K P R G

ENVIRONMENTAL CONSULTATION & REMEDIATION

KPRG and Associates, Inc.

CCR COMPLIANCE
ANNUAL GROUNDWATER MONITORING and CORRECTIVE ACTION REPORT - 2018

Midwest Generation, LLC
Joliet #29 Generating Station
1800 Channahon Road
Joliet, Illinois

Prepared By: KPRG and Associates, Inc.
14665 West Lisbon Road, Suite 1A
Brookfield, WI 53005

January 31, 2019

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APPENDICES

1.0 INTRODUCTION

The Detection Monitoring requirements in accordance with the Federal Register, Environmental Protection Agency, 40 CFR Parts 257.94, Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule dated April 17, 2015 (CCR Rule) have been completed for the ash pond monitoring wells located at the Midwest Generation, LLC (Midwest Generation) Joliet #29 Generating Station. The wells sampled were selected by to meet the monitoring requirements of the CCR Rule for Ash Pond 2. The monitoring well network around this pond consists of four monitoring wells (MW-3, MW-4, MW-5 and MW-10 [upgradient]) as shown on Figure 1.

The first CCR Compliance Annual Groundwater Monitoring and Corrective Action report was submitted January 24, 2018. This second annual report covers the work performed relative to CCR groundwater monitoring from January 1, 2018 through the end of 2018. It does not duplicate information or activities previously reported for 2017. It is prepared in accordance with Section 257.90(e)(1-5) and summarizes the sampling procedures used, provides an evaluation of groundwater flow conditions, summarizes the analytical data generated and provides a discussion of the statistical evaluations completed as a basis for determining the appropriate next phase of compliance activities.

2.0 FIELD PROCEDURES AND GROUNDWATER FLOW EVALUATION

2.1 Field Procedures

As previously noted, the CCR groundwater monitoring network for Ash Pond 2 consists of four wells (MW-3, MW-4, MW-5 and MW-10) as shown on Figure 1. As part of sampling procedures, the integrity of all monitoring wells was inspected and water levels obtained using an electronic water level meter (see summary of water level discussion below). During all sampling events, the wells were in good condition with locked protector casings, and the concrete surface seals were intact.

All groundwater samples were collected using the low-flow sampling technique from dedicated pumps. The samples were not filtered prior to analysis to provide for total metals concentrations as opposed to dissolved metals concentrations. One duplicate sample was collected from a randomly selected monitoring well per sampling event for quality assurance purposes.

2.2 Groundwater Flow Evaluation

Water level data measurements were obtained from each well during each round of groundwater monitoring. A complete round of water levels was collected prior to initiating sampling, and the water level data are summarized in Table 1. The water levels were used to generate a groundwater flow map for each sampling event. These maps are provided as Figures 2 and 3. A review of the maps indicates a consistent generally southerly groundwater flow direction and a fairly shallow horizontal hydraulic gradient. In accordance with general groundwater sampling requirements under Section 257.93(c), Table 2 provides a summary of the flow direction and an estimated rate of groundwater flow for each sampling event. The flow rate was calculated using the following equation:

$$V_s = \frac{K\,dh}{n_e\,dl}$$, where

V_s is seepage velocity (distance/time)
K is hydraulic conductivity (distance/time)
dh/dl is hydraulic gradient (unitless)
n_e is effective porosity (unitless)

The average hydraulic conductivity of 3.896×10^{-3} ft/sec used in Table 2 was obtained from the Hydrogeologic Assessment Report dated February 2011 and prepared by Patrick Engineering. The estimated effective porosity of the aquifer materials (0.35) was obtained from literature (Applied Hydrogeology, Fetter, 1980).

3.0 ANALYTICAL DATA AND STATUS OF EVALUATIONS

3.1 Sampling Summary

The groundwater sampling summary from 2018 is provided in Table 3, in accordance with 257.90 (e)(3).

3.2 Data Summary

The analytical data from the detection monitoring groundwater samples for Appendix III parameters are provided in Table 4. Semi-annual groundwater sampling was completed for Appendix III in 2018 in accordance with detection monitoring requirements under Section 257.94. The tables include the sample dates and whether the specific well is considered upgradient or downgradient relative to groundwater flow and the regulated unit. All duplicate values were within an acceptable range. The analytical data packages from the detection monitoring events are provided in Appendix A. Groundwater sampling for Appendix IV was not performed in 2018 since this facility is not in assessment monitoring.

Confirmatory resampling events were limited to any potential statistically significant increases (SSI) for specific parameters at specific wells. 2nd Quarter data indicated sulfate above the calculated Prediction Limit (PL) at wells MW-03 and MW-04 and Total Dissolved Solids (TDS) above its PL at well MW-05. Confirmatory resampling indicated that analytical results were below the PLs for each resampled well. 4th Quarter data indicated boron above the calculated PL at upgradient well MW-10. Confirmatory resampling as permitted within the rule was completed for well MW-10 and the result was below the PL.

3.3. Current Status

Ash Pond 2 is, and continues to be, in detection monitoring, and there has been no transition between monitoring programs in 2018 since no confirmed SSIs were recorded.

4.0 INITIAL STATISTICAL EVALUATION SUMMARY

The initial data to establish statistical background was collected as part of detection monitoring requirements under 257.94(b) and completed in 2017. Previous to 2018, eight rounds of groundwater data were generated for all upgradient and downgradient monitoring wells for Appendix III and Appendix IV parameters. In addition, a ninth round and resample event was collected for subsequent use in statistical comparisons. The Statistical Evaluation Summary dated January 2018 was prepared by KPRG and Associates, Inc. All statistical calculations were completed in accordance with the CCR Compliance Statistical Approach for Groundwater Data Evaluation for Joliet #29 Generating Station dated October 10, 2017.

The completed detection monitoring statistical analysis determined that there were no SSIs relative to established background prediction limits. Continued detection monitoring on a semi-annual basis was [and is] recommended at the time.

5.0 SUMMARY/CONCLUSIONS AND RECOMMENDATIONS

The detection monitoring requirements in accordance with the CCR Rule have been successfully met. While in detection monitoring, Ash Pond 2 analytical results were below the calculated PLs. Groundwater monitoring wells that had analytical results that showed parameters above the PLs were resampled to minimize potential for a false positive. All monitoring wells that were resampled showed analytical results below the prediction limits. Therefore, it is recommended that the site continue with routine detection monitoring at this time. The next round of CCR detection monitoring groundwater sampling is scheduled for 2nd Quarter of 2019.

6.0 REFERENCES

- Federal Register, Environmental Protection Agency, 40 CFR Parts 257 and 261, Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals From Electric Utilities; Final Rule. Vol. 80, No. 74, Friday April 17, 2015.

- Fetter, C.W. Jr., Applied Hydrogeology. Charles E. Merrill Publishing Co., 1980.

- KPRG and Associates, Inc., CCR Compliance Monitoring, Sampling and Analysis Plan, Midwest Generation, LLC Joliet #29 Generating Station. October 10, 2017.

- KPRG and Associates, Inc., CCR Compliance Statistical Approach for Groundwater Data Evaluation, Midwest Generation, LLC Joliet #29 Generating Station. October 10, 2017.

- KPRG and Associates, Inc., CCR Groundwater Monitoring Statistical Evaluation Summary - 2017, Midwest Generation, LLC Joliet #29 Generating Station. January 12, 2018.

- Patrick Engineering, Inc., Hydrogeologic Assessment Report – Joliet Generating Station No. 29, Joliet, IL. February 2011.

FIGURES

W:\c-p&p\projects\midwest generation\groundwater sampling\joliet #29 gmz.dwg(site map)

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14665 West Lisbon Road, Suite 2B Brookfield, Wisconsin 53005 Telephone 262-781-0475 Facsimile 262-781-0478

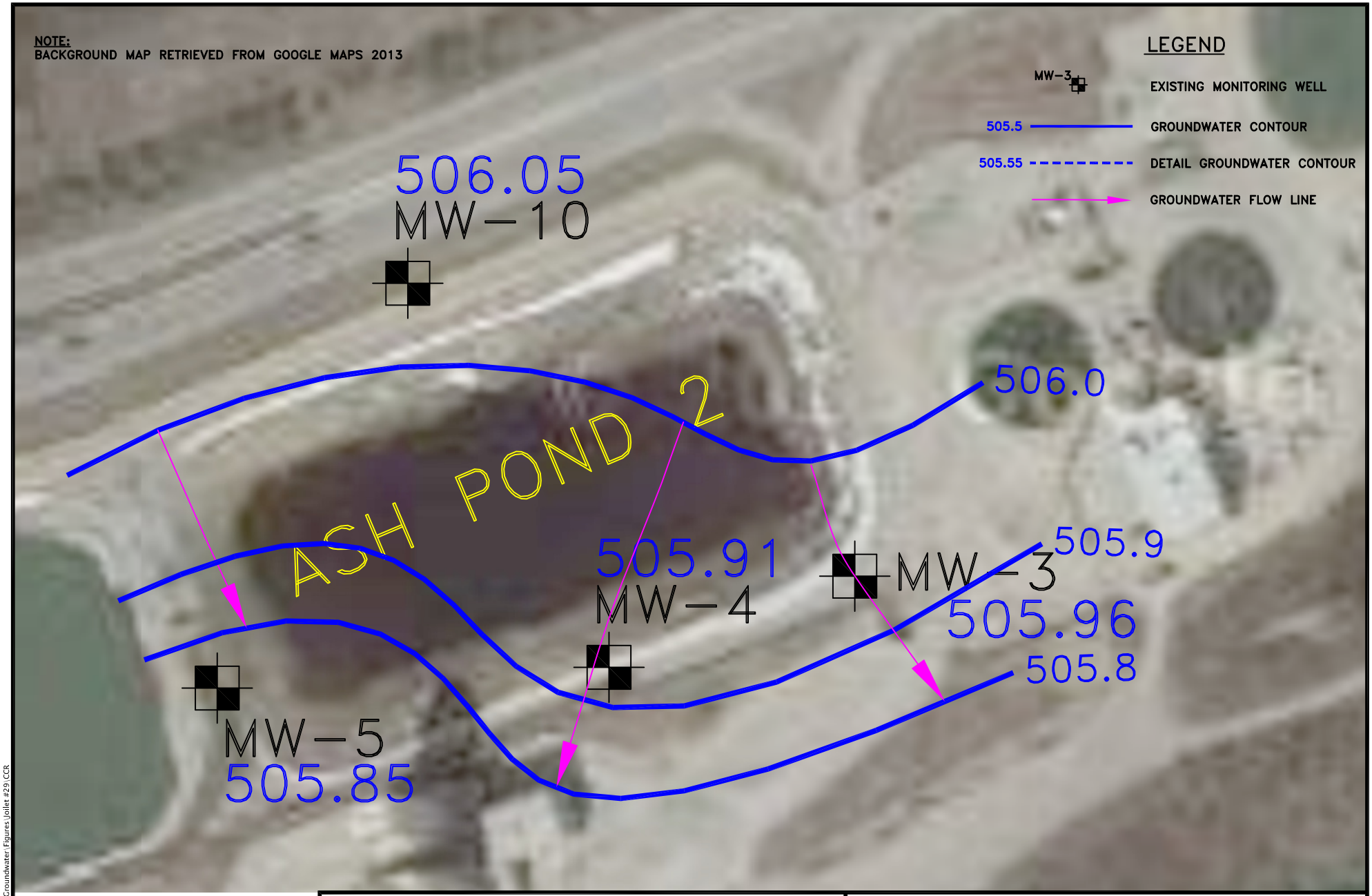
414 Plaza Drive, Suite 106 Westmont, Illinois 60559 Telephone 630-325-1300 Facsimile 630-325-1593

