

**2017 ANNUAL GROUNDWATER MONITORING  
AND  
CORRECTIVE ACTION REPORT**

**CCR LANDFILL  
IATAN GENERATING STATION  
IATAN, MISSOURI**

Presented To:

**Kansas City Power & Light Company**

Presented By:

**SCS ENGINEERS**  
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January 30, 2018  
Revision 1: February 13, 2018  
Revision 2: December 16, 2022  
File Number 27213167.17

## CERTIFICATIONS

I, John R. Rockhold, being a qualified groundwater scientist and Registered Geologist in the State of Missouri, do hereby certify that the 2017 Annual Groundwater Monitoring and Corrective Action Report for the CCR Landfill at the Iatan Generating Station was prepared by me or under my direct supervision and fulfills the requirements of 40 CFR 257.90(e).



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John R. Rockhold, R.G.  
SCS Engineers

I, Douglas L. Doerr, being a qualified licensed Professional Engineer in the State of Missouri, do hereby certify that the 2017 Annual Groundwater Monitoring and Corrective Action Report for the CCR Landfill at the Iatan Generating Station was prepared by me or under my direct supervision and fulfills the requirements of 40 CFR 257.90(e).



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Douglas L. Doerr, P.E.  
SCS Engineers

<b>Revision Number</b>	<b>Revision Date</b>	<b>Revision Section</b>	<b>Summary of Revisions</b>
1	2/13/2018	Report Text	Revision table added. No changes to text regarding the 2017 Annual Groundwater Monitoring and Corrective Action Report.
1	2/13/2018	Appendix B Table 1	Table 1 was revised to include the extra cadmium sample collected on 11/14/2017 from monitoring well MW-2.
2	December 16, 2022	Addendum 1	Added Addendum 1

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## 1 INTRODUCTION

This 2017 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 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 2017 Annual Groundwater Monitoring and Corrective Action Report for the CCR Landfill at the Iatan 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 all background (or upgradient) and downgradient monitoring wells with identification numbers for the CCR Landfill 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;*

The CCR groundwater monitoring system was initially certified on October 13, 2017. No new monitoring wells were installed and no wells were decommissioned as part of the CCR groundwater monitoring program for the CCR Landfill in 2017.

## 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. Sampling for the detection monitoring program began in August 2016. Samples were analyzed as indicated in **Appendix B, Table 1** (Appendix III and Appendix IV Detection Monitoring Results, and **Table 2** (Detection Monitoring Field Measurements). The dates of sample collection and the results of the analyses are also provided in these tables.

## 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 2017. Only detection monitoring was conducted in 2017. Statistical evaluation of the data was still in process as of the end of 2017.

## 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)**

*Status of Groundwater Monitoring and Corrective Action Program.*

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

*Summary of Key Actions Completed.*

Collection of initial background groundwater quality data was completed and the initial detection monitoring sampling and analysis event was completed in October 2017. Verification sampling was also conducted per the certified statistical method.

*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 (2018).*

Completion of statistical evaluation of detection monitoring data. Groundwater sampling and analysis and alternative source demonstration(s) (if required).

**2.5.2 § 257.94(d)(3)**

*Demonstration providing the basis for an alternative monitoring frequency for detection monitoring and certification that it meets the requirements of this section.*

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

**2.5.3 § 257.94(e)(2)**

*Demonstration that an alternative source other than the CCR unit caused the statistically significant increase (SSI) over background or that the SSI was caused by an 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.*

Not applicable because no such demonstration was conducted.

**2.5.4 § 257.95(c)(3)**

*Demonstration providing the basis for an alternative monitoring frequency for assessment monitoring and certification that it meets the requirements of this section.*

Not applicable because no such demonstration was conducted.

**2.5.5 § 257.95(d)(3)**

*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)**

*Demonstration that an alternative source other than the CCR unit caused the contamination, or that the SSI (during assessment monitoring) resulted from an 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.*

Not applicable because no such demonstration was conducted.

**2.5.7 § 257.96(a)**

*Demonstration of the need for additional time to complete the assessment of corrective measures due to site-specific conditions or circumstances. In addition, certification of the demonstration is to be included in the annual report.*

Not applicable because no such demonstration was 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 Iatan 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 KCP&L for specific application to the Iatan Generating Station CCR Landfill. No warranties, express or implied, are intended or made.

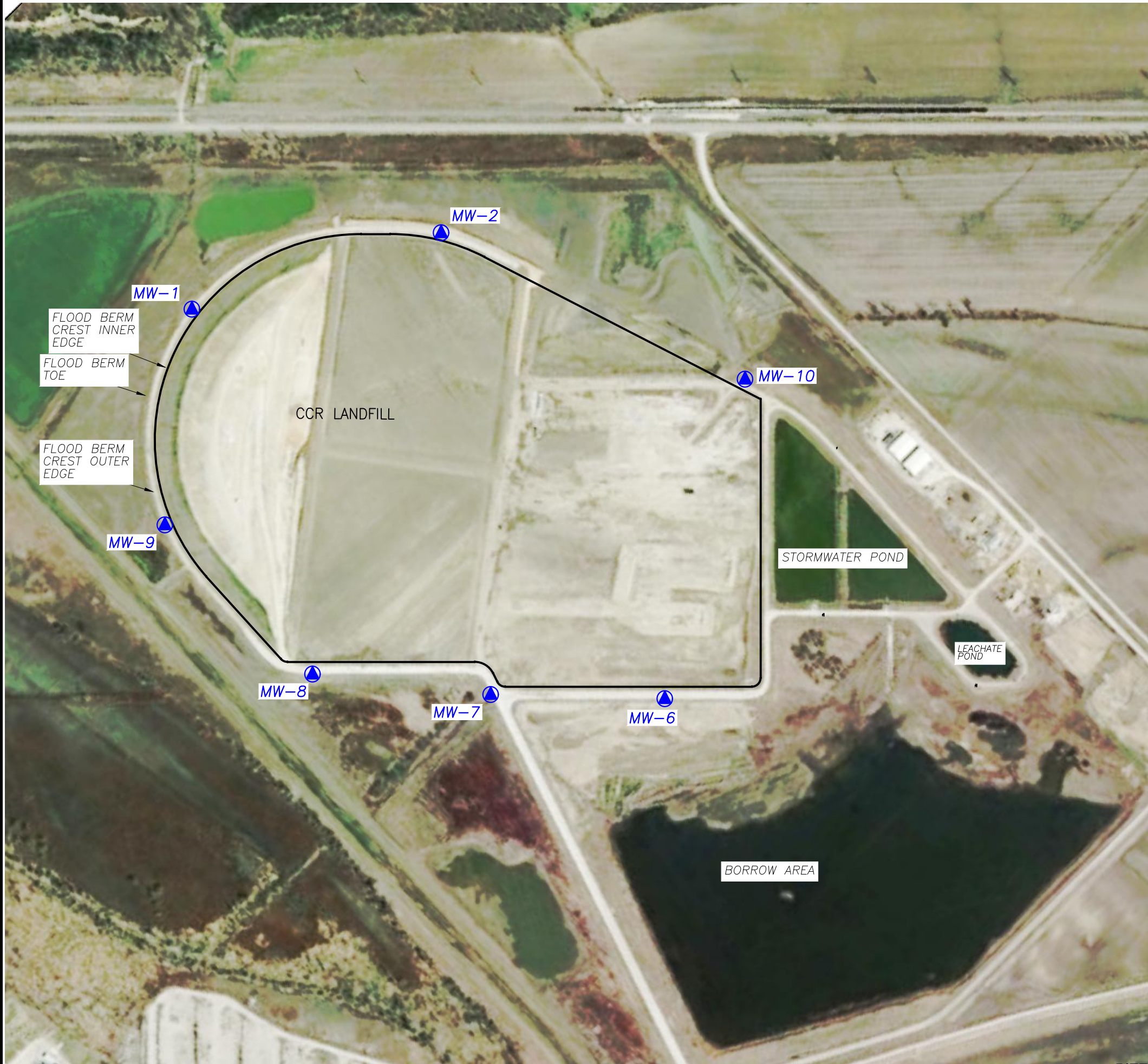
## **APPENDIX A**

### **FIGURES**

Figure 1: Site Map



N:\KCP\Projects\Groundwater\1 - Iatan\DWG\Fig 1 Iatan Site Map\_2017 CCR.dwg Nov 07, 2017 - 3:09pm Layout Name: Fig 1 By: 4121rcw

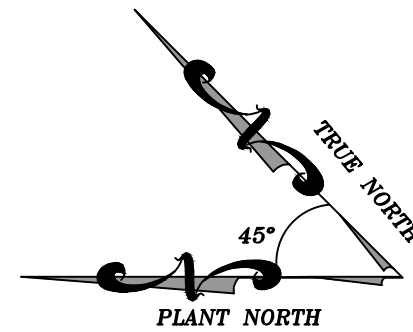


**LEGEND:**

- ▲ MW-1 CCR GROUNDWATER MONITORING WELL SYSTEM
- CCR LANDFILL UNIT BOUNDARY

**NOTES:**

1. HORIZONTAL DATUM: MISSOURI STATE PLANE COORDINATE SYSTEM, WEST ZONE (NAD 83)
2. VERTICAL DATUM: NAVD 88
3. GOOGLE EARTH IMAGE DATED MARCH 27, 2017. BOUNDARY AND MONITOR WELL LOCATIONS ARE APPROXIMATE
4. BOUNDARY AND MONITOR WELL LOCATIONS PROVIDED BY BURNS & MCDONNELL
5. CCR LANDFILL UNIT BOUNDARY SHOWN IS APPROXIMATE.



CK. BY	—	REV. DATE	—	SHEET TITLE	SITE MAP	CLIENT	KANSAS CITY POWER & LIGHT COMPANY	IATAN GENERATING STATION WESTON, MISSOURI	SCS ENGINEERS 7311 W. 130th St. Ste. 100 Overland Park, MO 66213 PH: (913) 681-0080 FAX: (913) 681-0012 PROJ. NO. 27213167.17 DWN. BY: LAM CHK. BY: JRR TSC. BY: LAM	CADD FILE: FIG 1_IATAN SITE MAP_2017 COLOR	DATE: 1/26/18	FIGURE NO. 1
	—		—		—							
—	—	—	—	PROJECT TITLE	CCR GROUNDWATER MONITORING SYSTEM	—	—	—	—	—	—	—
—	—	—	—	PROJECT TITLE	2017 GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT	—	—	—	—	—	—	—

## **APPENDIX B**

### **TABLES**

Table 1: Appendix III and Appendix IV Detection Monitoring Results

Table 2: Detection Monitoring Field Measurements



**Table 1  
CCR Landfill  
Appendix III and Appendix IV Detection Monitoring Results  
KCP&L Iatan Generating Station**

Well Number	Sample Date	Appendix III Constituents							Appendix IV Constituents														
		Boron (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	pH (S.U.)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Cobalt (mg/L)	Fluoride (mg/L)	Lead (mg/L)	Lithium (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Selenium (mg/L)	Thallium (mg/L)	Radium Combined (pCi/L)
MW-1	08/18/16	<0.200	134	5.93	0.234	6.89	32.4	513	<0.002	0.017	0.267	<0.002	<0.001	<.010	<.010	0.234	<0.002	0.0551	<0.0002	<0.005	<0.002	<0.002	0.899
MW-1	09/29/16	<0.200	134	6.07	0.292	7.24	35.3	486	<0.002	0.0131	0.244	<0.002	<0.001	<.010	<.010	0.292	<0.002	0.0536	<0.0002	<0.005	<0.002	<0.002	0.171
MW-1	11/09/16	<0.200	136	5.95	0.274	6.74	33.2	484	<0.002	0.0119	0.239	<0.002	<0.001	<.010	<.010	0.274	<0.002	0.0555	<0.0002	<0.005	<0.002	<0.002	0.36
MW-1	12/21/16	<0.200	134	5.97	0.241	6.86	36.2	493	<0.002	0.0206	0.308	<0.002	<0.001	<.010	<.010	0.241	0.00227	0.0542	<0.0002	<0.005	<0.002	<0.002	2.37
MW-1	02/03/17	<0.200	116	6.00	0.288	6.91	36.9	506	<0.002	0.0139	0.252	<0.002	<0.001	<.010	<.010	0.288	<0.002	0.0525	<0.0002	<0.005	<0.002	<0.002	1.42
MW-1	05/24/17	<0.200	128	5.61	0.272	7.41	27.4	477	<0.002	0.013	0.234	<0.002	<0.001	<.010	<.010	0.272	<0.002	0.0521	<0.0002	<0.005	<0.002	<0.002	0.46
MW-1	07/05/17	<0.200	129	5.78	0.275	7.54	34.2	481	<0.002	0.0129	0.235	<0.002	<0.001	<.010	<.010	0.275	<0.002	0.0558	<0.0002	<0.005	<0.002	<0.002	0.142
MW-1	08/17/17	<0.200	134	6.13	0.276	6.98	35.2	500	<0.002	0.0135	0.254	<0.002	<0.001	<.010	<.010	0.276	<0.002	0.0523	<0.0002	<0.005	<0.002	<0.002	1.21
MW-1	10/05/17	<0.200	141	6.75	0.273	7.03	34.5	472	<0.002	0.0138	0.262	<0.002	<0.2	<.010	<.010	0.273	<0.002	0.0534	<0.0002	<0.005	<0.002	<0.002	0.5
MW-1	11/14/17	---	*130	*6.73	---	**6.93	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-1	12/29/17	---	---	*6.27	---	**6.98	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-2	08/18/16	<0.200	170	8.26	0.303	6.90	142	696	<0.002	0.0222	0.222	<0.002	0.00114	<.010	<.010	0.303	<0.002	0.0563	<0.0002	<0.005	<0.002	<0.002	0.142
MW-2	09/29/16	<0.200	169	8.79	0.356	7.45	151	651	<0.002	0.0202	0.218	<0.002	0.00209	<.010	<.010	0.356	<0.002	0.0552	<0.0002	<0.005	<0.002	<0.002	0.884
MW-2	11/09/16	<0.200	169	8.76	0.331	6.79	155	711	<0.002	0.0192	0.218	<0.002	0.0014	<.010	<.010	0.331	<0.002	0.0553	<0.0002	<0.005	<0.002	<0.002	0.707
MW-2	12/21/16	<0.200	166	8.24	0.292	6.85	155	636	<0.002	0.0191	0.213	<0.002	<0.001	<.010	<.010	0.292	<0.002	0.0496	<0.0002	<0.005	<0.002	<0.002	1.84
MW-2	02/03/17	<0.200	146	8.17	0.342	7.08	150	661	<0.002	0.0193	0.223	<0.002	0.00163	<.010	<.010	0.342	<0.002	0.0513	<0.0002	<0.005	<0.002	<0.002	1.23
MW-2	05/24/17	<0.200	166	9.54	0.327	7.35	172	690	<0.002	0.021	0.213	<0.002	0.00121	<.010	<.010	0.327	<0.002	0.0557	<0.0002	<0.005	<0.002	<0.002	0.495
MW-2	07/05/17	<0.200	165	8.99	0.334	7.33	158	638	<0.002	0.0232	0.211	<0.002	0.00367	<.010	<.010	0.334	<0.002	0.0585	<0.0002	<0.005	<0.002	<0.002	1.28
MW-2	08/17/17	<0.200	168	8.98	0.332	6.97	149	690	<0.002	0.0219	0.223	<0.002	0.00291	<.010	<.010	0.332	<0.002	0.0544	<0.0002	<0.005	<0.002	<0.002	1.21
MW-2	10/05/17	<0.200	177	9.23	0.326	7.00	151	683	<0.002	0.0232	0.227	<0.002	0.00729	<.010	<.010	0.326	<0.002	0.0546	<0.0002	<0.005	<0.002	<0.002	1.40
MW-2	11/14/17	---	*161	**8.97	---	**6.91	---	---	---	---	---	---	**<0.001	---	---	---	---	---	---	---	---	---	---
MW-6	08/18/16	<0.200	142	1.31	0.298	7.18	30.2	522	<0.002	0.0237	0.294	<0.002	<0.001	<.010	<.010	0.298	<0.002	0.0368	<0.0002	<0.005	<0.002	<0.002	0.624
MW-6	09/29/16	<0.200	139	1.46	0.343	6.97	33.5	498	<0.002	0.0193	0.282	<0.002	<0.001	<.010	<.010	0.343	<0.002	0.0362	<0.0002	<0.005	<0.002	<0.002	1.39
MW-6	11/09/16	<0.200	142	1.29	0.324	7.72	31.4	506	<0.002	0.0185	0.289	<0.002	<0.001	<.010	<.010	0.324	<0.002	0.0366	<0.0002	<0.005	<0.002	<0.002	0.629
MW-6	12/21/16	<0.200	146	1.72	0.293	6.99	28.6	519	<0.002	0.0345	0.335	<0.002	<0.001	<.010	<.010	0.293	<0.002	0.0319	<0.0002	<0.005	<0.002	<0.002	1.53
MW-6	02/03/17	<0.200	136	1.4	0.348	7.10	28.5	527	<0.002	0.0214	0.325	<0.002	<0.001	<.010	<.010	0.348	<0.002	0.0342	<0.0002	<0.005	<0.002	<0.002	4.46
MW-6	05/24/17	<0.200	150	1.49	0.297	7.49	32.7	544	<0.002	0.0196	0.306	<0.002	<0.001	<.010	<.010	0.297	<0.002	0.0387	<0.0002	<0.005	<0.002	<0.002	0.064
MW-6	07/05/17	<0.200	147	1.54	0.317	7.46	37.2	508	<0.002	0.0219	0.304	<0.002	<0.001	<.010	<.010	0.317	<0.002	0.0409	<0.0002	<0.005	<0.002	<0.002	1.37
MW-6	08/17/17	<0.200	150	1.32	0.313	7.47	37.6	542	<0.002	0.0213	0.331	<0.002	<0.001	<.010	<.010	0.313	<0.002	0.0372	<0.0002	<0.005	<0.002	<0.002	1.24
MW-6	10/05/17	<0.200	157	2.09	0.312	7.20	34.5	528	<0.002	0.0182	0.304	<0.002	<0.001	<.010	<.010	0.312	<0.002	0.0376	<0.0002	<0.005	<0.002	<0.002	0.974
MW-6	11/14/17	---	*151	*2.12	---	**7.14	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-6	12/29/17	---	---	*1.45	---	**7.02	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-7	08/18/16	<0.200	145	12.3	0.366	6.97	70.2	560	<0.002	0.0104	0.285	<0.002	<0.001	<.010	<.010	0.366	<0.002	0.0417	<0.0002	<0.005	<0.002	<0.002	1.011
MW-7	09/29/16	<0.200	144	13.9	0.395	7.25	70.6	554	<0.002	0.0225	0.278	<0.002	<0.001	<.010	<.010	0.395	<0.002	0.0411	<0.0002	<0.005	<0.002	<0.002	0.746
MW-7	11/09/16	<0.200	146	11.1	0.333	7.87	62.6	538	<0.002	0.0104	0.288	<0.002	<0.001	<.010	<.010	0.333	<0.002	0.0406	<0.0002	<0.005	<0.002	<0.002	0.349
MW-7	12/21/16	<0.200	138	6.64	0.284	6.88	50.0	492	<0.002	0.0524	0.374	<0.002	<0.001	<.010	<.010	0.284	<0.002	0.037	<0.0002	<0.005	<0.002	<0.002	1.47
MW-7	02/03/17	<0.200	116	3.32	0.337	7.01	41.9	487	<0.002	0.00805	0.282	<0.002	<0.001	<.010	<.010	0.337	<0.002	0.0389	<0.0002	<0.005	<0.002	<0.002	1.51
MW-7	05/24/17	<0.200	123	1.76	0.391	7.67	16.2	462	<0.002	0.0195	0.24	<0.002	<0.001	<.010	<.010	0.391	<0.002	0.0361	<0.0002	<0.005	<0.002	<0.002	0.306
MW-7	07/05/17	<0.200	125	1.81	0.378	7.36	19.5	445	<0.002	0.0167	0.259	<0.002	<0.001	<.010	<.010	0.378	<0.002	0.0462	<0.0002	<0.005	<0.002	<0.002	0.762
MW-7	08/17/17	<0.200	133	2.00	0.326	7.15	34.1	466	<0.002	0.00706	0.286	<0.002	<0.001	<.010	<.010	0.326	<0.002	0.0409	<0.0002	<0.005	<0.002	<0.002	1
MW-7	10/05/17	<0.200	135	3.32	0.341	7.15	24.3	459	<0.002	0.0113	0.287	<0.002	<0.001	<.010	<.010	0.341	<0.002	0.0422	<0.0002	<0.005	<0.002	<0.002	0.301
MW-7	11/14/17	---	**125	**2.58	---	**7.13	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

\* Verification Sample  
 \*\*Extra Sample per Standard Sampling Procedure  
 mg/L - milligrams per liter  
 pCi/L - picocuries per liter  
 S.U. - Standard Units  
 --- Not Sampled

**Table 1  
CCR Landfill  
Appendix III and Appendix IV Detection Monitoring Results  
KCP&L Iatan Generating Station**

Well Number	Sample Date	Appendix III Constituents							Appendix IV Constituents														
		Boron (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	pH (S.U.)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Cobalt (mg/L)	Fluoride (mg/L)	Lead (mg/L)	Lithium (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Selenium (mg/L)	Thallium (mg/L)	Radium Combined (pCi/L)
MW-8	08/18/16	<0.200	136	1.50	0.438	7.10	23.3	494	<0.002	0.00749	0.2	<0.002	<0.001	<.010	<.010	0.438	<0.002	0.0436	<0.0002	<0.005	<0.002	<0.002	0.123
MW-8	09/29/16	<0.200	132	1.42	0.439	7.32	24.2	517	<0.002	0.00661	0.192	<0.002	<0.001	<.010	<.010	0.439	<0.002	0.0402	<0.0002	<0.005	<0.002	<0.002	0.089
MW-8	11/09/16	<0.200	135	1.76	0.415	8.24	23.8	471	<0.002	0.00695	0.198	<0.002	<0.001	<.010	<.010	0.415	<0.002	0.0421	<0.0002	<0.005	<0.002	<0.002	1.82
MW-8	12/21/16	<0.200	139	1.89	0.461	7.10	25.5	493	<0.002	0.00691	0.207	<0.002	<0.001	<.010	<.010	0.461	<0.002	0.039	<0.0002	<0.005	<0.002	<0.002	1.07
MW-8	02/03/17	<0.200	133	4.02	0.407	7.13	39.6	515	<0.002	0.00711	0.231	<0.002	<0.001	<.010	<.010	0.407	<0.002	0.0436	<0.0002	<0.005	<0.002	<0.002	1.69
MW-8	05/24/17	<0.200	138	3.63	0.391	7.66	42.8	485	<0.002	0.00756	0.2	<0.002	<0.001	<.010	<.010	0.391	<0.002	0.0392	<0.0002	<0.005	<0.002	<0.002	0.691
MW-8	07/05/17	<0.200	142	4.44	0.391	7.44	54.8	500	<0.002	0.00752	0.215	<0.002	0.00207	<.010	<.010	0.391	<0.002	0.0417	<0.0002	<0.005	<0.002	<0.002	1.73
MW-8	08/17/17	<0.200	145	3.53	0.406	7.27	43	504	<0.002	0.0088	0.226	<0.002	<0.001	<.010	<.010	0.406	<0.002	0.0437	<0.0002	<0.005	<0.002	<0.002	1.52
MW-8	10/05/17	<0.200	155	4.55	0.396	7.25	43.4	505	<0.002	0.0107	0.229	<0.002	<0.001	<.010	<.010	0.396	<0.002	0.0439	<0.0002	<0.005	<0.002	<0.002	0.828
MW-8	11/14/17	---	*145	**4.86	---	**7.24	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-9	08/18/16	<0.200	119	1.95	0.338	7.02	16.7	475	<0.002	0.0121	0.327	<0.002	<0.001	<.010	<.010	0.338	<0.002	0.0425	<0.0002	<0.005	<0.002	<0.002	1.041
MW-9	09/29/16	<0.200	102	<1	0.415	7.28	26.2	398	<0.002	0.0116	0.299	<0.002	<0.001	<.010	<.010	0.415	<0.002	0.04	<0.0002	<0.005	<0.002	<0.002	2.11
MW-9	11/09/16	<0.200	103	<1	0.383	6.99	23	476	<0.002	0.0156	0.276	<0.002	<0.001	<.010	<.010	0.383	<0.002	0.0445	<0.0002	<0.005	<0.002	<0.002	0.984
MW-9	12/21/16	<0.200	116	1.66	0.344	7.02	22.2	415	<0.002	0.00702	0.312	<0.002	<0.001	<.010	<.010	0.344	<0.002	0.0399	<0.0002	<0.005	<0.002	<0.002	3.16
MW-9	02/03/17	<0.200	105	1.16	0.327	7.05	21.1	442	<0.002	0.00703	0.33	<0.002	<0.001	<.010	<.010	0.327	<0.002	0.0458	<0.0002	<0.005	<0.002	<0.002	2.39
MW-9	05/24/17	<0.200	108	1.07	0.387	7.61	15.9	415	<0.002	0.0106	0.276	<0.002	<0.001	<.010	<.010	0.387	<0.002	0.046	<0.0002	<0.005	<0.002	<0.002	0.083
MW-9	07/05/17	<0.200	97.2	1.06	0.364	7.37	24.8	386	<0.002	0.0145	0.249	<0.002	<0.001	<.010	<.010	0.364	<0.002	0.0431	<0.0002	<0.005	<0.002	<0.002	1.31
MW-9	08/17/17	<0.200	110	<1	0.39	7.13	19.8	431	<0.002	0.0122	0.28	<0.002	<0.001	<.010	<.010	0.39	<0.002	0.0431	<0.0002	<0.005	<0.002	<0.002	1.56
MW-9	10/05/17	<0.200	113	3.57	0.204	7.35	21.5	414	<0.002	0.0139	0.255	<0.002	<0.001	<.010	<.010	0.204	<0.002	0.0413	<0.0002	<0.005	<0.002	<0.002	0.175
MW-9	11/14/17	---	**113	*1.82	---	**7.19	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-10	08/18/16	<0.200	123	7.47	0.584	7.06	17.8	532	<0.002	0.0195	0.232	<0.002	<0.001	<.010	<.010	0.584	<0.002	0.0569	<0.0002	<0.005	<0.002	<0.002	1.5
MW-10	09/29/16	<0.200	118	7.83	0.622	7.31	19.7	502	<0.002	0.02	0.23	<0.002	<0.001	<.010	<.010	0.622	<0.002	0.0554	<0.0002	<0.005	<0.002	<0.002	1.34
MW-10	11/09/16	<0.200	124	9.15	0.642	6.93	17.4	516	<0.002	0.0165	0.231	<0.002	<0.001	<.010	<.010	0.642	<0.002	0.0586	<0.0002	<0.005	<0.002	<0.002	0.816
MW-10	12/21/16	<0.200	123	9.84	0.538	6.96	17.7	497	<0.002	0.0159	0.249	<0.002	<0.001	<.010	<.010	0.538	<0.002	0.052	<0.0002	<0.005	<0.002	<0.002	0.925
MW-10	02/03/17	<0.200	109	10.3	0.521	6.99	19.1	531	<0.002	0.0168	0.236	<0.002	<0.001	<.010	<.010	0.521	<0.002	0.0541	<0.0002	<0.005	<0.002	<0.002	2.4
MW-10	05/24/17	<0.200	125	12.6	0.591	7.51	22.4	1760	<0.002	0.0226	0.234	<0.002	<0.001	<.010	<.010	0.591	<0.002	0.0572	<0.0002	<0.005	<0.002	<0.002	0.176
MW-10	07/05/17	<0.200	120	15.9	0.582	7.31	24.7	474	<0.002	0.0215	0.227	<0.002	<0.001	<.010	<.010	0.582	<0.002	0.0577	<0.0002	<0.005	<0.002	<0.002	1.1
MW-10	08/17/17	<0.200	122	17.6	0.682	7.10	26.5	539	<0.002	0.017	0.235	<0.002	<0.001	<.010	<.010	0.682	<0.002	0.0566	<0.0002	<0.005	<0.002	<0.002	0.889
MW-10	10/05/17	<0.200	131	19.7	0.312	7.05	26.4	539	<0.002	0.0137	0.229	<0.002	<0.001	<.010	<.010	0.312	<0.002	0.0545	<0.0002	<0.005	<0.002	<0.002	1.31
MW-10	11/14/17	---	*119	*17.6	---	**7.09	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

\* Verification Sample  
 \*\*Extra Sample per Standard Sampling Procedure  
 mg/L - milligrams per liter  
 pCi/L - picocuries per liter  
 S.U. - Standard Units  
 --- Not Sampled

**Table 2**  
**CCR Landfill**  
**Detection Monitoring Field Measurements**  
**KCP&L Iatan Generating Station**

Well Number	Sample Date	pH (S.U.)	Specific Conductivity (µS)	Temperature (°C)	Turbidity (NTU)	Water Level (ft btoc)	Groundwater Elevation (ft NGVD)
MW-1	08/18/16	6.89	856	17.02	4.9	19.64	769.28
MW-1	09/29/16	7.24	934	15.59	0.0	17.95	770.97
MW-1	11/09/16	6.74	892	16.58	0.0	19.75	769.17
MW-1	12/21/16	6.86	877	13.7	19.1	21.35	767.57
MW-1	02/03/17	6.91	894	12.07	1.2	22.47	766.45
MW-1	05/24/17	7.41	772	14.86	0.0	19.19	769.73
MW-1	07/05/17	7.54	690	16.3	0.0	19.60	769.32
MW-1	08/17/17	6.98	806	16.06	3.4	21.72	767.20
MW-1	10/05/17	7.03	819	14.75	5.5	21.12	767.57
MW-1	11/14/17	**6.93	760	14.13	3.7	21.47	767.22
MW-1	12/29/17	**6.98	752	12.05	4.8	23.00	765.69
MW-2	08/18/16	6.90	988	18.24	0.0	20.59	769.18
MW-2	09/29/16	7.45	1134	15.9	0.0	19.14	770.63
MW-2	11/09/16	6.79	1070	16.27	0.0	20.19	769.58
MW-2	12/21/16	6.85	1050	13.77	21.95	21.95	767.82
MW-2	02/03/17	7.08	1160	12.34	0.3	22.98	766.79
MW-2	05/24/17	7.35	976	15.47	0.0	20.61	769.16
MW-2	07/05/17	7.33	841	16.27	0.0	20.57	769.20
MW-2	08/17/17	6.97	980	16.64	0.9	22.46	767.31
MW-2	10/05/17	7.00	995	15.58	0.0	21.82	767.79
MW-2	11/14/17	**6.91	911	14.7	0.2	22.14	767.47
MW-6	08/18/16	7.18	870	15.69	3.6	21.05	768.63
MW-6	09/29/16	6.97	926	16.18	0.0	20.18	769.50
MW-6	11/09/16	7.72	861	15.56	0.0	20.77	768.91
MW-6	12/21/16	6.99	899	14.29	5.6	22.01	767.67
MW-6	02/03/17	7.10	962	12.64	4.3	23.28	766.40
MW-6	05/24/17	7.49	868	15.45	0.0	22.72	766.96
MW-6	07/05/17	7.46	720	17.9	0.0	22.03	767.65
MW-6	08/17/17	7.47	665	23.27	3.1	22.94	766.74
MW-6	10/05/17	7.20	839	15.24	0.7	22.35	767.30
MW-6	11/14/17	**7.14	821	15.3	0.0	22.62	767.03
MW-6	12/29/17	**7.02	833	13.75	3.4	23.69	765.96
MW-7	08/18/16	6.97	787	17.81	15.9	21.10	768.56
MW-7	09/29/16	7.25	970	15.31	0.0	19.75	769.91
MW-7	11/09/16	7.87	869	14.43	4.6	20.66	769.00
MW-7	12/21/16	6.88	859	14.31	11.7	22.28	767.38
MW-7	02/03/17	7.01	837	12.91	1.5	23.58	766.08
MW-7	05/24/17	7.67	723	14.93	0.0	22.15	767.51
MW-7	07/05/17	7.36	611	16.05	12.1	21.66	768.00
MW-7	08/17/17	7.15	728	16.33	2.7	23.02	766.64
MW-7	10/05/17	7.15	709	14.96	1.8	22.39	767.26
MW-7	11/14/17	**7.13	681	14.75	0.2	22.69	766.96
MW-8	08/18/16	7.10	800	14.93	0.0	21.31	768.43
MW-8	09/29/16	7.32	850	15.43	0.0	19.31	770.43
MW-8	11/09/16	8.24	808	14.98	2.5	20.57	769.17
MW-8	12/21/16	7.10	825	13.73	5.1	22.75	766.99
MW-8	02/03/17	7.13	921	12.74	0.0	24.02	765.72
MW-8	05/24/17	7.66	763	14.82	0.0	21.15	768.59
MW-8	07/05/17	7.44	660	15.29	0.0	21.32	768.42
MW-8	08/17/17	7.27	801	16.02	1.3	23.27	766.47
MW-8	10/05/17	7.25	791	15.04	0.0	22.58	767.13
MW-8	11/14/17	**7.24	768	14.63	2.9	22.85	766.86
MW-9	08/18/16	7.02	760	16.8	0.0	21.12	768.71
MW-9	09/29/16	7.28	763	15.84	0.0	19.22	770.61
MW-9	11/09/16	6.99	734	16.11	0.0	20.39	769.44
MW-9	12/21/16	7.02	789	13.99	9.1	22.94	766.89
MW-9	02/03/17	7.05	833	12.23	0.7	24.02	765.81
MW-9	05/24/17	7.61	657	15.02	0.0	20.57	769.26
MW-9	07/05/17	7.37	545	16.13	0.0	21.05	768.78
MW-9	08/17/17	7.13	690	17.67	0.0	23.20	766.63
MW-9	10/05/17	7.35	669	15.61	0.0	22.46	767.44
MW-9	11/14/17	**7.19	686	14.25	0.6	22.72	767.18
MW-10	08/18/16	7.06	876	16.31	0.0	20.48	768.97
MW-10	09/29/16	7.31	963	15.69	0.0	19.36	770.09
MW-10	11/09/16	6.93	939	15.68	0.0	19.95	769.50
MW-10	12/21/16	6.96	922	13.25	16.9	21.54	767.91
MW-10	02/03/17	6.99	927	12.21	1.0	22.62	766.83
MW-10	05/24/17	7.51	829	16.47	0.0	21.10	768.35
MW-10	07/05/17	7.31	746	21.52	0.0	20.70	768.75
MW-10	08/17/17	7.10	844	20.34	1.3	22.32	767.13
MW-10	10/05/17	7.05	898	15.57	0.0	21.66	767.80
MW-10	11/14/17	**7.09	818	14.24	0.2	22.01	767.45

\* Verification Sample  
\*\* Extra Sample Collected per Standard Sampling Procedure  
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

## **Addendum 1**

2017 Annual Groundwater Monitoring and Corrective Action Report Addendum 1

December 16, 2022  
File No. 27213167.17

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: 2017 Annual Groundwater Monitoring and Corrective Action Report Addendum 1  
Evergy Metro, Inc.  
CCR Landfill  
Iatan Generating Station – Platte County, Missouri



The CCR Landfill at the Iatan Generating Station is 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 2017 for the CCR Landfill was completed and placed in the facility’s operating record on January 30, 2018, as required by the Rule. The report was subsequently revised and placed in the operating record February 13, 2018. 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. Because a GWMCA Report was not required for 2016, the Appendix III and Appendix IV background data collected in 2016 is included herewith. The laboratory data packages for the following sampling events are provided:



- August 2016 – First background sampling event for Appendix III and Appendix IV.
- September 2016 – Second background sampling event for Appendix III and Appendix IV.
- November 2016 - Third background sampling event for Appendix III and Appendix IV.
- December 2016 - Fourth background sampling event for Appendix III and Appendix IV.
- February 2017 - Fifth background sampling event for Appendix III and Appendix IV.
- May 2017 - Sixth background sampling event for Appendix III and Appendix IV.
- July 2017 - Seventh background sampling event for Appendix III and Appendix IV.
- August 2017 - Eighth background sampling event for Appendix III and Appendix IV.
- October 2017 - Ninth background sampling event for Appendix IV.
- October 2017 – Fall semiannual detection monitoring sampling event and data validation re-analysis report.
- November 2017 – First verification sampling for the Fall 2017 detection monitoring sampling event.
- December 2017 – Second verification sampling for the Fall 2017 detection monitoring sampling event.

- Attachment 2 - Statistical Analyses:

Statistical analyses were not completed in 2017. Statistical analyses of the background sampling events were completed following data verification in 2018.

- Attachment 3 - Groundwater Potentiometric Surface Maps:

Includes 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:

- August 2016 – First background sampling event.
- September 2016 – Second background sampling event.
- November 2016 - Third background sampling event.
- December 2016 - Fourth background sampling event.
- February 2017 - Fifth background sampling event.
- May 2017 - Sixth background sampling event.
- July 2017 - Seventh background sampling event.
- August 2017 - Eighth background sampling event.
- October 2017 – Ninth background sampling event and Fall semiannual detection monitoring sampling event.

Jared Morrison  
December 16, 2022

**ATTACHMENT 1**  
**Laboratory Analytical Reports**

Jared Morrison  
December 16, 2022

**ATTACHMENT 1-1**  
**August 2016 Sampling Event Laboratory Report**



## SCS Engineers - KS

Sample Delivery Group: L854671  
Samples Received: 08/19/2016  
Project Number: 27213167.16  
Description: KCPL - Iatan Generating Station

Report To: Jason Franks  
7311 West 130th Street, Ste. 100  
Overland Park, KS 66213










Entire Report Reviewed By:



Jeff Carr  
Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



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# SAMPLE SUMMARY



## MW-1 L854671-01 GW

Collected by  
Adam Parris

Collected date/time  
08/18/16 12:30

Received date/time  
08/19/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG900646	1	08/24/16 12:26	08/24/16 12:58	MMF
Mercury by Method 7470A	WG900631	1	08/20/16 05:44	08/22/16 11:03	NJB
Metals (ICP) by Method 6010B	WG900659	1	08/22/16 17:50	08/23/16 13:02	CCE
Metals (ICPMS) by Method 6020	WG901121	1	08/23/16 16:22	08/24/16 20:45	JDG
Wet Chemistry by Method 9056A	WG900750	1	08/24/16 09:30	08/24/16 09:30	SAM

1  
Cp

2  
Tc

3  
Ss

4  
Cn

## MW-2 L854671-02 GW

Collected by  
Adam Parris

Collected date/time  
08/18/16 11:50

Received date/time  
08/19/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG900646	1	08/24/16 12:26	08/24/16 12:58	MMF
Mercury by Method 7470A	WG900631	1	08/20/16 05:44	08/22/16 11:06	NJB
Metals (ICP) by Method 6010B	WG900659	1	08/22/16 17:50	08/23/16 13:05	CCE
Metals (ICPMS) by Method 6020	WG901121	1	08/23/16 16:22	08/24/16 20:49	JDG
Wet Chemistry by Method 9056A	WG900750	1	08/24/16 09:45	08/24/16 09:45	SAM
Wet Chemistry by Method 9056A	WG902621	5	08/26/16 13:33	08/26/16 13:33	SAM

5  
Sr

6  
Qc

7  
Gl

8  
Al

9  
Sc

## MW-6 L854671-03 GW

Collected by  
Adam Parris

Collected date/time  
08/18/16 10:05

Received date/time  
08/19/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG900646	1	08/24/16 12:26	08/24/16 12:58	MMF
Mercury by Method 7470A	WG900631	1	08/20/16 05:44	08/22/16 11:09	NJB
Metals (ICP) by Method 6010B	WG900659	1	08/22/16 17:50	08/23/16 13:08	CCE
Metals (ICPMS) by Method 6020	WG901121	1	08/23/16 16:22	08/24/16 20:52	JDG
Wet Chemistry by Method 9056A	WG900750	1	08/24/16 10:00	08/24/16 10:00	SAM

## MW-7 L854671-04 GW

Collected by  
Adam Parris

Collected date/time  
08/18/16 15:00

Received date/time  
08/19/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG900646	1	08/24/16 12:26	08/24/16 12:58	MMF
Mercury by Method 7470A	WG900631	1	08/20/16 05:44	08/22/16 11:12	NJB
Metals (ICP) by Method 6010B	WG900659	1	08/22/16 17:50	08/23/16 14:59	CCE
Metals (ICPMS) by Method 6020	WG901121	1	08/23/16 16:22	08/24/16 20:55	JDG
Wet Chemistry by Method 9056A	WG901472	1	08/25/16 11:59	08/25/16 11:59	SAM

## MW-8 L854671-05 GW

Collected by  
Adam Parris

Collected date/time  
08/18/16 13:50

Received date/time  
08/19/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG900646	1	08/24/16 12:26	08/24/16 12:58	MMF
Mercury by Method 7470A	WG900631	1	08/20/16 05:44	08/22/16 10:54	NJB
Metals (ICP) by Method 6010B	WG900659	1	08/22/16 17:50	08/23/16 12:16	CCE
Metals (ICPMS) by Method 6020	WG901121	1	08/23/16 16:22	08/24/16 20:09	JDG
Wet Chemistry by Method 9056A	WG901473	1	08/25/16 21:14	08/25/16 21:14	SAM
Wet Chemistry by Method 9056A	WG902918	1	08/27/16 23:52	08/27/16 23:52	CM
Wet Chemistry by Method 9056A	WG903569	1	08/30/16 09:46	08/30/16 09:46	CM

# SAMPLE SUMMARY



## MW-9 L854671-06 GW

Collected by Adam Parris  
Collected date/time 08/18/16 13:20  
Received date/time 08/19/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG900646	1	08/24/16 12:26	08/24/16 12:58	MMF
Mercury by Method 7470A	WG900631	1	08/20/16 05:44	08/22/16 11:15	NJB
Metals (ICP) by Method 6010B	WG900659	1	08/22/16 17:50	08/23/16 15:01	CCE
Metals (ICPMS) by Method 6020	WG901121	1	08/23/16 16:22	08/24/16 20:59	JDG
Wet Chemistry by Method 9056A	WG901473	1	08/25/16 21:28	08/25/16 21:28	SAM
Wet Chemistry by Method 9056A	WG902918	1	08/28/16 01:07	08/28/16 01:07	CM
Wet Chemistry by Method 9056A	WG903569	1	08/30/16 10:31	08/30/16 10:31	CM

1  
Cp

2  
Tc

3  
Ss

4  
Cn

5  
Sr

## DUPLICATE L854671-07 GW

Collected by Adam Parris  
Collected date/time 08/18/16 10:10  
Received date/time 08/19/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG900646	1	08/24/16 12:26	08/24/16 12:58	MMF
Mercury by Method 7470A	WG900631	1	08/20/16 05:44	08/22/16 11:26	NJB
Metals (ICP) by Method 6010B	WG900659	1	08/22/16 17:50	08/23/16 15:04	CCE
Metals (ICPMS) by Method 6020	WG901121	1	08/23/16 16:22	08/24/16 21:02	JDG
Wet Chemistry by Method 9056A	WG901473	1	08/26/16 00:21	08/26/16 00:21	SAM
Wet Chemistry by Method 9056A	WG902918	1	08/28/16 01:22	08/28/16 01:22	CM
Wet Chemistry by Method 9056A	WG903569	1	08/30/16 10:46	08/30/16 10:46	CM

6  
Qc

7  
Gl

8  
Al

9  
Sc

## MW-10 L854671-08 GW

Collected by Adam Parris  
Collected date/time 08/18/16 11:10  
Received date/time 08/19/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG900646	1	08/24/16 12:26	08/24/16 12:58	MMF
Mercury by Method 7470A	WG900631	1	08/20/16 05:44	08/22/16 11:29	NJB
Metals (ICP) by Method 6010B	WG900659	1	08/22/16 17:50	08/23/16 15:07	CCE
Metals (ICPMS) by Method 6020	WG901121	1	08/23/16 16:22	08/24/16 21:05	JDG
Wet Chemistry by Method 9056A	WG901473	1	08/25/16 21:57	08/25/16 21:57	SAM
Wet Chemistry by Method 9056A	WG903569	1	08/30/16 11:30	08/30/16 11:30	ADH



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. 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  
Technical Service Representative

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



## Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	513000		10000	1	08/24/2016 12:58	<a href="#">WG900646</a>

## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	5930		1000	1	08/24/2016 09:30	<a href="#">WG900750</a>
Fluoride	234		100	1	08/24/2016 09:30	<a href="#">WG900750</a>
Sulfate	32400		5000	1	08/24/2016 09:30	<a href="#">WG900750</a>

## Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	08/22/2016 11:03	<a href="#">WG900631</a>

## Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	267		5.00	1	08/23/2016 13:02	<a href="#">WG900659</a>
Boron	ND		200	1	08/23/2016 13:02	<a href="#">WG900659</a>
Calcium	134000		1000	1	08/23/2016 13:02	<a href="#">WG900659</a>
Chromium	ND		10.0	1	08/23/2016 13:02	<a href="#">WG900659</a>
Cobalt	ND		10.0	1	08/23/2016 13:02	<a href="#">WG900659</a>
Lithium	55.1		15.0	1	08/23/2016 13:02	<a href="#">WG900659</a>
Molybdenum	ND		5.00	1	08/23/2016 13:02	<a href="#">WG900659</a>

## Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	08/24/2016 20:45	<a href="#">WG901121</a>
Arsenic	17.0		2.00	1	08/24/2016 20:45	<a href="#">WG901121</a>
Beryllium	ND		2.00	1	08/24/2016 20:45	<a href="#">WG901121</a>
Cadmium	ND		1.00	1	08/24/2016 20:45	<a href="#">WG901121</a>
Lead	ND		2.00	1	08/24/2016 20:45	<a href="#">WG901121</a>
Selenium	ND		2.00	1	08/24/2016 20:45	<a href="#">WG901121</a>
Thallium	ND		2.00	1	08/24/2016 20:45	<a href="#">WG901121</a>

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	696000		10000	1	08/24/2016 12:58	<a href="#">WG900646</a>

## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	8260		1000	1	08/24/2016 09:45	<a href="#">WG900750</a>
Fluoride	303		100	1	08/24/2016 09:45	<a href="#">WG900750</a>
Sulfate	142000		25000	5	08/26/2016 13:33	<a href="#">WG902621</a>

## Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	08/22/2016 11:06	<a href="#">WG900631</a>

## Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	222		5.00	1	08/23/2016 13:05	<a href="#">WG900659</a>
Boron	ND		200	1	08/23/2016 13:05	<a href="#">WG900659</a>
Calcium	170000		1000	1	08/23/2016 13:05	<a href="#">WG900659</a>
Chromium	ND		10.0	1	08/23/2016 13:05	<a href="#">WG900659</a>
Cobalt	ND		10.0	1	08/23/2016 13:05	<a href="#">WG900659</a>
Lithium	56.3		15.0	1	08/23/2016 13:05	<a href="#">WG900659</a>
Molybdenum	ND		5.00	1	08/23/2016 13:05	<a href="#">WG900659</a>

## Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	08/24/2016 20:49	<a href="#">WG901121</a>
Arsenic	22.2		2.00	1	08/24/2016 20:49	<a href="#">WG901121</a>
Beryllium	ND		2.00	1	08/24/2016 20:49	<a href="#">WG901121</a>
Cadmium	1.14		1.00	1	08/24/2016 20:49	<a href="#">WG901121</a>
Lead	ND		2.00	1	08/24/2016 20:49	<a href="#">WG901121</a>
Selenium	ND		2.00	1	08/24/2016 20:49	<a href="#">WG901121</a>
Thallium	ND		2.00	1	08/24/2016 20:49	<a href="#">WG901121</a>

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	522000		10000	1	08/24/2016 12:58	<a href="#">WG900646</a>

## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	1310		1000	1	08/24/2016 10:00	<a href="#">WG900750</a>
Fluoride	298		100	1	08/24/2016 10:00	<a href="#">WG900750</a>
Sulfate	30200		5000	1	08/24/2016 10:00	<a href="#">WG900750</a>

## Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	08/22/2016 11:09	<a href="#">WG900631</a>

## Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	294		5.00	1	08/23/2016 13:08	<a href="#">WG900659</a>
Boron	ND		200	1	08/23/2016 13:08	<a href="#">WG900659</a>
Calcium	142000		1000	1	08/23/2016 13:08	<a href="#">WG900659</a>
Chromium	ND		10.0	1	08/23/2016 13:08	<a href="#">WG900659</a>
Cobalt	ND		10.0	1	08/23/2016 13:08	<a href="#">WG900659</a>
Lithium	36.8		15.0	1	08/23/2016 13:08	<a href="#">WG900659</a>
Molybdenum	ND		5.00	1	08/23/2016 13:08	<a href="#">WG900659</a>

## Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	08/24/2016 20:52	<a href="#">WG901121</a>
Arsenic	23.7		2.00	1	08/24/2016 20:52	<a href="#">WG901121</a>
Beryllium	ND		2.00	1	08/24/2016 20:52	<a href="#">WG901121</a>
Cadmium	ND		1.00	1	08/24/2016 20:52	<a href="#">WG901121</a>
Lead	ND		2.00	1	08/24/2016 20:52	<a href="#">WG901121</a>
Selenium	ND		2.00	1	08/24/2016 20:52	<a href="#">WG901121</a>
Thallium	ND		2.00	1	08/24/2016 20:52	<a href="#">WG901121</a>

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	560000		10000	1	08/24/2016 12:58	<a href="#">WG900646</a>

## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	12300		1000	1	08/25/2016 11:59	<a href="#">WG901472</a>
Fluoride	366		100	1	08/25/2016 11:59	<a href="#">WG901472</a>
Sulfate	70200		5000	1	08/25/2016 11:59	<a href="#">WG901472</a>

## Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	08/22/2016 11:12	<a href="#">WG900631</a>

## Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	285		5.00	1	08/23/2016 14:59	<a href="#">WG900659</a>
Boron	ND		200	1	08/23/2016 14:59	<a href="#">WG900659</a>
Calcium	145000		1000	1	08/23/2016 14:59	<a href="#">WG900659</a>
Chromium	ND		10.0	1	08/23/2016 14:59	<a href="#">WG900659</a>
Cobalt	ND		10.0	1	08/23/2016 14:59	<a href="#">WG900659</a>
Lithium	41.7		15.0	1	08/23/2016 14:59	<a href="#">WG900659</a>
Molybdenum	ND		5.00	1	08/23/2016 14:59	<a href="#">WG900659</a>

## Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	08/24/2016 20:55	<a href="#">WG901121</a>
Arsenic	10.4		2.00	1	08/24/2016 20:55	<a href="#">WG901121</a>
Beryllium	ND		2.00	1	08/24/2016 20:55	<a href="#">WG901121</a>
Cadmium	ND		1.00	1	08/24/2016 20:55	<a href="#">WG901121</a>
Lead	ND		2.00	1	08/24/2016 20:55	<a href="#">WG901121</a>
Selenium	ND		2.00	1	08/24/2016 20:55	<a href="#">WG901121</a>
Thallium	ND		2.00	1	08/24/2016 20:55	<a href="#">WG901121</a>

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	494000		10000	1	08/24/2016 12:58	<a href="#">WG900646</a>

1 Cp

2 Tc

## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	1500		1000	1	08/25/2016 21:14	<a href="#">WG901473</a>
Fluoride	438		100	1	08/30/2016 09:46	<a href="#">WG903569</a>
Sulfate	23300		5000	1	08/27/2016 23:52	<a href="#">WG902918</a>

3 Ss

4 Cn

5 Sr

## Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	08/22/2016 10:54	<a href="#">WG900631</a>

6 Qc

7 Gl

## Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	200		5.00	1	08/23/2016 12:16	<a href="#">WG900659</a>
Boron	ND		200	1	08/23/2016 12:16	<a href="#">WG900659</a>
Calcium	136000		1000	1	08/23/2016 12:16	<a href="#">WG900659</a>
Chromium	ND		10.0	1	08/23/2016 12:16	<a href="#">WG900659</a>
Cobalt	ND		10.0	1	08/23/2016 12:16	<a href="#">WG900659</a>
Lithium	43.6		15.0	1	08/23/2016 12:16	<a href="#">WG900659</a>
Molybdenum	ND		5.00	1	08/23/2016 12:16	<a href="#">WG900659</a>

8 Al

9 Sc

## Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	08/24/2016 20:09	<a href="#">WG901121</a>
Arsenic	7.49		2.00	1	08/24/2016 20:09	<a href="#">WG901121</a>
Beryllium	ND		2.00	1	08/24/2016 20:09	<a href="#">WG901121</a>
Cadmium	ND		1.00	1	08/24/2016 20:09	<a href="#">WG901121</a>
Lead	ND		2.00	1	08/24/2016 20:09	<a href="#">WG901121</a>
Selenium	ND		2.00	1	08/24/2016 20:09	<a href="#">WG901121</a>
Thallium	ND		2.00	1	08/24/2016 20:09	<a href="#">WG901121</a>



## Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	475000		10000	1	08/24/2016 12:58	<a href="#">WG900646</a>

## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	1950		1000	1	08/25/2016 21:28	<a href="#">WG901473</a>
Fluoride	338		100	1	08/30/2016 10:31	<a href="#">WG903569</a>
Sulfate	16700		5000	1	08/28/2016 01:07	<a href="#">WG902918</a>

## Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	08/22/2016 11:15	<a href="#">WG900631</a>

## Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	327		5.00	1	08/23/2016 15:01	<a href="#">WG900659</a>
Boron	ND		200	1	08/23/2016 15:01	<a href="#">WG900659</a>
Calcium	119000		1000	1	08/23/2016 15:01	<a href="#">WG900659</a>
Chromium	ND		10.0	1	08/23/2016 15:01	<a href="#">WG900659</a>
Cobalt	ND		10.0	1	08/23/2016 15:01	<a href="#">WG900659</a>
Lithium	42.5		15.0	1	08/23/2016 15:01	<a href="#">WG900659</a>
Molybdenum	ND		5.00	1	08/23/2016 15:01	<a href="#">WG900659</a>

## Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	08/24/2016 20:59	<a href="#">WG901121</a>
Arsenic	12.1		2.00	1	08/24/2016 20:59	<a href="#">WG901121</a>
Beryllium	ND		2.00	1	08/24/2016 20:59	<a href="#">WG901121</a>
Cadmium	ND		1.00	1	08/24/2016 20:59	<a href="#">WG901121</a>
Lead	ND		2.00	1	08/24/2016 20:59	<a href="#">WG901121</a>
Selenium	ND		2.00	1	08/24/2016 20:59	<a href="#">WG901121</a>
Thallium	ND		2.00	1	08/24/2016 20:59	<a href="#">WG901121</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 08/18/16 10:10

L854671

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	525000		10000	1	08/24/2016 12:58	<a href="#">WG900646</a>

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	1270		1000	1	08/26/2016 00:21	<a href="#">WG901473</a>
Fluoride	327		100	1	08/30/2016 10:46	<a href="#">WG903569</a>
Sulfate	30300		5000	1	08/28/2016 01:22	<a href="#">WG902918</a>

3 Ss

4 Cn

5 Sr

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	08/22/2016 11:26	<a href="#">WG900631</a>

6 Qc

7 Gl

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	296		5.00	1	08/23/2016 15:04	<a href="#">WG900659</a>
Boron	ND		200	1	08/23/2016 15:04	<a href="#">WG900659</a>
Calcium	141000		1000	1	08/23/2016 15:04	<a href="#">WG900659</a>
Chromium	ND		10.0	1	08/23/2016 15:04	<a href="#">WG900659</a>
Cobalt	ND		10.0	1	08/23/2016 15:04	<a href="#">WG900659</a>
Lithium	36.7		15.0	1	08/23/2016 15:04	<a href="#">WG900659</a>
Molybdenum	ND		5.00	1	08/23/2016 15:04	<a href="#">WG900659</a>

8 Al

9 Sc

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	08/24/2016 21:02	<a href="#">WG901121</a>
Arsenic	24.4		2.00	1	08/24/2016 21:02	<a href="#">WG901121</a>
Beryllium	ND		2.00	1	08/24/2016 21:02	<a href="#">WG901121</a>
Cadmium	ND		1.00	1	08/24/2016 21:02	<a href="#">WG901121</a>
Lead	ND		2.00	1	08/24/2016 21:02	<a href="#">WG901121</a>
Selenium	ND		2.00	1	08/24/2016 21:02	<a href="#">WG901121</a>
Thallium	ND		2.00	1	08/24/2016 21:02	<a href="#">WG901121</a>



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	532000		10000	1	08/24/2016 12:58	<a href="#">WG900646</a>

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	7470		1000	1	08/25/2016 21:57	<a href="#">WG901473</a>
Fluoride	584		100	1	08/30/2016 11:30	<a href="#">WG903569</a>
Sulfate	17800		5000	1	08/30/2016 11:30	<a href="#">WG903569</a>

3 Ss

4 Cn

5 Sr

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	08/22/2016 11:29	<a href="#">WG900631</a>

6 Qc

7 Gl

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	232		5.00	1	08/23/2016 15:07	<a href="#">WG900659</a>
Boron	ND		200	1	08/23/2016 15:07	<a href="#">WG900659</a>
Calcium	123000		1000	1	08/23/2016 15:07	<a href="#">WG900659</a>
Chromium	ND		10.0	1	08/23/2016 15:07	<a href="#">WG900659</a>
Cobalt	ND		10.0	1	08/23/2016 15:07	<a href="#">WG900659</a>
Lithium	56.9		15.0	1	08/23/2016 15:07	<a href="#">WG900659</a>
Molybdenum	ND		5.00	1	08/23/2016 15:07	<a href="#">WG900659</a>

8 Al

9 Sc

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	08/24/2016 21:05	<a href="#">WG901121</a>
Arsenic	19.5		2.00	1	08/24/2016 21:05	<a href="#">WG901121</a>
Beryllium	ND		2.00	1	08/24/2016 21:05	<a href="#">WG901121</a>
Cadmium	ND		1.00	1	08/24/2016 21:05	<a href="#">WG901121</a>
Lead	ND		2.00	1	08/24/2016 21:05	<a href="#">WG901121</a>
Selenium	ND		2.00	1	08/24/2016 21:05	<a href="#">WG901121</a>
Thallium	ND		2.00	1	08/24/2016 21:05	<a href="#">WG901121</a>



Method Blank (MB)

(MB) R3159029-1 08/24/16 12:58

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

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

L854671-01 Original Sample (OS) • Duplicate (DUP)

(OS) L854671-01 08/24/16 12:58 • (DUP) R3159029-4 08/24/16 12:58

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	513000	519000	1	1.16		5

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

(LCS) R3159029-2 08/24/16 12:58 • (LCSD) R3159029-3 08/24/16 12:58

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 %
Dissolved Solids	8800000	8880000	8820000	101	100	85.0-115			0.678	5



Method Blank (MB)

(MB) R3158911-1 08/23/16 22:54

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Chloride	U		51.9	1000
Fluoride	U		9.90	100
Sulfate	461	J	77.4	5000

1 Cp

2 Tc

3 Ss

4 Cn

L854563-02 Original Sample (OS) • Duplicate (DUP)

(OS) L854563-02 08/24/16 00:53 • (DUP) R3158911-4 08/24/16 01:08

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	28100	27900	1	1		15
Fluoride	307	305	1	1		15
Sulfate	24600	24400	1	1		15

5 Sr

6 Qc

7 Gl

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

(LCS) R3158911-2 08/23/16 23:09 • (LCSD) R3158911-3 08/23/16 23:24

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Chloride	40000	39100	39300	98	98	80-120			0	15
Fluoride	8000	8000	8030	100	100	80-120			0	15
Sulfate	40000	39600	39700	99	99	80-120			0	15

8 Al

9 Sc

L854563-06 Original Sample (OS) • Matrix Spike (MS)

(OS) L854563-06 08/24/16 03:23 • (MS) R3158911-5 08/24/16 03:38

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Fluoride	5000	349	4690	87	1	80-120	
Sulfate	50000	16900	64100	94	1	80-120	

L854671-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L854671-03 08/24/16 10:00 • (MS) R3158911-6 08/24/16 10:14 • (MSD) R3158911-7 08/24/16 10:29

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Chloride	50000	1310	50900	50900	99	99	1	80-120			0	15
Fluoride	5000	298	5130	5530	97	105	1	80-120			8	15
Sulfate	50000	30200	78800	78900	97	97	1	80-120			0	15



Method Blank (MB)

(MB) R3159221-1 08/25/16 02:51

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

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L854500-09 Original Sample (OS) • Duplicate (DUP)

(OS) L854500-09 08/25/16 05:44 • (DUP) R3159221-4 08/25/16 05:58

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	26000	26000	1	0		15
Fluoride	2780	2780	1	0		15
Sulfate	42900	42900	1	0		15

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

(LCS) R3159221-2 08/25/16 03:05 • (LCSD) R3159221-3 08/25/16 03:20

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Chloride	40000	37300	37400	93	93	80-120			0	15
Fluoride	8000	7490	7520	94	94	80-120			0	15
Sulfate	40000	37500	37700	94	94	80-120			1	15

L854559-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L854559-01 08/25/16 06:13 • (MS) R3159221-5 08/25/16 06:27

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Chloride	50000	ND	49100	97	1	80-120	
Fluoride	5000	140	5010	97	1	80-120	
Sulfate	50000	22700	70200	95	1	80-120	

L854671-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L854671-04 08/25/16 11:59 • (MS) R3159221-6 08/25/16 12:13 • (MSD) R3159221-7 08/25/16 12:28

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Chloride	50000	12300	60500	60300	96	96	1	80-120			0	15
Fluoride	5000	366	5170	5170	96	96	1	80-120			0	15





L854671-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L854671-04 08/25/16 11:59 • (MS) R3159221-6 08/25/16 12:13 • (MSD) R3159221-7 08/25/16 12:28

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
Sulfate	50000	70200	115000	115000	90	90	1	80-120	E	E	0	15

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Method Blank (MB)

(MB) R3159687-1 08/25/16 20:02

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Chloride	U		51.9	1000

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

<sup>4</sup>Cn

<sup>5</sup>Sr

<sup>6</sup>Qc

L854671-06 Original Sample (OS) • Duplicate (DUP)

(OS) L854671-06 08/25/16 21:28 • (DUP) R3159687-4 08/25/16 21:43

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	1950	1920	1	2		15

<sup>7</sup>Gl

<sup>8</sup>Al

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

(LCS) R3159687-2 08/25/16 20:16 • (LCSD) R3159687-3 08/25/16 20:31

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Chloride	40000	39100	39100	98	98	80-120			0	15

<sup>9</sup>Sc

L854671-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L854671-05 08/25/16 21:14 • (MS) R3159687-5 08/25/16 23:53 • (MSD) R3159687-6 08/26/16 00:07

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Chloride	50000	1500	51400	51600	100	100	1	80-120			0	15

L854671-07 Original Sample (OS) • Matrix Spike (MS)

(OS) L854671-07 08/26/16 00:21 • (MS) R3159687-7 08/26/16 08:28

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Chloride	50000	1270	52100	102	1	80-120	



Method Blank (MB)

(MB) R3159603-1 08/26/16 11:52

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Sulfate	U		77.4	5000

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

L854671-02 Original Sample (OS) • Duplicate (DUP)

(OS) L854671-02 08/26/16 13:33 • (DUP) R3159603-4 08/26/16 13:47

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Sulfate	142000	142000	5	0		15

L854986-03 Original Sample (OS) • Duplicate (DUP)

(OS) L854986-03 08/26/16 19:41 • (DUP) R3159603-10 08/26/16 19:55

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Sulfate	68500	68600	1	0		15

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

(LCS) R3159603-2 08/26/16 12:07 • (LCSD) R3159603-3 08/26/16 12:21

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Sulfate	40000	37500	37500	94	94	80-120			0	15

L854986-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L854986-02 08/26/16 14:45 • (MS) R3159603-5 08/26/16 15:00

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Sulfate	50000	81500	127000	91	1	80-120	E

L854986-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L854986-10 08/26/16 17:46 • (MS) R3159603-6 08/26/16 18:00 • (MSD) R3159603-7 08/26/16 18:15

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Sulfate	50000	70900	116000	116000	90	90	1	80-120	E	E	0	15



[L854671-02](#)

L854986-11 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L854986-11 08/26/16 18:29 • (MS) R3159603-8 08/26/16 18:43 • (MSD) R3159603-9 08/26/16 18:58

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 %
Sulfate	50000	98200	141000	143000	85	90	1	80-120	E	E	2	15

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Method Blank (MB)

(MB) R3159863-1 08/27/16 22:08

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Sulfate	U		77.4	5000

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

L854812-07 Original Sample (OS) • Duplicate (DUP)

(OS) L854812-07 08/28/16 03:06 • (DUP) R3159863-6 08/28/16 03:51

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Sulfate	19500	20000	1	2		15

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

(LCS) R3159863-2 08/27/16 22:23 • (LCSD) R3159863-3 08/27/16 22:38

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Sulfate	40000	40000	40100	100	100	80-120			0	15

<sup>7</sup> Gl

<sup>8</sup> Al

L854671-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L854671-05 08/27/16 23:52 • (MS) R3159863-4 08/28/16 00:07 • (MSD) R3159863-5 08/28/16 00:22

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Sulfate	50000	23300	73000	73500	99	100	1	80-120			1	15

<sup>9</sup> Sc

L854855-07 Original Sample (OS) • Matrix Spike (MS)

(OS) L854855-07 08/28/16 05:36 • (MS) R3159863-7 08/28/16 05:50

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Sulfate	50000	U	51200	102	1	80-120	



Method Blank (MB)

(MB) R3160264-1 08/30/16 07:00

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Fluoride	U		9.90	100
Sulfate	U		77.4	5000

1 Cp

2 Tc

3 Ss

4 Cn

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

(LCS) R3160264-2 08/30/16 07:15 • (LCSD) R3160264-3 08/30/16 07:30

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Fluoride	8000	7900	7910	99	99	80-120			0	15
Sulfate	40000	39500	39600	99	99	80-120			0	15

5 Sr

6 Qc

L854671-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L854671-05 08/30/16 09:46 • (MS) R3160264-4 08/30/16 10:01 • (MSD) R3160264-5 08/30/16 10:16

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Fluoride	5000	438	5550	5210	102	95	1	80-120			6	15
Sulfate	50000	23100	71500	71700	97	97	1	80-120			0	15

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3158254-1 08/22/16 10:39

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Mercury	U		0.0490	0.200

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

<sup>4</sup>Cn

<sup>5</sup>Sr

<sup>6</sup>Qc

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

(LCS) R3158254-2 08/22/16 10:48 • (LCSD) R3158254-3 08/22/16 10:51

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 %
Mercury	3.00	3.16	3.23	105	108	80-120			2	20

<sup>7</sup>Gl

<sup>8</sup>Al

L854671-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L854671-05 08/22/16 10:54 • (MS) R3158254-4 08/22/16 10:57 • (MSD) R3158254-5 08/22/16 11:00

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 %
Mercury	3.00	ND	2.90	2.89	97	96	1	75-125			1	20

<sup>9</sup>Sc



Method Blank (MB)

(MB) R3158616-1 08/23/16 12:08

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Barium	U		1.70	5.00
Boron	U		12.6	200
Calcium	U		46.3	1000
Chromium	U		1.40	10.0
Cobalt	U		2.30	10.0
Lithium	U		5.30	15.0
Molybdenum	U		1.60	5.00

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

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

(LCS) R3158616-2 08/23/16 12:10 • (LCSD) R3158616-3 08/23/16 12:13

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Barium	1000	1050	1050	105	105	80-120			1	20
Boron	1000	1050	1060	105	106	80-120			1	20
Calcium	10000	10300	10300	103	103	80-120			0	20
Chromium	1000	1020	1030	102	103	80-120			1	20
Cobalt	1000	1050	1060	105	106	80-120			0	20
Lithium	1000	1030	1030	103	103	80-120			1	20
Molybdenum	1000	1020	1030	102	103	80-120			1	20

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

L854671-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L854671-05 08/23/16 12:16 • (MS) R3158616-5 08/23/16 12:21 • (MSD) R3158616-6 08/23/16 12:23

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Barium	1000	200	1220	1210	102	101	1	75-125			1	20
Boron	1000	ND	1170	1170	105	105	1	75-125			0	20
Calcium	10000	136000	144000	144000	82	82	1	75-125			0	20
Chromium	1000	ND	1000	990	100	99	1	75-125			1	20
Cobalt	1000	ND	1060	1060	106	106	1	75-125			1	20
Lithium	1000	43.6	1080	1070	103	103	1	75-125			0	20
Molybdenum	1000	ND	1010	1010	100	100	1	75-125			0	20





Method Blank (MB)

(MB) R3159020-1 08/24/16 19:59

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Antimony	0.898	J	0.754	2.00
Arsenic	U		0.250	2.00
Beryllium	U		0.120	2.00
Cadmium	U		0.160	1.00
Lead	U		0.240	2.00
Selenium	U		0.380	2.00
Thallium	U		0.190	2.00

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

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

(LCS) R3159020-2 08/24/16 20:03 • (LCSD) R3159020-3 08/24/16 20:06

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Antimony	57.9	56.2	56.6	97	98	80-120			1	20
Arsenic	50.0	51.5	51.9	103	104	80-120			1	20
Beryllium	50.0	52.9	53.0	106	106	80-120			0	20
Cadmium	50.0	53.6	54.3	107	109	80-120			1	20
Lead	50.0	51.0	50.8	102	102	80-120			0	20
Selenium	50.0	50.3	51.0	101	102	80-120			1	20
Thallium	50.0	50.9	50.8	102	102	80-120			0	20

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

L854671-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L854671-05 08/24/16 20:09 • (MS) R3159020-5 08/24/16 20:16 • (MSD) R3159020-6 08/24/16 20:19

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Antimony	57.9	ND	57.9	59.6	98	101	1	75-125			3	20
Arsenic	50.0	7.49	61.3	60.5	108	106	1	75-125			1	20
Beryllium	50.0	ND	52.8	53.6	106	107	1	75-125			1	20
Cadmium	50.0	ND	55.9	54.9	112	110	1	75-125			2	20
Lead	50.0	ND	51.2	51.6	102	103	1	75-125			1	20
Selenium	50.0	ND	51.9	51.1	104	102	1	75-125			1	20
Thallium	50.0	ND	52.0	52.6	104	105	1	75-125			1	20



## Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
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.
Rec.	Recovery.

## 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.

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



ESC Lab Sciences 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.

## State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Connecticut	PH-0197	North Carolina <sup>1</sup>	DW21704
Florida	E87487	North Carolina <sup>2</sup>	41
Georgia	NELAP	North Dakota	R-140
Georgia <sup>1</sup>	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky <sup>1</sup>	90010	South Dakota	n/a
Kentucky <sup>2</sup>	16	Tennessee <sup>14</sup>	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas <sup>5</sup>	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

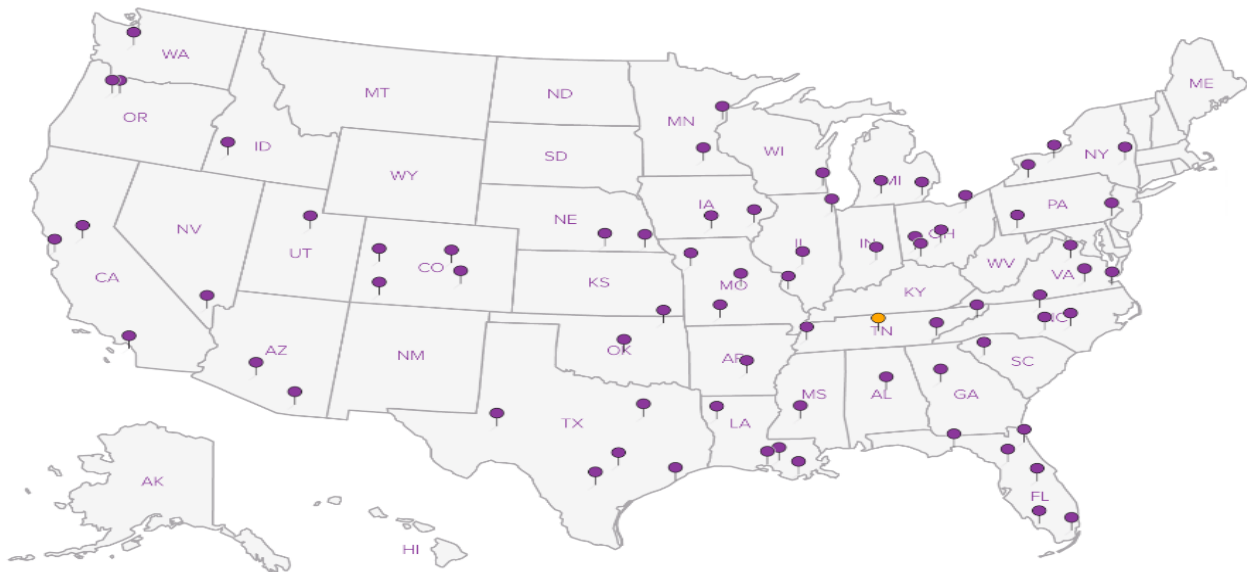
## Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA	100789
A2LA – ISO 17025 <sup>5</sup>	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>n/a</sup> Accreditation not applicable

## Our Locations

ESC Lab Sciences 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. **ESC Lab Sciences performs all testing at our central laboratory.**



**SCS Engineers - KS**

731 West 130th Street, Ste. 100  
Overland Park, KS 66213

Billing Information:  
Accounts Payable  
7311 West 130th Street, Ste. 100  
Overland Park, KS 66213

Report to:  
**Jason Franks**

Email To: [jfranks@scsengineers.com](mailto:jfranks@scsengineers.com)

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

City/State  
Collected:

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

Client Project #  
**27213167.16**

Lab Project #  
**AQUAOPKS-IATAN**

Collected by (print):  
*Adam Parris*

Site/Facility ID #

P.O. #

Collected by (signature):  
*[Signature]*

**Rush?** (Lab MUST Be Notified)  
 Same Day .....200%  
 Next Day .....100%  
 Two Day .....50%  
 Three Day .....25%

Date Results Needed  
**Standard**

Email?  No  Yes

FAX?  No  Yes

No. of  
Cnts

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cnts	CCR Metals 250mlHDPE-HNO3	Chloride, F, SO4 125mlHDPE-NoPres	TDS 250mlHDPE-NoPres												
MW-1	Grab	GW		8/18/2016	1230	3	X	X	X												
MW-2	↓	GW		↓	1150	3	X	X	X												
MW-6		GW			1005	3	X	X	X												
MW-7		GW			1500	3	X	X	X												
MW-8		GW			1350	3	X	X	X												
MW-9		GW			1320	3	X	X	X												
DUPLICATE		GW			1010	3	X	X	X												
MS		GW			1355	3	X	X	X												
MSD		GW			1400	3	X	X	X												
MW-10		↓				↓	1110	3													

\* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other

Remarks: 6010 Metals-B,CA,CR,CO,LI,MO, 6020 Metals-SB,AS,BE,CD,PB,SE,TL, 7470 Metals-HG.

MS  
8-19-16

pH \_\_\_\_\_ Temp \_\_\_\_\_  
Flow \_\_\_\_\_ Other \_\_\_\_\_

Hold # \_\_\_\_\_  
Condition: \_\_\_\_\_ (lab use only)

Relinquished by: (Signature) *[Signature]*

Date: 8/18/2016 Time: 1619

Received by: (Signature) *[Signature]*

Samples returned via:  UPS  
 FedEx  Courier  SWA

Temp: 1.8 °C Bottles Received: 36

Relinquished by: (Signature) *[Signature]*

Date: 8/18/16 Time: 1200

Received by: (Signature) *[Signature]*

Temp: \_\_\_\_\_ °C Bottles Received: \_\_\_\_\_

COC Seal Intact:  Y  N  NA

Relinquished by: (Signature) *[Signature]*

Date: \_\_\_\_\_ Time: \_\_\_\_\_

Received for lab by: (Signature) *[Signature]*

Date: 8-19-16 Time: 1900

pH Checked: Yes <2 NCF: YES

MS  
8-19-16

Analysis / Container / Preservative

Chain of Custody Page 1 of 2



L # **L85V671**  
Table # **E161**  
Acctnum: **AQUAOPKS**  
Template: **T114927**  
Prelogin: **P564650**  
TSR: **206 - Jeff Carr**  
PB: \_\_\_\_\_

Shipped Via:  
Rem./Contaminant Sample # (lab only)

Rem./Contaminant	Sample # (lab only)
	-01
	02
	03
	04
	05
	06
	07
	05
	05
	08



YOUR LAB OF CHOICE

# Cooler Receipt Checklist

Client: AQUAPAKS SDG# L85V671

Cooler Received/Opened On: 8-19-16 By M Shaver

Temperature Upon Receipt: 8 °c  
M Shaver  
(Signature)

Cooler Receipt Check List			Yes	No	N/A
Were custody seals on outside of cooler and intact?					✓
Were custody papers properly filled out (ink, signed, etc.)?			✓		
Did all bottles arrive in good condition?			✓		
Were correct bottles used for the analyses requested?			✓		
Was sufficient amount of sample sent in each bottle?			✓		
Were correct preservatives used?			✓		
Were all applicable sample containers checked for preservation? (Any samples not in accepted pH range noted on COC.)			✓		
If applicable, was an observable VOA headspace present?					
Non Conformance Generated? (If yes see attached NCF)					✓



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Innovation

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N·A·T·I·O·N·W·I·D·E

**Andy Vann**



YOUR LAB OF CHOICE

Login #: L854671	Client: AQUAOPKS	Date: 08/19/16	Evaluated by: Andy Vann
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**Non-Conformance (check applicable items)**

Sample Integrity	Chain of Custody Clarification	If Broken Container:
Parameter(s) past holding time	Login Clarification Needed	
Improper temperature	Chain of custody is incomplete	Insufficient packing material around container
Improper container type	Please specify Metals requested.	Insufficient packing material inside cooler
Improper preservation	Please specify TCLP requested.	
Insufficient sample volume.	Received additional samples not listed on coc.	Improper handling by carrier (FedEx / UPS / Courier)
Sample is biphasic.	Sample ids on containers do not match ids on coc	Sample was frozen
Vials received with headspace.	Trip Blank not received.	Container lid not intact
Broken container	Client did not "X" analysis.	<b>If no Chain of Custody:</b>
Broken container:	Chain of Custody is missing	Received by:
Sufficient sample remains		Date/Time:
		Temp./Cont. Rec./pH:
		Carrier:
		Tracking#

**Login Comments: 1. Which sample is the MS/MSD?**

Client informed by:	Call	Email	X	Voice Mail	Date: 08/19/16	Time: 1508
TSR Initials: JC	Client Contact: J. Franks					

**Login Instructions: MW-8**

## Case Narrative

### Lab No: 20160805

This report contains the analytical results for the 10 sample(s) received under chain of custody by ESC Lab Sciences on 8/19/2016 9:55:00 AM. These samples are associated with your KCPL Iatan Generating Station project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted below:

The test results in this report meet all NELAC requirements unless noted below:

This report shall not be reproduced, except in full, without the written approval of ESC Lab Sciences.

All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client.

Results have been reviewed by the Director of Radiochemistry or their designees and is approved for release.

