☐ Always Use Non-Parametric

Facility α

Statistical Evaluations per Year: 2

Constituents Analyzed: 7

Downgradient (Compliance) Wells: 7

Sampling Plan

Comparing Individual Observations

○ 1 of 1 ○ 1 of 2 ● 1 of 3 ○ 1 of 4

○ 2 of 4 ("Modified California")

IntraWell Other

☐ Stop if Background Trend Detected at Alpha = 0.05

☑ Plot Background Data

Override Standard Deviation:

Override DF: Override Kappa:

☐ Automatically Remove Background Outliers

☐ 2-Tailed Test Mode...

☑ Show Deselected Data Lighter

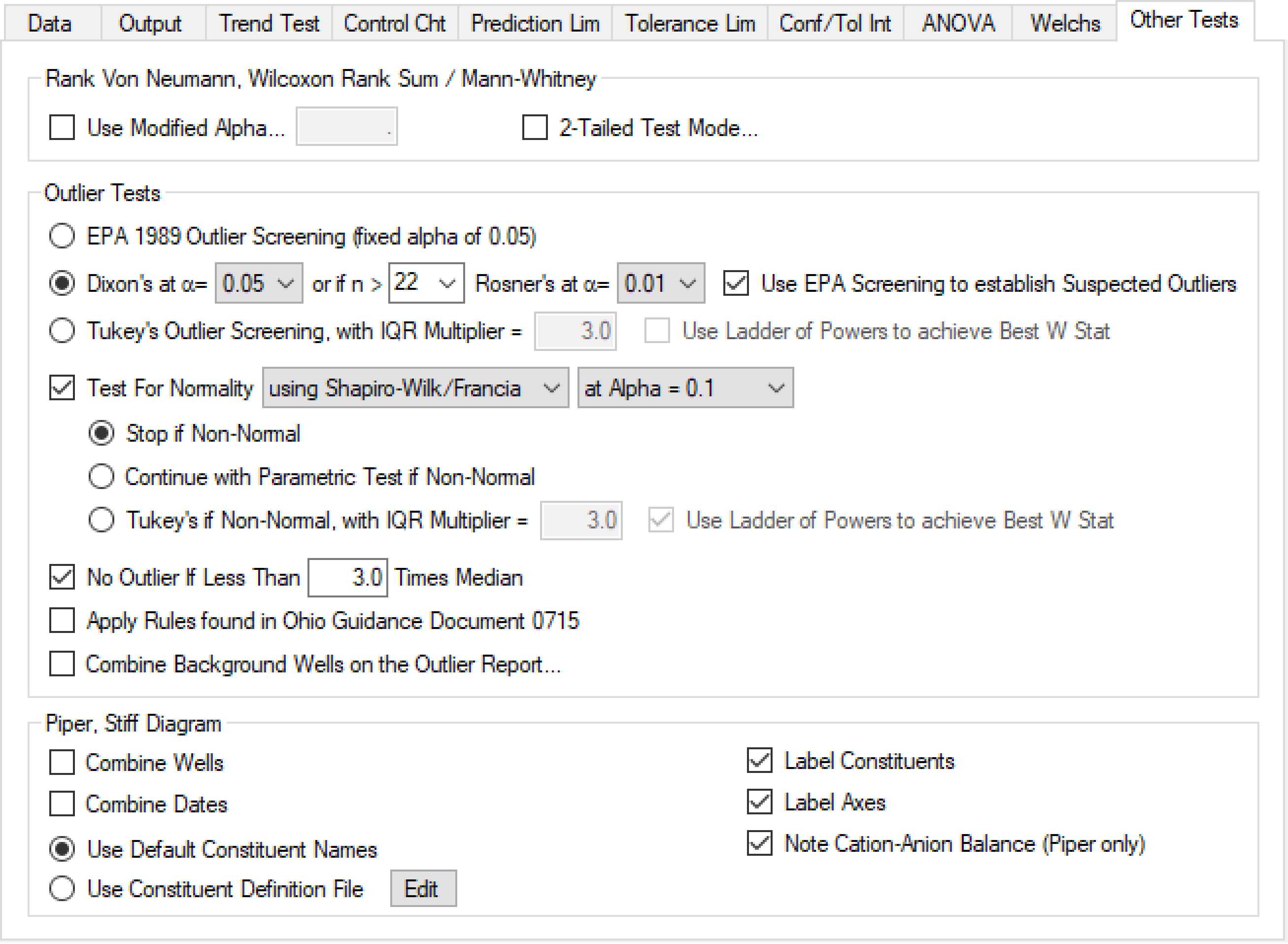
Non-Parametric Limit = Highest Background Value