SITE MAP

JOLIET #29 GENERATING STATION
JOLIET, ILLINOIS

Scale: 1" = 250' | Date: January 23, 2015

KPRG Project No. 12313.0 | FIGURE 1



ATTORNEY-CLIENT PRIVILEGE
WORK PRODUCT

0 100'
APPROXIMATE SCALE

N

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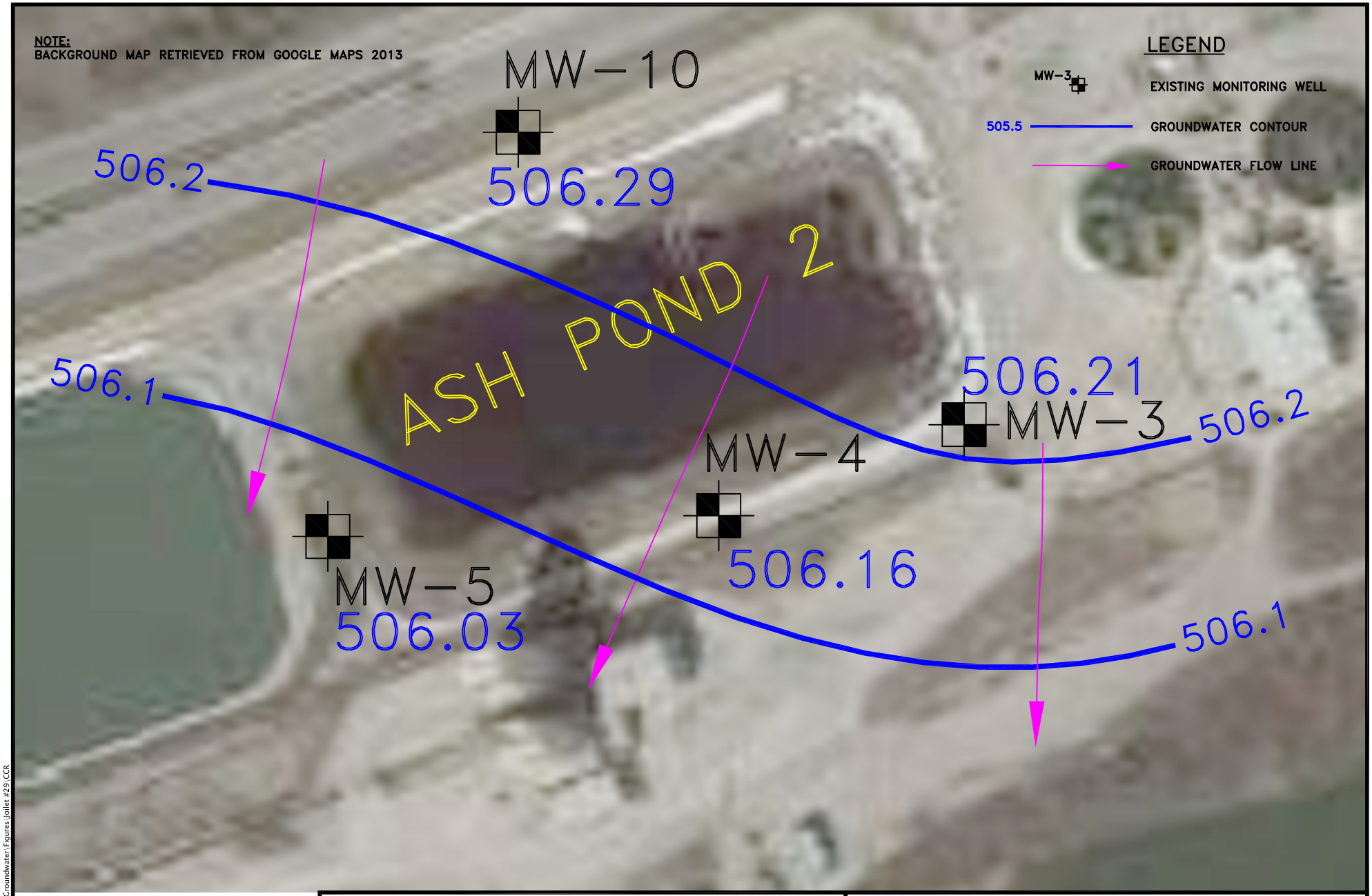
CCR GROUNDWATER CONTOUR-04/2018

JOLIET #29 GENERATING STATION
JOLIET, ILLINOIS

Scale: 1" = 100' | Date: June 13, 2018

KPRG Project No. 12313.0 | FIGURE 2

W:\Projects\Midwest Generation\12313 Ash Pond Groundwater\Figures\Joliet #29\CCR



ATTORNEY-CLIENT PRIVILEGE
WORK PRODUCT

0 100'
APPROXIMATE SCALE

N

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CCR GROUNDWATER CONTOUR-10/2018

JOLIET #29 GENERATING STATION
JOLIET, ILLINOIS

Scale: 1" = 100' | Date: December 26, 2018

KPRG Project No. 12313.0 | FIGURE 3

W:\Projects\Midwest Generation\12313 Ash Pond Groundwater\Figures\Joliet #29\CCR

TABLES

Table 1. Groundwater Elevations - Midwest Generation, LLC, Joliet Station #29, Joliet, IL

Well ID	Date	Top of Casing Elevation (ft above MSL)	Depth to Groundwater (ft below TOC)	Groundwater Elevation (ft above MSL)
MW-03	10/27/15	538.78	33.87	504.91
	02/09/16	538.79	33.17	505.62
	05/10/16	538.79	32.82	505.97
	08/30/16	538.79	31.88	506.91
	11/01/16	538.79	32.88	505.91
	02/06/17	538.79	33.25	505.54
	04/25/17	538.79	33.06	505.73
	06/14/17	538.79	33.74	505.05
	08/01/17	538.79	32.36	506.43
	10/18/17	538.79	30.03	508.76
	04/24/18	538.79	32.83	505.96
	10/16/18	538.79	32.58	506.21
MW-04	10/27/15	539.03	34.05	504.98
	02/09/16	539.01	33.42	505.59
	05/10/16	539.01	33.07	505.94
	08/30/16	539.01	32.08	506.93
	11/01/16	539.01	33.16	505.85
	02/06/17	539.01	33.51	505.50
	04/25/17	539.01	33.29	505.72
	06/14/17	539.01	33.99	505.02
	08/01/17	539.01	32.09	506.92
	10/18/17	539.01	30.28	508.73
	04/24/18	539.01	33.10	505.91
	10/16/18	539.01	32.85	506.16
MW-05	10/27/15	539.69	34.91	504.78
	02/09/16	539.64	34.18	505.46
	05/10/16	539.64	33.81	505.83
	08/30/16	539.64	32.82	506.82
	11/01/16	539.64	33.90	505.74
	02/06/17	539.64	34.23	505.41
	04/25/17	539.64	34.04	505.60
	06/14/17	539.64	34.74	504.90
	08/01/17	539.64	33.12	506.52
	10/18/17	539.64	31.03	508.61
	04/24/18	539.64	33.79	505.85
	10/16/18	539.64	33.61	506.03
MW-10	10/27/15	540.03	35.10	504.93
	02/09/16	540.02	34.32	505.70
	05/10/16	540.02	34.02	506.00
	08/30/16	540.02	32.97	507.05
	11/01/16	540.02	34.04	505.98
	02/06/17	540.02	34.42	505.60
	04/25/17	540.02	34.22	505.80
	06/14/17	540.02	34.91	505.11
	08/01/17	540.02	33.18	506.84
	10/18/17	540.02	31.13	508.89
	04/24/18	540.02	33.97	506.05
	10/16/18	540.02	33.73	506.29

MSL - Mean Sea Level
TOC - Top of Casing

Table 2. Groundwater Flow Direction and Estimated Seepage Velocity/Flow Rate - Joliet #29 Generation Station.