### Observations / Nonconformances

---





Client : SCS Engineers  
 Client Project : KCPL Iatan Generating Station  
 Lab Number : 20160805  
 Date Reported : 09/14/16  
 Date Received : 08/19/16  
 Page Number : 2 of 4

## Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst
--------	--------	----	-------	------	-----------	---------------	---------

**Lab ID** : 20160805-01  
**Client ID** : MW-1  
**Date Sampled** : 8/18/2016 12:30:00 PM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium	0.899 +/- 0.746	0.541	pCi/l				
Radium-226 SM 7500 Ra B M*	0.260 +/- 0.159	0.197	pCi/l		08/29/16	09/01/16	AK
Radium-228 EPA 904*/9320*	0.639 +/- 0.587	0.344	pCi/l		09/09/16	09/12/16	JR

**Lab ID** : 20160805-02  
**Client ID** : MW-2  
**Date Sampled** : 8/18/2016 11:50:00 AM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium	0.142 +/- 0.902	0.63	pCi/l				
Radium-226 SM 7500 Ra B M*	0.142 +/- 0.132	0.189	pCi/l		08/29/16	09/01/16	AK
Radium-228 EPA 904*/9320*	-0.274 +/- 0.770	0.441	pCi/l		09/09/16	09/12/16	JR

**Lab ID** : 20160805-03  
**Client ID** : MW-6  
**Date Sampled** : 8/18/2016 10:05:00 AM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium	0.624 +/- 0.681	0.445	pCi/l				
Radium-226 SM 7500 Ra B M*	0.192 +/- 0.119	0.128	pCi/l		08/29/16	09/01/16	AK
Radium-228 EPA 904*/9320*	0.432 +/- 0.562	0.317	pCi/l		09/09/16	09/12/16	JR

**Lab ID** : 20160805-04  
**Client ID** : MW-7  
**Date Sampled** : 8/18/2016 3:00:00 PM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium	1.01 +/- 0.815	0.662	pCi/l				
Radium-226 SM 7500 Ra B M*	0.148 +/- 0.127	0.176	pCi/l		08/29/16	09/01/16	AK
Radium-228 EPA 904*/9320*	0.863 +/- 0.688	0.486	pCi/l		09/09/16	09/12/16	JR





Client : SCS Engineers  
 Client Project : KCPL Iatan Generating Station  
 Lab Number : 20160805  
 Date Reported : 09/14/16  
 Date Received : 08/19/16  
 Page Number : 3 of 4

## Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst
--------	--------	----	-------	------	-----------	---------------	---------

**Lab ID** : 20160805-05  
**Client ID** : MW-8  
**Date Sampled** : 8/18/2016 1:50:00 PM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium	0.123 +/- 0.735	0.462	pCi/l				
Radium-226 SM 7500 Ra B M*	0.123 +/- 0.102	0.111	pCi/l		08/29/16	09/01/16	AK
Radium-228 EPA 904*/9320*	-0.130 +/- 0.633	0.351	pCi/l		09/09/16	09/12/16	JR

**Lab ID** : 20160805-06  
**Client ID** : MW-9  
**Date Sampled** : 8/18/2016 1:20:00 PM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium	1.04 +/- 0.791	0.472	pCi/l				
Radium-226 SM 7500 Ra B M*	0.373 +/- 0.143	0.094	pCi/l		08/29/16	09/01/16	AK
Radium-228 EPA 904*/9320*	0.668 +/- 0.648	0.378	pCi/l		09/09/16	09/12/16	JR

**Lab ID** : 20160805-07  
**Client ID** : DUPLICATE  
**Date Sampled** : 8/18/2016 10:10:00 AM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium	1.02 +/- 0.671	0.734	pCi/l				
Radium-226 SM 7500 Ra B M*	0.635 +/- 0.195	0.138	pCi/l		08/29/16	09/01/16	AK
Radium-228 EPA 904*/9320*	0.388 +/- 0.476	0.596	pCi/l		09/09/16	09/13/16	JR

**Lab ID** : 20160805-08  
**Client ID** : MS  
**Date Sampled** : 8/18/2016 1:55:00 PM  
**Matrix** : NPW

### Radiochemical Analyses

Radium-226 SM 7500 Ra B M*	109		% Rec		08/29/16	09/01/16	AK
Radium-228 EPA 904*/9320*	102		% Rec		09/09/16	09/13/16	JR

\*NELAC Certified Parameter

BDL = Below Detection Limit



Client : SCS Engineers  
 Client Project : KCPL Iatan Generating Station  
 Lab Number : 20160805  
 Date Reported : 09/14/16  
 Date Received : 08/19/16  
 Page Number : 4 of 4

## Analytical Report

	Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst
<b>Lab ID</b>	: 20160805-09							
<b>Client ID</b>	: MSD							
<b>Date Sampled</b>	: 8/18/2016 2:00:00 PM							
<b>Matrix</b>	: NPW							

### Radiochemical Analyses

Radium-226	SM 7500 Ra B M*	9.2		RPD		08/29/16	09/01/16	AK
Radium-228	EPA 904*/9320*	4.0		RPD		09/09/16	09/13/16	JR

**Lab ID** : 20160805-10  
**Client ID** : MW-10  
**Date Sampled** : 8/18/2016 11:10:00 AM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		1.50 +/- 0.728	0.754	pCi/l				
Radium-226	SM 7500 Ra B M*	0.623 +/- 0.196	0.119	pCi/l		08/29/16	09/01/16	AK
Radium-228	EPA 904*/9320*	0.877 +/- 0.532	0.635	pCi/l		09/09/16	09/13/16	JR

## QC Report

Parameter	Blank	LCS %REC	LCSD %REC	RPD	DUP RPD	RER, NAD or DER	MS %REC	MSD %REC	RPD	Batch ID
Radium-226	-0.008	102.0			82.5	1.500	109.0	99.6	9.2	R1127
Radium-228	-0.005	102.0			NC	0.890	86.7	90.5	4.0	R3852

**Lab Approval:**

Ron Eidson  
 Director of Radiochemistry



# SAMPLE LOGIN

Date Received: 8/19/2016 9:55:00

Lab Number: 20160805

Due: 9/16/2016

Sample Number	Client Sample ID	Matrix	Date Sampled	Container Type	Container Size	Preservation	Preserved Upon Receipt	Custody Seal	Seal Intact
20160805-01 B	MW-1	NPW	08/18/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20160805-01 A	MW-1	NPW	08/18/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20160805-02 A	MW-2	NPW	08/18/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20160805-02 B	MW-2	NPW	08/18/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20160805-03 A	MW-6	NPW	08/18/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20160805-03 B	MW-6	NPW	08/18/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20160805-04 A	MW-7	NPW	08/18/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20160805-04 B	MW-7	NPW	08/18/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20160805-05 B	MW-8	NPW	08/18/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20160805-05 A	MW-8	NPW	08/18/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20160805-06 B	MW-9	NPW	08/18/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20160805-06 A	MW-9	NPW	08/18/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20160805-07 A	DUPLICATE	NPW	08/18/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20160805-07 B	DUPLICATE	NPW	08/18/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						



ID	MS	NPW	Date	Material	IL	NO3	Yes
20160805-08 A	MS	NPW	08/18/16	Plastic	IL	HNO3, pH < 2	Yes
20160805-08 B	MS	NPW	08/18/16	Plastic	IL	HNO3, pH < 2	Yes
Radium-226			SM 7500 Ra B M*				
Radium-228			EPA 904*/9320*				
20160805-09 A	MSD	NPW	08/18/16	Plastic	IL	HNO3, pH < 2	Yes
20160805-09 B	MSD	NPW	08/18/16	Plastic	IL	HNO3, pH < 2	Yes
Radium-226			SM 7500 Ra B M*				
Radium-228			EPA 904*/9320*				
20160805-10 B	MW-10	NPW	08/18/16	Plastic	IL	HNO3, pH < 2	Yes
20160805-10 A	MW-10	NPW	08/18/16	Plastic	IL	HNO3, pH < 2	Yes
Radium-226			SM 7500 Ra B M*				
Radium-228			EPA 904*/9320*				

**CONTAINER INSPECTION**

# Coolers 2 Custody Seals Broken N/A Temperature: Amb Ice

Radiation Survey: <300 cpm

**SAMPLE INSPECTION**

Sample Seal Broken  Chain of Custody Record  Labels in Tact  Radiation Survey Complete  N/A

Anomalies There is no indication of which sample the ms + msd of. AT 08/19/16

Inspected By: Subra Taylor DATE 8/19/16  
 QA or Designee Review: Ronald Thomas DATE 08/19/16  
 Sample Custodian Review: Steve DATE 8/19/16

Project Notes:

Jared Morrison  
December 16, 2022

**ATTACHMENT 1-2**  
**September 2016 Sampling Event Laboratory Report**

## SCS Engineers - KS

Sample Delivery Group: L862929  
Samples Received: 09/30/2016  
Project Number: 27213167.16  
Description: KCPL - Iatan Generating Station

Report To: Jason Franks  
7311 West 130th Street, Ste. 100  
Overland Park, KS 66213

Entire Report Reviewed By:



Jeff Carr  
Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



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<b><sup>2</sup>Tc: Table of Contents</b>	<b>2</b>	
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<b><sup>4</sup>Cn: Case Narrative</b>	<b>5</b>	
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MW-8 L862929-05	10	
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# SAMPLE SUMMARY



## MW-1 L862929-01 GW

Collected by Adam Parris  
Collected date/time 09/29/16 13:50  
Received date/time 09/30/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG914264	1	10/06/16 01:24	10/06/16 03:32	JM
Mercury by Method 7470A	WG912960	1	10/01/16 05:15	10/04/16 13:11	NJB
Metals (ICP) by Method 6010B	WG913297	1	10/06/16 11:12	10/08/16 04:04	ST
Metals (ICPMS) by Method 6020	WG914087	1	10/06/16 11:12	10/06/16 20:30	VSS
Wet Chemistry by Method 9056A	WG913474	1	10/04/16 14:29	10/04/16 14:29	SAM

1  
Cp

2  
Tc

3  
Ss

4  
Cn

## MW-2 L862929-02 GW

Collected by Adam Parris  
Collected date/time 09/29/16 13:15  
Received date/time 09/30/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG914264	1	10/06/16 01:24	10/06/16 03:32	JM
Mercury by Method 7470A	WG912960	1	10/01/16 05:15	10/04/16 13:15	NJB
Metals (ICP) by Method 6010B	WG913297	1	10/06/16 11:12	10/08/16 04:07	ST
Metals (ICPMS) by Method 6020	WG914087	1	10/06/16 11:12	10/06/16 20:33	VSS
Wet Chemistry by Method 9056A	WG913474	1	10/04/16 14:59	10/04/16 14:59	SAM
Wet Chemistry by Method 9056A	WG914252	10	10/06/16 11:18	10/06/16 11:18	SAM

5  
Sr

6  
Qc

7  
Gl

8  
Al

9  
Sc

## MW-6 L862929-03 GW

Collected by Adam Parris  
Collected date/time 09/29/16 10:15  
Received date/time 09/30/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG914264	1	10/06/16 01:24	10/06/16 03:32	JM
Mercury by Method 7470A	WG912960	1	10/01/16 05:15	10/04/16 12:30	NJB
Metals (ICP) by Method 6010B	WG913297	1	10/06/16 11:12	10/08/16 03:43	ST
Metals (ICPMS) by Method 6020	WG914087	1	10/06/16 11:12	10/06/16 19:58	VSS
Wet Chemistry by Method 9056A	WG913474	1	10/04/16 15:15	10/04/16 15:15	SAM

## MW-7 L862929-04 GW

Collected by Adam Parris  
Collected date/time 09/29/16 15:15  
Received date/time 09/30/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG914264	1	10/06/16 01:24	10/06/16 03:32	JM
Mercury by Method 7470A	WG912960	1	10/01/16 05:15	10/04/16 13:22	NJB
Metals (ICP) by Method 6010B	WG913297	1	10/06/16 11:12	10/08/16 04:09	ST
Metals (ICPMS) by Method 6020	WG914087	1	10/06/16 11:12	10/06/16 20:36	VSS
Wet Chemistry by Method 9056A	WG913474	1	10/04/16 15:30	10/04/16 15:30	SAM

## MW-8 L862929-05 GW

Collected by Adam Parris  
Collected date/time 09/29/16 14:45  
Received date/time 09/30/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG914265	1	10/06/16 01:25	10/06/16 04:26	JM
Mercury by Method 7470A	WG912960	1	10/01/16 05:15	10/04/16 13:25	NJB
Metals (ICP) by Method 6010B	WG913297	1	10/06/16 11:12	10/08/16 04:12	ST
Metals (ICPMS) by Method 6020	WG914087	1	10/06/16 11:12	10/06/16 20:40	VSS
Wet Chemistry by Method 9056A	WG913474	1	10/04/16 15:45	10/04/16 15:45	SAM

# SAMPLE SUMMARY



## MW-9 L862929-06 GW

Collected by Adam Parris  
Collected date/time 09/29/16 14:15  
Received date/time 09/30/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG914265	1	10/06/16 01:25	10/06/16 04:26	JM
Mercury by Method 7470A	WG912960	1	10/01/16 05:15	10/04/16 13:27	NJB
Metals (ICP) by Method 6010B	WG913297	1	10/06/16 11:12	10/08/16 04:15	ST
Metals (ICPMS) by Method 6020	WG914087	1	10/06/16 11:12	10/06/16 20:43	VSS
Wet Chemistry by Method 9056A	WG913474	1	10/04/16 16:32	10/04/16 16:32	SAM

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn

## MW-10 L862929-07 GW

Collected by Adam Parris  
Collected date/time 09/29/16 11:45  
Received date/time 09/30/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG914265	1	10/06/16 01:25	10/06/16 04:26	JM
Mercury by Method 7470A	WG912960	1	10/01/16 05:15	10/04/16 13:30	NJB
Metals (ICP) by Method 6010B	WG913297	1	10/06/16 11:12	10/08/16 04:17	ST
Metals (ICPMS) by Method 6020	WG914087	1	10/06/16 11:12	10/06/16 20:46	VSS
Wet Chemistry by Method 9056A	WG913474	1	10/04/16 17:18	10/04/16 17:18	SAM

- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al

## DUPLICATE L862929-08 GW

Collected by Adam Parris  
Collected date/time 09/29/16 10:20  
Received date/time 09/30/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG914265	1	10/06/16 01:25	10/06/16 04:26	JM
Mercury by Method 7470A	WG912960	1	10/01/16 05:15	10/04/16 13:32	NJB
Metals (ICP) by Method 6010B	WG913297	1	10/06/16 11:12	10/08/16 04:20	ST
Metals (ICPMS) by Method 6020	WG914087	1	10/06/16 11:12	10/06/16 20:49	VSS
Wet Chemistry by Method 9056A	WG915225	1	10/09/16 13:14	10/09/16 13:14	CM

- 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. 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  
Technical Service Representative

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



## Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	486000		10000	1	10/06/2016 03:32	<a href="#">WG914264</a>

1 Cp

2 Tc

## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	6070		1000	1	10/04/2016 14:29	<a href="#">WG913474</a>
Fluoride	292		100	1	10/04/2016 14:29	<a href="#">WG913474</a>
Sulfate	35300		5000	1	10/04/2016 14:29	<a href="#">WG913474</a>

3 Ss

4 Cn

5 Sr

## Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND	J3	0.200	1	10/04/2016 13:11	<a href="#">WG912960</a>

6 Qc

7 Gl

## Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	244		5.00	1	10/08/2016 04:04	<a href="#">WG913297</a>
Boron	ND		200	1	10/08/2016 04:04	<a href="#">WG913297</a>
Cadmium	ND		2.00	1	10/08/2016 04:04	<a href="#">WG913297</a>
Calcium	134000		1000	1	10/08/2016 04:04	<a href="#">WG913297</a>
Chromium	ND		10.0	1	10/08/2016 04:04	<a href="#">WG913297</a>
Cobalt	ND		10.0	1	10/08/2016 04:04	<a href="#">WG913297</a>
Lithium	53.6		15.0	1	10/08/2016 04:04	<a href="#">WG913297</a>
Molybdenum	ND		5.00	1	10/08/2016 04:04	<a href="#">WG913297</a>

8 Al

9 Sc

## Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	10/06/2016 20:30	<a href="#">WG914087</a>
Arsenic	13.1		2.00	1	10/06/2016 20:30	<a href="#">WG914087</a>
Beryllium	ND		2.00	1	10/06/2016 20:30	<a href="#">WG914087</a>
Cadmium	ND		1.00	1	10/06/2016 20:30	<a href="#">WG914087</a>
Lead	ND		2.00	1	10/06/2016 20:30	<a href="#">WG914087</a>
Selenium	ND		2.00	1	10/06/2016 20:30	<a href="#">WG914087</a>
Thallium	ND		2.00	1	10/06/2016 20:30	<a href="#">WG914087</a>



## Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	651000		10000	1	10/06/2016 03:32	<a href="#">WG914264</a>

1 Cp

2 Tc

## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	8790		1000	1	10/04/2016 14:59	<a href="#">WG913474</a>
Fluoride	356		100	1	10/04/2016 14:59	<a href="#">WG913474</a>
Sulfate	151000		50000	10	10/06/2016 11:18	<a href="#">WG914252</a>

3 Ss

4 Cn

5 Sr

## Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND	J3	0.200	1	10/04/2016 13:15	<a href="#">WG912960</a>

6 Qc

7 Gl

## Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	218		5.00	1	10/08/2016 04:07	<a href="#">WG913297</a>
Boron	ND		200	1	10/08/2016 04:07	<a href="#">WG913297</a>
Cadmium	2.41		2.00	1	10/08/2016 04:07	<a href="#">WG913297</a>
Calcium	169000		1000	1	10/08/2016 04:07	<a href="#">WG913297</a>
Chromium	ND		10.0	1	10/08/2016 04:07	<a href="#">WG913297</a>
Cobalt	ND		10.0	1	10/08/2016 04:07	<a href="#">WG913297</a>
Lithium	55.2		15.0	1	10/08/2016 04:07	<a href="#">WG913297</a>
Molybdenum	ND		5.00	1	10/08/2016 04:07	<a href="#">WG913297</a>

8 Al

9 Sc

## Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	10/06/2016 20:33	<a href="#">WG914087</a>
Arsenic	20.2		2.00	1	10/06/2016 20:33	<a href="#">WG914087</a>
Beryllium	ND		2.00	1	10/06/2016 20:33	<a href="#">WG914087</a>
Cadmium	2.09		1.00	1	10/06/2016 20:33	<a href="#">WG914087</a>
Lead	ND		2.00	1	10/06/2016 20:33	<a href="#">WG914087</a>
Selenium	ND		2.00	1	10/06/2016 20:33	<a href="#">WG914087</a>
Thallium	ND		2.00	1	10/06/2016 20:33	<a href="#">WG914087</a>



## Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	498000		10000	1	10/06/2016 03:32	<a href="#">WG914264</a>

## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	1460		1000	1	10/04/2016 15:15	<a href="#">WG913474</a>
Fluoride	343		100	1	10/04/2016 15:15	<a href="#">WG913474</a>
Sulfate	33500		5000	1	10/04/2016 15:15	<a href="#">WG913474</a>

## Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND	<a href="#">J3 J6 O1</a>	0.200	1	10/04/2016 12:30	<a href="#">WG912960</a>

## Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	282		5.00	1	10/08/2016 03:43	<a href="#">WG913297</a>
Boron	ND		200	1	10/08/2016 03:43	<a href="#">WG913297</a>
Cadmium	ND		2.00	1	10/08/2016 03:43	<a href="#">WG913297</a>
Calcium	139000		1000	1	10/08/2016 03:43	<a href="#">WG913297</a>
Chromium	ND		10.0	1	10/08/2016 03:43	<a href="#">WG913297</a>
Cobalt	ND		10.0	1	10/08/2016 03:43	<a href="#">WG913297</a>
Lithium	36.2		15.0	1	10/08/2016 03:43	<a href="#">WG913297</a>
Molybdenum	ND		5.00	1	10/08/2016 03:43	<a href="#">WG913297</a>

## Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	10/06/2016 19:58	<a href="#">WG914087</a>
Arsenic	19.3		2.00	1	10/06/2016 19:58	<a href="#">WG914087</a>
Beryllium	ND		2.00	1	10/06/2016 19:58	<a href="#">WG914087</a>
Cadmium	ND		1.00	1	10/06/2016 19:58	<a href="#">WG914087</a>
Lead	ND		2.00	1	10/06/2016 19:58	<a href="#">WG914087</a>
Selenium	ND		2.00	1	10/06/2016 19:58	<a href="#">WG914087</a>
Thallium	ND		2.00	1	10/06/2016 19:58	<a href="#">WG914087</a>

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	554000		10000	1	10/06/2016 03:32	<a href="#">WG914264</a>

## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	13900		1000	1	10/04/2016 15:30	<a href="#">WG913474</a>
Fluoride	395		100	1	10/04/2016 15:30	<a href="#">WG913474</a>
Sulfate	70600		5000	1	10/04/2016 15:30	<a href="#">WG913474</a>

## Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND	<u>J3</u>	0.200	1	10/04/2016 13:22	<a href="#">WG912960</a>

## Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	278		5.00	1	10/08/2016 04:09	<a href="#">WG913297</a>
Boron	ND		200	1	10/08/2016 04:09	<a href="#">WG913297</a>
Cadmium	ND		2.00	1	10/08/2016 04:09	<a href="#">WG913297</a>
Calcium	144000		1000	1	10/08/2016 04:09	<a href="#">WG913297</a>
Chromium	ND		10.0	1	10/08/2016 04:09	<a href="#">WG913297</a>
Cobalt	ND		10.0	1	10/08/2016 04:09	<a href="#">WG913297</a>
Lithium	41.1		15.0	1	10/08/2016 04:09	<a href="#">WG913297</a>
Molybdenum	ND		5.00	1	10/08/2016 04:09	<a href="#">WG913297</a>

## Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	10/06/2016 20:36	<a href="#">WG914087</a>
Arsenic	22.5		2.00	1	10/06/2016 20:36	<a href="#">WG914087</a>
Beryllium	ND		2.00	1	10/06/2016 20:36	<a href="#">WG914087</a>
Cadmium	ND		1.00	1	10/06/2016 20:36	<a href="#">WG914087</a>
Lead	ND		2.00	1	10/06/2016 20:36	<a href="#">WG914087</a>
Selenium	ND		2.00	1	10/06/2016 20:36	<a href="#">WG914087</a>
Thallium	ND		2.00	1	10/06/2016 20:36	<a href="#">WG914087</a>

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	517000		10000	1	10/06/2016 04:26	<a href="#">WG914265</a>

## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	1420		1000	1	10/04/2016 15:45	<a href="#">WG913474</a>
Fluoride	439		100	1	10/04/2016 15:45	<a href="#">WG913474</a>
Sulfate	24200		5000	1	10/04/2016 15:45	<a href="#">WG913474</a>

## Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND	<u>J3</u>	0.200	1	10/04/2016 13:25	<a href="#">WG912960</a>

## Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	192		5.00	1	10/08/2016 04:12	<a href="#">WG913297</a>
Boron	ND		200	1	10/08/2016 04:12	<a href="#">WG913297</a>
Cadmium	ND		2.00	1	10/08/2016 04:12	<a href="#">WG913297</a>
Calcium	132000		1000	1	10/08/2016 04:12	<a href="#">WG913297</a>
Chromium	ND		10.0	1	10/08/2016 04:12	<a href="#">WG913297</a>
Cobalt	ND		10.0	1	10/08/2016 04:12	<a href="#">WG913297</a>
Lithium	40.2		15.0	1	10/08/2016 04:12	<a href="#">WG913297</a>
Molybdenum	ND		5.00	1	10/08/2016 04:12	<a href="#">WG913297</a>

## Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	10/06/2016 20:40	<a href="#">WG914087</a>
Arsenic	6.61		2.00	1	10/06/2016 20:40	<a href="#">WG914087</a>
Beryllium	ND		2.00	1	10/06/2016 20:40	<a href="#">WG914087</a>
Cadmium	ND		1.00	1	10/06/2016 20:40	<a href="#">WG914087</a>
Lead	ND		2.00	1	10/06/2016 20:40	<a href="#">WG914087</a>
Selenium	ND		2.00	1	10/06/2016 20:40	<a href="#">WG914087</a>
Thallium	ND		2.00	1	10/06/2016 20:40	<a href="#">WG914087</a>

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	398000		10000	1	10/06/2016 04:26	<a href="#">WG914265</a>

1 Cp

2 Tc

## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	ND		1000	1	10/04/2016 16:32	<a href="#">WG913474</a>
Fluoride	415		100	1	10/04/2016 16:32	<a href="#">WG913474</a>
Sulfate	26200		5000	1	10/04/2016 16:32	<a href="#">WG913474</a>

3 Ss

4 Cn

5 Sr

## Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND	J3	0.200	1	10/04/2016 13:27	<a href="#">WG912960</a>

6 Qc

7 Gl

## Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	299		5.00	1	10/08/2016 04:15	<a href="#">WG913297</a>
Boron	ND		200	1	10/08/2016 04:15	<a href="#">WG913297</a>
Cadmium	ND		2.00	1	10/08/2016 04:15	<a href="#">WG913297</a>
Calcium	102000		1000	1	10/08/2016 04:15	<a href="#">WG913297</a>
Chromium	ND		10.0	1	10/08/2016 04:15	<a href="#">WG913297</a>
Cobalt	ND		10.0	1	10/08/2016 04:15	<a href="#">WG913297</a>
Lithium	40.0		15.0	1	10/08/2016 04:15	<a href="#">WG913297</a>
Molybdenum	ND		5.00	1	10/08/2016 04:15	<a href="#">WG913297</a>

8 Al

9 Sc

## Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	10/06/2016 20:43	<a href="#">WG914087</a>
Arsenic	11.6		2.00	1	10/06/2016 20:43	<a href="#">WG914087</a>
Beryllium	ND		2.00	1	10/06/2016 20:43	<a href="#">WG914087</a>
Cadmium	ND		1.00	1	10/06/2016 20:43	<a href="#">WG914087</a>
Lead	ND		2.00	1	10/06/2016 20:43	<a href="#">WG914087</a>
Selenium	ND		2.00	1	10/06/2016 20:43	<a href="#">WG914087</a>
Thallium	ND		2.00	1	10/06/2016 20:43	<a href="#">WG914087</a>



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	502000		10000	1	10/06/2016 04:26	<a href="#">WG914265</a>

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	7830		1000	1	10/04/2016 17:18	<a href="#">WG913474</a>
Fluoride	622		100	1	10/04/2016 17:18	<a href="#">WG913474</a>
Sulfate	19700		5000	1	10/04/2016 17:18	<a href="#">WG913474</a>

3 Ss

4 Cn

5 Sr

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND	J3	0.200	1	10/04/2016 13:30	<a href="#">WG912960</a>

6 Qc

7 Gl

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	230		5.00	1	10/08/2016 04:17	<a href="#">WG913297</a>
Boron	ND		200	1	10/08/2016 04:17	<a href="#">WG913297</a>
Cadmium	ND		2.00	1	10/08/2016 04:17	<a href="#">WG913297</a>
Calcium	118000		1000	1	10/08/2016 04:17	<a href="#">WG913297</a>
Chromium	ND		10.0	1	10/08/2016 04:17	<a href="#">WG913297</a>
Cobalt	ND		10.0	1	10/08/2016 04:17	<a href="#">WG913297</a>
Lithium	55.4		15.0	1	10/08/2016 04:17	<a href="#">WG913297</a>
Molybdenum	ND		5.00	1	10/08/2016 04:17	<a href="#">WG913297</a>

8 Al

9 Sc

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	10/06/2016 20:46	<a href="#">WG914087</a>
Arsenic	20.0		2.00	1	10/06/2016 20:46	<a href="#">WG914087</a>
Beryllium	ND		2.00	1	10/06/2016 20:46	<a href="#">WG914087</a>
Cadmium	ND		1.00	1	10/06/2016 20:46	<a href="#">WG914087</a>
Lead	ND		2.00	1	10/06/2016 20:46	<a href="#">WG914087</a>
Selenium	ND		2.00	1	10/06/2016 20:46	<a href="#">WG914087</a>
Thallium	ND		2.00	1	10/06/2016 20:46	<a href="#">WG914087</a>



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	511000		10000	1	10/06/2016 04:26	<a href="#">WG914265</a>

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	1390		1000	1	10/09/2016 13:14	<a href="#">WG915225</a>
Fluoride	325		100	1	10/09/2016 13:14	<a href="#">WG915225</a>
Sulfate	31600		5000	1	10/09/2016 13:14	<a href="#">WG915225</a>

3 Ss

4 Cn

5 Sr

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Mercury	ND	J3	0.200	1	10/04/2016 13:32	<a href="#">WG912960</a>

6 Qc

7 Gl

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Barium	285		5.00	1	10/08/2016 04:20	<a href="#">WG913297</a>
Boron	ND		200	1	10/08/2016 04:20	<a href="#">WG913297</a>
Cadmium	ND		2.00	1	10/08/2016 04:20	<a href="#">WG913297</a>
Calcium	142000		1000	1	10/08/2016 04:20	<a href="#">WG913297</a>
Chromium	ND		10.0	1	10/08/2016 04:20	<a href="#">WG913297</a>
Cobalt	ND		10.0	1	10/08/2016 04:20	<a href="#">WG913297</a>
Lithium	36.3		15.0	1	10/08/2016 04:20	<a href="#">WG913297</a>
Molybdenum	ND		5.00	1	10/08/2016 04:20	<a href="#">WG913297</a>

8 Al

9 Sc

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Antimony	ND		2.00	1	10/06/2016 20:49	<a href="#">WG914087</a>
Arsenic	18.9		2.00	1	10/06/2016 20:49	<a href="#">WG914087</a>
Beryllium	ND		2.00	1	10/06/2016 20:49	<a href="#">WG914087</a>
Cadmium	ND		1.00	1	10/06/2016 20:49	<a href="#">WG914087</a>
Lead	ND		2.00	1	10/06/2016 20:49	<a href="#">WG914087</a>
Selenium	ND		2.00	1	10/06/2016 20:49	<a href="#">WG914087</a>
Thallium	ND		2.00	1	10/06/2016 20:49	<a href="#">WG914087</a>



Method Blank (MB)

(MB) R3168865-1 10/06/16 03:32

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Dissolved Solids	U		2820	10000

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

L862868-01 Original Sample (OS) • Duplicate (DUP)

(OS) L862868-01 10/06/16 03:32 • (DUP) R3168865-4 10/06/16 03:32

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Dissolved Solids	396000	386000	1	2.56		5

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

(LCS) R3168865-2 10/06/16 03:32 • (LCSD) R3168865-3 10/06/16 03:32

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Dissolved Solids	8800000	8140000	8520000	92.5	96.8	85.0-115			4.56	5

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Method Blank (MB)

(MB) R3168851-1 10/06/16 04:26

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Dissolved Solids	U		2820	10000

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

L862929-05 Original Sample (OS) • Duplicate (DUP)

(OS) L862929-05 10/06/16 04:26 • (DUP) R3168851-4 10/06/16 04:26

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Dissolved Solids	517000	509000	1	1.56		5

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

(LCS) R3168851-2 10/06/16 04:26 • (LCSD) R3168851-3 10/06/16 04:26

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Dissolved Solids	8800000	8150000	8560000	92.6	97.3	85.0-115			4.91	5



Method Blank (MB)

(MB) R3168273-1 10/04/16 07:00

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

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

L862929-01 Original Sample (OS) • Duplicate (DUP)

(OS) L862929-01 10/04/16 14:29 • (DUP) R3168273-4 10/04/16 14:44

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	6070	6150	1	1		15
Fluoride	292	298	1	2		15
Sulfate	35300	35400	1	0		15

L862950-05 Original Sample (OS) • Duplicate (DUP)

(OS) L862950-05 10/04/16 22:57 • (DUP) R3168273-8 10/04/16 23:12

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	48600	48400	1	0		15
Fluoride	367	367	1	0		15

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

(LCS) R3168273-2 10/04/16 07:16 • (LCSD) R3168273-3 10/04/16 07:31

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Chloride	40000	39700	39700	99	99	80-120			0	15
Fluoride	8000	7930	7930	99	99	80-120			0	15
Sulfate	40000	40600	40900	102	102	80-120			1	15

L862929-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862929-03 10/04/16 15:15 • (MS) R3168273-5 10/04/16 16:01 • (MSD) R3168273-6 10/04/16 16:16

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Chloride	50000	1460	52400	53000	102	103	1	80-120			1	15
Fluoride	5000	343	5030	5660	94	106	1	80-120			12	15
Sulfate	50000	33500	84200	85100	101	103	1	80-120			1	15



L862950-06 Original Sample (OS) • Matrix Spike (MS)

(OS) L862950-06 10/04/16 23:28 • (MS) R3168273-7 10/04/16 22:11

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>
Chloride	50000	27800	77600	100	1	80-120	
Fluoride	5000	800	5400	92	1	80-120	

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

<sup>4</sup>Cn

<sup>5</sup>Sr

<sup>6</sup>Qc

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>Sc



Method Blank (MB)

(MB) R3168869-1 10/06/16 07:13

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Sulfate	211	J	77.4	5000

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

L862054-01 Original Sample (OS) • Duplicate (DUP)

(OS) L862054-01 10/06/16 08:40 • (DUP) R3168869-4 10/06/16 08:54

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Sulfate	19200	19200	1	0		15

L862582-01 Original Sample (OS) • Duplicate (DUP)

(OS) L862582-01 10/06/16 10:20 • (DUP) R3168869-6 10/06/16 10:34

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Sulfate	101000	101000	5	0		15

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

(LCS) R3168869-2 10/06/16 07:27 • (LCSD) R3168869-3 10/06/16 07:42

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Sulfate	40000	41000	41100	102	103	80-120			0	15

L863269-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L863269-06 10/06/16 14:25 • (MS) R3168869-7 10/06/16 14:39 • (MSD) R3168869-8 10/06/16 14:54

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Sulfate	50000	ND	56100	56100	105	105	1	80-120			0	15





Method Blank (MB)

(MB) R3169312-1 10/09/16 12:00

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

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L862929-08 Original Sample (OS) • Duplicate (DUP)

(OS) L862929-08 10/09/16 13:14 • (DUP) R3169312-4 10/09/16 13:29

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	1390	1200	1	14		15
Fluoride	325	298	1	8		15
Sulfate	31600	31500	1	1		15

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

(LCS) R3169312-2 10/09/16 12:14 • (LCSD) R3169312-3 10/09/16 12:29

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Chloride	40000	39600	39500	99	99	80-120			0	15
Fluoride	8000	7970	7930	100	99	80-120			0	15
Sulfate	40000	39700	39600	99	99	80-120			0	15

L864321-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L864321-08 10/10/16 00:36 • (MS) R3169312-7 10/10/16 00:50 • (MSD) R3169312-8 10/10/16 01:05

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Chloride	50000	74500	122000	122000	95	95	1	80-120	E	E	0	15
Fluoride	5000	2000	6950	6890	99	98	1	80-120			1	15



Method Blank (MB)

(MB) R3168037-1 10/04/16 12:23

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Mercury	U		0.0490	0.200

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

<sup>4</sup>Cn

<sup>5</sup>Sr

<sup>6</sup>Qc

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

(LCS) R3168037-6 10/04/16 14:25 • (LCSD) R3168037-2 10/04/16 12:28

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Mercury	3.00	3.54	2.85	118	95	80-120		<u>J3</u>	22	20

L862929-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862929-03 10/04/16 12:30 • (MS) R3168037-3 10/04/16 12:33 • (MSD) R3168037-4 10/04/16 12:35

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Mercury	3.00	ND	2.33	1.94	78	65	1	75-125		<u>J6</u>	18	20

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>Sc



Method Blank (MB)

(MB) R3169203-1 10/08/16 03:35

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Barium	U		1.70	5.00
Boron	U		12.6	200
Cadmium	U		0.700	2.00
Calcium	U		46.3	1000
Chromium	U		1.40	10.0
Cobalt	U		2.30	10.0
Lithium	U		5.30	15.0
Molybdenum	U		1.60	5.00

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

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

(LCS) R3169203-2 10/08/16 03:38 • (LCSD) R3169203-3 10/08/16 03:40

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Barium	1000	1030	1030	103	103	80-120			0	20
Boron	1000	1010	990	101	99	80-120			2	20
Cadmium	1000	1010	1010	101	101	80-120			0	20
Calcium	10000	9890	9880	99	99	80-120			0	20
Chromium	1000	994	1000	99	100	80-120			1	20
Cobalt	1000	1030	1030	103	103	80-120			0	20
Lithium	1000	1000	1000	100	100	80-120			0	20
Molybdenum	1000	1010	1010	101	101	80-120			0	20

L862929-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862929-03 10/08/16 03:43 • (MS) R3169203-5 10/08/16 03:48 • (MSD) R3169203-6 10/08/16 03:56

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Barium	1000	282	1290	1280	100	100	1	75-125			0	20
Boron	1000	ND	1110	1130	98	100	1	75-125			2	20
Cadmium	1000	ND	1030	1030	103	103	1	75-125			0	20
Calcium	10000	139000	146000	148000	73	85	1	75-125	V		1	20
Chromium	1000	ND	987	982	99	98	1	75-125			0	20
Cobalt	1000	ND	1050	1050	105	105	1	75-125			0	20
Lithium	1000	36.2	1050	1050	102	101	1	75-125			1	20
Molybdenum	1000	ND	1010	1010	101	101	1	75-125			0	20



Method Blank (MB)

(MB) R3168785-7 10/06/16 19:48

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Antimony	U		0.754	2.00
Arsenic	U		0.250	2.00
Beryllium	U		0.120	2.00
Cadmium	U		0.160	1.00
Lead	U		0.240	2.00
Selenium	U		0.380	2.00
Thallium	U		0.190	2.00

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

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

(LCS) R3168785-8 10/06/16 19:52 • (LCSD) R3168785-9 10/06/16 19:55

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Antimony	57.9	54.0	54.0	93	93	80-120			0	20
Arsenic	50.0	48.9	49.4	98	99	80-120			1	20
Beryllium	50.0	47.1	47.5	94	95	80-120			1	20
Cadmium	50.0	49.3	50.8	99	102	80-120			3	20
Lead	50.0	48.4	48.1	97	96	80-120			1	20
Selenium	50.0	48.0	48.5	96	97	80-120			1	20
Thallium	50.0	48.2	48.1	96	96	80-120			0	20

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

L862929-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L862929-03 10/06/16 19:58 • (MS) R3168785-11 10/06/16 20:05 • (MSD) R3168785-12 10/06/16 20:08

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Antimony	57.9	ND	56.8	54.0	98	93	1	75-125			5	20
Arsenic	50.0	19.3	68.2	67.7	98	97	1	75-125			1	20
Beryllium	50.0	ND	48.9	47.6	98	95	1	75-125			3	20
Cadmium	50.0	ND	50.4	48.0	101	96	1	75-125			5	20
Lead	50.0	ND	49.1	47.4	98	95	1	75-125			4	20
Selenium	50.0	ND	48.4	47.2	97	94	1	75-125			3	20
Thallium	50.0	ND	49.4	47.8	99	96	1	75-125			3	20



## Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
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.
Rec.	Recovery.

## 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.
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.

- <sup>1</sup> Cp
- <sup>2</sup> Tc
- <sup>3</sup> Ss
- <sup>4</sup> Cn
- <sup>5</sup> Sr
- <sup>6</sup> Qc
- <sup>7</sup> Gl
- <sup>8</sup> Al
- <sup>9</sup> Sc



ESC Lab Sciences 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.



## State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Connecticut	PH-0197	North Carolina <sup>1</sup>	DW21704
Florida	E87487	North Carolina <sup>2</sup>	41
Georgia	NELAP	North Dakota	R-140
Georgia <sup>1</sup>	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky <sup>1</sup>	90010	South Dakota	n/a
Kentucky <sup>2</sup>	16	Tennessee <sup>14</sup>	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas <sup>5</sup>	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

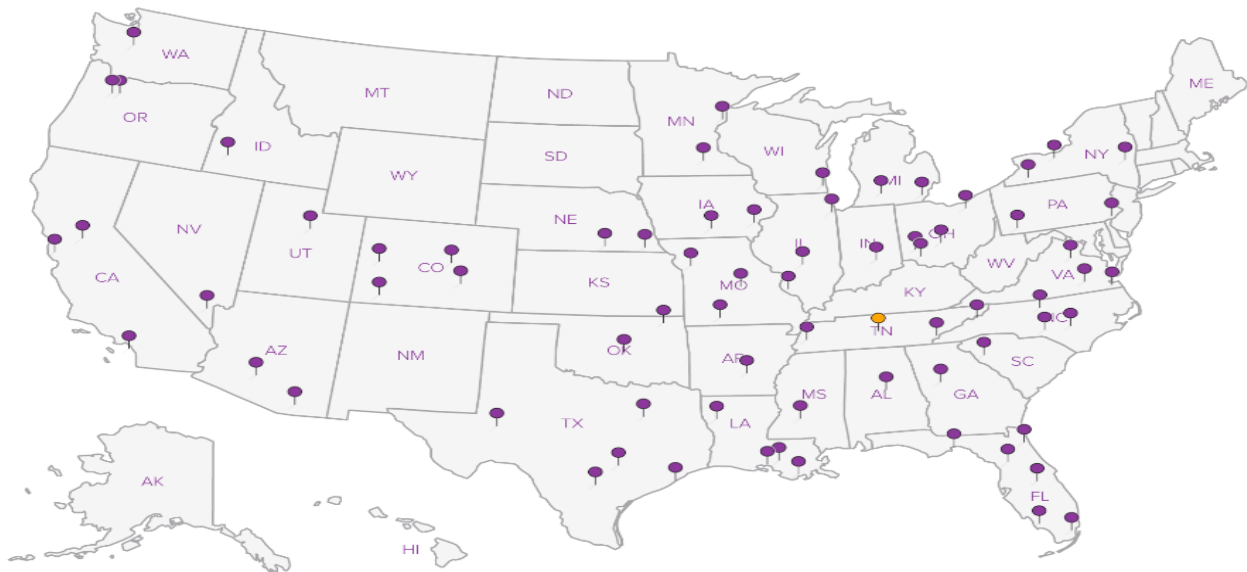
## Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA	100789
A2LA – ISO 17025 <sup>5</sup>	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>n/a</sup> Accreditation not applicable

## Our Locations

ESC Lab Sciences 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. **ESC Lab Sciences performs all testing at our central laboratory.**



Company Name/Address:  
**SCS Engineers**  
 7311 West 130th Street, Suite 100  
 Overland Park, KS 66213

Billing Information:  
**Accounts Payable**  
 7311 West 130th Street, Ste.100  
 Overland Park, KS 66213

Report to:  
**Jason Franks**

Email To:  
**jfranks@scsengineers.com**

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

City/State Collected:

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


Client Project #  
**27213167.16**

Lab Project #  
**AQUAOPKS-IATAN**

Collected by (print):  
**Adam Parris**

Site/Facility ID #

P.O. #

Collected by (signature):  
  
 Immediately Packed on Ice N  Y

Rush? (Lab MUST Be Notified)  
 Same Day .....200%  
 Next Day .....100%  
 Two Day .....50%  
 Three Day .....25%

Date Results Needed  
**Standard**

Email?  No  Yes  
 FAX?  No  Yes

No. of Cntrs

Analysis / Container / Preservative

CCR Metals 250ml HDPE - HNO3 L2

Chloride, F, SO4 125ml HDPE - NoPres

TDS 250ml HDPE - NoPres



YOUR LAB OF CHOICE

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



L # **862929**

Ta **D116**

Acctnum: **AQUAOPKS**  
 Template: **T114927**  
 Prelogin: **P564650**  
 TSR: **206-Jeff Carr**

Cooler:




Shipped Via:

Rem./Contaminant Sample # (lab only)

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	CCR Metals 250ml HDPE - HNO3 L2	Chloride, F, SO4 125ml HDPE - NoPres	TDS 250ml HDPE - NoPres										
MW-1	Grab	GW	-	9/29/16	1350	3	X	X	X										01
MW-2		GW	-		1315	3	X	X	X										02
MW-6		GW	-		1015	3	X	X	X										03
MW-7		GW	-		1515	3	X	X	X										04
MW-8		GW	-		1445	3	X	X	X										05
MW-9		GW	-		1415	3	X	X	X										06
MW-10		GW	-		1145	3	X	X	X										07
DUPLICATE		GW	-		1020	3	X	X	X										08
MS (MW-6)		GW	-		1025	3	X	X	X										09
MSD (MW-6)		GW	-		1030	3	X	X	X										09

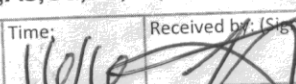
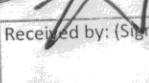
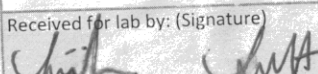
\* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other

Remarks: **6010 Metals B,Ca,Cr,Co,Li,Mo 6020 Metals Sb,As,Cd,Pb,Se,TL 7470 Metals Hg**

Relinquished by: (Signature)  
  
 Relinquished by: (Signature)  
  
 Relinquished by: (Signature)  


Date: **9/29/16**  
 Date: **9/29/16**  
 Date: **9/29/16**

Time: **11:00**  
 Time: **17:00**  
 Time: **17:00**

Received by: (Signature)  
  
 Received by: (Signature)  
  
 Received for lab by: (Signature)  


pH \_\_\_\_\_ Temp \_\_\_\_\_  
 Flow \_\_\_\_\_ Other \_\_\_\_\_

Samples returned via:  UPS  
 FedEx  Courier  \_\_\_\_\_

Temp: **2.9** °C  
 Bottles Received: **36/30**  
 Date: **9-30-16** Time: **9:00**

Hold # \_\_\_\_\_  
 Condition: (lab use only)  
**LC JW7**  
 COC Seal Intact:  Y  N  NA  
 pH Checked: **L2** NCF: \_\_\_\_\_



### Cooler Receipt Form

Client:	<i>A&amp;S OPIK</i>	SDG#	<i>862929</i>		
Cooler Received/Opened On: 9/30/16	Temperature Upon Receipt:		<i>2.9 °c</i>		
Received By: Timiesha Scott					
Signature: <i>[Handwritten Signatures]</i>					
Receipt Check List			Yes	No	N/A
Were custody seals on outside of cooler and intact?			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Were custody papers properly filled out?			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Did all bottles arrive in good condition?			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were correct bottles used for the analyses requested?			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Was sufficient amount of sample sent in each bottle?			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were all applicable sample containers correctly preserved and checked for preservation? (Any not in accepted range noted on COC)			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If applicable, was an observable VOA headspace present?			<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Non Conformance Generated. (If yes see attached NCF)			<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>



## Case Narrative

### Lab No: 20160951

This report contains the analytical results for the 10 sample(s) received under chain of custody by ESC Lab Sciences on 9/30/2016 12:10:58 PM. These samples are associated with your KCPL-Iatan Generating Station project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted below:

The test results in this report meet all NELAC requirements unless noted below:

This report shall not be reproduced, except in full, without the written approval of ESC Lab Sciences.

All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client.

Results have been reviewed by the Director of Radiochemistry or their designees and is approved for release.

### Observations / Nonconformances

The following QC parameters are outside method control limits:  
Radium-226 DUP/RER SDG# R1143



Client : SCS Engineers  
 Client Project : KCPL-Iatan Generating Station  
 Lab Number : 20160951  
 Date Reported : 10/28/16  
 Date Received : 09/30/16  
 Page Number : 2 of 4

## Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst
--------	--------	----	-------	------	-----------	---------------	---------

**Lab ID** : 20160951-01  
**Client ID** : MW-1  
**Date Sampled** : 9/29/2016 1:50:00 PM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		0.171 +/- 0.570	0.726	pCi/l			
Radium-226	SM 7500 Ra B M*	0.171 +/- 0.118	0.139	pCi/l	10/06/16	10/07/16	AK
Radium-228	EPA 904*/9320*	-0.022 +/- 0.452	0.587	pCi/l	10/04/16	10/19/16	JR

**Lab ID** : 20160951-02  
**Client ID** : MW-2  
**Date Sampled** : 9/29/2016 1:15:00 PM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		0.884 +/- 0.531	0.659	pCi/l			
Radium-226	SM 7500 Ra B M*	0.197 +/- 0.145	0.181	pCi/l	10/06/16	10/07/16	AK
Radium-228	EPA 904*/9320*	0.687 +/- 0.386	0.478	pCi/l	10/04/16	10/19/16	JR

**Lab ID** : 20160951-03  
**Client ID** : MW-6  
**Date Sampled** : 9/29/2016 10:15:00 AM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		1.39 +/- 1.57	1.34	pCi/l			
Radium-226	SM 7500 Ra B M*	0.223 +/- 0.147	0.174	pCi/l	10/06/16	10/07/16	AK
Radium-228	EPA 904*/9320*	1.17 +/- 1.42	1.17	pCi/l	10/24/16	10/27/16	JR

**Lab ID** : 20160951-04  
**Client ID** : MW-6MS  
**Date Sampled** : 9/29/2016 10:25:00 AM  
**Matrix** : NPW

### Radiochemical Analyses

Radium-226	SM 7500 Ra B M*	104		% Rec	10/06/16	10/07/16	AK
Radium-228	EPA 904*/9320*	103		% Rec	10/24/16	10/27/16	JR



Client : SCS Engineers  
 Client Project : KCPL-Iatan Generating Station  
 Lab Number : 20160951  
 Date Reported : 10/28/16  
 Date Received : 09/30/16  
 Page Number : 3 of 4

## Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst
--------	--------	----	-------	------	-----------	---------------	---------

**Lab ID** : 20160951-05  
**Client ID** : MW-6MSD  
**Date Sampled** : 9/29/2016 10:30:00 AM  
**Matrix** : NPW

### Radiochemical Analyses

Radium-226	SM 7500 Ra B M*	16.7	RPD		10/06/16	10/07/16	AK
Radium-228	EPA 904*/9320*	10.3	RPD		10/24/16	10/27/16	JR

**Lab ID** : 20160951-06  
**Client ID** : MW-7  
**Date Sampled** : 9/29/2016 3:15:00 PM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		0.746 +/- 0.603	0.957	pCi/l			
Radium-226	SM 7500 Ra B M*	0.233 +/- 0.134	0.152	pCi/l	10/06/16	10/07/16	AK
Radium-228	EPA 904*/9320*	0.513 +/- 0.469	0.805	pCi/l	10/04/16	10/19/16	JR

**Lab ID** : 20160951-07  
**Client ID** : MW-8  
**Date Sampled** : 9/29/2016 2:45:00 PM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		0.089 +/- 0.566	0.807	pCi/l			
Radium-226	SM 7500 Ra B M*	0.089 +/- 0.130	0.201	pCi/l	10/06/16	10/07/16	AK
Radium-228	EPA 904*/9320*	-0.854 +/- 0.436	0.606	pCi/l	10/04/16	10/19/16	JR

**Lab ID** : 20160951-08  
**Client ID** : MW-9  
**Date Sampled** : 9/29/2016 2:15:00 PM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		2.11 +/- 0.699	0.804	pCi/l			
Radium-226	SM 7500 Ra B M*	0.650 +/- 0.249	0.200	pCi/l	10/06/16	10/07/16	AK
Radium-228	EPA 904*/9320*	1.46 +/- 0.450	0.604	pCi/l	10/04/16	10/19/16	JR



Client : SCS Engineers  
 Client Project : KCPL-Iatan Generating Station  
 Lab Number : 20160951  
 Date Reported : 10/28/16  
 Date Received : 09/30/16  
 Page Number : 4 of 4

## Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst
<b>Lab ID</b> : 20160951-09							
<b>Client ID</b> : MW-10							
<b>Date Sampled</b> : 9/29/2016 11:45:00 AM							
<b>Matrix</b> : NPW							

### Radiochemical Analyses

Combined Radium		1.34 +/- 0.614	0.764	pCi/l			
Radium-226	SM 7500 Ra B M*	0.224 +/- 0.124	0.145	pCi/l	10/06/16	10/07/16	AK
Radium-228	EPA 904*/9320*	1.12 +/- 0.490	0.619	pCi/l	10/04/16	10/19/16	JR

**Lab ID** : 20160951-10  
**Client ID** : DUPLICATE  
**Date Sampled** : 9/29/2016 10:20:00 AM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		0.881 +/- 0.533	0.667	pCi/l			
Radium-226	SM 7500 Ra B M*	0.207 +/- 0.135	0.167	pCi/l	10/06/16	10/07/16	AK
Radium-228	EPA 904*/9320*	0.674 +/- 0.398	0.500	pCi/l	10/04/16	10/19/16	JR

## QC Report

Parameter	Blank	LCS %REC	LCSD %REC	RPD	DUP RPD	RER, NAD or DER	MS %REC	MSD %REC	RPD	Batch ID
Radium-226	0.005	110.0			NC	3.324	104.0	87.6	16.7	R1143
Radium-228	0.558	101.0			NC	0.739	103.0	95.1	10.3	R3869
Radium-228	-0.324	101.0			11.4	0.248	85.7	85.9	0.2	R3863

**Lab Approval:**

Ron Eidson  
 Director of Radiochemistry

# SAMPLE LOGIN

Date Received: 9/30/2016 12:10:5

Lab Number: 20160951

Due: 10/28/2016

Sample Number	Client Sample ID	Matrix	Date Sampled	Container Type	Container Size	Preservation	Preserved Upon Receipt	Custody Seal	Seal Intact
20160951-01 B	MW-1	NPW	09/29/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input type="checkbox"/>	Yes	Yes
20160951-01 A	MW-1	NPW	09/29/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input type="checkbox"/>	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20160951-02 A	MW-2	NPW	09/29/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input type="checkbox"/>	Yes	Yes
20160951-02 B	MW-2	NPW	09/29/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input type="checkbox"/>	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20160951-03 A	MW-6	NPW	09/29/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input type="checkbox"/>	Yes	Yes
20160951-03 B	MW-6	NPW	09/29/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input type="checkbox"/>	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20160951-04 A	MW-6MS	NPW	09/29/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input type="checkbox"/>	Yes	Yes
20160951-04 B	MW-6MS	NPW	09/29/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input type="checkbox"/>	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20160951-05 B	MW-6MSD	NPW	09/29/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input type="checkbox"/>	Yes	Yes
20160951-05 A	MW-6MSD	NPW	09/29/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input type="checkbox"/>	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20160951-06 B	MW-7	NPW	09/29/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input type="checkbox"/>	Yes	Yes
20160951-06 A	MW-7	NPW	09/29/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input type="checkbox"/>	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20160951-07 A	MW-8	NPW	09/29/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input type="checkbox"/>	Yes	Yes
20160951-07 B	MW-8	NPW	09/29/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input type="checkbox"/>	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						

20160951-08 A	MW-9	NPW	09/29/16	Plastic	I L	HNO <sub>3</sub> , pH < 2	Yes
20160951-08 B	MW-9	NPW	09/29/16	Plastic	I L	HNO <sub>3</sub> , pH < 2	Yes
Radium-226			SM 7500 Ra B M*				
Radium-228			EPA 904*/9320*				
20160951-09 A	MW-10	NPW	09/29/16	Plastic	I L	HNO <sub>3</sub> , pH < 2	Yes
20160951-09 B	MW-10	NPW	09/29/16	Plastic	I L	HNO <sub>3</sub> , pH < 2	Yes
Radium-226			SM 7500 Ra B M*				
Radium-228			EPA 904*/9320*				
20160951-10 B	DUPLICATE	NPW	09/29/16	Plastic	I L	HNO <sub>3</sub> , pH < 2	Yes
20160951-10 A	DUPLICATE	NPW	09/29/16	Plastic	I L	HNO <sub>3</sub> , pH < 2	Yes
Radium-226			SM 7500 Ra B M*				
Radium-228			EPA 904*/9320*				

**CONTAINER INSPECTION**

# Coolers **fox** Custody Seals Broken **A** Temperature: **Amb** Ice

Radiation Survey: <300 cpm

**SAMPLE INSPECTION**

Sample Seal Broken  Chain of Custody Record  Labels in Tact

Radiation Survey Complete **N/A**

**Anomalies**

Inspected By: *J. Di.* DATE 9/30/16  
 QA or Designee Review: *Raymond Stasny* DATE 09/30/16  
 Sample Custodian Review: *John Muel* DATE 9/30/16

Project Notes:



Company Name/Address:  
**SCS Engineers**  
 7311 West 130th Street, Suite 100  
 Overland Park, KS 66213

Billing Information:  
**Accounts Payable**  
 7311 West 130th Street, Ste. 100  
 Overland Park, KS 66213

Report to:  
**Jason Franks**

Email To:  
**jfranks@scsengineers.com**

Project Description:  
**KCPL-Iatan Generating Station**  
 Client Project #  
**27213167.16**

City/State Collected:  
**AQUAOPKS-KS-IATAN**

Collected by (print):  
**Adam Parviz**

P.O. #

Rush? (Lab MUST Be Notified)  
 Same Day .....200%  
 Next Day .....100%  
 Two Day .....50%  
 Three Day .....25%

Date Results Needed  
**Standard**  
 Email?  No  Yes  
 FAX?  No  Yes

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs
MW-1	Grab	GW	-	9/29/16	1350	2
MW-2		GW	-		1315	2
MW-6		GW	-		1015	2
MW-7		GW	-		1515	2
MW-8		GW	-		1445	2
MW-9		GW	-		1415	2
MW-10		GW	-		1145	2
DUPLICATE		GW	-		1020	2
MS (MW-6)		GW	-		1025	2
MSD (MW-6)		GW	-		1030	2

\* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other

Remarks:

Relinquished by : (Signature) *AR* Date: 9/29/16 Time: 1616  
 Received by: (Signature) *[Signature]*

Relinquished by : (Signature) *[Signature]* Date: 10/29/16 Time: 1700  
 Received by: (Signature) *[Signature]*

Relinquished by : (Signature) *[Signature]* Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 Received for lab by: (Signature) *Amber Payne* Date: 9/30/16 Time: 1210

Analysis / Container / Preservative

RA226, RA2281L HDPE - HN03

Chain of Custody Page 1 of 1



**KESC**  
 L.A.B S.C.I.E.N.C.E.S

YOUR LAB OF CHOICE

12065 Lebanon Rd  
 Mount Juliet, TN 37122  
 Phone: 615-759-5858  
 Phone: 800-767-5859  
 Fax: 615-759-5859

L# **163041**

Table #

Account: **AQUAOPKS**

Template: **T107350**

Preloght: **564648**

TSR: **206-Jeff Carr**

cooler:

Shipped Via:

Rem./Contaminant

Sample # (lab only)

Hold #

Condition: (lab use only)

COC Seal Intact:  Y  N  NA

pH Checked:  Y  N  NA

NC#:

pH \_\_\_\_\_ Temp \_\_\_\_\_

Flow \_\_\_\_\_ Other \_\_\_\_\_

Samples returned via:  UPS  FedEx  Courier

Temp: **Amus** Bottles Received:

Date: **9/30/16** Time: **1210**

7060951

Jared Morrison  
December 16, 2022

**ATTACHMENT 1-3**  
**November 2016 Sampling Event Laboratory Report**



## SCS Engineers - KS

Sample Delivery Group: L872230  
Samples Received: 11/11/2016  
Project Number: 27213169.16  
Description: KCPL - Iatan Gen Station

Report To: Jason Franks  
7311 West 130th Street, Ste. 100  
Overland Park, KS 66213










Entire Report Reviewed By:



Jeff Carr  
Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



<b><sup>1</sup>Cp: Cover Page</b>	<b>1</b>	
<b><sup>2</sup>Tc: Table of Contents</b>	<b>2</b>	
<b><sup>3</sup>Ss: Sample Summary</b>	<b>3</b>	
<b><sup>4</sup>Cn: Case Narrative</b>	<b>5</b>	
<b><sup>5</sup>Sr: Sample Results</b>	<b>6</b>	
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MW-2 L872230-02	7	
MW-6 L872230-03	8	
MW-7 L872230-04	9	
MW-8 L872230-05	10	
DUPLICATE L872230-06	11	
<b><sup>6</sup>Qc: Quality Control Summary</b>	<b>12</b>	
Gravimetric Analysis by Method 2540 C-2011	12	
Wet Chemistry by Method 9056A	14	
Mercury by Method 7470A	16	
Metals (ICP) by Method 6010B	17	
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<b><sup>7</sup>Gl: Glossary of Terms</b>	<b>20</b>	
<b><sup>8</sup>Al: Accreditations &amp; Locations</b>	<b>21</b>	
<b><sup>9</sup>Sc: Chain of Custody</b>	<b>22</b>	

# SAMPLE SUMMARY



## MW-1 L872230-01 GW

Collected by  
Alex McCormick      Collected date/time  
11/10/16 14:00      Received date/time  
11/11/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG927304	1	11/17/16 03:09	11/17/16 05:50	JM
Mercury by Method 7470A	WG926261	1	11/14/16 10:37	11/15/16 10:18	NJB
Metals (ICP) by Method 6010B	WG926154	1	11/14/16 09:02	11/14/16 13:22	ST
Metals (ICPMS) by Method 6020	WG926442	1	11/15/16 07:56	11/15/16 18:12	RDS
Wet Chemistry by Method 9056A	WG926853	1	11/16/16 11:15	11/16/16 11:15	KCF



## MW-2 L872230-02 GW

Collected by  
Alex McCormick      Collected date/time  
11/10/16 14:55      Received date/time  
11/11/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG927305	1	11/17/16 05:56	11/17/16 06:42	JM
Mercury by Method 7470A	WG926261	1	11/14/16 10:37	11/15/16 10:20	NJB
Metals (ICP) by Method 6010B	WG926154	1	11/14/16 09:02	11/14/16 13:24	ST
Metals (ICPMS) by Method 6020	WG926442	1	11/15/16 07:56	11/15/16 18:16	RDS
Wet Chemistry by Method 9056A	WG926853	1	11/16/16 11:30	11/16/16 11:30	KCF
Wet Chemistry by Method 9056A	WG926853	5	11/16/16 17:04	11/16/16 17:04	KCF



## MW-6 L872230-03 GW

Collected by  
Alex McCormick      Collected date/time  
11/10/16 11:35      Received date/time  
11/11/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG927305	1	11/17/16 05:56	11/17/16 06:42	JM
Mercury by Method 7470A	WG926261	1	11/14/16 10:37	11/15/16 10:22	NJB
Metals (ICP) by Method 6010B	WG926154	1	11/14/16 09:02	11/14/16 13:27	ST
Metals (ICPMS) by Method 6020	WG926442	1	11/15/16 07:56	11/15/16 18:19	RDS
Wet Chemistry by Method 9056A	WG926853	1	11/16/16 12:45	11/16/16 12:45	KCF

## MW-7 L872230-04 GW

Collected by  
Alex McCormick      Collected date/time  
11/10/16 13:05      Received date/time  
11/11/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG927305	1	11/17/16 05:56	11/17/16 06:42	JM
Mercury by Method 7470A	WG926261	1	11/14/16 10:37	11/15/16 10:24	NJB
Metals (ICP) by Method 6010B	WG926154	1	11/14/16 09:02	11/14/16 13:35	ST
Metals (ICPMS) by Method 6020	WG926442	1	11/15/16 07:56	11/15/16 18:23	RDS
Wet Chemistry by Method 9056A	WG926853	1	11/16/16 13:45	11/16/16 13:45	KCF

## MW-8 L872230-05 GW

Collected by  
Alex McCormick      Collected date/time  
11/10/16 13:55      Received date/time  
11/11/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG927305	1	11/17/16 05:56	11/17/16 06:42	JM
Mercury by Method 7470A	WG926261	1	11/14/16 10:37	11/15/16 10:02	NJB
Metals (ICP) by Method 6010B	WG926154	1	11/14/16 09:02	11/14/16 13:11	ST
Metals (ICPMS) by Method 6020	WG926442	1	11/15/16 07:56	11/15/16 22:03	RDS
Wet Chemistry by Method 9056A	WG926853	1	11/16/16 14:00	11/16/16 14:00	KCF

# SAMPLE SUMMARY



## DUPLICATE L872230-06 GW

Collected by: Alex McCornick  
 Collected date/time: 11/10/16 14:00  
 Received date/time: 11/11/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG927305	1	11/17/16 05:56	11/17/16 06:42	JM
Mercury by Method 7470A	WG926261	1	11/14/16 10:37	11/15/16 10:27	NJB
Metals (ICP) by Method 6010B	WG926154	1	11/14/16 09:02	11/14/16 13:38	ST
Metals (ICPMS) by Method 6020	WG926442	1	11/15/16 07:56	11/15/16 18:26	RDS
Wet Chemistry by Method 9056A	WG926853	1	11/16/16 14:44	11/16/16 14:44	KCF

- <sup>1</sup>Cp
- <sup>2</sup>Tc
- <sup>3</sup>Ss
- <sup>4</sup>Cn
- <sup>5</sup>Sr
- <sup>6</sup>Qc
- <sup>7</sup>Gl
- <sup>8</sup>Al
- <sup>9</sup>Sc



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. 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  
Technical Service Representative

- <sup>1</sup> Cp
- <sup>2</sup> Tc
- <sup>3</sup> Ss
- <sup>4</sup> Cn
- <sup>5</sup> Sr
- <sup>6</sup> Qc
- <sup>7</sup> Gl
- <sup>8</sup> Al
- <sup>9</sup> Sc



## Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	484000		10000	1	11/17/2016 05:50	<a href="#">WG927304</a>

1 Cp

2 Tc

## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	5950		1000	1	11/16/2016 11:15	<a href="#">WG926853</a>
Fluoride	274		100	1	11/16/2016 11:15	<a href="#">WG926853</a>
Sulfate	33200		5000	1	11/16/2016 11:15	<a href="#">WG926853</a>

3 Ss

4 Cn

5 Sr

## Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	11/15/2016 10:18	<a href="#">WG926261</a>

6 Qc

7 Gl

## Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	239		5.00	1	11/14/2016 13:22	<a href="#">WG926154</a>
Boron	ND		200	1	11/14/2016 13:22	<a href="#">WG926154</a>
Calcium	136000		1000	1	11/14/2016 13:22	<a href="#">WG926154</a>
Chromium	ND		10.0	1	11/14/2016 13:22	<a href="#">WG926154</a>
Cobalt	ND		10.0	1	11/14/2016 13:22	<a href="#">WG926154</a>

8 Al

9 Sc

## Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	11/15/2016 18:12	<a href="#">WG926442</a>
Arsenic	11.9		2.00	1	11/15/2016 18:12	<a href="#">WG926442</a>
Beryllium	ND		2.00	1	11/15/2016 18:12	<a href="#">WG926442</a>
Cadmium	ND		1.00	1	11/15/2016 18:12	<a href="#">WG926442</a>
Lead	ND		2.00	1	11/15/2016 18:12	<a href="#">WG926442</a>
Selenium	ND		2.00	1	11/15/2016 18:12	<a href="#">WG926442</a>
Thallium	ND		2.00	1	11/15/2016 18:12	<a href="#">WG926442</a>



## Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	71000		10000	1	11/17/2016 06:42	<a href="#">WG927305</a>

## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	8760		1000	1	11/16/2016 11:30	<a href="#">WG926853</a>
Fluoride	331		100	1	11/16/2016 11:30	<a href="#">WG926853</a>
Sulfate	155000		25000	5	11/16/2016 17:04	<a href="#">WG926853</a>

## Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Mercury	ND		0.200	1	11/15/2016 10:20	<a href="#">WG926261</a>

## Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Barium	218		5.00	1	11/14/2016 13:24	<a href="#">WG926154</a>
Boron	ND		200	1	11/14/2016 13:24	<a href="#">WG926154</a>
Calcium	169000		1000	1	11/14/2016 13:24	<a href="#">WG926154</a>
Chromium	ND		10.0	1	11/14/2016 13:24	<a href="#">WG926154</a>
Cobalt	ND		10.0	1	11/14/2016 13:24	<a href="#">WG926154</a>

## Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Antimony	ND		2.00	1	11/15/2016 18:16	<a href="#">WG926442</a>
Arsenic	19.2		2.00	1	11/15/2016 18:16	<a href="#">WG926442</a>
Beryllium	ND		2.00	1	11/15/2016 18:16	<a href="#">WG926442</a>
Cadmium	1.40		1.00	1	11/15/2016 18:16	<a href="#">WG926442</a>
Lead	ND		2.00	1	11/15/2016 18:16	<a href="#">WG926442</a>
Selenium	ND		2.00	1	11/15/2016 18:16	<a href="#">WG926442</a>
Thallium	ND		2.00	1	11/15/2016 18:16	<a href="#">WG926442</a>

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	506000		10000	1	11/17/2016 06:42	<a href="#">WG927305</a>

## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	1290		1000	1	11/16/2016 12:45	<a href="#">WG926853</a>
Fluoride	324		100	1	11/16/2016 12:45	<a href="#">WG926853</a>
Sulfate	31400		5000	1	11/16/2016 12:45	<a href="#">WG926853</a>

## Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	11/15/2016 10:22	<a href="#">WG926261</a>

## Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	289		5.00	1	11/14/2016 13:27	<a href="#">WG926154</a>
Boron	ND		200	1	11/14/2016 13:27	<a href="#">WG926154</a>
Calcium	142000		1000	1	11/14/2016 13:27	<a href="#">WG926154</a>
Chromium	ND		10.0	1	11/14/2016 13:27	<a href="#">WG926154</a>
Cobalt	ND		10.0	1	11/14/2016 13:27	<a href="#">WG926154</a>

## Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	11/15/2016 18:19	<a href="#">WG926442</a>
Arsenic	18.5		2.00	1	11/15/2016 18:19	<a href="#">WG926442</a>
Beryllium	ND		2.00	1	11/15/2016 18:19	<a href="#">WG926442</a>
Cadmium	ND		1.00	1	11/15/2016 18:19	<a href="#">WG926442</a>
Lead	ND		2.00	1	11/15/2016 18:19	<a href="#">WG926442</a>
Selenium	ND		2.00	1	11/15/2016 18:19	<a href="#">WG926442</a>
Thallium	ND		2.00	1	11/15/2016 18:19	<a href="#">WG926442</a>

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	538000		10000	1	11/17/2016 06:42	<a href="#">WG927305</a>

## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	11100		1000	1	11/16/2016 13:45	<a href="#">WG926853</a>
Fluoride	333		100	1	11/16/2016 13:45	<a href="#">WG926853</a>
Sulfate	62600		5000	1	11/16/2016 13:45	<a href="#">WG926853</a>

## Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	11/15/2016 10:24	<a href="#">WG926261</a>

## Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	288		5.00	1	11/14/2016 13:35	<a href="#">WG926154</a>
Boron	ND		200	1	11/14/2016 13:35	<a href="#">WG926154</a>
Calcium	146000		1000	1	11/14/2016 13:35	<a href="#">WG926154</a>
Chromium	ND		10.0	1	11/14/2016 13:35	<a href="#">WG926154</a>
Cobalt	ND		10.0	1	11/14/2016 13:35	<a href="#">WG926154</a>

## Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	11/15/2016 18:23	<a href="#">WG926442</a>
Arsenic	10.4		2.00	1	11/15/2016 18:23	<a href="#">WG926442</a>
Beryllium	ND		2.00	1	11/15/2016 18:23	<a href="#">WG926442</a>
Cadmium	ND		1.00	1	11/15/2016 18:23	<a href="#">WG926442</a>
Lead	ND		2.00	1	11/15/2016 18:23	<a href="#">WG926442</a>
Selenium	ND		2.00	1	11/15/2016 18:23	<a href="#">WG926442</a>
Thallium	ND		2.00	1	11/15/2016 18:23	<a href="#">WG926442</a>

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	471000		10000	1	11/17/2016 06:42	<a href="#">WG927305</a>

## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	1760		1000	1	11/16/2016 14:00	<a href="#">WG926853</a>
Fluoride	415		100	1	11/16/2016 14:00	<a href="#">WG926853</a>
Sulfate	23800		5000	1	11/16/2016 14:00	<a href="#">WG926853</a>

## Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	11/15/2016 10:02	<a href="#">WG926261</a>

## Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	198		5.00	1	11/14/2016 13:11	<a href="#">WG926154</a>
Boron	ND		200	1	11/14/2016 13:11	<a href="#">WG926154</a>
Calcium	135000		1000	1	11/14/2016 13:11	<a href="#">WG926154</a>
Chromium	ND		10.0	1	11/14/2016 13:11	<a href="#">WG926154</a>
Cobalt	ND		10.0	1	11/14/2016 13:11	<a href="#">WG926154</a>

## Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	11/15/2016 22:03	<a href="#">WG926442</a>
Arsenic	6.95		2.00	1	11/15/2016 22:03	<a href="#">WG926442</a>
Beryllium	ND		2.00	1	11/15/2016 22:03	<a href="#">WG926442</a>
Cadmium	ND		1.00	1	11/15/2016 22:03	<a href="#">WG926442</a>
Lead	ND		2.00	1	11/15/2016 22:03	<a href="#">WG926442</a>
Selenium	ND		2.00	1	11/15/2016 22:03	<a href="#">WG926442</a>
Thallium	ND		2.00	1	11/15/2016 22:03	<a href="#">WG926442</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 11/10/16 14:00

L872230

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	419000		10000	1	11/17/2016 06:42	<a href="#">WG927305</a>

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	1750		1000	1	11/16/2016 14:44	<a href="#">WG926853</a>
Fluoride	416		100	1	11/16/2016 14:44	<a href="#">WG926853</a>
Sulfate	23800		5000	1	11/16/2016 14:44	<a href="#">WG926853</a>

3 Ss

4 Cn

5 Sr

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Mercury	ND		0.200	1	11/15/2016 10:27	<a href="#">WG926261</a>

6 Qc

7 Gl

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Barium	201		5.00	1	11/14/2016 13:38	<a href="#">WG926154</a>
Boron	ND		200	1	11/14/2016 13:38	<a href="#">WG926154</a>
Calcium	138000		1000	1	11/14/2016 13:38	<a href="#">WG926154</a>
Chromium	ND		10.0	1	11/14/2016 13:38	<a href="#">WG926154</a>
Cobalt	ND		10.0	1	11/14/2016 13:38	<a href="#">WG926154</a>

8 Al

9 Sc

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Antimony	ND		2.00	1	11/15/2016 18:26	<a href="#">WG926442</a>
Arsenic	6.56		2.00	1	11/15/2016 18:26	<a href="#">WG926442</a>
Beryllium	ND		2.00	1	11/15/2016 18:26	<a href="#">WG926442</a>
Cadmium	ND		1.00	1	11/15/2016 18:26	<a href="#">WG926442</a>
Lead	ND		2.00	1	11/15/2016 18:26	<a href="#">WG926442</a>
Selenium	ND		2.00	1	11/15/2016 18:26	<a href="#">WG926442</a>
Thallium	ND		2.00	1	11/15/2016 18:26	<a href="#">WG926442</a>



Method Blank (MB)

(MB) R3179000-1 11/17/16 05:50

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Dissolved Solids	U		2820	10000

1 Cp

2 Tc

3 Ss

L872126-04 Original Sample (OS) • Duplicate (DUP)

(OS) L872126-04 11/17/16 05:50 • (DUP) R3179000-4 11/17/16 05:50

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Dissolved Solids	508000	500000	1	1.59		5

4 Cn

5 Sr

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

(LCS) R3179000-2 11/17/16 05:50 • (LCSD) R3179000-3 11/17/16 05:50

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Dissolved Solids	8800000	8150000	8550000	92.6	97.2	85.0-115			4.79	5

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3179001-1 11/17/16 06:42

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Dissolved Solids	U		2820	10000

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

L872230-02 Original Sample (OS) • Duplicate (DUP)

(OS) L872230-02 11/17/16 06:42 • (DUP) R3179001-4 11/17/16 06:42

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Dissolved Solids	711000	689000	1	3.05		5

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

(LCS) R3179001-2 11/17/16 06:42 • (LCSD) R3179001-3 11/17/16 06:42

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Dissolved Solids	8800000	8140000	8520000	92.5	96.8	85.0-115			4.56	5

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Method Blank (MB)

(MB) R3178658-1 11/16/16 06:30

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

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

L872230-03 Original Sample (OS) • Duplicate (DUP)

(OS) L872230-03 11/16/16 12:45 • (DUP) R3178658-6 11/16/16 13:30

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	1290	1260	1	2		15
Fluoride	324	325	1	0		15
Sulfate	31400	31500	1	0		15

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

(LCS) R3178658-2 11/16/16 06:45 • (LCSD) R3178658-3 11/16/16 07:00

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Chloride	40000	39000	39100	98	98	80-120			0	15
Fluoride	8000	7860	7880	98	98	80-120			0	15
Sulfate	40000	39100	39200	98	98	80-120			0	15

L871446-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L871446-01 11/16/16 09:46 • (MS) R3178658-5 11/16/16 10:01

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Chloride	50000	7670	58400	101	1	80-120	
Fluoride	5000	445	5560	102	1	80-120	
Sulfate	50000	ND	51000	101	1	80-120	

L872230-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L872230-05 11/16/16 14:00 • (MS) R3178658-7 11/16/16 14:15 • (MSD) R3178658-8 11/16/16 14:29

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Chloride	50000	1760	52500	52500	101	102	1	80-120			0	15
Fluoride	5000	415	5510	5510	102	102	1	80-120			0	15



L872230-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L872230-05 11/16/16 14:00 • (MS) R3178658-7 11/16/16 14:15 • (MSD) R3178658-8 11/16/16 14:29

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Sulfate	50000	23800	73300	73300	99	99	1	80-120			0	15

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Method Blank (MB)

(MB) R3178163-1 11/15/16 09:55

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Mercury	U		0.0490	0.200

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

<sup>4</sup>Cn

<sup>5</sup>Sr

<sup>6</sup>Qc

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

(LCS) R3178163-2 11/15/16 09:57 • (LCSD) R3178163-3 11/15/16 09:59

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 %
Mercury	3.00	2.53	2.45	84	82	80-120			3	20

L872230-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L872230-05 11/15/16 10:02 • (MS) R3178163-4 11/15/16 10:04 • (MSD) R3178163-5 11/15/16 10:06

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 %
Mercury	3.00	ND	2.46	2.26	82	75	1	75-125			9	20

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>Sc





Method Blank (MB)

(MB) R3177964-1 11/14/16 13:04

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Barium	U		1.70	5.00
Boron	U		12.6	200
Calcium	U		46.3	1000
Chromium	U		1.40	10.0
Cobalt	U		2.30	10.0

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

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

(LCS) R3177964-2 11/14/16 13:06 • (LCSD) R3177964-3 11/14/16 13:09

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Barium	1000	1030	1010	103	101	80-120			2	20
Boron	1000	1020	1020	102	102	80-120			0	20
Calcium	10000	9790	9710	98	97	80-120			1	20
Chromium	1000	1020	999	102	100	80-120			2	20
Cobalt	1000	1040	1030	104	103	80-120			1	20

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

L872230-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L872230-05 11/14/16 13:11 • (MS) R3177964-5 11/14/16 13:17 • (MSD) R3177964-6 11/14/16 13:19

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Barium	1000	198	1210	1200	101	100	1	75-125			1	20
Boron	1000	ND	1180	1170	105	103	1	75-125			1	20
Calcium	10000	135000	145000	145000	105	100	1	75-125			0	20
Chromium	1000	ND	1010	998	101	100	1	75-125			1	20
Cobalt	1000	ND	1060	1050	106	105	1	75-125			1	20



Method Blank (MB)

(MB) R3178253-1 11/15/16 16:43

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Antimony	U		0.754	2.00
Arsenic	U		0.250	2.00
Beryllium	U		0.120	2.00
Cadmium	U		0.160	1.00
Lead	U		0.240	2.00
Selenium	U		0.380	2.00
Thallium	U		0.190	2.00

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

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

(LCS) R3178253-2 11/15/16 16:47 • (LCSD) R3178253-3 11/15/16 16:50

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Antimony	57.9	46.1	46.3	80	80	80-120			0	20
Arsenic	50.0	46.0	45.8	92	92	80-120			0	20
Beryllium	50.0	42.4	42.7	85	85	80-120			1	20
Cadmium	50.0	48.4	49.6	97	99	80-120			2	20
Lead	50.0	46.1	46.4	92	93	80-120			0	20
Selenium	50.0	48.6	50.0	97	100	80-120			3	20
Thallium	50.0	46.8	46.7	94	93	80-120			0	20

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

L872167-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L872167-05 11/15/16 16:54 • (MS) R3178253-5 11/15/16 17:01 • (MSD) R3178253-6 11/15/16 17:04

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Antimony	57.9	ND	45.9	46.1	79	80	1	75-125			1	20
Arsenic	50.0	6.84	51.8	52.7	90	92	1	75-125			2	20
Beryllium	50.0	ND	41.3	41.3	83	83	1	75-125			0	20
Cadmium	50.0	ND	49.2	50.3	98	101	1	75-125			2	20
Lead	50.0	ND	46.0	46.4	92	93	1	75-125			1	20
Selenium	50.0	ND	50.4	50.3	101	101	1	75-125			0	20
Thallium	50.0	ND	47.0	47.3	94	95	1	75-125			1	20



L872230-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L872230-05 11/15/16 22:03 • (MS) R3178253-12 11/15/16 22:06 • (MSD) R3178253-13 11/15/16 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 %
Antimony	57.9	ND	48.7	49.6	84	86	1	75-125			2	20
Arsenic	50.0	6.95	55.3	55.7	97	97	1	75-125			1	20
Beryllium	50.0	ND	46.3	46.7	93	93	1	75-125			1	20
Cadmium	50.0	ND	50.2	50.9	100	102	1	75-125			1	20
Lead	50.0	ND	48.8	49.8	98	100	1	75-125			2	20
Selenium	50.0	ND	51.6	50.8	103	102	1	75-125			2	20
Thallium	50.0	ND	48.9	49.8	98	100	1	75-125			2	20

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

L872375-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L872375-01 11/15/16 22:13 • (MS) R3178253-14 11/15/16 22:16 • (MSD) R3178253-15 11/15/16 22:20

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 %
Antimony	57.9	U	47.1	47.0	81	81	1	75-125			0	20
Arsenic	50.0	1.26	49.0	48.4	96	94	1	75-125			1	20
Beryllium	50.0	U	45.6	45.1	91	90	1	75-125			1	20
Cadmium	50.0	U	50.5	50.0	101	100	1	75-125			1	20
Lead	50.0	0.553	49.1	48.1	97	95	1	75-125			2	20
Selenium	50.0	U	49.3	49.1	99	98	1	75-125			0	20
Thallium	50.0	U	47.7	47.8	95	96	1	75-125			0	20

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



## Abbreviations and Definitions

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SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
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.
Rec.	Recovery.

## Qualifier                      Description

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The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



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



## State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Connecticut	PH-0197	North Carolina <sup>1</sup>	DW21704
Florida	E87487	North Carolina <sup>2</sup>	41
Georgia	NELAP	North Dakota	R-140
Georgia <sup>1</sup>	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky <sup>1</sup>	90010	South Dakota	n/a
Kentucky <sup>2</sup>	16	Tennessee <sup>14</sup>	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas <sup>5</sup>	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

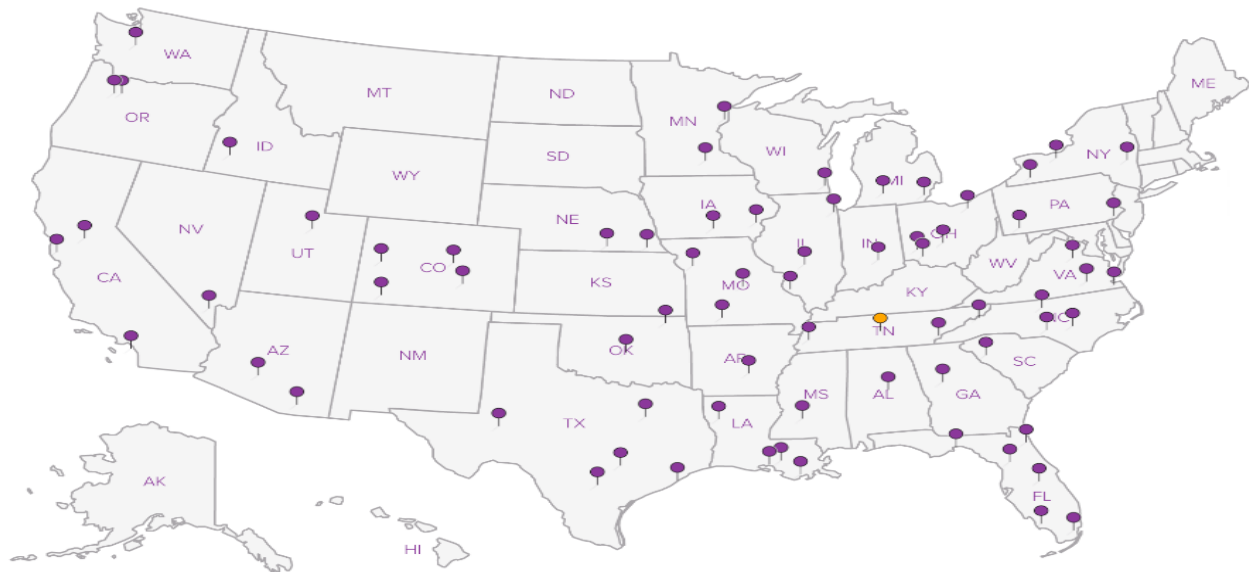
## Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA	100789
A2LA – ISO 17025 <sup>5</sup>	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>n/a</sup> Accreditation not applicable

## Our Locations

ESC Lab Sciences 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. **ESC Lab Sciences performs all testing at our central laboratory.**



**SCS Engineers - KS**  
 7311 West 130th Street, Ste. 100  
 Overland Park, KS 66213

Billing Information & Quote Number:  
**Accounts Payable**  
 7311 West 130th Street, Ste. 100  
 Overland Park, KS 66213

Report to:  
**Jason Franks**

Email To: **jfranks@scsengineers.com**

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

City/State Collected: **IATAN, MO**

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

Client Project #  
**2721316816**

Lab Project #  
**AQUAOPKS-IATAN**

Collected by (print):  
**Alex McCormick**

Site/Facility ID #

P.O. #

Collected by (signature):  
**Alex McCormick**

**Rush?** (Lab MUST Be Notified)  
 \_\_\_ Same Day .....200%  
 \_\_\_ Next Day .....100%  
 \_\_\_ Two Day .....50%  
 \_\_\_ Three Day .....25%

Date Results Needed  
 Email? \_\_\_ No **X** Yes  
 FAX? \_\_\_ No \_\_\_ Yes

Immediately  
 Packed on Ice N **Y** X

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs												
MW-1	Grab	GW		11/9/16	1400	3	X	X	X									
MW-2		GW			1455	3	X	X	X									
MW-6		GW			1135	3	X	X	X									
MW-7		GW			1305	3	X	X	X									
MW-8		GW			1355	3	X	X	X									
DUPLICATE		GW			1400	3	X	X	X									
MW-8 MS		GW			1405	3	X	X	X									
MW-8 MSD		GW			1410	3	X	X	X									

Analysis / Container / Preservative										
Anions - Clid, F, SO4	125mlHDPE-NoPres									
Metals	250mlHDPE-HNO3	< 2								
TDS	250mlHDPE-NoPres									

Chain of Custody Page **1** of **1**



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

YOUR LAB OF CHOICE

L# **L872230**

**J129**

Acctnum: **AQUAOPKS**  
 Template: **T117511**  
 Prelogin: **P575624**  
 TSR: **206 - Jeff Carr**  
 PB:

Shipped Via:

Rem./Contaminant	Sample # (lab only)
	-01
	-02
	-03
	-04
	-05
	-06
	-05
	-05

\* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other  
 Remarks: 6010 Metals - Ba,B,Ca,Cr,Co 6020 metals Sb,As,Be,Cd,Pb,Se 7470 metals - Hg

pH \_\_\_\_\_ Temp \_\_\_\_\_  
 Flow \_\_\_\_\_ Other \_\_\_\_\_

Relinquished by: (Signature) <b>Alex McCormick</b>	Date: <b>11/10/16</b>	Time: <b>1435</b>	Received by: (Signature) <b>John Howell</b>	Samples returned via: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> Courier <input checked="" type="checkbox"/> SWA	Hold #
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: <b>21.9</b> °C Bottles Received: <b>24</b>	Condition: (lab use only) <b>OK TO I</b>
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) <b>R1</b>	Date: <b>11-11-16</b> Time: <b>0900</b>	COC Seal Intact: ___ Y ___ N ___ NA pH Checked: <b>&lt; 2</b> NCF:



L · A · B   S · C · I · E · N · C · E · S

YOUR LAB OF CHOICE

### Cooler Receipt Form

Client: <u>AQUAOPKS</u>	SDG#	<u>U87230</u>
Cooler Received/Opened On: <u>11/11/16</u>	Temperature Upon Receipt:	<u>2.1 °c</u>
Received By: <u>Richard Hughes</u>		
Signature: <u>[Signature]</u>		

Receipt Check List	Yes	No	N/A
Were custody seals on outside of cooler and intact?			<u>✓</u>
Were custody papers properly filled out?	<u>✓</u>		
Did all bottles arrive in good condition?	<u>✓</u>		
Were correct bottles used for the analyses requested?	<u>✓</u>		
Was sufficient amount of sample sent in each bottle?	<u>✓</u>		
Were all applicable sample containers correctly preserved and checked for preservation? (Any not in accepted range noted on COC)	<u>✓</u>		
If applicable, was an observable VOA headspace present?			<u>✓</u>
Non Conformance Generated. (If yes see attached NCF)			



## SCS Engineers - KS

Sample Delivery Group: L872236  
Samples Received: 11/11/2016  
Project Number: 27213167.16  
Description: KCPL - Iatan Gen Station - CCR Groundwater

Report To: Jason Franks  
7311 West 130th Street, Ste. 100  
Overland Park, KS 66213

Entire Report Reviewed By:



Jeff Carr  
Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.