Non-Parametric Limit when 100% Non-Detects:

○ Highest/Second Highest Background Value

● Most Recent PQL if available, or MDL

○ Most Recent Background Value (subst. method)



Rank Von Neumann, Wilcoxon Rank Sum / Mann-Whitney

☐ Use Modified Alpha... ☐ 2-Tailed Test Mode...

Outlier Tests

○ EPA 1989 Outlier Screening (fixed alpha of 0.05)

● Dixon's at α= 0.05 or if n > 22 Rosner's at α= 0.01 ☑ Use EPA Screening to establish Suspected Outliers

○ Tukey's Outlier Screening, with IQR Multiplier = 3.0 ☐ Use Ladder of Powers to achieve Best W Stat

☑ Test For Normality using Shapiro-Wilk/Francia at Alpha = 0.1

- ● Stop if Non-Normal
- ○ Continue with Parametric Test if Non-Normal
- ○ Tukey's if Non-Normal, with IQR Multiplier = 3.0 ☑ Use Ladder of Powers to achieve Best W Stat

☑ No Outlier If Less Than 3.0 Times Median

☐ Apply Rules found in Ohio Guidance Document 0715

☐ Combine Background Wells on the Outlier Report...

Piper, Stiff Diagram

☐ Combine Wells

☐ Combine Dates

● Use Default Constituent Names

○ Use Constituent Definition File

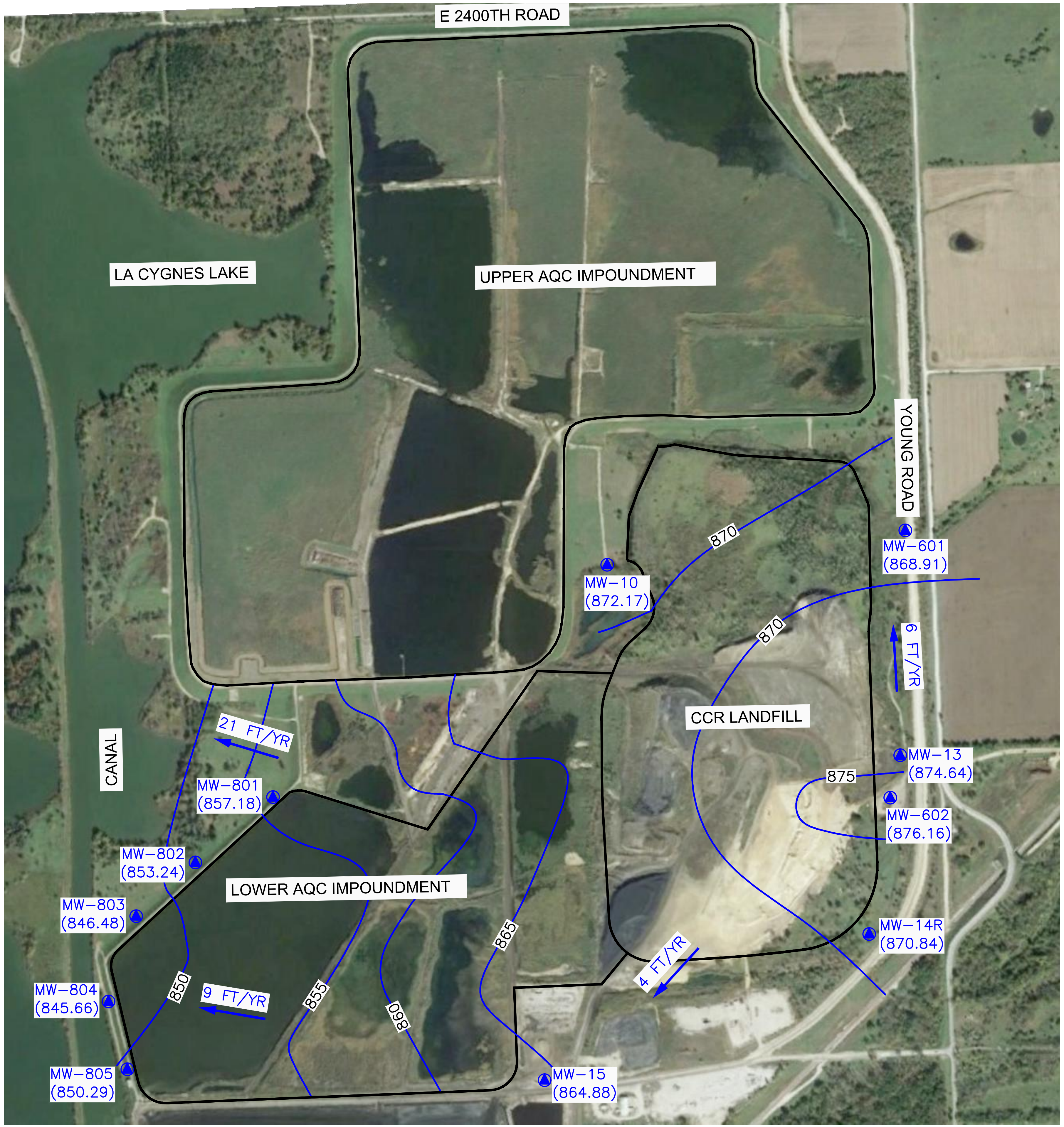
☑ Label Constituents

☑ Label Axes

☑ Note Cation-Anion Balance (Piper only)

ATTACHMENT 3

Groundwater Potentiometric Surface Maps

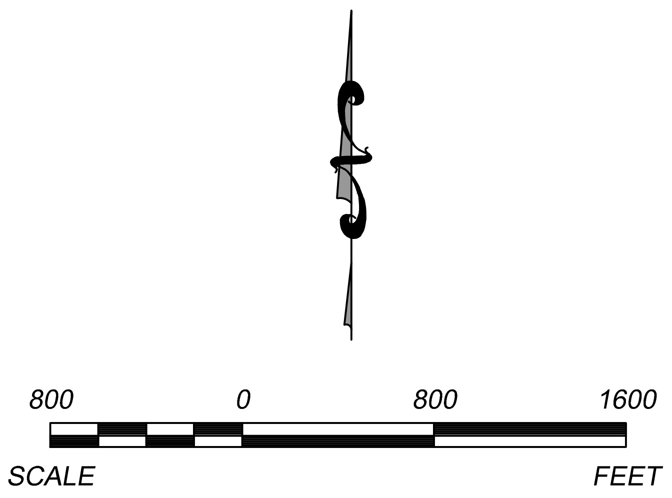


LEGEND

▭	CCR UNIT BOUNDARY (APPROXIMATE LIMITS OF CCR LANDFILL AND LOWER AQC IMPOUNDMENT)
MW−601 (868.92)	CCR GROUNDWATER MONITORING SYSTEM WELLS (GROUNDWATER ELEVATION)
−875−	GROUNDWATER POTENTIOMETRIC SURFACE ELEVATIONS (REPRESENTATIVE FOR THIS UNIT)
15 FT/YR ←	DIRECTION OF GROUNDWATER FLOW AND CALCULATED GROUNDWATER FLOW RATE (FEET/YEAR)

NOTES:

1. KDHE FACILITY PERMIT AND LANDFILL PERMIT BOUNDARIES VARY FROM THAT SHOWN.
2. GOOGLE EARTH IMAGE DATED OCTOBER 2014. BOUNDARY AND MONITOR WELL LOCATIONS ARE APPROXIMATE.
3. BOUNDARY AND MONITOR WELL LOCATIONS ARE PROVIDED BY AECOM.
4. WATER LEVEL MEASUREMENTS COMPLETED ON MAY 23, 2019.