DATE	Groundwater Flow Direction	K_{avg} (ft/sec)*	Average Hydraulic Gradient (ft/ft)	Porosity (unitless)**	Estimated Seepage Velocity (ft/day)
10/28/2015	Southerly (SSW-SSE)	3.896E-03	0.0003	0.35	0.26
2/10/2016	Southerly (SSW-SSE)	3.896E-03	0.0007	0.35	0.63
5/12/2016	Southerly (SSW-SSE)	3.896E-03	0.0004	0.35	0.34
8/31/2016	Southerly (SSW-SSE)	3.896E-03	0.0004	0.35	0.34
11/2/2016	Southerly (SSW-SSE)	3.896E-03	0.0007	0.35	0.63
2/6/2017	Southerly (SSW-SSE)	3.896E-03	0.0005	0.35	0.43
4/26/2017	Southerly (SSW-SSE)	3.896E-03	0.0006	0.35	0.58
6/14/2017	Southerly (SSW-SSE)	3.896E-03	0.0006	0.35	0.58
8/2/2017	Southerly (SSW-SSE)	3.896E-03	0.0008	0.35	0.77
10/18/2017	Southerly (SSW-SSE)	3.896E-03	0.0004	0.35	0.38
4/24/2018	Southerly (SSW-SSE)	3.896E-03	0.0008	0.35	0.77
10/16/2018	Southerly (SSW)	3.896E-03	0.00053	0.35	0.51

* K_{avg} - Average hydraulic conductivity (feet/second) from Hydrogeologic Assessment Report, Patrick Engineering, February 2011.
** - Porosity estimate from Applied Hydrogeology, Fetter, 1980.
SSW - South-southwest
SSE - South-southeast

Table 3. CCR Groundwater Sample Collection Summary for 2018 - Joliet #29 Generating Station

Well ID	Number of Groundwater Sampling Events	Dates Groundwater Sampling Events	Detection Monitoring (D) versus Assessment Monitoring (A)
MW-10 (Upgradient)	2	4/24/2018	D
		10/17/2018	D
MW-3 (Downgradient)	2	4/24/2018	D
		10/17/2018	D
MW-4 (Downgradient)	2	4/24/2018	D
		10/17/2018	D
MW-5 (Downgradient)	2	4/24/2018	D
		10/17/2018	D

Table 4. Detection Monitoring - Appendix III Analytical Groundwater Results through 2018

Well	Date	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved
MW-10 up-gradient	10/28/2015	0.47	100	200	0.41	7.04	84	790
	2/10/2016	0.41	100	210	0.44	7.17	120	820
	5/12/2016	0.29	100	300	0.42	7.02	110	920
	8/31/2016	0.36	89	170	0.46	6.95	100	760
	11/2/2016	0.48	100	130	0.45	6.99	95	720
	2/6/2017	0.44	120	190	0.36	6.99	88	820
	4/26/2017	0.35	120	200	0.35	7.27	87	760
	6/14/2017	0.29	91	160	0.43	7.47	75	690
	Pred. Limit*	**0.57**	**131**	**318**	**0.51**	**7.56-6.67**	**131**	**959**
	8/2/2017	0.45	97	170	0.38	7.23	110	750
	10/18/2017	**0.61**	120	140	0.41	7.11	130	820
	4/24/2018	0.4	110	260	0.39	7.28	120	910
	10/17/2018	**0.63**	120	180	0.42	7.30	110	810
	11/24/2018 R	0.44	NA	NA	NA	NA	NA	NA
MW-03 down-gradient	10/28/2015	0.34	110	230	0.41	7.11	110	920
	2/10/2016	0.49	100	220	0.44	7.31	130	790
	5/10/2016	0.48	95	240	0.44	7.07	130	800
	8/31/2016	0.49	100	250	0.45	7.18	120	920
	11/2/2016	0.34	87	190	0.44	7.45	94	780
	2/6/2017	0.40	97	140	0.39	7.35	77	720
	4/26/2017	0.54	100	210	0.36	7.03	120	820
	6/14/2017	0.45	88	190	0.44	7.48	75	760
	Pred. Limit	**0.57**	**131**	**316**	**0.51**	**7.56-6.67**	**130**	**956**
	8/2/2017	0.41	99	200	0.40	7.34	110	850
	10/18/2017	0.35	93	160	0.42	7.11	100	850
	4/24/2018	0.52	100	220	0.42	7.2	**150**	930
	7/31/2018 R	NA	NA	NA	NA	NA	110	NA
	10/17/2018	0.25	100	250	0.4	7.04	110	870
MW-04 down-gradient	10/28/2015	0.34	94	F1 200	0.45	7.07	83	740
	2/10/2016	0.32	97	210	0.47	7.22	140	810
	5/10/2016	0.47	100	260	0.46	6.71	150	900
	8/31/2016	0.42	100	210	0.45	7.07	120	890
	11/2/2016	0.32	98	160	0.43	7.25	83	750
	2/6/2017	0.40	110	200	0.37	7.19	98	790
	4/26/2017	0.33	100	220	0.37	7.46	89	770
	6/14/2017	0.37	92	190	0.47	7.43	80	770
	Pred. Limit	**0.57**	**131**	**316**	**0.51**	**7.56-6.67**	**130**	**956**
	8/2/2017	0.35	93	180	0.43	7.41	100	770
	10/18/2017	0.54	97	140	0.45	7.2	120	790
	4/24/2018	0.4	110	240	0.43	7.21	**160**	940
	7/31/2018 R	NA	NA	NA	NA	NA	120	NA
	10/17/2018	0.29	100	230	0.45	7.2	130	840
MW-05 down-gradient	10/28/2015	0.64	100	160	0.39	7.12	120	790
	2/10/2016	0.46	110	220	0.39	7.25	120	790
	5/10/2016	0.8	150	220	0.46	6.88	290	950
	8/31/2016	1.0	140	99	0.56	6.81	260	820
	11/2/2016	0.41	98	130	0.37	7.26	100	700
	2/6/2017	0.48	150	180	0.30	7.22	120	790
	4/26/2017	0.67	110	F1 190	0.37	7.28	170	770
	6/14/2017	0.44	75	150	0.46	7.45	110	670
	Pred. Limit	**0.57**	**131**	**316**	**0.51**	**7.56-6.67**	**130**	**956**
	8/2/2017	0.28	83	170	0.35	7.30	99	770
	10/18/2017	0.42	110	110	0.38	7.16	95	720
	4/24/2018	0.31	110	300	0.34	7.33	130	**1,000**
	7/31/2018 R	NA	NA	NA	NA	NA	NA	940
	10/17/2018	0.31	110	210	0.36	7.29	93	810

Notes: All units are in mg/l except pH is in standard units.

* - Intrawell Prediction Limit. All others are interwell comparisons with MW-10 as background..

Bold - Potential statistically significant increase.

F1 - MS and/or MSD Recovery outside of limits.

Pred. Limit - Prediction Limit

Italics Date - Detection Monitoring and resample after statistical background establishment.

R - Resample

NA - Not analyzed. No confirmation resample required.

APPENDIX A
Analytical Data Packages

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-144406-1
Client Project/Site: Joliet #29 CCR

For:
KPRG and Associates, Inc.
14665 West Lisbon Road,
Suite 2B
Brookfield, Wisconsin 53005

Attn: Richard Gnat

Authorized for release by:
5/10/2018 1:30:24 PM

Eric Lang, Manager of Project Management
(708)534-5200
eric.lang@testamericainc.com

Table of Contents

Job ID: 500-144406-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-144406-1

Comments
No additional comments.

Receipt
The samples were received on 4/26/2018 12:20 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.9º C.

Metals
Method(s) 6020A: The internal standard Terbium (Tb) was used to report the elements Lead and Thallium in batch 500-429940. This was due to the LCS being spiked with the trace digestion spike which contains Bismuth.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Method Summary

Client: KPRG and Associates, Inc.
Project/Site: Joliet #29 CCR

TestAmerica Job ID: 500-144406-1

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	TAL CHI
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL CHI
SM 4500 Cl- E	Chloride, Total	SM	TAL CHI
SM 4500 F C	Fluoride	SM	TAL CHI
SM 4500 SO4 E	Sulfate, Total	SM	TAL CHI
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL CHI

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: KPRG and Associates, Inc.
Project/Site: Joliet #29 CCR

TestAmerica Job ID: 500-144406-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-144406-1	MW-03	Water	04/24/18 11:54	04/26/18 12:20
500-144406-2	MW-04	Water	04/24/18 13:09	04/26/18 12:20
500-144406-3	MW-05	Water	04/24/18 14:31	04/26/18 12:20
500-144406-4	MW-10	Water	04/24/18 15:50	04/26/18 12:20
500-144406-5	Duplicate	Water	04/24/18 00:00	04/26/18 12:20

Client Sample Results

Client: KPRG and Associates, Inc.
Project/Site: Joliet #29 CCR

TestAmerica Job ID: 500-144406-1

Client Sample ID: MW-03
Date Collected: 04/24/18 11:54
Date Received: 04/26/18 12:20

Lab Sample ID: 500-144406-1
Matrix: Water

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.52		0.050		mg/L		04/26/18 15:42	04/27/18 23:29	1
Calcium	100		0.20		mg/L		04/26/18 15:42	04/27/18 23:29	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	930		10		mg/L			05/01/18 06:18	1
Chloride	220		10		mg/L			05/01/18 22:04	5
Fluoride	0.42		0.10		mg/L			04/28/18 11:54	1
Sulfate	150		50		mg/L			05/01/18 14:36	10

Client Sample Results

Client: KPRG and Associates, Inc.
Project/Site: Joliet #29 CCR

TestAmerica Job ID: 500-144406-1

Client Sample ID: MW-04
Date Collected: 04/24/18 13:09
Date Received: 04/26/18 12:20

Lab Sample ID: 500-144406-2
Matrix: Water

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.40		0.050		mg/L		04/26/18 15:42	04/27/18 23:47	1
Calcium	110		0.20		mg/L		04/26/18 15:42	04/27/18 23:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	940		10		mg/L			05/01/18 06:20	1
Chloride	240		10		mg/L			05/01/18 22:05	5
Fluoride	0.43		0.10		mg/L			04/28/18 11:56	1
Sulfate	160		25		mg/L			05/01/18 14:37	5

Client Sample Results

Client: KPRG and Associates, Inc.
Project/Site: Joliet #29 CCR

TestAmerica Job ID: 500-144406-1

Client Sample ID: MW-05
Date Collected: 04/24/18 14:31
Date Received: 04/26/18 12:20

Lab Sample ID: 500-144406-3
Matrix: Water

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.31		0.050		mg/L		04/26/18 15:42	04/27/18 23:51	1
Calcium	110		0.20		mg/L		04/26/18 15:42	04/27/18 23:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	1000		10		mg/L			05/01/18 06:23	1
Chloride	300		10		mg/L			05/01/18 22:06	5
Fluoride	0.34		0.10		mg/L			04/28/18 11:59	1
Sulfate	130		25		mg/L			05/08/18 11:14	5

Client Sample Results

Client: KPRG and Associates, Inc.
Project/Site: Joliet #29 CCR

TestAmerica Job ID: 500-144406-1

Client Sample ID: MW-10
Date Collected: 04/24/18 15:50
Date Received: 04/26/18 12:20

Lab Sample ID: 500-144406-4
Matrix: Water

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.40		0.050		mg/L		04/26/18 15:42	04/27/18 23:55	1
Calcium	110		0.20		mg/L		04/26/18 15:42	04/27/18 23:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	910		10		mg/L			05/01/18 06:26	1
Chloride	260		10		mg/L			05/01/18 22:06	5
Fluoride	0.39		0.10		mg/L			04/28/18 12:02	1
Sulfate	120		25		mg/L			05/08/18 11:17	5