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<b><sup>2</sup>Tc: Table of Contents</b>	<b>2</b>	
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<b><sup>4</sup>Cn: Case Narrative</b>	<b>4</b>	
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<b><sup>6</sup>Qc: Quality Control Summary</b>	<b>7</b>	
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# SAMPLE SUMMARY



## MW-9 L872236-01 GW

Collected by: Alex McCornick  
 Collected date/time: 11/09/16 16:20  
 Received date/time: 11/11/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG926830	1	11/15/16 23:54	11/16/16 01:43	JM
Mercury by Method 7470A	WG925950	1	11/12/16 06:29	11/14/16 12:31	NJB
Metals (ICP) by Method 6010B	WG925893	1	11/14/16 17:15	11/15/16 10:54	CCE
Metals (ICPMS) by Method 6020	WG926442	1	11/15/16 07:56	11/15/16 18:30	JPD
Wet Chemistry by Method 9056A	WG926853	1	11/16/16 14:59	11/16/16 14:59	CM

1  
Cp

2  
Tc

3  
Ss

4  
Cn

## MW-10 L872236-02 GW

Collected by: Alex McCornick  
 Collected date/time: 11/09/16 15:30  
 Received date/time: 11/11/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG926830	1	11/15/16 23:54	11/16/16 01:43	JM
Mercury by Method 7470A	WG925950	1	11/12/16 06:29	11/14/16 12:34	NJB
Metals (ICP) by Method 6010B	WG925893	1	11/14/16 17:15	11/15/16 11:42	CCE
Metals (ICPMS) by Method 6020	WG926442	1	11/15/16 07:56	11/15/16 18:33	JPD
Wet Chemistry by Method 9056A	WG926853	1	11/16/16 15:14	11/16/16 15:14	CM

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. 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  
Technical Service Representative

- <sup>1</sup> Cp
- <sup>2</sup> Tc
- <sup>3</sup> Ss
- <sup>4</sup> Cn
- <sup>5</sup> Sr
- <sup>6</sup> Qc
- <sup>7</sup> Gl
- <sup>8</sup> Al
- <sup>9</sup> Sc



## Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	476000		10000	1	11/16/2016 01:43	<a href="#">WG926830</a>

1 Cp

2 Tc

## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	ND		1000	1	11/16/2016 14:59	<a href="#">WG926853</a>
Fluoride	383		100	1	11/16/2016 14:59	<a href="#">WG926853</a>
Sulfate	23000		5000	1	11/16/2016 14:59	<a href="#">WG926853</a>

3 Ss

4 Cn

5 Sr

## Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	11/14/2016 12:31	<a href="#">WG925950</a>

6 Qc

7 Gl

## Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	276		5.00	1	11/15/2016 10:54	<a href="#">WG925893</a>
Boron	ND		200	1	11/15/2016 10:54	<a href="#">WG925893</a>
Calcium	103000		1000	1	11/15/2016 10:54	<a href="#">WG925893</a>
Chromium	ND		10.0	1	11/15/2016 10:54	<a href="#">WG925893</a>
Cobalt	ND		10.0	1	11/15/2016 10:54	<a href="#">WG925893</a>
Lithium	44.5		15.0	1	11/15/2016 10:54	<a href="#">WG925893</a>
Molybdenum	ND		5.00	1	11/15/2016 10:54	<a href="#">WG925893</a>

8 Al

9 Sc

## Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	11/15/2016 18:30	<a href="#">WG926442</a>
Arsenic	15.6		2.00	1	11/15/2016 18:30	<a href="#">WG926442</a>
Beryllium	ND		2.00	1	11/15/2016 18:30	<a href="#">WG926442</a>
Cadmium	ND		1.00	1	11/15/2016 18:30	<a href="#">WG926442</a>
Lead	ND		2.00	1	11/15/2016 18:30	<a href="#">WG926442</a>
Selenium	ND		2.00	1	11/15/2016 18:30	<a href="#">WG926442</a>
Thallium	ND		2.00	1	11/15/2016 18:30	<a href="#">WG926442</a>



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	516000		10000	1	11/16/2016 01:43	<a href="#">WG926830</a>

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	9150		1000	1	11/16/2016 15:14	<a href="#">WG926853</a>
Fluoride	642		100	1	11/16/2016 15:14	<a href="#">WG926853</a>
Sulfate	17400		5000	1	11/16/2016 15:14	<a href="#">WG926853</a>

3 Ss

4 Cn

5 Sr

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	11/14/2016 12:34	<a href="#">WG925950</a>

6 Qc

7 Gl

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	231		5.00	1	11/15/2016 11:42	<a href="#">WG925893</a>
Boron	ND		200	1	11/15/2016 11:42	<a href="#">WG925893</a>
Calcium	124000		1000	1	11/15/2016 11:42	<a href="#">WG925893</a>
Chromium	ND		10.0	1	11/15/2016 11:42	<a href="#">WG925893</a>
Cobalt	ND		10.0	1	11/15/2016 11:42	<a href="#">WG925893</a>
Lithium	58.6		15.0	1	11/15/2016 11:42	<a href="#">WG925893</a>
Molybdenum	ND		5.00	1	11/15/2016 11:42	<a href="#">WG925893</a>

8 Al

9 Sc

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	11/15/2016 18:33	<a href="#">WG926442</a>
Arsenic	16.5		2.00	1	11/15/2016 18:33	<a href="#">WG926442</a>
Beryllium	ND		2.00	1	11/15/2016 18:33	<a href="#">WG926442</a>
Cadmium	ND		1.00	1	11/15/2016 18:33	<a href="#">WG926442</a>
Lead	ND		2.00	1	11/15/2016 18:33	<a href="#">WG926442</a>
Selenium	ND		2.00	1	11/15/2016 18:33	<a href="#">WG926442</a>
Thallium	ND		2.00	1	11/15/2016 18:33	<a href="#">WG926442</a>



Method Blank (MB)

(MB) R3178668-1 11/16/16 01:43

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Dissolved Solids	U		2820	10000

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

L871801-03 Original Sample (OS) • Duplicate (DUP)

(OS) L871801-03 11/16/16 01:43 • (DUP) R3178668-4 11/16/16 01:43

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Dissolved Solids	2080000	2150000	1	3.08		5

7 Gl

8 Al

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

(LCS) R3178668-2 11/16/16 01:43 • (LCSD) R3178668-3 11/16/16 01:43

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Dissolved Solids	8800000	8160000	8360000	92.7	95.0	85.0-115			2.42	5

9 Sc



Method Blank (MB)

(MB) R3178658-1 11/16/16 06:30

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

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

L872230-03 Original Sample (OS) • Duplicate (DUP)

(OS) L872230-03 11/16/16 12:45 • (DUP) R3178658-6 11/16/16 13:30

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	1290	1260	1	2		15
Fluoride	324	325	1	0		15
Sulfate	31400	31500	1	0		15

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

(LCS) R3178658-2 11/16/16 06:45 • (LCSD) R3178658-3 11/16/16 07:00

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Chloride	40000	39000	39100	98	98	80-120			0	15
Fluoride	8000	7860	7880	98	98	80-120			0	15
Sulfate	40000	39100	39200	98	98	80-120			0	15

L871446-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L871446-01 11/16/16 09:46 • (MS) R3178658-5 11/16/16 10:01

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Chloride	50000	7670	58400	101	1	80-120	
Fluoride	5000	445	5560	102	1	80-120	
Sulfate	50000	ND	51000	101	1	80-120	

L872230-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L872230-05 11/16/16 14:00 • (MS) R3178658-7 11/16/16 14:15 • (MSD) R3178658-8 11/16/16 14:29

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Chloride	50000	1760	52500	52500	101	102	1	80-120			0	15
Fluoride	5000	415	5510	5510	102	102	1	80-120			0	15



L872230-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L872230-05 11/16/16 14:00 • (MS) R3178658-7 11/16/16 14:15 • (MSD) R3178658-8 11/16/16 14:29

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Sulfate	50000	23800	73300	73300	99	99	1	80-120			0	15

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc





Method Blank (MB)

(MB) R3177851-1 11/14/16 11:12

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Mercury	U		0.0490	0.200

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

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

(LCS) R3177851-2 11/14/16 11:15 • (LCSD) R3177851-3 11/14/16 11:18

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Mercury	3.00	3.15	3.13	105	104	80-120			1	20

L872169-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L872169-01 11/14/16 11:21 • (MS) R3177851-4 11/14/16 11:24 • (MSD) R3177851-5 11/14/16 11:27

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Mercury	3.00	ND	3.06	3.03	102	101	1	75-125			1	20

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Method Blank (MB)

(MB) R3178137-7 11/15/16 10:46

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Barium	U		1.70	5.00
Boron	U		12.6	200
Calcium	U		46.3	1000
Chromium	U		1.40	10.0
Cobalt	U		2.30	10.0
Lithium	U		5.30	15.0
Molybdenum	U		1.60	5.00

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

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

(LCS) R3178137-8 11/15/16 10:49 • (LCSD) R3178137-9 11/15/16 10:51

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Barium	1000	1020	1010	102	101	80-120			1	20
Boron	1000	981	984	98	98	80-120			0	20
Calcium	10000	9540	9470	95	95	80-120			1	20
Chromium	1000	997	988	100	99	80-120			1	20
Cobalt	1000	1020	1020	102	102	80-120			0	20
Lithium	1000	999	992	100	99	80-120			1	20
Molybdenum	1000	984	978	98	98	80-120			1	20

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

L872236-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L872236-01 11/15/16 10:54 • (MS) R3178137-11 11/15/16 10:59 • (MSD) R3178137-12 11/15/16 11:01

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Barium	1000	276	1270	1260	99	99	1	75-125			1	20
Boron	1000	ND	1130	1140	98	99	1	75-125			1	20
Calcium	10000	103000	111000	111000	79	78	1	75-125			0	20
Chromium	1000	ND	987	979	99	98	1	75-125			1	20
Cobalt	1000	ND	1030	1030	103	103	1	75-125			1	20
Lithium	1000	44.5	1040	1030	99	99	1	75-125			0	20
Molybdenum	1000	ND	988	972	99	97	1	75-125			2	20



Method Blank (MB)

(MB) R3178253-1 11/15/16 16:43

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Antimony	U		0.754	2.00
Arsenic	U		0.250	2.00
Beryllium	U		0.120	2.00
Cadmium	U		0.160	1.00
Lead	U		0.240	2.00
Selenium	U		0.380	2.00
Thallium	U		0.190	2.00

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

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

(LCS) R3178253-2 11/15/16 16:47 • (LCSD) R3178253-3 11/15/16 16:50

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Antimony	57.9	46.1	46.3	80	80	80-120			0	20
Arsenic	50.0	46.0	45.8	92	92	80-120			0	20
Beryllium	50.0	42.4	42.7	85	85	80-120			1	20
Cadmium	50.0	48.4	49.6	97	99	80-120			2	20
Lead	50.0	46.1	46.4	92	93	80-120			0	20
Selenium	50.0	48.6	50.0	97	100	80-120			3	20
Thallium	50.0	46.8	46.7	94	93	80-120			0	20

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

L872167-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L872167-05 11/15/16 16:54 • (MS) R3178253-5 11/15/16 17:01 • (MSD) R3178253-6 11/15/16 17:04

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Antimony	57.9	ND	45.9	46.1	79	80	1	75-125			1	20
Arsenic	50.0	6.84	51.8	52.7	90	92	1	75-125			2	20
Beryllium	50.0	ND	41.3	41.3	83	83	1	75-125			0	20
Cadmium	50.0	ND	49.2	50.3	98	101	1	75-125			2	20
Lead	50.0	ND	46.0	46.4	92	93	1	75-125			1	20
Selenium	50.0	ND	50.4	50.3	101	101	1	75-125			0	20
Thallium	50.0	ND	47.0	47.3	94	95	1	75-125			1	20



L872230-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L872230-05 11/15/16 22:03 • (MS) R3178253-12 11/15/16 22:06 • (MSD) R3178253-13 11/15/16 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 %
Antimony	57.9	ND	48.7	49.6	84	86	1	75-125			2	20
Arsenic	50.0	6.95	55.3	55.7	97	97	1	75-125			1	20
Beryllium	50.0	ND	46.3	46.7	93	93	1	75-125			1	20
Cadmium	50.0	ND	50.2	50.9	100	102	1	75-125			1	20
Lead	50.0	ND	48.8	49.8	98	100	1	75-125			2	20
Selenium	50.0	ND	51.6	50.8	103	102	1	75-125			2	20
Thallium	50.0	ND	48.9	49.8	98	100	1	75-125			2	20

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

L872375-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L872375-01 11/15/16 22:13 • (MS) R3178253-14 11/15/16 22:16 • (MSD) R3178253-15 11/15/16 22:20

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 %
Antimony	57.9	U	47.1	47.0	81	81	1	75-125			0	20
Arsenic	50.0	1.26	49.0	48.4	96	94	1	75-125			1	20
Beryllium	50.0	U	45.6	45.1	91	90	1	75-125			1	20
Cadmium	50.0	U	50.5	50.0	101	100	1	75-125			1	20
Lead	50.0	0.553	49.1	48.1	97	95	1	75-125			2	20
Selenium	50.0	U	49.3	49.1	99	98	1	75-125			0	20
Thallium	50.0	U	47.7	47.8	95	96	1	75-125			0	20

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



## Abbreviations and Definitions

---

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
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.
Rec.	Recovery.

## Qualifier                      Description

---

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



ESC Lab Sciences 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.



## State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Connecticut	PH-0197	North Carolina <sup>1</sup>	DW21704
Florida	E87487	North Carolina <sup>2</sup>	41
Georgia	NELAP	North Dakota	R-140
Georgia <sup>1</sup>	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky <sup>1</sup>	90010	South Dakota	n/a
Kentucky <sup>2</sup>	16	Tennessee <sup>14</sup>	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas <sup>5</sup>	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

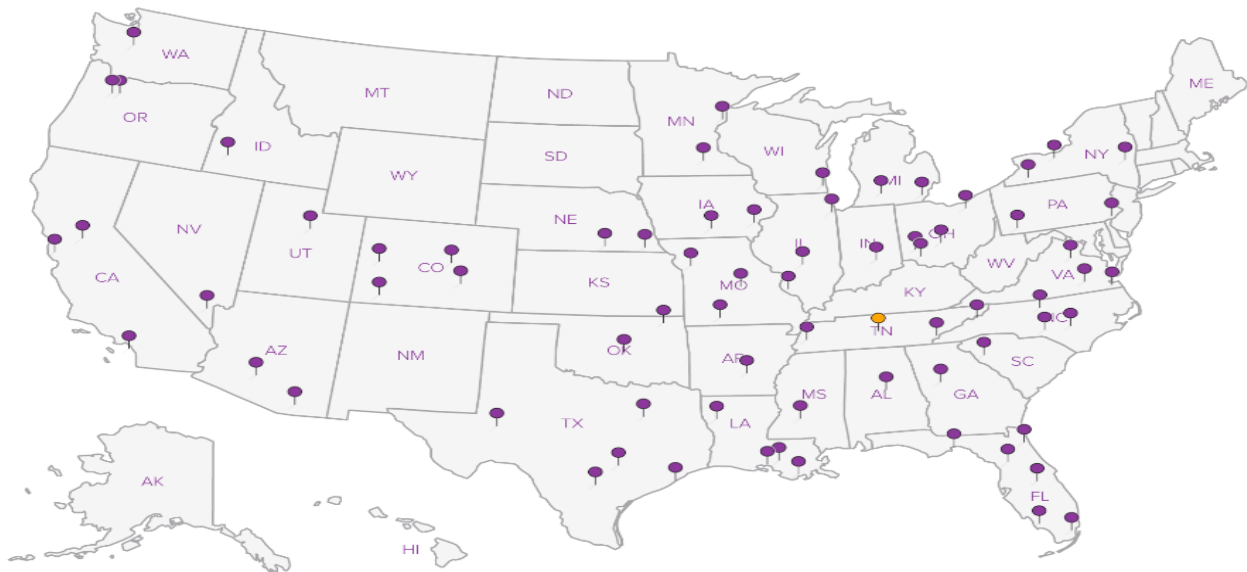
## Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA	100789
A2LA – ISO 17025 <sup>5</sup>	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>n/a</sup> Accreditation not applicable

## Our Locations

ESC Lab Sciences 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. **ESC Lab Sciences performs all testing at our central laboratory.**







L·A·B S·C·I·E·N·C·E·S

YOUR LAB OF CHOICE

### Cooler Receipt Form

Client: <i>AQUADPKS</i>	SDG#	<i>6872236</i>
Cooler Received/Opened On: <i>11/11/16</i>	Temperature Upon Receipt:	<i>21</i> °c
Received By: <i>Richard Hughes</i>		
Signature: <i>[Signature]</i>		

Receipt Check List			
	Yes	No	N/A
Were custody seals on outside of cooler and intact?			<input checked="" type="checkbox"/>
Were custody papers properly filled out?	<input checked="" type="checkbox"/>		
Did all bottles arrive in good condition?	<input checked="" type="checkbox"/>		
Were correct bottles used for the analyses requested?	<input checked="" type="checkbox"/>		
Was sufficient amount of sample sent in each bottle?	<input checked="" type="checkbox"/>		
Were all applicable sample containers correctly preserved and checked for preservation? (Any not in accepted range noted on COC)	<input checked="" type="checkbox"/>		
If applicable, was an observable VOA headspace present?			<input checked="" type="checkbox"/>
Non Conformance Generated. (If yes see attached NCF)			



## SCS Engineers - KS

Sample Delivery Group: L872238  
Samples Received: 11/11/2016  
Project Number: 27213167.16  
Description: KCPL - Iatan Generating Station

Report To: Jason Franks  
7311 West 130th Street, Ste. 100  
Overland Park, KS 66213










Entire Report Reviewed By:



Jeff Carr  
Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



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<b><sup>2</sup>Tc: Table of Contents</b>	<b>2</b>	
<b><sup>3</sup>Ss: Sample Summary</b>	<b>3</b>	
<b><sup>4</sup>Cn: Case Narrative</b>	<b>4</b>	
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# SAMPLE SUMMARY



## MW-1 L872238-01 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Metals (ICP) by Method 6010B	WG926445	1	11/15/16 17:01	11/16/16 01:53	LTB

Collected by Alex McCormick  
 Collected date/time 11/09/16 14:00  
 Received date/time 11/11/16 09:00



## MW-2 L872238-02 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Metals (ICP) by Method 6010B	WG926445	1	11/15/16 17:01	11/16/16 01:56	LTB

Collected by Alex McCormick  
 Collected date/time 11/09/16 14:55  
 Received date/time 11/11/16 09:00



## MW-6 L872238-03 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Metals (ICP) by Method 6010B	WG926445	1	11/15/16 17:01	11/16/16 01:59	LTB

Collected by Alex McCormick  
 Collected date/time 11/09/16 11:35  
 Received date/time 11/11/16 09:00



## MW-7 L872238-04 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Metals (ICP) by Method 6010B	WG926445	1	11/15/16 17:01	11/16/16 02:07	LTB

Collected by Alex McCormick  
 Collected date/time 11/09/16 13:05  
 Received date/time 11/11/16 09:00



## MW-8 L872238-05 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Metals (ICP) by Method 6010B	WG926445	1	11/15/16 17:01	11/16/16 01:43	LTB

Collected by Alex McCormick  
 Collected date/time 11/09/16 13:55  
 Received date/time 11/11/16 09:00

## DUPLICATE L872238-06 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Metals (ICP) by Method 6010B	WG926445	1	11/15/16 17:01	11/16/16 02:10	LTB

Collected by Alex McCormick  
 Collected date/time 11/09/16 14:00  
 Received date/time 11/11/16 09:00



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. 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  
Technical Service Representative

- <sup>1</sup> Cp
- <sup>2</sup> Tc
- <sup>3</sup> Ss
- <sup>4</sup> Cn
- <sup>5</sup> Sr
- <sup>6</sup> Qc
- <sup>7</sup> Gl
- <sup>8</sup> Al
- <sup>9</sup> Sc



Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Lithium	55.5		15.0	1	11/16/2016 01:53	<a href="#">WG926445</a>
Molybdenum	ND		5.00	1	11/16/2016 01:53	<a href="#">WG926445</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Lithium	55.3		15.0	1	11/16/2016 01:56	<a href="#">WG926445</a>
Molybdenum	ND		5.00	1	11/16/2016 01:56	<a href="#">WG926445</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Lithium	36.6		15.0	1	11/16/2016 01:59	<a href="#">WG926445</a>
Molybdenum	ND		5.00	1	11/16/2016 01:59	<a href="#">WG926445</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Lithium	40.6		15.0	1	11/16/2016 02:07	<a href="#">WG926445</a>
Molybdenum	ND		5.00	1	11/16/2016 02:07	<a href="#">WG926445</a>

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc





Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Lithium	42.1		15.0	1	11/16/2016 01:43	<a href="#">WG926445</a>
Molybdenum	ND		5.00	1	11/16/2016 01:43	<a href="#">WG926445</a>

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Lithium	41.5		15.0	1	11/16/2016 02:10	<a href="#">WG926445</a>
Molybdenum	ND		5.00	1	11/16/2016 02:10	<a href="#">WG926445</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3178319-1 11/16/16 01:35

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Lithium	U		5.30	15.0
Molybdenum	U		1.60	5.00

1 Cp

2 Tc

3 Ss

4 Cn

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

(LCS) R3178319-2 11/16/16 01:38 • (LCSD) R3178319-3 11/16/16 01:40

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Lithium	1000	1030	1030	103	103	80-120			0	20
Molybdenum	1000	1090	1090	109	109	80-120			0	20

5 Sr

6 Qc

L872238-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L872238-05 11/16/16 01:43 • (MS) R3178319-5 11/16/16 01:48 • (MSD) R3178319-6 11/16/16 01:51

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Lithium	1000	42.1	1090	1070	105	103	1	75-125			1	20
Molybdenum	1000	ND	1110	1100	111	109	1	75-125			1	20

7 Gl

8 Al

9 Sc



## Abbreviations and Definitions

---

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
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.
Rec.	Recovery.

Qualifier	Description
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The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



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Connecticut	PH-0197	North Carolina <sup>1</sup>	DW21704
Florida	E87487	North Carolina <sup>2</sup>	41
Georgia	NELAP	North Dakota	R-140
Georgia <sup>1</sup>	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
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Kansas	E-10277	South Carolina	84004
Kentucky <sup>1</sup>	90010	South Dakota	n/a
Kentucky <sup>2</sup>	16	Tennessee <sup>14</sup>	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas <sup>5</sup>	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

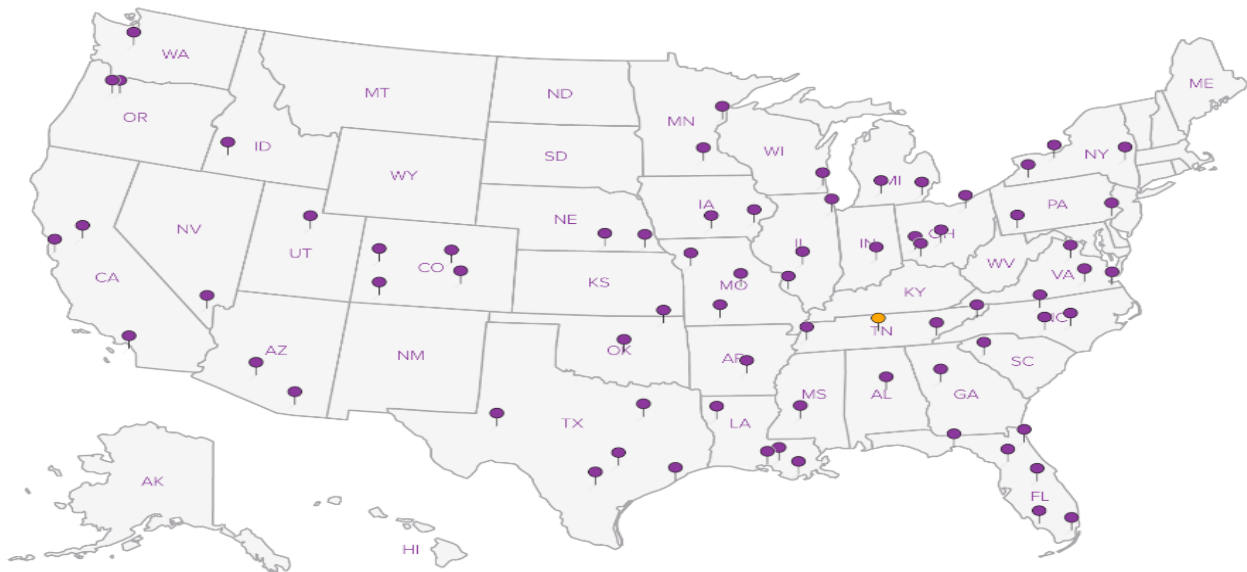
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A2LA – ISO 17025 <sup>5</sup>	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>n/a</sup> Accreditation not applicable

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L · A · B   S · C · I · E · N · C · E · S

YOUR LAB OF CHOICE

### Cooler Receipt Form

Client: <b>AQUAPKS</b>	SDG#	<b>LG72238</b>
Cooler Received/Opened On: <b>11/11/16</b>	Temperature Upon Receipt:	<b>2.1 °C</b>

Received By: **Richard Hughes**

Signature: *[Handwritten Signature]*

Receipt Check List			
	Yes	No	N/A
Were custody seals on outside of cooler and intact?			/
Were custody papers properly filled out?	/		
Did all bottles arrive in good condition?	/		
Were correct bottles used for the analyses requested?	/		
Was sufficient amount of sample sent in each bottle?	/		
Were all applicable sample containers correctly preserved and checked for preservation? (Any not in accepted range noted on COC)	/		
If applicable, was an observable VOA headspace present?			/
Non Conformance Generated. (If yes see attached NCF)			

## Case Narrative

### Lab No: 20161105

This report contains the analytical results for the 10 sample(s) received under chain of custody by ESC Lab Sciences on 11/11/2016 12:00:11 PM. These samples are associated with your 27213167.16 project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted below:

The test results in this report meet all NELAC requirements unless noted below:

This report shall not be reproduced, except in full, without the written approval of ESC Lab Sciences.

All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client.

Results have been reviewed by the Director of Radiochemistry or their designees and is approved for release.

### Observations / Nonconformances

L872830





Client : SCS Engineers  
 Client Project : 27213167.16  
 Lab Number : 20161105  
 Date Reported : 12/02/16  
 Date Received : 11/11/16  
 Page Number : 2 of 4

## Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst
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**Lab ID** : 20161105-01  
**Client ID** : MW-1  
**Date Sampled** : 11/9/2016 2:00:00 PM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium	0.360 +/- 0.698	0.568	pCi/l				
Radium-226 SM 7500 Ra B M*	0.195 +/- 0.166	0.230	pCi/l		11/23/16	11/27/16	AK
Radium-228 EPA 904*/9320*	0.165 +/- 0.532	0.338	pCi/l		11/25/16	11/29/16	JR

**Lab ID** : 20161105-02  
**Client ID** : MW-2  
**Date Sampled** : 11/9/2016 2:55:00 PM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium	0.707 +/- 0.844	0.622	pCi/l				
Radium-226 SM 7500 Ra B M*	0.159 +/- 0.130	0.179	pCi/l		11/23/16	11/27/16	AK
Radium-228 EPA 904*/9320*	0.548 +/- 0.714	0.443	pCi/l		11/25/16	11/29/16	JR

**Lab ID** : 20161105-03  
**Client ID** : MW-6  
**Date Sampled** : 11/9/2016 11:35:00 AM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium	0.629 +/- 0.631	0.468	pCi/l				
Radium-226 SM 7500 Ra B M*	0.139 +/- 0.100	0.108	pCi/l		11/23/16	11/27/16	AK
Radium-228 EPA 904*/9320*	0.490 +/- 0.531	0.360	pCi/l		11/25/16	11/29/16	JR

**Lab ID** : 20161105-04  
**Client ID** : MW-7  
**Date Sampled** : 11/9/2016 1:05:00 PM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium	0.349 +/- 0.785	0.677	pCi/l				
Radium-226 SM 7500 Ra B M*	0.285 +/- 0.138	0.130	pCi/l		11/23/16	11/27/16	AK
Radium-228 EPA 904*/9320*	0.064 +/- 0.647	0.547	pCi/l		11/25/16	11/29/16	JR



Client : SCS Engineers  
 Client Project : 27213167.16  
 Lab Number : 20161105  
 Date Reported : 12/02/16  
 Date Received : 11/11/16  
 Page Number : 3 of 4

## Analytical Report

	Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst
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**Lab ID** : 20161105-05  
**Client ID** : MW-8  
**Date Sampled** : 11/9/2016 1:55:00 PM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		1.82 +/- 0.858	0.603	pCi/l				
Radium-226	SM 7500 Ra B M*	0.387 +/- 0.201	0.214	pCi/l		11/23/16	11/27/16	AK
Radium-228	EPA 904*/9320*	1.43 +/- 0.657	0.389	pCi/l		11/25/16	11/29/16	JR

**Lab ID** : 20161105-06  
**Client ID** : DUPLICATE  
**Date Sampled** : 11/9/2016 2:00:00 PM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		0.286 +/- 1.02	0.823	pCi/l				
Radium-226	SM 7500 Ra B M*	0.204 +/- 0.158	0.212	pCi/l		11/23/16	11/27/16	AK
Radium-228	EPA 904*/9320*	0.082 +/- 0.862	0.611	pCi/l		11/25/16	11/29/16	JR

**Lab ID** : 20161105-07  
**Client ID** : MW-8 MS  
**Date Sampled** : 11/9/2016 2:05:00 PM  
**Matrix** : NPW

### Radiochemical Analyses

Radium-226	SM 7500 Ra B M*	110		% Rec		11/23/16	11/27/16	AK
Radium-228	EPA 904*/9320*	84.3		% Rec		11/25/16	11/29/16	JR

**Lab ID** : 20161105-08  
**Client ID** : MW-8 MSD  
**Date Sampled** : 11/9/2016 2:10:00 PM  
**Matrix** : NPW

### Radiochemical Analyses

Radium-226	SM 7500 Ra B M*	4.6		RPD		11/23/16	11/27/16	AK
Radium-228	EPA 904*/9320*	7.7		RPD		11/25/16	11/29/16	JR

**Lab ID** : 20161105-09  
**Client ID** : MW-9  
**Date Sampled** : 11/9/2016 4:20:00 PM  
**Matrix** : NPW

\*NELAC Certified Parameter

BDL = Below Detection Limit



Client : SCS Engineers  
 Client Project : 27213167.16  
 Lab Number : 20161105  
 Date Reported : 12/02/16  
 Date Received : 11/11/16  
 Page Number : 4 of 4

### Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst
<b>Radiochemical Analyses</b>							
Combined Radium	0.984 +/- 0.722	0.509	pCi/l				
Radium-226 SM 7500 Ra B M*	0.117 +/- 0.099	0.127	pCi/l		11/23/16	11/27/16	AK
Radium-228 EPA 904*/9320*	0.867 +/- 0.623	0.382	pCi/l		11/25/16	11/29/16	JR

**Lab ID** : 20161105-10  
**Client ID** : MW-10  
**Date Sampled** : 11/9/2016 3:30:00 PM  
**Matrix** : NPW

<b>Radiochemical Analyses</b>							
Combined Radium	0.816 +/- 0.884	0.660	pCi/l				
Radium-226 SM 7500 Ra B M*	0.299 +/- 0.153	0.181	pCi/l		11/23/16	11/27/16	AK
Radium-228 EPA 904*/9320*	0.517 +/- 0.731	0.479	pCi/l		11/25/16	11/29/16	JR

### QC Report

Parameter	Blank	LCS %REC	LCS RPD	DUP RPD	RER, NAD or DER	MS %REC	MSD %REC	MSD RPD	Batch ID
Radium-226	-0.001	110.0		NC	1.260	110.0	116.0	4.6	R1163
Radium-228	-0.046	105.0		3.8	0.068	84.3	92.6	7.7	R3886

Lab Approval:

Ron Eidson  
 Director of Radiochemistry







**SAMPLE LOGIN**

Date Received: 11/11/2016 12:00:

Lab Number: 20161105

Due: 12/9/2016

Sample Number	Client Sample ID	Matrix	Date Sampled	Container Type	Container Size	Preservation	Preserved Upon Receipt	Custody Seal	Seal Intact
20161105-01 B	MW-1	NPW	11/09/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input type="checkbox"/>	Yes	Yes
20161105-01 A	MW-1	NPW	11/09/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input type="checkbox"/>	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20161105-02 A	MW-2	NPW	11/09/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input type="checkbox"/>	Yes	Yes
20161105-02 B	MW-2	NPW	11/09/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input type="checkbox"/>	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20161105-03 A	MW-6	NPW	11/09/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input type="checkbox"/>	Yes	Yes
20161105-03 B	MW-6	NPW	11/09/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input type="checkbox"/>	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20161105-04 A	MW-7	NPW	11/09/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input type="checkbox"/>	Yes	Yes
20161105-04 B	MW-7	NPW	11/09/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input type="checkbox"/>	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20161105-05 B	MW-8	NPW	11/09/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input type="checkbox"/>	Yes	Yes
20161105-05 A	MW-8	NPW	11/09/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input type="checkbox"/>	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20161105-06 B	DUPLICATE	NPW	11/09/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input type="checkbox"/>	Yes	Yes
20161105-06 A	DUPLICATE	NPW	11/09/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input type="checkbox"/>	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20161105-07 A	MW-8 MS	NPW	11/09/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input type="checkbox"/>	Yes	Yes
20161105-07 B	MW-8 MS	NPW	11/09/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input type="checkbox"/>	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						

Yes Yes

HNO3, pH < 2  
HNO3, pH < 2

1 L  
1 L

Plastic  
Plastic

11/09/16  
11/09/16

NPW  
NPW

MW-8 MSD  
MW-8 MSD

20161105-08 A  
20161105-08 B

SM 7500 Ra B M\*  
EPA 904\*9320\*

Radium-226  
Radium-228

Yes Yes

HNO3, pH < 2  
HNO3, pH < 2

1 L  
1 L

Plastic  
Plastic

11/09/16  
11/09/16

NPW  
NPW

MW-9  
MW-9

20161105-09 A  
20161105-09 B

SM 7500 Ra B M\*  
EPA 904\*9320\*

Radium-226  
Radium-228

Yes Yes

HNO3, pH < 2  
HNO3, pH < 2

1 L  
1 L

Plastic  
Plastic

11/09/16  
11/09/16

NPW  
NPW

MW-10  
MW-10

20161105-10 B  
20161105-10 A

SM 7500 Ra B M\*  
EPA 904\*9320\*

Radium-226  
Radium-228

CONTAINER INSPECTION

# Coolers 2 Custody Seals Broken 0 Temperature: Amb Ice ✓ Radiation Survey: <300 cpm

SAMPLE INSPECTION

Sample Seal Broken 0 Chain of Custody Record ✓ Labels in Tact ✓ Radiation Survey Complete N/A

Anomalies

Inspected By: [Signature] DATE 11/11/16  
QA or Designee Review: [Signature] DATE 11/11/16  
Sample Custodian Review: [Signature] DATE 11/11/16

Project Notes:

Jared Morrison  
December 16, 2022

**ATTACHMENT 1-4**  
**December 2016 Sampling Event Laboratory Report**



January 04, 2017

## SCS Engineers - KS

Sample Delivery Group: L881015  
Samples Received: 12/22/2016  
Project Number: 27213168.16  
Description: KCPL - Iatan Gen Station

Report To: Jason Franks  
7311 West 130th Street, Ste. 100  
Overland Park, KS 66213

Entire Report Reviewed By:



Jeff Carr  
Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



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# SAMPLE SUMMARY



## MW-1 L881015-01 GW

						Collected by	Collected date/time	Received date/time
						Adam Parris	12/21/16 13:05	12/22/16 08:30
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst			
Gravimetric Analysis by Method 2540 C-2011	WG939206	1	12/28/16 22:08	12/28/16 22:30	JM			
Mercury by Method 7470A	WG939101	1	12/28/16 14:14	12/29/16 13:44	TRB			
Metals (ICP) by Method 6010B	WG939258	1	12/28/16 20:36	12/29/16 11:19	LTB			
Metals (ICP) by Method 6010B	WG939258	1	12/28/16 20:36	12/29/16 12:44	LTB			
Metals (ICPMS) by Method 6020	WG939313	1	12/29/16 10:53	12/30/16 09:47	JPD			
Wet Chemistry by Method 9040C	WG939354	1	12/29/16 14:49	12/29/16 14:49	KK			
Wet Chemistry by Method 9056A	WG939137	1	12/29/16 14:26	12/29/16 14:26	KCF			

1  
Cp

2  
Tc

3  
Ss

4  
Cn

5  
Sr

6  
Qc

7  
Gl

8  
Al

9  
Sc

## MW-2 L881015-02 GW

						Collected by	Collected date/time	Received date/time
						Adam Parris	12/21/16 13:30	12/22/16 08:30
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst			
Gravimetric Analysis by Method 2540 C-2011	WG939206	1	12/28/16 22:08	12/28/16 22:30	JM			
Mercury by Method 7470A	WG939101	1	12/28/16 14:14	12/29/16 13:46	TRB			
Metals (ICP) by Method 6010B	WG939258	1	12/28/16 20:36	12/29/16 11:22	LTB			
Metals (ICP) by Method 6010B	WG939258	1	12/28/16 20:36	12/29/16 12:46	LTB			
Metals (ICPMS) by Method 6020	WG939313	1	12/29/16 10:53	12/30/16 09:51	JPD			
Wet Chemistry by Method 9040C	WG939354	1	12/29/16 14:49	12/29/16 14:49	KK			
Wet Chemistry by Method 9056A	WG939137	1	12/29/16 14:36	12/29/16 14:36	KCF			
Wet Chemistry by Method 9056A	WG939684	5	12/31/16 17:37	12/31/16 17:37	KCF			

## MW-6 L881015-03 GW

						Collected by	Collected date/time	Received date/time
						Adam Parris	12/21/16 10:25	12/22/16 08:30
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst			
Gravimetric Analysis by Method 2540 C-2011	WG939206	1	12/28/16 22:08	12/28/16 22:30	JM			
Mercury by Method 7470A	WG939101	1	12/28/16 14:14	12/29/16 13:48	TRB			
Metals (ICP) by Method 6010B	WG939258	1	12/28/16 20:36	12/29/16 11:25	LTB			
Metals (ICPMS) by Method 6020	WG939313	1	12/29/16 10:53	12/30/16 09:54	JPD			
Wet Chemistry by Method 9040C	WG939354	1	12/29/16 14:49	12/29/16 14:49	KK			
Wet Chemistry by Method 9056A	WG939137	1	12/29/16 14:46	12/29/16 14:46	KCF			

## MW-7 L881015-04 GW

						Collected by	Collected date/time	Received date/time
						Adam Parris	12/21/16 10:55	12/22/16 08:30
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst			
Gravimetric Analysis by Method 2540 C-2011	WG939206	1	12/28/16 22:08	12/28/16 22:30	JM			
Mercury by Method 7470A	WG939101	1	12/28/16 14:14	12/29/16 13:51	TRB			
Metals (ICP) by Method 6010B	WG939258	1	12/28/16 20:36	12/29/16 11:27	LTB			
Metals (ICPMS) by Method 6020	WG939313	1	12/29/16 10:53	12/30/16 09:58	JPD			
Wet Chemistry by Method 9040C	WG939354	1	12/29/16 14:49	12/29/16 14:49	KK			
Wet Chemistry by Method 9056A	WG939137	1	12/29/16 16:17	12/29/16 16:17	KCF			

## MW-8 L881015-05 GW

						Collected by	Collected date/time	Received date/time
						Adam Parris	12/21/16 11:30	12/22/16 08:30
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst			
Gravimetric Analysis by Method 2540 C-2011	WG939206	1	12/28/16 22:08	12/28/16 22:30	JM			
Mercury by Method 7470A	WG939101	1	12/28/16 14:14	12/29/16 13:15	TRB			
Metals (ICP) by Method 6010B	WG939258	1	12/28/16 20:36	12/29/16 10:37	LTB			
Metals (ICPMS) by Method 6020	WG939313	1	12/29/16 10:53	12/30/16 09:05	JPD			

# SAMPLE SUMMARY



## MW-8 L881015-05 GW

			Collected by	Collected date/time	Received date/time
			Adam Parris	12/21/16 11:30	12/22/16 08:30
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9040C	WG939354	1	12/29/16 14:49	12/29/16 14:49	KK
Wet Chemistry by Method 9056A	WG939841	1	01/04/17 11:06	01/04/17 11:06	KCF

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

## MW-9 L881015-06 GW

			Collected by	Collected date/time	Received date/time
			Adam Parris	12/21/16 12:35	12/22/16 08:30
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG939206	1	12/28/16 22:08	12/28/16 22:30	JM
Mercury by Method 7470A	WG939101	1	12/28/16 14:14	12/29/16 13:53	TRB
Metals (ICP) by Method 6010B	WG939258	1	12/28/16 20:36	12/29/16 11:36	LTB
Metals (ICPMS) by Method 6020	WG939313	1	12/29/16 10:53	12/30/16 10:01	JPD
Wet Chemistry by Method 9040C	WG939354	1	12/29/16 14:49	12/29/16 14:49	KK
Wet Chemistry by Method 9056A	WG939137	1	12/29/16 16:38	12/29/16 16:38	KCF

## MW-10 L881015-07 GW

			Collected by	Collected date/time	Received date/time
			Adam Parris	12/21/16 14:00	12/22/16 08:30
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG939206	1	12/28/16 22:08	12/28/16 22:30	JM
Mercury by Method 7470A	WG939101	1	12/28/16 14:14	12/29/16 13:55	TRB
Metals (ICP) by Method 6010B	WG939258	1	12/28/16 20:36	12/29/16 11:38	LTB
Metals (ICPMS) by Method 6020	WG939313	1	12/29/16 10:53	12/30/16 10:05	JPD
Wet Chemistry by Method 9040C	WG939354	1	12/29/16 14:49	12/29/16 14:49	KK
Wet Chemistry by Method 9056A	WG939137	1	12/29/16 16:48	12/29/16 16:48	KCF

## DUPLICATE L881015-08 GW

			Collected by	Collected date/time	Received date/time
			Adam Parris	12/21/16 11:35	12/22/16 08:30
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG939206	1	12/28/16 22:08	12/28/16 22:30	JM
Mercury by Method 7470A	WG939101	1	12/28/16 14:14	12/29/16 13:57	TRB
Metals (ICP) by Method 6010B	WG939258	1	12/28/16 20:36	12/29/16 11:41	LTB
Metals (ICPMS) by Method 6020	WG939313	1	12/29/16 10:53	12/30/16 10:09	JPD
Wet Chemistry by Method 9040C	WG939688	1	12/31/16 14:35	12/31/16 14:35	MCG
Wet Chemistry by Method 9056A	WG939684	1	12/31/16 17:53	12/31/16 17:53	KCF



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  
Technical Service Representative

### Sample Handling and Receiving

The following samples were prepared and/or analyzed past recommended holding time. Concentrations should be considered minimum values.

<u>ESC Sample ID</u>	<u>Project Sample ID</u>	<u>Method</u>
<a href="#">L881015-01</a>	<a href="#">MW-1</a>	9040C
<a href="#">L881015-02</a>	<a href="#">MW-2</a>	9040C
<a href="#">L881015-03</a>	<a href="#">MW-6</a>	9040C
<a href="#">L881015-04</a>	<a href="#">MW-7</a>	9040C
<a href="#">L881015-05</a>	<a href="#">MW-8</a>	9040C
<a href="#">L881015-06</a>	<a href="#">MW-9</a>	9040C
<a href="#">L881015-07</a>	<a href="#">MW-10</a>	9040C
<a href="#">L881015-08</a>	<a href="#">DUPLICATE</a>	9040C

- <sup>1</sup> Cp
- <sup>2</sup> Tc
- <sup>3</sup> Ss
- <sup>4</sup> Cn
- <sup>5</sup> Sr
- <sup>6</sup> Qc
- <sup>7</sup> Gl
- <sup>8</sup> Al
- <sup>9</sup> Sc



## Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	493000		10000	1	12/28/2016 22:30	<a href="#">WG939206</a>

## Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.09		1	12/29/2016 14:49	<a href="#">WG939354</a>

## Sample Narrative:

9040C L881015-01 WG939354: 7.09 at 17.1c

## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	5970		1000	1	12/29/2016 14:26	<a href="#">WG939137</a>
Fluoride	241		100	1	12/29/2016 14:26	<a href="#">WG939137</a>
Sulfate	36200		5000	1	12/29/2016 14:26	<a href="#">WG939137</a>

## Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	12/29/2016 13:44	<a href="#">WG939101</a>

## Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	308		5.00	1	12/29/2016 11:19	<a href="#">WG939258</a>
Boron	ND		200	1	12/29/2016 12:44	<a href="#">WG939258</a>
Calcium	134000		1000	1	12/29/2016 11:19	<a href="#">WG939258</a>
Chromium	ND		10.0	1	12/29/2016 11:19	<a href="#">WG939258</a>
Cobalt	ND		10.0	1	12/29/2016 11:19	<a href="#">WG939258</a>
Lithium	54.2		15.0	1	12/29/2016 11:19	<a href="#">WG939258</a>
Molybdenum	ND		5.00	1	12/29/2016 11:19	<a href="#">WG939258</a>

## Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	12/30/2016 09:47	<a href="#">WG939313</a>
Arsenic	20.6		2.00	1	12/30/2016 09:47	<a href="#">WG939313</a>
Beryllium	ND		2.00	1	12/30/2016 09:47	<a href="#">WG939313</a>
Cadmium	ND		1.00	1	12/30/2016 09:47	<a href="#">WG939313</a>
Lead	2.27		2.00	1	12/30/2016 09:47	<a href="#">WG939313</a>
Selenium	ND		2.00	1	12/30/2016 09:47	<a href="#">WG939313</a>
Thallium	ND		2.00	1	12/30/2016 09:47	<a href="#">WG939313</a>

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	636000		10000	1	12/28/2016 22:30	<a href="#">WG939206</a>

## Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	6.92		1	12/29/2016 14:49	<a href="#">WG939354</a>

## Sample Narrative:

9040C L881015-02 WG939354: 6.92 at 17.4c

## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	8240		1000	1	12/29/2016 14:36	<a href="#">WG939137</a>
Fluoride	292		100	1	12/29/2016 14:36	<a href="#">WG939137</a>
Sulfate	155000		25000	5	12/31/2016 17:37	<a href="#">WG939684</a>

## Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Mercury	ND		0.200	1	12/29/2016 13:46	<a href="#">WG939101</a>

## Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Barium	213		5.00	1	12/29/2016 11:22	<a href="#">WG939258</a>
Boron	ND		200	1	12/29/2016 12:46	<a href="#">WG939258</a>
Calcium	166000		1000	1	12/29/2016 11:22	<a href="#">WG939258</a>
Chromium	ND		10.0	1	12/29/2016 11:22	<a href="#">WG939258</a>
Cobalt	ND		10.0	1	12/29/2016 11:22	<a href="#">WG939258</a>
Lithium	49.6		15.0	1	12/29/2016 11:22	<a href="#">WG939258</a>
Molybdenum	ND		5.00	1	12/29/2016 11:22	<a href="#">WG939258</a>

## Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Antimony	ND		2.00	1	12/30/2016 09:51	<a href="#">WG939313</a>
Arsenic	19.1		2.00	1	12/30/2016 09:51	<a href="#">WG939313</a>
Beryllium	ND		2.00	1	12/30/2016 09:51	<a href="#">WG939313</a>
Cadmium	ND		1.00	1	12/30/2016 09:51	<a href="#">WG939313</a>
Lead	ND		2.00	1	12/30/2016 09:51	<a href="#">WG939313</a>
Selenium	ND		2.00	1	12/30/2016 09:51	<a href="#">WG939313</a>
Thallium	ND		2.00	1	12/30/2016 09:51	<a href="#">WG939313</a>

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	519000		10000	1	12/28/2016 22:30	<a href="#">WG939206</a>

## Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.23		1	12/29/2016 14:49	<a href="#">WG939354</a>

## Sample Narrative:

9040C L881015-03 WG939354: 7.23 at 16.9c

## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	1720		1000	1	12/29/2016 14:46	<a href="#">WG939137</a>
Fluoride	293		100	1	12/29/2016 14:46	<a href="#">WG939137</a>
Sulfate	28600		5000	1	12/29/2016 14:46	<a href="#">WG939137</a>

## Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	12/29/2016 13:48	<a href="#">WG939101</a>

## Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	335		5.00	1	12/29/2016 11:25	<a href="#">WG939258</a>
Boron	ND		200	1	12/29/2016 11:25	<a href="#">WG939258</a>
Calcium	146000		1000	1	12/29/2016 11:25	<a href="#">WG939258</a>
Chromium	ND		10.0	1	12/29/2016 11:25	<a href="#">WG939258</a>
Cobalt	ND		10.0	1	12/29/2016 11:25	<a href="#">WG939258</a>
Lithium	31.9		15.0	1	12/29/2016 11:25	<a href="#">WG939258</a>
Molybdenum	ND		5.00	1	12/29/2016 11:25	<a href="#">WG939258</a>

## Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	12/30/2016 09:54	<a href="#">WG939313</a>
Arsenic	34.5		2.00	1	12/30/2016 09:54	<a href="#">WG939313</a>
Beryllium	ND		2.00	1	12/30/2016 09:54	<a href="#">WG939313</a>
Cadmium	ND		1.00	1	12/30/2016 09:54	<a href="#">WG939313</a>
Lead	ND		2.00	1	12/30/2016 09:54	<a href="#">WG939313</a>
Selenium	ND		2.00	1	12/30/2016 09:54	<a href="#">WG939313</a>
Thallium	ND		2.00	1	12/30/2016 09:54	<a href="#">WG939313</a>

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
Dissolved Solids	492000		10000	1	12/28/2016 22:30	<a href="#">WG939206</a>

## Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
pH	7.14		1	12/29/2016 14:49	<a href="#">WG939354</a>

## Sample Narrative:

9040C L881015-04 WG939354: 7.14 at 17.1c

## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
Chloride	6640		1000	1	12/29/2016 16:17	<a href="#">WG939137</a>
Fluoride	284		100	1	12/29/2016 16:17	<a href="#">WG939137</a>
Sulfate	50000		5000	1	12/29/2016 16:17	<a href="#">WG939137</a>

## Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
Mercury	ND		0.200	1	12/29/2016 13:51	<a href="#">WG939101</a>

## Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
Barium	374		5.00	1	12/29/2016 11:27	<a href="#">WG939258</a>
Boron	ND		200	1	12/29/2016 11:27	<a href="#">WG939258</a>
Calcium	138000		1000	1	12/29/2016 11:27	<a href="#">WG939258</a>
Chromium	ND		10.0	1	12/29/2016 11:27	<a href="#">WG939258</a>
Cobalt	ND		10.0	1	12/29/2016 11:27	<a href="#">WG939258</a>
Lithium	37.0		15.0	1	12/29/2016 11:27	<a href="#">WG939258</a>
Molybdenum	ND		5.00	1	12/29/2016 11:27	<a href="#">WG939258</a>

## Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
Antimony	ND		2.00	1	12/30/2016 09:58	<a href="#">WG939313</a>
Arsenic	52.4		2.00	1	12/30/2016 09:58	<a href="#">WG939313</a>
Beryllium	ND		2.00	1	12/30/2016 09:58	<a href="#">WG939313</a>
Cadmium	ND		1.00	1	12/30/2016 09:58	<a href="#">WG939313</a>
Lead	ND		2.00	1	12/30/2016 09:58	<a href="#">WG939313</a>
Selenium	ND		2.00	1	12/30/2016 09:58	<a href="#">WG939313</a>
Thallium	ND		2.00	1	12/30/2016 09:58	<a href="#">WG939313</a>

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	493000		10000	1	12/28/2016 22:30	<a href="#">WG939206</a>

## Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.27		1	12/29/2016 14:49	<a href="#">WG939354</a>

## Sample Narrative:

9040C L881015-05 WG939354: 7.27 at 17.4c

## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	1890		1000	1	01/04/2017 11:06	<a href="#">WG939841</a>
Fluoride	461		100	1	01/04/2017 11:06	<a href="#">WG939841</a>
Sulfate	25500		5000	1	01/04/2017 11:06	<a href="#">WG939841</a>

## Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Mercury	ND		0.200	1	12/29/2016 13:15	<a href="#">WG939101</a>

## Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Barium	207		5.00	1	12/29/2016 10:37	<a href="#">WG939258</a>
Boron	ND		200	1	12/29/2016 10:37	<a href="#">WG939258</a>
Calcium	139000	V	1000	1	12/29/2016 10:37	<a href="#">WG939258</a>
Chromium	ND		10.0	1	12/29/2016 10:37	<a href="#">WG939258</a>
Cobalt	ND		10.0	1	12/29/2016 10:37	<a href="#">WG939258</a>
Lithium	39.0		15.0	1	12/29/2016 10:37	<a href="#">WG939258</a>
Molybdenum	ND		5.00	1	12/29/2016 10:37	<a href="#">WG939258</a>

## Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Antimony	ND		2.00	1	12/30/2016 09:05	<a href="#">WG939313</a>
Arsenic	6.91		2.00	1	12/30/2016 09:05	<a href="#">WG939313</a>
Beryllium	ND		2.00	1	12/30/2016 09:05	<a href="#">WG939313</a>
Cadmium	ND		1.00	1	12/30/2016 09:05	<a href="#">WG939313</a>
Lead	ND		2.00	1	12/30/2016 09:05	<a href="#">WG939313</a>
Selenium	ND		2.00	1	12/30/2016 09:05	<a href="#">WG939313</a>
Thallium	ND		2.00	1	12/30/2016 09:05	<a href="#">WG939313</a>

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
Dissolved Solids	415000		10000	1	12/28/2016 22:30	<a href="#">WG939206</a>

## Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
pH	7.22		1	12/29/2016 14:49	<a href="#">WG939354</a>

## Sample Narrative:

9040C L881015-06 WG939354: 7.22 at 18.0c

## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
Chloride	1660		1000	1	12/29/2016 16:38	<a href="#">WG939137</a>
Fluoride	344		100	1	12/29/2016 16:38	<a href="#">WG939137</a>
Sulfate	22200		5000	1	12/29/2016 16:38	<a href="#">WG939137</a>

## Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
Mercury	ND		0.200	1	12/29/2016 13:53	<a href="#">WG939101</a>

## Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
Barium	312		5.00	1	12/29/2016 11:36	<a href="#">WG939258</a>
Boron	ND		200	1	12/29/2016 11:36	<a href="#">WG939258</a>
Calcium	116000		1000	1	12/29/2016 11:36	<a href="#">WG939258</a>
Chromium	ND		10.0	1	12/29/2016 11:36	<a href="#">WG939258</a>
Cobalt	ND		10.0	1	12/29/2016 11:36	<a href="#">WG939258</a>
Lithium	39.9		15.0	1	12/29/2016 11:36	<a href="#">WG939258</a>
Molybdenum	ND		5.00	1	12/29/2016 11:36	<a href="#">WG939258</a>

## Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
Antimony	ND		2.00	1	12/30/2016 10:01	<a href="#">WG939313</a>
Arsenic	7.02		2.00	1	12/30/2016 10:01	<a href="#">WG939313</a>
Beryllium	ND		2.00	1	12/30/2016 10:01	<a href="#">WG939313</a>
Cadmium	ND		1.00	1	12/30/2016 10:01	<a href="#">WG939313</a>
Lead	ND		2.00	1	12/30/2016 10:01	<a href="#">WG939313</a>
Selenium	ND		2.00	1	12/30/2016 10:01	<a href="#">WG939313</a>
Thallium	ND		2.00	1	12/30/2016 10:01	<a href="#">WG939313</a>

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	497000		10000	1	12/28/2016 22:30	<a href="#">WG939206</a>

1 Cp

2 Tc

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.61		1	12/29/2016 14:49	<a href="#">WG939354</a>

3 Ss

4 Cn

Sample Narrative:

9040C L881015-07 WG939354: 7.61 at 18.6c

5 Sr

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	9840		1000	1	12/29/2016 16:48	<a href="#">WG939137</a>
Fluoride	538		100	1	12/29/2016 16:48	<a href="#">WG939137</a>
Sulfate	17700		5000	1	12/29/2016 16:48	<a href="#">WG939137</a>

6 Qc

7 Gl

8 Al

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Mercury	ND		0.200	1	12/29/2016 13:55	<a href="#">WG939101</a>

9 Sc

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Barium	249		5.00	1	12/29/2016 11:38	<a href="#">WG939258</a>
Boron	ND		200	1	12/29/2016 11:38	<a href="#">WG939258</a>
Calcium	123000		1000	1	12/29/2016 11:38	<a href="#">WG939258</a>
Chromium	ND		10.0	1	12/29/2016 11:38	<a href="#">WG939258</a>
Cobalt	ND		10.0	1	12/29/2016 11:38	<a href="#">WG939258</a>
Lithium	52.0		15.0	1	12/29/2016 11:38	<a href="#">WG939258</a>
Molybdenum	ND		5.00	1	12/29/2016 11:38	<a href="#">WG939258</a>

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Antimony	ND		2.00	1	12/30/2016 10:05	<a href="#">WG939313</a>
Arsenic	15.9		2.00	1	12/30/2016 10:05	<a href="#">WG939313</a>
Beryllium	ND		2.00	1	12/30/2016 10:05	<a href="#">WG939313</a>
Cadmium	ND		1.00	1	12/30/2016 10:05	<a href="#">WG939313</a>
Lead	ND		2.00	1	12/30/2016 10:05	<a href="#">WG939313</a>
Selenium	ND		2.00	1	12/30/2016 10:05	<a href="#">WG939313</a>
Thallium	ND		2.00	1	12/30/2016 10:05	<a href="#">WG939313</a>



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	482000		10000	1	12/28/2016 22:30	<a href="#">WG939206</a>

1 Cp

2 Tc

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.26		1	12/31/2016 14:35	<a href="#">WG939688</a>

3 Ss

4 Cn

Sample Narrative:

9040C L881015-08 WG939688: 7.26 at 11.4c

5 Sr

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	2320		1000	1	12/31/2016 17:53	<a href="#">WG939684</a>
Fluoride	469		100	1	12/31/2016 17:53	<a href="#">WG939684</a>
Sulfate	26400		5000	1	12/31/2016 17:53	<a href="#">WG939684</a>

6 Qc

7 Gl

8 Al

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Mercury	ND		0.200	1	12/29/2016 13:57	<a href="#">WG939101</a>

9 Sc

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Barium	208		5.00	1	12/29/2016 11:41	<a href="#">WG939258</a>
Boron	ND		200	1	12/29/2016 11:41	<a href="#">WG939258</a>
Calcium	139000		1000	1	12/29/2016 11:41	<a href="#">WG939258</a>
Chromium	ND		10.0	1	12/29/2016 11:41	<a href="#">WG939258</a>
Cobalt	ND		10.0	1	12/29/2016 11:41	<a href="#">WG939258</a>
Lithium	38.6		15.0	1	12/29/2016 11:41	<a href="#">WG939258</a>
Molybdenum	ND		5.00	1	12/29/2016 11:41	<a href="#">WG939258</a>

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Antimony	ND		2.00	1	12/30/2016 10:09	<a href="#">WG939313</a>
Arsenic	7.18		2.00	1	12/30/2016 10:09	<a href="#">WG939313</a>
Beryllium	ND		2.00	1	12/30/2016 10:09	<a href="#">WG939313</a>
Cadmium	ND		1.00	1	12/30/2016 10:09	<a href="#">WG939313</a>
Lead	ND		2.00	1	12/30/2016 10:09	<a href="#">WG939313</a>
Selenium	ND		2.00	1	12/30/2016 10:09	<a href="#">WG939313</a>
Thallium	ND		2.00	1	12/30/2016 10:09	<a href="#">WG939313</a>



Method Blank (MB)

(MB) R3188375-1 12/28/16 22:30

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Dissolved Solids	U		2820	10000

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

L880681-01 Original Sample (OS) • Duplicate (DUP)

(OS) L880681-01 12/28/16 22:30 • (DUP) R3188375-4 12/28/16 22:30

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Dissolved Solids	30000	29000	1	3.39		5

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

(LCS) R3188375-2 12/28/16 22:30 • (LCSD) R3188375-3 12/28/16 22:30

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Dissolved Solids	8800000	8320000	8730000	94.5	99.2	85.0-115			4.81	5

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



L880923-01 Original Sample (OS) • Duplicate (DUP)

(OS) L880923-01 12/29/16 14:49 • (DUP) WG939354-3 12/29/16 14:49

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	7.15	7.17	1	0.279		1

L881063-02 Original Sample (OS) • Duplicate (DUP)

(OS) L881063-02 12/29/16 14:49 • (DUP) WG939354-4 12/29/16 14:49

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	7.96	7.97	1	0.126		1

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

(LCS) WG939354-1 12/29/16 14:49 • (LCSD) WG939354-2 12/29/16 14:49

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	su	su	su	%	%	%			%	%
pH	6.07	6.02	6.02	99.2	99.2	98.4-102			0.000	1

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



L880923-05 Original Sample (OS) • Duplicate (DUP)

(OS) L880923-05 12/31/16 14:35 • (DUP) WG939688-3 12/31/16 14:35

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	7.00	7.08	1	1.14		1

L881373-03 Original Sample (OS) • Duplicate (DUP)

(OS) L881373-03 12/31/16 14:35 • (DUP) WG939688-4 12/31/16 14:35

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	2.64	2.64	1	0.000		1

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

(LCS) WG939688-1 12/31/16 14:35 • (LCSD) WG939688-2 12/31/16 14:35

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	su	su	su	%	%	%			%	%
pH	6.07	6.09	6.09	100	100	98.4-102			0.000	1

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc





Method Blank (MB)

(MB) R3188158-1 12/29/16 09:21

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

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

L880945-01 Original Sample (OS) • Duplicate (DUP)

(OS) L880945-01 12/29/16 13:04 • (DUP) R3188158-4 12/29/16 13:35

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	40000	40500	1	1		15
Fluoride	U	0.000	1	0		15
Sulfate	59800	60300	1	1		15

L881013-02 Original Sample (OS) • Duplicate (DUP)

(OS) L881013-02 12/29/16 15:27 • (DUP) R3188158-6 12/29/16 15:37

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	1240	1240	1	0		15
Fluoride	U	0.000	1	0		15
Sulfate	U	0.000	1	0		15

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

(LCS) R3188158-2 12/29/16 09:32 • (LCSD) R3188158-3 12/29/16 09:42

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Chloride	40000	39800	40300	100	101	80-120			1	15
Fluoride	8000	8120	8150	101	102	80-120			0	15
Sulfate	40000	40100	40200	100	100	80-120			0	15

L880945-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L880945-02 12/29/16 13:45 • (MS) R3188158-5 12/29/16 13:55

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Chloride	50000	21800	71400	99	1	80-120	
Fluoride	5000	U	4930	99	1	80-120	



L880945-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L880945-02 12/29/16 13:45 • (MS) R3188158-5 12/29/16 13:55

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Sulfate	50000	9330	59200	100	1	80-120	

L881013-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L881013-03 12/29/16 15:47 • (MS) R3188158-7 12/29/16 15:57 • (MSD) R3188158-8 12/29/16 16:07

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	1580	51000	51200	99	99	1	80-120			0	15
Fluoride	5000	U	4920	4990	98	100	1	80-120			1	15
Sulfate	50000	8320	58600	58600	101	101	1	80-120			0	15

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

<sup>4</sup>Cn

<sup>5</sup>Sr

<sup>6</sup>Qc

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>Sc



Method Blank (MB)

(MB) R3188741-1 12/31/16 15:49

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Chloride	U		51.9	1000
Fluoride	U		9.90	100
Sulfate	229	J	77.4	5000

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L880545-01 Original Sample (OS) • Duplicate (DUP)

(OS) L880545-01 12/31/16 17:07 • (DUP) R3188741-4 12/31/16 17:22

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	8570	8550	1	0		15
Fluoride	547	543	1	1		15
Sulfate	6730	6590	1	2		15

L881367-01 Original Sample (OS) • Duplicate (DUP)

(OS) L881367-01 12/31/16 21:44 • (DUP) R3188741-7 12/31/16 21:59

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	1870	2160	1	15		15
Fluoride	ND	0.000	1	0		15
Sulfate	ND	0.000	1	0		15

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

(LCS) R3188741-2 12/31/16 16:05 • (LCSD) R3188741-3 12/31/16 16:20

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Chloride	40000	39600	39700	99	99	80-120			0	15
Fluoride	8000	7930	7920	99	99	80-120			0	15
Sulfate	40000	40300	40200	101	101	80-120			0	15

L881015-08 Original Sample (OS) • Matrix Spike (MS)

(OS) L881015-08 12/31/16 17:53 • (MS) R3188741-5 12/31/16 18:08

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Chloride	50000	2320	52700	101	1	80-120	
Fluoride	5000	469	5380	98	1	80-120	



L881015-08 Original Sample (OS) • Matrix Spike (MS)

(OS) L881015-08 12/31/16 17:53 • (MS) R3188741-5 12/31/16 18:08

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Sulfate	50000	26400	75300	98	1	80-120	

L881367-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L881367-07 12/31/16 23:32 • (MS) R3188741-8 12/31/16 23:47 • (MSD) R3188741-9 01/01/17 00:33

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 %
Chloride	50000	5660	56000	55800	101	100	1	80-120			0	15
Fluoride	5000	ND	5270	5130	105	103	1	80-120			3	15
Sulfate	50000	ND	51700	51600	102	102	1	80-120			0	15

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

<sup>4</sup>Cn

<sup>5</sup>Sr

<sup>6</sup>Qc

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>Sc



Method Blank (MB)

(MB) R3188855-1 01/04/17 07:48

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

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L880415-01 Original Sample (OS) • Duplicate (DUP)

(OS) L880415-01 01/04/17 10:35 • (DUP) R3188855-4 01/04/17 10:50

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	14600	14600	1	0		15
Fluoride	457	452	1	1		15
Sulfate	67400	67400	1	0		15

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

(LCS) R3188855-2 01/04/17 08:03 • (LCSD) R3188855-3 01/04/17 08:19

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Chloride	40000	39700	39700	99	99	80-120			0	15
Fluoride	8000	7980	7960	100	100	80-120			0	15
Sulfate	40000	40000	39900	100	100	80-120			0	15

L881015-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L881015-05 01/04/17 11:06 • (MS) R3188855-5 01/04/17 11:21 • (MSD) R3188855-6 01/04/17 11:36

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Chloride	50000	1890	52200	52300	101	101	1	80-120			0	15
Fluoride	5000	461	5560	5420	102	99	1	80-120			3	15
Sulfate	50000	25500	74200	74300	97	98	1	80-120			0	15



Method Blank (MB)

(MB) R3187984-1 12/29/16 13:04

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Mercury	U		0.0490	0.200

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

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

(LCS) R3187984-2 12/29/16 13:11 • (LCSD) R3187984-3 12/29/16 13:13

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 %
Mercury	3.00	2.82	3.11	94	104	80-120			10	20

L881015-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L881015-05 12/29/16 13:15 • (MS) R3187984-4 12/29/16 13:18 • (MSD) R3187984-5 12/29/16 13:20

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 %
Mercury	3.00	ND	3.09	3.00	103	100	1	75-125			3	20



Method Blank (MB)

(MB) R3187915-1 12/29/16 10:30

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Barium	U		1.70	5.00
Boron	U		12.6	200
Calcium	U		46.3	1000
Chromium	U		1.40	10.0
Cobalt	U		2.30	10.0
Lithium	U		5.30	15.0
Molybdenum	U		1.60	5.00

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

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

(LCS) R3187915-2 12/29/16 10:32 • (LCSD) R3187915-3 12/29/16 10:35

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Barium	1000	1020	1020	102	102	80-120			0	20
Boron	1000	1010	1010	101	101	80-120			0	20
Calcium	10000	9890	9810	99	98	80-120			1	20
Chromium	1000	994	989	99	99	80-120			1	20
Cobalt	1000	1020	1020	102	102	80-120			0	20
Lithium	1000	996	990	100	99	80-120			1	20
Molybdenum	1000	996	993	100	99	80-120			0	20

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

L881015-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L881015-05 12/29/16 10:37 • (MS) R3187915-5 12/29/16 10:43 • (MSD) R3187915-6 12/29/16 10:45

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Barium	1000	207	1200	1190	99	99	1	75-125			0	20
Boron	1000	ND	1120	1130	100	101	1	75-125			1	20
Calcium	10000	139000	145000	146000	64	74	1	75-125	V	V	1	20
Chromium	1000	ND	984	976	98	98	1	75-125			1	20
Cobalt	1000	ND	1040	1030	104	103	1	75-125			1	20
Lithium	1000	39.0	1040	1030	100	99	1	75-125			0	20
Molybdenum	1000	ND	999	990	100	99	1	75-125			1	20



Method Blank (MB)

(MB) R3188184-1 12/30/16 08:55

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Antimony	U		0.754	2.00
Arsenic	U		0.250	2.00
Beryllium	U		0.120	2.00
Cadmium	U		0.160	1.00
Lead	U		0.240	2.00
Selenium	U		0.380	2.00
Thallium	U		0.190	2.00

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

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

(LCS) R3188184-2 12/30/16 08:58 • (LCSD) R3188184-3 12/30/16 09:02

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Antimony	57.9	47.6	47.7	82	82	80-120			0	20
Arsenic	50.0	46.7	45.8	93	92	80-120			2	20
Beryllium	50.0	41.6	41.9	83	84	80-120			1	20
Cadmium	50.0	47.6	47.0	95	94	80-120			1	20
Lead	50.0	46.5	46.3	93	93	80-120			0	20
Selenium	50.0	50.7	49.6	101	99	80-120			2	20
Thallium	50.0	46.6	46.3	93	93	80-120			1	20

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

L881015-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L881015-05 12/30/16 09:05 • (MS) R3188184-5 12/30/16 09:12 • (MSD) R3188184-6 12/30/16 09:16

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Antimony	57.9	ND	50.9	49.0	88	85	1	75-125			4	20
Arsenic	50.0	6.91	52.6	51.2	91	89	1	75-125			3	20
Beryllium	50.0	ND	42.2	41.9	84	84	1	75-125			1	20
Cadmium	50.0	ND	47.0	46.1	94	92	1	75-125			2	20
Lead	50.0	ND	47.0	47.2	94	94	1	75-125			0	20
Selenium	50.0	ND	50.9	50.1	102	100	1	75-125			2	20
Thallium	50.0	ND	46.8	46.9	94	94	1	75-125			0	20





## Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
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.
Rec.	Recovery.

## Qualifier                      Description

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.

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



ESC Lab Sciences 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.



## State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Connecticut	PH-0197	North Carolina <sup>1</sup>	DW21704
Florida	E87487	North Carolina <sup>2</sup>	41
Georgia	NELAP	North Dakota	R-140
Georgia <sup>1</sup>	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky <sup>1</sup>	90010	South Dakota	n/a
Kentucky <sup>2</sup>	16	Tennessee <sup>14</sup>	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas <sup>5</sup>	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

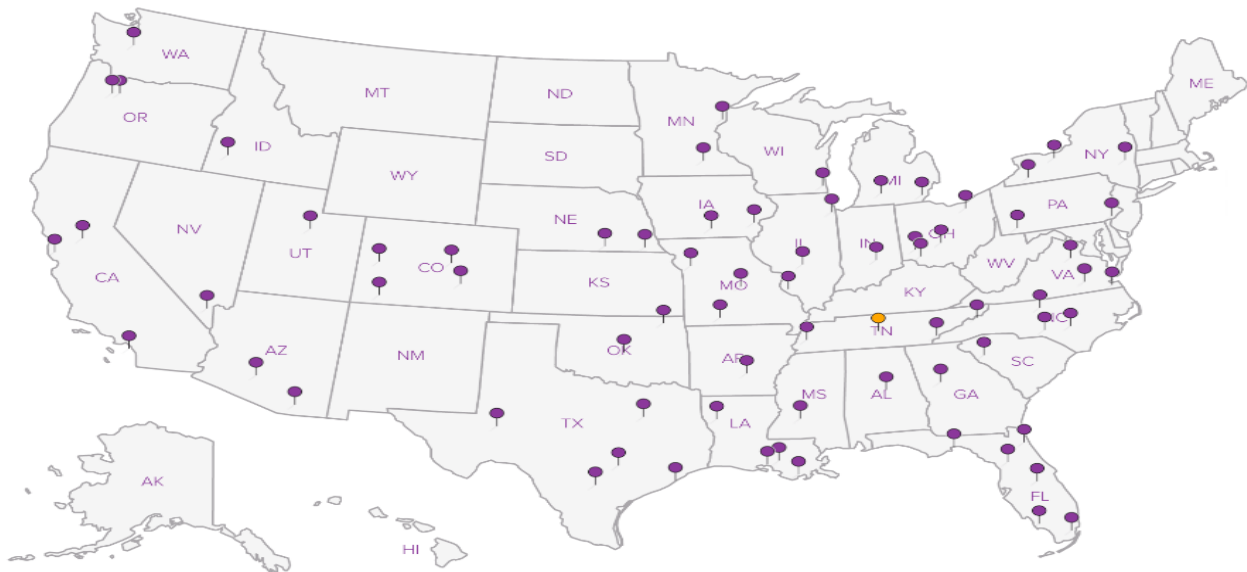
## Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA	100789
A2LA – ISO 17025 <sup>5</sup>	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>n/a</sup> Accreditation not applicable

## Our Locations

ESC Lab Sciences 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. **ESC Lab Sciences performs all testing at our central laboratory.**



**SCS Engineers - KS**

7311 West 130th Street, Ste. 100  
Overland Park, KS 66213

Billing Information & Quote Number:

**Accounts Payable**  
7311 West 130th Street, Ste. 100  
Overland Park, KS 66213

Analysis / Container / Preservative

Chain of Custody Page 1 of 1

Report to:  
**Jason Franks**

Email To: [jfranks@scsengineers.com](mailto:jfranks@scsengineers.com)

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

City/State Collected:

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

Client Project #  
**27213168.16**

Lab Project #  
**AQUAOPKS-IATAN**

Collected by (print):

Site/Facility ID #

P.O. #

Collected by (signature):

**Rush?** (Lab MUST Be Notified)

Date Results Needed

Immediately Packed on Ice N  Y

Same Day .....200%  
 Next Day .....100%  
 Two Day .....50%  
 Three Day .....25%

Email?  No  Yes

FAX?  No  Yes

No. of Cntrs

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Anions - Clid, F, SO4	Metals 250mHDPE-HNO3	TDS, PH 500mHDPE-NoPres										
MW-1	Grab	GW	-	12/21/16	1305	3	X	X	X										
MW-2		GW	-		1330	3	X	X	X										-01
MW-6		GW	-		1025	3	X	X	X										-02
MW-7		GW	-		1055	3	X	X	X										-03
MW-8		GW	-		1130	3	X	X	X										-04
MW-9		GW	-		1235	3	X	X	X										-05
MW-10		GW	-		1400	3	X	X	X										-06
DUPLICATE		GW	-		1135	3	X	X	X										-07
MS		GW	-		1140	3	X	X	X										-08
MSD		GW	-		1145	3	X	X	X										-05
																			-05

\* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other

Remarks: 6010 Metals-Ba,B,Ca,Cr,Co,Li,Mo 6020 metals-Sb,As,Be,Cd,Pb,Se,Tl 7470 metals - Hg

pH \_\_\_\_\_ Temp \_\_\_\_\_

Flow \_\_\_\_\_ Other \_\_\_\_\_

Hold #

Relinquished by: (Signature)

Date:

12/21/16

Time:

1410

Received by: (Signature)

Samples returned via:  UPS

FedEx  Courier

Condition: (lab use only)

Relinquished by: (Signature)

Date:

12/21/16

Time:

1700

Received by: (Signature)

Temp: °C Bottles Received:

2.4

36

ml

Relinquished by: (Signature)

Date:

12-22-16

Time:

0830

Received for lab by: (Signature)

Date: Time:

12-22-16 0830

COC Seal Intact:  Y  N  NA

pH Checked: CZ

NCF: X



YOUR LAB OF CHOICE

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



L# **1881015**

**C108**

Acctnum: **AQUAOPKS**

Template: **T117511**

Prelogin: **P581208**

TSR: **206 - Jeff Carr**

PB:

Shipped Via:

Rem./Contaminant Sample # (lab only)



L · A · B   S · C · I · E · N · C · E · S

YOUR LAB OF CHOICE

### Cooler Receipt Form

Client: <i>AQUAOPKS</i>	SDG#	<i>L881015</i>		
Cooler Received/Opened On: <i>12/22/16</i>	Temperature Upon Receipt:	<i>2.4 °c</i>		
Received By: Joseph Roberts				
Signature: <i>Joseph Roberts</i>				
<b>Receipt Check List</b>				
	Yes	No	N/A	
Were custody seals on outside of cooler and intact?			✓	
Were custody papers properly filled out?	✓			
Did all bottles arrive in good condition?	✓			
Were correct bottles used for the analyses requested?	✓			
Was sufficient amount of sample sent in each bottle?	✓			
Were all applicable sample containers correctly preserved and checked for preservation? (Any not in accepted range noted on COC)	✓			
If applicable, was an observable VOA headspace present?			✓	
Non Conformance Generated. (If yes see attached NCF)	✓			

**Troy Dunlap**

**ESC Lab Sciences**  
**Non-Conformance Form**

<b>Login #</b> L881015	<b>Client:</b> AQUAOPKS	<b>Date:</b> 12/22	<b>Evaluated by:</b> Matt S
------------------------	-------------------------	--------------------	-----------------------------

**Non-Conformance (check applicable items)**

<b>Sample Integrity</b>	<b>Chain of Custody Clarification</b>	<b>If Broken Container:</b>
Parameter(s) past holding time <input checked="" type="checkbox"/>	Login Clarification Needed	
Improper temperature	Chain of custody is incomplete	Insufficient packing material around container
Improper container type	Please specify Metals requested.	Insufficient packing material inside cooler
Improper preservation	Please specify TCLP requested.	Improper handling by carrier (FedEx / UPS / Courier)
Insufficient sample volume.	Received additional samples not listed on coc.	Sample was frozen
Sample is biphasic.	Sample ids on containers do not match ids on coc	Container lid not intact
Vials received with headspace.	Trip Blank not received.	<b>If no Chain of Custody:</b>
Broken container	Client did not "X" analysis.	Received by:
Broken container:	Chain of Custody is missing	Date/Time:
Sufficient sample remains		Temp./Cont. Rec./pH:
		Carrier:
		Tracking#

**Login Comments: which sample does MS/MSD go with?**

<b>Client informed by:</b>	Call	Email	<input checked="" type="checkbox"/> Voice Mail	Date: 12/28/16	Time: 0919
<b>TSR Initials:</b> JC	Client Contact: J. Franks				
<b>Login Instructions:</b>	MW-8				

This E-mail and any attached files are confidential, and may be copyright protected. If you are not the addressee, any dissemination of this communication is strictly prohibited. If you have received this message in error, please contact the sender immediately and delete/destroy all information received.

## Case Narrative

### Lab No: 20161266

This report contains the analytical results for the 10 sample(s) received under chain of custody by ESC Lab Sciences on 12/22/2016 11:09:36 AM. These samples are associated with your 27213167.16 project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted below:

The test results in this report meet all NELAC requirements unless noted below:

This report shall not be reproduced, except in full, without the written approval of ESC Lab Sciences.

All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client.

Results have been reviewed by the Director of Radiochemistry or their designees and is approved for release.

### Observations / Nonconformances

L880939



Client : SCS Engineers  
 Client Project : 27213167.16  
 Lab Number : 20161266  
 Date Reported : 01/27/17  
 Date Received : 12/22/16  
 Page Number : 2 of 4

## Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst
--------	--------	----	-------	------	-----------	---------------	---------

**Lab ID** : 20161266-01  
**Client ID** : MW-1  
**Date Sampled** : 12/21/2016 1:05:00 PM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		2.37 +/- 0.615	0.741	pCi/l			
Radium-226	SM 7500 Ra B M*	0.352 +/- 0.153	0.162	pCi/l	01/18/17	01/20/17	AK
Radium-228	EPA 904*/9320*	2.02 +/- 0.462	0.579	pCi/l	01/18/17	01/25/17	JR

**Lab ID** : 20161266-02  
**Client ID** : MW-2  
**Date Sampled** : 12/21/2016 1:30:00 PM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		1.84 +/- 0.709	0.973	pCi/l			
Radium-226	SM 7500 Ra B M*	0.161 +/- 0.203	0.309	pCi/l	01/18/17	01/20/17	AK
Radium-228	EPA 904*/9320*	1.68 +/- 0.506	0.664	pCi/l	01/18/17	01/25/17	JR

**Lab ID** : 20161266-03  
**Client ID** : MW-6  
**Date Sampled** : 12/21/2016 10:25:00 AM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		1.53 +/- 0.714	0.913	pCi/l			
Radium-226	SM 7500 Ra B M*	0.329 +/- 0.147	0.137	pCi/l	01/18/17	01/20/17	AK
Radium-228	EPA 904*/9320*	1.20 +/- 0.567	0.776	pCi/l	01/18/17	01/25/17	JR

**Lab ID** : 20161266-04  
**Client ID** : MW-7  
**Date Sampled** : 12/21/2016 10:55:00 AM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		1.47 +/- 0.818	1.20	pCi/l			
Radium-226	SM 7500 Ra B M*	-0.063 +/- 0.215	0.380	pCi/l	01/18/17	01/20/17	AK
Radium-228	EPA 904*/9320*	1.47 +/- 0.603	0.821	pCi/l	01/18/17	01/25/17	JR





Client : SCS Engineers  
 Client Project : 27213167.16  
 Lab Number : 20161266  
 Date Reported : 01/27/17  
 Date Received : 12/22/16  
 Page Number : 3 of 4

## Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst
--------	--------	----	-------	------	-----------	---------------	---------

**Lab ID** : 20161266-05  
**Client ID** : MW-8  
**Date Sampled** : 12/21/2016 11:30:00 AM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		1.07 +/- 0.609	0.797	pCi/l			
Radium-226	SM 7500 Ra B M*	0.266 +/- 0.153	0.166	pCi/l	01/18/17	01/20/17	AK
Radium-228	EPA 904*/9320*	0.799 +/- 0.456	0.631	pCi/l	01/18/17	01/25/17	JR

**Lab ID** : 20161266-06  
**Client ID** : MW-9  
**Date Sampled** : 12/21/2016 12:35:00 PM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		3.16 +/- 0.787	0.951	pCi/l			
Radium-226	SM 7500 Ra B M*	0.532 +/- 0.194	0.177	pCi/l	01/18/17	01/20/17	AK
Radium-228	EPA 904*/9320*	2.63 +/- 0.593	0.774	pCi/l	01/18/17	01/25/17	JR

**Lab ID** : 20161266-07  
**Client ID** : MW-10  
**Date Sampled** : 12/21/2016 2:00:00 PM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		0.925 +/- 0.598	0.756	pCi/l			
Radium-226	SM 7500 Ra B M*	0.224 +/- 0.119	0.090	pCi/l	01/18/17	01/20/17	AK
Radium-228	EPA 904*/9320*	0.701 +/- 0.479	0.666	pCi/l	01/18/17	01/25/17	JR

**Lab ID** : 20161266-08  
**Client ID** : DUPLICATE  
**Date Sampled** : 12/21/2016 11:35:00 AM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		0.944 +/- 0.532	0.660	pCi/l			
Radium-226	SM 7500 Ra B M*	0.186 +/- 0.137	0.166	pCi/l	01/18/17	01/20/17	AK
Radium-228	EPA 904*/9320*	0.758 +/- 0.395	0.494	pCi/l	01/18/17	01/25/17	JR





Client : SCS Engineers  
 Client Project : 27213167.16  
 Lab Number : 20161266  
 Date Reported : 01/27/17  
 Date Received : 12/22/16  
 Page Number : 4 of 4

### Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst
<b>Lab ID</b> : 20161266-09							
<b>Client ID</b> : MS							
<b>Date Sampled</b> : 12/21/2016 11:40:00 AM							
<b>Matrix</b> : NPW							

#### Radiochemical Analyses

Radium-226	SM 7500 Ra B M*	111	% Rec	01/18/17	01/20/17	AK
Radium-228	EPA 904*/9320*	80.6	% Rec	01/18/17	01/26/17	JR

**Lab ID** : 20161266-10  
**Client ID** : MSD  
**Date Sampled** : 12/21/2016 11:45:00 AM  
**Matrix** : NPW

#### Radiochemical Analyses

Radium-226	SM 7500 Ra B M*	2.7	RPD	01/18/17	01/20/17	AK
Radium-228	EPA 904*/9320*	6.65	RPD	01/18/17	01/26/17	JR

### QC Report

Parameter	Blank	LCS %REC	LCSD %REC	RPD	DUP RPD	RER, NAD or DER	MS %REC	MSD %REC	RPD	Batch ID
Radium-226	-0.007	107.0			NC	0.682	106.0	109.0	1.9	R1180
Radium-228	-0.601	101.0			NC	0.058	87.7	95.3	8.4	R3910

Lab Approval:

Ron Eidson  
 Director of Radiochemistry



# SAMPLE LOGIN

Date Received: 12/22/2016 11:09:

Lab Number: 20161266

Due: 1/21/2016

Sample Number	Client Sample ID	Matrix	Date Sampled	Container Type	Container Size	Preservation	Preserved Upon Receipt	Custody Seal	Seal Intact
20161266-01 B	MW-1	NPW	12/21/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20161266-01 A	MW-1	NPW	12/21/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20161266-02 A	MW-2	NPW	12/21/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20161266-02 B	MW-2	NPW	12/21/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20161266-03 A	MW-6	NPW	12/21/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20161266-03 B	MW-6	NPW	12/21/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20161266-04 A	MW-7	NPW	12/21/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20161266-04 B	MW-7	NPW	12/21/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20161266-05 B	MW-8	NPW	12/21/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20161266-05 A	MW-8	NPW	12/21/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20161266-06 B	MW-9	NPW	12/21/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20161266-06 A	MW-9	NPW	12/21/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20161266-07 A	MW-10	NPW	12/21/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20161266-07 B	MW-10	NPW	12/21/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						

20161266-08 A	DUPLICATE	NPW	12/21/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes
20161266-08 B	DUPLICATE	NPW	12/21/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes
Radium-226			SM 7500 Ra B M*					
Radium-228			EPA 904*/9320*					
20161266-09 A	MS	NPW	12/21/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes
20161266-09 B	MS	NPW	12/21/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes
Radium-226			SM 7500 Ra B M*					
Radium-228			EPA 904*/9320*					
20161266-10 B	MSD	NPW	12/21/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes
20161266-10 A	MSD	NPW	12/21/16	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes
Radium-226			SM 7500 Ra B M*					
Radium-228			EPA 904*/9320*					

**CONTAINER INSPECTION**

# Coolers 2 Custody Seals Broken  Temperature: Amb Ice  Radiation Survey: <300 cpm

**SAMPLE INSPECTION**

Sample Seal Broken  Chain of Custody Record  Labels in Tact  Radiation Survey Complete

Anomalies There is not any information on COC nor on sample container labels as to which sample the MS and MSD are to be of; see % Recoveries.