REV.	DATE	CK. BY
△	-	-
△	-	-
△	-	-
△	-	-
△	-	-
△	-	-

SHEET TITLE
POTENTIOMETRIC SURFACE MAP (MAY 2019)
CCR LANDFILL & LOWER AQC IMPOUNDMENT

PROJECT TITLE
2019 GROUNDWATER MONITORING AND
CORRECTIVE ACTION REPORT ADDENDUM

CLIENT
EVERGY METRO
LA CYGNE GENERATING STATION
LA CYGNE, KANSAS

SCS ENGINEERS
7311 W. 130th St, Ste. 100
Overland Park, Kansas 66213
PH. (913) 681-0030 FAX. (913) 681-0012

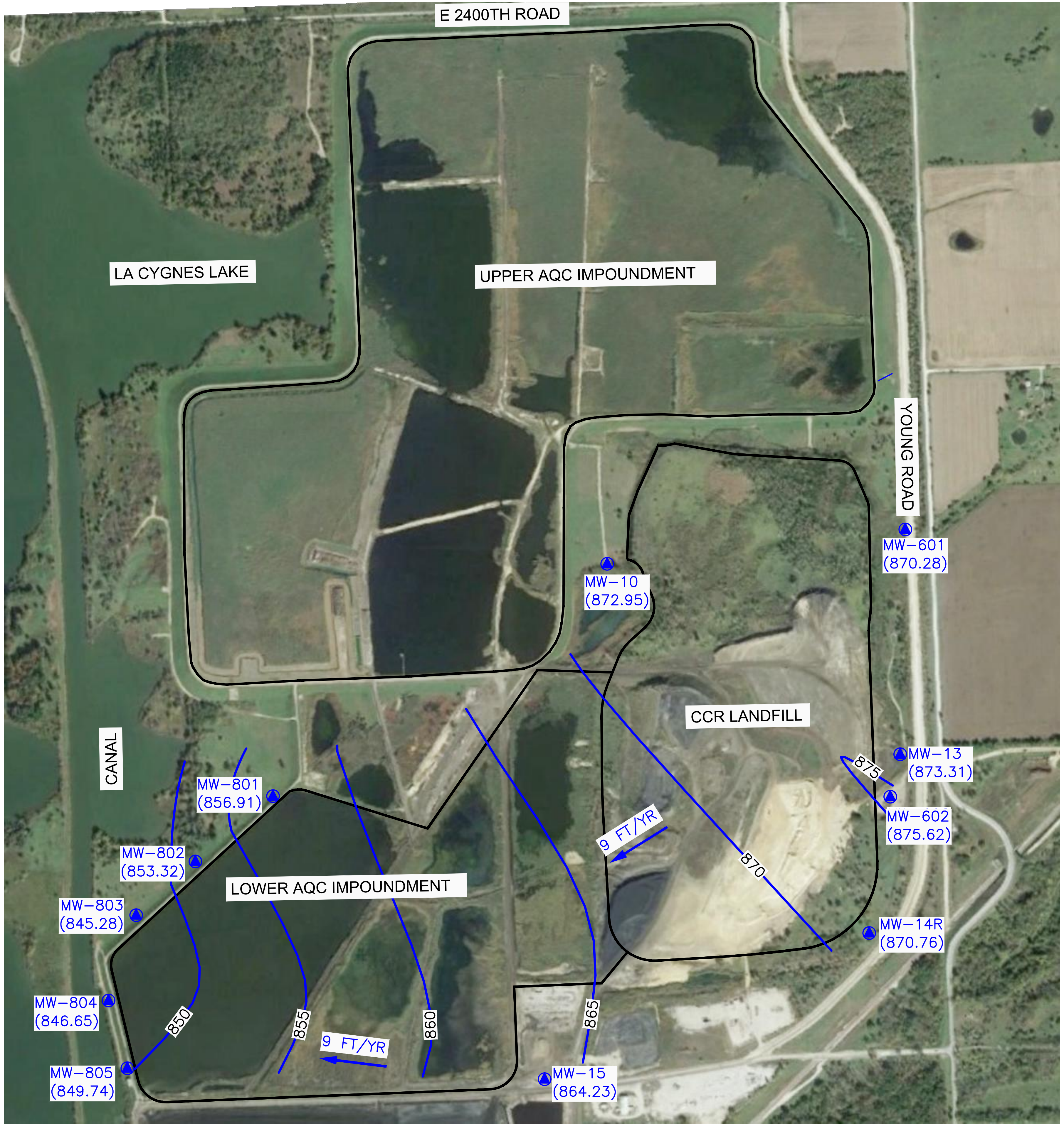
PROJ. NO. 27217233.00
DSN. BY: RCW
DWN. BY: RCW
CHK. BY: JRR
Q/A RVW BY: JRR
PROJ. MGR JRR