Client: KPRG and Associates, Inc.
Project/Site: Joliet #29 CCR

TestAmerica Job ID: 500-144406-1

Client Sample ID: Duplicate
Date Collected: 04/24/18 00:00
Date Received: 04/26/18 12:20

Lab Sample ID: 500-144406-5
Matrix: Water

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.54		0.050		mg/L		04/26/18 15:42	04/28/18 00:06	1
Calcium	100		0.20		mg/L		04/26/18 15:42	04/28/18 00:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	920		10		mg/L			05/01/18 06:28	1
Chloride	220		10		mg/L			05/01/18 22:09	5
Fluoride	0.42		0.10		mg/L			04/28/18 12:05	1
Sulfate	140		25		mg/L			05/08/18 11:18	5

Qualifiers

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

General Chemistry

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Metals

Prep Batch: 429585

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-144406-1	MW-03	Total Recoverable	Water	3005A	
500-144406-2	MW-04	Total Recoverable	Water	3005A	
500-144406-3	MW-05	Total Recoverable	Water	3005A	
500-144406-4	MW-10	Total Recoverable	Water	3005A	
500-144406-5	Duplicate	Total Recoverable	Water	3005A	
MB 500-429585/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 500-429585/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
500-144406-1 MS	MW-03	Total Recoverable	Water	3005A	
500-144406-1 MSD	MW-03	Total Recoverable	Water	3005A	
500-144406-1 DU	MW-03	Total Recoverable	Water	3005A	

Analysis Batch: 429940

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-144406-1	MW-03	Total Recoverable	Water	6020A	429585
500-144406-2	MW-04	Total Recoverable	Water	6020A	429585
500-144406-3	MW-05	Total Recoverable	Water	6020A	429585
500-144406-4	MW-10	Total Recoverable	Water	6020A	429585
500-144406-5	Duplicate	Total Recoverable	Water	6020A	429585
MB 500-429585/1-A	Method Blank	Total Recoverable	Water	6020A	429585
LCS 500-429585/2-A	Lab Control Sample	Total Recoverable	Water	6020A	429585
500-144406-1 MS	MW-03	Total Recoverable	Water	6020A	429585
500-144406-1 MSD	MW-03	Total Recoverable	Water	6020A	429585
500-144406-1 DU	MW-03	Total Recoverable	Water	6020A	429585

General Chemistry

Analysis Batch: 429844

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-144406-1	MW-03	Total/NA	Water	SM 4500 F C	
500-144406-2	MW-04	Total/NA	Water	SM 4500 F C	
500-144406-3	MW-05	Total/NA	Water	SM 4500 F C	
500-144406-4	MW-10	Total/NA	Water	SM 4500 F C	
500-144406-5	Duplicate	Total/NA	Water	SM 4500 F C	
MB 500-429844/3	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 500-429844/4	Lab Control Sample	Total/NA	Water	SM 4500 F C	

Analysis Batch: 430064

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-144406-1	MW-03	Total/NA	Water	SM 2540C	
500-144406-2	MW-04	Total/NA	Water	SM 2540C	
500-144406-3	MW-05	Total/NA	Water	SM 2540C	
500-144406-4	MW-10	Total/NA	Water	SM 2540C	
500-144406-5	Duplicate	Total/NA	Water	SM 2540C	
MB 500-430064/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 500-430064/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 430151

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-144406-1	MW-03	Total/NA	Water	SM 4500 SO4 E	
500-144406-2	MW-04	Total/NA	Water	SM 4500 SO4 E	

General Chemistry (Continued)

Analysis Batch: 430151 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 500-430151/3	Method Blank	Total/NA	Water	SM 4500 SO4 E	
LCS 500-430151/4	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	

Analysis Batch: 430219

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-144406-1	MW-03	Total/NA	Water	SM 4500 Cl- E	
500-144406-2	MW-04	Total/NA	Water	SM 4500 Cl- E	
500-144406-3	MW-05	Total/NA	Water	SM 4500 Cl- E	
500-144406-4	MW-10	Total/NA	Water	SM 4500 Cl- E	
500-144406-5	Duplicate	Total/NA	Water	SM 4500 Cl- E	
MB 500-430219/12	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 500-430219/13	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
500-144406-4 MS	MW-10	Total/NA	Water	SM 4500 Cl- E	
500-144406-4 MSD	MW-10	Total/NA	Water	SM 4500 Cl- E	

Analysis Batch: 431165

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-144406-3	MW-05	Total/NA	Water	SM 4500 SO4 E	
500-144406-4	MW-10	Total/NA	Water	SM 4500 SO4 E	
500-144406-5	Duplicate	Total/NA	Water	SM 4500 SO4 E	
MB 500-431165/3	Method Blank	Total/NA	Water	SM 4500 SO4 E	
LCS 500-431165/4	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
500-144406-3 MS	MW-05	Total/NA	Water	SM 4500 SO4 E	
500-144406-3 MSD	MW-05	Total/NA	Water	SM 4500 SO4 E	

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 500-429585/1-A
Matrix: Water
Analysis Batch: 429940

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 429585

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.050		0.050		mg/L		04/26/18 15:42	04/27/18 23:21	1
Calcium	<0.20		0.20		mg/L		04/26/18 15:42	04/27/18 23:21	1

Lab Sample ID: LCS 500-429585/2-A
Matrix: Water
Analysis Batch: 429940

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 429585

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.00	0.995		mg/L		99	80 - 120
Calcium	10.0	9.73		mg/L		97	80 - 120

Lab Sample ID: 500-144406-1 MS
Matrix: Water
Analysis Batch: 429940

Client Sample ID: MW-03
Prep Type: Total Recoverable
Prep Batch: 429585

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	0.52		1.00	1.46		mg/L		94	75 - 125
Calcium	100		10.0	108	4	mg/L		80	75 - 125

Lab Sample ID: 500-144406-1 MSD
Matrix: Water
Analysis Batch: 429940

Client Sample ID: MW-03
Prep Type: Total Recoverable
Prep Batch: 429585

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron	0.52		1.00	1.45		mg/L		93	75 - 125	1	20
Calcium	100		10.0	107	4	mg/L		72	75 - 125	1	20

Lab Sample ID: 500-144406-1 DU
Matrix: Water
Analysis Batch: 429940

Client Sample ID: MW-03
Prep Type: Total Recoverable
Prep Batch: 429585

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Boron	0.52		0.542		mg/L		4	20
Calcium	100		103		mg/L		3	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 500-430064/1
Matrix: Water
Analysis Batch: 430064

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<10		10		mg/L			05/01/18 05:37	1

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: LCS 500-430064/2
Matrix: Water
Analysis Batch: 430064

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	250	288		mg/L		115	80 - 120

Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 500-430219/12
Matrix: Water
Analysis Batch: 430219

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<2.0		2.0		mg/L			05/01/18 21:24	1

Lab Sample ID: LCS 500-430219/13
Matrix: Water
Analysis Batch: 430219

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	51.6		mg/L		103	85 - 115

Lab Sample ID: 500-144406-4 MS
Matrix: Water
Analysis Batch: 430219

Client Sample ID: MW-10
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	260		50.0	284	4	mg/L		42	75 - 125

Lab Sample ID: 500-144406-4 MSD
Matrix: Water
Analysis Batch: 430219

Client Sample ID: MW-10
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	260		50.0	285	4	mg/L		43	75 - 125	0	20

Method: SM 4500 F C - Fluoride

Lab Sample ID: MB 500-429844/3
Matrix: Water
Analysis Batch: 429844

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.10		0.10		mg/L			04/28/18 10:58	1

Lab Sample ID: LCS 500-429844/4
Matrix: Water
Analysis Batch: 429844

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	10.0	10.3		mg/L		103	80 - 120

Method: SM 4500 SO4 E - Sulfate, Total

Lab Sample ID: MB 500-430151/3
Matrix: Water
Analysis Batch: 430151

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<5.0		5.0		mg/L			05/01/18 14:17	1

Lab Sample ID: LCS 500-430151/4
Matrix: Water
Analysis Batch: 430151

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	20.0	18.9		mg/L		94	80 - 120

Lab Sample ID: MB 500-431165/3
Matrix: Water
Analysis Batch: 431165

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<5.0		5.0		mg/L			05/08/18 11:12	1

Lab Sample ID: LCS 500-431165/4
Matrix: Water
Analysis Batch: 431165

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	20.0	18.7		mg/L		93	80 - 120

Lab Sample ID: 500-144406-3 MS
Matrix: Water
Analysis Batch: 431165

Client Sample ID: MW-05
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	130		200	304		mg/L		88	75 - 125

Lab Sample ID: 500-144406-3 MSD
Matrix: Water
Analysis Batch: 431165

Client Sample ID: MW-05
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	130		200	306		mg/L		89	75 - 125	1	20

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

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University Park, IL 60484
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Report To:		Bill To:	
Contact:	Richard Gnat	Contact:	
Company:	KPRG and Associates, Inc	Company:	
Address:	14665 W. Lisbon Rd., Suite 2B	Address:	
	Brookfield, WI 53005		
Phone:	262-781-0475	Phone:	
Email:	richardg@kprginc.com	Email	
		PO #:	

Lab Lot # 500-144406

Package Sealed	Samples Sealed
Yes (No)	Yes (No)
Received on Ice	**Samples Intact**
(Yes) No	(Yes) No N/A

Temperature °C of Cooler 3.9

Within Hold Time	Preserv. Indicated
(Yes) No	(Yes) No N/A
pH Check OK	**Res Cl_2 Check OK**
(Yes) No	(Yes) No N/A

Sample Labels and COC Agree
(Yes) No COC not present

Sampler Name:	COMPANY:
Ian John Howieson	KPRG & Associates Inc.
Project Name:	**TestAmerica Project Number:**
Quarterly- JOLIET #29 CCR	50011568
Project Location:	**TAT**
Joliet, IL	15 Days
Lab PM: Eric Lang	eric.lang@testamerica.com