Inspected By: [Signature] DATE 12/22/16  
 QA or Designee Review: [Signature] DATE 12/22/16  
 Sample Custodian Review: [Signature] DATE 12/22/16

Project Notes:

Jared Morrison  
December 16, 2022

**ATTACHMENT 1-5**  
**February 2017 Sampling Event Laboratory Report**

February 13, 2017

## SCS Engineers - KS

Sample Delivery Group: L887962  
Samples Received: 02/04/2017  
Project Number: 27213168.16  
Description: KCPL - Iatan Gen Station-CCR GW BG

Report To: Jason Franks  
7311 West 130th Street, Ste. 100  
Overland Park, KS 66213

Entire Report Reviewed By:



Jeff Carr  
Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



<sup>1</sup> Cp: Cover Page	1	
<sup>2</sup> Tc: Table of Contents	2	
<sup>3</sup> Ss: Sample Summary	3	
<sup>4</sup> Cn: Case Narrative	5	
<sup>5</sup> Sr: Sample Results	6	
MW-1 L887962-01	6	
MW-2 L887962-02	7	
MW-6 L887962-03	8	
MW-7 L887962-04	9	
MW-8 L887962-05	10	
MW-9 L887962-06	11	
MW-10 L887962-07	12	
DUPLICATE L887962-08	13	
<sup>6</sup> Qc: Quality Control Summary	14	
Gravimetric Analysis by Method 2540 C-2011	14	
Wet Chemistry by Method 9056A	15	
Mercury by Method 7470A	18	
Metals (ICP) by Method 6010B	19	
Metals (ICPMS) by Method 6020	20	
<sup>7</sup> Gl: Glossary of Terms	21	
<sup>8</sup> Al: Accreditations & Locations	22	
<sup>9</sup> Sc: Chain of Custody	23	

# SAMPLE SUMMARY



## MW-1 L887962-01 GW

Collected by Adam Parris  
Collected date/time 02/03/17 13:30  
Received date/time 02/04/17 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG950537	1	02/09/17 14:42	02/09/17 15:19	MMF
Mercury by Method 7470A	WG949780	1	02/06/17 12:04	02/07/17 12:55	NJB
Metals (ICP) by Method 6010B	WG949921	1	02/07/17 09:27	02/07/17 13:28	ST
Metals (ICPMS) by Method 6020	WG949740	1	02/06/17 09:50	02/06/17 16:36	LAT
Wet Chemistry by Method 9056A	WG949828	1	02/07/17 20:04	02/07/17 20:04	KCF

1  
Cp

2  
Tc

3  
Ss

4  
Cn

## MW-2 L887962-02 GW

Collected by Adam Parris  
Collected date/time 02/03/17 14:35  
Received date/time 02/04/17 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG950537	1	02/09/17 14:42	02/09/17 15:19	MMF
Mercury by Method 7470A	WG949780	1	02/06/17 12:04	02/07/17 12:57	NJB
Metals (ICP) by Method 6010B	WG949921	1	02/07/17 09:27	02/07/17 13:31	ST
Metals (ICPMS) by Method 6020	WG949740	1	02/06/17 09:50	02/06/17 16:39	LAT
Wet Chemistry by Method 9056A	WG949828	1	02/07/17 20:18	02/07/17 20:18	KCF
Wet Chemistry by Method 9056A	WG950546	5	02/09/17 15:58	02/09/17 15:58	KCF

5  
Sr

6  
Qc

7  
Gl

8  
Al

9  
Sc

## MW-6 L887962-03 GW

Collected by Adam Parris  
Collected date/time 02/03/17 10:35  
Received date/time 02/04/17 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG950537	1	02/09/17 14:42	02/09/17 15:19	MMF
Mercury by Method 7470A	WG949780	1	02/06/17 12:04	02/07/17 13:00	NJB
Metals (ICP) by Method 6010B	WG949921	1	02/07/17 09:27	02/07/17 13:33	ST
Metals (ICPMS) by Method 6020	WG949740	1	02/06/17 09:50	02/06/17 16:52	LAT
Wet Chemistry by Method 9056A	WG949828	1	02/07/17 20:47	02/07/17 20:47	KCF

## MW-7 L887962-04 GW

Collected by Adam Parris  
Collected date/time 02/03/17 11:05  
Received date/time 02/04/17 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG950537	1	02/09/17 14:42	02/09/17 15:19	MMF
Mercury by Method 7470A	WG949780	1	02/06/17 12:04	02/07/17 13:02	NJB
Metals (ICP) by Method 6010B	WG949921	1	02/07/17 09:27	02/07/17 13:36	ST
Metals (ICPMS) by Method 6020	WG949740	1	02/06/17 09:50	02/06/17 16:56	LAT
Wet Chemistry by Method 9056A	WG949828	1	02/07/17 21:30	02/07/17 21:30	KCF

## MW-8 L887962-05 GW

Collected by Adam Parris  
Collected date/time 02/03/17 11:35  
Received date/time 02/04/17 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG950537	1	02/09/17 14:42	02/09/17 15:19	MMF
Mercury by Method 7470A	WG949780	1	02/06/17 12:04	02/07/17 12:19	NJB
Metals (ICP) by Method 6010B	WG949921	1	02/07/17 09:27	02/07/17 12:47	ST
Metals (ICPMS) by Method 6020	WG949740	1	02/06/17 09:50	02/06/17 15:25	LAT
Wet Chemistry by Method 9056A	WG949828	1	02/07/17 21:45	02/07/17 21:45	KCF



# SAMPLE SUMMARY



## MW-9 L887962-06 GW

Collected by Adam Parris  
Collected date/time 02/03/17 12:50  
Received date/time 02/04/17 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG950537	1	02/09/17 14:42	02/09/17 15:19	MMF
Mercury by Method 7470A	WG949780	1	02/06/17 12:04	02/07/17 13:04	NJB
Metals (ICP) by Method 6010B	WG949921	1	02/07/17 09:27	02/07/17 13:39	ST
Metals (ICPMS) by Method 6020	WG949740	1	02/06/17 09:50	02/06/17 16:59	LAT
Wet Chemistry by Method 9056A	WG949828	1	02/07/17 22:28	02/07/17 22:28	KCF

1  
Cp

2  
Tc

3  
Ss

4  
Cn

## MW-10 L887962-07 GW

Collected by Adam Parris  
Collected date/time 02/03/17 15:10  
Received date/time 02/04/17 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG950537	1	02/09/17 14:42	02/09/17 15:19	MMF
Mercury by Method 7470A	WG949780	1	02/06/17 12:04	02/07/17 13:06	NJB
Metals (ICP) by Method 6010B	WG949921	1	02/07/17 09:27	02/07/17 13:41	ST
Metals (ICPMS) by Method 6020	WG949740	1	02/06/17 09:50	02/06/17 17:03	LAT
Wet Chemistry by Method 9056A	WG949828	1	02/07/17 22:42	02/07/17 22:42	KCF

5  
Sr

6  
Qc

7  
Gl

8  
Al

## DUPLICATE L887962-08 GW

Collected by Adam Parris  
Collected date/time 02/03/17 11:40  
Received date/time 02/04/17 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG950537	1	02/09/17 14:42	02/09/17 15:19	MMF
Mercury by Method 7470A	WG949780	1	02/06/17 12:04	02/07/17 13:09	NJB
Metals (ICP) by Method 6010B	WG949921	1	02/07/17 09:27	02/07/17 13:49	ST
Metals (ICPMS) by Method 6020	WG949740	1	02/06/17 09:50	02/06/17 17:06	LAT
Wet Chemistry by Method 9056A	WG949828	1	02/07/17 22:57	02/07/17 22:57	KCF

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. 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  
Technical Service Representative

- <sup>1</sup> Cp
- <sup>2</sup> Tc
- <sup>3</sup> Ss
- <sup>4</sup> Cn
- <sup>5</sup> Sr
- <sup>6</sup> Qc
- <sup>7</sup> Gl
- <sup>8</sup> Al
- <sup>9</sup> Sc



## Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	506000		10000	1	02/09/2017 15:19	<a href="#">WG950537</a>

1 Cp

2 Tc

## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	6000		1000	1	02/07/2017 20:04	<a href="#">WG949828</a>
Fluoride	288		100	1	02/07/2017 20:04	<a href="#">WG949828</a>
Sulfate	36900		5000	1	02/07/2017 20:04	<a href="#">WG949828</a>

3 Ss

4 Cn

5 Sr

## Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	02/07/2017 12:55	<a href="#">WG949780</a>

6 Qc

7 Gl

## Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	252		5.00	1	02/07/2017 13:28	<a href="#">WG949921</a>
Boron	ND		200	1	02/07/2017 13:28	<a href="#">WG949921</a>
Chromium	ND		10.0	1	02/07/2017 13:28	<a href="#">WG949921</a>
Cobalt	ND		10.0	1	02/07/2017 13:28	<a href="#">WG949921</a>
Lithium	52.5		15.0	1	02/07/2017 13:28	<a href="#">WG949921</a>
Molybdenum	ND		5.00	1	02/07/2017 13:28	<a href="#">WG949921</a>

8 Al

9 Sc

## Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	02/06/2017 16:36	<a href="#">WG949740</a>
Arsenic	13.9		2.00	1	02/06/2017 16:36	<a href="#">WG949740</a>
Beryllium	ND		2.00	1	02/06/2017 16:36	<a href="#">WG949740</a>
Cadmium	ND		1.00	1	02/06/2017 16:36	<a href="#">WG949740</a>
Calcium	116000		1000	1	02/06/2017 16:36	<a href="#">WG949740</a>
Lead	ND		2.00	1	02/06/2017 16:36	<a href="#">WG949740</a>
Selenium	ND		2.00	1	02/06/2017 16:36	<a href="#">WG949740</a>
Thallium	ND		2.00	1	02/06/2017 16:36	<a href="#">WG949740</a>



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	661000		10000	1	02/09/2017 15:19	<a href="#">WG950537</a>

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	8170		1000	1	02/07/2017 20:18	<a href="#">WG949828</a>
Fluoride	342		100	1	02/07/2017 20:18	<a href="#">WG949828</a>
Sulfate	150000		25000	5	02/09/2017 15:58	<a href="#">WG950546</a>

3 Ss

4 Cn

5 Sr

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Mercury	ND		0.200	1	02/07/2017 12:57	<a href="#">WG949780</a>

6 Qc

7 Gl

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Barium	223		5.00	1	02/07/2017 13:31	<a href="#">WG949921</a>
Boron	ND		200	1	02/07/2017 13:31	<a href="#">WG949921</a>
Chromium	ND		10.0	1	02/07/2017 13:31	<a href="#">WG949921</a>
Cobalt	ND		10.0	1	02/07/2017 13:31	<a href="#">WG949921</a>
Lithium	51.3		15.0	1	02/07/2017 13:31	<a href="#">WG949921</a>
Molybdenum	ND		5.00	1	02/07/2017 13:31	<a href="#">WG949921</a>

8 Al

9 Sc

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Antimony	ND		2.00	1	02/06/2017 16:39	<a href="#">WG949740</a>
Arsenic	19.3		2.00	1	02/06/2017 16:39	<a href="#">WG949740</a>
Beryllium	ND		2.00	1	02/06/2017 16:39	<a href="#">WG949740</a>
Cadmium	1.63		1.00	1	02/06/2017 16:39	<a href="#">WG949740</a>
Calcium	146000		1000	1	02/06/2017 16:39	<a href="#">WG949740</a>
Lead	ND		2.00	1	02/06/2017 16:39	<a href="#">WG949740</a>
Selenium	ND		2.00	1	02/06/2017 16:39	<a href="#">WG949740</a>
Thallium	ND		2.00	1	02/06/2017 16:39	<a href="#">WG949740</a>



## Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	527000		10000	1	02/09/2017 15:19	<a href="#">WG950537</a>

## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	1400		1000	1	02/07/2017 20:47	<a href="#">WG949828</a>
Fluoride	348		100	1	02/07/2017 20:47	<a href="#">WG949828</a>
Sulfate	28500		5000	1	02/07/2017 20:47	<a href="#">WG949828</a>

## Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	02/07/2017 13:00	<a href="#">WG949780</a>

## Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	325		5.00	1	02/07/2017 13:33	<a href="#">WG949921</a>
Boron	ND		200	1	02/07/2017 13:33	<a href="#">WG949921</a>
Chromium	ND		10.0	1	02/07/2017 13:33	<a href="#">WG949921</a>
Cobalt	ND		10.0	1	02/07/2017 13:33	<a href="#">WG949921</a>
Lithium	34.2		15.0	1	02/07/2017 13:33	<a href="#">WG949921</a>
Molybdenum	ND		5.00	1	02/07/2017 13:33	<a href="#">WG949921</a>

## Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	02/06/2017 16:52	<a href="#">WG949740</a>
Arsenic	21.4		2.00	1	02/06/2017 16:52	<a href="#">WG949740</a>
Beryllium	ND		2.00	1	02/06/2017 16:52	<a href="#">WG949740</a>
Cadmium	ND		1.00	1	02/06/2017 16:52	<a href="#">WG949740</a>
Calcium	136000		1000	1	02/06/2017 16:52	<a href="#">WG949740</a>
Lead	ND		2.00	1	02/06/2017 16:52	<a href="#">WG949740</a>
Selenium	ND		2.00	1	02/06/2017 16:52	<a href="#">WG949740</a>
Thallium	ND		2.00	1	02/06/2017 16:52	<a href="#">WG949740</a>

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	487000		10000	1	02/09/2017 15:19	<a href="#">WG950537</a>

1 Cp

2 Tc

## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	3320		1000	1	02/07/2017 21:30	<a href="#">WG949828</a>
Fluoride	337		100	1	02/07/2017 21:30	<a href="#">WG949828</a>
Sulfate	41900		5000	1	02/07/2017 21:30	<a href="#">WG949828</a>

3 Ss

4 Cn

5 Sr

## Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	02/07/2017 13:02	<a href="#">WG949780</a>

6 Qc

7 Gl

## Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	282		5.00	1	02/07/2017 13:36	<a href="#">WG949921</a>
Boron	ND		200	1	02/07/2017 13:36	<a href="#">WG949921</a>
Chromium	ND		10.0	1	02/07/2017 13:36	<a href="#">WG949921</a>
Cobalt	ND		10.0	1	02/07/2017 13:36	<a href="#">WG949921</a>
Lithium	38.9		15.0	1	02/07/2017 13:36	<a href="#">WG949921</a>
Molybdenum	ND		5.00	1	02/07/2017 13:36	<a href="#">WG949921</a>

8 Al

9 Sc

## Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	02/06/2017 16:56	<a href="#">WG949740</a>
Arsenic	8.05		2.00	1	02/06/2017 16:56	<a href="#">WG949740</a>
Beryllium	ND		2.00	1	02/06/2017 16:56	<a href="#">WG949740</a>
Cadmium	ND		1.00	1	02/06/2017 16:56	<a href="#">WG949740</a>
Calcium	116000		1000	1	02/06/2017 16:56	<a href="#">WG949740</a>
Lead	ND		2.00	1	02/06/2017 16:56	<a href="#">WG949740</a>
Selenium	ND		2.00	1	02/06/2017 16:56	<a href="#">WG949740</a>
Thallium	ND		2.00	1	02/06/2017 16:56	<a href="#">WG949740</a>



## Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	515000		10000	1	02/09/2017 15:19	<a href="#">WG950537</a>

1 Cp

2 Tc

## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	4020		1000	1	02/07/2017 21:45	<a href="#">WG949828</a>
Fluoride	407		100	1	02/07/2017 21:45	<a href="#">WG949828</a>
Sulfate	39600		5000	1	02/07/2017 21:45	<a href="#">WG949828</a>

3 Ss

4 Cn

5 Sr

## Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Mercury	ND		0.200	1	02/07/2017 12:19	<a href="#">WG949780</a>

6 Qc

7 Gl

## Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Barium	231		5.00	1	02/07/2017 12:47	<a href="#">WG949921</a>
Boron	ND		200	1	02/07/2017 12:47	<a href="#">WG949921</a>
Chromium	ND		10.0	1	02/07/2017 12:47	<a href="#">WG949921</a>
Cobalt	ND		10.0	1	02/07/2017 12:47	<a href="#">WG949921</a>
Lithium	43.6		15.0	1	02/07/2017 12:47	<a href="#">WG949921</a>
Molybdenum	ND		5.00	1	02/07/2017 12:47	<a href="#">WG949921</a>

8 Al

9 Sc

## Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Antimony	ND		2.00	1	02/06/2017 15:25	<a href="#">WG949740</a>
Arsenic	7.11		2.00	1	02/06/2017 15:25	<a href="#">WG949740</a>
Beryllium	ND		2.00	1	02/06/2017 15:25	<a href="#">WG949740</a>
Cadmium	ND		1.00	1	02/06/2017 15:25	<a href="#">WG949740</a>
Calcium	133000	<a href="#">O1 V</a>	1000	1	02/06/2017 15:25	<a href="#">WG949740</a>
Lead	ND		2.00	1	02/06/2017 15:25	<a href="#">WG949740</a>
Selenium	ND		2.00	1	02/06/2017 15:25	<a href="#">WG949740</a>
Thallium	ND		2.00	1	02/06/2017 15:25	<a href="#">WG949740</a>



## Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	442000		10000	1	02/09/2017 15:19	<a href="#">WG950537</a>

1 Cp

2 Tc

## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	1160		1000	1	02/07/2017 22:28	<a href="#">WG949828</a>
Fluoride	327		100	1	02/07/2017 22:28	<a href="#">WG949828</a>
Sulfate	21100		5000	1	02/07/2017 22:28	<a href="#">WG949828</a>

3 Ss

4 Cn

5 Sr

## Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	02/07/2017 13:04	<a href="#">WG949780</a>

6 Qc

7 Gl

## Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	330		5.00	1	02/07/2017 13:39	<a href="#">WG949921</a>
Boron	ND		200	1	02/07/2017 13:39	<a href="#">WG949921</a>
Chromium	ND		10.0	1	02/07/2017 13:39	<a href="#">WG949921</a>
Cobalt	ND		10.0	1	02/07/2017 13:39	<a href="#">WG949921</a>
Lithium	45.8		15.0	1	02/07/2017 13:39	<a href="#">WG949921</a>
Molybdenum	ND		5.00	1	02/07/2017 13:39	<a href="#">WG949921</a>

8 Al

9 Sc

## Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	02/06/2017 16:59	<a href="#">WG949740</a>
Arsenic	7.03		2.00	1	02/06/2017 16:59	<a href="#">WG949740</a>
Beryllium	ND		2.00	1	02/06/2017 16:59	<a href="#">WG949740</a>
Cadmium	ND		1.00	1	02/06/2017 16:59	<a href="#">WG949740</a>
Calcium	105000		1000	1	02/06/2017 16:59	<a href="#">WG949740</a>
Lead	ND		2.00	1	02/06/2017 16:59	<a href="#">WG949740</a>
Selenium	ND		2.00	1	02/06/2017 16:59	<a href="#">WG949740</a>
Thallium	ND		2.00	1	02/06/2017 16:59	<a href="#">WG949740</a>





Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	531000		10000	1	02/09/2017 15:19	<a href="#">WG950537</a>

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	10300		1000	1	02/07/2017 22:42	<a href="#">WG949828</a>
Fluoride	521		100	1	02/07/2017 22:42	<a href="#">WG949828</a>
Sulfate	19100		5000	1	02/07/2017 22:42	<a href="#">WG949828</a>

3 Ss

4 Cn

5 Sr

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Mercury	ND		0.200	1	02/07/2017 13:06	<a href="#">WG949780</a>

6 Qc

7 Gl

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Barium	236		5.00	1	02/07/2017 13:41	<a href="#">WG949921</a>
Boron	ND		200	1	02/07/2017 13:41	<a href="#">WG949921</a>
Chromium	ND		10.0	1	02/07/2017 13:41	<a href="#">WG949921</a>
Cobalt	ND		10.0	1	02/07/2017 13:41	<a href="#">WG949921</a>
Lithium	54.1		15.0	1	02/07/2017 13:41	<a href="#">WG949921</a>
Molybdenum	ND		5.00	1	02/07/2017 13:41	<a href="#">WG949921</a>

8 Al

9 Sc

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Antimony	ND		2.00	1	02/06/2017 17:03	<a href="#">WG949740</a>
Arsenic	16.8		2.00	1	02/06/2017 17:03	<a href="#">WG949740</a>
Beryllium	ND		2.00	1	02/06/2017 17:03	<a href="#">WG949740</a>
Cadmium	ND		1.00	1	02/06/2017 17:03	<a href="#">WG949740</a>
Calcium	109000		1000	1	02/06/2017 17:03	<a href="#">WG949740</a>
Lead	ND		2.00	1	02/06/2017 17:03	<a href="#">WG949740</a>
Selenium	ND		2.00	1	02/06/2017 17:03	<a href="#">WG949740</a>
Thallium	ND		2.00	1	02/06/2017 17:03	<a href="#">WG949740</a>



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	527000		10000	1	02/09/2017 15:19	<a href="#">WG950537</a>

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	3710		1000	1	02/07/2017 22:57	<a href="#">WG949828</a>
Fluoride	416		100	1	02/07/2017 22:57	<a href="#">WG949828</a>
Sulfate	39700		5000	1	02/07/2017 22:57	<a href="#">WG949828</a>

3 Ss

4 Cn

5 Sr

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Mercury	ND		0.200	1	02/07/2017 13:09	<a href="#">WG949780</a>

6 Qc

7 Gl

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Barium	226		5.00	1	02/07/2017 13:49	<a href="#">WG949921</a>
Boron	ND		200	1	02/07/2017 13:49	<a href="#">WG949921</a>
Chromium	ND		10.0	1	02/07/2017 13:49	<a href="#">WG949921</a>
Cobalt	ND		10.0	1	02/07/2017 13:49	<a href="#">WG949921</a>
Lithium	42.0		15.0	1	02/07/2017 13:49	<a href="#">WG949921</a>
Molybdenum	ND		5.00	1	02/07/2017 13:49	<a href="#">WG949921</a>

8 Al

9 Sc

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Antimony	ND		2.00	1	02/06/2017 17:06	<a href="#">WG949740</a>
Arsenic	7.27		2.00	1	02/06/2017 17:06	<a href="#">WG949740</a>
Beryllium	ND		2.00	1	02/06/2017 17:06	<a href="#">WG949740</a>
Cadmium	ND		1.00	1	02/06/2017 17:06	<a href="#">WG949740</a>
Calcium	130000		1000	1	02/06/2017 17:06	<a href="#">WG949740</a>
Lead	ND		2.00	1	02/06/2017 17:06	<a href="#">WG949740</a>
Selenium	ND		2.00	1	02/06/2017 17:06	<a href="#">WG949740</a>
Thallium	ND		2.00	1	02/06/2017 17:06	<a href="#">WG949740</a>



Method Blank (MB)

(MB) R3196125-1 02/09/17 15:19

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

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

L887961-01 Original Sample (OS) • Duplicate (DUP)

(OS) L887961-01 02/09/17 15:19 • (DUP) R3196125-4 02/09/17 15:19

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	13000000	12700000	1	2.33		5

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

(LCS) R3196125-2 02/09/17 15:19 • (LCSD) R3196125-3 02/09/17 15:19

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 %
Dissolved Solids	8800000	8540000	8470000	97.0	96.3	85.0-115			0.823	5

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Method Blank (MB)

(MB) R3195435-1 02/07/17 18:23

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

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

L887962-02 Original Sample (OS) • Duplicate (DUP)

(OS) L887962-02 02/07/17 20:18 • (DUP) R3195435-4 02/07/17 20:33

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	8170	8150	1	0		15
Fluoride	342	344	1	1		15

L887962-08 Original Sample (OS) • Duplicate (DUP)

(OS) L887962-08 02/07/17 22:57 • (DUP) R3195435-7 02/07/17 23:11

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	3710	3630	1	2		15
Fluoride	416	413	1	1		15
Sulfate	39700	39800	1	0		15

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

(LCS) R3195435-2 02/07/17 18:37 • (LCSD) R3195435-3 02/07/17 18:52

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Chloride	40000	39100	39200	98	98	80-120			0	15
Fluoride	8000	7970	7990	100	100	80-120			0	15
Sulfate	40000	39300	39300	98	98	80-120			0	15

L887962-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L887962-05 02/07/17 21:45 • (MS) R3195435-5 02/07/17 21:59 • (MSD) R3195435-6 02/07/17 22:14

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Chloride	50000	4020	55000	54900	102	102	1	80-120			0	15
Fluoride	5000	407	5640	5390	105	100	1	80-120			5	15
Sulfate	50000	39600	87100	86800	95	94	1	80-120			0	15



L887994-06 Original Sample (OS) • Matrix Spike (MS)

(OS) L887994-06 02/07/17 23:26 • (MS) R3195435-8 02/08/17 00:09

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>
Chloride	50000	40800	90700	100	1	80-120	
Fluoride	5000	175	5240	101	1	80-120	
Sulfate	50000	21800	70700	98	1	80-120	

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Method Blank (MB)

(MB) R3195976-1 02/09/17 05:53

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Sulfate	U		77.4	5000

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

L888205-02 Original Sample (OS) • Duplicate (DUP)

(OS) L888205-02 02/09/17 16:12 • (DUP) R3195976-6 02/09/17 16:27

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Sulfate	1720000	1700000	20	1		15

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

(LCS) R3195976-2 02/09/17 06:08 • (LCSD) R3195976-3 02/09/17 06:22

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Sulfate	40000	39000	38900	98	97	80-120			0	15

<sup>7</sup> Gl

<sup>8</sup> Al

L887918-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L887918-01 02/09/17 13:48 • (MS) R3195976-5 02/09/17 14:32

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Sulfate	50000	23500	69400	92	1	80-120	

<sup>9</sup> Sc



Method Blank (MB)

(MB) R3195254-2 02/07/17 12:10

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Mercury	U		0.0490	0.200

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

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

(LCS) R3195254-3 02/07/17 12:12 • (LCSD) R3195254-4 02/07/17 12:14

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Mercury	3.00	2.92	2.86	97	95	80-120			2	20

L887962-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L887962-05 02/07/17 12:19 • (MS) R3195254-5 02/07/17 12:25 • (MSD) R3195254-6 02/07/17 12:28

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Mercury	3.00	ND	3.05	2.75	102	92	1	75-125			10	20

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3195345-1 02/07/17 12:39

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Barium	U		1.70	5.00
Boron	14.7	J	12.6	200
Chromium	U		1.40	10.0
Cobalt	U		2.30	10.0
Lithium	U		5.30	15.0
Molybdenum	U		1.60	5.00

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

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

(LCS) R3195345-2 02/07/17 12:42 • (LCSD) R3195345-3 02/07/17 12:44

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Barium	1000	1020	1030	102	103	80-120			0	20
Boron	1000	1020	1030	102	103	80-120			1	20
Chromium	1000	986	988	99	99	80-120			0	20
Cobalt	1000	1020	1020	102	102	80-120			0	20
Lithium	1000	962	973	96	97	80-120			1	20
Molybdenum	1000	1010	1020	101	102	80-120			1	20

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

L887962-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L887962-05 02/07/17 12:47 • (MS) R3195345-5 02/07/17 12:52 • (MSD) R3195345-6 02/07/17 12:54

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Barium	1000	231	1230	1230	100	100	1	75-125			0	20
Boron	1000	ND	1180	1180	103	104	1	75-125			1	20
Chromium	1000	ND	990	984	99	98	1	75-125			1	20
Cobalt	1000	ND	1040	1040	104	104	1	75-125			0	20
Lithium	1000	43.6	1040	1030	99	99	1	75-125			0	20
Molybdenum	1000	ND	1020	1020	101	102	1	75-125			1	20





Method Blank (MB)

(MB) R3195140-1 02/06/17 15:15

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Antimony	U		0.754	2.00
Arsenic	U		0.250	2.00
Beryllium	U		0.120	2.00
Cadmium	U		0.160	1.00
Calcium	U		46.0	1000
Lead	U		0.240	2.00
Selenium	U		0.380	2.00
Thallium	U		0.190	2.00

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

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

(LCS) R3195140-2 02/06/17 15:18 • (LCSD) R3195140-3 02/06/17 15:22

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Antimony	57.9	48.6	48.7	84	84	80-120			0	20
Arsenic	50.0	47.5	47.7	95	95	80-120			0	20
Beryllium	50.0	45.4	46.0	91	92	80-120			1	20
Cadmium	50.0	52.0	52.6	104	105	80-120			1	20
Calcium	5000	4780	4810	96	96	80-120			1	20
Lead	50.0	49.8	49.6	100	99	80-120			0	20
Selenium	50.0	49.9	51.6	100	103	80-120			3	20
Thallium	50.0	49.5	49.4	99	99	80-120			0	20

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

L887962-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L887962-05 02/06/17 15:25 • (MS) R3195140-5 02/06/17 15:32 • (MSD) R3195140-6 02/06/17 15:36

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Antimony	57.9	ND	50.3	48.8	87	84	1	75-125			3	20
Arsenic	50.0	7.11	55.2	54.9	96	96	1	75-125			1	20
Beryllium	50.0	ND	45.2	44.2	90	88	1	75-125			2	20
Cadmium	50.0	ND	52.1	51.6	104	103	1	75-125			1	20
Calcium	5000	133000	135000	136000	52	71	1	75-125	V	V	1	20
Lead	50.0	ND	50.1	49.1	99	97	1	75-125			2	20
Selenium	50.0	ND	53.3	52.5	107	105	1	75-125			1	20
Thallium	50.0	ND	50.1	49.1	100	98	1	75-125			2	20



## Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
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.
Rec.	Recovery.

## Qualifier                      Description

J	The identification of the analyte is acceptable; the reported value is an estimate.
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.

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



ESC Lab Sciences 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.

## State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Connecticut	PH-0197	North Carolina <sup>1</sup>	DW21704
Florida	E87487	North Carolina <sup>2</sup>	41
Georgia	NELAP	North Dakota	R-140
Georgia <sup>1</sup>	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky <sup>1</sup>	90010	South Dakota	n/a
Kentucky <sup>2</sup>	16	Tennessee <sup>14</sup>	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas <sup>5</sup>	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

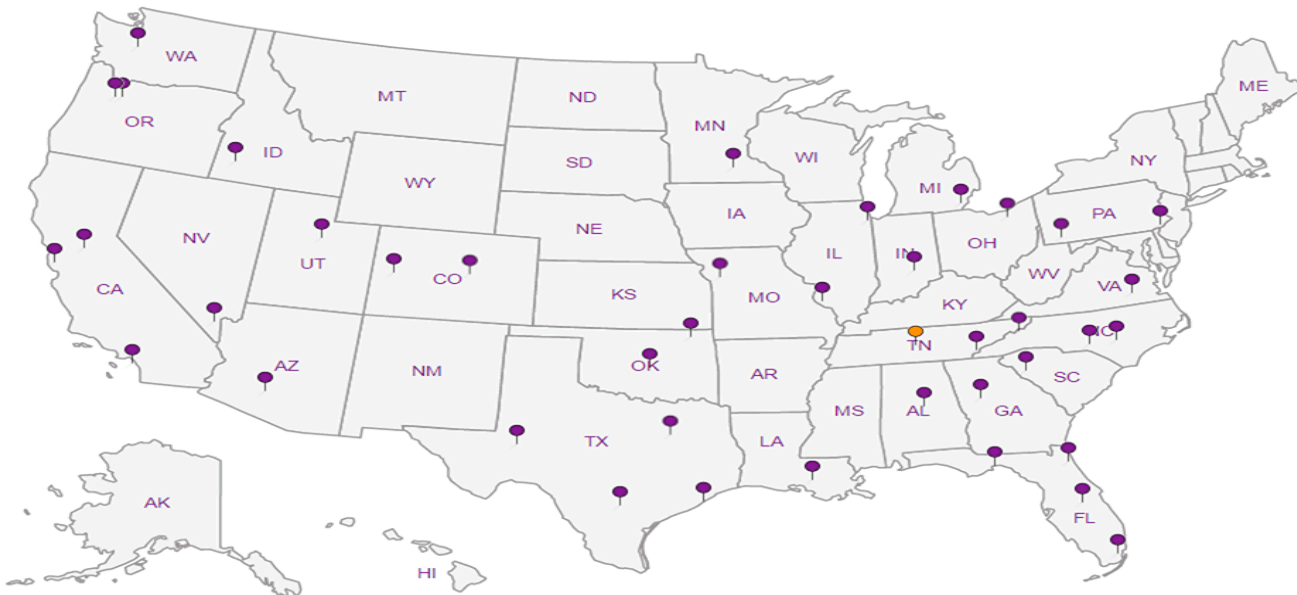
## Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA	100789
A2LA – ISO 17025 <sup>5</sup>	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>n/a</sup> Accreditation not applicable

## Our Locations

ESC Lab Sciences 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. **ESC Lab Sciences performs all testing at our central laboratory.**



1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

**SCS Engineers - KS**

7311 West 130th Street, Ste. 100  
Overland Park, KS 66213

Billing Information:

Accounts Payable  
7311 West 130th Street, Ste. 100  
Overland Park, KS 66213

Pres  
Chk

Analysis / Container / Preservative



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; jrockhold@scsengineers.com

Project Description: **KCPL - Iatan Generating Station - CCR GW BG**

City/State Collected:

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

Client Project #  
27213168.16

Lab Project #  
AQUAOPKS-IATAN

Collected by (print):  
**Adam Parris**

Site/Facility ID #

P.O. #

Collected by (signature):

**Rush?** (Lab MUST Be Notified)  
 \_\_\_ Same Day .....200%  
 \_\_\_ Next Day .....100%  
 \_\_\_ Two Day .....50%  
 \_\_\_ Three Day .....25%

Quote #

Date Results Needed  
**Standard**

No. of  
Cntrs

Immediately Packed on Ice N \_\_\_ Y **X**

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Analysis	Container	Preservative	Chain of Custody
MW-1	Grab	GW	-	2/3/17	1330	3	X	X	X	01
MW-2	↓	GW	-	↓	1435	3	X	X	X	02
MW-6		GW	-		1035	3	X	X	X	03
MW-7		GW	-		1105	3	X	X	X	04
MW-8		GW	-		1135	3	X	X	X	05
MW-9		GW	-		1250	3	X	X	X	05
MW-10		GW	-		1510	3	X	X	X	05
DUPLICATE		GW	-		1140	3	X	X	X	05
MS (MW-8)		GW	-		1145	3	X	X	X	05
MSD (MW-8)		GW	-		1150	3	X	X	X	05

\* Matrix:  
 SS - Soil AIR - Air  
 GW - Groundwater  
 WW - WasteWater  
 DW - Drinking Water  
 OT - Other

Remarks: 6010 Metals-Ba,B,Cr,Co,Li,Mo 6020 metals-Sb,As,Be,Cd,Ca,Pb,Se,Tl 7470 metals - Hg

pH \_\_\_\_\_ Temp \_\_\_\_\_  
 Flow \_\_\_\_\_ Other \_\_\_\_\_

Sample Receipt Checklist

COC Seal Present/Intact:	<input checked="" type="checkbox"/> NP	Y	N
COC Signed/Accurate:	<input checked="" type="checkbox"/>	Y	N
Bottles arrive intact:	<input checked="" type="checkbox"/>	Y	N
Correct bottles used:	<input checked="" type="checkbox"/>	Y	N
Sufficient volume sent:	<input checked="" type="checkbox"/>	Y	N
If Applicable			
VDA Zero Headspace:	<input checked="" type="checkbox"/>	Y	N
Preservation Correct/Checked:	<input checked="" type="checkbox"/>	Y	N

Samples returned via: \_\_\_ UPS  FedEx \_\_\_ Courier \_\_\_\_\_ Tracking # **7061 6678 1989**

Relinquished by: (Signature)	Date: 2/3/17	Time: 1630	Received by: (Signature)	Trip Blank Received: Yes / <input checked="" type="checkbox"/> No	HCL / MeOH TBR
Relinquished by: (Signature)	Date: 2/3/17	Time: 1700	Received by: (Signature)	Temp: 5.7 °C	Bottles Received: 30
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 2-9-17	Time: 9:00

If preservation required by Login: Date/Time  
 Hold: \_\_\_\_\_ Condition: **NCF / OK**

## Case Narrative

### Lab No: 20170083

This report contains the analytical results for the 10 sample(s) received under chain of custody by ESC Lab Sciences on 2/6/2017 1:43:37 PM. These samples are associated with your 27213167.16 project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted below:

The test results in this report meet all NELAC requirements unless noted below:

This report shall not be reproduced, except in full, without the written approval of ESC Lab Sciences.

All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client.

Results have been reviewed by the Director of Radiochemistry or their designees and is approved for release.

### Observations / Nonconformances

L888792



Client : SCS Engineers  
 Client Project : 27213167.16  
 Lab Number : 20170083  
 Date Reported : 03/06/17  
 Date Received : 02/06/17  
 Page Number : 2 of 4

## Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst
--------	--------	----	-------	------	-----------	---------------	---------

**Lab ID** : 20170083-01  
**Client ID** : MW-1  
**Date Sampled** : 2/3/2017 1:30:00 PM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		1.42 +/- 0.886	1.15	pCi/l			
Radium-226	SM 7500 Ra B M*	-0.653 +/- 0.340	0.610	pCi/l	02/23/17	03/02/17	SD
Radium-228	EPA 904*/9320*	1.42 +/- 0.546	0.542	pCi/l	02/21/17	02/27/17	JR

**Lab ID** : 20170083-02  
**Client ID** : MW-2  
**Date Sampled** : 2/3/2017 2:35:00 PM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		1.23 +/- 0.709	0.895	pCi/l			
Radium-226	SM 7500 Ra B M*	-0.086 +/- 0.134	0.230	pCi/l	02/23/17	03/02/17	SD
Radium-228	EPA 904*/9320*	1.23 +/- 0.575	0.665	pCi/l	02/21/17	02/27/17	JR

**Lab ID** : 20170083-03  
**Client ID** : MW-6  
**Date Sampled** : 2/3/2017 10:35:00 AM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		4.46 +/- 0.742	0.814	pCi/l			
Radium-226	SM 7500 Ra B M*	0.044 +/- 0.105	0.169	pCi/l	02/23/17	03/02/17	SD
Radium-228	EPA 904*/9320*	4.42 +/- 0.637	0.645	pCi/l	02/21/17	02/27/17	JR

**Lab ID** : 20170083-04  
**Client ID** : MW-7  
**Date Sampled** : 2/3/2017 11:05:00 AM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		1.51 +/- 0.681	0.801	pCi/l			
Radium-226	SM 7500 Ra B M*	-0.022 +/- 0.077	0.136	pCi/l	02/23/17	03/02/17	SD
Radium-228	EPA 904*/9320*	1.51 +/- 0.604	0.665	pCi/l	02/21/17	02/27/17	JR



Client : SCS Engineers  
 Client Project : 27213167.16  
 Lab Number : 20170083  
 Date Reported : 03/06/17  
 Date Received : 02/06/17  
 Page Number : 3 of 4

## Analytical Report

	Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst
--	--------	--------	----	-------	------	-----------	---------------	---------

**Lab ID** : 20170083-05  
**Client ID** : MW-8  
**Date Sampled** : 2/3/2017 11:35:00 AM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		1.69 +/- 0.690	0.771	pCi/l				
Radium-226	SM 7500 Ra B M*	0.233 +/- 0.123	0.157	pCi/l		02/23/17	03/02/17	SD
Radium-228	EPA 904*/9320*	1.46 +/- 0.567	0.614	pCi/l		02/21/17	02/27/17	JR

**Lab ID** : 20170083-06  
**Client ID** : MW-9  
**Date Sampled** : 2/3/2017 12:50:00 PM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		2.39 +/- 0.694	0.742	pCi/l				
Radium-226	SM 7500 Ra B M*	0.303 +/- 0.116	0.135	pCi/l		02/23/17	03/02/17	SD
Radium-228	EPA 904*/9320*	2.09 +/- 0.578	0.607	pCi/l		02/21/17	02/27/17	JR

**Lab ID** : 20170083-07  
**Client ID** : MW-10  
**Date Sampled** : 2/3/2017 3:10:00 PM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		2.40 +/- 0.672	0.835	pCi/l				
Radium-226	SM 7500 Ra B M*	-0.057 +/- 0.135	0.233	pCi/l		02/23/17	03/02/17	SD
Radium-228	EPA 904*/9320*	2.40 +/- 0.537	0.602	pCi/l		02/21/17	02/27/17	JR

**Lab ID** : 20170083-08  
**Client ID** : DUPLICATE  
**Date Sampled** : 2/3/2017 11:40:00 AM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		0.502 +/- 0.587	0.715	pCi/l				
Radium-226	SM 7500 Ra B M*	0.102 +/- 0.152	0.228	pCi/l		02/23/17	03/02/17	SD
Radium-228	EPA 904*/9320*	0.400 +/- 0.435	0.487	pCi/l		02/21/17	02/28/17	JR



Client : SCS Engineers  
 Client Project : 27213167.16  
 Lab Number : 20170083  
 Date Reported : 03/06/17  
 Date Received : 02/06/17  
 Page Number : 4 of 4

### Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst
<b>Lab ID</b> : 20170083-09							
<b>Client ID</b> : MS (MW-8)							
<b>Date Sampled</b> : 2/3/2017 11:45:00 AM							
<b>Matrix</b> : NPW							

#### Radiochemical Analyses

Radium-226	SM 7500 Ra B M*	103	% Rec	02/23/17	03/02/17	SD
Radium-228	EPA 904*/9320*	77.5	% Rec	02/21/17	02/28/17	JR

**Lab ID** : 20170083-10  
**Client ID** : MSD (MW-8)  
**Date Sampled** : 2/3/2017 11:50:00 AM  
**Matrix** : NPW

#### Radiochemical Analyses

Radium-226	SM 7500 Ra B M*	7.8	RPD	02/23/17	03/02/17	SD
Radium-228	EPA 904*/9320*	3.9	RPD	02/21/17	02/28/17	JR

### QC Report

Parameter	Blank	LCS %REC	LCSD %REC	RPD	DUP RPD	RER, NAD or DER	MS %REC	MSD %REC	RPD	Batch ID
Radium-226	0.094	92.1			NC	1.120	103.0	111.0	7.8	R1194
Radium-228	0.631	106.0			39.5	0.897	77.5	80.9	3.9	R3925

Lab Approval:

Ron Eidson  
 Director of Radiochemistry



**SCS Engineers - KS**  
 7311 West 130th Street, Ste. 100  
 Overland Park, KS 66213

Report to:  
**Jason Franks**

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

Project Description: **KCPL - Iatan Generating Station - CCR GW DG**

Client Project #  
**27213167.16**

Site/Facility ID #

P.O. #

Lab Project #  
**AQUAOPKS-IATAN**

Quote #

Collected by (signature): *Adam Barris*  
 Rush? (Lab MUST Be Notified)  
 \_\_\_ Same Day .....200%  
 \_\_\_ Next Day .....100%  
 \_\_\_ Two Day .....50%  
 \_\_\_ Three Day .....25%  
 Immediately Packed on Ice N \_\_\_ Y **X**

Date Results Needed  
**Standard**

No. of Ctr's

Billing Information:

Accounts Payable  
 7311 West 130th Street, Ste. 100  
 Overland Park, KS 66213

Chain of Custody Page 1 of 1



L.A.B S.C.I.E.N.C.E.S

VOLUME LAB OF FORCE



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

L# **888792**

Table #

Accnum: **AQUAOPKS**

Template: **T107350**

Prelogin: **P585651**

TSR: **206 - Jeff Carr**

PB:

Shipped Via:

Rem./Contaminant Sample # (lab only)

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Ctr's
MW-1	Grab	NPW	-	2/18/17	1330	2
MW-2		NPW	-		1435	2
MW-6		NPW	-		1035	2
MW-7		NPW	-		1105	2
MW-8		NPW	-		1136	2
MW-9		NPW	-		1250	2
MW-10		NPW	-		1510	2
DUPLICATE		NPW	-		1140	2
MS (MW-8)		NPW	-		1145	2
MSD (MW-8)		NPW	-		1150	2

RA226, RA228 1L-HDPE-Add HNO3

*Handwritten signature*

Remarks: RA 226/228 - Report separately and combined.

\* Matrix: SS - Soil AIR - Air  
 GW - Groundwater  
 WW - Waste Water  
 DW - Drinking Water  
 OT - Other

Samples returned via: UPS Fac/DX Courier

Relinquished by: (Signature) *[Signature]*  
 Date: **2/13/17**  
 Time: **1030**

Relinquished by: (Signature) *[Signature]*  
 Date: **2/13/17**  
 Time: **1700**

Relinquished by: (Signature) *[Signature]*  
 Date: **2/13/17**  
 Time: **1700**

TRB-Kit #

Received by: (Signature) *[Signature]*  
 Received by: (Signature) *[Signature]*  
 Received by: (Signature) *[Signature]*

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 Headpace: Y N  
 Preservation Correct/Checked: Y N

pH \_\_\_\_\_ Temp \_\_\_\_\_  
 Flow \_\_\_\_\_ Other \_\_\_\_\_

Trip Blank Received: Yes / No  
 HCL / MeOH  
 TBR

Temp: **Amb** °C  
 Date: **2/16/17**

If preservation required by Login: Date/Time

Hold:

Condition:  
 NCF / OK

20170083

**SAMPLE LOGIN**

Date Received: 2/6/2017 1:43:37

Lab Number: 20170083

Due: 3/6/2017

Sample Number	Client Sample ID	Matrix	Date Sampled	Container Type	Container Size	Preservation	Preserved Upon Receipt	Custody Seal	Seal Intact
20170083-01 B	MW-1	NPW	02/03/17	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20170083-01 A	MW-1	NPW	02/03/17	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						
20170083-02 A	MW-2	NPW	02/03/17	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20170083-02 B	MW-2	NPW	02/03/17	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						
20170083-03 A	MW-6	NPW	02/03/17	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20170083-03 B	MW-6	NPW	02/03/17	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						
20170083-04 A	MW-7	NPW	02/03/17	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20170083-04 B	MW-7	NPW	02/03/17	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						
20170083-05 B	MW-8	NPW	02/03/17	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20170083-05 A	MW-8	NPW	02/03/17	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						
20170083-06 B	MW-9	NPW	02/03/17	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20170083-06 A	MW-9	NPW	02/03/17	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						
20170083-07 A	MW-10	NPW	02/03/17	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20170083-07 B	MW-10	NPW	02/03/17	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						

20170083-08 A	DUPLICATE	NPW	02/03/17	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes
20170083-08 B	DUPLICATE	NPW	02/03/17	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes
Radium-226			SM 7500 Ra B M*					
Radium-228			EPA 904*/9320*					
20170083-09 A	MS (MW-8)	NPW	02/03/17	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes
20170083-09 B	MS (MW-8)	NPW	02/03/17	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes
Radium-226			SM 7500 Ra B M*					
Radium-228			EPA 904*/9320*					
20170083-10 B	MSD (MW-8)	NPW	02/03/17	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes
20170083-10 A	MSD (MW-8)	NPW	02/03/17	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes
Radium-226			SM 7500 Ra B M*					
Radium-228			EPA 904*/9320*					

**CONTAINER INSPECTION**

# Coolers 2 Custody Seals Broken  Temperature: Awb C Ice  Radiation Survey: <300 cpm

**SAMPLE INSPECTION**

Sample Seal Broken  Chain of Custody Record  Labels in Tact  Radiation Survey Complete

**Anomalies**

Inspected By: [Signature] DATE 2/6/17  
 QA or Designee Review: Raymond Thomas DATE 02/06/17  
 Sample Custodian Review: [Signature] DATE 2/6/17

**Project Notes:**

Jared Morrison  
December 16, 2022

**ATTACHMENT 1-6**  
**May 2017 Sampling Event Laboratory Report**

## SCS Engineers - KS

Sample Delivery Group: L912129  
Samples Received: 05/26/2017  
Project Number: 27213167.15  
Description: KCPL - Iatan Generating Station

Report To: Jason Franks  
7311 West 130th Street, Ste. 100  
Overland Park, KS 66213










Entire Report Reviewed By:



Jeff Carr  
Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



<b>Cp: Cover Page</b>	<b>1</b>	
<b>Tc: Table of Contents</b>	<b>2</b>	
<b>Ss: Sample Summary</b>	<b>3</b>	
<b>Cn: Case Narrative</b>	<b>5</b>	
<b>Sr: Sample Results</b>	<b>6</b>	
<b>MW-1 L912129-01</b>	<b>6</b>	
<b>MW-2 L912129-02</b>	<b>7</b>	
<b>MW-6 L912129-03</b>	<b>8</b>	
<b>MW-7 L912129-04</b>	<b>9</b>	
<b>MW-8 L912129-05</b>	<b>10</b>	
<b>DUPLICATE L912129-06</b>	<b>11</b>	
<b>Qc: Quality Control Summary</b>	<b>12</b>	
<b>Gravimetric Analysis by Method 2540 C-2011</b>	<b>12</b>	
<b>Wet Chemistry by Method 9056A</b>	<b>14</b>	
<b>Mercury by Method 7470A</b>	<b>17</b>	
<b>Metals (ICP) by Method 6010B</b>	<b>18</b>	
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<b>Al: Accreditations &amp; Locations</b>	<b>22</b>	
<b>Sc: Chain of Custody</b>	<b>23</b>	

# SAMPLE SUMMARY



## MW-1 L912129-01 GW

Collected by Adam Parris  
Collected date/time 05/24/17 15:05  
Received date/time 05/26/17 12:18

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG984381	1	05/31/17 16:07	05/31/17 16:33	EG
Wet Chemistry by Method 9056A	WG984347	1	05/31/17 19:28	05/31/17 19:28	KCF
Mercury by Method 7470A	WG983679	1	05/27/17 06:26	05/31/17 06:11	BRJ
Metals (ICP) by Method 6010B	WG984875	1	06/01/17 09:51	06/01/17 12:10	NJB
Metals (ICPMS) by Method 6020	WG985320	1	06/02/17 10:59	06/02/17 15:55	VSS
Metals (ICPMS) by Method 6020	WG985320	1	06/02/17 10:59	06/04/17 19:47	VSS

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

## MW-2 L912129-02 GW

Collected by Adam Parris  
Collected date/time 05/24/17 15:55  
Received date/time 05/26/17 12:18

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG984381	1	05/31/17 16:07	05/31/17 16:33	EG
Wet Chemistry by Method 9056A	WG984347	1	05/31/17 21:09	05/31/17 21:09	KCF
Wet Chemistry by Method 9056A	WG985145	5	06/02/17 12:41	06/02/17 12:41	DR
Mercury by Method 7470A	WG983679	1	05/27/17 06:26	05/31/17 06:04	BRJ
Metals (ICP) by Method 6010B	WG984875	1	06/01/17 09:51	06/01/17 11:54	NJB
Metals (ICPMS) by Method 6020	WG985320	1	06/02/17 10:59	06/02/17 15:09	VSS

## MW-6 L912129-03 GW

Collected by Adam Parris  
Collected date/time 05/24/17 11:40  
Received date/time 05/26/17 12:18

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG984381	1	05/31/17 16:07	05/31/17 16:33	EG
Wet Chemistry by Method 9056A	WG984347	1	05/31/17 19:42	05/31/17 19:42	KCF
Mercury by Method 7470A	WG983679	1	05/27/17 06:26	05/31/17 06:14	BRJ
Metals (ICP) by Method 6010B	WG984875	1	06/01/17 09:51	06/01/17 13:19	NJB
Metals (ICPMS) by Method 6020	WG985320	1	06/02/17 10:59	06/02/17 15:58	VSS
Metals (ICPMS) by Method 6020	WG985320	1	06/02/17 10:59	06/04/17 19:50	VSS

## MW-7 L912129-04 GW

Collected by Adam Parris  
Collected date/time 05/24/17 12:30  
Received date/time 05/26/17 12:18

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG984381	1	05/31/17 16:07	05/31/17 16:33	EG
Wet Chemistry by Method 9056A	WG984347	1	05/31/17 19:57	05/31/17 19:57	KCF
Mercury by Method 7470A	WG983679	1	05/27/17 06:26	05/31/17 06:16	BRJ
Metals (ICP) by Method 6010B	WG984875	1	06/01/17 09:51	06/01/17 13:23	NJB
Metals (ICPMS) by Method 6020	WG985320	1	06/02/17 10:59	06/02/17 16:02	VSS
Metals (ICPMS) by Method 6020	WG985320	1	06/02/17 10:59	06/04/17 19:54	VSS

## MW-8 L912129-05 GW

Collected by Adam Parris  
Collected date/time 05/24/17 13:15  
Received date/time 05/26/17 12:18

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG984381	1	05/31/17 16:07	05/31/17 16:33	EG
Wet Chemistry by Method 9056A	WG984347	1	05/31/17 20:11	05/31/17 20:11	KCF
Mercury by Method 7470A	WG983679	1	05/27/17 06:26	05/31/17 06:18	BRJ
Metals (ICP) by Method 6010B	WG984875	1	06/01/17 09:51	06/01/17 13:25	NJB
Metals (ICPMS) by Method 6020	WG985320	1	06/02/17 10:59	06/02/17 16:05	VSS
Metals (ICPMS) by Method 6020	WG985320	1	06/02/17 10:59	06/04/17 19:57	VSS



## DUPLICATE L912129-06 GW

Collected by Adam Parris  
 Collected date/time 05/24/17 16:00  
 Received date/time 05/26/17 12:18

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG984382	1	05/31/17 15:29	05/31/17 15:56	EG
Wet Chemistry by Method 9056A	WG984347	1	05/31/17 20:25	05/31/17 20:25	KCF
Wet Chemistry by Method 9056A	WG985145	5	06/02/17 13:25	06/02/17 13:25	DR
Mercury by Method 7470A	WG983679	1	05/27/17 06:26	05/31/17 06:20	BRJ
Metals (ICP) by Method 6010B	WG984875	1	06/01/17 09:51	06/01/17 13:28	NJB
Metals (ICPMS) by Method 6020	WG985320	1	06/02/17 10:59	06/02/17 16:09	VSS
Metals (ICPMS) by Method 6020	WG985320	1	06/02/17 10:59	06/04/17 20:01	VSS

- <sup>1</sup>Cp
- <sup>2</sup>Tc
- <sup>3</sup>Ss
- <sup>4</sup>Cn
- <sup>5</sup>Sr
- <sup>6</sup>Qc
- <sup>7</sup>Gl
- <sup>8</sup>Al
- <sup>9</sup>Sc





All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. 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  
Technical Service Representative

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



## Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	477000		10000	1	05/31/2017 16:33	<a href="#">WG984381</a>

1 Cp

2 Tc

## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	5610		1000	1	05/31/2017 19:28	<a href="#">WG984347</a>
Fluoride	272		100	1	05/31/2017 19:28	<a href="#">WG984347</a>
Sulfate	27400		5000	1	05/31/2017 19:28	<a href="#">WG984347</a>

3 Ss

4 Cn

5 Sr

## Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	05/31/2017 06:11	<a href="#">WG983679</a>

6 Qc

7 Gl

## Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	234		5.00	1	06/01/2017 12:10	<a href="#">WG984875</a>
Boron	ND		200	1	06/01/2017 12:10	<a href="#">WG984875</a>
Calcium	128000		1000	1	06/01/2017 12:10	<a href="#">WG984875</a>
Chromium	ND		10.0	1	06/01/2017 12:10	<a href="#">WG984875</a>
Cobalt	ND		10.0	1	06/01/2017 12:10	<a href="#">WG984875</a>

8 Al

9 Sc

## Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	06/02/2017 15:55	<a href="#">WG985320</a>
Arsenic	13.0		2.00	1	06/02/2017 15:55	<a href="#">WG985320</a>
Beryllium	ND		2.00	1	06/04/2017 19:47	<a href="#">WG985320</a>
Cadmium	ND		1.00	1	06/02/2017 15:55	<a href="#">WG985320</a>
Lead	ND		2.00	1	06/02/2017 15:55	<a href="#">WG985320</a>
Selenium	ND		2.00	1	06/02/2017 15:55	<a href="#">WG985320</a>
Thallium	ND		2.00	1	06/02/2017 15:55	<a href="#">WG985320</a>



## Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	690000		10000	1	05/31/2017 16:33	<a href="#">WG984381</a>

1 Cp

2 Tc

## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	9540		1000	1	05/31/2017 21:09	<a href="#">WG984347</a>
Fluoride	327		100	1	05/31/2017 21:09	<a href="#">WG984347</a>
Sulfate	172000	<u>J6</u>	25000	5	06/02/2017 12:41	<a href="#">WG985145</a>

3 Ss

4 Cn

5 Sr

## Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	05/31/2017 06:04	<a href="#">WG983679</a>

6 Qc

7 Gl

## Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	213		5.00	1	06/01/2017 11:54	<a href="#">WG984875</a>
Boron	ND		200	1	06/01/2017 11:54	<a href="#">WG984875</a>
Calcium	166000	<u>V</u>	1000	1	06/01/2017 11:54	<a href="#">WG984875</a>
Chromium	ND		10.0	1	06/01/2017 11:54	<a href="#">WG984875</a>
Cobalt	ND		10.0	1	06/01/2017 11:54	<a href="#">WG984875</a>

8 Al

9 Sc

## Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	06/02/2017 15:09	<a href="#">WG985320</a>
Arsenic	21.0		2.00	1	06/02/2017 15:09	<a href="#">WG985320</a>
Beryllium	ND		2.00	1	06/02/2017 15:09	<a href="#">WG985320</a>
Cadmium	1.21		1.00	1	06/02/2017 15:09	<a href="#">WG985320</a>
Lead	ND		2.00	1	06/02/2017 15:09	<a href="#">WG985320</a>
Selenium	ND		2.00	1	06/02/2017 15:09	<a href="#">WG985320</a>
Thallium	ND		2.00	1	06/02/2017 15:09	<a href="#">WG985320</a>



## Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	544000		10000	1	05/31/2017 16:33	<a href="#">WG984381</a>

1 Cp

2 Tc

## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	1490		1000	1	05/31/2017 19:42	<a href="#">WG984347</a>
Fluoride	297		100	1	05/31/2017 19:42	<a href="#">WG984347</a>
Sulfate	32700		5000	1	05/31/2017 19:42	<a href="#">WG984347</a>

3 Ss

4 Cn

5 Sr

## Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	05/31/2017 06:14	<a href="#">WG983679</a>

6 Qc

7 Gl

## Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	306		5.00	1	06/01/2017 13:19	<a href="#">WG984875</a>
Boron	ND		200	1	06/01/2017 13:19	<a href="#">WG984875</a>
Calcium	150000		1000	1	06/01/2017 13:19	<a href="#">WG984875</a>
Chromium	ND		10.0	1	06/01/2017 13:19	<a href="#">WG984875</a>
Cobalt	ND		10.0	1	06/01/2017 13:19	<a href="#">WG984875</a>

8 Al

9 Sc

## Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	06/02/2017 15:58	<a href="#">WG985320</a>
Arsenic	19.6		2.00	1	06/02/2017 15:58	<a href="#">WG985320</a>
Beryllium	ND		2.00	1	06/04/2017 19:50	<a href="#">WG985320</a>
Cadmium	ND		1.00	1	06/02/2017 15:58	<a href="#">WG985320</a>
Lead	ND		2.00	1	06/02/2017 15:58	<a href="#">WG985320</a>
Selenium	ND		2.00	1	06/02/2017 15:58	<a href="#">WG985320</a>
Thallium	ND		2.00	1	06/02/2017 15:58	<a href="#">WG985320</a>



## Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	462000		10000	1	05/31/2017 16:33	<a href="#">WG984381</a>

## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	1760		1000	1	05/31/2017 19:57	<a href="#">WG984347</a>
Fluoride	391		100	1	05/31/2017 19:57	<a href="#">WG984347</a>
Sulfate	16200		5000	1	05/31/2017 19:57	<a href="#">WG984347</a>

## Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	05/31/2017 06:16	<a href="#">WG983679</a>

## Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	240		5.00	1	06/01/2017 13:23	<a href="#">WG984875</a>
Boron	ND		200	1	06/01/2017 13:23	<a href="#">WG984875</a>
Calcium	123000		1000	1	06/01/2017 13:23	<a href="#">WG984875</a>
Chromium	ND		10.0	1	06/01/2017 13:23	<a href="#">WG984875</a>
Cobalt	ND		10.0	1	06/01/2017 13:23	<a href="#">WG984875</a>

## Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	06/02/2017 16:02	<a href="#">WG985320</a>
Arsenic	19.5		2.00	1	06/02/2017 16:02	<a href="#">WG985320</a>
Beryllium	ND		2.00	1	06/04/2017 19:54	<a href="#">WG985320</a>
Cadmium	ND		1.00	1	06/02/2017 16:02	<a href="#">WG985320</a>
Lead	ND		2.00	1	06/02/2017 16:02	<a href="#">WG985320</a>
Selenium	ND		2.00	1	06/02/2017 16:02	<a href="#">WG985320</a>
Thallium	ND		2.00	1	06/02/2017 16:02	<a href="#">WG985320</a>

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	485000		10000	1	05/31/2017 16:33	<a href="#">WG984381</a>

## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	3630		1000	1	05/31/2017 20:11	<a href="#">WG984347</a>
Fluoride	391		100	1	05/31/2017 20:11	<a href="#">WG984347</a>
Sulfate	42800		5000	1	05/31/2017 20:11	<a href="#">WG984347</a>

## Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	05/31/2017 06:18	<a href="#">WG983679</a>

## Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	200		5.00	1	06/01/2017 13:25	<a href="#">WG984875</a>
Boron	ND		200	1	06/01/2017 13:25	<a href="#">WG984875</a>
Calcium	138000		1000	1	06/01/2017 13:25	<a href="#">WG984875</a>
Chromium	ND		10.0	1	06/01/2017 13:25	<a href="#">WG984875</a>
Cobalt	ND		10.0	1	06/01/2017 13:25	<a href="#">WG984875</a>

## Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	06/02/2017 16:05	<a href="#">WG985320</a>
Arsenic	7.56		2.00	1	06/02/2017 16:05	<a href="#">WG985320</a>
Beryllium	ND		2.00	1	06/04/2017 19:57	<a href="#">WG985320</a>
Cadmium	ND		1.00	1	06/02/2017 16:05	<a href="#">WG985320</a>
Lead	ND		2.00	1	06/02/2017 16:05	<a href="#">WG985320</a>
Selenium	ND		2.00	1	06/02/2017 16:05	<a href="#">WG985320</a>
Thallium	ND		2.00	1	06/02/2017 16:05	<a href="#">WG985320</a>

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	713000		10000	1	05/31/2017 15:56	<a href="#">WG984382</a>

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	9530		1000	1	05/31/2017 20:25	<a href="#">WG984347</a>
Fluoride	324		100	1	05/31/2017 20:25	<a href="#">WG984347</a>
Sulfate	177000		25000	5	06/02/2017 13:25	<a href="#">WG985145</a>

3 Ss

4 Cn

5 Sr

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	05/31/2017 06:20	<a href="#">WG983679</a>

6 Qc

7 Gl

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	213		5.00	1	06/01/2017 13:28	<a href="#">WG984875</a>
Boron	ND		200	1	06/01/2017 13:28	<a href="#">WG984875</a>
Calcium	166000		1000	1	06/01/2017 13:28	<a href="#">WG984875</a>
Chromium	ND		10.0	1	06/01/2017 13:28	<a href="#">WG984875</a>
Cobalt	ND		10.0	1	06/01/2017 13:28	<a href="#">WG984875</a>

8 Al

9 Sc

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	06/02/2017 16:09	<a href="#">WG985320</a>
Arsenic	21.6		2.00	1	06/02/2017 16:09	<a href="#">WG985320</a>
Beryllium	ND		2.00	1	06/04/2017 20:01	<a href="#">WG985320</a>
Cadmium	1.10		1.00	1	06/02/2017 16:09	<a href="#">WG985320</a>
Lead	ND		2.00	1	06/02/2017 16:09	<a href="#">WG985320</a>
Selenium	ND		2.00	1	06/02/2017 16:09	<a href="#">WG985320</a>
Thallium	ND		2.00	1	06/02/2017 16:09	<a href="#">WG985320</a>



Method Blank (MB)

(MB) R3223198-1 05/31/17 16:33

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Dissolved Solids	U		2820	10000

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

L912039-02 Original Sample (OS) • Duplicate (DUP)

(OS) L912039-02 05/31/17 16:33 • (DUP) R3223198-4 05/31/17 16:33

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Dissolved Solids	5690000	5430000	1	4.68		5

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

(LCS) R3223198-2 05/31/17 16:33 • (LCSD) R3223198-3 05/31/17 16:33

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Dissolved Solids	8800000	8790000	9110000	99.9	104	85.0-115			3.58	5

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc





Method Blank (MB)

(MB) R3223202-1 05/31/17 15:56

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Dissolved Solids	U		2820	10000

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

L912150-01 Original Sample (OS) • Duplicate (DUP)

(OS) L912150-01 05/31/17 15:56 • (DUP) R3223202-4 05/31/17 15:56

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Dissolved Solids	3760000	3820000	1	1.59		5

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

(LCS) R3223202-2 05/31/17 15:56 • (LCSD) R3223202-3 05/31/17 15:56

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Dissolved Solids	8800000	8690000	9090000	98.8	103	85.0-115			4.50	5

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Method Blank (MB)

(MB) R3222381-1 05/31/17 06:59

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

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L912085-01 Original Sample (OS) • Duplicate (DUP)

(OS) L912085-01 05/31/17 17:04 • (DUP) R3222381-4 05/31/17 17:18

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Chloride	328000	328000	10	0		15
Fluoride	1380	1100	10	23	P1	15
Sulfate	ND	39000	10	0		15

L912156-03 Original Sample (OS) • Duplicate (DUP)

(OS) L912156-03 05/31/17 23:47 • (DUP) R3222381-8 06/01/17 00:02

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Chloride	42800	42800	1	0		15
Fluoride	595	597	1	0		15

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

(LCS) R3222381-2 05/31/17 07:13 • (LCSD) R3222381-3 05/31/17 07:27

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Chloride	40000	39600	39700	99	99	80-120			0	15
Fluoride	8000	8070	8060	101	101	80-120			0	15
Sulfate	40000	40100	40100	100	100	80-120			0	15

L912097-14 Original Sample (OS) • Matrix Spike (MS)

(OS) L912097-14 05/31/17 18:30 • (MS) R3222381-5 05/31/17 18:45

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
	ug/l	ug/l	ug/l	%		%	
Chloride	50000	50600	98500	96	1	80-120	
Fluoride	5000	253	5130	98	1	80-120	



L912129-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L912129-02 05/31/17 21:09 • (MS) R3222381-6 05/31/17 21:23 • (MSD) R3222381-7 05/31/17 21:38

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	9540	60300	60800	101	102	1	80-120			1	15
Fluoride	5000	327	5510	5420	104	102	1	80-120			2	15

- <sup>1</sup> Cp
- <sup>2</sup> Tc
- <sup>3</sup> Ss
- <sup>4</sup> Cn
- <sup>5</sup> Sr
- <sup>6</sup> Qc
- <sup>7</sup> Gl
- <sup>8</sup> Al
- <sup>9</sup> Sc



Method Blank (MB)

(MB) R3222728-1 06/02/17 04:22

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Sulfate	U		77.4	5000

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

L912129-06 Original Sample (OS) • Duplicate (DUP)

(OS) L912129-06 06/02/17 13:25 • (DUP) R3222728-6 06/02/17 13:39

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Sulfate	177000	174000	5	2		15

L912675-08 Original Sample (OS) • Duplicate (DUP)

(OS) L912675-08 06/02/17 15:20 • (DUP) R3222728-7 06/02/17 15:34

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Sulfate	174000	172000	5	1		15

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

(LCS) R3222728-2 06/02/17 04:37 • (LCSD) R3222728-3 06/02/17 04:51

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Sulfate	40000	42300	42500	106	106	80-120			1	15

L912129-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L912129-02 06/02/17 12:41 • (MS) R3222728-4 06/02/17 12:56 • (MSD) R3222728-5 06/02/17 13:10

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Sulfate	50000	172000	213000	211000	83	78	5	80-120		<u>J6</u>	1	15

L912444-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L912444-01 06/02/17 15:49 • (MS) R3222728-8 06/02/17 16:03

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Sulfate	50000	ND	59400	103	10	80-120	



Method Blank (MB)

(MB) R3222023-1 05/31/17 05:53

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Mercury	U		0.0490	0.200

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

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

(LCS) R3222023-2 05/31/17 05:55 • (LCSD) R3222023-3 05/31/17 06:02

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Mercury	3.00	2.87	2.88	96	96	80-120			0	20

L912129-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L912129-02 05/31/17 06:04 • (MS) R3222023-4 05/31/17 06:07 • (MSD) R3222023-5 05/31/17 06:09

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Mercury	3.00	ND	2.91	2.88	97	96	1	75-125			1	20

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Method Blank (MB)

(MB) R3222507-1 06/01/17 11:46

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Barium	U		1.70	5.00
Boron	U		12.6	200
Calcium	U		46.3	1000
Chromium	U		1.40	10.0
Cobalt	U		2.30	10.0

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

<sup>4</sup>Cn

<sup>5</sup>Sr

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

(LCS) R3222507-2 06/01/17 11:49 • (LCSD) R3222507-3 06/01/17 11:51

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Barium	1000	1010	1010	101	101	80-120			0	20
Boron	1000	937	947	94	95	80-120			1	20
Calcium	10000	9920	9910	99	99	80-120			0	20
Chromium	1000	999	1000	100	100	80-120			0	20
Cobalt	1000	1030	1030	103	103	80-120			0	20

<sup>6</sup>Qc

<sup>7</sup>Gl

<sup>8</sup>Al

L912129-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L912129-02 06/01/17 11:54 • (MS) R3222507-5 06/01/17 12:00 • (MSD) R3222507-6 06/01/17 12:02

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Barium	1000	213	1210	1210	100	99	1	75-125			0	20
Boron	1000	ND	1130	1120	96	96	1	75-125			1	20
Calcium	10000	166000	173000	173000	65	67	1	75-125	V	V	0	20
Chromium	1000	ND	988	991	99	99	1	75-125			0	20
Cobalt	1000	ND	1030	1030	103	103	1	75-125			0	20

<sup>9</sup>Sc



Method Blank (MB)

(MB) R3222997-1 06/02/17 14:58

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Antimony	U		0.754	2.00
Arsenic	U		0.250	2.00
Beryllium	U		0.120	2.00
Cadmium	U		0.160	1.00
Lead	U		0.240	2.00
Selenium	U		0.380	2.00
Thallium	U		0.190	2.00

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

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

(LCS) R3222997-2 06/02/17 15:02 • (LCSD) R3222997-3 06/02/17 15:06

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Antimony	50.0	51.1	51.7	102	103	80-120			1	20
Arsenic	50.0	48.1	47.9	96	96	80-120			0	20
Beryllium	50.0	43.8	43.7	88	87	80-120			0	20
Cadmium	50.0	49.6	50.6	99	101	80-120			2	20
Lead	50.0	48.8	48.8	98	98	80-120			0	20
Selenium	50.0	49.2	49.7	98	99	80-120			1	20
Thallium	50.0	48.7	48.9	97	98	80-120			0	20

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

L912129-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L912129-02 06/02/17 15:09 • (MS) R3222997-5 06/02/17 15:16 • (MSD) R3222997-6 06/02/17 15:20

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Antimony	50.0	ND	51.4	50.7	103	101	1	75-125			1	20
Arsenic	50.0	21.0	66.4	66.8	91	92	1	75-125			0	20
Beryllium	50.0	ND	42.6	41.6	85	83	1	75-125			2	20
Cadmium	50.0	1.21	51.3	51.1	100	100	1	75-125			0	20
Lead	50.0	ND	48.2	48.0	96	96	1	75-125			0	20
Selenium	50.0	ND	48.7	48.3	97	97	1	75-125			1	20
Thallium	50.0	ND	48.7	48.7	97	97	1	75-125			0	20



L912167-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L912167-02 06/02/17 16:37 • (MS) R3222997-7 06/02/17 16:41 • (MSD) R3222997-8 06/02/17 16:44

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 %
Antimony	50.0	ND	52.9	53.4	106	107	1	75-125			1	20
Arsenic	50.0	21.3	68.0	67.9	93	93	1	75-125			0	20
Cadmium	50.0	2.11	49.9	49.4	96	95	1	75-125			1	20
Lead	50.0	ND	47.6	47.5	95	95	1	75-125			0	20
Selenium	50.0	ND	50.0	49.6	100	99	1	75-125			1	20
Thallium	50.0	ND	48.3	47.8	97	96	1	75-125			1	20

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

<sup>4</sup>Cn

<sup>5</sup>Sr

<sup>6</sup>Qc

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>Sc





## Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
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.
Rec.	Recovery.

Qualifier	Description
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
V	The sample concentration is too high to evaluate accurate spike recoveries.

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



ESC Lab Sciences 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.

## State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Connecticut	PH-0197	North Carolina <sup>1</sup>	DW21704
Florida	E87487	North Carolina <sup>2</sup>	41
Georgia	NELAP	North Dakota	R-140
Georgia <sup>1</sup>	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky <sup>1</sup>	90010	South Dakota	n/a
Kentucky <sup>2</sup>	16	Tennessee <sup>14</sup>	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas <sup>5</sup>	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

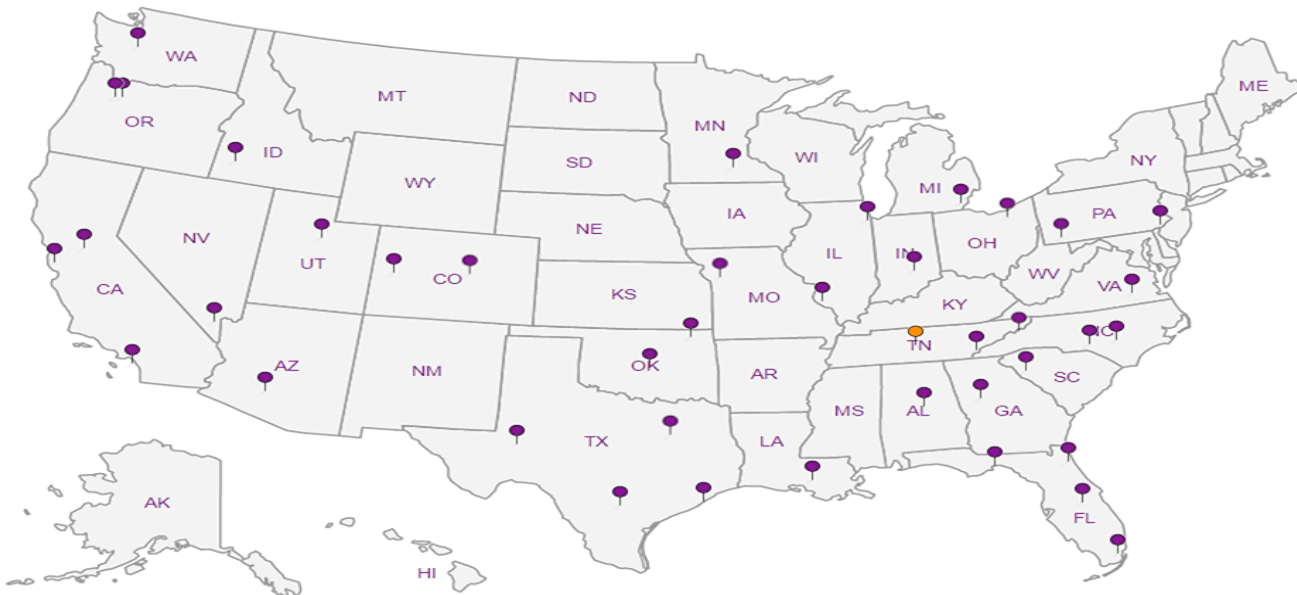
## Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC	100789
A2LA – ISO 17025 <sup>5</sup>	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>n/a</sup> Accreditation not applicable

## Our Locations

ESC Lab Sciences 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. **ESC Lab Sciences performs all testing at our central laboratory.**



<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



## SCS Engineers - KS

Sample Delivery Group: L912125  
Samples Received: 05/26/2017  
Project Number: 27213168.16  
Description: KCPL - Iatan Gen Station

Report To: Jason Franks  
7311 West 130th Street, Ste. 100  
Overland Park, KS 66213










Entire Report Reviewed By:



Jeff Carr  
Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



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# SAMPLE SUMMARY



## MW-9 L912125-01 GW

Collected by Adam Parris  
Collected date/time 05/24/17 14:25  
Received date/time 05/26/17 12:18

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG984381	1	05/31/17 16:07	05/31/17 16:33	EG
Wet Chemistry by Method 9056A	WG984347	1	05/31/17 18:59	05/31/17 18:59	KCF
Mercury by Method 7470A	WG983653	1	05/27/17 06:25	05/30/17 12:25	EL
Metals (ICP) by Method 6010B	WG984726	1	05/31/17 16:23	05/31/17 21:02	ST
Metals (ICPMS) by Method 6020	WG984776	1	05/31/17 22:08	06/01/17 11:21	JPD
Metals (ICPMS) by Method 6020	WG984776	1	05/31/17 22:08	06/01/17 16:15	VSS

1  
Cp

2  
Tc

3  
Ss

4  
Cn

5  
Sr

## MW-10 L912125-02 GW

Collected by Adam Parris  
Collected date/time 05/24/17 19:20  
Received date/time 05/26/17 12:18

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG984381	1	05/31/17 16:07	05/31/17 16:33	EG
Wet Chemistry by Method 9056A	WG984347	1	05/31/17 19:13	05/31/17 19:13	KCF
Mercury by Method 7470A	WG983653	1	05/27/17 06:25	05/30/17 12:27	EL
Metals (ICP) by Method 6010B	WG984726	1	05/31/17 16:23	05/31/17 21:04	ST
Metals (ICPMS) by Method 6020	WG984776	1	05/31/17 22:08	06/01/17 11:25	JPD
Metals (ICPMS) by Method 6020	WG984776	1	05/31/17 22:08	06/01/17 16:19	VSS

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. 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  
Technical Service Representative

### Project Narrative

---

The TDS for sample L912125-02 was re-analyzayed outside of the recommended hold time yielding a result of 960000 ug/l.