CADD FILE:
LA CYGNE LF LAQC IMP & UAQC KDHE GW FIG 1_MAY 2019 – COMBINED V0.02.DWG

DATE:
12/1/22

FIGURE NO.
2

N:\KCPL\Projects\Groundwater\DWG\La Cygne\2019\La Cygne LF LAQC Imp & UAQC KDHE GW Fig 1_MAY 2019 - COMBINED v0.02.dwg Dec 01, 2022 - 4:58pm Layout Name: Fig 1 LAQC By: swyly



LEGEND

▭	CCR UNIT BOUNDARY (APPROXIMATE LIMITS OF UPPER AQC IMPOUNDMENT)
● MW−703 (877.00)	CCR GROUNDWATER MONITORING SYSTEM WELLS (GROUNDWATER ELEVATION)
—875—	GROUNDWATER POTENTIOMETRIC SURFACE ELEVATIONS (REPRESENTATIVE FOR THIS UNIT)
MW−702*	INDICATES WELL NOT USED IN POTENTIOMETRIC SURFACE MAP CREATION
← 17 FT/YR	DIRECTION OF GROUNDWATER FLOW AND CALCULATED GROUNDWATER FLOW RATE (FEET/YEAR)

NOTES:

1. KDHE FACILITY PERMIT AND LANDFILL PERMIT BOUNDARIES VARY FROM THAT SHOWN.
2. GOOGLE EARTH IMAGE DATED OCTOBER 2014. BOUNDARY AND MONITOR WELL LOCATIONS ARE APPROXIMATE.
3. BOUNDARY AND MONITOR WELL LOCATIONS ARE PROVIDED BY AECOM.
4. WATER LEVEL MEASUREMENTS COMPLETED ON NOVEMBER 7, 2019.

800 0 800 1600

SCALE FEET

REV.	DATE		CK. BY
△	–		–
△	–		–
△	–		–
△	–		–
△	–		–
△	–		–

SHEET TITLE

POTENTIOMETRIC SURFACE MAP (NOVEMBER 2019)
CCR LANDFILL & LOWER AQC IMPOUNDMNET

PROJECT TITLE

2019 GROUNDWATER MONITORING AND
CORRECTIVE ACTION REPORT ADDENDUM

CLIENT

EVERGY METRO
LA CYGNE GENERATING STATION
LA CYGNE, KANSAS

SCS ENGINEERS

7311 W. 130th St, Ste. 100
Overland Park, Kansas 66213
PH. (913) 681-0030 FAX. (913) 681-0012

PROJ. NO. 27217233.00	DWN. BY: DAW	Q/A RVW BY: JRR
DSN. BY: DAW	CHK. BY: JF	PROJ. MGR JRR

CADD FILE: LA CYGNE LF LAQC IMP & UAQC KDHE GW FIG 1_NOV 2019 – COMBINED V0.02.DWG

DATE: 12/1/22

FIGURE NO. 3

N:\KCPL\Projects\Groundwater\DWG\La Cygne\2019\La Cygne LF LAQC Imp & UAQC KDHE GW Fig 1_NOV 2019 - COMBINED v0.02.dwg Dec 01, 2022 - 1:39pm Layout Name: Fig 1 Lower By: swyly