Laboratory ID	MS-MSD	Client Sample ID	Sampling Date	Sampling Time	Matrix	# of Cont	6020A - Total Metals (B, Ca)	2540C -TDS	4500_F_C - Fluoride	SM4500_Cl_E Chloride	SM4500_SO4_E - Sulfate	Additional Analyses / Remarks
1		MW-03	4-24-18	11:54	W	2	X	X	X	X	X	
2		MW-04	4-24-18	13:09	W	2	X	X	X	X	X	
3		MW-05	4-24-18	14:31	W	2	X	X	X	X	X	
4		MW-10	4-24-18	15:50	W	2	X	X	X	X	X	
5		Duplicate	4-24-18	—	W	2	X	X	X	X	X	

RELINQUISHED BY:	COMPANY:	DATE:	TIME:	RECEIVED BY:	COMPANY:	DATE:	TIME:
IJH	KPRG	4-26-18	12:20		TA	04/26/18	1220
RELINQUISHED BY:	COMPANY:	DATE:	TIME:	RECEIVED BY:	COMPANY:	DATE:	TIME:

Matrix Key

WW = Wastewater	SE = Sediment
W = Water	SO = Solid
S = Soil	DL = Drum Liquid
SL = Sludge	DS = Drum Solid
MS = Miscellaneous	L = Leachate
OL = Oil	W = Wipe
A = Air	O = _____

Container Key

1. Plastic
2. VOA Vial
3. Sterile Plastic
4. Amber Glass
5. Widemouth Glass
6. Other

_____

Preservative Key

1. HCl, Cool to 4°
2. H_2SO_4, Cool to 4°
3. HNO_3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. Cool to 4°
7. None

COMMENTS:

500-144406 COC

Date Received 04,26,18
Courier: IH
Hand Delivered ☐
Bill of Lading:

__1__of__1__

STL-8208 (0600)

Login Sample Receipt Checklist

Client: KPRG and Associates, Inc.

Job Number: 500-144406-1

Login Number: 144406
List Number: 1
Creator: Kelsey, Shawn M

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.9c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Lab Chronicle

Client: KPRG and Associates, Inc.
Project/Site: Joliet #29 CCR

TestAmerica Job ID: 500-144406-1

Client Sample ID: MW-03

Date Collected: 04/24/18 11:54
Date Received: 04/26/18 12:20

Lab Sample ID: 500-144406-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			429585	04/26/18 15:42	BDE	TAL CHI
Total Recoverable	Analysis	6020A		1	429940	04/27/18 23:29	FXG	TAL CHI
Total/NA	Analysis	SM 2540C		1	430064	05/01/18 06:18	CLB	TAL CHI
Total/NA	Analysis	SM 4500 Cl- E		5	430219	05/01/18 22:04	HMW	TAL CHI
Total/NA	Analysis	SM 4500 F C		1	429844	04/28/18 11:54	EAT	TAL CHI
Total/NA	Analysis	SM 4500 SO4 E		10	430151		CLB	TAL CHI
					(Start)	05/01/18 14:36		
					(End)	05/01/18 14:37		

Client Sample ID: MW-04

Date Collected: 04/24/18 13:09
Date Received: 04/26/18 12:20

Lab Sample ID: 500-144406-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			429585	04/26/18 15:42	BDE	TAL CHI
Total Recoverable	Analysis	6020A		1	429940	04/27/18 23:47	FXG	TAL CHI
Total/NA	Analysis	SM 2540C		1	430064	05/01/18 06:20	CLB	TAL CHI
Total/NA	Analysis	SM 4500 Cl- E		5	430219	05/01/18 22:05	HMW	TAL CHI
Total/NA	Analysis	SM 4500 F C		1	429844	04/28/18 11:56	EAT	TAL CHI
Total/NA	Analysis	SM 4500 SO4 E		5	430151		CLB	TAL CHI
					(Start)	05/01/18 14:37		
					(End)	05/01/18 14:38		

Client Sample ID: MW-05

Date Collected: 04/24/18 14:31
Date Received: 04/26/18 12:20

Lab Sample ID: 500-144406-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			429585	04/26/18 15:42	BDE	TAL CHI
Total Recoverable	Analysis	6020A		1	429940	04/27/18 23:51	FXG	TAL CHI
Total/NA	Analysis	SM 2540C		1	430064	05/01/18 06:23	CLB	TAL CHI
Total/NA	Analysis	SM 4500 Cl- E		5	430219	05/01/18 22:06	HMW	TAL CHI
Total/NA	Analysis	SM 4500 F C		1	429844	04/28/18 11:59	EAT	TAL CHI
Total/NA	Analysis	SM 4500 SO4 E		5	431165		CLB	TAL CHI
					(Start)	05/08/18 11:14		
					(End)	05/08/18 11:15		

Lab Chronicle

Client: KPRG and Associates, Inc.
Project/Site: Joliet #29 CCR

TestAmerica Job ID: 500-144406-1

Client Sample ID: MW-10

Date Collected: 04/24/18 15:50
Date Received: 04/26/18 12:20

Lab Sample ID: 500-144406-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			429585	04/26/18 15:42	BDE	TAL CHI
Total Recoverable	Analysis	6020A		1	429940	04/27/18 23:55	FXG	TAL CHI
Total/NA	Analysis	SM 2540C		1	430064	05/01/18 06:26	CLB	TAL CHI
Total/NA	Analysis	SM 4500 Cl- E		5	430219	05/01/18 22:06	HMW	TAL CHI
Total/NA	Analysis	SM 4500 F C		1	429844	04/28/18 12:02	EAT	TAL CHI
Total/NA	Analysis	SM 4500 SO4 E		5	431165		CLB	TAL CHI
					(Start)	05/08/18 11:17		
					(End)	05/08/18 11:18		

Client Sample ID: Duplicate

Date Collected: 04/24/18 00:00
Date Received: 04/26/18 12:20

Lab Sample ID: 500-144406-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			429585	04/26/18 15:42	BDE	TAL CHI
Total Recoverable	Analysis	6020A		1	429940	04/28/18 00:06	FXG	TAL CHI
Total/NA	Analysis	SM 2540C		1	430064	05/01/18 06:28	CLB	TAL CHI
Total/NA	Analysis	SM 4500 Cl- E		5	430219	05/01/18 22:09	HMW	TAL CHI
Total/NA	Analysis	SM 4500 F C		1	429844	04/28/18 12:05	EAT	TAL CHI
Total/NA	Analysis	SM 4500 SO4 E		5	431165		CLB	TAL CHI
					(Start)	05/08/18 11:18		
					(End)	05/08/18 11:19		

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-149339-1
Client Project/Site: Joliet #29 CCR

For:
KPRG and Associates, Inc.
14665 West Lisbon Road,
Suite 1A
Brookfield, Wisconsin 53005

Attn: Richard Gnat

Authorized for release by:
8/13/2018 3:42:16 PM

Eric Lang, Manager of Project Management
(708)534-5200
eric.lang@testamericainc.com

Table of Contents

Case Narrative

Client: KPRG and Associates, Inc.
Project/Site: Joliet #29 CCR

TestAmerica Job ID: 500-149339-1

Job ID: 500-149339-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-149339-1

Comments
No additional comments.

Receipt
The samples were received on 8/2/2018 10:27 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.9º C.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Method Summary

Client: KPRG and Associates, Inc.
Project/Site: Joliet #29 CCR

TestAmerica Job ID: 500-149339-1

Method	Method Description	Protocol	Laboratory
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL CHI
SM 4500 SO4 E	Sulfate, Total	SM	TAL CHI

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: KPRG and Associates, Inc.
Project/Site: Joliet #29 CCR

TestAmerica Job ID: 500-149339-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-149339-1	MW-03	Water	07/31/18 11:42	08/02/18 10:27
500-149339-2	MW-04	Water	07/31/18 12:35	08/02/18 10:27
500-149339-3	MW-05	Water	07/31/18 13:37	08/02/18 10:27

Client Sample Results

Client: KPRG and Associates, Inc.
Project/Site: Joliet #29 CCR

TestAmerica Job ID: 500-149339-1

Client Sample ID: MW-03
Date Collected: 07/31/18 11:42
Date Received: 08/02/18 10:27

Lab Sample ID: 500-149339-1
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	110		25		mg/L			08/13/18 06:01	5

Client: KPRG and Associates, Inc.
Project/Site: Joliet #29 CCR

TestAmerica Job ID: 500-149339-1

Client Sample ID: MW-04
Date Collected: 07/31/18 12:35
Date Received: 08/02/18 10:27

Lab Sample ID: 500-149339-2
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	120		25		mg/L			08/13/18 06:04	5

Client Sample Results

Client: KPRG and Associates, Inc.
Project/Site: Joliet #29 CCR

TestAmerica Job ID: 500-149339-1

Client Sample ID: MW-05
Date Collected: 07/31/18 13:37
Date Received: 08/02/18 10:27

Lab Sample ID: 500-149339-3
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	940		10		mg/L			08/06/18 05:23	1

Definitions/Glossary

Client: KPRG and Associates, Inc.
Project/Site: Joliet #29 CCR

TestAmerica Job ID: 500-149339-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Association Summary

Client: KPRG and Associates, Inc.
Project/Site: Joliet #29 CCR

TestAmerica Job ID: 500-149339-1

General Chemistry

Analysis Batch: 444126

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-149339-3	MW-05	Total/NA	Water	SM 2540C	
MB 500-444126/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 500-444126/2	Lab Control Sample	Total/NA	Water	SM 2540C	
500-149339-3 MS	MW-05	Total/NA	Water	SM 2540C	
500-149339-3 DU	MW-05	Total/NA	Water	SM 2540C	

Analysis Batch: 445062

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-149339-1	MW-03	Total/NA	Water	SM 4500 SO4 E	
500-149339-2	MW-04	Total/NA	Water	SM 4500 SO4 E	
MB 500-445062/3	Method Blank	Total/NA	Water	SM 4500 SO4 E	
LCS 500-445062/4	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
500-149339-1 MS	MW-03	Total/NA	Water	SM 4500 SO4 E	
500-149339-1 MSD	MW-03	Total/NA	Water	SM 4500 SO4 E	

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 500-444126/1
Matrix: Water
Analysis Batch: 444126

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<10		10		mg/L			08/06/18 05:18	1

Lab Sample ID: LCS 500-444126/2
Matrix: Water
Analysis Batch: 444126

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	250	276		mg/L		110	80 - 120

Lab Sample ID: 500-149339-3 MS
Matrix: Water
Analysis Batch: 444126

Client Sample ID: MW-05
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	940		250	1190		mg/L		102	75 - 125

Lab Sample ID: 500-149339-3 DU
Matrix: Water
Analysis Batch: 444126

Client Sample ID: MW-05
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	940		968		mg/L		3	5

Method: SM 4500 SO4 E - Sulfate, Total

Lab Sample ID: MB 500-445062/3
Matrix: Water
Analysis Batch: 445062

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<5.0		5.0		mg/L			08/13/18 05:59	1

Lab Sample ID: LCS 500-445062/4
Matrix: Water
Analysis Batch: 445062

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	20.0	20.4		mg/L		102	80 - 120

Lab Sample ID: 500-149339-1 MS
Matrix: Water
Analysis Batch: 445062

Client Sample ID: MW-03
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	110		200	317		mg/L		101	75 - 125

Method: SM 4500 SO4 E - Sulfate, Total (Continued)

Lab Sample ID: 500-149339-1 MSD
Matrix: Water
Analysis Batch: 445062

Client Sample ID: MW-03
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	110		200	317		mg/L		101	75 - 125	0	20

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Chicago
2417 Bond St.
University Park, IL 60484
708-534-5200
Fax. 708-534-5211

Report To:		Bill To:
Contact:	Richard Gnat	Contact:
Company:	KPRG and Associates, Inc	Company:
Address:	14665 W. Lisbon Rd., Suite 2B	Address:
	Brookfield, WI 53005	
Phone:	262-781-0475	Phone:
Email:	richardg@kprginc.com	Email
		PO #:

Lab Lot # 500-149339

Package Sealed	Samples Sealed
(Yes) No	(Yes) No
Received on Ice	**Samples Intact**
(Yes) No	(Yes) No N/A

Temperature °C of Cooler 3.9 160X.