- <sup>1</sup> Cp
- <sup>2</sup> Tc
- <sup>3</sup> Ss
- <sup>4</sup> Cn
- <sup>5</sup> Sr
- <sup>6</sup> Qc
- <sup>7</sup> Gl
- <sup>8</sup> Al
- <sup>9</sup> Sc





## Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	415000		10000	1	05/31/2017 16:33	<a href="#">WG984381</a>

## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	1070		1000	1	05/31/2017 18:59	<a href="#">WG984347</a>
Fluoride	387		100	1	05/31/2017 18:59	<a href="#">WG984347</a>
Sulfate	15900		5000	1	05/31/2017 18:59	<a href="#">WG984347</a>

## Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	05/30/2017 12:25	<a href="#">WG983653</a>

## Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	276		5.00	1	05/31/2017 21:02	<a href="#">WG984726</a>
Boron	ND		200	1	05/31/2017 21:02	<a href="#">WG984726</a>
Calcium	108000		1000	1	05/31/2017 21:02	<a href="#">WG984726</a>
Chromium	ND		10.0	1	05/31/2017 21:02	<a href="#">WG984726</a>
Cobalt	ND		10.0	1	05/31/2017 21:02	<a href="#">WG984726</a>
Lithium	46.0		15.0	1	05/31/2017 21:02	<a href="#">WG984726</a>
Molybdenum	ND		5.00	1	05/31/2017 21:02	<a href="#">WG984726</a>

## Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	06/01/2017 11:21	<a href="#">WG984776</a>
Arsenic	10.6		2.00	1	06/01/2017 11:21	<a href="#">WG984776</a>
Beryllium	ND		2.00	1	06/01/2017 16:15	<a href="#">WG984776</a>
Cadmium	ND		1.00	1	06/01/2017 11:21	<a href="#">WG984776</a>
Lead	ND		2.00	1	06/01/2017 11:21	<a href="#">WG984776</a>
Selenium	ND		2.00	1	06/01/2017 11:21	<a href="#">WG984776</a>
Thallium	ND		2.00	1	06/01/2017 11:21	<a href="#">WG984776</a>

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	1760000		10000	1	05/31/2017 16:33	<a href="#">WG984381</a>

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	12600		1000	1	05/31/2017 19:13	<a href="#">WG984347</a>
Fluoride	591		100	1	05/31/2017 19:13	<a href="#">WG984347</a>
Sulfate	22400		5000	1	05/31/2017 19:13	<a href="#">WG984347</a>

3 Ss

4 Cn

5 Sr

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	05/30/2017 12:27	<a href="#">WG983653</a>

6 Qc

7 Gl

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	234		5.00	1	05/31/2017 21:04	<a href="#">WG984726</a>
Boron	ND		200	1	05/31/2017 21:04	<a href="#">WG984726</a>
Calcium	125000		1000	1	05/31/2017 21:04	<a href="#">WG984726</a>
Chromium	ND		10.0	1	05/31/2017 21:04	<a href="#">WG984726</a>
Cobalt	ND		10.0	1	05/31/2017 21:04	<a href="#">WG984726</a>
Lithium	57.2		15.0	1	05/31/2017 21:04	<a href="#">WG984726</a>
Molybdenum	ND		5.00	1	05/31/2017 21:04	<a href="#">WG984726</a>

8 Al

9 Sc

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	06/01/2017 11:25	<a href="#">WG984776</a>
Arsenic	22.6		2.00	1	06/01/2017 11:25	<a href="#">WG984776</a>
Beryllium	ND		2.00	1	06/01/2017 16:19	<a href="#">WG984776</a>
Cadmium	ND		1.00	1	06/01/2017 11:25	<a href="#">WG984776</a>
Lead	ND		2.00	1	06/01/2017 11:25	<a href="#">WG984776</a>
Selenium	ND		2.00	1	06/01/2017 11:25	<a href="#">WG984776</a>
Thallium	ND		2.00	1	06/01/2017 11:25	<a href="#">WG984776</a>



Method Blank (MB)

(MB) R3223198-1 05/31/17 16:33

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Dissolved Solids	U		2820	10000

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

L912039-02 Original Sample (OS) • Duplicate (DUP)

(OS) L912039-02 05/31/17 16:33 • (DUP) R3223198-4 05/31/17 16:33

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Dissolved Solids	5690000	5430000	1	4.68		5

<sup>4</sup> Cn

<sup>5</sup> Sr

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

(LCS) R3223198-2 05/31/17 16:33 • (LCSD) R3223198-3 05/31/17 16:33

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Dissolved Solids	8800000	8790000	9110000	99.9	104	85.0-115			3.58	5

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Method Blank (MB)

(MB) R3222381-1 05/31/17 06:59

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

1 Cp

2 Tc

3 Ss

4 Cn

L912085-01 Original Sample (OS) • Duplicate (DUP)

(OS) L912085-01 05/31/17 17:04 • (DUP) R3222381-4 05/31/17 17:18

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	328000	328000	10	0		15
Fluoride	1380	1100	10	23	P1	15
Sulfate	ND	39000	10	0		15

5 Sr

6 Qc

7 Gl

L912156-03 Original Sample (OS) • Duplicate (DUP)

(OS) L912156-03 05/31/17 23:47 • (DUP) R3222381-8 06/01/17 00:02

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	42800	42800	1	0		15
Fluoride	595	597	1	0		15

8 Al

9 Sc

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

(LCS) R3222381-2 05/31/17 07:13 • (LCSD) R3222381-3 05/31/17 07:27

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Chloride	40000	39600	39700	99	99	80-120			0	15
Fluoride	8000	8070	8060	101	101	80-120			0	15
Sulfate	40000	40100	40100	100	100	80-120			0	15

L912097-14 Original Sample (OS) • Matrix Spike (MS)

(OS) L912097-14 05/31/17 18:30 • (MS) R3222381-5 05/31/17 18:45

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Chloride	50000	50600	98500	96	1	80-120	
Fluoride	5000	253	5130	98	1	80-120	



L912129-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L912129-02 05/31/17 21:09 • (MS) R3222381-6 05/31/17 21:23 • (MSD) R3222381-7 05/31/17 21:38

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	9540	60300	60800	101	102	1	80-120			1	15
Fluoride	5000	327	5510	5420	104	102	1	80-120			2	15

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

<sup>4</sup>Cn

<sup>5</sup>Sr

<sup>6</sup>Qc

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>Sc



Method Blank (MB)

(MB) R3221865-1 05/30/17 11:15

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Mercury	U		0.0490	0.200

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

<sup>4</sup>Cn

<sup>5</sup>Sr

<sup>6</sup>Qc

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

(LCS) R3221865-2 05/30/17 11:18 • (LCSD) R3221865-3 05/30/17 11:20

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Mercury	3.00	2.94	2.86	98	95	80-120			3	20

L911936-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L911936-01 05/30/17 11:39 • (MS) R3221865-4 05/30/17 11:41 • (MSD) R3221865-5 05/30/17 11:43

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Mercury	3.00	ND	2.85	2.81	95	94	1	75-125			1	20

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>Sc



Method Blank (MB)

(MB) R3222325-1 05/31/17 19:55

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Barium	U		1.70	5.00
Boron	U		12.6	200
Calcium	U		46.3	1000
Chromium	U		1.40	10.0
Cobalt	U		2.30	10.0
Lithium	U		5.30	15.0
Molybdenum	U		1.60	5.00

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

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

(LCS) R3222325-2 05/31/17 19:58 • (LCSD) R3222325-3 05/31/17 20:00

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Barium	1000	1050	1060	105	106	80-120			1	20
Boron	1000	989	1010	99	101	80-120			2	20
Calcium	10000	10200	10200	102	102	80-120			0	20
Chromium	1000	1040	1040	104	104	80-120			0	20
Cobalt	1000	1060	1070	106	107	80-120			1	20
Lithium	1000	1020	1020	102	102	80-120			1	20
Molybdenum	1000	1020	1030	102	103	80-120			1	20

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

L912039-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L912039-01 05/31/17 20:03 • (MS) R3222325-5 05/31/17 20:09 • (MSD) R3222325-6 05/31/17 20:11

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Barium	1000	60.4	1060	1060	100	100	1	75-125			1	20
Boron	1000	52.6	1030	1030	98	98	1	75-125			0	20
Calcium	10000	305000	308000	308000	24	23	1	75-125	V	V	0	20
Chromium	1000	U	1000	993	100	99	1	75-125			1	20
Cobalt	1000	U	1080	1070	108	107	1	75-125			1	20
Lithium	1000	22.7	1030	1030	101	101	1	75-125			0	20
Molybdenum	1000	U	1010	1000	101	100	1	75-125			1	20



Method Blank (MB)

(MB) R3222486-3 06/01/17 10:56

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Antimony	U		0.754	2.00
Arsenic	U		0.250	2.00
Cadmium	U		0.160	1.00
Lead	U		0.240	2.00
Selenium	U		0.380	2.00
Thallium	U		0.190	2.00

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

Method Blank (MB)

(MB) R3222565-1 06/01/17 15:51

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Beryllium	U		0.120	2.00

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

(LCS) R3222486-8 06/01/17 11:51 • (LCSD) R3222486-4 06/01/17 11:03

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Antimony	50.0	49.6	50.9	99	102	80-120			2	20
Arsenic	50.0	46.5	48.0	93	96	80-120			3	20
Cadmium	50.0	51.8	51.5	104	103	80-120			1	20
Lead	50.0	49.9	49.0	100	98	80-120			2	20
Selenium	50.0	48.0	49.4	96	99	80-120			3	20
Thallium	50.0	49.3	48.5	99	97	80-120			2	20

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

(LCS) R3222565-2 06/01/17 15:54 • (LCSD) R3222565-3 06/01/17 15:58

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Beryllium	50.0	48.0	47.9	96	96	80-120			0	20



L911994-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L911994-01 06/01/17 11:07 • (MS) R3222486-6 06/01/17 11:14 • (MSD) R3222486-7 06/01/17 11:18

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 %
Antimony	50.0	U	52.2	52.8	104	106	1	75-125			1	20
Arsenic	50.0	7.94	55.6	54.5	95	93	1	75-125			2	20
Cadmium	50.0	U	52.5	52.4	105	105	1	75-125			0	20
Lead	50.0	U	48.9	49.0	98	98	1	75-125			0	20
Selenium	50.0	2.38	53.2	51.1	102	98	1	75-125			4	20
Thallium	50.0	U	48.4	49.2	97	98	1	75-125			2	20

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc





## Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
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.
Rec.	Recovery.

## Qualifier Description

P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
V	The sample concentration is too high to evaluate accurate spike recoveries.

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



ESC Lab Sciences 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.

## State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Connecticut	PH-0197	North Carolina <sup>1</sup>	DW21704
Florida	E87487	North Carolina <sup>2</sup>	41
Georgia	NELAP	North Dakota	R-140
Georgia <sup>1</sup>	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky <sup>1</sup>	90010	South Dakota	n/a
Kentucky <sup>2</sup>	16	Tennessee <sup>14</sup>	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas <sup>5</sup>	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

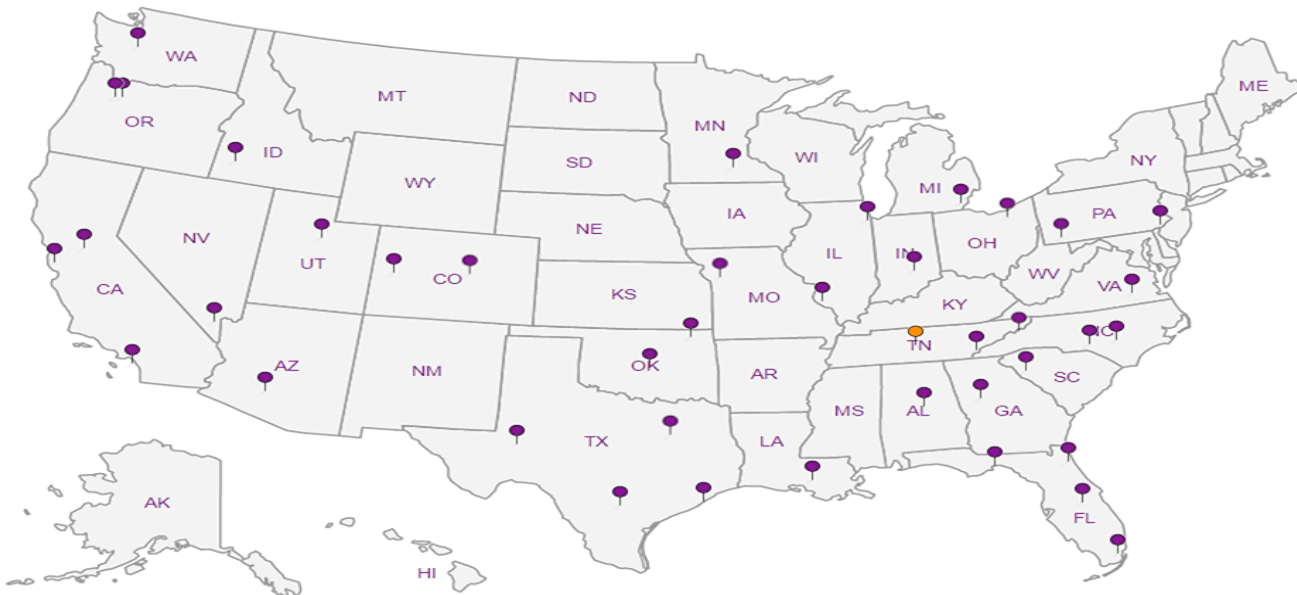
## Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC	100789
A2LA – ISO 17025 <sup>5</sup>	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>n/a</sup> Accreditation not applicable

## Our Locations

ESC Lab Sciences 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. **ESC Lab Sciences performs all testing at our central laboratory.**





## SCS Engineers - KS

Sample Delivery Group: L912137  
Samples Received: 05/26/2017  
Project Number: 27213167.15  
Description: KCPL - Iatan Generating Station

Report To: Jason Franks  
7311 West 130th Street, Ste. 100  
Overland Park, KS 66213




Entire Report Reviewed By:



Jeff Carr  
Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



<b>Cp: Cover Page</b>	<b>1</b>	
<b>Tc: Table of Contents</b>	<b>2</b>	
<b>Ss: Sample Summary</b>	<b>3</b>	
<b>Cn: Case Narrative</b>	<b>4</b>	
<b>Sr: Sample Results</b>	<b>5</b>	
<b>MW-1 L912137-01</b>	<b>5</b>	
<b>MW-2 L912137-02</b>	<b>6</b>	
<b>MW-6 L912137-03</b>	<b>7</b>	
<b>MW-7 L912137-04</b>	<b>8</b>	
<b>MW-8 L912137-05</b>	<b>9</b>	
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<b>Qc: Quality Control Summary</b>	<b>11</b>	
<b>Metals (ICP) by Method 6010B</b>	<b>11</b>	
<b>Gl: Glossary of Terms</b>	<b>12</b>	
<b>Al: Accreditations &amp; Locations</b>	<b>13</b>	
<b>Sc: Chain of Custody</b>	<b>14</b>	

# SAMPLE SUMMARY



## MW-1 L912137-01 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Metals (ICP) by Method 6010B	WG985232	1	06/03/17 10:21	06/04/17 19:42	ST

Collected by Adam Parris  
 Collected date/time 05/24/17 15:05  
 Received date/time 05/26/17 12:18



## MW-2 L912137-02 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Metals (ICP) by Method 6010B	WG985232	1	06/03/17 10:21	06/04/17 19:18	ST

Collected by Adam Parris  
 Collected date/time 05/24/17 15:55  
 Received date/time 05/26/17 12:18



## MW-6 L912137-03 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Metals (ICP) by Method 6010B	WG985232	1	06/03/17 10:21	06/04/17 19:45	ST

Collected by Adam Parris  
 Collected date/time 05/24/17 11:40  
 Received date/time 05/26/17 12:18



## MW-7 L912137-04 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Metals (ICP) by Method 6010B	WG985232	1	06/03/17 10:21	06/04/17 19:48	ST

Collected by Adam Parris  
 Collected date/time 05/24/17 12:30  
 Received date/time 05/26/17 12:18



## MW-8 L912137-05 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Metals (ICP) by Method 6010B	WG985232	1	06/03/17 10:21	06/04/17 19:51	ST

Collected by Adam Parris  
 Collected date/time 05/24/17 13:15  
 Received date/time 05/26/17 12:18

## DUPLICATE L912137-06 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Metals (ICP) by Method 6010B	WG985232	1	06/03/17 10:21	06/04/17 19:53	ST

Collected by Adam Parris  
 Collected date/time 05/24/17 16:00  
 Received date/time 05/26/17 12:18



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. 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  
Technical Service Representative

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Lithium	52.1		15.0	1	06/04/2017 19:42	<a href="#">WG985232</a>
Molybdenum	ND		5.00	1	06/04/2017 19:42	<a href="#">WG985232</a>

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc





Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Lithium	55.7		15.0	1	06/04/2017 19:18	<a href="#">WG985232</a>
Molybdenum	ND		5.00	1	06/04/2017 19:18	<a href="#">WG985232</a>

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Lithium	38.7		15.0	1	06/04/2017 19:45	<a href="#">WG985232</a>
Molybdenum	ND		5.00	1	06/04/2017 19:45	<a href="#">WG985232</a>

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Lithium	36.1		15.0	1	06/04/2017 19:48	<a href="#">WG985232</a>
Molybdenum	ND		5.00	1	06/04/2017 19:48	<a href="#">WG985232</a>

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Lithium	39.2		15.0	1	06/04/2017 19:51	<a href="#">WG985232</a>
Molybdenum	ND		5.00	1	06/04/2017 19:51	<a href="#">WG985232</a>

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Lithium	51.4		15.0	1	06/04/2017 19:53	<a href="#">WG985232</a>
Molybdenum	ND		5.00	1	06/04/2017 19:53	<a href="#">WG985232</a>

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Method Blank (MB)

(MB) R3223015-1 06/04/17 19:10

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Lithium	ug/l		ug/l	ug/l
Lithium	U		5.30	15.0
Molybdenum	U		1.60	5.00

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

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

(LCS) R3223015-2 06/04/17 19:13 • (LCSD) R3223015-3 06/04/17 19:16

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Lithium	ug/l	ug/l	ug/l	%	%	%			%	%
Lithium	1000	991	969	99	97	80-120			2	20
Molybdenum	1000	1000	990	100	99	80-120			1	20

L912137-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L912137-02 06/04/17 19:18 • (MS) R3223015-5 06/04/17 19:24 • (MSD) R3223015-6 06/04/17 19:26

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Lithium	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Lithium	1000	55.7	1060	1030	101	98	1	75-125			3	20
Molybdenum	1000	ND	1020	988	101	99	1	75-125			3	20

L912167-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L912167-02 06/04/17 19:29 • (MS) R3223015-7 06/04/17 19:32 • (MSD) R3223015-8 06/04/17 19:34

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Lithium	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Lithium	1000	55.0	1060	1050	100	100	1	75-125			1	20
Molybdenum	1000	ND	1010	1000	100	100	1	75-125			0	20



## Abbreviations and Definitions

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SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
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.
Rec.	Recovery.

Qualifier	Description
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The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



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

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California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Connecticut	PH-0197	North Carolina <sup>1</sup>	DW21704
Florida	E87487	North Carolina <sup>2</sup>	41
Georgia	NELAP	North Dakota	R-140
Georgia <sup>1</sup>	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky <sup>1</sup>	90010	South Dakota	n/a
Kentucky <sup>2</sup>	16	Tennessee <sup>14</sup>	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas <sup>5</sup>	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

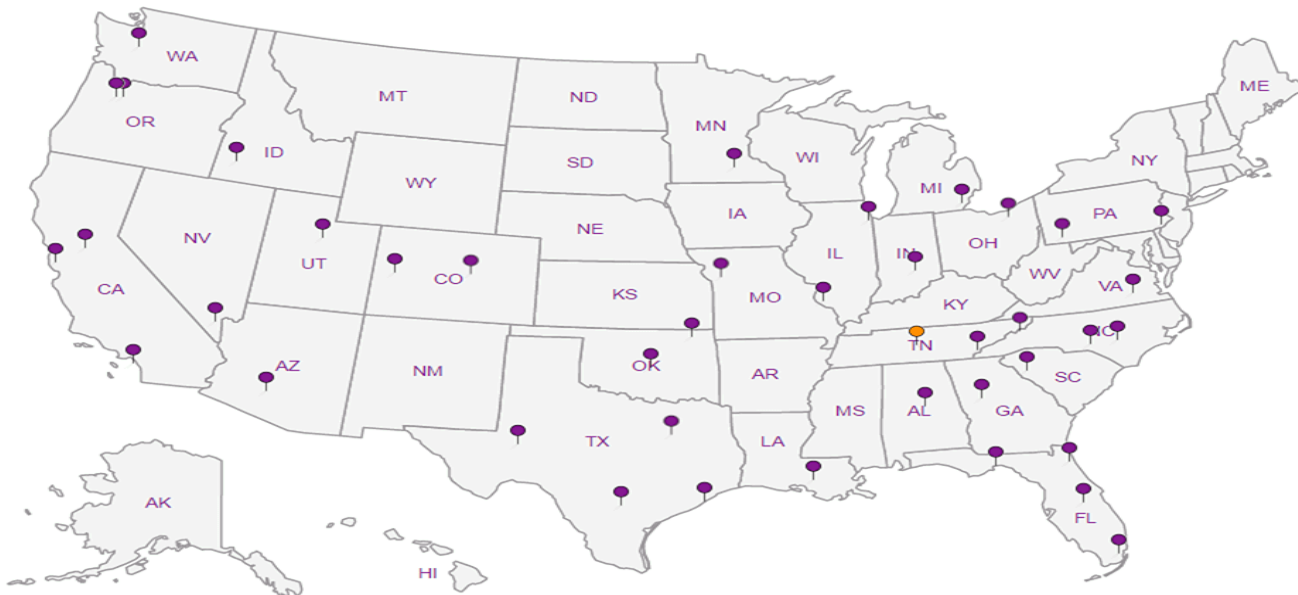
## Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC	100789
A2LA – ISO 17025 <sup>5</sup>	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>n/a</sup> Accreditation not applicable

## Our Locations

ESC Lab Sciences 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. **ESC Lab Sciences performs all testing at our central laboratory.**



1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc





## Case Narrative

### Lab No: 20170474

This report contains the analytical results for the 10 sample(s) received under chain of custody by ESC Lab Sciences on 5/26/2017 12:06:48 PM. These samples are associated with your 27213167.16 project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted below:

The test results in this report meet all NELAC requirements unless noted below:

This report shall not be reproduced, except in full, without the written approval of ESC Lab Sciences.

All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client.

Results have been reviewed by the Director of Radiochemistry or their designees and is approved for release.

DL for Radiochemistry = MDA

DL for Metals and Wet Chemistry = MDL

DL for Drinking Water = SDWA

### Observations / Nonconformances

L912233



Client : SCS Engineers  
 Client Project : 27213167.16  
 Lab Number : 20170474  
 Date Reported : 06/26/17  
 Date Received : 05/26/17  
 Page Number : 2 of 4

## Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst
<b>Lab ID : 20170474-01</b>							
<b>Client ID : MW-1</b>							
<b>Date Sampled : 5/24/2017 3:05:00 PM</b>							
<b>Matrix : NPW</b>							
<b>Radiochemical Analyses</b>							
Combined Radium	0.460 +/- 0.636	0.880	pCi/l				
Radium-226 SM 7500 Ra B M*	0.113 +/- 0.095	0.124	pCi/l		06/20/17	06/21/17	SD
Radium-228 EPA 904*	0.347 +/- 0.541	0.756	pCi/l		06/13/17	06/20/17	JR
<b>Lab ID : 20170474-02</b>							
<b>Client ID : MW-2</b>							
<b>Date Sampled : 5/24/2017 3:55:00 PM</b>							
<b>Matrix : NPW</b>							
<b>Radiochemical Analyses</b>							
Combined Radium	0.495 +/- 0.560	1.03	pCi/l				
Radium-226 SM 7500 Ra B M*	0.173 +/- 0.120	0.147	pCi/l		06/20/17	06/21/17	SD
Radium-228 EPA 904*	0.322 +/- 0.440	0.884	pCi/l		06/13/17	06/20/17	JR
<b>Lab ID : 20170474-03</b>							
<b>Client ID : MW-2 MS</b>							
<b>Date Sampled : 5/24/2017 4:05:00 PM</b>							
<b>Matrix : NPW</b>							
<b>Radiochemical Analyses</b>							
Radium-226 SM 7500 Ra B M*	83.4		% Rec		06/20/17	06/21/17	SD
Radium-228 EPA 904*	89.4		% Rec		06/13/17	06/20/17	JR
<b>Lab ID : 20170474-04</b>							
<b>Client ID : MW-2 MSD</b>							
<b>Date Sampled : 5/24/2017 4:10:00 PM</b>							
<b>Matrix : NPW</b>							
<b>Radiochemical Analyses</b>							
Radium-226 SM 7500 Ra B M*	10.0		RPD		06/20/17	06/21/17	SD
Radium-228 EPA 904*	15.6		RPD		06/13/17	06/20/17	JR
<b>Lab ID : 20170474-05</b>							
<b>Client ID : MW-6</b>							
<b>Date Sampled : 5/24/2017 11:40:00 AM</b>							
<b>Matrix : NPW</b>							

\*NELAC Certified Parameter      BDL = Below Detection Limit



Client : SCS Engineers  
 Client Project : 27213167.16  
 Lab Number : 20170474  
 Date Reported : 06/26/17  
 Date Received : 05/26/17  
 Page Number : 3 of 4

## Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst
<b>Radiochemical Analyses</b>							
Combined Radium	0.064 +/- 0.657	0.936	pCi/l				
Radium-226	SM 7500 Ra B M*	0.312 +/- 0.220	0.302	pCi/l	06/20/17	06/21/17	SD
Radium-228	EPA 904*	-0.248 +/- 0.437	0.634	pCi/l	06/13/17	06/20/17	JR
<b>Lab ID : 20170474-06</b>							
<b>Client ID : MW-7</b>							
<b>Date Sampled : 5/24/2017 12:30:00 PM</b>							
<b>Matrix : NPW</b>							
<b>Radiochemical Analyses</b>							
Combined Radium	0.306 +/- 0.695	0.921	pCi/l				
Radium-226	SM 7500 Ra B M*	0.202 +/- 0.171	0.213	pCi/l	06/20/17	06/21/17	SD
Radium-228	EPA 904*	0.104 +/- 0.524	0.708	pCi/l	06/13/17	06/20/17	JR
<b>Lab ID : 20170474-07</b>							
<b>Client ID : MW-8</b>							
<b>Date Sampled : 5/24/2017 1:15:00 PM</b>							
<b>Matrix : NPW</b>							
<b>Radiochemical Analyses</b>							
Combined Radium	0.691 +/- 0.630	0.842	pCi/l				
Radium-226	SM 7500 Ra B M*	0.088 +/- 0.161	0.263	pCi/l	06/20/17	06/21/17	SD
Radium-228	EPA 904*	0.603 +/- 0.469	0.579	pCi/l	06/13/17	06/20/17	JR
<b>Lab ID : 20170474-08</b>							
<b>Client ID : MW-9</b>							
<b>Date Sampled : 5/24/2017 2:25:00 PM</b>							
<b>Matrix : NPW</b>							
<b>Radiochemical Analyses</b>							
Combined Radium	0.083 +/- 0.657	0.798	pCi/l				
Radium-226	SM 7500 Ra B M*	0.236 +/- 0.173	0.216	pCi/l	06/20/17	06/21/17	SD
Radium-228	EPA 904*	-0.153 +/- 0.484	0.582	pCi/l	06/13/17	06/22/17	JR
<b>Lab ID : 20170474-09</b>							
<b>Client ID : MW-10</b>							
<b>Date Sampled : 5/24/2017 7:20:00 PM</b>							
<b>Matrix : NPW</b>							
<b>Radiochemical Analyses</b>							
Combined Radium	0.176 +/- 0.583	0.736	pCi/l				

\*NELAC Certified Parameter

BDL = Below Detection Limit



Client : SCS Engineers  
 Client Project : 27213167.16  
 Lab Number : 20170474  
 Date Reported : 06/26/17  
 Date Received : 05/26/17  
 Page Number : 4 of 4

### Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst
Radium-226	SM 7500 Ra B M*	0.234 +/- 0.176	0.232	pCi/l	06/20/17	06/21/17	SD
Radium-228	EPA 904*	-0.058 +/- 0.407	0.504	pCi/l	06/13/17	06/22/17	JR

Lab ID : 20170474-10  
 Client ID : DUPLICATE  
 Date Sampled : 5/24/2017 4:00:00 PM  
 Matrix : NPW

### Radiochemical Analyses

Combined Radium		2.27 +/- 0.741	1.02	pCi/l			
Radium-226	SM 7500 Ra B M*	0.294 +/- 0.310	0.454	pCi/l	06/20/17	06/21/17	SD
Radium-228	EPA 904*	1.98 +/- 0.431	0.567	pCi/l	06/13/17	06/22/17	JR

### QC Report

Parameter	Blank	LCS %REC	LCSD %REC	RPD	DUP RPD	RER, NAD or DER	MS %REC	MSD %REC	RPD	Batch ID
Radium-226	-0.002	80.6			NC	0.821	83.4	92.4	10.0	R1242
Radium-228	-0.238	110.0			NC	0.016	89.4	105.0	15.6	R3970

Lab Approval:

Ron Eidson  
 Director of Radiochemistry



**YOUR LAB OF CHOICE**

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

L # 912233

Table #

Acctnum: **AQUAOPKS**  
 Template: **T107350**  
 Prelogin: **P599228**  
 TSR: **206 - Jeff Carr**  
 PB:

Shipped Via: \_\_\_\_\_  
 Remarks \_\_\_\_\_  
 Sample # (lab only) \_\_\_\_\_

Analysis / Container / Preservative	Pres Chk
RA226, RA228 1L-HDPE-Add HNO3	

**Billing information:**

**Accounts Payable**  
 7311 West 130th Street, Ste. 100  
 Overland Park, KS 66213

Email To: [jfranks@sccengineers.com](mailto:jfranks@sccengineers.com);  
[jay.martin@kcpl.com](mailto:jay.martin@kcpl.com); [jockhold@sccengineers.com](mailto:jockhold@sccengineers.com)

City/State Collected: \_\_\_\_\_

Lab Project # **AQUAOPKS-IATAN**

P.O. # \_\_\_\_\_

Quote # \_\_\_\_\_

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  
Standard

No. of Cntrs

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs
MW-1	Grab	NPW	-	5/24/17	1505	2
MW-2		NPW	-		1555	2
MW-6		NPW	-		1140	2
MW-7		NPW	-		1230	2
MW-8		NPW	-		1315	2
MW-9		NPW	-		1425	2
MW-10		NPW	-		1920	2
DUPLICATE		NPW	-		1600	2
MS (MW-2)		NPW	-		1605	2
MSD (MW-2)		NPW	-		1610	2

Remarks: RA 226/228 - Report separately and combined.

Matrix:  
 SS - Soil    AIR - Air    F - Filter  
 GW - Groundwater    B - Bioassay  
 WW - Waste Water  
 DW - Drinking Water  
 OT - Other \_\_\_\_\_

Samples returned via: \_\_\_\_\_  
 \_\_\_ UPS \_\_\_ FedEx \_\_\_ Courier \_\_\_\_\_

Tracking # \_\_\_\_\_

Received by: (Signature) \_\_\_\_\_  
 Time: 12:50

Received by: (Signature) \_\_\_\_\_  
 Time: \_\_\_\_\_

Received by: (Signature) \_\_\_\_\_  
 Time: \_\_\_\_\_

Relinquished by: (Signature)	Date:	Time:	Temp: °C	Bottles Received:	Temp: °C	Date:	Time:	Condition:
<i>[Signature]</i>	5/25/17	12:50		20		5/26/17	12:06	NCF / OK

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

If preservation required by Login: Date/Time

Hold: \_\_\_\_\_

20170474

# SAMPLE LOGIN

Date Received: 5/26/2017 12:06:4

Lab Number: 20170474

Due: 6/26/2017

Sample Number	Client Sample ID	Matrix	Date Sampled	Container Type	Container Size	Preservation	Preserved Upon Receipt	Custody Seal	Seal Intact
20170474-01 B	MW-1	NPW	05/24/17	Plastic	1 L	HNO <sub>3</sub> , pH < 2	✓	Yes	Yes
20170474-01 A	MW-1	NPW	05/24/17	Plastic	1 L	HNO <sub>3</sub> , pH < 2	✓	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*						
20170474-02 A	MW-2	NPW	05/24/17	Plastic	1 L	HNO <sub>3</sub> , pH < 2	✓	Yes	Yes
20170474-02 B	MW-2	NPW	05/24/17	Plastic	1 L	HNO <sub>3</sub> , pH < 2	✓	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*						
20170474-03 A	MW-2 MS	NPW	05/24/17	Plastic	1 L	HNO <sub>3</sub> , pH < 2	✓	Yes	Yes
20170474-03 B	MW-2 MS	NPW	05/24/17	Plastic	1 L	HNO <sub>3</sub> , pH < 2	✓	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*						
20170474-04 A	MW-2 MSD	NPW	05/24/17	Plastic	1 L	HNO <sub>3</sub> , pH < 2	✓	Yes	Yes
20170474-04 B	MW-2 MSD	NPW	05/24/17	Plastic	1 L	HNO <sub>3</sub> , pH < 2	✓	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*						
20170474-05 B	MW-6	NPW	05/24/17	Plastic	1 L	HNO <sub>3</sub> , pH < 2	✓	Yes	Yes
20170474-05 A	MW-6	NPW	05/24/17	Plastic	1 L	HNO <sub>3</sub> , pH < 2	✓	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*						
20170474-06 B	MW-7	NPW	05/24/17	Plastic	1 L	HNO <sub>3</sub> , pH < 2	✓	Yes	Yes
20170474-06 A	MW-7	NPW	05/24/17	Plastic	1 L	HNO <sub>3</sub> , pH < 2	✓	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*						
20170474-07 A	MW-8	NPW	05/24/17	Plastic	1 L	HNO <sub>3</sub> , pH < 2	✓	Yes	Yes
20170474-07 B	MW-8	NPW	05/24/17	Plastic	1 L	HNO <sub>3</sub> , pH < 2	✓	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*						

20170474-08 A	MW-9	NPW	05/24/17	Plastic	I L	HNO3, pH < 2	Yes	Yes
20170474-08 B	MW-9	NPW	05/24/17	Plastic	I L	HNO3, pH < 2	Yes	Yes
	Radium-226		SM 7500 Ra B M*					
	Radium-228		EPA 904*					
20170474-09 A	MW-10	NPW	05/24/17	Plastic	I L	HNO3, pH < 2	Yes	Yes
20170474-09 B	MW-10	NPW	05/24/17	Plastic	I L	HNO3, pH < 2	Yes	Yes
	Radium-226		SM 7500 Ra B M*					
	Radium-228		EPA 904*					
20170474-10 B	DUPLICATE	NPW	05/24/17	Plastic	I L	HNO3, pH < 2	Yes	Yes
20170474-10 A	DUPLICATE	NPW	05/24/17	Plastic	I L	HNO3, pH < 2	Yes	Yes
	Radium-226		SM 7500 Ra B M*					
	Radium-228		EPA 904*					

**CONTAINER INSPECTION**

# Coolers 2 Custody Seals Broken 0 Temperature: 46 C Ice ✓ Radiation Survey: <300 cpm

**SAMPLE INSPECTION**

Sample Seal Broken 0 Chain of Custody Record ✓ Labels in Tact ✓ Radiation Survey Complete NA

**Anomalies**

Inspected By: [Signature] DATE 5/26/17  
 QA or Designee Review: Raymond Thomas DATE 05/26/17  
 Sample Custodian Review: [Signature] DATE 5/26/17

Project Notes:



Jared Morrison  
December 16, 2022

**ATTACHMENT 1-7**  
**July 2017 Sampling Event Laboratory Report**

July 14, 2017

## SCS Engineers - KS

Sample Delivery Group: L921028  
Samples Received: 07/07/2017  
Project Number: 27213167.16  
Description: KCPL - Iatan Gen Station - CCR Groundwater

Report To: Jason Franks  
7311 West 130th Street, Ste. 100  
Overland Park, KS 66213

Entire Report Reviewed By:



Jeff Carr  
Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



<b>Cp: Cover Page</b>	<b>1</b>	<b><sup>1</sup>Cp</b>
<b>Tc: Table of Contents</b>	<b>2</b>	
<b>Ss: Sample Summary</b>	<b>3</b>	<b><sup>2</sup>Tc</b>
<b>Cn: Case Narrative</b>	<b>5</b>	
<b>Sr: Sample Results</b>	<b>6</b>	<b><sup>3</sup>Ss</b>
<b>MW-1 L921028-01</b>	<b>6</b>	
<b>MW-2 L921028-02</b>	<b>7</b>	<b><sup>4</sup>Cn</b>
<b>MW-6 L921028-03</b>	<b>8</b>	<b><sup>5</sup>Sr</b>
<b>MW-7 L921028-04</b>	<b>9</b>	
<b>MW-8 L921028-05</b>	<b>10</b>	<b><sup>6</sup>Qc</b>
<b>MW-9 L921028-06</b>	<b>11</b>	
<b>DUPLICATE L921028-07</b>	<b>12</b>	<b><sup>7</sup>Gl</b>
<b>MW-10 L921028-10</b>	<b>13</b>	<b><sup>8</sup>Al</b>
<b>Qc: Quality Control Summary</b>	<b>14</b>	<b><sup>9</sup>Sc</b>
<b>Gravimetric Analysis by Method 2540 C-2011</b>	<b>14</b>	
<b>Wet Chemistry by Method 9056A</b>	<b>17</b>	
<b>Mercury by Method 7470A</b>	<b>19</b>	
<b>Metals (ICP) by Method 6010B</b>	<b>20</b>	
<b>Metals (ICPMS) by Method 6020</b>	<b>21</b>	
<b>Gl: Glossary of Terms</b>	<b>22</b>	
<b>Al: Accreditations &amp; Locations</b>	<b>23</b>	
<b>Sc: Chain of Custody</b>	<b>24</b>	

# SAMPLE SUMMARY



## MW-1 L921028-01 GW

Collected by  
Whit Martin      Collected date/time  
07/05/17 10:40      Received date/time  
07/07/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG996973	1	07/11/17 20:27	07/11/17 20:43	EG
Wet Chemistry by Method 9056A	WG997731	1	07/13/17 14:03	07/13/17 14:03	DR
Mercury by Method 7470A	WG996883	1	07/08/17 08:08	07/10/17 10:23	EL
Metals (ICP) by Method 6010B	WG997224	1	07/10/17 17:22	07/11/17 03:43	CCE
Metals (ICPMS) by Method 6020	WG997221	1	07/11/17 19:32	07/13/17 11:12	LAT

1  
Cp

2  
Tc

3  
Ss

4  
Cn

5  
Sr

6  
Qc

7  
Gl

8  
Al

9  
Sc

## MW-2 L921028-02 GW

Collected by  
Whit Martin      Collected date/time  
07/05/17 11:20      Received date/time  
07/07/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG996973	1	07/11/17 20:27	07/11/17 20:43	EG
Wet Chemistry by Method 9056A	WG997731	1	07/13/17 14:16	07/13/17 14:16	DR
Wet Chemistry by Method 9056A	WG998767	5	07/14/17 11:51	07/14/17 11:51	SAM
Mercury by Method 7470A	WG996883	1	07/08/17 08:08	07/10/17 09:56	EL
Metals (ICP) by Method 6010B	WG997224	1	07/10/17 17:22	07/11/17 03:33	CCE
Metals (ICPMS) by Method 6020	WG997221	1	07/11/17 19:32	07/13/17 10:51	LAT

## MW-6 L921028-03 GW

Collected by  
Whit Martin      Collected date/time  
07/05/17 13:20      Received date/time  
07/07/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG996973	1	07/11/17 20:27	07/11/17 20:43	EG
Wet Chemistry by Method 9056A	WG997731	1	07/13/17 14:54	07/13/17 14:54	DR
Mercury by Method 7470A	WG996883	1	07/08/17 08:08	07/10/17 10:25	EL
Metals (ICP) by Method 6010B	WG997224	1	07/10/17 17:22	07/11/17 03:46	CCE
Metals (ICPMS) by Method 6020	WG997221	1	07/11/17 19:32	07/13/17 15:56	VSS

## MW-7 L921028-04 GW

Collected by  
Whit Martin      Collected date/time  
07/05/17 13:55      Received date/time  
07/07/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG997513	1	07/11/17 18:42	07/11/17 19:05	EG
Wet Chemistry by Method 9056A	WG997731	1	07/13/17 15:07	07/13/17 15:07	DR
Mercury by Method 7470A	WG996883	1	07/08/17 08:08	07/10/17 10:28	EL
Metals (ICP) by Method 6010B	WG997224	1	07/10/17 17:22	07/11/17 03:49	CCE
Metals (ICPMS) by Method 6020	WG997221	1	07/11/17 19:32	07/13/17 15:59	VSS

## MW-8 L921028-05 GW

Collected by  
Whit Martin      Collected date/time  
07/05/17 14:30      Received date/time  
07/07/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG997513	1	07/11/17 18:42	07/11/17 19:05	EG
Wet Chemistry by Method 9056A	WG997731	1	07/13/17 15:20	07/13/17 15:20	DR
Mercury by Method 7470A	WG996883	1	07/08/17 08:08	07/10/17 10:30	EL
Metals (ICP) by Method 6010B	WG997224	1	07/10/17 17:22	07/11/17 03:57	CCE
Metals (ICPMS) by Method 6020	WG997221	1	07/11/17 19:32	07/13/17 16:03	VSS

# SAMPLE SUMMARY



## MW-9 L921028-06 GW

Collected by  
Whit Martin      Collected date/time  
07/05/17 15:05      Received date/time  
07/07/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG997513	1	07/11/17 18:42	07/11/17 19:05	EG
Wet Chemistry by Method 9056A	WG997731	1	07/13/17 15:33	07/13/17 15:33	DR
Mercury by Method 7470A	WG996883	1	07/08/17 08:08	07/10/17 10:32	EL
Metals (ICP) by Method 6010B	WG997224	1	07/10/17 17:22	07/11/17 04:00	CCE
Metals (ICPMS) by Method 6020	WG997221	1	07/11/17 19:32	07/13/17 16:06	VSS

1  
Cp

2  
Tc

3  
Ss

4  
Cn

5  
Sr

6  
Qc

7  
Gl

8  
Al

9  
Sc

## DUPLICATE L921028-07 GW

Collected by  
Whit Martin      Collected date/time  
07/05/17 00:00      Received date/time  
07/07/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG997513	1	07/11/17 18:42	07/11/17 19:05	EG
Wet Chemistry by Method 9056A	WG997731	1	07/13/17 15:46	07/13/17 15:46	DR
Wet Chemistry by Method 9056A	WG998767	5	07/14/17 12:06	07/14/17 12:06	SAM
Mercury by Method 7470A	WG996883	1	07/08/17 08:08	07/10/17 10:34	EL
Metals (ICP) by Method 6010B	WG997224	1	07/10/17 17:22	07/11/17 04:02	CCE
Metals (ICPMS) by Method 6020	WG997221	1	07/11/17 19:32	07/13/17 16:10	VSS

## MW-10 L921028-10 GW

Collected by  
Whit Martin      Collected date/time  
07/05/17 12:35      Received date/time  
07/07/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG997514	1	07/11/17 20:50	07/11/17 21:09	EG
Wet Chemistry by Method 9056A	WG997731	1	07/13/17 16:25	07/13/17 16:25	DR
Mercury by Method 7470A	WG996883	1	07/08/17 08:08	07/10/17 10:46	EL
Metals (ICP) by Method 6010B	WG997224	1	07/10/17 17:22	07/11/17 04:05	CCE
Metals (ICPMS) by Method 6020	WG997221	1	07/11/17 19:32	07/13/17 16:15	VSS



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. 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  
Technical Service Representative

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



## Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	481000		10000	1	07/11/2017 20:43	<a href="#">WG996973</a>

1 Cp

2 Tc

## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	5780		1000	1	07/13/2017 14:03	<a href="#">WG997731</a>
Fluoride	275		100	1	07/13/2017 14:03	<a href="#">WG997731</a>
Sulfate	34200		5000	1	07/13/2017 14:03	<a href="#">WG997731</a>

3 Ss

4 Cn

5 Sr

## Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	07/10/2017 10:23	<a href="#">WG996883</a>

6 Qc

7 Gl

## Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	235		5.00	1	07/11/2017 03:43	<a href="#">WG997224</a>
Boron	ND		200	1	07/11/2017 03:43	<a href="#">WG997224</a>
Calcium	129000		1000	1	07/11/2017 03:43	<a href="#">WG997224</a>
Chromium	ND		10.0	1	07/11/2017 03:43	<a href="#">WG997224</a>
Cobalt	ND		10.0	1	07/11/2017 03:43	<a href="#">WG997224</a>
Lithium	55.8		15.0	1	07/11/2017 03:43	<a href="#">WG997224</a>
Molybdenum	ND		5.00	1	07/11/2017 03:43	<a href="#">WG997224</a>

8 Al

9 Sc

## Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	07/13/2017 11:12	<a href="#">WG997221</a>
Arsenic	12.9		2.00	1	07/13/2017 11:12	<a href="#">WG997221</a>
Beryllium	ND		2.00	1	07/13/2017 11:12	<a href="#">WG997221</a>
Cadmium	ND		1.00	1	07/13/2017 11:12	<a href="#">WG997221</a>
Lead	ND		2.00	1	07/13/2017 11:12	<a href="#">WG997221</a>
Selenium	ND		2.00	1	07/13/2017 11:12	<a href="#">WG997221</a>
Thallium	ND		2.00	1	07/13/2017 11:12	<a href="#">WG997221</a>



## Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	638000		10000	1	07/11/2017 20:43	<a href="#">WG996973</a>

## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	8990		1000	1	07/13/2017 14:16	<a href="#">WG997731</a>
Fluoride	334		100	1	07/13/2017 14:16	<a href="#">WG997731</a>
Sulfate	158000		25000	5	07/14/2017 11:51	<a href="#">WG998767</a>

## Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	07/10/2017 09:56	<a href="#">WG996883</a>

## Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	211		5.00	1	07/11/2017 03:33	<a href="#">WG997224</a>
Boron	ND		200	1	07/11/2017 03:33	<a href="#">WG997224</a>
Calcium	165000	V	1000	1	07/11/2017 03:33	<a href="#">WG997224</a>
Chromium	ND		10.0	1	07/11/2017 03:33	<a href="#">WG997224</a>
Cobalt	ND		10.0	1	07/11/2017 03:33	<a href="#">WG997224</a>
Lithium	58.5		15.0	1	07/11/2017 03:33	<a href="#">WG997224</a>
Molybdenum	ND		5.00	1	07/11/2017 03:33	<a href="#">WG997224</a>

## Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	07/13/2017 10:51	<a href="#">WG997221</a>
Arsenic	23.2		2.00	1	07/13/2017 10:51	<a href="#">WG997221</a>
Beryllium	ND		2.00	1	07/13/2017 10:51	<a href="#">WG997221</a>
Cadmium	3.67		1.00	1	07/13/2017 10:51	<a href="#">WG997221</a>
Lead	ND		2.00	1	07/13/2017 10:51	<a href="#">WG997221</a>
Selenium	ND		2.00	1	07/13/2017 10:51	<a href="#">WG997221</a>
Thallium	ND		2.00	1	07/13/2017 10:51	<a href="#">WG997221</a>

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	508000		10000	1	07/11/2017 20:43	<a href="#">WG996973</a>

## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	1540		1000	1	07/13/2017 14:54	<a href="#">WG997731</a>
Fluoride	317		100	1	07/13/2017 14:54	<a href="#">WG997731</a>
Sulfate	37200		5000	1	07/13/2017 14:54	<a href="#">WG997731</a>

## Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	07/10/2017 10:25	<a href="#">WG996883</a>

## Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	304		5.00	1	07/11/2017 03:46	<a href="#">WG997224</a>
Boron	ND		200	1	07/11/2017 03:46	<a href="#">WG997224</a>
Calcium	147000		1000	1	07/11/2017 03:46	<a href="#">WG997224</a>
Chromium	ND		10.0	1	07/11/2017 03:46	<a href="#">WG997224</a>
Cobalt	ND		10.0	1	07/11/2017 03:46	<a href="#">WG997224</a>
Lithium	40.9		15.0	1	07/11/2017 03:46	<a href="#">WG997224</a>
Molybdenum	ND		5.00	1	07/11/2017 03:46	<a href="#">WG997224</a>

## Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	07/13/2017 15:56	<a href="#">WG997221</a>
Arsenic	21.9		2.00	1	07/13/2017 15:56	<a href="#">WG997221</a>
Beryllium	ND		2.00	1	07/13/2017 15:56	<a href="#">WG997221</a>
Cadmium	ND		1.00	1	07/13/2017 15:56	<a href="#">WG997221</a>
Lead	ND		2.00	1	07/13/2017 15:56	<a href="#">WG997221</a>
Selenium	ND		2.00	1	07/13/2017 15:56	<a href="#">WG997221</a>
Thallium	ND		2.00	1	07/13/2017 15:56	<a href="#">WG997221</a>

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	445000		10000	1	07/11/2017 19:05	<a href="#">WG997513</a>

1 Cp

2 Tc

## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	1810		1000	1	07/13/2017 15:07	<a href="#">WG997731</a>
Fluoride	378		100	1	07/13/2017 15:07	<a href="#">WG997731</a>
Sulfate	19500		5000	1	07/13/2017 15:07	<a href="#">WG997731</a>

3 Ss

4 Cn

5 Sr

## Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	07/10/2017 10:28	<a href="#">WG996883</a>

6 Qc

7 Gl

## Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	259		5.00	1	07/11/2017 03:49	<a href="#">WG997224</a>
Boron	ND		200	1	07/11/2017 03:49	<a href="#">WG997224</a>
Calcium	125000		1000	1	07/11/2017 03:49	<a href="#">WG997224</a>
Chromium	ND		10.0	1	07/11/2017 03:49	<a href="#">WG997224</a>
Cobalt	ND		10.0	1	07/11/2017 03:49	<a href="#">WG997224</a>
Lithium	46.2		15.0	1	07/11/2017 03:49	<a href="#">WG997224</a>
Molybdenum	ND		5.00	1	07/11/2017 03:49	<a href="#">WG997224</a>

8 Al

9 Sc

## Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	07/13/2017 15:59	<a href="#">WG997221</a>
Arsenic	16.7		2.00	1	07/13/2017 15:59	<a href="#">WG997221</a>
Beryllium	ND		2.00	1	07/13/2017 15:59	<a href="#">WG997221</a>
Cadmium	ND		1.00	1	07/13/2017 15:59	<a href="#">WG997221</a>
Lead	ND		2.00	1	07/13/2017 15:59	<a href="#">WG997221</a>
Selenium	ND		2.00	1	07/13/2017 15:59	<a href="#">WG997221</a>
Thallium	ND		2.00	1	07/13/2017 15:59	<a href="#">WG997221</a>



## Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	500000		10000	1	07/11/2017 19:05	<a href="#">WG997513</a>

## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	4440		1000	1	07/13/2017 15:20	<a href="#">WG997731</a>
Fluoride	391		100	1	07/13/2017 15:20	<a href="#">WG997731</a>
Sulfate	54800		5000	1	07/13/2017 15:20	<a href="#">WG997731</a>

## Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	07/10/2017 10:30	<a href="#">WG996883</a>

## Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	215		5.00	1	07/11/2017 03:57	<a href="#">WG997224</a>
Boron	ND		200	1	07/11/2017 03:57	<a href="#">WG997224</a>
Calcium	142000		1000	1	07/11/2017 03:57	<a href="#">WG997224</a>
Chromium	ND		10.0	1	07/11/2017 03:57	<a href="#">WG997224</a>
Cobalt	ND		10.0	1	07/11/2017 03:57	<a href="#">WG997224</a>
Lithium	41.7		15.0	1	07/11/2017 03:57	<a href="#">WG997224</a>
Molybdenum	ND		5.00	1	07/11/2017 03:57	<a href="#">WG997224</a>

## Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	07/13/2017 16:03	<a href="#">WG997221</a>
Arsenic	7.52		2.00	1	07/13/2017 16:03	<a href="#">WG997221</a>
Beryllium	ND		2.00	1	07/13/2017 16:03	<a href="#">WG997221</a>
Cadmium	2.07		1.00	1	07/13/2017 16:03	<a href="#">WG997221</a>
Lead	ND		2.00	1	07/13/2017 16:03	<a href="#">WG997221</a>
Selenium	ND		2.00	1	07/13/2017 16:03	<a href="#">WG997221</a>
Thallium	ND		2.00	1	07/13/2017 16:03	<a href="#">WG997221</a>

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	386000		10000	1	07/11/2017 19:05	<a href="#">WG997513</a>

1 Cp

2 Tc

## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	1060		1000	1	07/13/2017 15:33	<a href="#">WG997731</a>
Fluoride	364		100	1	07/13/2017 15:33	<a href="#">WG997731</a>
Sulfate	24800		5000	1	07/13/2017 15:33	<a href="#">WG997731</a>

3 Ss

4 Cn

5 Sr

## Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	07/10/2017 10:32	<a href="#">WG996883</a>

6 Qc

7 Gl

## Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	249		5.00	1	07/11/2017 04:00	<a href="#">WG997224</a>
Boron	ND		200	1	07/11/2017 04:00	<a href="#">WG997224</a>
Calcium	97200		1000	1	07/11/2017 04:00	<a href="#">WG997224</a>
Chromium	ND		10.0	1	07/11/2017 04:00	<a href="#">WG997224</a>
Cobalt	ND		10.0	1	07/11/2017 04:00	<a href="#">WG997224</a>
Lithium	43.1		15.0	1	07/11/2017 04:00	<a href="#">WG997224</a>
Molybdenum	ND		5.00	1	07/11/2017 04:00	<a href="#">WG997224</a>

8 Al

9 Sc

## Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	07/13/2017 16:06	<a href="#">WG997221</a>
Arsenic	14.5		2.00	1	07/13/2017 16:06	<a href="#">WG997221</a>
Beryllium	ND		2.00	1	07/13/2017 16:06	<a href="#">WG997221</a>
Cadmium	ND		1.00	1	07/13/2017 16:06	<a href="#">WG997221</a>
Lead	ND		2.00	1	07/13/2017 16:06	<a href="#">WG997221</a>
Selenium	ND		2.00	1	07/13/2017 16:06	<a href="#">WG997221</a>
Thallium	ND		2.00	1	07/13/2017 16:06	<a href="#">WG997221</a>



Collected date/time: 07/05/17 00:00

L921028

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	642000		10000	1	07/11/2017 19:05	<a href="#">WG997513</a>

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	9030		1000	1	07/13/2017 15:46	<a href="#">WG997731</a>
Fluoride	331		100	1	07/13/2017 15:46	<a href="#">WG997731</a>
Sulfate	159000		25000	5	07/14/2017 12:06	<a href="#">WG998767</a>

3 Ss

4 Cn

5 Sr

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	07/10/2017 10:34	<a href="#">WG996883</a>

6 Qc

7 Gl

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	212		5.00	1	07/11/2017 04:02	<a href="#">WG997224</a>
Boron	ND		200	1	07/11/2017 04:02	<a href="#">WG997224</a>
Calcium	165000		1000	1	07/11/2017 04:02	<a href="#">WG997224</a>
Chromium	ND		10.0	1	07/11/2017 04:02	<a href="#">WG997224</a>
Cobalt	ND		10.0	1	07/11/2017 04:02	<a href="#">WG997224</a>
Lithium	61.6		15.0	1	07/11/2017 04:02	<a href="#">WG997224</a>
Molybdenum	ND		5.00	1	07/11/2017 04:02	<a href="#">WG997224</a>

8 Al

9 Sc

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	07/13/2017 16:10	<a href="#">WG997221</a>
Arsenic	22.2		2.00	1	07/13/2017 16:10	<a href="#">WG997221</a>
Beryllium	ND		2.00	1	07/13/2017 16:10	<a href="#">WG997221</a>
Cadmium	3.73		1.00	1	07/13/2017 16:10	<a href="#">WG997221</a>
Lead	ND		2.00	1	07/13/2017 16:10	<a href="#">WG997221</a>
Selenium	ND		2.00	1	07/13/2017 16:10	<a href="#">WG997221</a>
Thallium	ND		2.00	1	07/13/2017 16:10	<a href="#">WG997221</a>



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	474000		10000	1	07/11/2017 21:09	<a href="#">WG997514</a>

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	15900		1000	1	07/13/2017 16:25	<a href="#">WG997731</a>
Fluoride	582		100	1	07/13/2017 16:25	<a href="#">WG997731</a>
Sulfate	24700		5000	1	07/13/2017 16:25	<a href="#">WG997731</a>

3 Ss

4 Cn

5 Sr

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	07/10/2017 10:46	<a href="#">WG996883</a>

6 Qc

7 Gl

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	227		5.00	1	07/11/2017 04:05	<a href="#">WG997224</a>
Boron	ND		200	1	07/11/2017 04:05	<a href="#">WG997224</a>
Calcium	120000		1000	1	07/11/2017 04:05	<a href="#">WG997224</a>
Chromium	ND		10.0	1	07/11/2017 04:05	<a href="#">WG997224</a>
Cobalt	ND		10.0	1	07/11/2017 04:05	<a href="#">WG997224</a>
Lithium	57.7		15.0	1	07/11/2017 04:05	<a href="#">WG997224</a>
Molybdenum	ND		5.00	1	07/11/2017 04:05	<a href="#">WG997224</a>

8 Al

9 Sc

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	07/13/2017 16:15	<a href="#">WG997221</a>
Arsenic	21.5		2.00	1	07/13/2017 16:15	<a href="#">WG997221</a>
Beryllium	ND		2.00	1	07/13/2017 16:15	<a href="#">WG997221</a>
Cadmium	ND		1.00	1	07/13/2017 16:15	<a href="#">WG997221</a>
Lead	ND		2.00	1	07/13/2017 16:15	<a href="#">WG997221</a>
Selenium	ND		2.00	1	07/13/2017 16:15	<a href="#">WG997221</a>
Thallium	ND		2.00	1	07/13/2017 16:15	<a href="#">WG997221</a>



Method Blank (MB)

(MB) R3233087-1 07/11/17 20:43

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Dissolved Solids	4000	J	2820	10000

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

L920888-05 Original Sample (OS) • Duplicate (DUP)

(OS) L920888-05 07/11/17 20:43 • (DUP) R3233087-4 07/11/17 20:43

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Dissolved Solids	265000	262000	1	1.14		5

<sup>4</sup> Cn

<sup>5</sup> Sr

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

(LCS) R3233087-2 07/11/17 20:43 • (LCSD) R3233087-3 07/11/17 20:43

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Dissolved Solids	8800000	8530000	8670000	96.9	98.5	85.0-115			1.63	5

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Method Blank (MB)

(MB) R3232771-1 07/11/17 19:05

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Dissolved Solids	U		2820	10000

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

L919816-01 Original Sample (OS) • Duplicate (DUP)

(OS) L919816-01 07/11/17 19:05 • (DUP) R3232771-4 07/11/17 19:05

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Dissolved Solids	100000000	104000000	1	3.73		5

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

(LCS) R3232771-2 07/11/17 19:05 • (LCSD) R3232771-3 07/11/17 19:05

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Dissolved Solids	8800000	8480000	8710000	96.4	99.0	85.0-115			2.68	5

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc





Method Blank (MB)

(MB) R3233067-1 07/11/17 21:09

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Dissolved Solids	U		2820	10000

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

L920961-01 Original Sample (OS) • Duplicate (DUP)

(OS) L920961-01 07/11/17 21:09 • (DUP) R3233067-4 07/11/17 21:09

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Dissolved Solids	1300000	1340000	1	2.87		5

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

(LCS) R3233067-2 07/11/17 21:09 • (LCSD) R3233067-3 07/11/17 21:09

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Dissolved Solids	8800000	8180000	8430000	93.0	95.8	85.0-115			3.01	5



Method Blank (MB)

(MB) R3233235-1 07/13/17 11:02

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

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L921145-21 Original Sample (OS) • Duplicate (DUP)

(OS) L921145-21 07/13/17 17:29 • (DUP) R3233235-8 07/13/17 17:42

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	485	494	1	2	J	15
Fluoride	U	0.000	1	0		15

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

(LCS) R3233235-2 07/13/17 11:15 • (LCSD) R3233235-3 07/13/17 11:28

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Chloride	40000	39200	39200	98	98	80-120			0	15
Fluoride	8000	8230	8210	103	103	80-120			0	15
Sulfate	40000	39700	39500	99	99	80-120			1	15

L920474-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L920474-01 07/13/17 12:06 • (MS) R3233235-5 07/13/17 12:32

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Chloride	50000	7130	54700	95	1	80-120	
Fluoride	5000	739	5580	97	1	80-120	
Sulfate	50000	35800	82200	93	1	80-120	

L921028-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L921028-02 07/13/17 14:16 • (MS) R3233235-6 07/13/17 14:28 • (MSD) R3233235-7 07/13/17 14:41

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Chloride	50000	8990	56100	56000	94	94	1	80-120			0	15
Fluoride	5000	334	5040	5050	94	94	1	80-120			0	15



Method Blank (MB)

(MB) R3233314-1 07/14/17 07:31

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

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

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

(LCS) R3233314-2 07/14/17 07:47 • (LCSD) R3233314-3 07/14/17 08:03

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 %
Sulfate	40000	40700	40700	102	102	80-120			0	15

<sup>4</sup>Cn

<sup>5</sup>Sr

<sup>6</sup>Qc

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>Sc



Method Blank (MB)

(MB) R3232014-1 07/10/17 09:49

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Mercury	U		0.0490	0.200

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

<sup>4</sup>Cn

<sup>5</sup>Sr

<sup>6</sup>Qc

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

(LCS) R3232014-2 07/10/17 09:51 • (LCSD) R3232014-3 07/10/17 09:54

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Mercury	3.00	2.97	2.90	99	97	80-120			2	20

L921028-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L921028-02 07/10/17 09:56 • (MS) R3232014-4 07/10/17 09:58 • (MSD) R3232014-5 07/10/17 10:00

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Mercury	3.00	ND	2.89	2.77	96	92	1	75-125			4	20

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>Sc



Method Blank (MB)

(MB) R3232224-1 07/11/17 03:25

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Barium	U		1.70	5.00
Boron	U		12.6	200
Calcium	U		46.3	1000
Chromium	U		1.40	10.0
Cobalt	U		2.30	10.0
Lithium	U		5.30	15.0
Molybdenum	U		1.60	5.00

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

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

(LCS) R3232224-2 07/11/17 03:28 • (LCSD) R3232224-3 07/11/17 03:30

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Barium	1000	1000	1010	100	101	80-120			1	20
Boron	1000	1000	990	100	99	80-120			1	20
Calcium	10000	10100	10100	101	101	80-120			0	20
Chromium	1000	1080	1020	108	102	80-120			6	20
Cobalt	1000	1060	1030	106	103	80-120			3	20
Lithium	1000	1060	1060	106	106	80-120			0	20
Molybdenum	1000	997	993	100	99	80-120			0	20

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

L921028-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L921028-02 07/11/17 03:33 • (MS) R3232224-5 07/11/17 03:38 • (MSD) R3232224-6 07/11/17 03:41

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Barium	1000	211	1230	1230	102	102	1	75-125			0	20
Boron	1000	ND	1200	1190	102	101	1	75-125			1	20
Calcium	10000	165000	172000	172000	77	72	1	75-125		V	0	20
Chromium	1000	ND	1010	1000	101	100	1	75-125			1	20
Cobalt	1000	ND	1050	1040	105	104	1	75-125			1	20
Lithium	1000	58.5	1150	1140	109	108	1	75-125			0	20
Molybdenum	1000	ND	1010	1010	101	101	1	75-125			0	20



Method Blank (MB)

(MB) R3233002-1 07/13/17 10:40

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Antimony	1.01	J	0.754	2.00
Arsenic	U		0.250	2.00
Beryllium	U		0.120	2.00
Cadmium	U		0.160	1.00
Lead	U		0.240	2.00
Selenium	U		0.380	2.00
Thallium	U		0.190	2.00

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

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

(LCS) R3233002-2 07/13/17 10:44 • (LCSD) R3233002-3 07/13/17 10:48

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Antimony	50.0	52.3	52.4	105	105	80-120			0	20
Arsenic	50.0	50.1	50.0	100	100	80-120			0	20
Beryllium	50.0	48.2	49.3	96	99	80-120			2	20
Cadmium	50.0	52.1	50.8	104	102	80-120			3	20
Lead	50.0	50.5	50.6	101	101	80-120			0	20
Selenium	50.0	50.9	50.0	102	100	80-120			2	20
Thallium	50.0	49.8	49.8	100	100	80-120			0	20

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

L921028-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L921028-02 07/13/17 10:51 • (MS) R3233002-5 07/13/17 10:58 • (MSD) R3233002-6 07/13/17 11:02

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Antimony	50.0	ND	53.5	53.5	105	105	1	75-125			0	20
Arsenic	50.0	23.2	71.4	73.5	96	101	1	75-125			3	20
Beryllium	50.0	ND	46.6	48.4	93	97	1	75-125			4	20
Cadmium	50.0	3.67	54.4	56.6	101	106	1	75-125			4	20
Lead	50.0	ND	50.0	50.2	99	100	1	75-125			0	20
Selenium	50.0	ND	48.7	52.5	97	105	1	75-125			8	20
Thallium	50.0	ND	49.8	50.5	100	101	1	75-125			1	20



## Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
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.
Rec.	Recovery.

## Qualifier                      Description

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.

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



ESC Lab Sciences 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.

## State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Connecticut	PH-0197	North Carolina <sup>1</sup>	DW21704
Florida	E87487	North Carolina <sup>2</sup>	41
Georgia	NELAP	North Dakota	R-140
Georgia <sup>1</sup>	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky <sup>1</sup>	90010	South Dakota	n/a
Kentucky <sup>2</sup>	16	Tennessee <sup>14</sup>	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas <sup>5</sup>	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

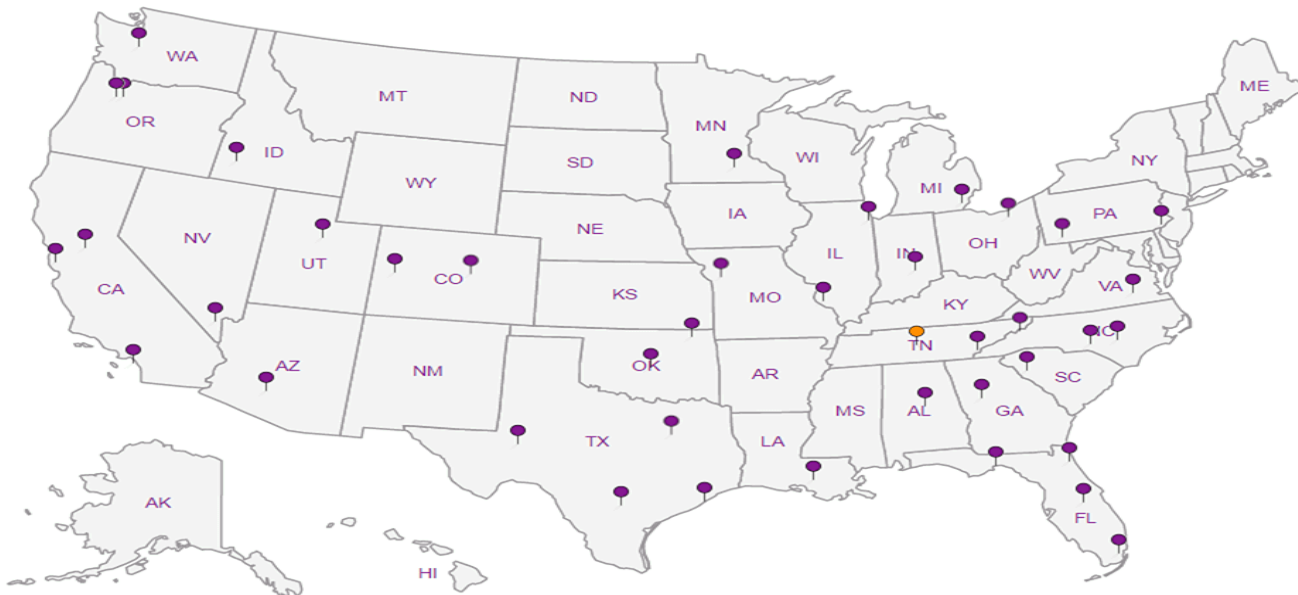
## Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC	100789
A2LA – ISO 17025 <sup>5</sup>	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>n/a</sup> Accreditation not applicable

## Our Locations

ESC Lab Sciences 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. **ESC Lab Sciences performs all testing at our central laboratory.**



1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



**SCS Engineers - KS**

7311 West 130th Street, Ste. 100  
Overland Park, KS 66213

Billing Information:

Accounts Payable  
7311 West 130th Street, Ste. 100  
Overland Park, KS 66213

Pres  
Chk

Analysis / Container / Preservative

Chain of Custody Page 1 of 2



YOUR LAB OF CHOICE

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; jrockhold@scsengineers.com

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

City/State  
Collected: **Weston, MO**

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

Client Project #  
**27213167.16**

Lab Project #  
**AQUAOPKS-IATAN**

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

**Standard**

No.  
of  
Cnts

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cnts	CCR Metals 250mlHDPE-HNO3	Chloride, F, SO4 125mlHDPE-NoPres	TDS 250mlHDPE-NoPres
MW-1	Grab	GW		7/5/17	1040	3	X	X	X
MW-2	Grab	GW		7/5/17	1120	3	X	X	X
MW-6	Grab	GW		7/5/17	1320	3	X	X	X
MW-7	Grab	GW		7/5/17	1355	3	X	X	X
MW-8	Grab	GW		7/5/17	1430	3	X	X	X
MW-9	Grab	GW		7/5/17	1505	3	X	X	X
DUPLICATE	Grab	GW		7/5/17	<del>1505</del> 1507	3	X	X	X
MW-2 MS	Grab	GW		7/5/17	1130	3	X	X	X
MW-2 MSD	Grab	GW		7/5/17	1135	3	X	X	X
MW-10	Grab	GW		7/5/17	1235	3	X	X	X

L # **1921028**

Tal **G136**

Accnum: **AQUAOPKS**

Template: **T114927**

Prelogin: **P606676**

TSR: **206 - Jeff Carr**

PB:

Shipped Via:

Remarks Sample # (lab only)

**-10**

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

Remarks: 6010 Metals-B,BA,CA,CR,CO,LI,MO, 6020 Metals-SB,AS,BE,CD,PB,SE,TL, 7470 Metals-HG.

Samples returned via:  
 UPS  FedEx  Courier

Tracking # **7384 4200 1280**

pH \_\_\_\_\_ Temp \_\_\_\_\_

Flow \_\_\_\_\_ Other \_\_\_\_\_

Sample Receipt Checklist	
COC Seal Present/Intact:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
COC Signed/Accurate:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Bottles arrive intact:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Correct bottles used:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Sufficient volume sent:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
If Applicable	
VOA Zero Headspace:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Preservation Correct/Checked:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N

Relinquished by: (Signature)

*Whit Martin*

Date:

**7/6/17**

Time:

**1700**

Received by: (Signature)

*[Signature]*

Trip Blank Received: Yes  No   
HCL/MeOH  
TBR

Relinquished by: (Signature)

*[Signature]*

Date:

**7/6/17**

Time:

**1700**

Received by: (Signature)

*[Signature]*

Temp: **1.0 3.4** °C  
Bottles Received: **36**

If preservation required by Login: Date/Time

Relinquished by: (Signature)

*[Signature]*

Date:

**7/7/17**

Time:

**0845**

Received for lab by: (Signature)

*[Signature]*

Date: **7/7/17** Time: **0845**

Hold:

Condition:  
NCF /  OK

## Case Narrative

### Lab No: 20170624

This report contains the analytical results for the 10 sample(s) received under chain of custody by ESC Lab Sciences on 7/7/2017 11:43:31 AM. These samples are associated with your 27213167.16 project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted below:

The test results in this report meet all NELAC requirements unless noted below:

This report shall not be reproduced, except in full, without the written approval of ESC Lab Sciences.

All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client.

Results have been reviewed by the Director of Radiochemistry or their designees and is approved for release.

DL for Radiochemistry = MDA

DL for Metals and Wet Chemistry = MDL

DL for Drinking Water = SDWA

### Observations / Nonconformances

L921326



Client : SCS Engineers  
 Client Project : 27213167.16  
 Lab Number : 20170624  
 Date Reported : 08/04/17  
 Date Received : 07/07/17  
 Page Number : 2 of 4

## Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst
<b>Lab ID : 20170624-01</b>							
<b>Client ID : MW-1</b>							
<b>Date Sampled : 7/5/2017 10:40:00 AM</b>							
<b>Matrix : NPW</b>							
<b>Radiochemical Analyses</b>							
Combined Radium	0.142 +/- 0.732	0.563	pCi/l				
Radium-226 SM 7500 Ra B M*	0.142 +/- 0.104	0.126	pCi/l		07/14/17	07/19/17	SD
Radium-228 EPA 904*	-0.105 +/- 0.628	0.437	pCi/l		07/27/17	07/31/17	JR
<b>Lab ID : 20170624-02</b>							
<b>Client ID : MW-2</b>							
<b>Date Sampled : 7/5/2017 11:20:00 AM</b>							
<b>Matrix : NPW</b>							
<b>Radiochemical Analyses</b>							
Combined Radium	1.28 +/- 0.718	0.527	pCi/l				
Radium-226 SM 7500 Ra B M*	0.315 +/- 0.137	0.121	pCi/l		07/14/17	07/19/17	SD
Radium-228 EPA 904*	0.964 +/- 0.581	0.406	pCi/l		07/27/17	07/31/17	JR
<b>Lab ID : 20170624-03</b>							
<b>Client ID : MW-2 MS</b>							
<b>Date Sampled : 7/5/2017 11:30:00 AM</b>							
<b>Matrix : NPW</b>							
<b>Radiochemical Analyses</b>							
Radium-226 SM 7500 Ra B M*	118		% Rec		07/14/17	07/19/17	SD
Radium-228 EPA 904*	77.7		% Rec		07/27/17	07/31/17	JR
<b>Lab ID : 20170624-04</b>							
<b>Client ID : MW-2 MSD</b>							
<b>Date Sampled : 7/5/2017 11:35:00 AM</b>							
<b>Matrix : NPW</b>							
<b>Radiochemical Analyses</b>							
Radium-226 SM 7500 Ra B M*	5.8		RPD		07/14/17	07/19/17	SD
Radium-228 EPA 904*	3.6		RPD		07/27/17	07/31/17	JR
<b>Lab ID : 20170624-05</b>							
<b>Client ID : MW-6</b>							
<b>Date Sampled : 7/5/2017 1:20:00 PM</b>							
<b>Matrix : NPW</b>							

\*NELAC Certified Parameter BDL = Below Detection Limit



Client : SCS Engineers  
 Client Project : 27213167.16  
 Lab Number : 20170624  
 Date Reported : 08/04/17  
 Date Received : 07/07/17  
 Page Number : 3 of 4

## Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst
<b>Radiochemical Analyses</b>							
Combined Radium	1.37 +/- 0.673	0.813	pCi/l				
Radium-226 SM 7500 Ra B M*	0.265 +/- 0.157	0.205	pCi/l		07/14/17	07/19/17	SD
Radium-228 EPA 904*	1.10 +/- 0.516	0.608	pCi/l		07/27/17	07/31/17	JR

**Lab ID** : 20170624-06  
**Client ID** : MW-7  
**Date Sampled** : 7/5/2017 1:55:00 PM  
**Matrix** : NPW

<b>Radiochemical Analyses</b>							
Combined Radium	0.762 +/- 0.505	0.603	pCi/l				
Radium-226 SM 7500 Ra B M*	0.112 +/- 0.119	0.172	pCi/l		07/14/17	07/19/17	SD
Radium-228 EPA 904*	0.650 +/- 0.386	0.431	pCi/l		07/27/17	07/31/17	JR

**Lab ID** : 20170624-07  
**Client ID** : MW-8  
**Date Sampled** : 7/5/2017 2:30:00 PM  
**Matrix** : NPW

<b>Radiochemical Analyses</b>							
Combined Radium	1.73 +/- 0.539	0.663	pCi/l				
Radium-226 SM 7500 Ra B M*	0.238 +/- 0.132	0.143	pCi/l		07/14/17	07/19/17	SD
Radium-228 EPA 904*	1.49 +/- 0.407	0.520	pCi/l		07/27/17	07/31/17	JR

**Lab ID** : 20170624-08  
**Client ID** : MW-9  
**Date Sampled** : 7/5/2017 3:05:00 PM  
**Matrix** : NPW

<b>Radiochemical Analyses</b>							
Combined Radium	1.31 +/- 0.659	0.842	pCi/l				
Radium-226 SM 7500 Ra B M*	0.228 +/- 0.172	0.234	pCi/l		07/14/17	07/19/17	SD
Radium-228 EPA 904*	1.08 +/- 0.487	0.608	pCi/l		07/27/17	07/31/17	JR

**Lab ID** : 20170624-09  
**Client ID** : MW-10  
**Date Sampled** : 7/5/2017 12:35:00 PM  
**Matrix** : NPW

<b>Radiochemical Analyses</b>							
Combined Radium	1.10 +/- 0.527	0.733	pCi/l				

\*NELAC Certified Parameter

BDL = Below Detection Limit



Client : SCS Engineers  
 Client Project : 27213167.16  
 Lab Number : 20170624  
 Date Reported : 08/04/17  
 Date Received : 07/07/17  
 Page Number : 4 of 4

### Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst
Radium-226	SM 7500 Ra B M*	0.229 +/- 0.154	0.205	pCi/l	07/14/17	07/19/17	SD
Radium-228	EPA 904*	0.874 +/- 0.373	0.528	pCi/l	07/27/17	07/31/17	JR

Lab ID : 20170624-10  
 Client ID : DUPLICATE  
 Date Sampled : 7/5/2017  
 Matrix : NPW

### Radiochemical Analyses

Combined Radium		0.996 +/- 0.595	0.993	pCi/l			
Radium-226	SM 7500 Ra B M*	0.073 +/- 0.137	0.215	pCi/l	07/14/17	07/19/17	SD
Radium-228	EPA 904*	0.923 +/- 0.458	0.778	pCi/l	07/27/17	07/31/17	JR

### QC Report

Parameter	Blank	LCS %REC	LCSD %REC	RPD	DUP RPD	RER, NAD or DER	MS %REC	MSD %REC	RPD	Batch ID
Radium-226	0.006	112.0			NC	0.145	118.0	111.0	5.8	R1255
Radium-228	0.879	105.0			NC	0.841	77.7	81.1	3.6	R3984

Lab Approval:

Ron Eidson  
 Director of Radiochemistry





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

L# **921326**  
Table #  
Acctnum: **AQUAOPKS**  
Template: **T107350**  
Prelogin: **P606675**  
TSR: **206 - Jeff Carr**  
PB:

Shipped Via:  
Remarks  
Sample # (lab only)

Analysis / Container / Preservative

Pres Chk

Billing information:

**Accounts Payable**  
7311 West 130th Street, Ste. 100  
Overland Park, KS 66213

Email To: jfranks@sceengineers.com;  
jay.martin@kcpk.com; jrockhold@sceengineers.com

City/State Collected: **Weston, MO**

Lab Project # **AQUAOPKS-IATAN**

P.O. #

Quote #

Date Results Needed  
**Standard**

No. of Cntrs

Sample ID

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs
MW-1	Grab	NPW		7/5/17	1040	2
MW-2	Grab	NPW		7/5/17	1120	2
MW-6	Grab	NPW		7/5/17	1320	2
MW-7	Grab	NPW		7/5/17	1355	2
MW-8	Grab	NPW		7/5/17	1430	2
MW-9	Grab	NPW		7/5/17	1505	2
MW-10	Grab	NPW		7/5/17	1235	2
DUPLICATE	Grab	NPW		7/5/17	—	2
MS Mw-2	Grab	NPW		7/5/17	1130	2
MSD Mw-2	Grab	NPW		7/5/17	1135	2

RA226, RA228 1L-HDFE-Add HNO3

Remarks: RA 226/228 - Report separately and combined.