Within Hold Time	Preserv. Indicated
(Yes) No	Yes No (N/A)
pH Check OK	**Res CL_2 Check OK**
(Yes) No	(Yes) No N/A

Sample Labels and COC Agree
(Yes) No COC not present

Sampler Name:	COMPANY:
Ian John Howieson	KPRG & Associates Inc.
Project Name:	**TestAmerica Project Number:**
Quarterly- JOLIET #29 CCR	50011568
Project Location:	**TAT**
Joliet, IL	15 Days
Lab PM: Eric Lang	eric.lang@testamerica.com

Laboratory ID	MS-MSD	Client Sample ID	Sampling Date	Sampling Time	Matrix	# of Cont	6020A - Total Metals (B, Ca)	2540C -TDS	4500_F_C - Fluoride	SM4500_Cl_E Chloride	SM4500_SO4_E - Sulfate
1		MW-03	7-31-18	11:42	W	1	X				X
2		MW-04	7-31-18	12:35	W	1	X				X
3		MW-05	7-31-18	13:37	W	1	X	X	X	X	X
		~~MW-06~~	—	—							
		~~Duplicate~~	—	—							

Additional Analyses / Remarks

500-149339 COC

RELINQUISHED BY:	COMPANY:	DATE:	TIME:	RECEIVED BY:	COMPANY:	DATE:	TIME:
IJH	KPRG	8-2-18	10:27	[signature]	TA-CHI	8/2/18	1027
RELINQUISHED BY:	COMPANY:	DATE:	TIME:	RECEIVED BY:	COMPANY:	DATE:	TIME:

Matrix Key

WW = Wastewater	SE = Sediment
W = Water	SO = Solid
S = Soil	DL = Drum Liquid
SL = Sludge	DS = Drum Solid
MS = Miscellaneous	L = Leachate
OL = Oil	W = Wipe
A = Air	O = _____

Container Key

1. Plastic
2. VOA Vial
3. Sterile Plastic
4. Amber Glass
5. Widemouth Glass
6. Other

_____

Preservative Key

1. HCl, Cool to 4°
2. H_2SO_4, Cool to 4°
3. HNO_3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. Cool to 4°
7. None

COMMENTS:

Date Received 08 02 18
Courier:
Hand Delivered [X]
Bill of Lading:

__1__of__1__

STL-8208 (0600)

Login Sample Receipt Checklist

Client: KPRG and Associates, Inc.

Job Number: 500-149339-1

Login Number: 149339
List Number: 1
Creator: Sanchez, Ariel M

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.9
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Lab Chronicle

Client: KPRG and Associates, Inc.
Project/Site: Joliet #29 CCR

TestAmerica Job ID: 500-149339-1

Client Sample ID: MW-03
Date Collected: 07/31/18 11:42
Date Received: 08/02/18 10:27

Lab Sample ID: 500-149339-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 SO4 E		5	445062		CLB	TAL CHI
					(Start)	08/13/18 06:01		
					(End)	08/13/18 06:02		

Client Sample ID: MW-04
Date Collected: 07/31/18 12:35
Date Received: 08/02/18 10:27

Lab Sample ID: 500-149339-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 SO4 E		5	445062		CLB	TAL CHI
					(Start)	08/13/18 06:04		
					(End)	08/13/18 06:05		

Client Sample ID: MW-05
Date Collected: 07/31/18 13:37
Date Received: 08/02/18 10:27

Lab Sample ID: 500-149339-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540C		1	444126	08/06/18 05:23	CLB	TAL CHI

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-153411-1
Client Project/Site: Joliet #29 CCR
Sampling Event: Quarterly MWG Joliet #29 CCR

For:
KPRG and Associates, Inc.
14665 West Lisbon Road,
Suite 1A
Brookfield, Wisconsin 53005

Attn: Richard Gnat

Authorized for release by:
11/2/2018 3:12:31 PM

Eric Lang, Manager of Project Management
(708)534-5200
eric.lang@testamericainc.com

Table of Contents

Case Narrative

Client: KPRG and Associates, Inc.
Project/Site: Joliet #29 CCR

TestAmerica Job ID: 500-153411-1

Job ID: 500-153411-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-153411-1

Comments
No additional comments.

Receipt
The samples were received on 10/18/2018 2:20 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.0º C.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Method Summary

Client: KPRG and Associates, Inc.
Project/Site: Joliet #29 CCR

TestAmerica Job ID: 500-153411-1

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	TAL CHI
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL CHI
SM 4500 Cl- E	Chloride, Total	SM	TAL CHI
SM 4500 F C	Fluoride	SM	TAL CHI
SM 4500 SO4 E	Sulfate, Total	SM	TAL CHI
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL CHI

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: KPRG and Associates, Inc.
Project/Site: Joliet #29 CCR

TestAmerica Job ID: 500-153411-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-153411-1	MW-03	Water	10/17/18 09:52	10/18/18 14:20
500-153411-2	MW-04	Water	10/17/18 11:08	10/18/18 14:20
500-153411-3	MW-05	Water	10/17/18 12:41	10/18/18 14:20
500-153411-4	MW-10	Water	10/17/18 14:05	10/18/18 14:20
500-153411-5	Duplicate	Water	10/17/18 00:00	10/18/18 14:20

Client Sample Results

Client: KPRG and Associates, Inc.
Project/Site: Joliet #29 CCR

TestAmerica Job ID: 500-153411-1

Client Sample ID: MW-03
Date Collected: 10/17/18 09:52
Date Received: 10/18/18 14:20

Lab Sample ID: 500-153411-1
Matrix: Water

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.25		0.050		mg/L		10/22/18 09:49	10/27/18 00:45	1
Calcium	100		0.20		mg/L		10/22/18 09:49	10/27/18 00:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	870		10		mg/L			10/19/18 08:11	1
Chloride	250		10		mg/L			11/01/18 11:59	5
Fluoride	0.40		0.10		mg/L			10/27/18 16:11	1
Sulfate	110		20		mg/L			10/24/18 11:47	4

Client Sample Results

Client: KPRG and Associates, Inc.
Project/Site: Joliet #29 CCR

TestAmerica Job ID: 500-153411-1

Client Sample ID: MW-04
Date Collected: 10/17/18 11:08
Date Received: 10/18/18 14:20

Lab Sample ID: 500-153411-2
Matrix: Water

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.29		0.050		mg/L		10/22/18 09:49	10/27/18 00:49	1
Calcium	100		0.20		mg/L		10/22/18 09:49	10/27/18 00:49	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	840		10		mg/L			10/19/18 08:14	1
Chloride	230		10		mg/L			11/01/18 11:59	5
Fluoride	0.45		0.10		mg/L			10/27/18 16:14	1
Sulfate	130		20		mg/L			10/24/18 11:48	4

Client Sample Results

Client: KPRG and Associates, Inc.
Project/Site: Joliet #29 CCR

TestAmerica Job ID: 500-153411-1

Client Sample ID: MW-05
Date Collected: 10/17/18 12:41
Date Received: 10/18/18 14:20

Lab Sample ID: 500-153411-3
Matrix: Water

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.31		0.050		mg/L		10/22/18 09:49	10/27/18 00:53	1
Calcium	110		0.20		mg/L		10/22/18 09:49	10/27/18 00:53	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	810		10		mg/L			10/19/18 08:16	1
Chloride	210		10		mg/L			11/01/18 12:00	5
Fluoride	0.36		0.10		mg/L			10/27/18 16:17	1
Sulfate	93		50		mg/L			10/30/18 07:59	10

Client Sample Results

Client: KPRG and Associates, Inc.
Project/Site: Joliet #29 CCR

TestAmerica Job ID: 500-153411-1

Client Sample ID: MW-10
Date Collected: 10/17/18 14:05
Date Received: 10/18/18 14:20

Lab Sample ID: 500-153411-4
Matrix: Water

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.63		0.050		mg/L		10/22/18 09:49	10/27/18 00:56	1
Calcium	120		0.20		mg/L		10/22/18 09:49	10/27/18 00:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	810		10		mg/L			10/19/18 08:19	1
Chloride	180		10		mg/L			11/01/18 12:00	5
Fluoride	0.42		0.10		mg/L			10/27/18 16:30	1
Sulfate	110		50		mg/L			10/30/18 08:02	10

Client: KPRG and Associates, Inc.
Project/Site: Joliet #29 CCR

TestAmerica Job ID: 500-153411-1

Client Sample ID: Duplicate
Date Collected: 10/17/18 00:00
Date Received: 10/18/18 14:20

Lab Sample ID: 500-153411-5
Matrix: Water

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.29		0.050		mg/L		10/22/18 09:49	10/27/18 01:00	1
Calcium	100		0.20		mg/L		10/22/18 09:49	10/27/18 01:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	830		10		mg/L			10/19/18 08:21	1
Chloride	240		10		mg/L			11/01/18 14:59	5
Fluoride	0.45		0.10		mg/L			10/27/18 16:33	1
Sulfate	120		25		mg/L			10/30/18 08:03	5