Sample Receipt Checklist  
COC Seal Present/Intact:    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

pH    Temp     
Flow    Other   

Trip Blank Received: Yes / No  
HCL / MeOH  
TBR  
Temp:    °C Bottles Received:     
Date:    Time:   

Samples returned via:  
UPS    FedEx    Courier   

If preservation required by Login: Date/Time  
Hold:  
Condition: NCF / OK

Received by: (Signature)  
Received by: (Signature)  
Received by: (Signature)

Date:    Time:     
Date:    Time:     
Date:    Time:   

Relinquished by: (Signature)  
Relinquished by: (Signature)  
Relinquished by: (Signature)

20170624

# SAMPLE LOGIN

Date Received: 7/7/2017 11:43:31

Lab Number: 20170624

Due: 8/4/2017

Sample Number	Client Sample ID	Matrix	Date Sampled	Container Type	Container Size	Preservation	Preserved Upon Receipt	Custody Seal	Seal Intact
20170624-01 B	MW-1	NPW	07/05/17	Plastic	1 L	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20170624-01 A	MW-1	NPW	07/05/17	Plastic	1 L	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*						
20170624-02 A	MW-2	NPW	07/05/17	Plastic	1 L	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20170624-02 B	MW-2	NPW	07/05/17	Plastic	1 L	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*						
20170624-03 A	MW-2 MS	NPW	07/05/17	Plastic	1 L	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20170624-03 B	MW-2 MS	NPW	07/05/17	Plastic	1 L	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*						
20170624-04 A	MW-2 MSD	NPW	07/05/17	Plastic	1 L	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20170624-04 B	MW-2 MSD	NPW	07/05/17	Plastic	1 L	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*						
20170624-05 B	MW-6	NPW	07/05/17	Plastic	1 L	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20170624-05 A	MW-6	NPW	07/05/17	Plastic	1 L	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*						
20170624-06 B	MW-7	NPW	07/05/17	Plastic	1 L	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20170624-06 A	MW-7	NPW	07/05/17	Plastic	1 L	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*						
20170624-07 A	MW-8	NPW	07/05/17	Plastic	1 L	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20170624-07 B	MW-8	NPW	07/05/17	Plastic	1 L	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*						

20170624-08 A	MW-9	NPW	07/05/17	Plastic	1 L	HNO3, pH < 2	✓	Yes
20170624-08 B	MW-9	NPW	07/05/17	Plastic	1 L	HNO3, pH < 2	✓	Yes
	Radium-226		SM 7500 Ra B M*					
	Radium-228		EPA 904*					
20170624-09 A	MW-10	NPW	07/05/17	Plastic	1 L	HNO3, pH < 2	✓	Yes
20170624-09 B	MW-10	NPW	07/05/17	Plastic	1 L	HNO3, pH < 2	✓	Yes
	Radium-226		SM 7500 Ra B M*					
	Radium-228		EPA 904*					
20170624-10 B	DUPLICATE	NPW	07/05/17	Plastic	1 L	HNO3, pH < 2	✓	Yes
20170624-10 A	DUPLICATE	NPW	07/05/17	Plastic	1 L	HNO3, pH < 2	✓	Yes
	Radium-226		SM 7500 Ra B M*					
	Radium-228		EPA 904*					

**CONTAINER INSPECTION**

# Coolers 1 Custody Seals Broken 0 Temperature: 16 C Ice 0 Radiation Survey: <300 cpm

**SAMPLE INSPECTION**

Sample Seal Broken 0 Chain of Custody Record ✓ Labels in Tact ✓ Radiation Survey Complete YEA

**Anomalies**

Inspected By: [Signature] DATE 7/7/17  
 QA or Designee Review: [Signature] DATE 7/7/17  
 Sample Custodian Review: [Signature] DATE 7/7/17

**Project Notes:**



Jared Morrison  
December 16, 2022

**ATTACHMENT 1-8**  
**August 2017 Sampling Event Laboratory Report**

## SCS Engineers - KS

Sample Delivery Group: L930900  
Samples Received: 08/19/2017  
Project Number: 27213168.16  
Description: KCPL - Iatan Gen Station

Report To: Jason Franks  
7311 West 130th Street, Ste. 100  
Overland Park, KS 66213

Entire Report Reviewed By:



Jeff Carr  
Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



<b>Cp: Cover Page</b>	<b>1</b>	<b>1</b> Cp
<b>Tc: Table of Contents</b>	<b>2</b>	
<b>Ss: Sample Summary</b>	<b>3</b>	<b>2</b> Tc
<b>Cn: Case Narrative</b>	<b>5</b>	
<b>Sr: Sample Results</b>	<b>6</b>	<b>3</b> Ss
MW-1 L930900-01	6	
MW-2 L930900-02	7	<b>4</b> Cn
MW-6 L930900-03	8	<b>5</b> Sr
MW-7 L930900-04	9	
MW-8 L930900-05	10	<b>6</b> Qc
MW-9 L930900-06	11	
MW-10 L930900-07	12	<b>7</b> Gl
DUPLICATE L930900-08	13	<b>8</b> Al
<b>Qc: Quality Control Summary</b>	<b>14</b>	<b>9</b> Sc
Gravimetric Analysis by Method 2540 C-2011	14	
Wet Chemistry by Method 9056A	15	
Mercury by Method 7470A	19	
Metals (ICP) by Method 6010B	20	
Metals (ICPMS) by Method 6020	22	
<b>Gl: Glossary of Terms</b>	<b>23</b>	
<b>Al: Accreditations &amp; Locations</b>	<b>24</b>	
<b>Sc: Chain of Custody</b>	<b>25</b>	

# SAMPLE SUMMARY



## MW-1 L930900-01 GW

Collected by  
Whit Martin  
Collected date/time  
08/17/17 10:00  
Received date/time  
08/19/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG1012540	1	08/23/17 12:43	08/23/17 13:43	MMF
Wet Chemistry by Method 9056A	WG1012612	1	08/23/17 23:00	08/23/17 23:00	SAM
Mercury by Method 7470A	WG1011870	1	08/22/17 08:32	08/22/17 23:23	EL
Metals (ICP) by Method 6010B	WG1013800	1	08/28/17 08:06	08/28/17 12:59	CCE
Metals (ICPMS) by Method 6020	WG1013862	1	08/28/17 12:10	08/29/17 20:04	JPD

1  
Cp

2  
Tc

3  
Ss

4  
Cn

## MW-2 L930900-02 GW

Collected by  
Whit Martin  
Collected date/time  
08/17/17 10:45  
Received date/time  
08/19/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG1012540	1	08/23/17 12:43	08/23/17 13:43	MMF
Wet Chemistry by Method 9056A	WG1012612	1	08/23/17 23:15	08/23/17 23:15	SAM
Wet Chemistry by Method 9056A	WG1014312	5	08/28/17 13:34	08/28/17 13:34	SAM
Mercury by Method 7470A	WG1011870	1	08/22/17 08:32	08/22/17 23:09	EL
Metals (ICP) by Method 6010B	WG1013800	1	08/28/17 08:06	08/28/17 12:33	CCE
Metals (ICPMS) by Method 6020	WG1013862	1	08/28/17 12:10	08/29/17 19:01	JPD

5  
Sr

6  
Qc

7  
Gl

8  
Al

9  
Sc

## MW-6 L930900-03 GW

Collected by  
Whit Martin  
Collected date/time  
08/17/17 12:50  
Received date/time  
08/19/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG1012540	1	08/23/17 12:43	08/23/17 13:43	MMF
Wet Chemistry by Method 9056A	WG1012612	1	08/24/17 00:00	08/24/17 00:00	SAM
Mercury by Method 7470A	WG1011870	1	08/22/17 08:32	08/22/17 23:25	EL
Metals (ICP) by Method 6010B	WG1013800	1	08/28/17 08:06	08/28/17 13:02	CCE
Metals (ICPMS) by Method 6020	WG1013862	1	08/28/17 12:10	08/29/17 20:07	JPD

## MW-7 L930900-04 GW

Collected by  
Whit Martin  
Collected date/time  
08/17/17 13:25  
Received date/time  
08/19/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG1012540	1	08/23/17 12:43	08/23/17 13:43	MMF
Wet Chemistry by Method 9056A	WG1012612	1	08/24/17 00:15	08/24/17 00:15	SAM
Mercury by Method 7470A	WG1011870	1	08/22/17 08:32	08/22/17 23:27	EL
Metals (ICP) by Method 6010B	WG1013800	1	08/28/17 08:06	08/28/17 13:05	CCE
Metals (ICPMS) by Method 6020	WG1013862	1	08/28/17 12:10	08/29/17 20:11	JPD

## MW-8 L930900-05 GW

Collected by  
Whit Martin  
Collected date/time  
08/17/17 13:55  
Received date/time  
08/19/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG1012540	1	08/23/17 12:43	08/23/17 13:43	MMF
Wet Chemistry by Method 9056A	WG1012612	1	08/24/17 00:30	08/24/17 00:30	SAM
Mercury by Method 7470A	WG1011870	1	08/22/17 08:32	08/22/17 23:29	EL
Metals (ICP) by Method 6010B	WG1013800	1	08/28/17 08:06	08/28/17 13:09	CCE
Metals (ICPMS) by Method 6020	WG1013862	1	08/28/17 12:10	08/29/17 20:14	JPD

# SAMPLE SUMMARY



## MW-9 L930900-06 GW

Collected by  
Whit Martin

Collected date/time  
08/17/17 14:30

Received date/time  
08/19/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG1012540	1	08/23/17 12:43	08/23/17 13:43	MMF
Wet Chemistry by Method 9056A	WG1012612	1	08/24/17 00:45	08/24/17 00:45	SAM
Mercury by Method 7470A	WG1011870	1	08/22/17 08:32	08/22/17 23:36	EL
Metals (ICP) by Method 6010B	WG1013800	1	08/28/17 08:06	08/28/17 13:12	CCE
Metals (ICPMS) by Method 6020	WG1013862	1	08/28/17 12:10	08/29/17 20:18	JPD

1  
Cp

2  
Tc

3  
Ss

4  
Cn

## MW-10 L930900-07 GW

Collected by  
Whit Martin

Collected date/time  
08/17/17 12:00

Received date/time  
08/19/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG1012540	1	08/23/17 12:43	08/23/17 13:43	MMF
Wet Chemistry by Method 9056A	WG1012612	1	08/24/17 01:29	08/24/17 01:29	SAM
Mercury by Method 7470A	WG1011870	1	08/22/17 08:32	08/22/17 23:38	EL
Metals (ICP) by Method 6010B	WG1013800	1	08/28/17 08:06	08/28/17 13:15	CCE
Metals (ICPMS) by Method 6020	WG1013862	1	08/28/17 12:10	08/29/17 20:21	JPD

5  
Sr

6  
Qc

7  
Gl

8  
Al

## DUPLICATE L930900-08 GW

Collected by  
Whit Martin

Collected date/time  
08/17/17 00:00

Received date/time  
08/19/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG1012540	1	08/23/17 12:43	08/23/17 13:43	MMF
Wet Chemistry by Method 9056A	WG1012612	1	08/24/17 01:44	08/24/17 01:44	SAM
Wet Chemistry by Method 9056A	WG1013322	5	08/26/17 12:09	08/26/17 12:09	SAM
Mercury by Method 7470A	WG1011870	1	08/22/17 08:32	08/22/17 23:41	EL
Metals (ICP) by Method 6010B	WG1013800	1	08/28/17 08:06	08/28/17 13:19	CCE
Metals (ICPMS) by Method 6020	WG1013862	1	08/28/17 12:10	08/29/17 20:25	JPD

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. 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  
Technical Service Representative

- <sup>1</sup> Cp
- <sup>2</sup> Tc
- <sup>3</sup> Ss
- <sup>4</sup> Cn
- <sup>5</sup> Sr
- <sup>6</sup> Qc
- <sup>7</sup> Gl
- <sup>8</sup> Al
- <sup>9</sup> Sc



## Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	500000		10000	1	08/23/2017 13:43	<a href="#">WG1012540</a>

1 Cp

2 Tc

## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	6130		1000	1	08/23/2017 23:00	<a href="#">WG1012612</a>
Fluoride	276		100	1	08/23/2017 23:00	<a href="#">WG1012612</a>
Sulfate	35200		5000	1	08/23/2017 23:00	<a href="#">WG1012612</a>

3 Ss

4 Cn

5 Sr

## Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	08/22/2017 23:23	<a href="#">WG1011870</a>

6 Qc

7 Gl

## Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	254		5.00	1	08/28/2017 12:59	<a href="#">WG1013800</a>
Boron	ND		200	1	08/28/2017 12:59	<a href="#">WG1013800</a>
Calcium	134000		1000	1	08/28/2017 12:59	<a href="#">WG1013800</a>
Chromium	ND		10.0	1	08/28/2017 12:59	<a href="#">WG1013800</a>
Cobalt	ND		10.0	1	08/28/2017 12:59	<a href="#">WG1013800</a>
Lithium	52.3		15.0	1	08/28/2017 12:59	<a href="#">WG1013800</a>
Molybdenum	ND		5.00	1	08/28/2017 12:59	<a href="#">WG1013800</a>

8 Al

9 Sc

## Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	08/29/2017 20:04	<a href="#">WG1013862</a>
Arsenic	13.5		2.00	1	08/29/2017 20:04	<a href="#">WG1013862</a>
Beryllium	ND		2.00	1	08/29/2017 20:04	<a href="#">WG1013862</a>
Cadmium	ND		1.00	1	08/29/2017 20:04	<a href="#">WG1013862</a>
Lead	ND		2.00	1	08/29/2017 20:04	<a href="#">WG1013862</a>
Selenium	ND		2.00	1	08/29/2017 20:04	<a href="#">WG1013862</a>
Thallium	ND		2.00	1	08/29/2017 20:04	<a href="#">WG1013862</a>



## Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	690000		10000	1	08/23/2017 13:43	<a href="#">WG1012540</a>

1 Cp

2 Tc

## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	8980		1000	1	08/23/2017 23:15	<a href="#">WG1012612</a>
Fluoride	332		100	1	08/23/2017 23:15	<a href="#">WG1012612</a>
Sulfate	149000		25000	5	08/28/2017 13:34	<a href="#">WG1014312</a>

3 Ss

4 Cn

5 Sr

## Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	08/22/2017 23:09	<a href="#">WG1011870</a>

6 Qc

7 Gl

## Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	223		5.00	1	08/28/2017 12:33	<a href="#">WG1013800</a>
Boron	ND		200	1	08/28/2017 12:33	<a href="#">WG1013800</a>
Calcium	168000	V	1000	1	08/28/2017 12:33	<a href="#">WG1013800</a>
Chromium	ND		10.0	1	08/28/2017 12:33	<a href="#">WG1013800</a>
Cobalt	ND		10.0	1	08/28/2017 12:33	<a href="#">WG1013800</a>
Lithium	54.4		15.0	1	08/28/2017 12:33	<a href="#">WG1013800</a>
Molybdenum	ND		5.00	1	08/28/2017 12:33	<a href="#">WG1013800</a>

8 Al

9 Sc

## Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	08/29/2017 19:01	<a href="#">WG1013862</a>
Arsenic	21.9		2.00	1	08/29/2017 19:01	<a href="#">WG1013862</a>
Beryllium	ND		2.00	1	08/29/2017 19:01	<a href="#">WG1013862</a>
Cadmium	2.91		1.00	1	08/29/2017 19:01	<a href="#">WG1013862</a>
Lead	ND		2.00	1	08/29/2017 19:01	<a href="#">WG1013862</a>
Selenium	ND		2.00	1	08/29/2017 19:01	<a href="#">WG1013862</a>
Thallium	ND		2.00	1	08/29/2017 19:01	<a href="#">WG1013862</a>





## Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	542000		10000	1	08/23/2017 13:43	<a href="#">WG1012540</a>

## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	1320		1000	1	08/24/2017 00:00	<a href="#">WG1012612</a>
Fluoride	313		100	1	08/24/2017 00:00	<a href="#">WG1012612</a>
Sulfate	37600		5000	1	08/24/2017 00:00	<a href="#">WG1012612</a>

## Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	08/22/2017 23:25	<a href="#">WG1011870</a>

## Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	331		5.00	1	08/28/2017 13:02	<a href="#">WG1013800</a>
Boron	ND		200	1	08/28/2017 13:02	<a href="#">WG1013800</a>
Calcium	150000		1000	1	08/28/2017 13:02	<a href="#">WG1013800</a>
Chromium	ND		10.0	1	08/28/2017 13:02	<a href="#">WG1013800</a>
Cobalt	ND		10.0	1	08/28/2017 13:02	<a href="#">WG1013800</a>
Lithium	37.2		15.0	1	08/28/2017 13:02	<a href="#">WG1013800</a>
Molybdenum	ND		5.00	1	08/28/2017 13:02	<a href="#">WG1013800</a>

## Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	08/29/2017 20:07	<a href="#">WG1013862</a>
Arsenic	21.3		2.00	1	08/29/2017 20:07	<a href="#">WG1013862</a>
Beryllium	ND		2.00	1	08/29/2017 20:07	<a href="#">WG1013862</a>
Cadmium	ND		1.00	1	08/29/2017 20:07	<a href="#">WG1013862</a>
Lead	ND		2.00	1	08/29/2017 20:07	<a href="#">WG1013862</a>
Selenium	ND		2.00	1	08/29/2017 20:07	<a href="#">WG1013862</a>
Thallium	ND		2.00	1	08/29/2017 20:07	<a href="#">WG1013862</a>

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	466000		10000	1	08/23/2017 13:43	<a href="#">WG1012540</a>

1 Cp

2 Tc

## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	2000		1000	1	08/24/2017 00:15	<a href="#">WG1012612</a>
Fluoride	326		100	1	08/24/2017 00:15	<a href="#">WG1012612</a>
Sulfate	34100		5000	1	08/24/2017 00:15	<a href="#">WG1012612</a>

3 Ss

4 Cn

5 Sr

## Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	08/22/2017 23:27	<a href="#">WG1011870</a>

6 Qc

7 Gl

## Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	286		5.00	1	08/28/2017 13:05	<a href="#">WG1013800</a>
Boron	ND		200	1	08/28/2017 13:05	<a href="#">WG1013800</a>
Calcium	133000		1000	1	08/28/2017 13:05	<a href="#">WG1013800</a>
Chromium	ND		10.0	1	08/28/2017 13:05	<a href="#">WG1013800</a>
Cobalt	ND		10.0	1	08/28/2017 13:05	<a href="#">WG1013800</a>
Lithium	40.9		15.0	1	08/28/2017 13:05	<a href="#">WG1013800</a>
Molybdenum	ND		5.00	1	08/28/2017 13:05	<a href="#">WG1013800</a>

8 Al

9 Sc

## Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	08/29/2017 20:11	<a href="#">WG1013862</a>
Arsenic	7.06		2.00	1	08/29/2017 20:11	<a href="#">WG1013862</a>
Beryllium	ND		2.00	1	08/29/2017 20:11	<a href="#">WG1013862</a>
Cadmium	ND		1.00	1	08/29/2017 20:11	<a href="#">WG1013862</a>
Lead	ND		2.00	1	08/29/2017 20:11	<a href="#">WG1013862</a>
Selenium	ND		2.00	1	08/29/2017 20:11	<a href="#">WG1013862</a>
Thallium	ND		2.00	1	08/29/2017 20:11	<a href="#">WG1013862</a>



## Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	504000		10000	1	08/23/2017 13:43	<a href="#">WG1012540</a>

1 Cp

2 Tc

## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	3530		1000	1	08/24/2017 00:30	<a href="#">WG1012612</a>
Fluoride	406		100	1	08/24/2017 00:30	<a href="#">WG1012612</a>
Sulfate	43000		5000	1	08/24/2017 00:30	<a href="#">WG1012612</a>

3 Ss

4 Cn

5 Sr

## Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	08/22/2017 23:29	<a href="#">WG1011870</a>

6 Qc

7 Gl

## Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	226		5.00	1	08/28/2017 13:09	<a href="#">WG1013800</a>
Boron	ND		200	1	08/28/2017 13:09	<a href="#">WG1013800</a>
Calcium	145000		1000	1	08/28/2017 13:09	<a href="#">WG1013800</a>
Chromium	ND		10.0	1	08/28/2017 13:09	<a href="#">WG1013800</a>
Cobalt	ND		10.0	1	08/28/2017 13:09	<a href="#">WG1013800</a>
Lithium	43.7		15.0	1	08/28/2017 13:09	<a href="#">WG1013800</a>
Molybdenum	ND		5.00	1	08/28/2017 13:09	<a href="#">WG1013800</a>

8 Al

9 Sc

## Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	08/29/2017 20:14	<a href="#">WG1013862</a>
Arsenic	8.80		2.00	1	08/29/2017 20:14	<a href="#">WG1013862</a>
Beryllium	ND		2.00	1	08/29/2017 20:14	<a href="#">WG1013862</a>
Cadmium	ND		1.00	1	08/29/2017 20:14	<a href="#">WG1013862</a>
Lead	ND		2.00	1	08/29/2017 20:14	<a href="#">WG1013862</a>
Selenium	ND		2.00	1	08/29/2017 20:14	<a href="#">WG1013862</a>
Thallium	ND		2.00	1	08/29/2017 20:14	<a href="#">WG1013862</a>



## Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	431000		10000	1	08/23/2017 13:43	<a href="#">WG1012540</a>

## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	ND		1000	1	08/24/2017 00:45	<a href="#">WG1012612</a>
Fluoride	390		100	1	08/24/2017 00:45	<a href="#">WG1012612</a>
Sulfate	19800		5000	1	08/24/2017 00:45	<a href="#">WG1012612</a>

## Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	08/22/2017 23:36	<a href="#">WG1011870</a>

## Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	280		5.00	1	08/28/2017 13:12	<a href="#">WG1013800</a>
Boron	ND		200	1	08/28/2017 13:12	<a href="#">WG1013800</a>
Calcium	110000		1000	1	08/28/2017 13:12	<a href="#">WG1013800</a>
Chromium	ND		10.0	1	08/28/2017 13:12	<a href="#">WG1013800</a>
Cobalt	ND		10.0	1	08/28/2017 13:12	<a href="#">WG1013800</a>
Lithium	43.1		15.0	1	08/28/2017 13:12	<a href="#">WG1013800</a>
Molybdenum	ND		5.00	1	08/28/2017 13:12	<a href="#">WG1013800</a>

## Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	08/29/2017 20:18	<a href="#">WG1013862</a>
Arsenic	12.2		2.00	1	08/29/2017 20:18	<a href="#">WG1013862</a>
Beryllium	ND		2.00	1	08/29/2017 20:18	<a href="#">WG1013862</a>
Cadmium	ND		1.00	1	08/29/2017 20:18	<a href="#">WG1013862</a>
Lead	ND		2.00	1	08/29/2017 20:18	<a href="#">WG1013862</a>
Selenium	ND		2.00	1	08/29/2017 20:18	<a href="#">WG1013862</a>
Thallium	ND		2.00	1	08/29/2017 20:18	<a href="#">WG1013862</a>

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	539000		10000	1	08/23/2017 13:43	<a href="#">WG1012540</a>

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	17600		1000	1	08/24/2017 01:29	<a href="#">WG1012612</a>
Fluoride	682		100	1	08/24/2017 01:29	<a href="#">WG1012612</a>
Sulfate	26500		5000	1	08/24/2017 01:29	<a href="#">WG1012612</a>

3 Ss

4 Cn

5 Sr

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	08/22/2017 23:38	<a href="#">WG1011870</a>

6 Qc

7 Gl

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	235		5.00	1	08/28/2017 13:15	<a href="#">WG1013800</a>
Boron	ND		200	1	08/28/2017 13:15	<a href="#">WG1013800</a>
Calcium	122000		1000	1	08/28/2017 13:15	<a href="#">WG1013800</a>
Chromium	ND		10.0	1	08/28/2017 13:15	<a href="#">WG1013800</a>
Cobalt	ND		10.0	1	08/28/2017 13:15	<a href="#">WG1013800</a>
Lithium	56.6		15.0	1	08/28/2017 13:15	<a href="#">WG1013800</a>
Molybdenum	ND		5.00	1	08/28/2017 13:15	<a href="#">WG1013800</a>

8 Al

9 Sc

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	08/29/2017 20:21	<a href="#">WG1013862</a>
Arsenic	17.0		2.00	1	08/29/2017 20:21	<a href="#">WG1013862</a>
Beryllium	ND		2.00	1	08/29/2017 20:21	<a href="#">WG1013862</a>
Cadmium	ND		1.00	1	08/29/2017 20:21	<a href="#">WG1013862</a>
Lead	ND		2.00	1	08/29/2017 20:21	<a href="#">WG1013862</a>
Selenium	ND		2.00	1	08/29/2017 20:21	<a href="#">WG1013862</a>
Thallium	ND		2.00	1	08/29/2017 20:21	<a href="#">WG1013862</a>



Collected date/time: 08/17/17 00:00

L930900

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	657000		10000	1	08/23/2017 13:43	<a href="#">WG1012540</a>

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	9040		1000	1	08/24/2017 01:44	<a href="#">WG1012612</a>
Fluoride	334		100	1	08/24/2017 01:44	<a href="#">WG1012612</a>
Sulfate	153000		25000	5	08/26/2017 12:09	<a href="#">WG1013322</a>

3 Ss

4 Cn

5 Sr

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	08/22/2017 23:41	<a href="#">WG1011870</a>

6 Qc

7 Gl

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	223		5.00	1	08/28/2017 13:19	<a href="#">WG1013800</a>
Boron	ND		200	1	08/28/2017 13:19	<a href="#">WG1013800</a>
Calcium	168000		1000	1	08/28/2017 13:19	<a href="#">WG1013800</a>
Chromium	ND		10.0	1	08/28/2017 13:19	<a href="#">WG1013800</a>
Cobalt	ND		10.0	1	08/28/2017 13:19	<a href="#">WG1013800</a>
Lithium	55.0		15.0	1	08/28/2017 13:19	<a href="#">WG1013800</a>
Molybdenum	ND		5.00	1	08/28/2017 13:19	<a href="#">WG1013800</a>

8 Al

9 Sc

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	08/29/2017 20:25	<a href="#">WG1013862</a>
Arsenic	21.9		2.00	1	08/29/2017 20:25	<a href="#">WG1013862</a>
Beryllium	ND		2.00	1	08/29/2017 20:25	<a href="#">WG1013862</a>
Cadmium	2.70		1.00	1	08/29/2017 20:25	<a href="#">WG1013862</a>
Lead	ND		2.00	1	08/29/2017 20:25	<a href="#">WG1013862</a>
Selenium	ND		2.00	1	08/29/2017 20:25	<a href="#">WG1013862</a>
Thallium	ND		2.00	1	08/29/2017 20:25	<a href="#">WG1013862</a>



Method Blank (MB)

(MB) R3244336-1 08/23/17 13:43

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Dissolved Solids	U		2820	10000

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L930855-34 Original Sample (OS) • Duplicate (DUP)

(OS) L930855-34 08/23/17 13:43 • (DUP) R3244336-4 08/23/17 13:43

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Dissolved Solids	547000	547000	1	0.000		5

L930900-08 Original Sample (OS) • Duplicate (DUP)

(OS) L930900-08 08/23/17 13:43 • (DUP) R3244336-5 08/23/17 13:43

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Dissolved Solids	657000	666000	1	1.36		5

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

(LCS) R3244336-2 08/23/17 13:43 • (LCSD) R3244336-3 08/23/17 13:43

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Dissolved Solids	8800000	8390000	8440000	95.3	95.9	85.0-115			0.594	5



Method Blank (MB)

(MB) R3244010-1 08/23/17 19:02

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

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

L930506-01 Original Sample (OS) • Duplicate (DUP)

(OS) L930506-01 08/23/17 21:31 • (DUP) R3244010-4 08/23/17 21:46

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Chloride	4130	4110	1	0		15
Fluoride	129	128	1	1		15
Sulfate	ND	3960	1	0		15

L930901-03 Original Sample (OS) • Duplicate (DUP)

(OS) L930901-03 08/24/17 02:59 • (DUP) R3244010-7 08/24/17 03:14

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Chloride	3960	3970	1	0		15
Fluoride	438	491	1	12		15
Sulfate	19500	19300	1	1		15

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

(LCS) R3244010-2 08/23/17 19:17 • (LCSD) R3244010-3 08/23/17 19:32

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Chloride	40000	39800	39800	99	99	80-120			0	15
Fluoride	8000	8030	8030	100	100	80-120			0	15
Sulfate	40000	39200	39300	98	98	80-120			0	15





L930900-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L930900-02 08/23/17 23:15 • (MS) R3244010-5 08/23/17 23:30 • (MSD) R3244010-6 08/23/17 23:45

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	8980	60000	59900	102	102	1	80-120			0	15
Fluoride	5000	332	5460	5470	103	103	1	80-120			0	15

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

L930901-03 Original Sample (OS) • Matrix Spike (MS)

(OS) L930901-03 08/24/17 02:59 • (MS) R3244010-8 08/24/17 03:29

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	3960	56000	104	1	80-120	
Fluoride	5000	438	5650	104	1	80-120	
Sulfate	50000	19500	68200	97	1	80-120	

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Method Blank (MB)

(MB) R3244878-3 08/26/17 09:41

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Sulfate	220	↓	77.4	5000

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

L931953-02 Original Sample (OS) • Duplicate (DUP)

(OS) L931953-02 08/26/17 11:04 • (DUP) R3244878-6 08/26/17 11:20

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Sulfate	ND	0.000	1	0		15

L931579-01 Original Sample (OS) • Duplicate (DUP)

(OS) L931579-01 08/26/17 14:37 • (DUP) R3244878-7 08/26/17 14:54

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Sulfate	23500	23700	1	1		15

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

(LCS) R3244878-4 08/26/17 10:14 • (LCSD) R3244878-5 08/26/17 10:31

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Sulfate	40000	40000	40300	100	101	80-120			1	15

L931595-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L931595-01 08/26/17 15:10 • (MS) R3244878-8 08/26/17 15:27

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Sulfate	50000	12800	62300	99	1	80-120	



Method Blank (MB)

(MB) R3245040-1 08/28/17 12:05

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Sulfate	U		77.4	5000

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

L932215-02 Original Sample (OS) • Duplicate (DUP)

(OS) L932215-02 08/28/17 15:48 • (DUP) R3245040-6 08/28/17 16:03

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Sulfate	20600	20600	1	0		15

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

(LCS) R3245040-2 08/28/17 12:20 • (LCSD) R3245040-3 08/28/17 12:35

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Sulfate	40000	39900	39900	100	100	80-120			0	15

L930900-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L930900-02 08/28/17 13:34 • (MS) R3245040-4 08/28/17 13:49 • (MSD) R3245040-5 08/28/17 14:04

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Sulfate	10000	149000	192000	191000	87	85	5	80-120			1	15



Method Blank (MB)

(MB) R3243489-1 08/22/17 22:55

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Mercury	U		0.0490	0.200

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

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

(LCS) R3243489-2 08/22/17 22:57 • (LCSD) R3243489-3 08/22/17 23:00

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Mercury	3.00	2.70	2.68	90	89	80-120			1	20

7 Gl

8 Al

L930900-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L930900-02 08/22/17 23:09 • (MS) R3243489-4 08/22/17 23:11 • (MSD) R3243489-5 08/22/17 23:13

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Mercury	3.00	ND	2.64	2.74	88	91	1	75-125			4	20

9 Sc



Method Blank (MB)

(MB) R3245016-1 08/28/17 12:10

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Barium	U		1.70	5.00
Boron	U		12.6	200
Calcium	U		46.3	1000
Chromium	U		1.40	10.0
Cobalt	U		2.30	10.0
Lithium	U		5.30	15.0
Molybdenum	U		1.60	5.00

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

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

(LCS) R3245016-2 08/28/17 12:13 • (LCSD) R3245016-3 08/28/17 12:16

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 %
Barium	1000	1050	1050	105	105	80-120			1	20
Boron	1000	996	993	100	99	80-120			0	20
Calcium	10000	10200	10200	102	102	80-120			0	20
Chromium	1000	999	998	100	100	80-120			0	20
Cobalt	1000	1050	1030	105	103	80-120			2	20
Lithium	1000	1030	1030	103	103	80-120			0	20
Molybdenum	1000	1040	1030	104	103	80-120			1	20

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

L930889-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L930889-04 08/28/17 12:20 • (MS) R3245016-5 08/28/17 12:26 • (MSD) R3245016-6 08/28/17 12:30

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 %
Barium	1000	109	1150	1130	105	102	1	75-125			2	20
Boron	1000	ND	1120	1110	100	100	1	75-125			0	20
Calcium	10000	134000	141000	141000	70	72	1	75-125	V	V	0	20
Chromium	1000	ND	1010	1010	100	100	1	75-125			0	20
Cobalt	1000	ND	1050	1040	104	103	1	75-125			1	20
Lithium	1000	ND	1060	1050	106	105	1	75-125			1	20
Molybdenum	1000	ND	1050	1030	105	103	1	75-125			2	20



L930900-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L930900-02 08/28/17 12:33 • (MS) R3245016-7 08/28/17 12:36 • (MSD) R3245016-8 08/28/17 12:39

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 %
Barium	1000	223	1250	1260	102	103	1	75-125			1	20
Boron	1000	ND	1180	1180	99	100	1	75-125			0	20
Calcium	10000	168000	174000	175000	59	66	1	75-125	<u>V</u>	<u>V</u>	0	20
Chromium	1000	ND	968	1000	97	100	1	75-125			3	20
Cobalt	1000	ND	1020	1030	102	103	1	75-125			1	20
Lithium	1000	54.4	1090	1110	104	105	1	75-125			1	20
Molybdenum	1000	ND	1030	1040	103	104	1	75-125			1	20

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



Method Blank (MB)

(MB) R3245554-7 08/29/17 18:51

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Antimony	U		0.754	2.00
Arsenic	U		0.250	2.00
Beryllium	U		0.120	2.00
Cadmium	U		0.160	1.00
Lead	U		0.240	2.00
Selenium	U		0.380	2.00
Thallium	U		0.190	2.00

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

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

(LCS) R3245554-8 08/29/17 18:54 • (LCSD) R3245554-9 08/29/17 18:58

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 %
Antimony	50.0	51.4	52.0	103	104	80-120			1	20
Arsenic	50.0	49.0	49.5	98	99	80-120			1	20
Beryllium	50.0	48.0	47.8	96	96	80-120			0	20
Cadmium	50.0	49.5	49.7	99	99	80-120			0	20
Lead	50.0	46.2	46.7	92	93	80-120			1	20
Selenium	50.0	47.6	48.3	95	97	80-120			2	20
Thallium	50.0	47.2	46.7	94	93	80-120			1	20

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

L930900-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L930900-02 08/29/17 19:01 • (MS) R3245554-11 08/29/17 19:08 • (MSD) R3245554-12 08/29/17 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 %
Antimony	50.0	ND	52.4	52.5	105	105	1	75-125			0	20
Arsenic	50.0	21.9	69.3	69.1	95	94	1	75-125			0	20
Beryllium	50.0	ND	44.7	44.7	89	89	1	75-125			0	20
Cadmium	50.0	2.91	51.9	51.1	98	96	1	75-125			1	20
Lead	50.0	ND	46.4	45.5	93	91	1	75-125			2	20
Selenium	50.0	ND	48.7	49.4	97	99	1	75-125			1	20
Thallium	50.0	ND	46.9	46.8	94	94	1	75-125			0	20



Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
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.
Rec.	Recovery.

Qualifier	Description
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.

- <sup>1</sup> Cp
- <sup>2</sup> Tc
- <sup>3</sup> Ss
- <sup>4</sup> Cn
- <sup>5</sup> Sr
- <sup>6</sup> Qc
- <sup>7</sup> Gl
- <sup>8</sup> Al
- <sup>9</sup> Sc





ESC Lab Sciences 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.

## State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Connecticut	PH-0197	North Carolina <sup>1</sup>	DW21704
Florida	E87487	North Carolina <sup>2</sup>	41
Georgia	NELAP	North Dakota	R-140
Georgia <sup>1</sup>	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky <sup>1</sup>	90010	South Dakota	n/a
Kentucky <sup>2</sup>	16	Tennessee <sup>14</sup>	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas <sup>5</sup>	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

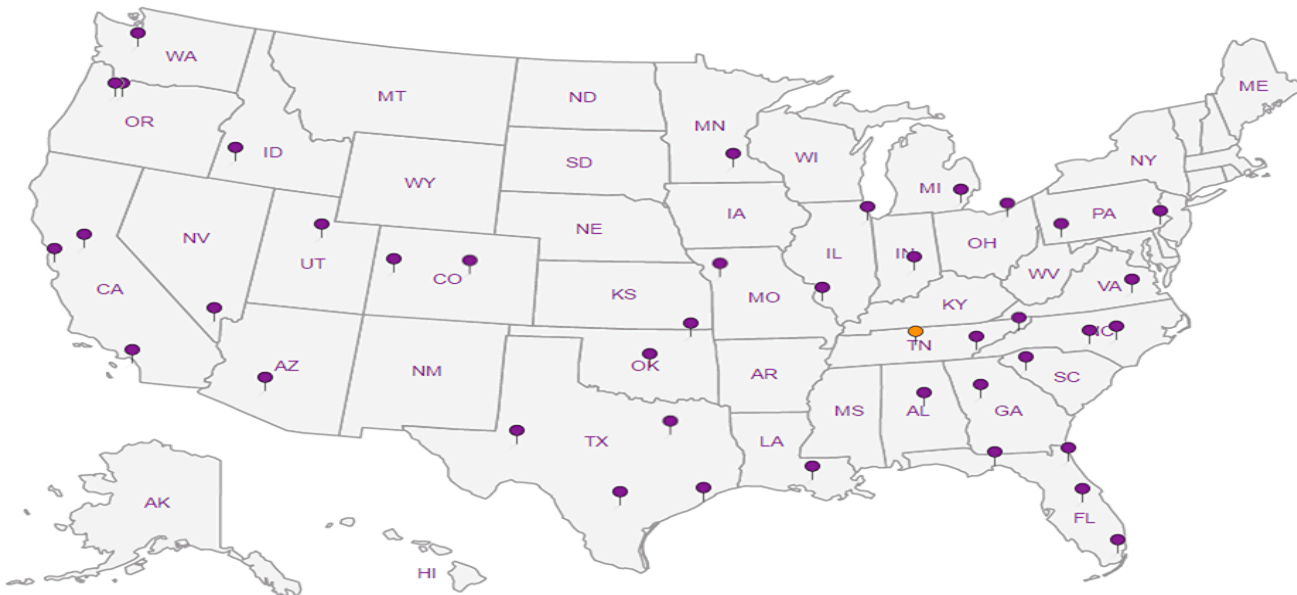
## Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC	100789
A2LA – ISO 17025 <sup>5</sup>	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>n/a</sup> Accreditation not applicable

## Our Locations

ESC Lab Sciences 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. **ESC Lab Sciences performs all testing at our central laboratory.**



1  
Cp

2  
Tc

3  
Ss

4  
Cn

5  
Sr

6  
Qc

7  
Gl

8  
Al

9  
Sc

**SCS Engineers - KS**

7311 West 130th Street, Ste. 100  
Overland Park, KS 66213

Report to:  
**Jason Franks**

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

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

Client Project #  
**27213168.16**

City/State  
Collected: **Weston, MO**

Lab Project #  
**AQUAOPKS-IATAN**

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

**Standard**

No. of Cntrs

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Anions - Cld, F, SO4	Metals 250mlHDPE-HNO3	TDS 500mlHDPE-NoPres
MW-1	Grab	GW		8/17/17	1000	3	X	X	X
MW-2		GW		8/17/17	1045	3	X	X	X
MW-6		GW		8/17/17	1250	3	X	X	X
MW-7		GW		8/17/17	1325	3	X	X	X
MW-8		GW		8/17/17	1355	3	X	X	X
MW-9		GW		8/17/17	1430	3	X	X	X
MW-10		GW		8/17/17	1200	3	X	X	X
DUPLICATE		GW		8/17/17	-	3	X	X	X
MW-2 MS		GW		8/17/17	1055	3	X	X	X
MW-2 MSD		GW		8/17/17	1100	3	X	X	X

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

Remarks: 6010 Metals-Ba,B,Ca,Cr,Co,Li,Mo 6020 metals-Sb,As,Be,Cd,Pb,Se,Tl 7470 metals - Hg

Samples returned via:  
 UPS  FedEx  Courier

Tracking #

Relinquished by: (Signature)

*Whit Martin*

Date:

8/18/17

Time:

1615

Received by: (Signature)

*Jim Hill*

Trip Blank Received: Yes/No

HCL / MeOH  
TBR

Temp:  $20.0^{\circ}\text{C}$  Bottles Received: 30

Date: 8-19-17 Time: 845

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Relinquished by: (Signature)

Date:

Time:

Received for lab by: (Signature)

Date: 8-19-17 Time: 845

**Sample Receipt Checklist**  
COC Seal Present/Intact:  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 Headpace:  Y  N  
Preservation Correct/Checked:  Y  N

If preservation required by Login: Date/Time

Hold:

Condition:  
NCF /  OK

Billing information:

Accounts Payable  
7311 West 130th Street, Ste. 100  
Overland Park, KS 66213

Pres  
Chk

Analysis / Container / Preservative

Chain of Custody Page 1 of 1



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



L#

**C197**

6930900

Acctnum: **AQUAOPKS**

Template: **T117511**

Prelogin: **P610700**

TSR: **206 - Jeff Carr**

PB:

Shipped Via:

Remarks Sample # (lab only)

-01

-02

-03

-04

-05

-06

-07

-08

-09

-10

ES&C KC

## Case Narrative

### Lab No: 20170781

This report contains the analytical results for the 10 sample(s) received under chain of custody by ESC Lab Sciences on 8/21/2017 8:43:34 AM. These samples are associated with your 27213167.16 project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted below:

The test results in this report meet all NELAC requirements unless noted below:

This report shall not be reproduced, except in full, without the written approval of ESC Lab Sciences.

All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client.

Results have been reviewed by the Director of Radiochemistry or their designees and is approved for release.

DL for Radiochemistry = MDA

DL for Metals and Wet Chemistry = MDL

DL for Drinking Water = SDWA

### Observations / Nonconformances

L930915



Client : SCS Engineers  
 Client Project : 27213167.16  
 Lab Number : 20170781  
 Date Reported : 09/19/17  
 Date Received : 08/21/17  
 Page Number : 2 of 4

## Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst
<b>Lab ID : 20170781-01</b>							
<b>Client ID : MW-1</b>							
<b>Date Sampled : 8/17/2017 10:00:00 AM</b>							
<b>Matrix : NPW</b>							
<b>Radiochemical Analyses</b>							
Combined Radium	1.21 +/- 0.643	0.832	pCi/l				
Radium-226 SM 7500 Ra B M*	0.260 +/- 0.207	0.234	pCi/l		09/01/17	09/07/17	RE
Radium-228 EPA 904*	0.949 +/- 0.436	0.598	pCi/l		09/06/17	09/12/17	JR
<b>Lab ID : 20170781-02</b>							
<b>Client ID : MW-2</b>							
<b>Date Sampled : 8/17/2017 10:45:00 AM</b>							
<b>Matrix : NPW</b>							
<b>Radiochemical Analyses</b>							
Combined Radium	1.21 +/- 0.715	0.918	pCi/l				
Radium-226 SM 7500 Ra B M*	0.308 +/- 0.215	0.218	pCi/l		09/01/17	09/07/17	RE
Radium-228 EPA 904*	0.904 +/- 0.500	0.700	pCi/l		09/06/17	09/12/17	JR
<b>Lab ID : 20170781-03</b>							
<b>Client ID : MW-2 MS</b>							
<b>Date Sampled : 8/17/2017 10:55:00 AM</b>							
<b>Matrix : NPW</b>							
<b>Radiochemical Analyses</b>							
Radium-226 SM 7500 Ra B M*	118		% Rec		09/01/17	09/07/17	RE
Radium-228 EPA 904*	87.0		% Rec		09/06/17	09/12/17	JR
<b>Lab ID : 20170781-04</b>							
<b>Client ID : MW-2 MSD</b>							
<b>Date Sampled : 8/17/2017 11:00:00 AM</b>							
<b>Matrix : NPW</b>							
<b>Radiochemical Analyses</b>							
Radium-226 SM 7500 Ra B M*	1.6		RPD		09/01/17	09/07/17	RE
Radium-228 EPA 904*	14.8		RPD		09/06/17	09/12/17	JR
<b>Lab ID : 20170781-05</b>							
<b>Client ID : MW-6</b>							
<b>Date Sampled : 8/17/2017 12:50:00 PM</b>							
<b>Matrix : NPW</b>							

\*NELAC Certified Parameter      BDL = Below Detection Limit



Client : SCS Engineers  
 Client Project : 27213167.16  
 Lab Number : 20170781  
 Date Reported : 09/19/17  
 Date Received : 08/21/17  
 Page Number : 3 of 4

## Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst
<b>Radiochemical Analyses</b>							
Combined Radium	1.24 +/- 0.771	0.856	pCi/l				
Radium-226 SM 7500 Ra B M*	0.392 +/- 0.245	0.195	pCi/l		08/31/17	09/05/17	RE
Radium-228 EPA 904*	0.847 +/- 0.526	0.661	pCi/l		09/06/17	09/12/17	JR
<b>Lab ID : 20170781-06</b>							
<b>Client ID : MW-7</b>							
<b>Date Sampled : 8/17/2017 1:25:00 PM</b>							
<b>Matrix : NPW</b>							
<b>Radiochemical Analyses</b>							
Combined Radium	1.00 +/- 0.671	0.880	pCi/l				
Radium-226 SM 7500 Ra B M*	0.195 +/- 0.220	0.300	pCi/l		08/31/17	09/05/17	RE
Radium-228 EPA 904*	0.806 +/- 0.451	0.580	pCi/l		09/06/17	09/12/17	JR
<b>Lab ID : 20170781-07</b>							
<b>Client ID : MW-8</b>							
<b>Date Sampled : 8/17/2017 1:55:00 PM</b>							
<b>Matrix : NPW</b>							
<b>Radiochemical Analyses</b>							
Combined Radium	1.52 +/- 0.729	1.25	pCi/l				
Radium-226 SM 7500 Ra B M*	-0.042 +/- 0.184	0.389	pCi/l		08/31/17	09/05/17	RE
Radium-228 EPA 904*	1.52 +/- 0.545	0.862	pCi/l		09/06/17	09/12/17	JR
<b>Lab ID : 20170781-08</b>							
<b>Client ID : MW-9</b>							
<b>Date Sampled : 8/17/2017 2:30:00 PM</b>							
<b>Matrix : NPW</b>							
<b>Radiochemical Analyses</b>							
Combined Radium	1.56 +/- 0.715	0.905	pCi/l				
Radium-226 SM 7500 Ra B M*	0.290 +/- 0.238	0.277	pCi/l		08/31/17	09/05/17	RE
Radium-228 EPA 904*	1.27 +/- 0.477	0.628	pCi/l		09/06/17	09/12/17	JR
<b>Lab ID : 20170781-09</b>							
<b>Client ID : MW-10</b>							
<b>Date Sampled : 8/17/2017 12:00:00 PM</b>							
<b>Matrix : NPW</b>							
<b>Radiochemical Analyses</b>							
Combined Radium	0.889 +/- 0.671	0.774	pCi/l				

\*NELAC Certified Parameter

BDL = Below Detection Limit



Client : SCS Engineers  
 Client Project : 27213167.16  
 Lab Number : 20170781  
 Date Reported : 09/19/17  
 Date Received : 08/21/17  
 Page Number : 4 of 4

### Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst
Radium-226	SM 7500 Ra B M*	0.278 +/- 0.259	0.267	pCi/l	08/31/17	09/05/17	RE
Radium-228	EPA 904*	0.611 +/- 0.412	0.507	pCi/l	09/06/17	09/12/17	JR

Lab ID : 20170781-10  
 Client ID : DUPLICATE  
 Date Sampled : 8/17/2017  
 Matrix : NPW

### Radiochemical Analyses

Combined Radium		1.27 +/- 0.778	1.14	pCi/l			
Radium-226	SM 7500 Ra B M*	0.398 +/- 0.273	0.305	pCi/l	08/31/17	09/06/17	RE
Radium-228	EPA 904*	0.869 +/- 0.505	0.832	pCi/l	09/06/17	09/12/17	JR

### QC Report

Parameter	Blank	LCS %REC	LCSD %REC	RPD	DUP RPD	RER, NAD or DER	MS %REC	MSD %REC	RPD	Batch ID
Radium-226	-0.002	110.0			NC	0.576	118.0	116.0	1.6	R1276
Radium-226	-0.012	119.0			29.6	0.768	116.0	113.0	3.0	R1275
Radium-228	0.049	94.0			NC	0.378	87.0	103.0	14.8	R3998

Lab Approval:

Ron Eidson  
 Director of Radiochemistry



**SCS Engineers - KS**  
 7311 West 130th Street, Ste. 100  
 Overland Park, KS 66213

Report to:  
**Jason Franks**

Description: **KCPL - Iatan Generating Station**  
 Client Project #  
**27213167.16**

Collected by (print):  
**Whit Martin**

Collected by (signature):  
*Whit Martin*

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

Std

Billing Information:

Accounts Payable  
 7311 West 130th Street, Ste. 100  
 Overland Park, KS 66213

Email To: jfranks@sccsengineers.com;  
 jay.martin@kcpl.com; jrockhold@sccsengineers.com

City/State

Collected: **Weston, MO**

Lab Project #

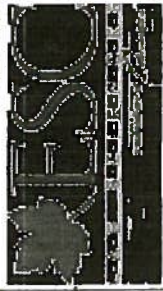
**AQUAOPKS-IATAN**

P.O. #

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page 1 of 1



12065 Lebanon Rd  
 Mount Juliet, TN 37122  
 Phone: 615-759-8888  
 Phone: 800-767-5859  
 Fax: 615-759-5859

L# **930915**

Table #

Acctnum: **AQUAOPKS**

Template: **T107350**

Prelogin: **P610697**

TSR: **206 - Jeff Carr**

PB:

Shipped Via:

Remarks

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs
MW-1	Grab	NPW		8/17/17	1000	2
MW-2		NPW			1045	2
MW-6		NPW			1250	2
MW-7		NPW			1325	2
MW-8		NPW			1355	2
MW-9		NPW			1430	2
MW-10		NPW			1200	2
DUPLICATE		NPW				2
MS MW-2		NPW			1055	2
MSD MW-2		NPW			1100	2

Remarks: RA 226/228 - Report separately and combined.

ESCKC

pH \_\_\_\_\_ Temp \_\_\_\_\_  
 Flow \_\_\_\_\_ Other \_\_\_\_\_

Samples returned via:  
 \_\_\_ UPS \_\_\_ FedEx \_\_\_ Courier

Date: **8/18/17**

Time: **1615**

Date: \_\_\_\_\_

Time: \_\_\_\_\_

Date: \_\_\_\_\_

Time: \_\_\_\_\_

Relinquished by: (Signature)  
*Whit Martin*

Relinquished by: (Signature)

Relinquished by: (Signature)

Received by: (Signature)  
*[Signature]*

Received by: (Signature)

Received by: (Signature)

Trip Blank Received: Yes/No  
 HCL / MeOH  
 TBR

Temp: **Amb** °C

Date: **9/21/17**

Time: **8:13**

Tracking #

Received by: (Signature)

Received by: (Signature)

Received by: (Signature)

Sampling Receipt Checklist  
 COC Seal Present/Intact: \_\_\_ Y \_\_\_ N  
 COC Signed/Accurate: \_\_\_ Y \_\_\_ N  
 Bottles arrive intact: \_\_\_ Y \_\_\_ N  
 Correct bottles used: \_\_\_ Y \_\_\_ N  
 Sufficient volume sent: \_\_\_ Y \_\_\_ N  
 Yf Applicable  
 VOA Zero Headspace: \_\_\_ Y \_\_\_ N  
 Preservation Correct/Checked: \_\_\_ Y \_\_\_ N

If preservation required by Login: Date/Time

Hold: \_\_\_\_\_  
 Condition: NCF / OK

20170721

# SAMPLE LOGIN

Date Received: 8/21/2017 8:43:34

Lab Number: 20170781

Due: 9/19/2017

Sample Number	Client Sample ID	Matrix	Date Sampled	Container Type	Container Size	Preservation	Preserved Upon Receipt	Custody Seal	Seal Intact
20170781-01 B	MW-1	NPW	08/17/17	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20170781-01 A	MW-1	NPW	08/17/17	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*						
20170781-02 A	MW-2	NPW	08/17/17	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20170781-02 B	MW-2	NPW	08/17/17	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*						
20170781-03 A	MW-2 MS	NPW	08/17/17	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20170781-03 B	MW-2 MS	NPW	08/17/17	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*						
20170781-04 A	MW-2 MSD	NPW	08/17/17	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20170781-04 B	MW-2 MSD	NPW	08/17/17	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*						
20170781-05 B	MW-6	NPW	08/17/17	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20170781-05 A	MW-6	NPW	08/17/17	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*						
20170781-06 B	MW-7	NPW	08/17/17	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20170781-06 A	MW-7	NPW	08/17/17	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*						
20170781-07 A	MW-8	NPW	08/17/17	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20170781-07 B	MW-8	NPW	08/17/17	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*						



20170781-08 A	MW-9	NPW	08/17/17	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes
20170781-08 B	MW-9	NPW	08/17/17	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes
Radium-226			SM 7500 Ra B M*					
Radium-228			EPA 904*					
20170781-09 A	MW-10	NPW	08/17/17	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes
20170781-09 B	MW-10	NPW	08/17/17	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes
Radium-226			SM 7500 Ra B M*					
Radium-228			EPA 904*					
20170781-10 B	DUPLICATE	NPW	08/17/17	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes
20170781-10 A	DUPLICATE	NPW	08/17/17	Plastic	1 L	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes
Radium-226			SM 7500 Ra B M*					
Radium-228			EPA 904*					

**CONTAINER INSPECTION**

# Coolers 2 Custody Seals Broken 0 Temperature: As C Ice      Radiation Survey: <300 cpm

**SAMPLE INSPECTION**

Sample Seal Broken 0 Chain of Custody Record  Labels in Tact  Radiation Survey Complete N/A

**Anomalies**

Inspected By: [Signature] DATE 8/21/17  
 QA or Designee Review: [Signature] DATE 08/21/17  
 Sample Custodian Review: [Signature] DATE 8/21/17

**Project Notes:**

Jared Morrison  
December 16, 2022

**ATTACHMENT 1-9**  
**October 2017 Background Sampling Event Laboratory Report**

October 20, 2017

## SCS Engineers - KS

Sample Delivery Group: L941846  
Samples Received: 10/06/2017  
Project Number: 27213167.15  
Description: KCPL - Iatan Generating Station

Report To: Jason Franks  
7311 West 130th Street, Ste. 100  
Overland Park, KS 66213

Entire Report Reviewed By:



Jeff Carr  
Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



<b>Cp: Cover Page</b>	<b>1</b>	
<b>Tc: Table of Contents</b>	<b>2</b>	
<b>Ss: Sample Summary</b>	<b>3</b>	
<b>Cn: Case Narrative</b>	<b>4</b>	
<b>Sr: Sample Results</b>	<b>5</b>	
<b>MW-1 L941846-01</b>	<b>5</b>	
<b>MW-2 L941846-02</b>	<b>6</b>	
<b>MW-6 L941846-03</b>	<b>7</b>	
<b>MW-7 L941846-04</b>	<b>8</b>	
<b>MW-8 L941846-05</b>	<b>9</b>	
<b>DUPLICATE L941846-06</b>	<b>10</b>	
<b>Qc: Quality Control Summary</b>	<b>11</b>	
<b>Mercury by Method 7470A</b>	<b>11</b>	
<b>Metals (ICP) by Method 6010B</b>	<b>12</b>	
<b>Metals (ICPMS) by Method 6020</b>	<b>13</b>	
<b>Gl: Glossary of Terms</b>	<b>15</b>	
<b>Al: Accreditations &amp; Locations</b>	<b>16</b>	
<b>Sc: Sample Chain of Custody</b>	<b>17</b>	

# SAMPLE SUMMARY



## MW-1 L941846-01 GW

Collected by  
Jason R. Franks  
Collected date/time  
10/05/17 13:45  
Received date/time  
10/06/17 10:13

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG1030009	1	10/11/17 03:25	10/11/17 11:28	ABL
Metals (ICP) by Method 6010B	WG1029577	1	10/12/17 14:04	10/13/17 00:21	CCE
Metals (ICPMS) by Method 6020	WG1033468	1	10/19/17 16:38	10/20/17 14:54	JPD

1  
Cp

2  
Tc

3  
Ss

4  
Cn

5  
Sr

6  
Qc

7  
Gl

8  
Al

9  
Sc

## MW-2 L941846-02 GW

Collected by  
Jason R. Franks  
Collected date/time  
10/05/17 12:40  
Received date/time  
10/06/17 10:13

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG1030009	1	10/11/17 03:25	10/11/17 11:30	ABL
Metals (ICP) by Method 6010B	WG1029577	1	10/12/17 14:04	10/13/17 00:24	CCE
Metals (ICPMS) by Method 6020	WG1033468	1	10/19/17 16:38	10/20/17 14:58	JPD

## MW-6 L941846-03 GW

Collected by  
Jason R. Franks  
Collected date/time  
10/05/17 10:45  
Received date/time  
10/06/17 10:13

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG1030009	1	10/11/17 03:25	10/11/17 10:47	ABL
Metals (ICP) by Method 6010B	WG1029577	1	10/12/17 14:04	10/12/17 23:41	CCE
Metals (ICPMS) by Method 6020	WG1033468	1	10/19/17 16:38	10/20/17 14:19	JPD

## MW-7 L941846-04 GW

Collected by  
Jason R. Franks  
Collected date/time  
10/05/17 12:20  
Received date/time  
10/06/17 10:13

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG1030009	1	10/11/17 03:25	10/11/17 11:32	ABL
Metals (ICP) by Method 6010B	WG1029577	1	10/12/17 14:04	10/13/17 00:27	CCE
Metals (ICPMS) by Method 6020	WG1033468	1	10/19/17 16:38	10/20/17 15:01	JPD

## MW-8 L941846-05 GW

Collected by  
Jason R. Franks  
Collected date/time  
10/05/17 13:00  
Received date/time  
10/06/17 10:13

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG1030009	1	10/11/17 03:25	10/11/17 11:39	ABL
Metals (ICP) by Method 6010B	WG1029577	1	10/12/17 14:04	10/13/17 00:30	CCE
Metals (ICPMS) by Method 6020	WG1033468	1	10/19/17 16:38	10/20/17 15:05	JPD

## DUPLICATE L941846-06 GW

Collected by  
Jason R. Franks  
Collected date/time  
10/05/17 00:00  
Received date/time  
10/06/17 10:13

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG1030009	1	10/11/17 03:25	10/11/17 11:42	ABL
Metals (ICP) by Method 6010B	WG1029577	1	10/12/17 14:04	10/13/17 00:34	CCE
Metals (ICPMS) by Method 6020	WG1033468	1	10/19/17 16:38	10/20/17 15:08	JPD



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. 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  
Technical Service Representative

- <sup>1</sup> Cp
- <sup>2</sup> Tc
- <sup>3</sup> Ss
- <sup>4</sup> Cn
- <sup>5</sup> Sr
- <sup>6</sup> Qc
- <sup>7</sup> Gl
- <sup>8</sup> Al
- <sup>9</sup> Sc



Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	10/11/2017 11:28	<a href="#">WG1030009</a>

1 Cp

2 Tc

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	262		5.00	1	10/13/2017 00:21	<a href="#">WG1029577</a>
Chromium	ND		10.0	1	10/13/2017 00:21	<a href="#">WG1029577</a>
Cobalt	ND		10.0	1	10/13/2017 00:21	<a href="#">WG1029577</a>

3 Ss

4 Cn

5 Sr

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	10/20/2017 14:54	<a href="#">WG1033468</a>
Arsenic	13.8		2.00	1	10/20/2017 14:54	<a href="#">WG1033468</a>
Beryllium	ND		2.00	1	10/20/2017 14:54	<a href="#">WG1033468</a>
Cadmium	ND		1.00	1	10/20/2017 14:54	<a href="#">WG1033468</a>
Lead	ND		2.00	1	10/20/2017 14:54	<a href="#">WG1033468</a>
Selenium	ND		2.00	1	10/20/2017 14:54	<a href="#">WG1033468</a>
Thallium	ND		2.00	1	10/20/2017 14:54	<a href="#">WG1033468</a>

6 Qc

7 Gl

8 Al

9 Sc



Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	10/11/2017 11:30	<a href="#">WG1030009</a>

1 Cp

2 Tc

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	227		5.00	1	10/13/2017 00:24	<a href="#">WG1029577</a>
Chromium	ND		10.0	1	10/13/2017 00:24	<a href="#">WG1029577</a>
Cobalt	ND		10.0	1	10/13/2017 00:24	<a href="#">WG1029577</a>

3 Ss

4 Cn

5 Sr

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	10/20/2017 14:58	<a href="#">WG1033468</a>
Arsenic	23.2		2.00	1	10/20/2017 14:58	<a href="#">WG1033468</a>
Beryllium	ND		2.00	1	10/20/2017 14:58	<a href="#">WG1033468</a>
Cadmium	7.29		1.00	1	10/20/2017 14:58	<a href="#">WG1033468</a>
Lead	ND		2.00	1	10/20/2017 14:58	<a href="#">WG1033468</a>
Selenium	ND		2.00	1	10/20/2017 14:58	<a href="#">WG1033468</a>
Thallium	ND		2.00	1	10/20/2017 14:58	<a href="#">WG1033468</a>

6 Qc

7 Gl

8 Al

9 Sc





Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	10/11/2017 10:47	<a href="#">WG1030009</a>

1 Cp

2 Tc

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	304	O1	5.00	1	10/12/2017 23:41	<a href="#">WG1029577</a>
Chromium	ND		10.0	1	10/12/2017 23:41	<a href="#">WG1029577</a>
Cobalt	ND		10.0	1	10/12/2017 23:41	<a href="#">WG1029577</a>

3 Ss

4 Cn

5 Sr

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	10/20/2017 14:19	<a href="#">WG1033468</a>
Arsenic	18.2		2.00	1	10/20/2017 14:19	<a href="#">WG1033468</a>
Beryllium	ND		2.00	1	10/20/2017 14:19	<a href="#">WG1033468</a>
Cadmium	ND		1.00	1	10/20/2017 14:19	<a href="#">WG1033468</a>
Lead	ND		2.00	1	10/20/2017 14:19	<a href="#">WG1033468</a>
Selenium	ND		2.00	1	10/20/2017 14:19	<a href="#">WG1033468</a>
Thallium	ND		2.00	1	10/20/2017 14:19	<a href="#">WG1033468</a>

6 Qc

7 Gl

8 Al

9 Sc



Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	10/11/2017 11:32	<a href="#">WG1030009</a>

1 Cp

2 Tc

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	287		5.00	1	10/13/2017 00:27	<a href="#">WG1029577</a>
Chromium	ND		10.0	1	10/13/2017 00:27	<a href="#">WG1029577</a>
Cobalt	ND		10.0	1	10/13/2017 00:27	<a href="#">WG1029577</a>

3 Ss

4 Cn

5 Sr

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	10/20/2017 15:01	<a href="#">WG1033468</a>
Arsenic	11.3		2.00	1	10/20/2017 15:01	<a href="#">WG1033468</a>
Beryllium	ND		2.00	1	10/20/2017 15:01	<a href="#">WG1033468</a>
Cadmium	ND		1.00	1	10/20/2017 15:01	<a href="#">WG1033468</a>
Lead	ND		2.00	1	10/20/2017 15:01	<a href="#">WG1033468</a>
Selenium	ND		2.00	1	10/20/2017 15:01	<a href="#">WG1033468</a>
Thallium	ND		2.00	1	10/20/2017 15:01	<a href="#">WG1033468</a>

6 Qc

7 Gl

8 Al

9 Sc



Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	10/11/2017 11:39	<a href="#">WG1030009</a>

<sup>1</sup> Cp

<sup>2</sup> Tc

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	229		5.00	1	10/13/2017 00:30	<a href="#">WG1029577</a>
Chromium	ND		10.0	1	10/13/2017 00:30	<a href="#">WG1029577</a>
Cobalt	ND		10.0	1	10/13/2017 00:30	<a href="#">WG1029577</a>

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	10/20/2017 15:05	<a href="#">WG1033468</a>
Arsenic	10.7		2.00	1	10/20/2017 15:05	<a href="#">WG1033468</a>
Beryllium	ND		2.00	1	10/20/2017 15:05	<a href="#">WG1033468</a>
Cadmium	ND		1.00	1	10/20/2017 15:05	<a href="#">WG1033468</a>
Lead	ND		2.00	1	10/20/2017 15:05	<a href="#">WG1033468</a>
Selenium	ND		2.00	1	10/20/2017 15:05	<a href="#">WG1033468</a>
Thallium	ND		2.00	1	10/20/2017 15:05	<a href="#">WG1033468</a>

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Collected date/time: 10/05/17 00:00

L941846

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	10/11/2017 11:42	<a href="#">WG1030009</a>

<sup>1</sup> Cp

<sup>2</sup> Tc

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	316		5.00	1	10/13/2017 00:34	<a href="#">WG1029577</a>
Chromium	ND		10.0	1	10/13/2017 00:34	<a href="#">WG1029577</a>
Cobalt	ND		10.0	1	10/13/2017 00:34	<a href="#">WG1029577</a>

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	10/20/2017 15:08	<a href="#">WG1033468</a>
Arsenic	19.2		2.00	1	10/20/2017 15:08	<a href="#">WG1033468</a>
Beryllium	ND		2.00	1	10/20/2017 15:08	<a href="#">WG1033468</a>
Cadmium	ND		1.00	1	10/20/2017 15:08	<a href="#">WG1033468</a>
Lead	ND		2.00	1	10/20/2017 15:08	<a href="#">WG1033468</a>
Selenium	ND		2.00	1	10/20/2017 15:08	<a href="#">WG1033468</a>
Thallium	ND		2.00	1	10/20/2017 15:08	<a href="#">WG1033468</a>

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Method Blank (MB)

(MB) R3256526-1 10/11/17 10:09

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Mercury	U		0.0490	0.200

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

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

(LCS) R3256526-2 10/11/17 10:11 • (LCSD) R3256526-3 10/11/17 10:45

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 %
Mercury	3.00	3.03	3.06	101	102	80-120			1	20

<sup>7</sup> Gl

<sup>8</sup> Al

L941846-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L941846-03 10/11/17 10:47 • (MS) R3256526-4 10/11/17 10:49 • (MSD) R3256526-5 10/11/17 10:51

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 %
Mercury	3.00	ND	2.99	3.11	100	104	1	75-125			4	20

<sup>9</sup> Sc



Method Blank (MB)

(MB) R3257061-1 10/12/17 23:32

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Barium	U		1.70	5.00
Chromium	U		1.40	10.0
Cobalt	U		2.30	10.0

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

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

(LCS) R3257061-2 10/12/17 23:35 • (LCSD) R3257061-3 10/12/17 23:38

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Barium	1000	1040	1030	104	103	80-120			0	20
Chromium	1000	995	1000	100	100	80-120			1	20
Cobalt	1000	1020	1010	102	101	80-120			1	20

L941846-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L941846-03 10/12/17 23:41 • (MS) R3257061-5 10/12/17 23:48 • (MSD) R3257061-6 10/12/17 23:51

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Barium	1000	304	1330	1320	103	102	1	75-125			1	20
Chromium	1000	ND	982	979	98	98	1	75-125			0	20
Cobalt	1000	ND	1020	1020	102	102	1	75-125			1	20



Method Blank (MB)

(MB) R3259323-1 10/20/17 14:08

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Antimony	U		0.754	2.00
Arsenic	U		0.250	2.00
Beryllium	U		0.120	2.00
Cadmium	U		0.160	1.00
Lead	U		0.240	2.00
Selenium	U		0.380	2.00
Thallium	U		0.190	2.00

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

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

(LCS) R3259323-2 10/20/17 14:12 • (LCSD) R3259323-3 10/20/17 14:16

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Antimony	50.0	50.0	51.7	100	103	80-120			3	20
Arsenic	50.0	47.8	49.7	96	99	80-120			4	20
Beryllium	50.0	47.1	47.4	94	95	80-120			1	20
Cadmium	50.0	48.8	50.5	98	101	80-120			4	20
Lead	50.0	47.8	49.1	96	98	80-120			3	20
Selenium	50.0	48.5	48.5	97	97	80-120			0	20
Thallium	50.0	47.4	49.7	95	99	80-120			5	20

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

L941846-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L941846-03 10/20/17 14:19 • (MS) R3259323-5 10/20/17 14:26 • (MSD) R3259323-6 10/20/17 14:30

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Antimony	50.0	ND	51.4	50.3	103	101	1	75-125			2	20
Arsenic	50.0	18.2	65.9	66.3	96	96	1	75-125			1	20
Beryllium	50.0	ND	47.0	47.5	94	95	1	75-125			1	20
Cadmium	50.0	ND	49.6	48.8	99	98	1	75-125			2	20
Lead	50.0	ND	47.8	47.7	96	95	1	75-125			0	20
Selenium	50.0	ND	48.4	48.2	97	96	1	75-125			0	20
Thallium	50.0	ND	48.5	48.4	97	97	1	75-125			0	20



L941895-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L941895-10 10/20/17 14:33 • (MS) R3259323-7 10/20/17 14:37 • (MSD) R3259323-8 10/20/17 14:40

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 %
Antimony	50.0	ND	52.3	52.2	105	104	1	75-125			0	20
Arsenic	50.0	5.08	53.6	53.6	97	97	1	75-125			0	20
Beryllium	50.0	ND	47.6	49.3	95	99	1	75-125			4	20
Cadmium	50.0	ND	49.6	49.6	99	99	1	75-125			0	20
Lead	50.0	ND	48.2	49.0	96	98	1	75-125			2	20
Selenium	50.0	ND	49.1	49.5	98	99	1	75-125			1	20
Thallium	50.0	ND	48.6	49.0	97	98	1	75-125			1	20

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.

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, 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.
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.

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

Qualifier Description

O1	The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference.
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ESC Lab Sciences 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.

## State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Connecticut	PH-0197	North Carolina <sup>1</sup>	DW21704
Florida	E87487	North Carolina <sup>2</sup>	41
Georgia	NELAP	North Dakota	R-140
Georgia <sup>1</sup>	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky <sup>1</sup>	90010	South Dakota	n/a
Kentucky <sup>2</sup>	16	Tennessee <sup>14</sup>	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas <sup>5</sup>	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

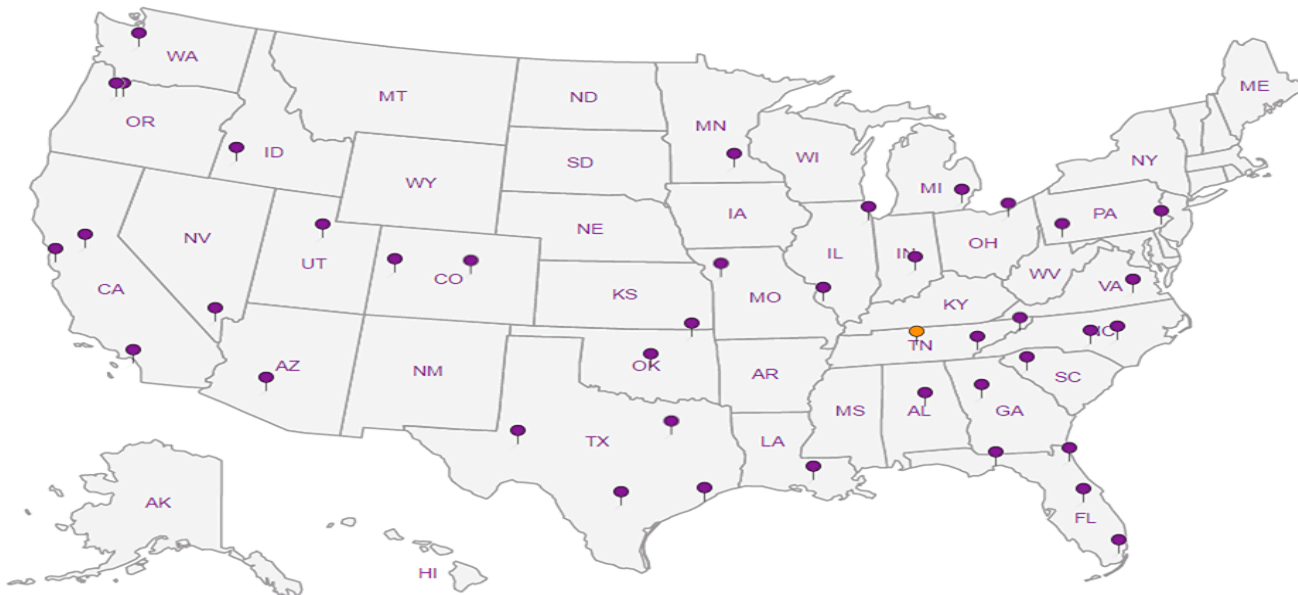
## Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC	100789
A2LA – ISO 17025 <sup>5</sup>	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>n/a</sup> Accreditation not applicable

## Our Locations

ESC Lab Sciences 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. **ESC Lab Sciences performs all testing at our central laboratory.**



1  
Cp

2  
Tc

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Ss

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Company Name/Address: <b>SCS Engineers</b> 7311 West 130th Street Suite 100 Overland Park, Kansas 66213			Billing Information: <b>Jason Franks</b> SCS Engineers 7311 West 130th Street Suite 100 Overland Park, Kansas 66213			Analysis / Container / Preservative						Chain of Custody Page 1 of 1			
Report to: <b>Mr. Jason R. Franks</b>			Email To: <b>jfranks@scsengineers.com</b>			Total Metals* 250mlHDPE-HN03						 YOUR LAB OF CHOICE 12065 Lebanon Rd Mount Juliet, TN 37122 Phone: 615-758-5858 Phone: 800-767-5859 Fax: 615-758-5859			
Project Description: <b>KCPL iatan Gen Station - Groundwater</b>			City/State Collected: <b>Weston, Mo</b>									L# <b>941846</b>		T# <b>D114</b>	
Phone: <b>913-681-0030</b>		Client Project # <b>27213167.17</b>		Lab Project #								Acctnum: <b>AQUAOPKS</b>		Template:	
Fax: <b>913-681-0012</b>		Site/Facility ID #		P.O. #								Prelogin:		TSR: <b>206-Jeff Carr</b>	
Collected by (print): <b>Jason R. Franks</b>		Rush? (Lab MUST Be Notified)		Date Results Needed <b>STD</b>								PB:		Shipped Via:	
Collected by (signature): 		<input type="checkbox"/> Same Day .....200% <input type="checkbox"/> Next Day .....100% <input type="checkbox"/> Two Day .....50% <input type="checkbox"/> Three Day .....25%		Email? <input type="checkbox"/> No <input type="checkbox"/> Yes FAX? <input type="checkbox"/> No <input type="checkbox"/> Yes								No. of Cntrs		Rem./Contaminant	
Immediately Packed on ice N <input type="checkbox"/> Y <input checked="" type="checkbox"/>														Sample # (lab only)	
Sample ID		Comp/Grab	Matrix *	Depth	Date							Time	No. of Cntrs		
MW-1		Grab	GW	NA	10/5/17							1345	1	X	
MW-2		Grab	GW	NA								1240	1	X	-01
MW-6		Grab	GW	NA		1045	1	X	-02						
MW-7		Grab	GW	NA		1220	1	X	-03						
MW-8		Grab	GW	NA		1300	1	X	-04						
Duplicate		Grab	GW	NA		-	1	X	-05						
MS <i>MW to</i>		Grab	GW	NA		1055	1	X	-06						
MSD <i>MW to</i>		Grab	GW	NA		1100	1	X	-07 <i>no</i>						
			NA												

\* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other \_\_\_\_\_

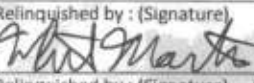

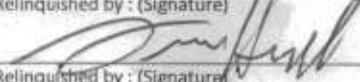
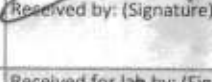
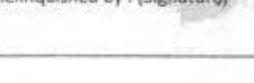
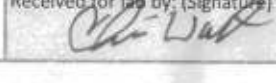
Remarks: \*Metals (6010): Ba,Cr,Co - (6020): Pb,As,Be,Cd,Sb,Se,Tl - (7470): Hg

ESCKC

pH \_\_\_\_\_ Temp \_\_\_\_\_

Flow \_\_\_\_\_ Other \_\_\_\_\_

Hold # \_\_\_\_\_

Relinquished by: (Signature) 	Date: 10/5/17	Time: 1535	Received by: (Signature) 	Samples returned via: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> Courier <input type="checkbox"/> _____	Condition: (lab use only)
Relinquished by: (Signature) 	Date: 10/5/17	Time: 1415	Received by: (Signature) 	Temp: 2.9°C Bottles Received: 8	COC Seal Intact: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> RA
Relinquished by: (Signature) 	Date:	Time:	Received for lab by: (Signature) 	Date: 10/6/17 Time: 0845 am	pH Checked: NCF: <input type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> RA OK

1013

## ESC LAB SCIENCES Cooler Receipt Form

Client: <u>ADWADPKS</u>	SDG#	<u>941846</u>
Cooler Received/Opened On: <u>10/5/17</u>	Temperature: <u>2.9</u>	
Received by : <u>Chris Ward</u>		
Signature: <u>Chris Ward</u>		

Receipt Check List	NP	Yes	No
COC Seal Present / Intact?	/		
COC Signed / Accurate?	/		
Bottles arrive intact?	/		
Correct bottles used?	/		
Sufficient volume sent?	/		
If Applicable			
VOA Zero headspace?			
Preservation Correct / Checked?	/		

## SCS Engineers - KS

Sample Delivery Group: L941832  
Samples Received: 10/06/2017  
Project Number: 27213167.15  
Description: KCPL - Iatan Generating Station

Report To: Jason Franks  
7311 West 130th Street, Ste. 100  
Overland Park, KS 66213

Entire Report Reviewed By:



Jason Romer  
Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.





<b>Cp: Cover Page</b>	<b>1</b>	<b><sup>1</sup>Cp</b>
<b>Tc: Table of Contents</b>	<b>2</b>	<b><sup>2</sup>Tc</b>
<b>Ss: Sample Summary</b>	<b>3</b>	<b><sup>3</sup>Ss</b>
<b>Cn: Case Narrative</b>	<b>4</b>	<b><sup>4</sup>Cn</b>
<b>Sr: Sample Results</b>	<b>5</b>	<b><sup>5</sup>Sr</b>
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MW-2 L941832-02	<b>6</b>	
MW-6 L941832-03	<b>7</b>	
MW-7 L941832-04	<b>8</b>	
MW-8 L941832-05	<b>9</b>	<b><sup>6</sup>Qc</b>
DUPLICATE L941832-06	<b>10</b>	
MW-9 L941832-07	<b>11</b>	<b><sup>7</sup>Gl</b>
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<b>Qc: Quality Control Summary</b>	<b>13</b>	<b><sup>9</sup>Sc</b>
Mercury by Method 7470A	<b>13</b>	
Metals (ICP) by Method 6010B	<b>14</b>	
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<b>Sc: Sample Chain of Custody</b>	<b>19</b>	

# SAMPLE SUMMARY



## MW-1 L941832-01 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Metals (ICP) by Method 6010B	WG1029576	1	10/13/17 15:19	10/14/17 08:40	TRB

Collected by Jason R. Franks  
 Collected date/time 10/05/17 13:45  
 Received date/time 10/06/17 10:13

1 Cp

2 Tc

3 Ss

## MW-2 L941832-02 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Metals (ICP) by Method 6010B	WG1029576	1	10/13/17 15:19	10/14/17 08:42	TRB

Collected by Jason R. Franks  
 Collected date/time 10/05/17 12:40  
 Received date/time 10/06/17 10:13

4 Cn

5 Sr

## MW-6 L941832-03 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Metals (ICP) by Method 6010B	WG1029576	1	10/13/17 15:19	10/14/17 08:17	TRB

Collected by Jason R. Franks  
 Collected date/time 10/05/17 10:45  
 Received date/time 10/06/17 10:13

6 Qc

7 Gl

## MW-7 L941832-04 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Metals (ICP) by Method 6010B	WG1029576	1	10/13/17 15:19	10/14/17 08:45	TRB

Collected by Jason R. Franks  
 Collected date/time 10/05/17 12:20  
 Received date/time 10/06/17 10:13

8 Al

9 Sc

## MW-8 L941832-05 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Metals (ICP) by Method 6010B	WG1029576	1	10/13/17 15:19	10/14/17 08:48	TRB

Collected by Jason R. Franks  
 Collected date/time 10/05/17 13:00  
 Received date/time 10/06/17 10:13

## DUPLICATE L941832-06 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Metals (ICP) by Method 6010B	WG1029576	1	10/13/17 15:19	10/14/17 08:50	TRB

Collected by Jason R. Franks  
 Collected date/time 10/05/17 00:00  
 Received date/time 10/06/17 10:13

## MW-9 L941832-07 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG1030068	1	10/11/17 13:55	10/12/17 13:33	EL
Metals (ICP) by Method 6010B	WG1029576	1	10/13/17 15:19	10/14/17 08:53	TRB
Metals (ICPMS) by Method 6020	WG1029560	1	10/12/17 12:32	10/13/17 16:55	JPD

Collected by Jason R. Franks  
 Collected date/time 10/05/17 13:45  
 Received date/time 10/06/17 10:13

## MW-10 L941832-08 GW

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG1030068	1	10/11/17 13:55	10/12/17 13:35	EL
Metals (ICP) by Method 6010B	WG1029576	1	10/13/17 15:19	10/14/17 08:55	TRB
Metals (ICPMS) by Method 6020	WG1029561	1	10/12/17 15:27	10/14/17 19:37	LAT

Collected by Jason R. Franks  
 Collected date/time 10/05/17 12:00  
 Received date/time 10/06/17 10:13



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. 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  
Technical Service Representative

- <sup>1</sup> Cp
- <sup>2</sup> Tc
- <sup>3</sup> Ss
- <sup>4</sup> Cn
- <sup>5</sup> Sr
- <sup>6</sup> Qc
- <sup>7</sup> Gl
- <sup>8</sup> Al
- <sup>9</sup> Sc





Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Lithium	53.4		15.0	1	10/14/2017 08:40	<a href="#">WG1029576</a>
Molybdenum	ND		5.00	1	10/14/2017 08:40	<a href="#">WG1029576</a>

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Lithium	54.6		15.0	1	10/14/2017 08:42	<a href="#">WG1029576</a>
Molybdenum	ND		5.00	1	10/14/2017 08:42	<a href="#">WG1029576</a>

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Lithium	37.6		15.0	1	10/14/2017 08:17	<a href="#">WG1029576</a>
Molybdenum	ND		5.00	1	10/14/2017 08:17	<a href="#">WG1029576</a>

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Lithium	42.2		15.0	1	10/14/2017 08:45	<a href="#">WG1029576</a>
Molybdenum	ND		5.00	1	10/14/2017 08:45	<a href="#">WG1029576</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Lithium	43.9		15.0	1	10/14/2017 08:48	<a href="#">WG1029576</a>
Molybdenum	ND		5.00	1	10/14/2017 08:48	<a href="#">WG1029576</a>

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Lithium	36.7		15.0	1	10/14/2017 08:50	<a href="#">WG1029576</a>
Molybdenum	ND		5.00	1	10/14/2017 08:50	<a href="#">WG1029576</a>

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	10/12/2017 13:33	<a href="#">WG1030068</a>

1 Cp

2 Tc

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	255		5.00	1	10/14/2017 08:53	<a href="#">WG1029576</a>
Chromium	ND		10.0	1	10/14/2017 08:53	<a href="#">WG1029576</a>
Cobalt	ND		10.0	1	10/14/2017 08:53	<a href="#">WG1029576</a>
Lithium	41.3		15.0	1	10/14/2017 08:53	<a href="#">WG1029576</a>
Molybdenum	ND		5.00	1	10/14/2017 08:53	<a href="#">WG1029576</a>

3 Ss

4 Cn

5 Sr

6 Qc

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	10/13/2017 16:55	<a href="#">WG1029560</a>
Arsenic	13.9		2.00	1	10/13/2017 16:55	<a href="#">WG1029560</a>
Beryllium	ND		2.00	1	10/13/2017 16:55	<a href="#">WG1029560</a>
Cadmium	ND		1.00	1	10/13/2017 16:55	<a href="#">WG1029560</a>
Lead	ND		2.00	1	10/13/2017 16:55	<a href="#">WG1029560</a>
Selenium	ND		2.00	1	10/13/2017 16:55	<a href="#">WG1029560</a>
Thallium	ND		2.00	1	10/13/2017 16:55	<a href="#">WG1029560</a>

7 Gl

8 Al

9 Sc



Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	10/12/2017 13:35	<a href="#">WG1030068</a>

1 Cp

2 Tc

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	229		5.00	1	10/14/2017 08:55	<a href="#">WG1029576</a>
Chromium	ND		10.0	1	10/14/2017 08:55	<a href="#">WG1029576</a>
Cobalt	ND		10.0	1	10/14/2017 08:55	<a href="#">WG1029576</a>
Lithium	54.5		15.0	1	10/14/2017 08:55	<a href="#">WG1029576</a>
Molybdenum	ND		5.00	1	10/14/2017 08:55	<a href="#">WG1029576</a>

3 Ss

4 Cn

5 Sr

6 Qc

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		2.00	1	10/14/2017 19:37	<a href="#">WG1029561</a>
Arsenic	13.7		2.00	1	10/14/2017 19:37	<a href="#">WG1029561</a>
Beryllium	ND		2.00	1	10/14/2017 19:37	<a href="#">WG1029561</a>
Cadmium	ND		1.00	1	10/14/2017 19:37	<a href="#">WG1029561</a>
Lead	ND		2.00	1	10/14/2017 19:37	<a href="#">WG1029561</a>
Selenium	ND		2.00	1	10/14/2017 19:37	<a href="#">WG1029561</a>
Thallium	ND		2.00	1	10/14/2017 19:37	<a href="#">WG1029561</a>

7 Gl

8 Al

9 Sc





Method Blank (MB)

(MB) R3257028-1 10/12/17 09:33

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Mercury	U		0.0490	0.200

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

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

(LCS) R3257028-6 10/12/17 19:57 • (LCSD) R3257028-7 10/12/17 20:00

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Mercury	3.00	2.99	3.00	100	100	80-120			0	20

7 Gl

8 Al

L941838-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L941838-01 10/12/17 09:40 • (MS) R3257028-4 10/12/17 09:42 • (MSD) R3257028-5 10/12/17 09:44

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Mercury	3.00	ND	2.72	2.77	91	92	1	75-125			2	20

9 Sc



Method Blank (MB)

(MB) R3257439-1 10/14/17 08:10

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Barium	U		1.70	5.00
Chromium	U		1.40	10.0
Cobalt	U		2.30	10.0
Lithium	U		5.30	15.0
Molybdenum	U		1.60	5.00

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

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

(LCS) R3257439-2 10/14/17 08:12 • (LCSD) R3257439-3 10/14/17 08:14

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Barium	1000	1010	1020	101	102	80-120			1	20
Chromium	1000	973	981	97	98	80-120			1	20
Cobalt	1000	1000	1010	100	101	80-120			1	20
Lithium	1000	987	1000	99	100	80-120			1	20
Molybdenum	1000	1000	1010	100	101	80-120			1	20

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

L941832-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L941832-03 10/14/17 08:17 • (MS) R3257439-5 10/14/17 08:22 • (MSD) R3257439-6 10/14/17 08:25

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Barium	1000	296	1290	1300	99	100	1	75-125			1	20
Chromium	1000	ND	963	978	96	98	1	75-125			1	20
Cobalt	1000	ND	1020	1030	102	103	1	75-125			1	20
Lithium	1000	37.6	1050	1050	101	102	1	75-125			1	20
Molybdenum	1000	ND	1000	1020	100	102	1	75-125			2	20

L941838-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L941838-06 10/14/17 08:27 • (MS) R3257439-7 10/14/17 08:30 • (MSD) R3257439-8 10/14/17 08:32

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Barium	1000	297	1290	1280	100	98	1	75-125			1	20
Chromium	1000	ND	967	957	97	96	1	75-125			1	20
Cobalt	1000	ND	1030	1020	103	102	1	75-125			1	20
Lithium	1000	38.4	1050	1040	101	101	1	75-125			1	20
Molybdenum	1000	ND	1010	1000	101	100	1	75-125			1	20



Method Blank (MB)

(MB) R3257362-1 10/13/17 15:48

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Antimony	0.803	↓	0.754	2.00
Arsenic	U		0.250	2.00
Beryllium	U		0.120	2.00
Cadmium	U		0.160	1.00
Lead	0.957	↓	0.240	2.00
Selenium	U		0.380	2.00
Thallium	U		0.190	2.00

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

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

(LCS) R3257362-2 10/13/17 15:52 • (LCSD) R3257362-3 10/13/17 15:56

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 %
Antimony	50.0	51.2	51.1	102	102	80-120			0	20
Arsenic	50.0	45.9	46.9	92	94	80-120			2	20
Beryllium	50.0	45.0	46.8	90	94	80-120			4	20
Cadmium	50.0	47.9	47.6	96	95	80-120			1	20
Lead	50.0	48.1	48.0	96	96	80-120			0	20
Selenium	50.0	47.9	50.6	96	101	80-120			5	20
Thallium	50.0	46.8	46.8	94	94	80-120			0	20

L941838-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L941838-06 10/13/17 15:59 • (MS) R3257362-5 10/13/17 16:06 • (MSD) R3257362-6 10/13/17 16:09

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 %
Antimony	50.0	ND	53.8	52.5	108	105	1	75-125			2	20
Arsenic	50.0	19.4	67.5	66.9	96	95	1	75-125			1	20
Beryllium	50.0	ND	45.9	44.9	92	90	1	75-125			2	20
Cadmium	50.0	ND	46.9	48.0	94	96	1	75-125			2	20
Lead	50.0	ND	48.2	48.0	96	96	1	75-125			0	20
Selenium	50.0	ND	54.4	50.9	109	102	1	75-125			7	20
Thallium	50.0	ND	47.8	47.2	96	94	1	75-125			1	20



Method Blank (MB)

(MB) R3257668-1 10/14/17 18:54

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Antimony	U		0.754	2.00
Arsenic	U		0.250	2.00
Beryllium	U		0.120	2.00
Cadmium	U		0.160	1.00
Lead	U		0.240	2.00
Selenium	U		0.380	2.00
Thallium	U		0.190	2.00

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

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

(LCS) R3257668-2 10/14/17 18:58 • (LCSD) R3257668-3 10/14/17 19:01

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 %
Antimony	50.0	50.4	50.5	101	101	80-120			0	20
Arsenic	50.0	50.3	49.9	101	100	80-120			1	20
Beryllium	50.0	44.5	44.2	89	88	80-120			1	20
Cadmium	50.0	53.0	52.6	106	105	80-120			1	20
Lead	50.0	49.9	49.2	100	98	80-120			1	20
Selenium	50.0	49.2	49.0	98	98	80-120			0	20
Thallium	50.0	49.6	49.6	99	99	80-120			0	20

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

L941846-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L941846-03 10/14/17 19:05 • (MS) R3257668-5 10/14/17 19:12 • (MSD) R3257668-6 10/14/17 19:15

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 %
Antimony	50.0	ND	50.0	51.8	100	104	1	75-125			4	20
Arsenic	50.0	20.1	68.1	68.4	96	97	1	75-125			0	20
Beryllium	50.0	ND	44.9	45.3	90	91	1	75-125			1	20
Cadmium	50.0	ND	51.4	53.5	103	107	1	75-125			4	20
Lead	50.0	ND	49.1	49.5	98	98	1	75-125			1	20
Selenium	50.0	ND	49.8	51.1	100	102	1	75-125			3	20
Thallium	50.0	ND	49.2	50.5	98	101	1	75-125			3	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, 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.
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.

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

Qualifier Description

J	The identification of the analyte is acceptable; the reported value is an estimate.
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ESC Lab Sciences 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.

## State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Connecticut	PH-0197	North Carolina <sup>1</sup>	DW21704
Florida	E87487	North Carolina <sup>2</sup>	41
Georgia	NELAP	North Dakota	R-140
Georgia <sup>1</sup>	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky <sup>1</sup>	90010	South Dakota	n/a
Kentucky <sup>2</sup>	16	Tennessee <sup>14</sup>	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas <sup>5</sup>	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

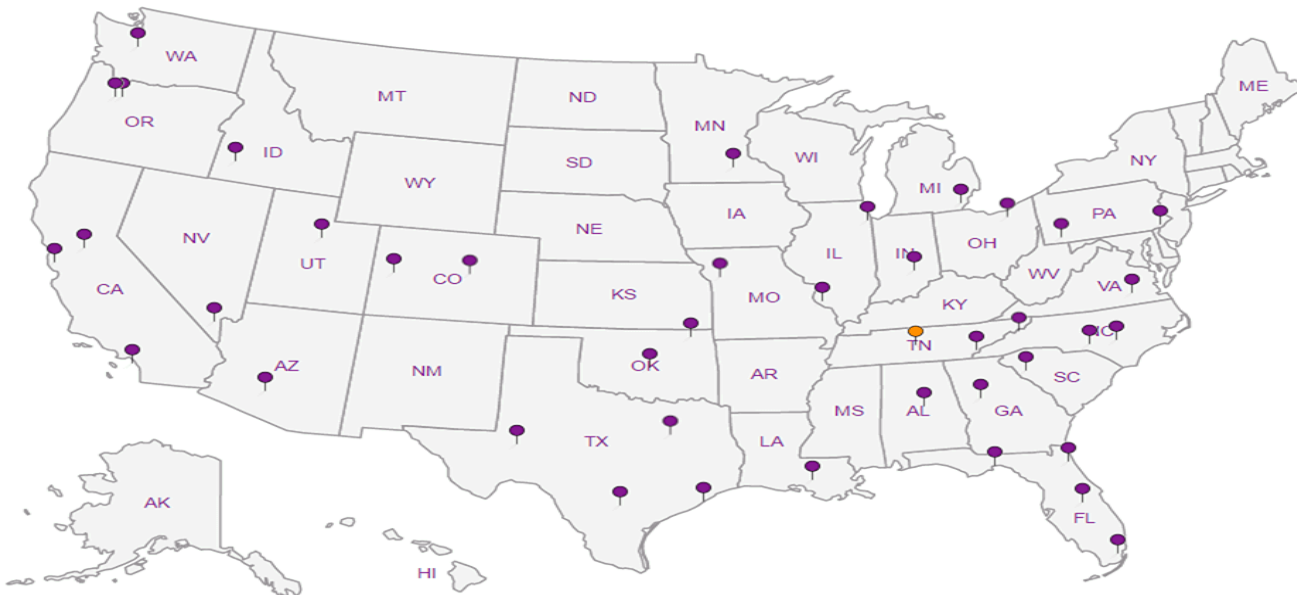
## Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC	100789
A2LA – ISO 17025 <sup>5</sup>	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>n/a</sup> Accreditation not applicable

## Our Locations

ESC Lab Sciences 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. **ESC Lab Sciences performs all testing at our central laboratory.**



<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

**SCS Engineers - KS**

7311 West 130th Street, Ste. 100  
Overland Park, KS 66213

Report to:  
**Jason Franks**

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

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

Client Project #  
**27213167.15**

City/State  
Collected: **WESTON, MO**

Lab Project #  
**AQUAOPKS-IATAN**

Collected by (print):  
**JASON R. FRANKS**

Site/Facility ID #

P.O. #

Collected by (signature):  
*[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

Pres  
Chk

Li, Mo - 6010 250mlHDPE-HNO3

Analysis / Container / Preservative

Chain of Custody Page 1 of 2



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

L # **941832**

Table **D113**

Acctnum: **AQUAOPKS**  
Template: **T117474**  
Prelogin: **P599227**  
TSR: **206 - Jeff Carr**  
PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Remarks	Sample # (lab only)
MW-1	Grab	GW	-	10/5/17	1345	1	X	
MW-2		GW	-		1240	1	X	-01
MW-6		GW	-		1045	1	X	-02
MW-7		GW	-		1220	1	X	-03
MW-8		GW	-		1300	1	X	-04
DUPLICATE		GW	-		-	1	X	-05
MW-6 MS		GW	-		1055	1	X	-04
MW-6 MSD		GW	-		1100	1	X	

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

Remarks:

Samples returned via:  
UPS  FedEx  Courier

Tracking #

**ESCKC**

pH \_\_\_\_\_ Temp \_\_\_\_\_  
Flow \_\_\_\_\_ Other \_\_\_\_\_

**Sample Receipt Checklist**  
COC Seal Present/Intact:  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)

*[Signature]*

Date: **10/5/17**  
Time: **1535**

Received by: (Signature)  
*[Signature]*

Trip Blank Received: Yes / No  
HCL / MeOH  
TBR

Relinquished by: (Signature)

*[Signature]*

Date: **10/5/17**  
Time: **1415**

Received by: (Signature)  
*[Signature]*

Temp: **2.9°C** Bottles Received: **10**

If preservation required by Login: Date/Time

Relinquished by: (Signature)

Date: \_\_\_\_\_  
Time: \_\_\_\_\_

Received for lab by: (Signature)  
*[Signature]*

Date: **10/6/17** Time: **0845**

Hold: \_\_\_\_\_  
Conditions: **NCF**  OK







## ESC LAB SCIENCES Cooler Receipt Form

Client: <b>AQUADRES</b>	SDG#	<b>941832</b>
Cooler Received/Opened On: <b>10/6 /17</b>	Temperature: <b>2.9</b>	
Received by : Chris Ward		
Signature: <i>Chris Ward</i>		

Receipt Check List	NP	Yes	No
COC Seal Present / Intact?	/		
COC Signed / Accurate?		/	
Bottles arrive intact?		/	
Correct bottles used?		/	
Sufficient volume sent?		/	
If Applicable			
VOA Zero headspace?			
Preservation Correct / Checked?		/	



## Case Narrative

### Lab No: 20170952

This report contains the analytical results for the 10 sample(s) received under chain of custody by ESC Lab Sciences on 10/9/2017 12:50:43 PM. These samples are associated with your 27213167.16 project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted below:

The test results in this report meet all NELAC requirements unless noted below:

This report shall not be reproduced, except in full, without the written approval of ESC Lab Sciences.

All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client.

Results have been reviewed by the Director of Radiochemistry or their designees and is approved for release.

DL for Radiochemistry = MDA

DL for Metals and Wet Chemistry = MDL

DL for Drinking Water = SDWA

### Observations / Nonconformances

L942860



Client : SCS Engineers  
 Client Project : 27213167.16  
 Lab Number : 20170952  
 Date Reported : 12/01/17  
 Date Received : 10/09/17  
 Page Number : 2 of 4

## Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst
<b>Lab ID : 20170952-01</b>							
<b>Client ID : MW-1</b>							
<b>Date Sampled : 10/5/2017 1:45:00 PM</b>							
<b>Matrix : NPW</b>							
<b>Radiochemical Analyses</b>							
Combined Radium	0.5 +/- 0.816	0.745	pCi/l				
Radium-226 SM 7500 Ra B M*	-0.007 +/- 0.100	0.240	pCi/l		11/01/17	11/07/17	RE
Radium-228 EPA 904*	0.500 +/- 0.716	0.505	pCi/l		11/02/17	11/21/17	JR
<b>Lab ID : 20170952-02</b>							
<b>Client ID : MW-2</b>							
<b>Date Sampled : 10/5/2017 12:40:00 PM</b>							
<b>Matrix : NPW</b>							
<b>Radiochemical Analyses</b>							
Combined Radium	1.40 +/- 0.707	1.056	pCi/l				
Radium-226 SM 7500 Ra B M*	0.018 +/- 0.281	0.450	pCi/l		11/01/17	11/07/17	RE
Radium-228 EPA 904*	1.38 +/- 0.426	0.606	pCi/l		11/02/17	11/28/17	JR
<b>Lab ID : 20170952-03</b>							
<b>Client ID : MW-6</b>							
<b>Date Sampled : 10/5/2017 10:45:00 AM</b>							
<b>Matrix : NPW</b>							
<b>Radiochemical Analyses</b>							
Combined Radium	0.974 +/- 0.722	0.972	pCi/l				
Radium-226 SM 7500 Ra B M*	0.239 +/- 0.239	0.314	pCi/l		11/01/17	11/07/17	RE
Radium-228 EPA 904*	0.735 +/- 0.483	0.658	pCi/l		11/02/17	11/28/17	JR
<b>Lab ID : 20170952-04</b>							
<b>Client ID : MW-6 MS</b>							
<b>Date Sampled : 10/5/2017 10:55:00 AM</b>							
<b>Matrix : NPW</b>							
<b>Radiochemical Analyses</b>							
Radium-226 SM 7500 Ra B M*	115		% Rec		11/01/17	11/07/17	RE
Radium-228 EPA 904*	81.6		% Rec		11/02/17	11/28/17	JR



Client : SCS Engineers  
 Client Project : 27213167.16  
 Lab Number : 20170952  
 Date Reported : 12/01/17  
 Date Received : 10/09/17  
 Page Number : 3 of 4

## Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst
--------	--------	----	-------	------	-----------	---------------	---------

**Lab ID** : 20170952-05  
**Client ID** : MW-6 MSD  
**Date Sampled** : 10/5/2017 11:00:00 AM  
**Matrix** : NPW

### Radiochemical Analyses

Radium-226	SM 7500 Ra B M*	1.0	RPD		11/01/17	11/07/17	RE
Radium-228	EPA 904*	13.6	RPD		11/02/17	11/28/17	JR

**Lab ID** : 20170952-06  
**Client ID** : MW-7  
**Date Sampled** : 10/5/2017 12:20:00 PM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		0.301 +/- 0.648	0.844	pCi/l			
Radium-226	SM 7500 Ra B M*	0.239 +/- 0.239	0.314	pCi/l	11/01/17	11/07/17	RE
Radium-228	EPA 904*	0.062 +/- 0.409	0.530	pCi/l	11/02/17	11/28/17	JR

**Lab ID** : 20170952-07  
**Client ID** : MW-8  
**Date Sampled** : 10/5/2017 1:00:00 PM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		0.828 +/- 0.624	0.942	pCi/l			
Radium-226	SM 7500 Ra B M*	0.094 +/- 0.150	0.233	pCi/l	11/01/17	11/07/17	RE
Radium-228	EPA 904*	0.734 +/- 0.474	0.709	pCi/l	11/02/17	11/28/17	JR

**Lab ID** : 20170952-08  
**Client ID** : MW-9  
**Date Sampled** : 10/5/2017 1:45:00 PM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		0.175 +/- 0.699	1.038	pCi/l			
Radium-226	SM 7500 Ra B M*	0.175 +/- 0.191	0.256	pCi/l	11/01/17	11/07/17	RE
Radium-228	EPA 904*	-0.271 +/- 0.508	0.782	pCi/l	11/02/17	11/28/17	JR



Client : SCS Engineers  
 Client Project : 27213167.16  
 Lab Number : 20170952  
 Date Reported : 12/01/17  
 Date Received : 10/09/17  
 Page Number : 4 of 4

## Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst
<b>Lab ID</b> : 20170952-09							
<b>Client ID</b> : MW-10							
<b>Date Sampled</b> : 10/5/2017 12:00:00 PM							
<b>Matrix</b> : NPW							

### Radiochemical Analyses

Combined Radium		1.31 +/- 0.731	0.805	pCi/l			
Radium-226	SM 7500 Ra B M*	0.058 +/- 0.130	0.224	pCi/l	11/01/17	11/07/17	RE
Radium-228	EPA 904*	1.25 +/- 0.601	0.581	pCi/l	11/02/17	11/29/17	JR

**Lab ID** : 20170952-10  
**Client ID** : DUPLICATE  
**Date Sampled** : 10/5/2017  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		0.146 +/- 0.994	0.854	pCi/l			
Radium-226	SM 7500 Ra B M*	0.146 +/- 0.191	0.273	pCi/l	11/01/17	11/07/17	RE
Radium-228	EPA 904*	-0.895 +/- 0.803	0.581	pCi/l	11/02/17	11/28/17	JR

## QC Report

Parameter	Blank	LCS %REC	LCSD %REC	RPD	DUP RPD	RER, NAD or DER	MS %REC	MSD %REC	RPD	Batch ID
Radium-226	0.016	119.0			NC	0.045	115.0	116.0	1.0	R1294
Radium-228	0.574	91.0			NC	1.500	81.6	95.0	13.6	R4016

Lab Approval:

Ron Eidson  
 Director of Radiochemistry



# SAMPLE LOGIN

Date Received: 10/9/2017 12:50:4

Lab Number: 20170952

Due: 11/3/2017

Sample Number	Client Sample ID	Matrix	Date Sampled	Container Type	Container Size	Preservation	Preserved Upon Receipt	Custody Seal	Seal Intact
20170952-01 B	MW-1	NPW	10/05/17	Plastic	1 L	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20170952-01 A	MW-1	NPW	10/05/17	Plastic	1 L	HNO3, pH < 2	<input type="checkbox"/>	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*						
20170952-02 A	MW-2	NPW	10/05/17	Plastic	1 L	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20170952-02 B	MW-2	NPW	10/05/17	Plastic	1 L	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*						
20170952-03 A	MW-6	NPW	10/05/17	Plastic	1 L	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20170952-03 B	MW-6	NPW	10/05/17	Plastic	1 L	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*						
20170952-04 A	MW-6 MS	NPW	10/05/17	Plastic	1 L	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20170952-04 B	MW-6 MS	NPW	10/05/17	Plastic	1 L	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*						
20170952-05 B	MW-6 MSD	NPW	10/05/17	Plastic	1 L	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20170952-05 A	MW-6 MSD	NPW	10/05/17	Plastic	1 L	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*						
20170952-06 B	MW-7	NPW	10/05/17	Plastic	1 L	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20170952-06 A	MW-7	NPW	10/05/17	Plastic	1 L	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*						
20170952-07 A	MW-8	NPW	10/05/17	Plastic	1 L	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20170952-07 B	MW-8	NPW	10/05/17	Plastic	1 L	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*						



20170952-08 A	MW-9	NPW	10/05/17	Plastic	1 L	HNO3, pH < 2	Yes
20170952-08 B	MW-9	NPW	10/05/17	Plastic	1 L	HNO3, pH < 2	Yes
	Radium-226		SM 7500 Ra B M*				
	Radium-228		EPA 904*				
20170952-09 A	MW-10	NPW	10/05/17	Plastic	1 L	HNO3, pH < 2	Yes
20170952-09 B	MW-10	NPW	10/05/17	Plastic	1 L	HNO3, pH < 2	Yes
	Radium-226		SM 7500 Ra B M*				
	Radium-228		EPA 904*				
20170952-10 B	DUPLICATE	NPW	10/05/17	Plastic	1 L	HNO3, pH < 2	Yes
20170952-10 A	DUPLICATE	NPW	10/05/17	Plastic	1 L	HNO3, pH < 2	Yes
	Radium-226		SM 7500 Ra B M*				
	Radium-228		EPA 904*				

**CONTAINER INSPECTION**

# Coolers 2 Custody Seals Broken 0 Temperature: As C Ice      Radiation Survey: <300 cpm

**SAMPLE INSPECTION**

Sample Seal Broken 0 Chain of Custody Record  Labels in Tact  Radiation Survey Complete     

**Anomalies**

Inspected By:      DATE 10/2/17  
 QA or Designee Review: Raymond Thomas DATE 10/09/17  
 Sample Custodian Review:      DATE 10/9/17

**Project Notes:**



Jared Morrison  
December 16, 2022

**ATTACHMENT 1-10**  
**October 2017 Detection Sampling Event Laboratory Report**

October 16, 2017

## SCS Engineers - KS

Sample Delivery Group: L941818  
Samples Received: 10/06/2017  
Project Number: 27213167.17  
Description: KCP Iatan Gen Station - Groundwater

Report To: Jason Franks  
7311 West 130th Street, Ste. 100  
Overland Park, KS 66213










Entire Report Reviewed By:



Jason Romer  
Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



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# SAMPLE SUMMARY



## MW-1 L941818-01 GW

Collected by  
Jason R. Franks  
Collected date/time  
10/05/17 13:45  
Received date/time  
10/06/17 10:13

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG1030085	1	10/12/17 13:35	10/12/17 14:13	MMF
Wet Chemistry by Method 9056A	WG1030038	1	10/12/17 03:55	10/12/17 03:55	NJM
Metals (ICP) by Method 6010B	WG1029574	1	10/12/17 19:06	10/13/17 21:20	TRB

1  
Cp

2  
Tc

3  
Ss

4  
Cn

5  
Sr

6  
Qc

7  
Gl

8  
Al

9  
Sc

## MW-2 L941818-02 GW

Collected by  
Jason R. Franks  
Collected date/time  
10/05/17 12:40  
Received date/time  
10/06/17 10:13

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG1030085	1	10/12/17 13:35	10/12/17 14:13	MMF
Wet Chemistry by Method 9056A	WG1030038	1	10/12/17 04:10	10/12/17 04:10	NJM
Wet Chemistry by Method 9056A	WG1030426	2	10/13/17 04:41	10/13/17 04:41	MAJ
Metals (ICP) by Method 6010B	WG1029574	1	10/12/17 19:06	10/13/17 21:23	TRB

## MW-6 L941818-03 GW

Collected by  
Jason R. Franks  
Collected date/time  
10/05/17 10:45  
Received date/time  
10/06/17 10:13

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG1030085	1	10/12/17 13:35	10/12/17 14:13	MMF
Wet Chemistry by Method 9056A	WG1030777	1	10/12/17 23:04	10/12/17 23:04	MAJ
Metals (ICP) by Method 6010B	WG1029574	1	10/12/17 19:06	10/13/17 20:25	TRB

## MW-7 L941818-04 GW

Collected by  
Jason R. Franks  
Collected date/time  
10/05/17 12:20  
Received date/time  
10/06/17 10:13

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG1030085	1	10/12/17 13:35	10/12/17 14:13	MMF
Wet Chemistry by Method 9056A	WG1030038	1	10/12/17 04:40	10/12/17 04:40	NJM
Metals (ICP) by Method 6010B	WG1029574	1	10/12/17 19:06	10/13/17 21:26	TRB

## MW-8 L941818-05 GW

Collected by  
Jason R. Franks  
Collected date/time  
10/05/17 13:00  
Received date/time  
10/06/17 10:13

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG1030085	1	10/12/17 13:35	10/12/17 14:13	MMF
Wet Chemistry by Method 9056A	WG1030038	1	10/12/17 04:55	10/12/17 04:55	NJM
Metals (ICP) by Method 6010B	WG1029574	1	10/12/17 19:06	10/13/17 21:28	TRB

## DUPLICATE L941818-06 GW

Collected by  
Jason R. Franks  
Collected date/time  
10/05/17 00:00  
Received date/time  
10/06/17 10:13

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG1030085	1	10/12/17 13:35	10/12/17 14:13	MMF
Wet Chemistry by Method 9056A	WG1030038	1	10/12/17 05:10	10/12/17 05:10	NJM
Metals (ICP) by Method 6010B	WG1029574	1	10/12/17 19:06	10/13/17 21:31	TRB



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. 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  
Technical Service Representative

- <sup>1</sup> Cp
- <sup>2</sup> Tc
- <sup>3</sup> Ss
- <sup>4</sup> Cn
- <sup>5</sup> Sr
- <sup>6</sup> Qc
- <sup>7</sup> Gl
- <sup>8</sup> Al
- <sup>9</sup> Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	472000		10000	1	10/12/2017 14:13	<a href="#">WG1030085</a>

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	6750		1000	1	10/12/2017 03:55	<a href="#">WG1030038</a>
Fluoride	273		100	1	10/12/2017 03:55	<a href="#">WG1030038</a>
Sulfate	34500		5000	1	10/12/2017 03:55	<a href="#">WG1030038</a>

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Boron	ND		200	1	10/13/2017 21:20	<a href="#">WG1029574</a>
Calcium	141000		1000	1	10/13/2017 21:20	<a href="#">WG1029574</a>

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	683000		10000	1	10/12/2017 14:13	<a href="#">WG1030085</a>

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	9230		1000	1	10/12/2017 04:10	<a href="#">WG1030038</a>
Fluoride	326		100	1	10/12/2017 04:10	<a href="#">WG1030038</a>
Sulfate	151000		10000	2	10/13/2017 04:41	<a href="#">WG1030426</a>

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Boron	ND		200	1	10/13/2017 21:23	<a href="#">WG1029574</a>
Calcium	177000		1000	1	10/13/2017 21:23	<a href="#">WG1029574</a>

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	528000		10000	1	10/12/2017 14:13	<a href="#">WG1030085</a>

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	2090		1000	1	10/12/2017 23:04	<a href="#">WG1030777</a>
Fluoride	312		100	1	10/12/2017 23:04	<a href="#">WG1030777</a>
Sulfate	34500		5000	1	10/12/2017 23:04	<a href="#">WG1030777</a>

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Boron	ND		200	1	10/13/2017 20:25	<a href="#">WG1029574</a>
Calcium	157000	<u>V</u>	1000	1	10/13/2017 20:25	<a href="#">WG1029574</a>

6 Qc

7 Gl

8 Al

9 Sc





Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	459000		10000	1	10/12/2017 14:13	<a href="#">WG1030085</a>

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	3320		1000	1	10/12/2017 04:40	<a href="#">WG1030038</a>
Fluoride	341		100	1	10/12/2017 04:40	<a href="#">WG1030038</a>
Sulfate	24300		5000	1	10/12/2017 04:40	<a href="#">WG1030038</a>

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Boron	ND		200	1	10/13/2017 21:26	<a href="#">WG1029574</a>
Calcium	135000		1000	1	10/13/2017 21:26	<a href="#">WG1029574</a>

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	505000		10000	1	10/12/2017 14:13	<a href="#">WG1030085</a>

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	4550		1000	1	10/12/2017 04:55	<a href="#">WG1030038</a>
Fluoride	396		100	1	10/12/2017 04:55	<a href="#">WG1030038</a>
Sulfate	43400		5000	1	10/12/2017 04:55	<a href="#">WG1030038</a>

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Boron	ND		200	1	10/13/2017 21:28	<a href="#">WG1029574</a>
Calcium	155000		1000	1	10/13/2017 21:28	<a href="#">WG1029574</a>

6 Qc

7 Gl

8 Al

9 Sc



Collected date/time: 10/05/17 00:00

L941818

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	529000		10000	1	10/12/2017 14:13	<a href="#">WG1030085</a>

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	1990		1000	1	10/12/2017 05:10	<a href="#">WG1030038</a>
Fluoride	302		100	1	10/12/2017 05:10	<a href="#">WG1030038</a>
Sulfate	34000		5000	1	10/12/2017 05:10	<a href="#">WG1030038</a>

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Boron	ND		200	1	10/13/2017 21:31	<a href="#">WG1029574</a>
Calcium	159000		1000	1	10/13/2017 21:31	<a href="#">WG1029574</a>

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3257349-1 10/12/17 14:13

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Dissolved Solids	U		2820	10000

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

L941818-01 Original Sample (OS) • Duplicate (DUP)

(OS) L941818-01 10/12/17 14:13 • (DUP) R3257349-4 10/12/17 14:13

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Dissolved Solids	472000	474000	1	0.423		5

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

(LCS) R3257349-2 10/12/17 14:13 • (LCSD) R3257349-3 10/12/17 14:13

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Dissolved Solids	8800000	8600000	8600000	97.7	97.7	85.0-115			0.000	5

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Method Blank (MB)

(MB) R3256768-1 10/11/17 23:27

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

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

L941736-01 Original Sample (OS) • Duplicate (DUP)

(OS) L941736-01 10/12/17 00:41 • (DUP) R3256768-4 10/12/17 00:56

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	4960	8910	1	57	J3	15
Fluoride	198	212	1	7		15
Sulfate	18500	18500	1	0		15

L941822-02 Original Sample (OS) • Duplicate (DUP)

(OS) L941822-02 10/12/17 06:09 • (DUP) R3256768-7 10/12/17 06:24

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	12100	15700	1	26	J3	15
Fluoride	323	254	1	24	P1	15
Sulfate	15500	15700	1	1		15

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

(LCS) R3256768-2 10/11/17 23:42 • (LCSD) R3256768-3 10/11/17 23:57

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Chloride	40000	39000	39000	98	98	80-120			0	15
Fluoride	8000	7910	7890	99	99	80-120			0	15
Sulfate	40000	39400	39300	98	98	80-120			0	15



L941736-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L941736-01 10/12/17 00:41 • (MS) R3256768-5 10/12/17 01:11 • (MSD) R3256768-6 10/12/17 01:26

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	4960	55900	51500	102	93	1	80-120			8	15
Fluoride	5000	198	5180	4840	100	93	1	80-120			7	15
Sulfate	50000	18500	64400	64700	92	93	1	80-120			1	15

L941822-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L941822-02 10/12/17 06:09 • (MS) R3256768-8 10/12/17 06:39

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	12100	57300	90	1	80-120	
Fluoride	5000	323	4570	85	1	80-120	
Sulfate	50000	15500	56800	83	1	80-120	

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



Method Blank (MB)

(MB) R3256954-1 10/12/17 11:53

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Sulfate	U		77.4	5000

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

L941363-01 Original Sample (OS) • Duplicate (DUP)

(OS) L941363-01 10/12/17 13:26 • (DUP) R3256954-4 10/12/17 13:38

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Sulfate	U	0.000	200	0		15

L941955-08 Original Sample (OS) • Duplicate (DUP)

(OS) L941955-08 10/13/17 07:16 • (DUP) R3256954-8 10/13/17 07:29

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Sulfate	U	0.000	1	0		15

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

(LCS) R3256954-2 10/12/17 12:06 • (LCSD) R3256954-3 10/12/17 12:19

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Sulfate	40000	40400	40200	101	101	80-120			0	15

L941394-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L941394-01 10/13/17 03:24 • (MS) R3256954-5 10/13/17 03:37

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Sulfate	50000	24400	72400	96	1	80-120	

L941955-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L941955-02 10/13/17 05:07 • (MS) R3256954-6 10/13/17 05:20 • (MSD) R3256954-7 10/13/17 05:59

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Sulfate	50000	111000	652000	653000	108	108	10	80-120			0	15



Method Blank (MB)

(MB) R3257155-1 10/12/17 16:21

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

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

L943220-02 Original Sample (OS) • Duplicate (DUP)

(OS) L943220-02 10/12/17 20:04 • (DUP) R3257155-6 10/12/17 20:19

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	34400	35700	1	4		15
Fluoride	ND	58.7	1	1	J	15
Sulfate	26600	26600	1	0		15

L943217-01 Original Sample (OS) • Duplicate (DUP)

(OS) L943217-01 10/12/17 19:20 • (DUP) R3257155-5 10/12/17 19:35

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Fluoride	ND	0.000	1	0		15
Sulfate	84600	84600	1	0		15

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

(LCS) R3257155-2 10/12/17 16:36 • (LCSD) R3257155-3 10/12/17 16:51

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Chloride	40000	39400	39200	98	98	80-120			1	15
Fluoride	8000	7990	7890	100	99	80-120			1	15
Sulfate	40000	39100	38600	98	96	80-120			1	15

L943109-04 Original Sample (OS) • Matrix Spike (MS)

(OS) L943109-04 10/12/17 17:35 • (MS) R3257155-4 10/12/17 17:50

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Chloride	50000	8740	59400	101	1	80-120	
Fluoride	5000	ND	5050	101	1	80-120	





[L941818-03](#)

L943109-04 Original Sample (OS) • Matrix Spike (MS)

(OS) L943109-04 10/12/17 17:35 • (MS) R3257155-4 10/12/17 17:50

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>
Sulfate	50000	ND	50700	99	1	80-120	

L941818-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L941818-03 10/12/17 23:04 • (MS) R3257155-7 10/12/17 23:19 • (MSD) R3257155-8 10/12/17 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 %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Chloride	50000	2090	52400	51900	101	100	1	80-120			1	15
Fluoride	5000	312	5310	5330	100	100	1	80-120			0	15
Sulfate	50000	34500	82400	82500	96	96	1	80-120			0	15

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Method Blank (MB)

(MB) R3257398-1 10/13/17 20:17

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Boron	U		12.6	200
Calcium	95.9	<u>J</u>	46.3	1000

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

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

(LCS) R3257398-2 10/13/17 20:20 • (LCSD) R3257398-3 10/13/17 20:22

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Boron	1000	1050	1040	105	104	80-120			1	20
Calcium	10000	10500	10400	105	104	80-120			1	20

<sup>5</sup> Sr

<sup>6</sup> Qc

L941818-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L941818-03 10/13/17 20:25 • (MS) R3257398-5 10/13/17 20:30 • (MSD) R3257398-6 10/13/17 20:33

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Boron	1000	ND	1190	1170	106	104	1	75-125			2	20
Calcium	10000	157000	162000	165000	54	76	1	75-125	<u>V</u>		1	20

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> 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.

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, 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.
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.

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

Qualifier	Description
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.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
V	The sample concentration is too high to evaluate accurate spike recoveries.



ESC Lab Sciences 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.

## State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Connecticut	PH-0197	North Carolina <sup>1</sup>	DW21704
Florida	E87487	North Carolina <sup>2</sup>	41
Georgia	NELAP	North Dakota	R-140
Georgia <sup>1</sup>	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky <sup>1</sup>	90010	South Dakota	n/a
Kentucky <sup>2</sup>	16	Tennessee <sup>14</sup>	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas <sup>5</sup>	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

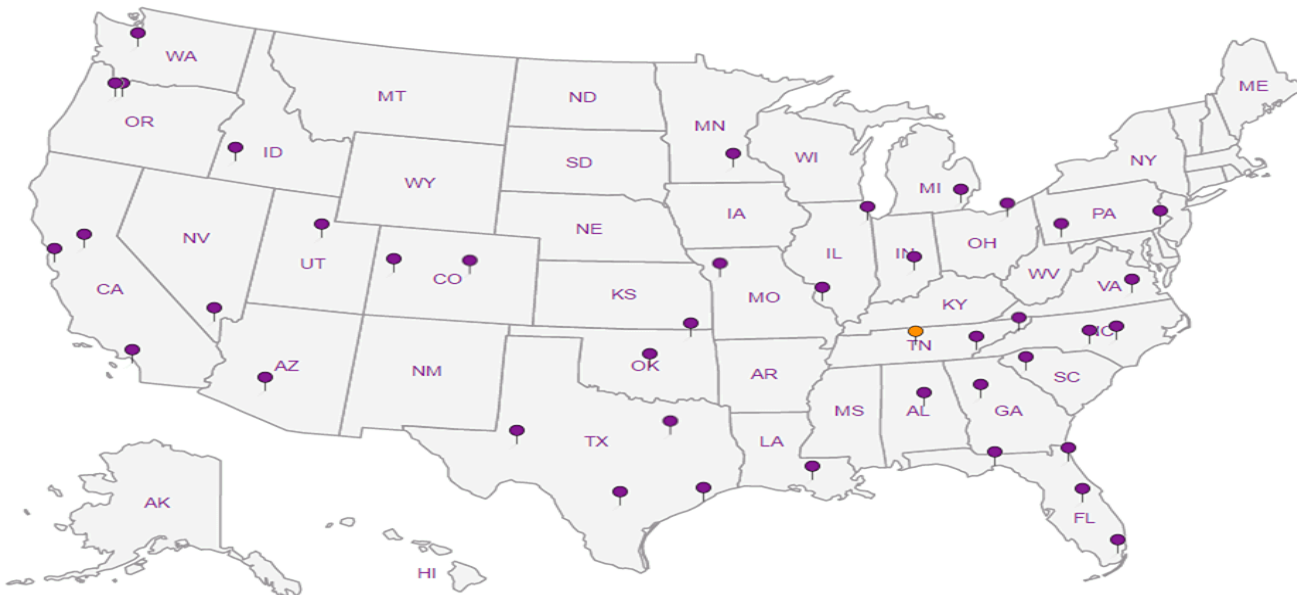
## Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC	100789
A2LA – ISO 17025 <sup>5</sup>	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>n/a</sup> Accreditation not applicable

## Our Locations

ESC Lab Sciences 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. **ESC Lab Sciences performs all testing at our central laboratory.**



Company Name/Address:  
**SCS Engineers**  
 7311 West 130th Street  
 Suite 100  
 Overland Park, Kansas 66213

Billing Information:  
**Jason Franks**  
**SCS Engineers**  
 7311 West 130th Street  
 Suite 100  
 Overland Park, Kansas 66213

Report to:  
**Mr. Jason R. Franks**

Email To:  
**jfranks@scsengineers.com**

Project Description:  
**KCPL Iatan Gen Station - Groundwater**

City/State Collected:  
**Weston, Mo**

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

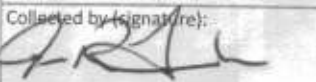
Client Project #  
**27213167.17**

Lab Project #

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 .....200%  
 \_\_\_ Next Day .....100%  
 \_\_\_ Two Day .....50%  
 \_\_\_ Three Day .....25%

Date Results Needed  
**STD**  
 Email? \_\_\_ No \_\_\_ Yes  
 FAX? \_\_\_ No \_\_\_ Yes

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Anions(Cl-, F-, SO4)	Total Metals* 250mlHDPE-HN03	TDS 250mlHDPE-NoPres
MW-1	Grab	GW	NA	10/5/17	1345	3	X	X	X
MW-2	Grab	GW	NA		1240	3	X	X	X
MW-6	Grab	GW	NA		1045	3	X	X	X
MW-7	Grab	GW	NA		1220	3	X	X	X
MW-8	Grab	GW	NA		1300	3	X	X	X
Duplicate	Grab	GW	NA		-	3	X	X	X
MS MW-6	Grab	GW	NA		1055	3	X	X	X
MSD MW-6	Grab	GW	NA		1100	3	X	X	X

Analysis / Container / Preservative									

Chain of Custody Page 1 of 1



L.A.B. S.C.I.E.N.C.E.S.

YOUR LAB OF CHOICE

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



L# **941818**

T **D111**

Acctnum: **AQUAOPKS**

Template:

Prelogin:

TSR: **206-Jeff Carr**

PB:

Shipped Via:

Rem./Contaminant	Sample # (lab only)
	-01
	-02
	-03
	-04
	-05
	-06
	-07
	-08

\* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other \_\_\_\_\_


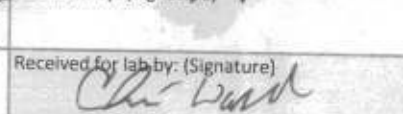
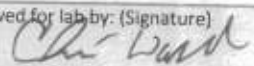
Remarks: **\*Metals (6010): B and Ca**

**ESCKE**

pH \_\_\_\_\_ Temp \_\_\_\_\_  
 Flow \_\_\_\_\_ Other \_\_\_\_\_

Relinquished by: (Signature)  
  
 Relinquished by: (Signature)  
  
 Relinquished by: (Signature)

Date: **10/5/17** Time: **1535**  
 Date: **10/5/17** Time:

Received by: (Signature)  
  
 Received by: (Signature)  
  
 Received for lab by: (Signature)  


Samples returned via:  UPS  
 FedEx  Courier   
 Temp: **29.4** °C Bottles Received: **24**  
 Date: **10/6/17** Time: **0845 1013**  
 CW

Hold # \_\_\_\_\_  
 Condition: (lab use only) \_\_\_\_\_  
 COC Seal Intact: \_\_\_ Y \_\_\_ N \_\_\_ NA  
 pH Checked: \_\_\_\_\_ NCF: **OK**

## ESC LAB SCIENCES Cooler Receipt Form

Client: <u>AQUAOPKS</u>	SDG#	<u>941818</u>
Cooler Received/Opened On: <u>10/ 6 /17</u>	Temperature: <u>2.9</u>	
Received by : <u>Chris Ward</u>		
Signature: <u>Chris Ward</u>		

Receipt Check List			
	NP	Yes	No
COC Seal Present / Intact?	<input checked="" type="checkbox"/>		
COC Signed / Accurate?	<input checked="" type="checkbox"/>		
Bottles arrive intact?	<input checked="" type="checkbox"/>		
Correct bottles used?	<input checked="" type="checkbox"/>		
Sufficient volume sent?	<input checked="" type="checkbox"/>		
If Applicable	<input checked="" type="checkbox"/>		
VOA Zero headspace?	<input type="checkbox"/>		
Preservation Correct / Checked?	<input checked="" type="checkbox"/>		



October 16, 2017

## SCS Engineers - KS

Sample Delivery Group: L941825  
Samples Received: 10/06/2017  
Project Number: 27213167.17  
Description: KCP Iatan Gen Station - Groundwater

Report To: Jason Franks  
7311 West 130th Street, Ste. 100  
Overland Park, KS 66213










Entire Report Reviewed By:



Jason Romer  
Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



<b>Cp: Cover Page</b>	<b>1</b>	
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<b>MW-10 L941825-02</b>	<b>6</b>	
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# SAMPLE SUMMARY



## MW-9 L941825-01 GW

Collected by Jason R. Franks	Collected date/time 10/05/17 13:45	Received date/time 10/06/17 10:13
---------------------------------	---------------------------------------	--------------------------------------

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG1030085	1	10/12/17 13:35	10/12/17 14:13	MMF
Wet Chemistry by Method 9056A	WG1030412	1	10/12/17 08:40	10/12/17 08:40	KCF
Metals (ICP) by Method 6010B	WG1029575	1	10/13/17 13:53	10/13/17 22:47	TRB

1  
Cp

2  
Tc

3  
Ss

4  
Cn

5  
Sr

6  
Qc

7  
Gl

8  
Al

9  
Sc

## MW-10 L941825-02 GW

Collected by Jason R. Franks	Collected date/time 10/05/17 12:00	Received date/time 10/06/17 10:13
---------------------------------	---------------------------------------	--------------------------------------

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG1030085	1	10/12/17 13:35	10/12/17 14:13	MMF
Wet Chemistry by Method 9056A	WG1030412	1	10/12/17 08:50	10/12/17 08:50	KCF
Metals (ICP) by Method 6010B	WG1029575	1	10/13/17 13:53	10/13/17 22:49	TRB



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. 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  
Technical Service Representative

- <sup>1</sup> Cp
- <sup>2</sup> Tc
- <sup>3</sup> Ss
- <sup>4</sup> Cn
- <sup>5</sup> Sr
- <sup>6</sup> Qc
- <sup>7</sup> Gl
- <sup>8</sup> Al
- <sup>9</sup> Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	414000		10000	1	10/12/2017 14:13	<a href="#">WG1030085</a>

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	3570		1000	1	10/12/2017 08:40	<a href="#">WG1030412</a>
Fluoride	204		100	1	10/12/2017 08:40	<a href="#">WG1030412</a>
Sulfate	21500		5000	1	10/12/2017 08:40	<a href="#">WG1030412</a>

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Boron	ND		200	1	10/13/2017 22:47	<a href="#">WG1029575</a>
Calcium	113000		1000	1	10/13/2017 22:47	<a href="#">WG1029575</a>

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	539000		10000	1	10/12/2017 14:13	<a href="#">WG1030085</a>

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	19700		1000	1	10/12/2017 08:50	<a href="#">WG1030412</a>
Fluoride	312		100	1	10/12/2017 08:50	<a href="#">WG1030412</a>
Sulfate	26400		5000	1	10/12/2017 08:50	<a href="#">WG1030412</a>

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Boron	ND		200	1	10/13/2017 22:49	<a href="#">WG1029575</a>
Calcium	131000		1000	1	10/13/2017 22:49	<a href="#">WG1029575</a>

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3257349-1 10/12/17 14:13

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Dissolved Solids	U		2820	10000

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

L941818-01 Original Sample (OS) • Duplicate (DUP)

(OS) L941818-01 10/12/17 14:13 • (DUP) R3257349-4 10/12/17 14:13

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Dissolved Solids	472000	474000	1	0.423		5

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

(LCS) R3257349-2 10/12/17 14:13 • (LCSD) R3257349-3 10/12/17 14:13

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Dissolved Solids	8800000	8600000	8600000	97.7	97.7	85.0-115			0.000	5

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3257085-1 10/12/17 04:05

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

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

L940877-01 Original Sample (OS) • Duplicate (DUP)

(OS) L940877-01 10/12/17 04:56 • (DUP) R3257085-4 10/12/17 05:06

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	5050	11900	1	81	J3	15
Fluoride	570	544	1	5		15
Sulfate	ND	4160	1	0		15

L941502-01 Original Sample (OS) • Duplicate (DUP)

(OS) L941502-01 10/12/17 07:08 • (DUP) R3257085-6 10/12/17 07:18

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	17300	20700	1	18	J3	15
Fluoride	116	0.000	1	200	P1	15

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

(LCS) R3257085-2 10/12/17 04:15 • (LCSD) R3257085-3 10/12/17 04:26

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Chloride	40000	38800	38800	97	97	80-120			0	15
Fluoride	8000	8010	7990	100	100	80-120			0	15
Sulfate	40000	39000	39000	97	97	80-120			0	15

L940877-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L940877-01 10/12/17 04:56 • (MS) R3257085-5 10/12/17 05:16

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Chloride	50000	5050	55400	101	1	80-120	
Fluoride	5000	570	4380	76	1	80-120	J6



L940877-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L940877-01 10/12/17 04:56 • (MS) R3257085-5 10/12/17 05:16

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>
Sulfate	50000	ND	47500	85	1	80-120	

L941502-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L941502-01 10/12/17 07:08 • (MS) R3257085-7 10/12/17 07:29 • (MSD) R3257085-8 10/12/17 07:39

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Chloride	50000	17300	60100	62500	86	90	1	80-120			4	15
Fluoride	5000	116	4160	3510	81	68	1	80-120		<u>J3 J6</u>	17	15

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Method Blank (MB)

(MB) R3257399-1 10/13/17 21:39

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

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

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

(LCS) R3257399-2 10/13/17 21:41 • (LCSD) R3257399-3 10/13/17 21:44

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Boron	1000	1040	1020	104	102	80-120			2	20
Calcium	10000	10400	10300	104	103	80-120			1	20

L941816-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L941816-01 10/13/17 21:47 • (MS) R3257399-4 10/13/17 21:52 • (MSD) R3257399-5 10/13/17 21:54

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Boron	1000	ND	1220	1190	107	104	1	75-125			3	20
Calcium	10000	143000	151000	150000	81	75	1	75-125			0	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, 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.
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.

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

Qualifier	Description
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.



ESC Lab Sciences 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.

## State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Connecticut	PH-0197	North Carolina <sup>1</sup>	DW21704
Florida	E87487	North Carolina <sup>2</sup>	41
Georgia	NELAP	North Dakota	R-140
Georgia <sup>1</sup>	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky <sup>1</sup>	90010	South Dakota	n/a
Kentucky <sup>2</sup>	16	Tennessee <sup>14</sup>	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas <sup>5</sup>	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

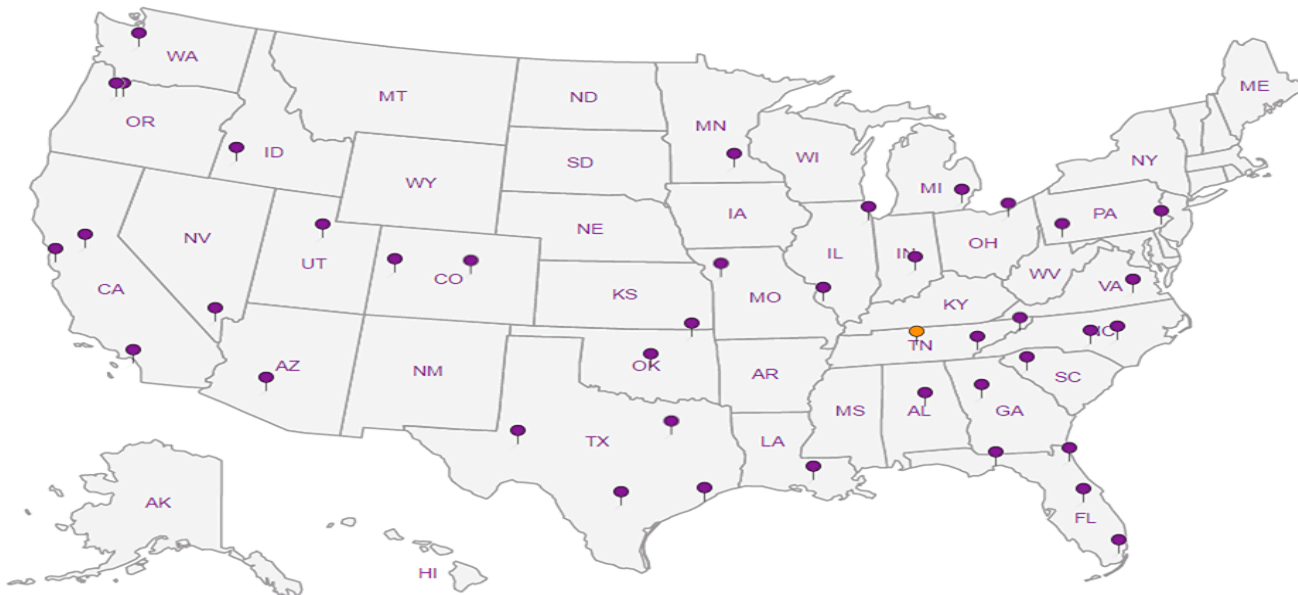
## Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC	100789
A2LA – ISO 17025 <sup>5</sup>	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>n/a</sup> Accreditation not applicable

## Our Locations

ESC Lab Sciences 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. **ESC Lab Sciences performs all testing at our central laboratory.**



Company Name/Address:  
**SCS Engineers**  
 7311 West 130th Street  
 Suite 100  
 Overland Park, Kansas 66213

Billing Information:  
**Jason Franks**  
**SCS Engineers**  
 7311 West 130th Street  
 Suite 100  
 Overland Park, Kansas 66213

Report to:  
**Mr. Jason R. Franks**

Email To:  
**jfranks@scsengineers.com**

Chain of Custody Page 1 of 1



YOUR LAB OF CHOICE

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



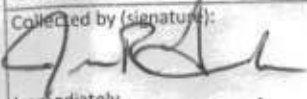
Project Description:  
**KCPL Iatan Gen Station - Groundwater**

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

Client Project #  
**27213167.17**

Site/Facility ID #

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

Collected by (signature):  


Immerdiately Packed on Ice N  Y

City/State Collected:  
**Weston NO**

Lab Project #

P.O. #

Date Results Needed  
**STD**

Email?  No  Yes  
 FAX?  No  Yes

No. of Cntrs

Analysis / Container / Preservative

CCR Anions(Cl-, F-, SO4) 125miHDPE-NoPres

\*CCR Metals 500miHDPE-HNO3

TDS 250miHDPE-NoPres

L# **941828**

Ta **D112**

Accnum: **AQUAOPKS**

Template:

Prelogin:

TSR: **206-Jeff Carr**

PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	CCR Anions(Cl-, F-, SO4) 125miHDPE-NoPres	*CCR Metals 500miHDPE-HNO3	TDS 250miHDPE-NoPres										
MW-9	Grab	GW	NA	10/5/17	1345	3	X	X	X										
MW-10	Grab	GW	NA	10/5/17	1200	3	X	X	X										
	Grab	GW																	
	Grab	GW																	
	Grab	GW																	
	Grab	GW																	
	Grab	GW																	
	Grab	Other																	
	Grab	Other																	

\* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other

Remarks: **\*CCR App III Metals (6010): B and Ca**

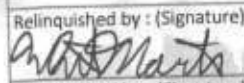
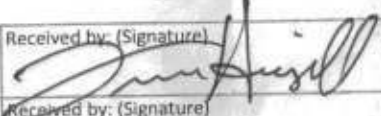
ESCKC

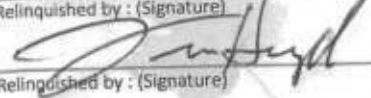
pH \_\_\_\_\_ Temp \_\_\_\_\_

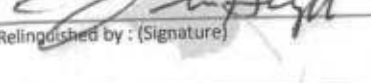
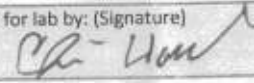
Flow \_\_\_\_\_ Other \_\_\_\_\_

Hold # \_\_\_\_\_

Condition: (lab use only)

Relinquished by: (Signature)  Date: 10/5/17 Time: 1535 Received by: (Signature)  Samples returned via:  UPS  FedEx  Courier  \_\_\_\_\_

Relinquished by: (Signature)  Date: 10/5/17 Time: 1615 Received by: (Signature) \_\_\_\_\_ Temp: 2.9°C Bottles Received: 6

Relinquished by: (Signature)  Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received for lab by: (Signature)  Date: 10/6/17 Time: 0845 1013

COC Seal Intact:  Y  N  NA

pH Checked: \_\_\_\_\_ NCF: **OK**

## ESC LAB SCIENCES Cooler Receipt Form

Client: <b>AQUAOPKS</b>	SDG#	<b>941825</b>
Cooler Received/Opened On: <b>10/6/17</b>	Temperature: <b>29</b>	
Received by : <b>Chris Ward</b>		
Signature: <i>Chris Ward</i>		

Receipt Check List	NP	Yes	No
COC Seal Present / Intact?	/		
COC Signed / Accurate?		/	
Bottles arrive intact?		/	
Correct bottles used?		/	
Sufficient volume sent?		/	
If Applicable			
VOA Zero headspace?			
Preservation Correct / Checked?	/		

## SCS Engineers - KS

Sample Delivery Group: L946941  
Samples Received: 10/06/2017  
Project Number: 27213167.17  
Description: KCP Iatan Gen Station - Groundwater

Report To: Jason Franks  
7311 West 130th Street, Ste. 100  
Overland Park, KS 66213

Entire Report Reviewed By:



Jeff Carr  
Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.





<b>Cp: Cover Page</b>	<b>1</b>	<b><sup>1</sup>Cp</b>
<b>Tc: Table of Contents</b>	<b>2</b>	
<b>Ss: Sample Summary</b>	<b>3</b>	<b><sup>2</sup>Tc</b>
<b>Cn: Case Narrative</b>	<b>5</b>	
<b>Sr: Sample Results</b>	<b>6</b>	<b><sup>3</sup>Ss</b>
<b>MW-1 L946941-01</b>	<b>6</b>	
<b>MW-2 L946941-02</b>	<b>7</b>	<b><sup>4</sup>Cn</b>
<b>MW-6 L946941-03</b>	<b>8</b>	<b><sup>5</sup>Sr</b>
<b>MW-7 L946941-04</b>	<b>9</b>	
<b>MW-8 L946941-05</b>	<b>10</b>	<b><sup>6</sup>Qc</b>
<b>DUPLICATE L946941-06</b>	<b>11</b>	
<b>MW-3 L946941-07</b>	<b>12</b>	<b><sup>7</sup>Gl</b>
<b>MW-4 L946941-08</b>	<b>13</b>	<b><sup>8</sup>Al</b>
<b>MW-5 L946941-09</b>	<b>14</b>	
<b>MW-2 L946941-10</b>	<b>15</b>	<b><sup>9</sup>Sc</b>
<b>Qc: Quality Control Summary</b>	<b>16</b>	
<b>Wet Chemistry by Method 9056A</b>	<b>16</b>	
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<b>Gl: Glossary of Terms</b>	<b>18</b>	
<b>Al: Accreditations &amp; Locations</b>	<b>19</b>	
<b>Sc: Sample Chain of Custody</b>	<b>20</b>	

# SAMPLE SUMMARY



## MW-1 L946941-01 GW

Collected by  
Jason R. Franks  
Collected date/time  
10/05/17 13:45  
Received date/time  
10/06/17 10:13

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9056A	WG1036673	1	10/30/17 13:36	10/30/17 13:36	DR
Metals (ICP) by Method 6010B	WG1037273	1	10/31/17 09:39	10/31/17 17:07	ST



## MW-2 L946941-02 GW

Collected by  
Jason R. Franks  
Collected date/time  
10/05/17 12:40  
Received date/time  
10/06/17 10:13

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9056A	WG1036673	1	10/30/17 14:50	10/30/17 14:50	DR
Metals (ICP) by Method 6010B	WG1037273	1	10/31/17 09:39	10/31/17 17:10	ST

## MW-6 L946941-03 GW

Collected by  
Jason R. Franks  
Collected date/time  
10/05/17 10:45  
Received date/time  
10/06/17 10:13

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9056A	WG1036673	1	10/30/17 15:05	10/30/17 15:05	DR
Metals (ICP) by Method 6010B	WG1037273	1	10/31/17 09:39	10/31/17 17:18	ST

## MW-7 L946941-04 GW

Collected by  
Jason R. Franks  
Collected date/time  
10/05/17 12:20  
Received date/time  
10/06/17 10:13

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9056A	WG1036673	1	10/30/17 15:20	10/30/17 15:20	DR
Metals (ICP) by Method 6010B	WG1037273	1	10/31/17 09:39	10/31/17 17:20	ST

## MW-8 L946941-05 GW

Collected by  
Jason R. Franks  
Collected date/time  
10/05/17 13:00  
Received date/time  
10/06/17 10:13

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9056A	WG1036673	1	10/30/17 15:35	10/30/17 15:35	DR
Metals (ICP) by Method 6010B	WG1037273	1	10/31/17 09:39	10/31/17 17:23	ST

## DUPLICATE L946941-06 GW

Collected by  
Jason R. Franks  
Collected date/time  
10/05/17 00:00  
Received date/time  
10/06/17 10:13

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9056A	WG1036673	1	10/30/17 15:50	10/30/17 15:50	DR
Metals (ICP) by Method 6010B	WG1037273	1	10/31/17 09:39	10/31/17 17:26	ST

## MW-3 L946941-07 GW

Collected by  
Jason R. Franks  
Collected date/time  
10/05/17 08:40  
Received date/time  
10/06/17 10:13

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9056A	WG1036673	1	10/30/17 16:05	10/30/17 16:05	DR
Metals (ICP) by Method 6010B	WG1037273	1	10/31/17 09:39	10/31/17 17:28	ST

# SAMPLE SUMMARY



## MW-4 L946941-08 GW

Collected by Jason R. Franks  
 Collected date/time 10/05/17 09:20  
 Received date/time 10/06/17 10:13

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9056A	WG1036673	1	10/30/17 16:20	10/30/17 16:20	DR
Metals (ICP) by Method 6010B	WG1037273	1	10/31/17 09:39	10/31/17 17:31	ST

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

## MW-5 L946941-09 GW

Collected by Jason R. Franks  
 Collected date/time 10/05/17 10:00  
 Received date/time 10/06/17 10:13

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9056A	WG1036673	1	10/30/17 17:49	10/30/17 17:49	DR
Metals (ICP) by Method 6010B	WG1037273	1	10/31/17 09:39	10/31/17 17:34	ST

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

## MW-2 L946941-10 GW

Collected by Jason R. Franks  
 Collected date/time 10/05/17 12:40  
 Received date/time 10/06/17 10:13

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Metals (ICP) by Method 6010B	WG1037273	1	10/31/17 09:39	10/31/17 17:36	ST

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc





All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. 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  
Technical Service Representative

- <sup>1</sup> Cp
- <sup>2</sup> Tc
- <sup>3</sup> Ss
- <sup>4</sup> Cn
- <sup>5</sup> Sr
- <sup>6</sup> Qc
- <sup>7</sup> Gl
- <sup>8</sup> Al
- <sup>9</sup> Sc



Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	7500		1000	1	10/30/2017 13:36	<a href="#">WG1036673</a>

1 Cp

2 Tc

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Calcium	140000		1000	1	10/31/2017 17:07	<a href="#">WG1037273</a>

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	9730		1000	1	10/30/2017 14:50	<a href="#">WG1036673</a>

1 Cp

2 Tc

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Calcium	175000		1000	1	10/31/2017 17:10	<a href="#">WG1037273</a>

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	2270		1000	1	10/30/2017 15:05	<a href="#">WG1036673</a>

1 Cp

2 Tc

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Calcium	157000		1000	1	10/31/2017 17:18	<a href="#">WG1037273</a>

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	2390		1000	1	10/30/2017 15:20	<a href="#">WG1036673</a>

1 Cp

2 Tc

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Calcium	136000		1000	1	10/31/2017 17:20	<a href="#">WG1037273</a>

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	5290		1000	1	10/30/2017 15:35	<a href="#">WG1036673</a>

<sup>1</sup> Cp

<sup>2</sup> Tc

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Calcium	154000		1000	1	10/31/2017 17:23	<a href="#">WG1037273</a>

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Collected date/time: 10/05/17 00:00

L946941

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	2170		1000	1	10/30/2017 15:50	<a href="#">WG1036673</a>

<sup>1</sup> Cp

<sup>2</sup> Tc

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Calcium	157000		1000	1	10/31/2017 17:26	<a href="#">WG1037273</a>

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	15300		1000	1	10/30/2017 16:05	<a href="#">WG1036673</a>

1 Cp

2 Tc

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Calcium	167000		1000	1	10/31/2017 17:28	<a href="#">WG1037273</a>

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc





Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	6440		1000	1	10/30/2017 16:20	<a href="#">WG1036673</a>

1 Cp

2 Tc

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Calcium	129000		1000	1	10/31/2017 17:31	<a href="#">WG1037273</a>

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	53100		1000	1	10/30/2017 17:49	<a href="#">WG1036673</a>

1 Cp

2 Tc

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Calcium	180000		1000	1	10/31/2017 17:34	<a href="#">WG1037273</a>

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Cadmium	7.42		2.00	1	10/31/2017 17:36	<a href="#">WG1037273</a>

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Method Blank (MB)

(MB) R3261669-1 10/30/17 10:17

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Chloride	U		51.9	1000

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

<sup>4</sup>Cn

<sup>5</sup>Sr

<sup>6</sup>Qc

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>Sc

L946941-01 Original Sample (OS) • Duplicate (DUP)

(OS) L946941-01 10/30/17 13:36 • (DUP) R3261669-4 10/30/17 14:20

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	7500	7950	1	6		15

L946941-08 Original Sample (OS) • Duplicate (DUP)

(OS) L946941-08 10/30/17 16:20 • (DUP) R3261669-6 10/30/17 17:04

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	6440	6780	1	5		15

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

(LCS) R3261669-2 10/30/17 10:32 • (LCSD) R3261669-3 10/30/17 10:47

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Chloride	40000	39200	39400	98	99	80-120			1	15

L946941-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L946941-01 10/30/17 13:36 • (MS) R3261669-5 10/30/17 14:35

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Chloride	50000	7500	57000	99	1	80-120	

L946941-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L946941-08 10/30/17 16:20 • (MS) R3261669-7 10/30/17 17:19 • (MSD) R3261669-8 10/30/17 17:34

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Chloride	50000	6440	55700	56400	98	100	1	80-120			1	15



Method Blank (MB)

(MB) R3261974-1 10/31/17 16:47

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Cadmium	U		0.700	2.00
Calcium	U		46.3	1000

1 Cp

2 Tc

3 Ss

4 Cn

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

(LCS) R3261974-2 10/31/17 16:49 • (LCSD) R3261974-3 10/31/17 16:52

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	%	%	%			%	%
Cadmium	1000	1030	1050	103	105	80-120			2	20
Calcium	10000	10100	10400	101	104	80-120			3	20

5 Sr

6 Qc

L947051-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L947051-01 10/31/17 16:54 • (MS) R3261974-5 10/31/17 16:59 • (MSD) R3261974-6 10/31/17 17:02

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Cadmium	1000	ND	1040	1050	104	105	1	75-125			0	20
Calcium	10000	37000	46300	46400	92	94	1	75-125			0	20

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.

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, 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.
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.

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

Qualifier Description

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.



ESC Lab Sciences 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.

## State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Connecticut	PH-0197	North Carolina <sup>1</sup>	DW21704
Florida	E87487	North Carolina <sup>2</sup>	41
Georgia	NELAP	North Dakota	R-140
Georgia <sup>1</sup>	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky <sup>1</sup>	90010	South Dakota	n/a
Kentucky <sup>2</sup>	16	Tennessee <sup>14</sup>	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas <sup>5</sup>	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

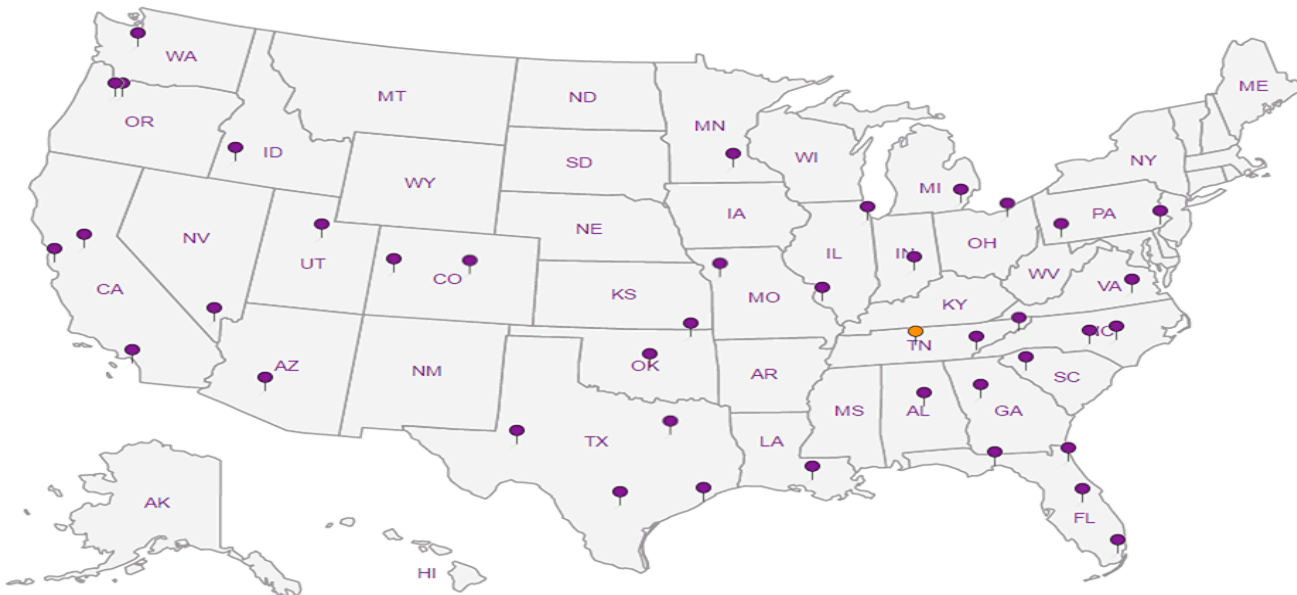
## Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC	100789
A2LA – ISO 17025 <sup>5</sup>	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>n/a</sup> Accreditation not applicable

## Our Locations

ESC Lab Sciences 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. **ESC Lab Sciences performs all testing at our central laboratory.**



<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

Company Name/Address:  
**SCS Engineers**  
 7311 West 130th Street  
 Suite 100  
 Overland Park, Kansas 66213

Billing Information:  
**Jason Franks**  
**SCS Engineers**  
 7311 West 130th Street  
 Suite 100  
 Overland Park, Kansas 66213

Analysis / Container / Preservative

Chain of Custody Page 1 of 2

Report to:  
**Mr. Jason R. Franks**

Email To:  
**jfranks@scsengineers.com**

Project Description:  
**KCPL Iatan Gen Station - Groundwater**

City/State Collected:  
**Weston, Mo**

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

Client Project #  
**27213167.17**

Lab Project #

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

Site/Facility ID #

P.O. #

Collected by (signature):  
*[Signature]*  
 Immediately Packed on ice: N  Y

Rush? (Lab MUST Be Notified)  
 Same Day  200%  
 Next Day  100%  
 Two Day  50%  
 Three Day  25%

Date Results Needed  
**STD**  
 Email?  No  Yes  
 FAX?  No  Yes

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Anions(Cl-, F-, SO4)	125mlHDPE-NoPres	Total Metals* 250mlHDPE+HN03	TDS 250mlHDPE-NoPres
MW-1	Grab	GW	NA	10/5/17	1345	3	X	X	X	
MW-2	Grab	GW	NA		1240	3	X	X	X	
MW-6	Grab	GW	NA		1045	3	X	X	X	
MW-7	Grab	GW	NA		1220	3	X	X	X	
MW-8	Grab	GW	NA		1300	3	X	X	X	
Duplicate	Grab	GW	NA		-	3	X	X	X	
MS MW-6	Grab	GW	NA		1055	3	X	X	X	
MSD MW-6	Grab	GW	NA		1100	3	X	X	X	



L# **241818**  
**D111**  
**LN69YI**  
 Acctnum: **AQUAOPKS**  
 Template:  
 Prelogin:  
 TSR: **206-Jeff Carr**  
 PB:  
 Shipped Via:

N  
 10/2/17  
 -01  
 02  
 03  
 04  
 05  
 06

\* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other

Remarks: **\*Metals (6010): B and Ca**

**ESCKE**

Relinquished by: (Signature)  
*[Signature]*  
 Relinquished by: (Signature)  
*[Signature]*  
 Relinquished by: (Signature)

Date: **10/5/17**  
 Date: **10/5/17**  
 Date:

Time: **1535**  
 Time:  
 Received for lab by: (Signature)  
*[Signature]*

pH \_\_\_\_\_ Temp \_\_\_\_\_  
 Flow \_\_\_\_\_ Other \_\_\_\_\_  
 Samples returned via:  UPS  
 FedEx  Courier   
 Temp: **29.4** °C Bottles Received: **24**  
 Date: **10/6/17** Time: **0845** 1015  
 CW

Hold #  
 Condition: (lab use only)  
 CDC Seal Intact:  Y  N  NA  
 pH Checked: **OK**



**SCS Engineers - KS**

7311 West 130th Street, Ste. 100  
Overland Park, KS 66213

Billing Information:  
**Accounts Payable**  
7311 West 130th Street, Ste. 100  
Overland Park, KS 66213

Pres  
Chk

Analysis / Container / Preservative

Chain of Custody Page 1 of 2



12005 Lebanon Rd  
Mount Juliet, TN 37112  
Phone: 615-756-6856  
Phone: 800-767-5979  
Fax: 615-756-5950



L# **441838**  
**D115**  
**L9V691**

N  
10/27/17

Account: **AQUAOPKS**  
Template: **T61397**  
Prelogin: **P599225**  
TSE: 206 - Jeff Carr  
PE:

Shipped Via:

Report to:  
**Jason Franks**

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

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

City/State Collected: **Weston, MO**

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

Client Project #  
**27213167.17**

Lab Project #  
**AQUAOPKS-IATAN**

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

Site/Facility ID #

P.O. #

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

Rush? (Lab MUST Be Notified)

Quote #

Same Day  Five Day   
Next Day  5 Day (Rad Only)   
Two Day  30 Day (Rad Only)   
Three Day

Date Results Needed

**5TD**

No. of  
Cntrs

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Anions 125mlHDPE-NoPres	COD 250mlHDPE-H2SO4	Metals, Hardness 250mlHDPE-HNO3	TDS 250mlHDPE-NoPres	TOC 250ml/Amb-HCl	TOX 1L-Amb-Add H2SO4
MW-3	Grab	GW	-	10/5/17	0840	6	X	X	X	X	X	X
MW-4	↓	GW	-	↓	0920	6	X	X	X	X	X	X
MW-5	↓	GW	-	↓	1000	6	X	X	X	X	X	X

07  
08  
09

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

Remarks: 6010 metals-Al,Ba,B,Ca,Cr,Co,Fe,Mg,Mn,Ni,Ag,Na 6020 metals-Sb,As,Be,Cd,Cu,Pb,Se,Tl,Zn 7470-Hg

**ESCKC**

pH \_\_\_\_\_ Temp \_\_\_\_\_  
Flow \_\_\_\_\_ Other \_\_\_\_\_

Sample Receipt Checklist  
 CDC Seal Present/Intact:  Y  N  
 CDC 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

Samples returned via:  
UPS  FedEx  Courier

Tracking #

Relinquished by: (Signature)  
**Robert Martin**

Date: **10/5/17**

Time: **1535**

Received by: (Signature)  
**Donny**

Trip Blank Received: Yes /  No  
HCL / MeOH  
TBX

Relinquished by: (Signature)  
**Jason Franks**

Date: **10/5/17**

Time: **1615**

Received by: (Signature)  
**Chad**

Temp: **2.9°C** Bottles Received: **50**

If preservation required by Login: Date/Time

Relinquished by: (Signature)

Date:

Time:

Received for lab by: (Signature)  
**Chad**

Date: **10/16/17** Time: **0845**

Hold: Condition NCF **10/16**

Company Name/Address:  
**SCS Engineers**  
 7311 West 130th Street  
 Suite 100  
 Overland Park, Kansas 66213

Billing Information:  
**Jason Franks**  
 SCS Engineers  
 7311 West 130th Street  
 Suite 100  
 Overland Park, Kansas 66213

Report to:  
**Mr. Jason R. Franks**

Email To:  
**jfranks@scsengineers.com**

Project Description:  
**KCPL Iatan Gen Station - Groundwater**

City/State Collected:  
**Weston, Mo**

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


Client Project #  
**27213167.17**

Lab Project #

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 \_\_\_ 200%  
 \_\_\_ Next Day \_\_\_ 100%  
 \_\_\_ Two Day \_\_\_ 50%  
 \_\_\_ Three Day \_\_\_ 25%

Date Results Needed  
**STD**  
 Email? \_\_\_ No \_\_\_ Yes  
 FAX? \_\_\_ No \_\_\_ Yes  
 No. of Cntes

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntes
MW-1	Grab	GW	NA	10/5/17	1345	1 X
MW-2	Grab	GW	NA		1240	1 X
MW-6	Grab	GW	NA		1045	1 X
MW-7	Grab	GW	NA		1220	1 X
MW-8	Grab	GW	NA		1300	1 X
Duplicate	Grab	GW	NA		-	1 X
MS mw to	Grab	GW	NA		1055	1 X
MSD mw to	Grab	GW	NA		1100	1 X
			NA			

Total Metals\* 250mlHDPE-HN03

Analysis / Container / Preservative

Chain of Custody Page 1 of 1



12065 Lakewood Rd  
 Mount Juliet, TN 37122  
 Phone: 615-756-5858  
 Phone: 800-167-5851  
 Fax: 615-758-5859



LR **441848**  
 TI **D114**  
**L969V1**  
 Acctnum: **AQUAOPKS**  
 Template:  
 Prelogin:  
 TSI: **206-Jeff Carr**  
 PB:

Shipped Via:

Rem./Container	Sample # (Lab use only)
	10
	11
	12
	13
	14
	15
	16
	17
	18
	19
	20

\* Matrix: SS - Soil GW - Groundwater WW - Waste Water DW - Drinking Water OT - Other

ESCKC

pH \_\_\_\_\_ Temp \_\_\_\_\_

Remarks: \*Metals (6010): Ba,Cr,Co - (6020): Pb,As,Be,Cd,Sb,Se,Tl - (7470): Hg

Flow \_\_\_\_\_ Other \_\_\_\_\_

Hold # \_\_\_\_\_ Condition: (lab use only)


Relinquished by: (Signature)  


Date: **10/5/17** Time: **1535**

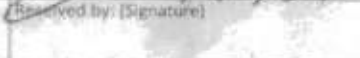
Received by: (Signature)  


Samples returned via:  UPS  
 FedEx  Courier  \_\_\_\_\_

Temp: **2.9°C** Bottles Received: **8**


Relinquished by: (Signature)  


Date: **10/5/17** Time: **1415**

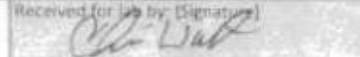
Received by: (Signature)  


Date: **10/6/17** Time: **0845**

COC Seal Intact:  Y  N  NA  
 pH Checked: **OK**

Relinquished by: (Signature)  


Date: \_\_\_\_\_ Time: \_\_\_\_\_

Received for lab by: (Signature)  


Date: **10/6/17** Time: **0845**

pH Checked: **OK**

1013

**Andy Vann**

---

**From:** Jeff Carr  
**Sent:** Friday, October 27, 2017 3:54 PM  
**To:** Login  
**Subject:** relog L941818-01 thru -06 and L941838-01 thru -03 for CHLORIDE and CAICP.

Per client request, please relog AQUAOPKS samples L941818-01 thru -06 and L941838-01 thru -03 for CHLORIDE and CAICP.

Also relog L941846-02 for CDICP.

These can all be relogged to the same SDG.

✉ Jeffrey A. Carr  
Sr. Project Manager  
**ESC Lab Sciences**-a subsidiary of Pace Analytical  
12065 Lebanon Road | Mt. Juliet, TN 37122  
(615) 758-5858 | Ext. 9667

[www.esclabsciences.com](http://www.esclabsciences.com)

Jared Morrison  
December 16, 2022

**ATTACHMENT 1-11**  
**November 2017 Sampling Event Laboratory Report**

November 17, 2017

## SCS Engineers - KS

Sample Delivery Group: L951078  
Samples Received: 11/15/2017  
Project Number: 27213167.17  
Description: KCPL - Iatan Generating Station

Report To: Jason Franks  
7311 West 130th Street, Ste. 100  
Overland Park, KS 66213










Entire Report Reviewed By:



Jeff Carr  
Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



<b>Cp: Cover Page</b>	<b>1</b>	
<b>Tc: Table of Contents</b>	<b>2</b>	
<b>Ss: Sample Summary</b>	<b>3</b>	
<b>Cn: Case Narrative</b>	<b>4</b>	
<b>Sr: Sample Results</b>	<b>5</b>	
<b>MW-1 L951078-01</b>	<b>5</b>	
<b>MW-2 L951078-02</b>	<b>6</b>	
<b>MW-6 L951078-03</b>	<b>7</b>	
<b>MW-7 L951078-04</b>	<b>8</b>	
<b>MW-8 L951078-05</b>	<b>9</b>	
<b>DUPLICATE 2 L951078-06</b>	<b>10</b>	
<b>Qc: Quality Control Summary</b>	<b>11</b>	
<b>Wet Chemistry by Method 9056A</b>	<b>11</b>	
<b>Metals (ICP) by Method 6010B</b>	<b>12</b>	
<b>Gl: Glossary of Terms</b>	<b>13</b>	
<b>Al: Accreditations &amp; Locations</b>	<b>14</b>	
<b>Sc: Sample Chain of Custody</b>	<b>15</b>	



# SAMPLE SUMMARY



## MW-1 L951078-01 GW

			Collected by	Collected date/time	Received date/time
			Whit Martin	11/14/17 09:20	11/15/17 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9056A	WG1043194	1	11/16/17 01:04	11/16/17 01:04	DR
Metals (ICP) by Method 6010B	WG1043169	1	11/16/17 11:36	11/17/17 03:08	CCE

1  
Cp

2  
Tc

3  
Ss

4  
Cn

5  
Sr

6  
Qc

7  
Gl

8  
Al

9  
Sc

## MW-2 L951078-02 GW

			Collected by	Collected date/time	Received date/time
			Whit Martin	11/14/17 09:55	11/15/17 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9056A	WG1043194	1	11/16/17 01:18	11/16/17 01:18	DR
Metals (ICP) by Method 6010B	WG1043169	1	11/16/17 11:36	11/17/17 03:11	CCE

## MW-6 L951078-03 GW

			Collected by	Collected date/time	Received date/time
			Whit Martin	11/14/17 12:50	11/15/17 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9056A	WG1043194	1	11/16/17 01:33	11/16/17 01:33	DR
Metals (ICP) by Method 6010B	WG1043169	1	11/16/17 11:36	11/17/17 02:11	CCE

## MW-7 L951078-04 GW

			Collected by	Collected date/time	Received date/time
			Whit Martin	11/14/17 13:25	11/15/17 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9056A	WG1043194	1	11/16/17 02:45	11/16/17 02:45	DR
Metals (ICP) by Method 6010B	WG1043169	1	11/16/17 11:36	11/17/17 03:21	CCE

## MW-8 L951078-05 GW

			Collected by	Collected date/time	Received date/time
			Whit Martin	11/14/17 13:55	11/15/17 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9056A	WG1043194	1	11/16/17 02:59	11/16/17 02:59	DR
Metals (ICP) by Method 6010B	WG1043169	1	11/16/17 11:36	11/17/17 03:24	CCE

## DUPLICATE 2 L951078-06 GW

			Collected by	Collected date/time	Received date/time
			Whit Martin	11/14/17 00:00	11/15/17 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9056A	WG1043194	1	11/16/17 03:14	11/16/17 03:14	DR
Metals (ICP) by Method 6010B	WG1043169	1	11/16/17 11:36	11/17/17 03:28	CCE



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. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. 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  
Technical Service Representative

- <sup>1</sup> Cp
- <sup>2</sup> Tc
- <sup>3</sup> Ss
- <sup>4</sup> Cn
- <sup>5</sup> Sr
- <sup>6</sup> Qc
- <sup>7</sup> Gl
- <sup>8</sup> Al
- <sup>9</sup> Sc





Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	6730		1000	1	11/16/2017 01:04	<a href="#">WG1043194</a>

<sup>1</sup> Cp

<sup>2</sup> Tc

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Calcium	130000		1000	1	11/17/2017 03:08	<a href="#">WG1043169</a>

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	8970		1000	1	11/16/2017 01:18	<a href="#">WG1043194</a>

<sup>1</sup> Cp

<sup>2</sup> Tc

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Calcium	161000		1000	1	11/17/2017 03:11	<a href="#">WG1043169</a>

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	2120		1000	1	11/16/2017 01:33	<a href="#">WG1043194</a>

1 Cp

2 Tc

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Calcium	151000	<u>V</u>	1000	1	11/17/2017 02:11	<a href="#">WG1043169</a>

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	2580		1000	1	11/16/2017 02:45	<a href="#">WG1043194</a>

1 Cp

2 Tc

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Calcium	125000		1000	1	11/17/2017 03:21	<a href="#">WG1043169</a>

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	4860		1000	1	11/16/2017 02:59	<a href="#">WG1043194</a>

<sup>1</sup> Cp

<sup>2</sup> Tc

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Calcium	145000		1000	1	11/17/2017 03:24	<a href="#">WG1043169</a>

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	2160		1000	1	11/16/2017 03:14	<a href="#">WG1043194</a>

<sup>1</sup> Cp

<sup>2</sup> Tc

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Calcium	152000		1000	1	11/17/2017 03:28	<a href="#">WG1043169</a>

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Method Blank (MB)

(MB) R3266322-1 11/15/17 20:01

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Chloride	U		51.9	1000

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

<sup>4</sup>Cn

<sup>5</sup>Sr

<sup>6</sup>Qc

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>Sc

L950923-03 Original Sample (OS) • Duplicate (DUP)

(OS) L950923-03 11/15/17 21:42 • (DUP) R3266322-4 11/15/17 21:57

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	23900	23900	1	0		15

L951139-02 Original Sample (OS) • Duplicate (DUP)

(OS) L951139-02 11/16/17 16:37 • (DUP) R3266322-8 11/16/17 16:51

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	14400	14400	1	0		15

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

(LCS) R3266322-2 11/15/17 20:16 • (LCSD) R3266322-3 11/15/17 20:30

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Chloride	40000	39300	39200	98	98	80-120			0	15

L950923-07 Original Sample (OS) • Matrix Spike (MS)

(OS) L950923-07 11/15/17 23:23 • (MS) R3266322-5 11/15/17 23:38

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Chloride	50000	27800	76700	98	1	80-120	

L951078-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L951078-03 11/16/17 01:33 • (MS) R3266322-6 11/16/17 02:16 • (MSD) R3266322-7 11/16/17 02:31

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Chloride	50000	2120	54200	48800	104	93	1	80-120			11	15



Method Blank (MB)

(MB) R3266417-1 11/17/17 02:02

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Calcium	U		46.3	1000

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

<sup>4</sup>Cn

<sup>5</sup>Sr

<sup>6</sup>Qc

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

(LCS) R3266417-8 11/17/17 07:43 • (LCSD) R3266417-2 11/17/17 02:08

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Calcium	10000	9680	9910	97	99	80-120			2	20

L951078-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L951078-03 11/17/17 02:11 • (MS) R3266417-4 11/17/17 02:18 • (MSD) R3266417-5 11/17/17 02:21

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Calcium	10000	151000	158000	158000	73	69	1	75-125	<u>V</u>	<u>V</u>	0	20

<sup>7</sup>Gl

<sup>8</sup>Al

L951085-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L951085-01 11/17/17 02:24 • (MS) R3266417-6 11/17/17 02:27 • (MSD) R3266417-7 11/17/17 02:30

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Calcium	10000	169000	175000	175000	61	66	1	75-125	<u>V</u>	<u>V</u>	0	20

<sup>9</sup>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.

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, 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.
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.

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

Qualifier Description

V	The sample concentration is too high to evaluate accurate spike recoveries.
---	---



ESC Lab Sciences 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.

## State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Connecticut	PH-0197	North Carolina <sup>1</sup>	DW21704
Florida	E87487	North Carolina <sup>2</sup>	41
Georgia	NELAP	North Dakota	R-140
Georgia <sup>1</sup>	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky <sup>1</sup>	90010	South Dakota	n/a
Kentucky <sup>2</sup>	16	Tennessee <sup>14</sup>	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas <sup>5</sup>	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

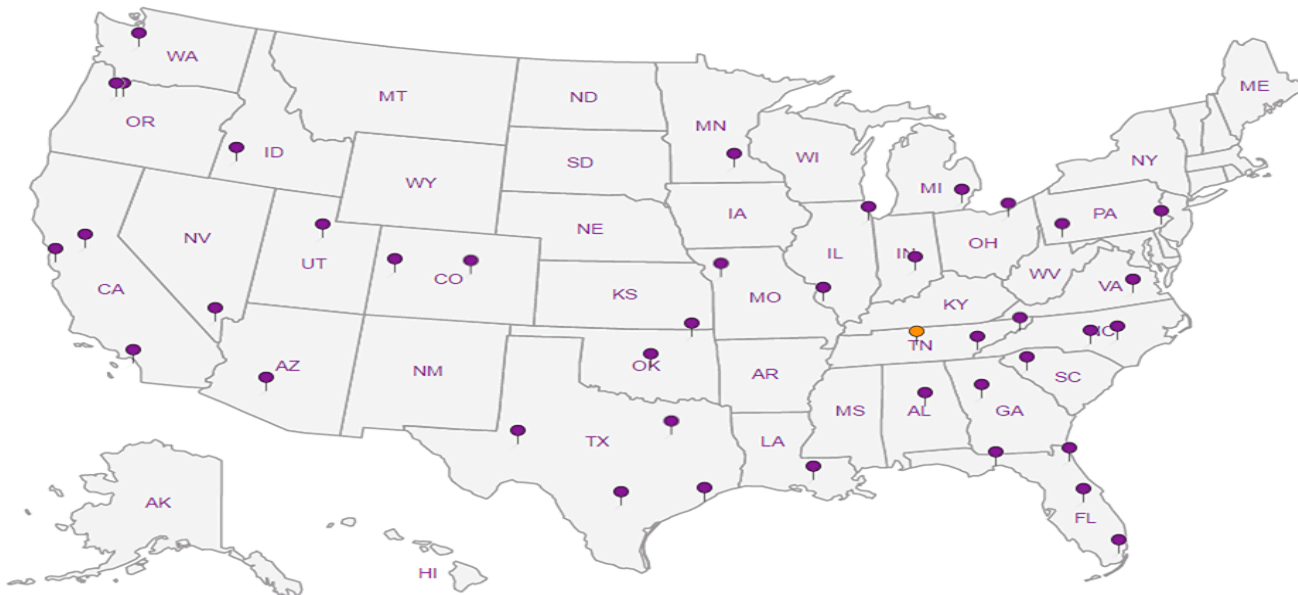
## Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC	100789
A2LA – ISO 17025 <sup>5</sup>	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>n/a</sup> Accreditation not applicable

## Our Locations

ESC Lab Sciences 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. **ESC Lab Sciences performs all testing at our central laboratory.**



1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Company Name/Address:  
**SCS Engineers**  
 7311 West 130th Street  
 Suite 100  
 Overland Park, Kansas 66213

Billing Information: **RUSH**  
**Jason Franks**  
**SCS Engineers**  
 7311 West 130th Street  
 Suite 100  
 Overland Park, Kansas 66213

Report to:  
**Mr. Jason R. Franks**

Email To:  
**jfranks@scsengineers.com**

Project Description:  
**KCPL Iatan Gen Station - Groundwater**

City/State Collected:  
**Weston, Mo**

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

Client Project #  
**27213167.17**

Lab Project #

Collected by (print):  
**Whit Martin**

Site/Facility ID #

P.O. #

Collected by (signature):  
*Whit Martin*  
 Immediately Packed on Ice N \_\_\_ Y

**Rush?** (Lab MUST Be Notified)  
 \_\_\_ Same Day .....200%  
 \_\_\_ Next Day .....100%  
 \_\_\_ Two Day .....50%  
 Three Day .....25%

Date Results Needed  
**3 day**  
 Email? \_\_\_ No  Yes  
 FAX? \_\_\_ No \_\_\_ Yes

No. of Cntrs

Chloride - 9056 125mIHDPE-NoPres

Calcium - 6010 250mIHDPE-HNO3

Analysis / Container / Preservative



YOUR LAB OF CHOICE

13065 Lebanon Rd  
 Mount Juliet, TN 37122  
 Phone: 615-758-5858  
 Phone: 800-767-5859  
 Fax: 615-758-5859



L# **951078**  
**D047**

Acctnum: **AQUAOPKS**

Template:

Prelogin:

TSR: **206-Jeff Carr**

PB:

Shipped Via:

Rem./Contaminant Sample # (lab only)

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Chloride	Calcium	Rem.	Contaminant	Sample # (lab only)
MW-1	Grab	GW	NA	11/14/17	0920	2	X	X			-01
MW-2	Grab	GW	NA	11/14/17	0955	2	X	X			-02
MW-6	Grab	GW	NA	11/14/17	1250	2	X	X			-03
MW-7	Grab	GW	NA	11/14/17	1325	2	X	X			-04
MW-8	Grab	GW	NA	11/14/17	1355	2	X	X			-05
Duplicate 2	Grab	GW	NA	11/14/17	-	2	X	X			-06
MS (MW-6)	Grab	GW	NA	11/14/17	1255	2	X	X			-07
MSD (MW-6)	Grab	GW	NA	11/14/17	1255	2	X	X			-08

\* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other \_\_\_\_\_

pH \_\_\_\_\_ Temp \_\_\_\_\_  
 Flow \_\_\_\_\_ Other \_\_\_\_\_

Hold #

Remarks:

**7305 8949 5608**

Relinquished by: (Signature)  
*Whit Martin*  
 Relinquished by: (Signature)

Date: **11/14/17**  
 Time: **1540**

Received by: (Signature)  
*[Signature]*  
 Received by: (Signature)

Samples returned via:  UPS  
 FedEx  Courier  \_\_\_\_\_

Condition: (lab use only)

Temp: **0.75** °C Bottles Received: **16**

COC Seal Intact: \_\_\_ Y \_\_\_ N  NA

Relinquished by: (Signature)

Date: \_\_\_\_\_  
 Time: \_\_\_\_\_

Received for lab by: (Signature)  
*[Signature]* 801

Date: **11/15/17** Time: **08:45**

pH Checked: \_\_\_\_\_ NCF: **DK**

## ESC LAB SCIENCES Cooler Receipt Form

Client: <u>ADWA DPKS</u>	SDG#	<u>951078</u>	
Cooler Received/Opened On: <u>11/16/17</u>	Temperature:	<u>0.7</u>	
Received By: <u>Kevin Turner</u>			
Signature: <u>[Signature]</u>			
Receipt Check List	NP	Yes	No
COC Seal Present / Intact?	<input checked="" type="checkbox"/>		
COC Signed / Accurate?		<input checked="" type="checkbox"/>	
Bottles arrive intact?		<input checked="" type="checkbox"/>	
Correct bottles used?		<input checked="" type="checkbox"/>	
Sufficient volume sent?			
If Applicable			
VOA Zero headspace?		<input checked="" type="checkbox"/>	
Preservation Correct / Checked?			