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Metals

Prep Batch: 456088

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-153411-1	MW-03	Total Recoverable	Water	3005A	
500-153411-2	MW-04	Total Recoverable	Water	3005A	
500-153411-3	MW-05	Total Recoverable	Water	3005A	
500-153411-4	MW-10	Total Recoverable	Water	3005A	
500-153411-5	Duplicate	Total Recoverable	Water	3005A	
MB 500-456088/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 500-456088/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 457318

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-153411-1	MW-03	Total Recoverable	Water	6020A	456088
500-153411-2	MW-04	Total Recoverable	Water	6020A	456088
500-153411-3	MW-05	Total Recoverable	Water	6020A	456088
500-153411-4	MW-10	Total Recoverable	Water	6020A	456088
500-153411-5	Duplicate	Total Recoverable	Water	6020A	456088
MB 500-456088/1-A	Method Blank	Total Recoverable	Water	6020A	456088
LCS 500-456088/2-A	Lab Control Sample	Total Recoverable	Water	6020A	456088

General Chemistry

Analysis Batch: 455746

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-153411-1	MW-03	Total/NA	Water	SM 2540C	
500-153411-2	MW-04	Total/NA	Water	SM 2540C	
500-153411-3	MW-05	Total/NA	Water	SM 2540C	
500-153411-4	MW-10	Total/NA	Water	SM 2540C	
500-153411-5	Duplicate	Total/NA	Water	SM 2540C	
MB 500-455746/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 500-455746/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 456548

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-153411-1	MW-03	Total/NA	Water	SM 4500 SO4 E	
500-153411-2	MW-04	Total/NA	Water	SM 4500 SO4 E	
MB 500-456548/3	Method Blank	Total/NA	Water	SM 4500 SO4 E	
LCS 500-456548/4	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	

Analysis Batch: 457341

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-153411-1	MW-03	Total/NA	Water	SM 4500 F C	
500-153411-2	MW-04	Total/NA	Water	SM 4500 F C	
500-153411-3	MW-05	Total/NA	Water	SM 4500 F C	
500-153411-4	MW-10	Total/NA	Water	SM 4500 F C	
500-153411-5	Duplicate	Total/NA	Water	SM 4500 F C	
MB 500-457341/3	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 500-457341/4	Lab Control Sample	Total/NA	Water	SM 4500 F C	

Analysis Batch: 457467

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-153411-3	MW-05	Total/NA	Water	SM 4500 SO4 E	

General Chemistry (Continued)

Analysis Batch: 457467 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-153411-4	MW-10	Total/NA	Water	SM 4500 SO4 E	
500-153411-5	Duplicate	Total/NA	Water	SM 4500 SO4 E	
MB 500-457467/3	Method Blank	Total/NA	Water	SM 4500 SO4 E	
LCS 500-457467/4	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
500-153411-3 MS	MW-05	Total/NA	Water	SM 4500 SO4 E	
500-153411-3 MSD	MW-05	Total/NA	Water	SM 4500 SO4 E	

Analysis Batch: 457936

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-153411-1	MW-03	Total/NA	Water	SM 4500 Cl- E	
500-153411-2	MW-04	Total/NA	Water	SM 4500 Cl- E	
500-153411-3	MW-05	Total/NA	Water	SM 4500 Cl- E	
500-153411-4	MW-10	Total/NA	Water	SM 4500 Cl- E	
MB 500-457936/54	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 500-457936/55	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	

Analysis Batch: 458008

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-153411-5	Duplicate	Total/NA	Water	SM 4500 Cl- E	
MB 500-458008/4	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 500-458008/5	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 500-456088/1-A
Matrix: Water
Analysis Batch: 457318

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 456088

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.050		0.050		mg/L		10/22/18 09:49	10/27/18 00:38	1
Calcium	<0.20		0.20		mg/L		10/22/18 09:49	10/27/18 00:38	1

Lab Sample ID: LCS 500-456088/2-A
Matrix: Water
Analysis Batch: 457318

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 456088

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.00	0.975		mg/L		97	80 - 120
Calcium	10.0	8.81		mg/L		88	80 - 120

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 500-455746/1
Matrix: Water
Analysis Batch: 455746

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<10		10		mg/L			10/19/18 07:25	1

Lab Sample ID: LCS 500-455746/2
Matrix: Water
Analysis Batch: 455746

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	250	256		mg/L		102	80 - 120

Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 500-457936/54
Matrix: Water
Analysis Batch: 457936

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<2.0		2.0		mg/L			11/01/18 11:40	1

Lab Sample ID: LCS 500-457936/55
Matrix: Water
Analysis Batch: 457936

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	50.0		mg/L		100	85 - 115

Lab Sample ID: MB 500-458008/4
Matrix: Water
Analysis Batch: 458008

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<2.0		2.0		mg/L			11/01/18 14:57	1

Lab Sample ID: LCS 500-458008/5
Matrix: Water
Analysis Batch: 458008

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	50.1		mg/L		100	85 - 115

Method: SM 4500 F C - Fluoride

Lab Sample ID: MB 500-457341/3
Matrix: Water
Analysis Batch: 457341

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.10		0.10		mg/L			10/27/18 15:07	1

Lab Sample ID: LCS 500-457341/4
Matrix: Water
Analysis Batch: 457341

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	10.0	10.6		mg/L		106	80 - 120

Method: SM 4500 SO4 E - Sulfate, Total

Lab Sample ID: MB 500-456548/3
Matrix: Water
Analysis Batch: 456548

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<5.0		5.0		mg/L			10/24/18 11:27	1

Lab Sample ID: LCS 500-456548/4
Matrix: Water
Analysis Batch: 456548

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	20.0	19.0		mg/L		95	80 - 120

Lab Sample ID: MB 500-457467/3
Matrix: Water
Analysis Batch: 457467

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<5.0		5.0		mg/L			10/30/18 07:57	1

Lab Sample ID: LCS 500-457467/4
Matrix: Water
Analysis Batch: 457467

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	20.0	19.7		mg/L		99	80 - 120

Method: SM 4500 SO4 E - Sulfate, Total (Continued)

Lab Sample ID: 500-153411-3 MS
Matrix: Water
Analysis Batch: 457467

Client Sample ID: MW-05
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate	93		400	472		mg/L		95	75 - 125		

Lab Sample ID: 500-153411-3 MSD
Matrix: Water
Analysis Batch: 457467

Client Sample ID: MW-05
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	93		400	498		mg/L		101	75 - 125	6	20

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Chicago
2417 Bond St.
University Park, IL 60484
708-534-5200
Fax. 708-534-5211

Report To:		Bill To:	
Contact:	Richard Gnat	Contact:	
Company:	KPRG and Associates, Inc	Company:	
Address:	14665 W. Lisbon Rd., Suite 2B	Address:	
	Brookfield, WI 53005		
Phone:	262-781-0475	Phone:	
Email:	richardg@kprginc.com	Email	
		PO #:	

500-153411 COC

Lab Lot # 500753411

Package Sealed: Yes / No	Samples Sealed: Yes / No
Received on Ice: Yes / No	Samples Intact: Yes / No / N/A
Temperature °C of Cooler	1.0
Within Hold Time: Yes / No	Preserv. Indicated: Yes / No / N/A
pH Check OK: Yes / No	Res CL_2 Check OK: Yes / No / N/A
Sample Labels and COC Agree: Yes / No	COC not present

Sampler Name: Ian John Howieson	**COMPANY:** KPRG & Associates Inc.	# / Cont.	
		Volume	
Project Name: Quarterly- JOLIET #29 CCR	**TestAmerica Project Number:** 50011568	Preserv.	
Project Location: Joliet, IL	**TAT** 15 Days	Matrix	# of Cont
Lab PM: Eric Lang	eric.lang@testamerica.com		

Laboratory ID	MS-MSD	Client Sample ID	Sampling Date	Sampling Time	Matrix	# of Cont	6020A - Total Metals (B, Ca)	2540C -TDS	4500_F_C - Fluoride	SM4500_Cl_E Chloride	SM4500_SO4_E - Sulfate	Additional Analyses / Remarks
1		MW-03	10-17-18	09:52	W	2	X	X	X	X	X	
2		MW-04	10-17-18	11:08	W	2	X	X	X	X	X	
3		MW-05	10-17-18	12:41	W	2	X	X	X	X	X	
4		MW-10	10-17-18	14:05	W	2	X	X	X	X	X	
5		Duplicate	10-17-18	—	W	2	X	X	X	X	X	

RELINQUISHED BY: IJH	COMPANY: KPRG	DATE: 10-18-18	TIME: 14:20	RECEIVED BY:	COMPANY: TA-CHI	DATE: 10/18/18	TIME: 1420
RELINQUISHED BY:	COMPANY:	DATE:	TIME:	RECEIVED BY:	COMPANY:	DATE:	TIME:

Matrix Key
WW = Wastewater, SE = Sediment, W = Water, SO = Solid, S = Soil, DL = Drum Liquid, SL = Sludge, DS = Drum Solid, MS = Miscellaneous, L = Leachate, OL = Oil, W = Wipe, A = Air, O = _____

Container Key
1. Plastic
2. VOA Vial
3. Sterile Plastic
4. Amber Glass
5. Widemouth Glass
6. Other
_____

Preservative Key
1. HCl, Cool to 4°
2. H_2SO_4, Cool to 4°
3. HNO_3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. Cool to 4°
7. None

COMMENTS:

Date Received 10 18 18
Courier:
Hand Delivered X
Bill of Lading:

__1__of__1__

STL-8208 (0600)

Login Sample Receipt Checklist

Client: KPRG and Associates, Inc.