November 17, 2017

## SCS Engineers - KS

Sample Delivery Group: L951072  
Samples Received: 11/15/2017  
Project Number: 27213167.17  
Description: KCPL - Iatan Generating Station

Report To: Jason Franks  
7311 West 130th Street, Ste. 100  
Overland Park, KS 66213

Entire Report Reviewed By:











Jeff Carr  
Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.





<b>Cp: Cover Page</b>	<b>1</b>	
<b>Tc: Table of Contents</b>	<b>2</b>	
<b>Ss: Sample Summary</b>	<b>3</b>	
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<b>MW-9 L951072-01</b>	<b>5</b>	
<b>MW-10 L951072-02</b>	<b>6</b>	
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## MW-9 L951072-01 GW

Collected by  
Whit Martin

Collected date/time  
11/14/17 14:20

Received date/time  
11/15/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9056A	WG1043400	1	11/16/17 16:59	11/16/17 16:59	DR
Metals (ICP) by Method 6010B	WG1043169	1	11/16/17 11:36	11/17/17 03:01	CCE

1  
Cp

2  
Tc

3  
Ss

## MW-10 L951072-02 GW

Collected by  
Whit Martin

Collected date/time  
11/14/17 13:03

Received date/time  
11/15/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9056A	WG1043400	1	11/16/17 17:14	11/16/17 17:14	DR
Metals (ICP) by Method 6010B	WG1043169	1	11/16/17 11:36	11/17/17 03:05	CCE

4  
Cn

5  
Sr

6  
Qc

7  
Gl

8  
Al



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. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. 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  
Technical Service Representative

- <sup>1</sup> Cp
- <sup>2</sup> Tc
- <sup>3</sup> Ss
- <sup>4</sup> Cn
- <sup>5</sup> Sr
- <sup>6</sup> Qc
- <sup>7</sup> Gl
- <sup>8</sup> Al





Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	1820		1000	1	11/16/2017 16:59	<a href="#">WG1043400</a>

1 Cp

2 Tc

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Calcium	113000		1000	1	11/17/2017 03:01	<a href="#">WG1043169</a>

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al



Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	17600		1000	1	11/16/2017 17:14	<a href="#">WG1043400</a>

1 Cp

2 Tc

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Calcium	119000		1000	1	11/17/2017 03:05	<a href="#">WG1043169</a>

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al



Method Blank (MB)

(MB) R3266359-1 11/16/17 13:27

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Chloride	U		51.9	1000

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

L951085-01 Original Sample (OS) • Duplicate (DUP)

(OS) L951085-01 11/16/17 17:28 • (DUP) R3266359-4 11/16/17 18:11

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	13100	13100	1	0		15

L951088-08 Original Sample (OS) • Duplicate (DUP)

(OS) L951088-08 11/16/17 21:19 • (DUP) R3266359-7 11/16/17 21:33

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	655	599	1	9	↓	15

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

(LCS) R3266359-2 11/16/17 13:42 • (LCSD) R3266359-3 11/16/17 13:56

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Chloride	40000	39400	39400	99	99	80-120			0	15

L951085-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L951085-01 11/16/17 17:28 • (MS) R3266359-5 11/16/17 18:26 • (MSD) R3266359-6 11/16/17 18:40

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Chloride	50000	13100	64800	64200	103	102	1	80-120			1	15

L951088-08 Original Sample (OS) • Matrix Spike (MS)

(OS) L951088-08 11/16/17 21:19 • (MS) R3266359-8 11/16/17 21:47

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Chloride	50000	655	52200	103	1	80-120	



Method Blank (MB)

(MB) R3266417-1 11/17/17 02:02

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Calcium	U		46.3	1000

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

<sup>4</sup>Cn

<sup>5</sup>Sr

<sup>6</sup>Qc

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

(LCS) R3266417-8 11/17/17 07:43 • (LCSD) R3266417-2 11/17/17 02:08

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Calcium	10000	9680	9910	97	99	80-120			2	20

L951078-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L951078-03 11/17/17 02:11 • (MS) R3266417-4 11/17/17 02:18 • (MSD) R3266417-5 11/17/17 02:21

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Calcium	10000	151000	158000	158000	73	69	1	75-125	<u>V</u>	<u>V</u>	0	20

<sup>7</sup>Gl

<sup>8</sup>Al

L951085-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L951085-01 11/17/17 02:24 • (MS) R3266417-6 11/17/17 02:27 • (MSD) R3266417-7 11/17/17 02:30

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Calcium	10000	169000	175000	175000	61	66	1	75-125	<u>V</u>	<u>V</u>	0	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, 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.
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.

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

Qualifier Description

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.



ESC Lab Sciences 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.

## State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Connecticut	PH-0197	North Carolina <sup>1</sup>	DW21704
Florida	E87487	North Carolina <sup>2</sup>	41
Georgia	NELAP	North Dakota	R-140
Georgia <sup>1</sup>	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky <sup>1</sup>	90010	South Dakota	n/a
Kentucky <sup>2</sup>	16	Tennessee <sup>14</sup>	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas <sup>5</sup>	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

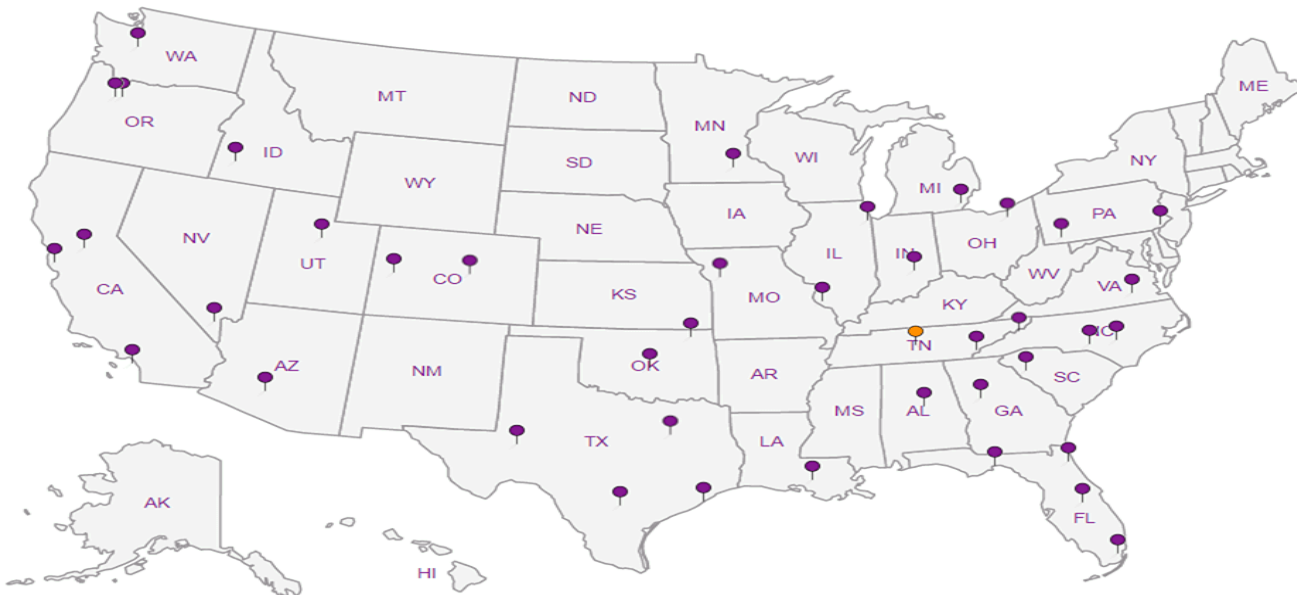
## Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC	100789
A2LA – ISO 17025 <sup>5</sup>	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>n/a</sup> Accreditation not applicable

## Our Locations

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1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

Jared Morrison  
December 16, 2022

**ATTACHMENT 1-12**  
**December 2017 Sampling Event Laboratory Report**

January 05, 2018

## SCS Engineers - KS

Sample Delivery Group: L960488  
Samples Received: 12/30/2017  
Project Number: 27213167.17  
Description: KCPL - Iatan Generating Station-Groundwater

Report To: Jason Franks  
7311 West 130th Street, Ste. 100  
Overland Park, KS 66213

Entire Report Reviewed By:



Jeff Carr  
Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.





<b>Cp: Cover Page</b>	<b>1</b>	<b><sup>1</sup>Cp</b>
<b>Tc: Table of Contents</b>	<b>2</b>	<b><sup>2</sup>Tc</b>
<b>Ss: Sample Summary</b>	<b>3</b>	<b><sup>3</sup>Ss</b>
<b>Cn: Case Narrative</b>	<b>4</b>	<b><sup>4</sup>Cn</b>
<b>Sr: Sample Results</b>	<b>5</b>	<b><sup>5</sup>Sr</b>
<b>MW-1 L960488-01</b>	<b>5</b>	
<b>MW-6 L960488-02</b>	<b>6</b>	
<b>Qc: Quality Control Summary</b>	<b>7</b>	<b><sup>6</sup>Qc</b>
<b>Wet Chemistry by Method 9056A</b>	<b>7</b>	
<b>Gl: Glossary of Terms</b>	<b>8</b>	<b><sup>7</sup>Gl</b>
<b>Al: Accreditations &amp; Locations</b>	<b>9</b>	<b><sup>8</sup>Al</b>
<b>Sc: Sample Chain of Custody</b>	<b>10</b>	<b><sup>9</sup>Sc</b>

# SAMPLE SUMMARY



## MW-1 L960488-01 GW

Collected by Whit Martin	Collected date/time 12/29/17 09:20	Received date/time 12/30/17 08:45
-----------------------------	---------------------------------------	--------------------------------------

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9056A	WG1058604	1	12/31/17 00:12	12/31/17 00:12	DR

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

## MW-6 L960488-02 GW

Collected by Whit Martin	Collected date/time 12/29/17 09:50	Received date/time 12/30/17 08:45
-----------------------------	---------------------------------------	--------------------------------------

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9056A	WG1058604	1	12/31/17 00:26	12/31/17 00:26	DR

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> 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. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. 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  
Technical Service Representative

- <sup>1</sup>Cp
- <sup>2</sup>Tc
- <sup>3</sup>Ss
- <sup>4</sup>Cn
- <sup>5</sup>Sr
- <sup>6</sup>Qc
- <sup>7</sup>Gl
- <sup>8</sup>Al
- <sup>9</sup>Sc



Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	6270		1000	1	12/31/2017 00:12	<a href="#">WG1058604</a>

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	1450		1000	1	12/31/2017 00:26	<a href="#">WG1058604</a>

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Method Blank (MB)

(MB) R3277059-1 12/30/17 13:01

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

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

<sup>4</sup>Cn

<sup>5</sup>Sr

<sup>6</sup>Qc

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

(LCS) R3277059-2 12/30/17 13:16 • (LCSD) R3277059-3 12/30/17 13:30

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 %
Chloride	40000	39500	39300	98.6	98.3	80-120			0.392	15

<sup>7</sup>Gl

<sup>8</sup>Al

L960408-08 Original Sample (OS) • Matrix Spike (MS)

(OS) L960408-08 12/30/17 20:21 • (MS) R3277059-8 12/30/17 21:19

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	5280	55800	101	1	80-120	

<sup>9</sup>Sc



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SDG	Sample Delivery Group.
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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, 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.
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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.

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

Qualifier Description

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.



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

## State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Connecticut	PH-0197	North Carolina <sup>1</sup>	DW21704
Florida	E87487	North Carolina <sup>2</sup>	41
Georgia	NELAP	North Dakota	R-140
Georgia <sup>1</sup>	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky <sup>1</sup>	90010	South Dakota	n/a
Kentucky <sup>2</sup>	16	Tennessee <sup>14</sup>	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas <sup>5</sup>	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

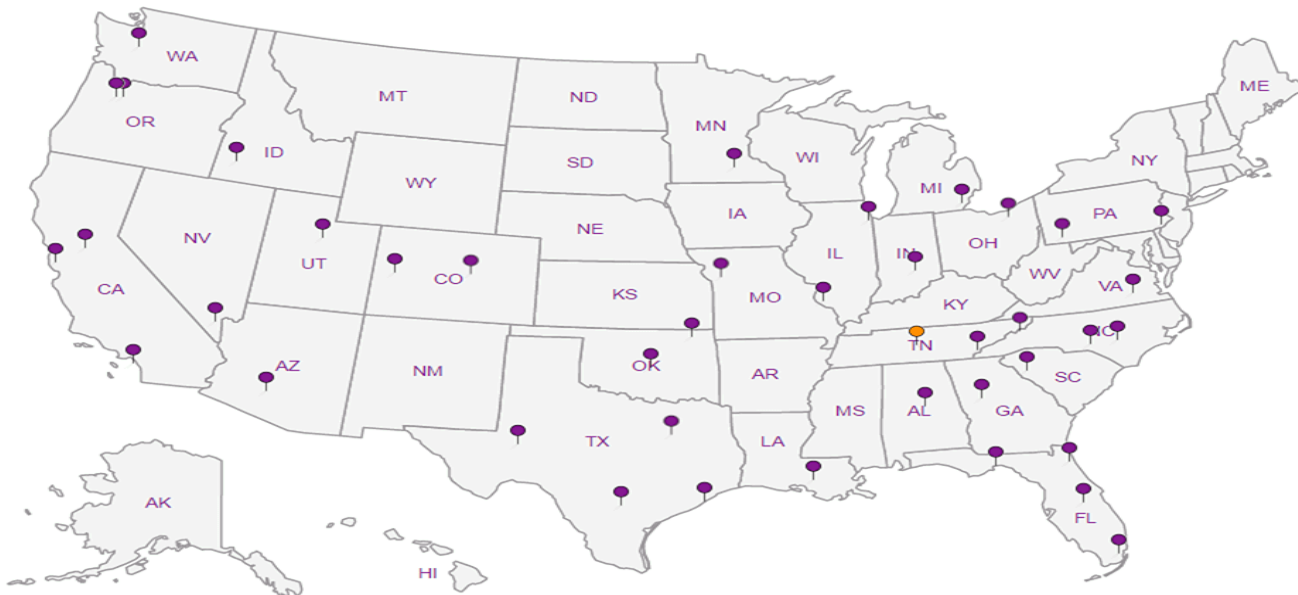
## Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC	100789
A2LA – ISO 17025 <sup>5</sup>	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>n/a</sup> Accreditation not applicable

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## ESC LAB SCIENCES Cooler Receipt Form

Client: <u>HOVAOPKS</u>	SDG#		
Cooler Received/Opened On: <u>12/30/17</u>	Temperature:	<u>1.3</u>	
Received by : Marina Fahmy			
Signature: 			
Receipt Check List			
	NP	Yes	No
COC Seal Present / Intact?	/		
COC Signed / Accurate?		/	
Bottles arrive intact?		/	
Correct bottles used?		/	
Sufficient volume sent?		/	
If Applicable			
VOA Zero headspace?			
Preservation Correct / Checked?			

## SCS Engineers - KS

Sample Delivery Group: L962607  
Samples Received: 12/30/2017  
Project Number: 27213167.17  
Description:

Report To: Jason Franks  
7311 West 130th Street, Ste. 100  
Overland Park, KS 66213

Entire Report Reviewed By:



Jeff Carr  
Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



<b>Cp: Cover Page</b>	<b>1</b>	<b><sup>1</sup>Cp</b>
<b>Tc: Table of Contents</b>	<b>2</b>	
<b>Ss: Sample Summary</b>	<b>3</b>	<b><sup>2</sup>Tc</b>
<b>Cn: Case Narrative</b>	<b>4</b>	
<b>Sr: Sample Results</b>	<b>5</b>	<b><sup>3</sup>Ss</b>
<b>MW-1 L962607-01</b>	<b>5</b>	
<b>Qc: Quality Control Summary</b>	<b>6</b>	<b><sup>4</sup>Cn</b>
<b>Wet Chemistry by Method 9056A</b>	<b>6</b>	<b><sup>5</sup>Sr</b>
<b>Gl: Glossary of Terms</b>	<b>7</b>	
<b>Al: Accreditations &amp; Locations</b>	<b>8</b>	<b><sup>6</sup>Qc</b>
<b>Sc: Sample Chain of Custody</b>	<b>9</b>	<b><sup>7</sup>Gl</b>
		<b><sup>8</sup>Al</b>
		<b><sup>9</sup>Sc</b>

# SAMPLE SUMMARY



MW-1 L962607-01 GW

Collected by Whit Martin	Collected date/time 12/29/17 09:20	Received date/time 12/30/17 08:45
-----------------------------	---------------------------------------	--------------------------------------

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9056A	WG1061950	1	01/11/18 16:20	01/11/18 16:20	MAJ

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

<sup>4</sup>Cn

<sup>5</sup>Sr

<sup>6</sup>Qc

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>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 radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. 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  
Technical Service Representative

- <sup>1</sup> Cp
- <sup>2</sup> Tc
- <sup>3</sup> Ss
- <sup>4</sup> Cn
- <sup>5</sup> Sr
- <sup>6</sup> Qc
- <sup>7</sup> Gl
- <sup>8</sup> Al
- <sup>9</sup> Sc



Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chloride	5990		1000	1	01/11/2018 16:20	<a href="#">WG1061950</a>

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



Method Blank (MB)

(MB) R3278981-1 01/11/18 12:38

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Chloride	325	↓	51.9	1000

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

L962607-01 Original Sample (OS) • Duplicate (DUP)

(OS) L962607-01 01/11/18 16:20 • (DUP) R3278981-4 01/11/18 16:33

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	5990	5860	1	2.18		15

L962452-01 Original Sample (OS) • Duplicate (DUP)

(OS) L962452-01 01/11/18 21:28 • (DUP) R3278981-6 01/11/18 21:42

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	22700	22700	1	0.0714		15

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

(LCS) R3278981-2 01/11/18 12:52 • (LCSD) R3278981-3 01/11/18 13:05

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Chloride	40000	39300	39400	98.1	98.6	80-120			0.462	15

L962607-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L962607-01 01/11/18 16:20 • (MS) R3278981-5 01/11/18 16:47

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Chloride	50000	5990	57200	102	1	80-120	

L962452-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L962452-01 01/11/18 21:28 • (MS) R3278981-7 01/11/18 21:55 • (MSD) R3278981-8 01/11/18 22:09

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Chloride	50000	22700	73000	73300	101	101	1	80-120			0.498	15





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.
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, 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.
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.

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

Qualifier Description

J The identification of the analyte is acceptable; the reported value is an estimate.



ESC Lab Sciences 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.

## State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Connecticut	PH-0197	North Carolina <sup>1</sup>	DW21704
Florida	E87487	North Carolina <sup>2</sup>	41
Georgia	NELAP	North Dakota	R-140
Georgia <sup>1</sup>	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky <sup>1</sup>	90010	South Dakota	n/a
Kentucky <sup>2</sup>	16	Tennessee <sup>14</sup>	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas <sup>5</sup>	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

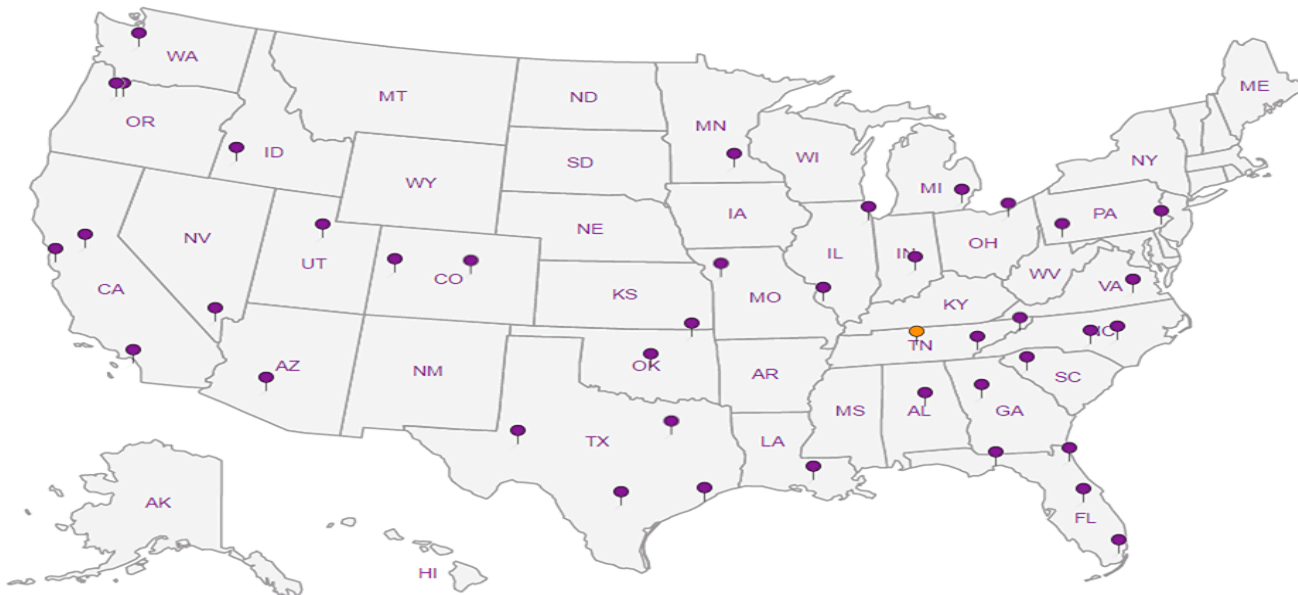
## Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC	100789
A2LA – ISO 17025 <sup>5</sup>	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>n/a</sup> Accreditation not applicable

## Our Locations

ESC Lab Sciences 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. **ESC Lab Sciences performs all testing at our central laboratory.**



<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc



**Matt Shacklock**

---

**From:** Jeff Carr  
**Sent:** Thursday, January 11, 2018 12:34 PM  
**To:** Login  
**Subject:** relog L960488-01 for chloride.

Per client request, please relog AQUAOPKS sample L960488-01 for chloride.

✉ Jeffrey A. Carr  
Sr. Project Manager  
**ESC Lab Sciences**-a subsidiary of Pace Analytical  
12065 Lebanon Road | Mt. Juliet, TN 37122  
(615) 758-5858 | Ext. 9667  
[www.esclabsciences.com](http://www.esclabsciences.com)

Jared Morrison  
December 16, 2022

## **ATTACHMENT 2**

### **Statistical Analyses**

Statistical analyses were not completed in 2017. Statistical analyses of the background sampling events were completed following data verification in 2018.

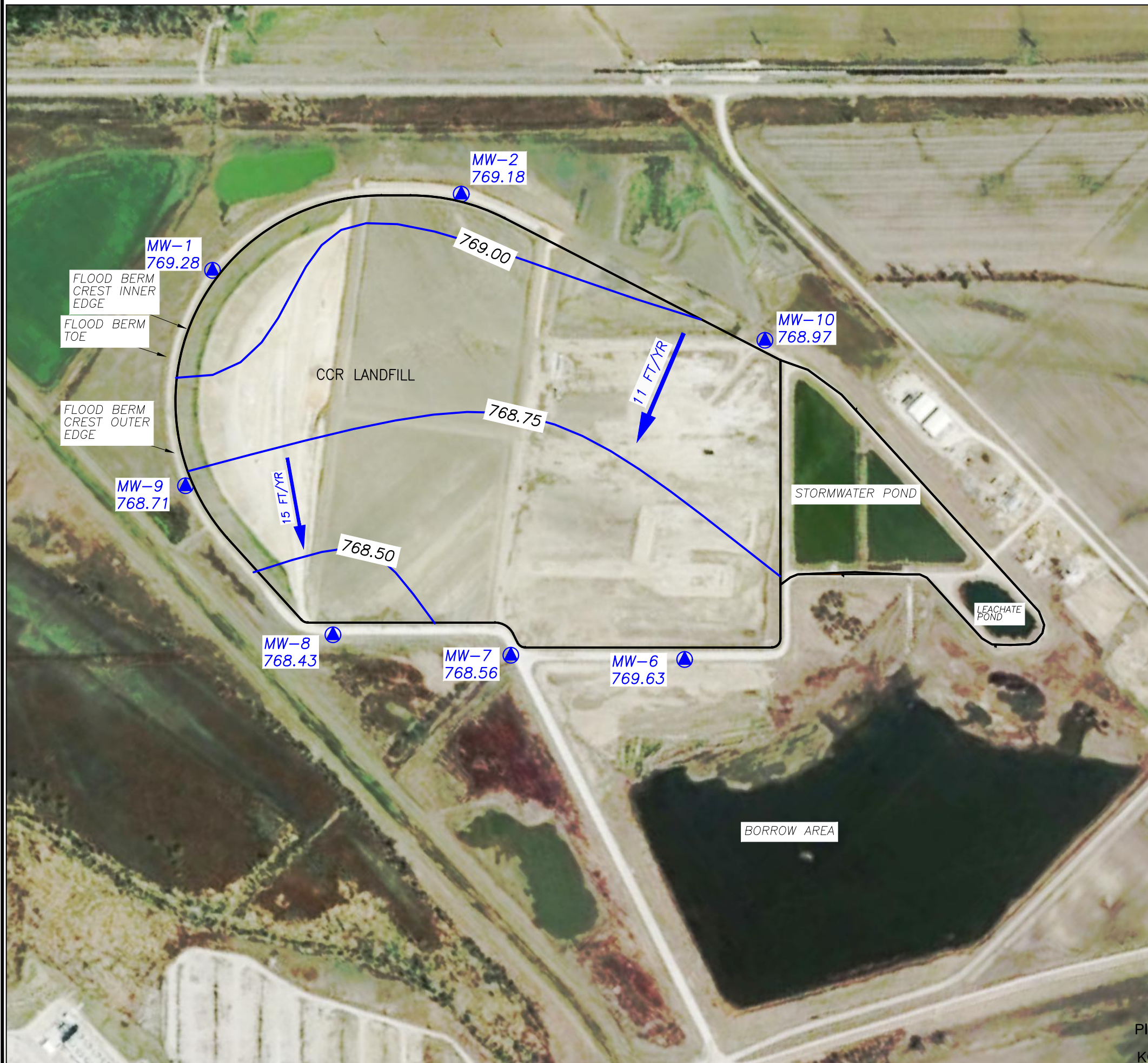
### **ATTACHMENT 3**

#### **Groundwater Potentiometric Surface Maps**

- August 2016 – First background sampling event.
- September 2016 – Second background sampling event.
- November 2016 - Third background sampling event.
- December 2016 - Fourth background sampling event.
- February 2017 - Fifth background sampling event.
- May 2017 - Sixth background sampling event.
- July 2017 - Seventh background sampling event.
- August 2017 - Eighth background sampling event.
- October 2017 – Ninth background sampling event and Fall semiannual detection monitoring sampling event.



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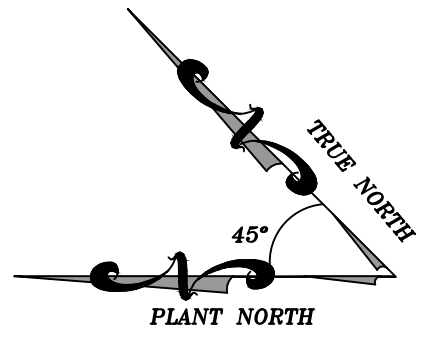


**LEGEND**

- CCR UNIT BOUNDARY (APPROXIMATE LIMITS)
- MW-704 CCR GROUNDWATER MONITORING SYSTEM WELLS (869.52) (GROUNDWATER ELEVATION)
- 875- GROUNDWATER POTENTIOMETRIC SURFACE ELEVATIONS
- 16 FT/YR DIRECTION OF GROUNDWATER FLOW AND CALCULATED GROUNDWATER FLOW RATE (FEET/YEAR)

**NOTES:**

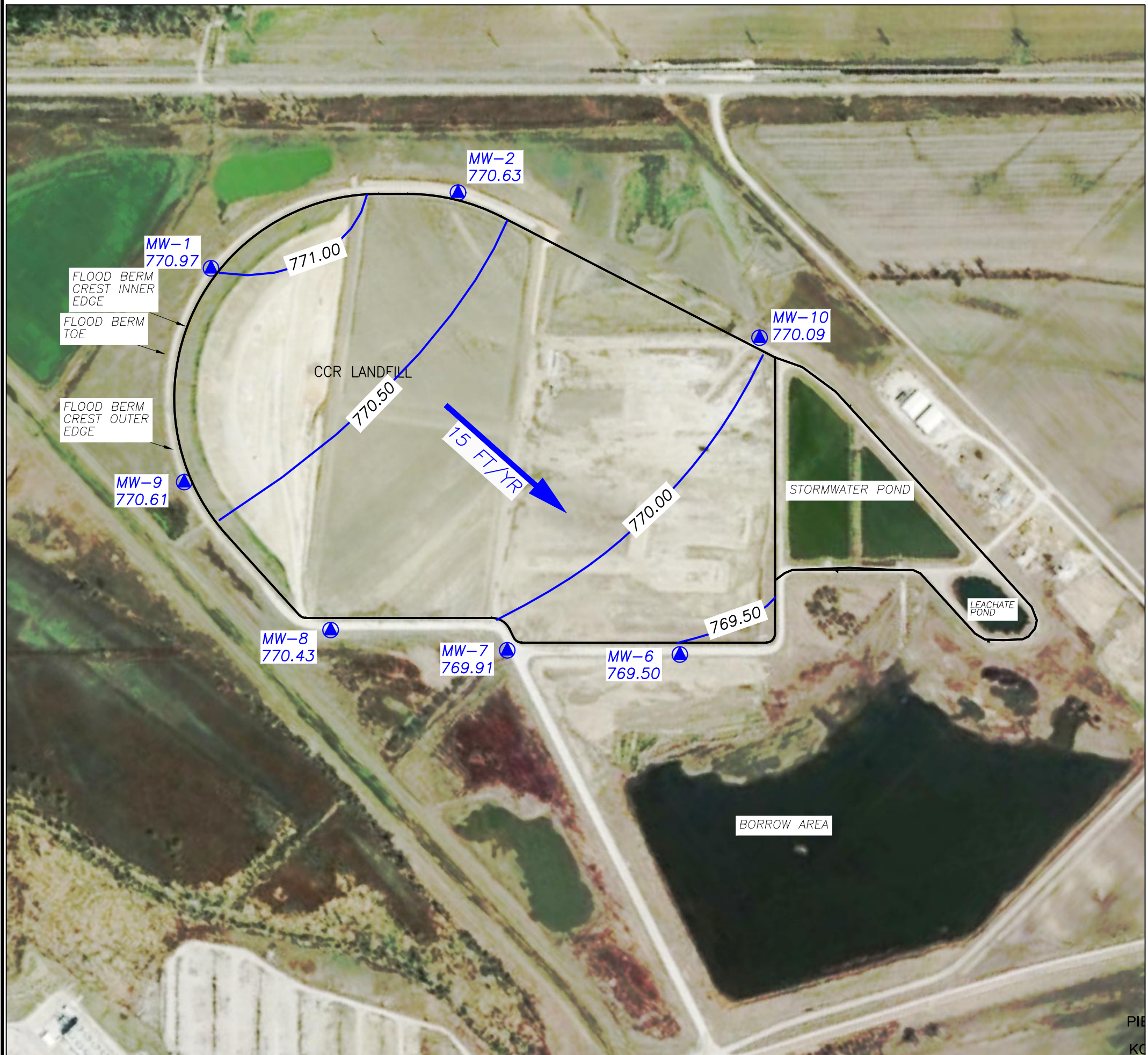
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2. VERTICAL DATUM: NAVD 88
3. GOOGLE EARTH IMAGE DATED MARCH 27, 2017
4. APPROXIMATE BOUNDARY LOCATION PROVIDED BY BURNS & MCDONNELL
5. MONITORING WELL LOCATIONS PROVIDED BY SHAFFER, KLINE, & WARREN
6. WATER LEVEL MEASUREMENTS COMPLETED ON AUGUST 18, 2016



CK: BY	-	-	-	-	-
	-	-	-	-	-
REV	△	△	△	△	△
DATE	-	-	-	-	-
SHEET TITLE	POTENTIOMETRIC SURFACE MAP (AUGUST 2016) CCR LANDFILL				
PROJECT TITLE	2017 GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT ADDENDUM				
CLIENT	EVERGY METRO, INC IATAN GENERATING STATION WESTON, MISSOURI				
SCS ENGINEERS	7311 W. 130th St., Ste. 100 Overland Park, MO 66213 PH: (813) 681-0030 FAX: (813) 681-0012 PROJ. NO. 27213167.17 DSK: BY: LAM DWN: BY: LAM CHK: BY: JRR Q/A: BY: JRR PROJ. MGR: JRR				
CADD FILE:	IATAN LANDFILL AND IMPOUND GW MAP 2016-8.dwg				
DATE:	12/1/2022				
FIGURE NO.	1				



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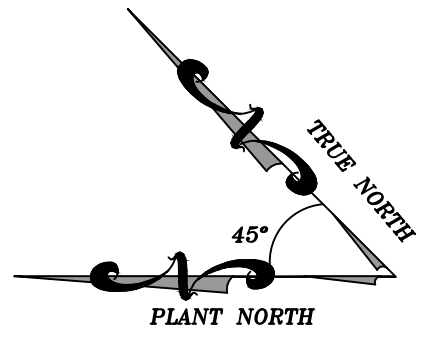


**LEGEND**

- CCR UNIT BOUNDARY (APPROXIMATE LIMITS)
- MW-704 CCR GROUNDWATER MONITORING SYSTEM WELLS (869.52) (GROUNDWATER ELEVATION)
- 875- GROUNDWATER POTENTIOMETRIC SURFACE ELEVATIONS
- 16 FT/YR DIRECTION OF GROUNDWATER FLOW AND CALCULATED GROUNDWATER FLOW RATE (FEET/YEAR)

**NOTES:**

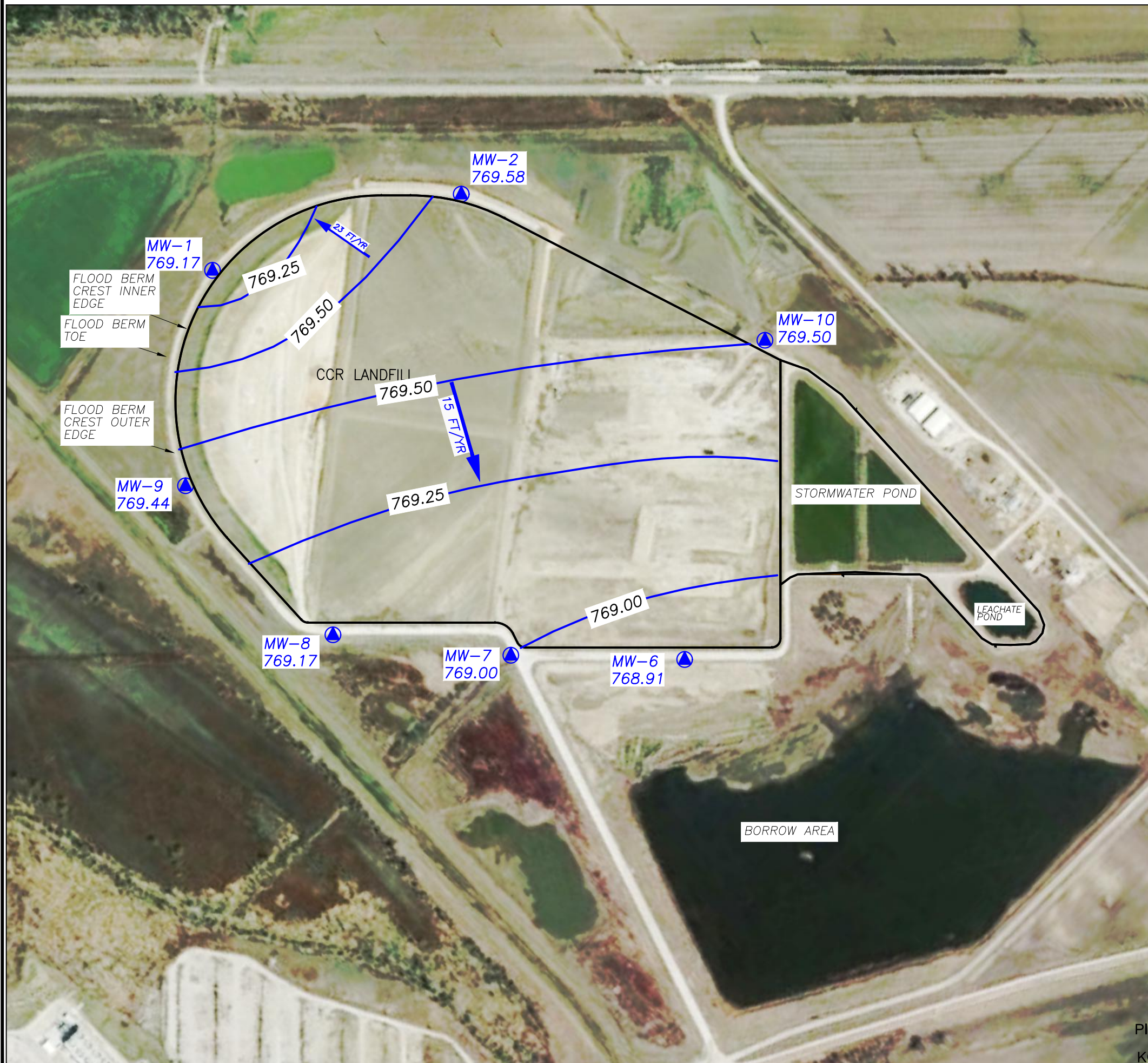
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4. APPROXIMATE BOUNDARY LOCATION PROVIDED BY BURNS & MCDONNELL
5. MONITORING WELL LOCATIONS PROVIDED BY SHAFFER, KLINE, & WARREN
6. WATER LEVEL MEASUREMENTS COMPLETED ON SEPTEMBER 29, 2016



CK: BY	-	REV	-	DATE	-
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PROJECT TITLE		2017 GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT ADDENDUM			
CLIENT	EVERGY METRO, INC IATAN GENERATING STATION WESTON, MISSOURI				
SCS ENGINEERS	7311 W. 130th St., Ste. 100 Overland Park, MO 66213 PH: (813) 681-0030 FAX: (813) 681-0012 PROJ. NO. 27213167.17 DSK: BY: LAM DWN: BY: LAM CHK: BY: JRR Q/A: BY: JRR PROJ. MGR: JRR				
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DATE:	12/1/2022				
FIGURE NO.	2				



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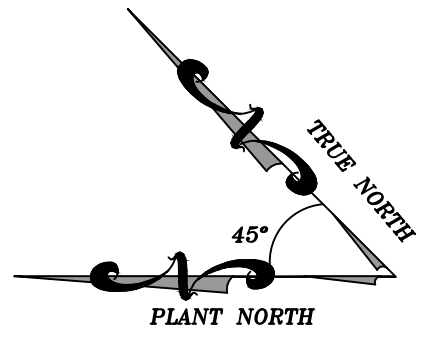


**LEGEND**

- CCR UNIT BOUNDARY (APPROXIMATE LIMITS)
- MW-704 CCR GROUNDWATER MONITORING SYSTEM WELLS (869.52) (GROUNDWATER ELEVATION)
- 875- GROUNDWATER POTENTIOMETRIC SURFACE ELEVATIONS
- 16 FT/YR DIRECTION OF GROUNDWATER FLOW AND CALCULATED GROUNDWATER FLOW RATE (FEET/YEAR)

**NOTES:**

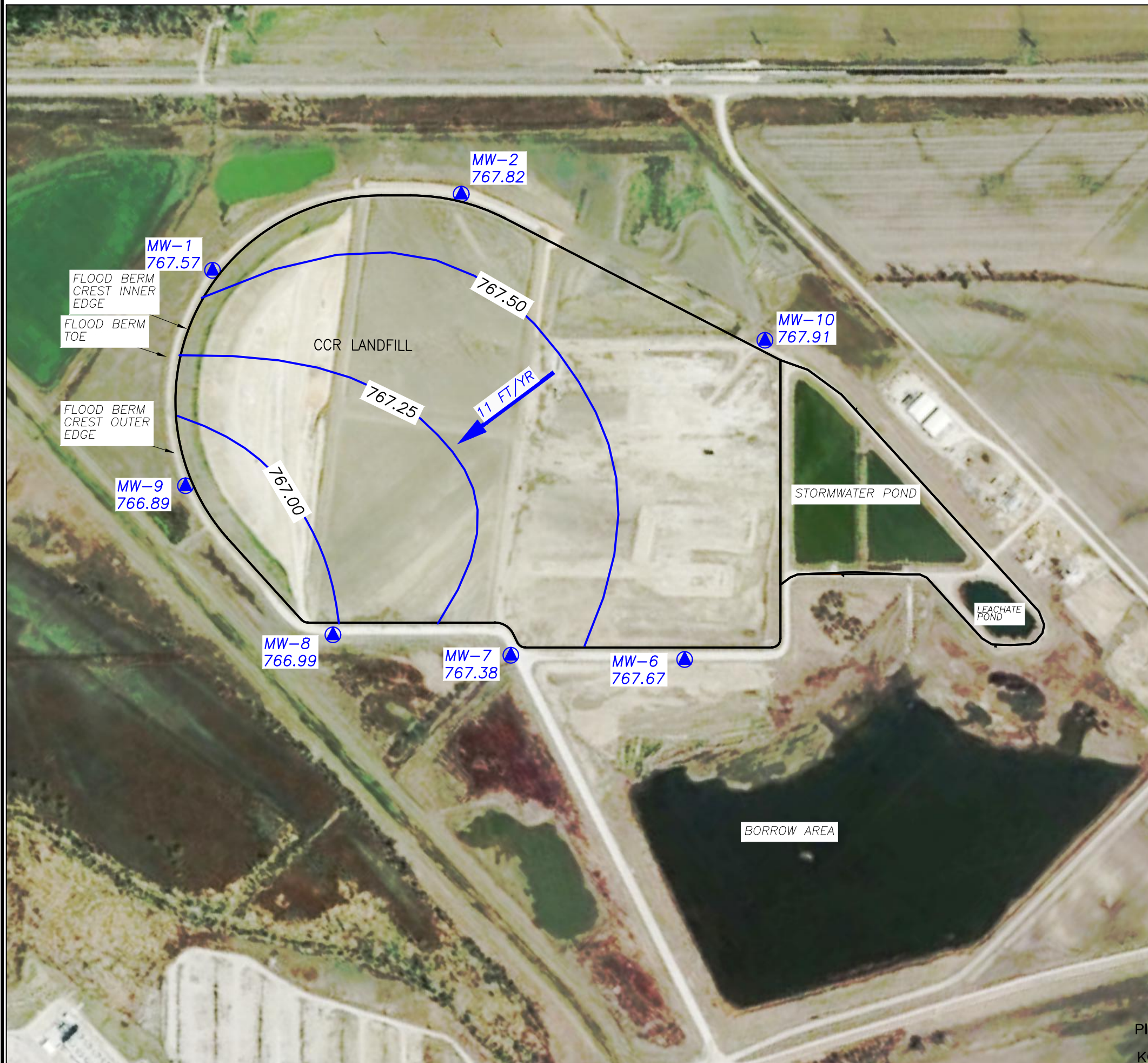
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4. APPROXIMATE BOUNDARY LOCATION PROVIDED BY BURNS & MCDONNELL
5. MONITORING WELL LOCATIONS PROVIDED BY SHAFFER, KLINE, & WARREN
6. WATER LEVEL MEASUREMENTS COMPLETED ON NOVEMBER 9, 2016



CK: BY	-	REV	-	DATE	SHEET TITLE	PROJECT TITLE
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CLIENT						
EVERGY METRO, INC IATAN GENERATING STATION WESTON, MISSOURI						
SCS ENGINEERS 7911 W. 130th St., Ste. 100 Overland Park, MO 66213 PH: (813) 681-0030 FAX: (813) 681-0012 PROJ. NO.: 27213167.17 DISK: BY: LAM DWN. BY: LAM CHK. BY: JRR O/A REV BY: JRR PHOT. MGR: JRR						
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DATE: 12/1/2022						
FIGURE NO. <b>3</b>						



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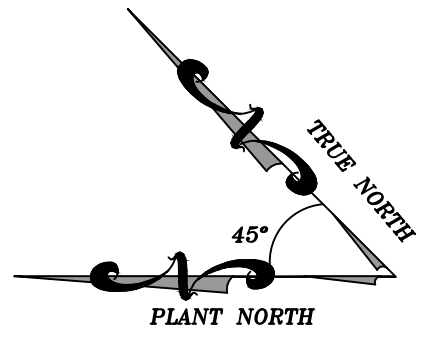


**LEGEND**

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- MW-704 CCR GROUNDWATER MONITORING SYSTEM WELLS (869.52) (GROUNDWATER ELEVATION)
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**NOTES:**

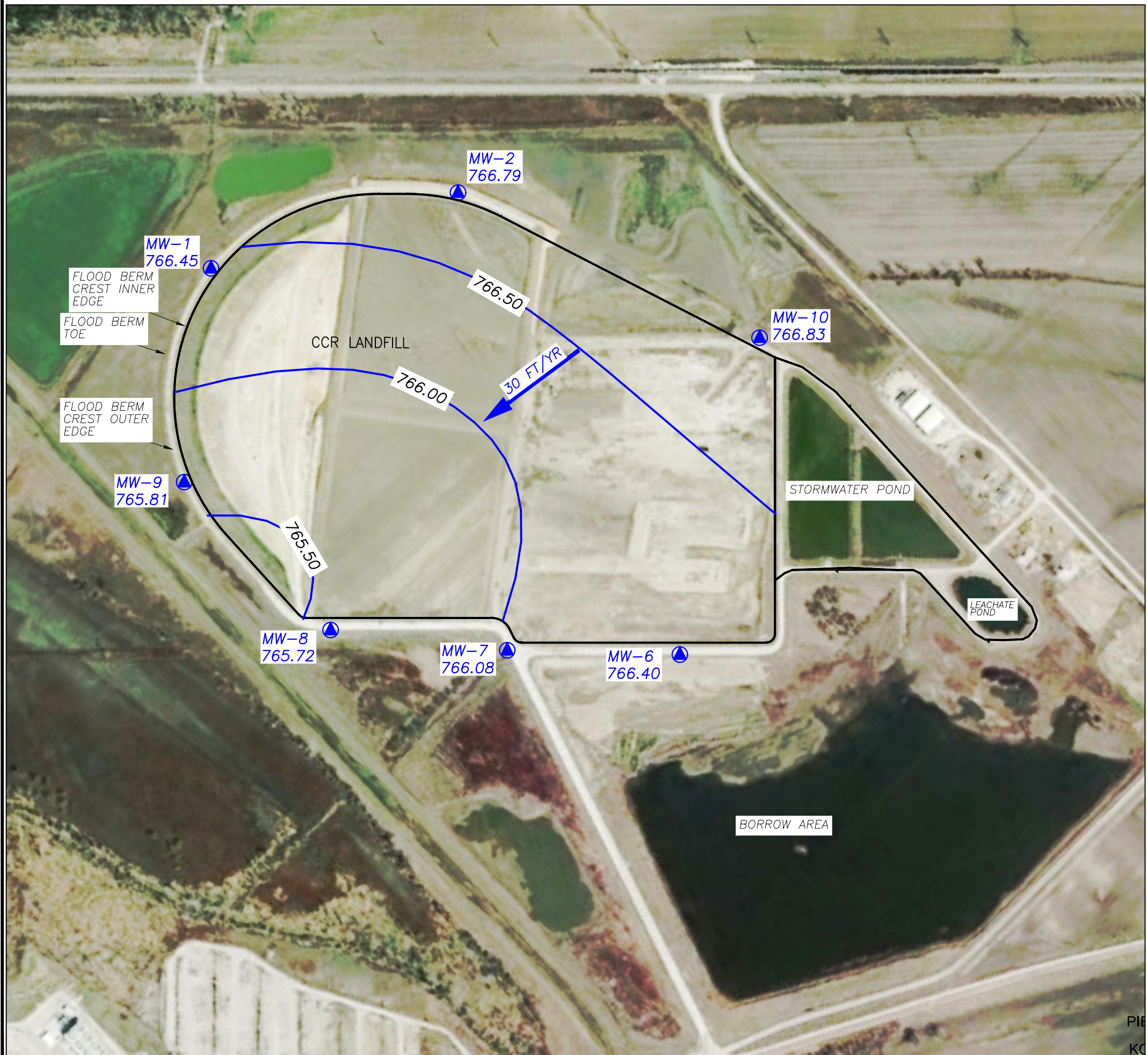
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4. APPROXIMATE BOUNDARY LOCATION PROVIDED BY BURNS & MCDONNELL
5. MONITORING WELL LOCATIONS PROVIDED BY SHAFFER, KLINE, & WARREN
6. WATER LEVEL MEASUREMENTS COMPLETED ON DECEMBER 21, 2016



CK: BY	-	REV	-	DATE	-
	-		-		-
SHEET TITLE		POTENTIOMETRIC SURFACE MAP (DECEMBER 2016) CCR LANDFILL			
PROJECT TITLE		2017 GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT ADDENDUM			
CLIENT	EVERGY METRO, INC IATAN GENERATING STATION WESTON, MISSOURI				
SCS ENGINEERS	7311 W. 130th St., Ste. 100 Overland Park, MO 66213 PH: (813) 681-0030 FAX: (813) 681-0012 PROJ. NO. 27213167.17 DSK: BY: LAM DWN: BY: LAM CHK: BY: JRR Q/A: BY: JRR PHOT. MGR: JRR				
CADD FILE:	IATAN LANDFILL AND IMPOUNDMENT GW MAP 2016-12.dwg				
DATE:	12/1/2022				
FIGURE NO.	4				



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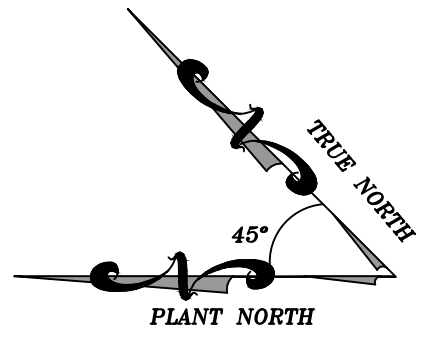


**LEGEND**

- CCR UNIT BOUNDARY (APPROXIMATE LIMITS)
- MW-704 CCR GROUNDWATER MONITORING SYSTEM WELLS (869.52) (GROUNDWATER ELEVATION)
- 875- GROUNDWATER POTENTIOMETRIC SURFACE ELEVATIONS
- 16 FT/YR DIRECTION OF GROUNDWATER FLOW AND CALCULATED GROUNDWATER FLOW RATE (FEET/YEAR)

**NOTES:**

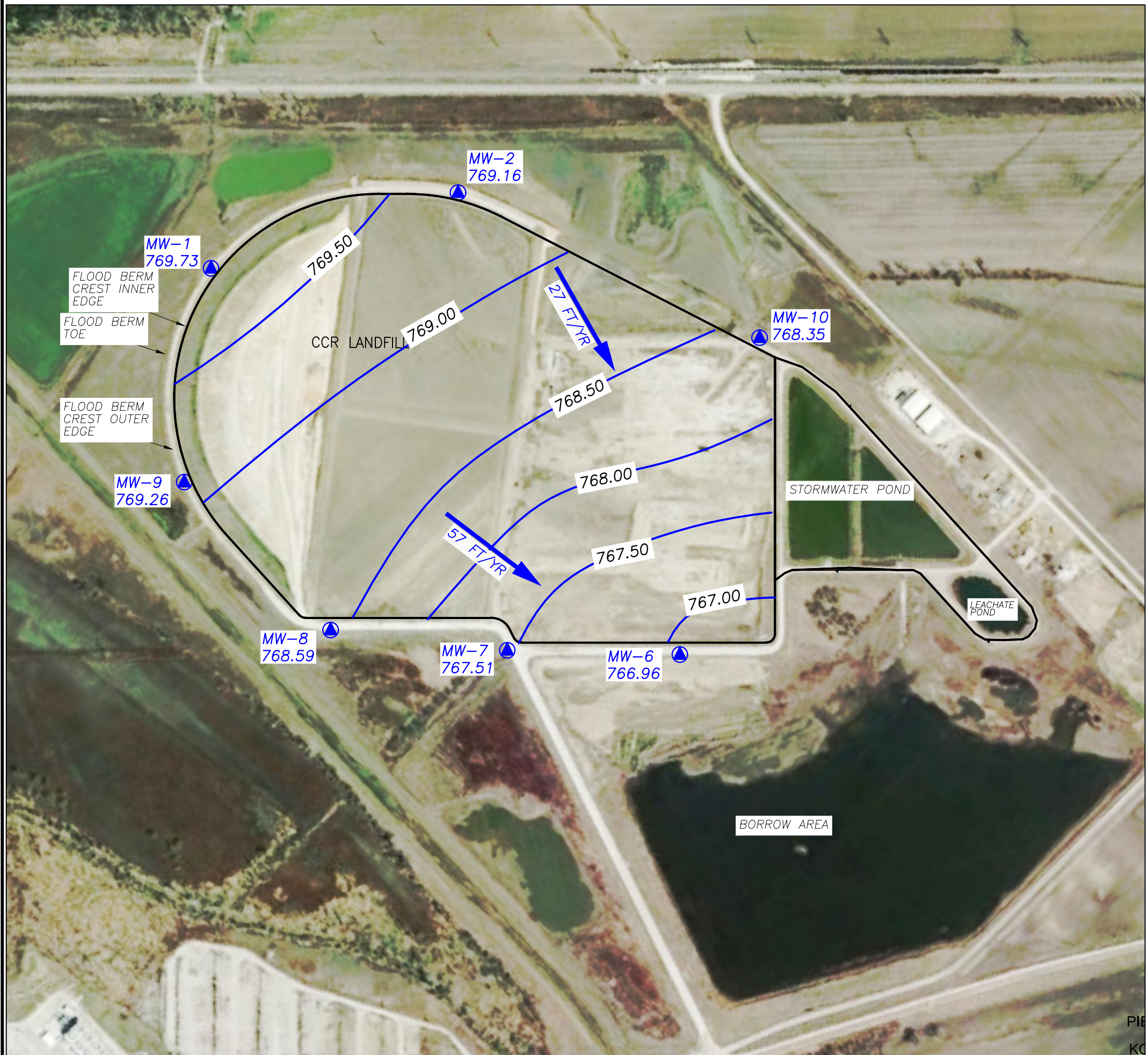
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2. VERTICAL DATUM: NAVD 88
3. GOOGLE EARTH IMAGE DATED MARCH 27, 2017
4. APPROXIMATE BOUNDARY LOCATION PROVIDED BY BURNS & MCDONNELL
5. MONITORING WELL LOCATIONS PROVIDED BY SHAFFER, KLINE, & WARREN
6. WATER LEVEL MEASUREMENTS COMPLETED ON FEBRUARY 3, 2017



CK: BY	-	-	-	-	-
	-	-	-	-	-
REV	△	△	△	△	△
DATE	-	-	-	-	-
SHEET TITLE	POTENTIOMETRIC SURFACE MAP (FEBRUARY 2017) CCR LANDFILL				
PROJECT TITLE	2017 GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT ADDENDUM				
CLIENT	EVERGY METRO, INC IATAN GENERATING STATION WESTON, MISSOURI				
SCS ENGINEERS	7311 W. 130th St., Ste. 100 Overland Park, MO 66213 PH: (813) 681-0030 FAX: (813) 681-0012				
PROJ. NO.	27213167.17	DWN. BY:	LAM	Q/A REV BY:	JRR
DSK. BY:	LAM	CHK. BY:	JRR	PHOT. MGR:	JRR
CADD FILE:	IATAN LANDFILL AND IMPOUNDMENT GW MAP 2017-2.dwg				
DATE:	12/1/2022				
FIGURE NO.	5				



C:\Users\5412\Documents\Temp\AcPublish\_17080\Iatan Landfill and Impound GW Map 2017-5.dwg Dec 12, 2022 - 8:43am Layout Name: Fig 2\_CCR By: 5412jds

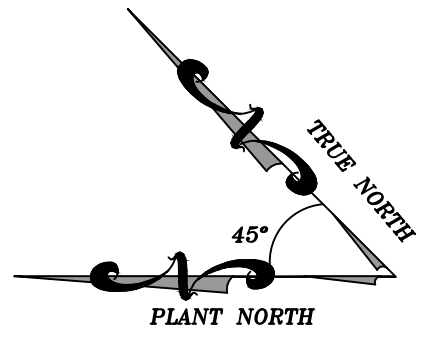


**LEGEND**

- CCR UNIT BOUNDARY (APPROXIMATE LIMITS)
- MW-704 CCR GROUNDWATER MONITORING SYSTEM WELLS (869.52) (GROUNDWATER ELEVATION)
- 875- GROUNDWATER POTENTIOMETRIC SURFACE ELEVATIONS
- 16 FT/YR DIRECTION OF GROUNDWATER FLOW AND CALCULATED GROUNDWATER FLOW RATE (FEET/YEAR)

**NOTES:**

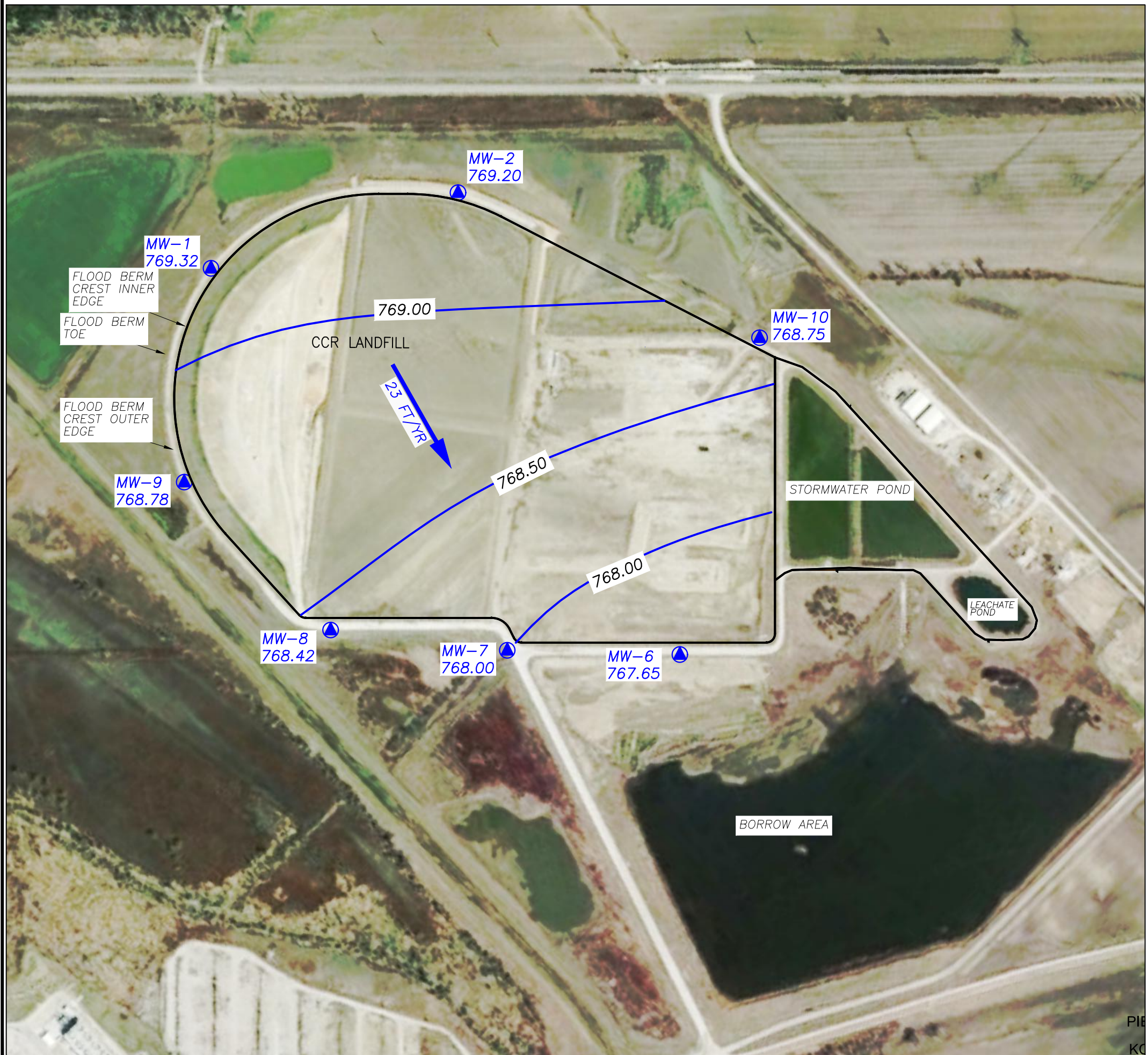
1. HORIZONTAL DATUM: MISSOURI STATE PLANE COORDINATE SYSTEM WEST ZONE (NAD 83)
2. VERTICAL DATUM: NAVD 88
3. GOOGLE EARTH IMAGE DATED MARCH 27, 2017
4. APPROXIMATE BOUNDARY LOCATION PROVIDED BY BURNS & MCDONNELL
5. MONITORING WELL LOCATIONS PROVIDED BY SHAFFER, KLINE, & WARREN
6. WATER LEVEL MEASUREMENTS COMPLETED ON MAY 24, 2017



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REV	△	△	△	△	△
DATE	-	-	-	-	-
SHEET TITLE	POTENTIOMETRIC SURFACE MAP (MAY 2017) CCR LANDFILL				
PROJECT TITLE	2017 GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT ADDENDUM				
CLIENT	EVERGY METRO, INC IATAN GENERATING STATION WESTON, MISSOURI				
SCS ENGINEERS	7311 W. 130th St., Ste. 100 Columbia, MO 65243 PH: (813) 681-0030 FAX: (813) 681-0012				
PROJ. NO.	27213167.17	DWN. BY:	LAM	Q/A REV BY:	JRR
DSK. BY:	LAM	CHK. BY:	JRR	PHOT. MGR:	JRR
CADD FILE:	IATAN LANDFILL AND IMPOUND GW MAP 2017-5.dwg				
DATE:	12/1/2022				
FIGURE NO.	6				



C:\Users\5412\Documents\Temp\AcPublish\_17080\Iatan Landfill and Impoundment GW Map 2017-7.dwg Dec 12, 2022 - 8:44am Layout Name: Fig 2\_CCR By: 5412jds

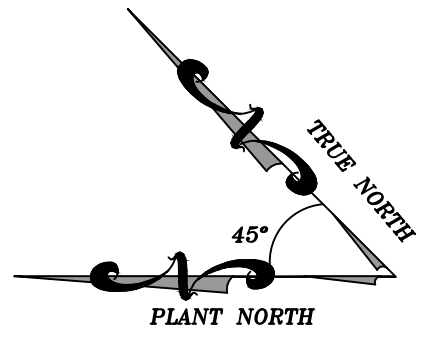


**LEGEND**

- CCR UNIT BOUNDARY (APPROXIMATE LIMITS)
- MW-704 CCR GROUNDWATER MONITORING SYSTEM WELLS (869.52) (GROUNDWATER ELEVATION)
- 875- GROUNDWATER POTENTIOMETRIC SURFACE ELEVATIONS
- 16 FT/YR DIRECTION OF GROUNDWATER FLOW AND CALCULATED GROUNDWATER FLOW RATE (FEET/YEAR)

**NOTES:**

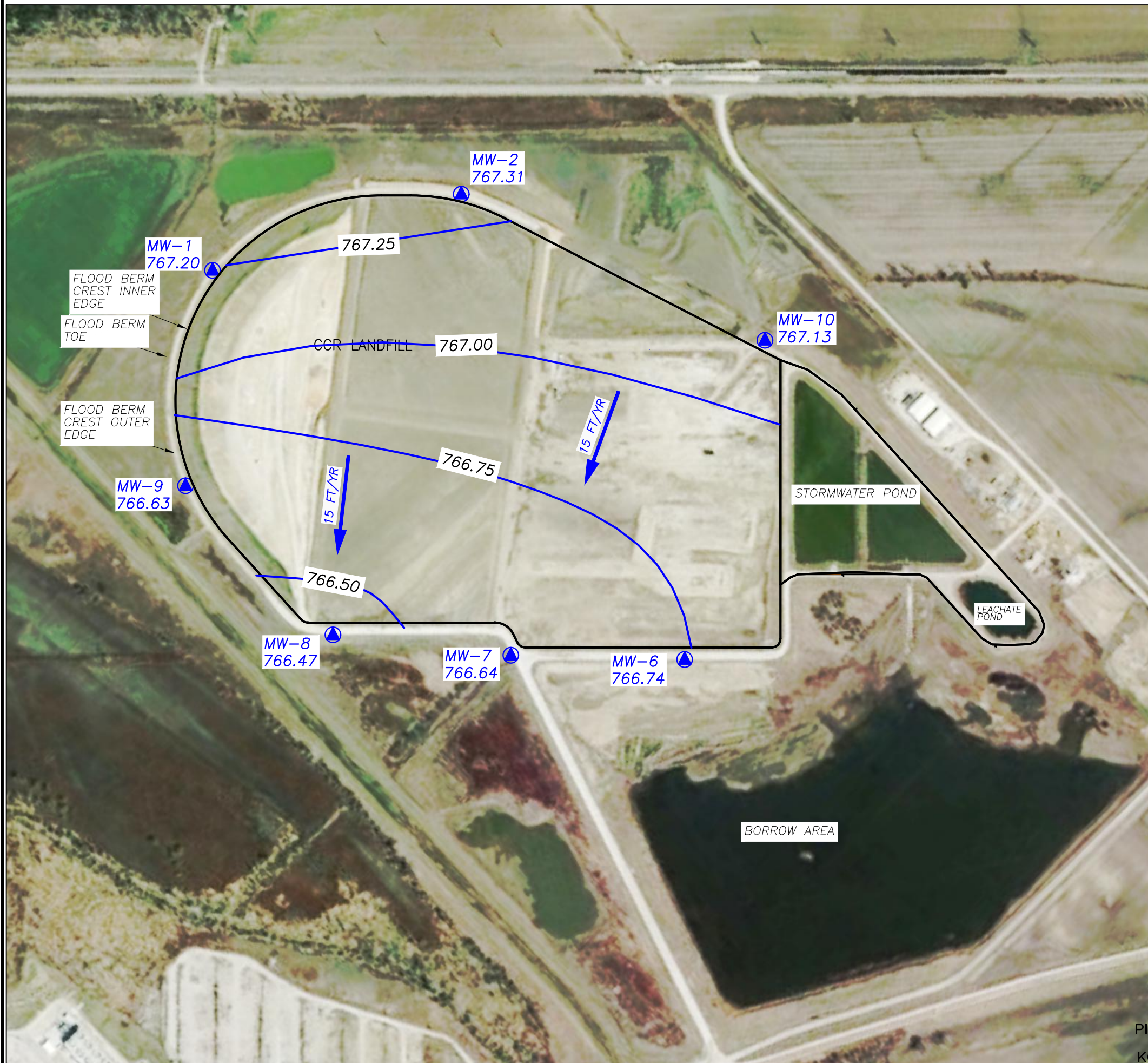
1. HORIZONTAL DATUM: MISSOURI STATE PLANE COORDINATE SYSTEM WEST ZONE (NAD 83)
2. VERTICAL DATUM: NAVD 88
3. GOOGLE EARTH IMAGE DATED MARCH 27, 2017
4. APPROXIMATE BOUNDARY LOCATION PROVIDED BY BURNS & MCDONNELL
5. MONITORING WELL LOCATIONS PROVIDED BY SHAFFER, KLINE, & WARREN
6. WATER LEVEL MEASUREMENTS COMPLETED ON JULY 5, 2017



CK: BY	-	REV	-	DATE	-
	-		-		-
SHEET TITLE		POTENTIOMETRIC SURFACE MAP (JULY 2017) CCR LANDFILL			
PROJECT TITLE		2017 GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT ADDENDUM			
CLIENT	EVERGY METRO, INC IATAN GENERATING STATION WESTON, MISSOURI				
SCS ENGINEERS	7311 W. 130th St., Ste. 100 Overland Park, MO 66213 PH: (813) 681-0030 FAX: (813) 681-0012 PROJ. NO. 27213167.17 DSK: BY: LAM DWN: BY: LAM CHK: BY: JRR Q/A: BY: JRR PROJ. MGR: JRR				
CADD FILE:	IATAN LANDFILL AND IMPOUNDMENT GW MAP 2017-7.dwg				
DATE:	12/1/2022				
FIGURE NO.	7				



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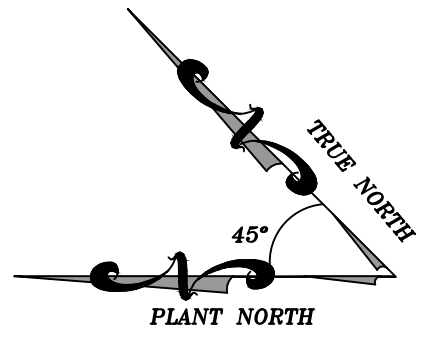


**LEGEND**

- CCR UNIT BOUNDARY (APPROXIMATE LIMITS)
- MW-704 CCR GROUNDWATER MONITORING SYSTEM WELLS (869.52) (GROUNDWATER ELEVATION)
- 875- GROUNDWATER POTENTIOMETRIC SURFACE ELEVATIONS
- 16 FT/YR DIRECTION OF GROUNDWATER FLOW AND CALCULATED GROUNDWATER FLOW RATE (FEET/YEAR)

**NOTES:**

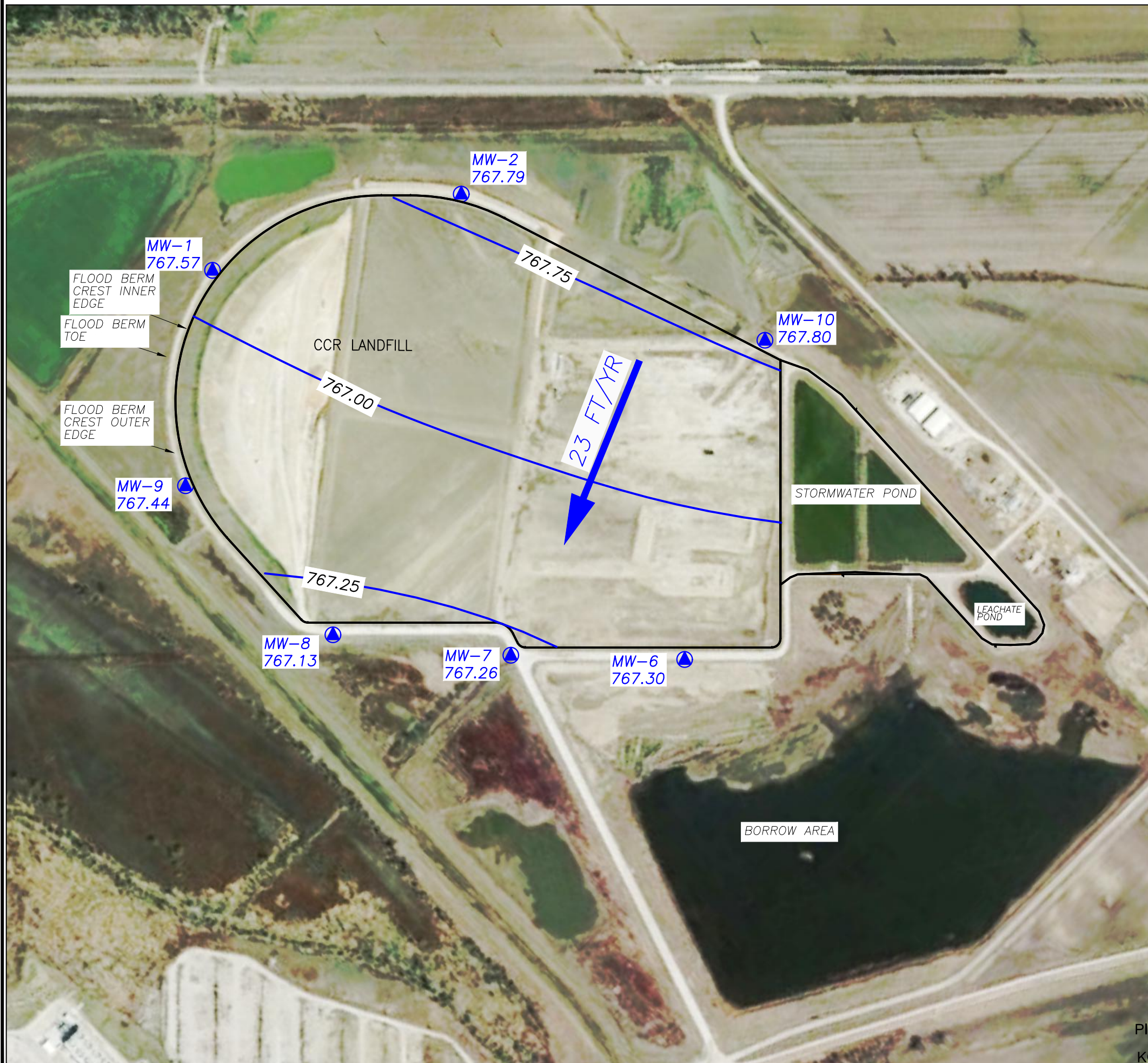
1. HORIZONTAL DATUM: MISSOURI STATE PLANE COORDINATE SYSTEM WEST ZONE (NAD 83)
2. VERTICAL DATUM: NAVD 88
3. GOOGLE EARTH IMAGE DATED MARCH 27, 2017
4. APPROXIMATE BOUNDARY LOCATION PROVIDED BY BURNS & MCDONNELL
5. MONITORING WELL LOCATIONS PROVIDED BY SHAFFER, KLINE, & WARREN
6. WATER LEVEL MEASUREMENTS COMPLETED ON AUGUST 17, 2017



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REV	△	△	△	△	△
DATE	-	-	-	-	-
SHEET TITLE	POTENTIOMETRIC SURFACE MAP (AUGUST 2017) CCR LANDFILL				
PROJECT TITLE	2017 GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT ADDENDUM				
CLIENT	EVERGY METRO, INC IATAN GENERATING STATION WESTON, MISSOURI				
SCS ENGINEERS	7311 W. 130th St., Ste. 100 Overland Park, MO 66213 PH: (813) 681-0030 FAX: (813) 681-0012 PROJ. NO. 27213167.17 DSK: BY: LAM DWN: BY: LAM CHK: BY: JRR Q/A: BY: JRR PROJ. MGR: JRR				
CADD FILE:	IATAN LANDFILL AND IMPOUNDMENT GW MAP 2017-8.dwg				
DATE:	12/1/2022				
FIGURE NO.	8				



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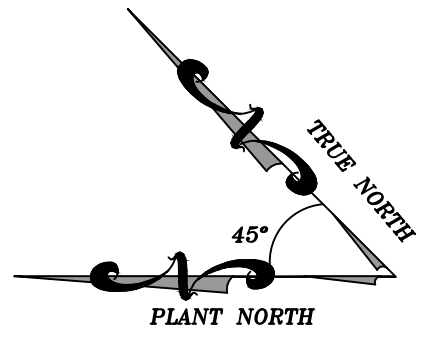


**LEGEND**

- CCR UNIT BOUNDARY (APPROXIMATE LIMITS)
- MW-704 CCR GROUNDWATER MONITORING SYSTEM WELLS (869.52) (GROUNDWATER ELEVATION)
- 875- GROUNDWATER POTENTIOMETRIC SURFACE ELEVATIONS
- 16 FT/YR DIRECTION OF GROUNDWATER FLOW AND CALCULATED GROUNDWATER FLOW RATE (FEET/YEAR)

**NOTES:**

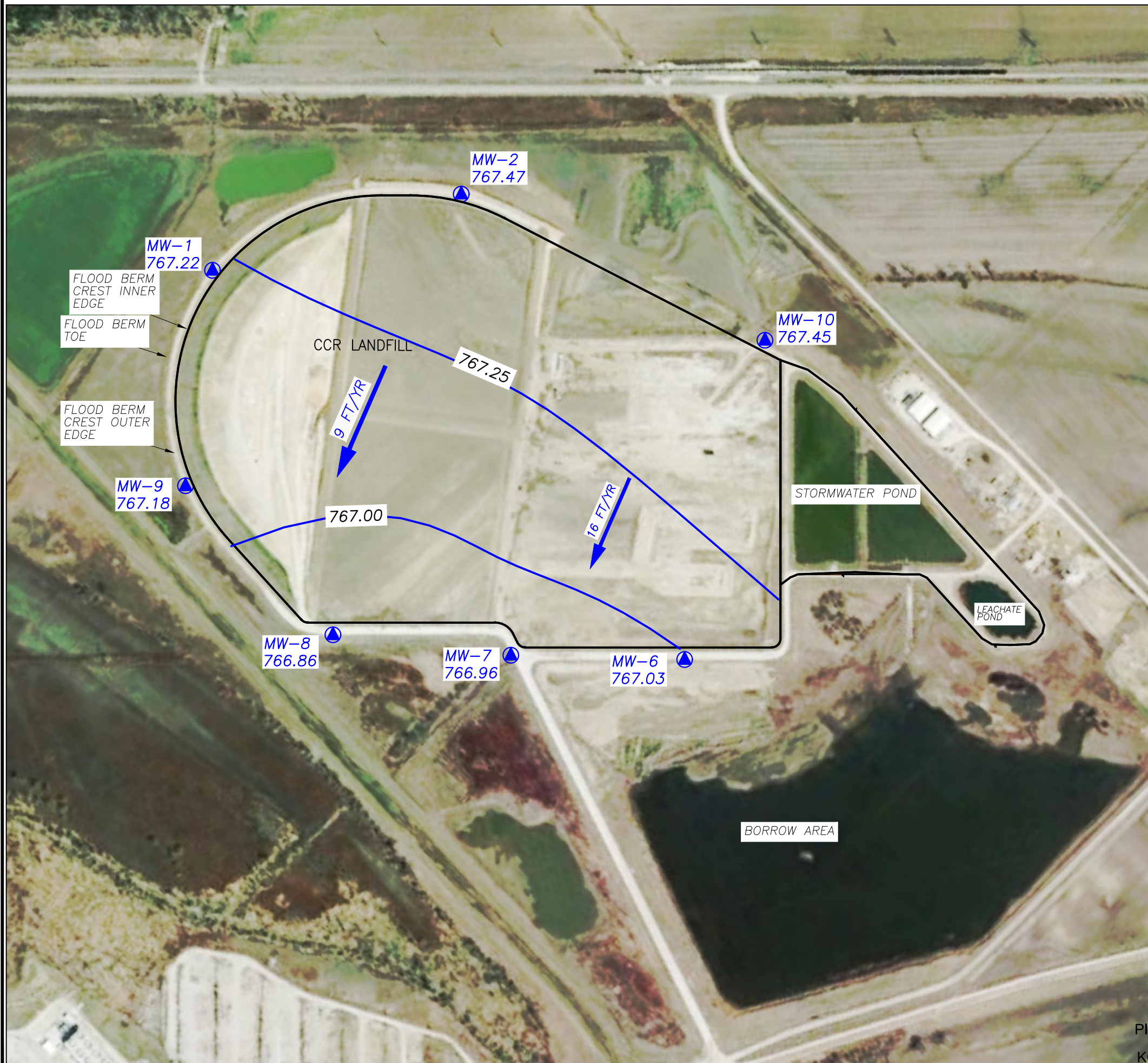
1. HORIZONTAL DATUM: MISSOURI STATE PLANE COORDINATE SYSTEM WEST ZONE (NAD 83)
2. VERTICAL DATUM: NAVD 88
3. GOOGLE EARTH IMAGE DATED MARCH 27, 2017
4. APPROXIMATE BOUNDARY LOCATION PROVIDED BY BURNS & MCDONNELL
5. MONITORING WELL LOCATIONS PROVIDED BY SHAFFER, KLINE, & WARREN
6. WATER LEVEL MEASUREMENTS COMPLETED ON OCTOBER 5, 2017



CK BY		REV		DATE	
SHEET TITLE		POTENTIOMETRIC SURFACE MAP (OCTOBER 2017) CCR LANDFILL			
PROJECT TITLE		2017 GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT ADDENDUM			
CLIENT	EVERGY METRO, INC IATAN GENERATING STATION WESTON, MISSOURI				
SCS ENGINEERS	7911 W. 130th St., Ste. 100 Overland Park, MO 66209 PH: (813) 681-0030 FAX: (813) 681-0012 PROJ. NO. 27213167.17 DSK: BY: LAM    DWN: BY: LAM    Q/A: BY: JRR CHK: BY: LAM    CHK: BY: JRR    PHOT. MGR: JRR				
CADD FILE:	IATAN LANDFILL AND IMPOUNDMENT GW MAP 2017-10.dwg				
DATE:	12/1/2022				
FIGURE NO.	9				



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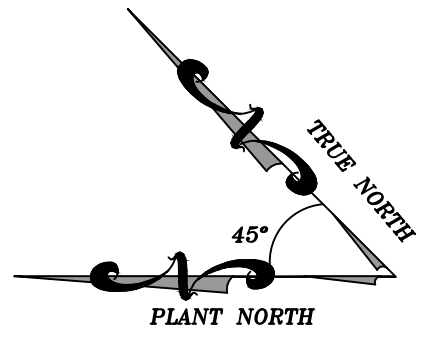


**LEGEND**

- CCR UNIT BOUNDARY (APPROXIMATE LIMITS)
- MW-704 CCR GROUNDWATER MONITORING SYSTEM WELLS (869.52) (GROUNDWATER ELEVATION)
- 875- GROUNDWATER POTENTIOMETRIC SURFACE ELEVATIONS
- 16 FT/YR DIRECTION OF GROUNDWATER FLOW AND CALCULATED GROUNDWATER FLOW RATE (FEET/YEAR)

**NOTES:**

1. HORIZONTAL DATUM: MISSOURI STATE PLANE COORDINATE SYSTEM WEST ZONE (NAD 83)
2. VERTICAL DATUM: NAVD 88
3. GOOGLE EARTH IMAGE DATED MARCH 27, 2017
4. APPROXIMATE BOUNDARY LOCATION PROVIDED BY BURNS & MCDONNELL
5. MONITORING WELL LOCATIONS PROVIDED BY SHAFFER, KLINE, & WARREN
6. WATER LEVEL MEASUREMENTS COMPLETED ON NOVEMBER 14, 2017



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DATE	—	—	—	—	—
SHEET TITLE	POTENTIOMETRIC SURFACE MAP (NOVEMBER 2017) CCR LANDFILL				
PROJECT TITLE	2017 GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT ADDENDUM				
CLIENT	EVERGY METRO, INC IATAN GENERATING STATION WESTON, MISSOURI				
SCS ENGINEERS	7911 W. 130th St., Ste. 100 Overland Park, MO 66213 PH: (813) 681-0030 FAX: (813) 681-0012 PROJ. NO. 27213167.17 DSK: BY: LAM DWN: BY: LAM CHK: BY: JRR Q/A: BY: JRR PROJ. MGR: JRR				
CADD FILE:	IATAN LANDFILL AND IMPOUND GW MAP 2017-11.dwg				
DATE:	12/1/2022				
FIGURE NO.	10				