Job Number: 500-153411-1

Login Number: 153411
List Number: 1
Creator: Sanchez, Ariel M

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.0
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Lab Chronicle

Client: KPRG and Associates, Inc.
Project/Site: Joliet #29 CCR

TestAmerica Job ID: 500-153411-1

Client Sample ID: MW-03

Lab Sample ID: 500-153411-1

Date Collected: 10/17/18 09:52

Matrix: Water

Date Received: 10/18/18 14:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			456088	10/22/18 09:49	SAH	TAL CHI
Total Recoverable	Analysis	6020A		1	457318	10/27/18 00:45	FXG	TAL CHI
Total/NA	Analysis	SM 2540C		1	455746	10/19/18 08:11	CLB	TAL CHI
Total/NA	Analysis	SM 4500 Cl- E		5	457936	11/01/18 11:59	EAT	TAL CHI
Total/NA	Analysis	SM 4500 F C		1	457341	10/27/18 16:11	EAT	TAL CHI
Total/NA	Analysis	SM 4500 SO4 E		4	456548		CLB	TAL CHI
					(Start)	10/24/18 11:47		
					(End)	10/24/18 11:48		

Client Sample ID: MW-04

Lab Sample ID: 500-153411-2

Date Collected: 10/17/18 11:08

Matrix: Water

Date Received: 10/18/18 14:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			456088	10/22/18 09:49	SAH	TAL CHI
Total Recoverable	Analysis	6020A		1	457318	10/27/18 00:49	FXG	TAL CHI
Total/NA	Analysis	SM 2540C		1	455746	10/19/18 08:14	CLB	TAL CHI
Total/NA	Analysis	SM 4500 Cl- E		5	457936	11/01/18 11:59	EAT	TAL CHI
Total/NA	Analysis	SM 4500 F C		1	457341	10/27/18 16:14	EAT	TAL CHI
Total/NA	Analysis	SM 4500 SO4 E		4	456548		CLB	TAL CHI
					(Start)	10/24/18 11:48		
					(End)	10/24/18 11:49		

Client Sample ID: MW-05

Lab Sample ID: 500-153411-3

Date Collected: 10/17/18 12:41

Matrix: Water

Date Received: 10/18/18 14:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			456088	10/22/18 09:49	SAH	TAL CHI
Total Recoverable	Analysis	6020A		1	457318	10/27/18 00:53	FXG	TAL CHI
Total/NA	Analysis	SM 2540C		1	455746	10/19/18 08:16	CLB	TAL CHI
Total/NA	Analysis	SM 4500 Cl- E		5	457936	11/01/18 12:00	EAT	TAL CHI
Total/NA	Analysis	SM 4500 F C		1	457341	10/27/18 16:17	EAT	TAL CHI
Total/NA	Analysis	SM 4500 SO4 E		10	457467		CLB	TAL CHI
					(Start)	10/30/18 07:59		
					(End)	10/30/18 08:00		

Lab Chronicle

Client: KPRG and Associates, Inc.
Project/Site: Joliet #29 CCR

TestAmerica Job ID: 500-153411-1

Client Sample ID: MW-10

Date Collected: 10/17/18 14:05
Date Received: 10/18/18 14:20

Lab Sample ID: 500-153411-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			456088	10/22/18 09:49	SAH	TAL CHI
Total Recoverable	Analysis	6020A		1	457318	10/27/18 00:56	FXG	TAL CHI
Total/NA	Analysis	SM 2540C		1	455746	10/19/18 08:19	CLB	TAL CHI
Total/NA	Analysis	SM 4500 Cl- E		5	457936	11/01/18 12:00	EAT	TAL CHI
Total/NA	Analysis	SM 4500 F C		1	457341	10/27/18 16:30	EAT	TAL CHI
Total/NA	Analysis	SM 4500 SO4 E		10	457467		CLB	TAL CHI
					(Start)	10/30/18 08:02		
					(End)	10/30/18 08:03		

Client Sample ID: Duplicate

Date Collected: 10/17/18 00:00
Date Received: 10/18/18 14:20

Lab Sample ID: 500-153411-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			456088	10/22/18 09:49	SAH	TAL CHI
Total Recoverable	Analysis	6020A		1	457318	10/27/18 01:00	FXG	TAL CHI
Total/NA	Analysis	SM 2540C		1	455746	10/19/18 08:21	CLB	TAL CHI
Total/NA	Analysis	SM 4500 Cl- E		5	458008	11/01/18 14:59	EAT	TAL CHI
Total/NA	Analysis	SM 4500 F C		1	457341	10/27/18 16:33	EAT	TAL CHI
Total/NA	Analysis	SM 4500 SO4 E		5	457467		CLB	TAL CHI
					(Start)	10/30/18 08:03		
					(End)	10/30/18 08:04		

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-155461-1
Client Project/Site: Joliet #9

For:
KPRG and Associates, Inc.
14665 West Lisbon Road,
Suite 1A
Brookfield, Wisconsin 53005

Attn: Richard Gnat

Authorized for release by:
12/5/2018 11:15:33 AM

Eric Lang, Manager of Project Management
(708)534-5200
eric.lang@testamericainc.com

Table of Contents

Case Narrative

Client: KPRG and Associates, Inc.
Project/Site: Joliet #9

TestAmerica Job ID: 500-155461-1

Job ID: 500-155461-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-155461-1

Comments
No additional comments.

Receipt
The sample was received on 11/30/2018 11:20 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.4° C.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Method Summary

Client: KPRG and Associates, Inc.
Project/Site: Joliet #9

TestAmerica Job ID: 500-155461-1

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	TAL CHI
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL CHI

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: KPRG and Associates, Inc.
Project/Site: Joliet #9

TestAmerica Job ID: 500-155461-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-155461-1	MW-10	Water	11/28/18 11:51	11/30/18 11:20

Client Sample Results

Client: KPRG and Associates, Inc.
Project/Site: Joliet #9

TestAmerica Job ID: 500-155461-1

Client Sample ID: MW-10
Date Collected: 11/28/18 11:51
Date Received: 11/30/18 11:20

Lab Sample ID: 500-155461-1
Matrix: Water

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.44		0.050		mg/L		12/01/18 16:22	12/04/18 11:06	1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Association Summary

Client: KPRG and Associates, Inc.
Project/Site: Joliet #9

TestAmerica Job ID: 500-155461-1

Metals

Prep Batch: 462659

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-155461-1	MW-10	Total Recoverable	Water	3005A	
MB 500-462659/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 500-462659/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
500-155461-1 MS	MW-10	Total Recoverable	Water	3005A	
500-155461-1 MSD	MW-10	Total Recoverable	Water	3005A	
500-155461-1 DU	MW-10	Total Recoverable	Water	3005A	

Analysis Batch: 463118

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-155461-1	MW-10	Total Recoverable	Water	6020A	462659
MB 500-462659/1-A	Method Blank	Total Recoverable	Water	6020A	462659
LCS 500-462659/2-A	Lab Control Sample	Total Recoverable	Water	6020A	462659
500-155461-1 MS	MW-10	Total Recoverable	Water	6020A	462659
500-155461-1 MSD	MW-10	Total Recoverable	Water	6020A	462659
500-155461-1 DU	MW-10	Total Recoverable	Water	6020A	462659

QC Sample Results

Client: KPRG and Associates, Inc.
Project/Site: Joliet #9

TestAmerica Job ID: 500-155461-1

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 500-462659/1-A
Matrix: Water
Analysis Batch: 463118

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 462659

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.050		0.050		mg/L		12/01/18 16:22	12/04/18 10:55	1

Lab Sample ID: LCS 500-462659/2-A
Matrix: Water
Analysis Batch: 463118

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 462659

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.00	1.02		mg/L		102	80 - 120

Lab Sample ID: 500-155461-1 MS
Matrix: Water
Analysis Batch: 463118

Client Sample ID: MW-10
Prep Type: Total Recoverable
Prep Batch: 462659

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	0.44		1.00	1.37		mg/L		93	75 - 125

Lab Sample ID: 500-155461-1 MSD
Matrix: Water
Analysis Batch: 463118

Client Sample ID: MW-10
Prep Type: Total Recoverable
Prep Batch: 462659

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron	0.44		1.00	1.36		mg/L		93	75 - 125	0	20

Lab Sample ID: 500-155461-1 DU
Matrix: Water
Analysis Batch: 463118

Client Sample ID: MW-10
Prep Type: Total Recoverable
Prep Batch: 462659

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Boron	0.44		0.473		mg/L		7	20

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

(optional)

Report To
Contact: RICHARD GNAT
Company: KPRG and Assoc, Inc.
Address: 14665 W LISBON AVE IA
Address: BROOKFIELD, WI 53005
Phone: 262-781-0475
Fax:
E-Mail: richardg@kprginc.com

(optional)

Bill To
Contact: RICHARD GNAT
Company: KPRG and Assoc. Inc.
Address: 14665 W LISBON AVE IA
Address: BROOKFIELD, WI 53005
Phone: 262-781-0475
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #: 500-155461

Chain of Custody Number:

Page 1 of 1

Temperature °C of Cooler: -0.8 → 1.4

Client: KPRG and Assoc., Inc
Client Project #: 12313.0
Project Name: MIDWEST GEN - JOLIET #29
Project Location/State: IL
Lab Project #:
Sampler: ERIN BULSON
Lab PM:

Preservative: 3
Parameter: BORON

500-155461 COC

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	Comments
1		MW-10	11/28	1151	1	W	X

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days X 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date _____

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Erin Bulson	KPRG	11-29-18	8:47 AM		TA	11-29-18	8:47 AM
	TA	11-29-18	17:00		TA	11-30-18	1120

Lab Courier
Shipped
Hand Delivered

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

ORIGIN ID:RRLA (262) 202-5955
SHIPPING
TESTAMERICA
4125 N 124TH ST

BROOKFIELD, WI 53005
UNITED STATES US

SHIP DATE: 29NOV18
ACTWGT: 46.90 LB
CAD: 525155/CAFE3211

BILL RECIPIENT

TO SAMPLE RECEIPT
TESTAMERICA LABS
2417 BOND STREET

UNIVERSITY PARK IL 60484

(708) 634-6200 REF:
INV:
PO: DEPT:

FedEx
Express

TRK# 0201 7125 4939 2544

FRI - 30 NOV 10:30A
PRIORITY OVERNIGHT

79 JOTA

60484
IL-US ORD

48qt.

500-155461 Waybill

Login Sample Receipt Checklist

Client: KPRG and Associates, Inc.

Job Number: 500-155461-1

Login Number: 155461
List Number: 1
Creator: James, Jeff A

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.4
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Lab Chronicle

Client: KPRG and Associates, Inc.
Project/Site: Joliet #9

TestAmerica Job ID: 500-155461-1

Client Sample ID: MW-10
Date Collected: 11/28/18 11:51
Date Received: 11/30/18 11:20

Lab Sample ID: 500-155461-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			462659	12/01/18 16:22	BDE	TAL CHI
Total Recoverable	Analysis	6020A		1	463118	12/04/18 11:06	FXG	TAL CHI

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200