2018 Annual Groundwater Monitoring and Corrective Action Report

M.L. Kapp Generating Station
3301 Highway 67 S
Clinton, Iowa 52732

Prepared for:

Alliant Energy

Interstate Power and Light Company
4902 N. Biltmore Lane
Madison, Wisconsin 53718

SCS ENGINEERS

25219077.00 | August 1, 2019

2830 Dairy Drive
Madison, WI 53718-6751
608-224-2830

Table of Contents

Tables

Figures

Appendix A – Analytical Laboratory Reports

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1.0 INTRODUCTION

This 2018 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" published by the U.S. 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) and subsequent amendments. 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 2018 Annual Groundwater Monitoring and Corrective Action Report for the CCR unit.

This report covers the period of groundwater monitoring from January 1, 2018, through December 31, 2018. March 28, 2018, is the date of the first background sampling round. All future annual reports will cover the period from January 1 through December 31 of the previous year.

The groundwater monitoring system for the M.L. Kapp Generating Station (KAP) monitors a single CCR unit:

- Kapp Main Ash Pond (inactive surface impoundment – closed January 2018)

The system is designed to detect monitored constituents at the waste boundary of the KAP CCR unit as required by 40 CFR 257.91(d). The groundwater monitoring system consists of one upgradient and five downgradient monitoring wells.

2.0 257.100(E)(5) GROUNDWATER MONITORING AND CORRECTIVE ACTION FOR INACTIVE CCR SURFACE IMPOUNDMENTS

The owner or operator of the inactive CCR surface impoundments must: (i) No later than April 17, 2019, comply with groundwater monitoring requirements set forth in §§ 257.90(b) and 257.94(b); and (ii) No later than August 1, 2019, prepare the initial groundwater monitoring and corrective action report as set forth in § 257.90(e).

This report is submitted to fulfill the initial report requirement.

3.0 §257.90(E) ANNUAL REPORT REQUIREMENTS

Annual groundwater monitoring and corrective action report. 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:

3.1 §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 map showing the CCR unit as well as the background (or upgradient) and downgradient monitoring wells with identification numbers for the groundwater monitoring program is provided as **Figure 2**.

3.2 §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;

Upgradient monitoring well MW-306 and downgradient monitoring wells MW-301, MW-302, MW-303, MW-304, and MW-305 were installed at KAP on February 7 to 8, 2018, to establish the monitoring system.

3.3 §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;

Six groundwater samples were collected from each CCR monitoring well in 2018 for the establishment of background. Background sampling began in March 2018. Background samples were analyzed for both Appendix III and Appendix IV constituents. A summary including the number of groundwater samples that were collected in 2018 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 is included in **Table 1**. The results of the analytical laboratory analyses are provided in the laboratory reports in **Appendix A1** through **Appendix A6**.

3.4 §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);

There were no transitions between monitoring programs in 2018.

3.5 §257.90(E)(5) OTHER REQUIREMENTS

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

Additional potentially applicable requirements for the annual report, and the location of the requirement within the Rule, are provided in the following sections. For each cited section of the Rule, the portion referencing the annual report requirement is provided below in *italics*, followed by applicable information relative to the 2018 Annual Groundwater Monitoring and Corrective Action Report for the CCR units.

3.5.1 §257.90(e) General Requirements

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.

Status of Groundwater Monitoring and Corrective Action Program. In 2018, the groundwater monitoring and corrective action program was in background monitoring.

Summary of Key Actions Completed. Collection of six rounds of background groundwater quality data was completed in 2018.

Description of Any Problems Encountered. No issues were encountered.

Discussion of Actions to Resolve the Problems. Not applicable.

Projection of Key Activities for the Upcoming Year (2019):

- Completion of background monitoring.
- Initiation of detection monitoring no later than April 17, 2019.
- Two semi-annual groundwater sampling and analysis events (April and October 2019).
- Statistical evaluation and determination of any statistically significant increases (SSIs) for the April 2019 monitoring event (by July 16, 2019) and for the October 2019 monitoring event (by January, 2020).
- If an SSI is determined, then within 90 days either:
  - Complete alternative source demonstration (if applicable), or
  - Establish an assessment monitoring program

3.5.2 §257.94(d) Alternative Detection Monitoring Frequency

The owner or operator must include the demonstration providing the basis for the alternative monitoring frequency and the certification by a qualified professional engineer in the annual groundwater monitoring and corrective action report required by § 257.90(e).

Not Applicable. No alternative detection monitoring frequency has been proposed.

3.5.3 §257.94(e)(2) Alternative Source Demonstration for Detection Monitoring

The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by § 257.90(e), in addition to the certification by a qualified professional engineer.

Not Applicable. No alternative source demonstration was completed in 2018.

3.5.4 §257.95(c) Alternative Assessment Monitoring Frequency

The owner or operator must include the demonstration providing the basis for the alternative monitoring frequency and the certification by a qualified professional engineer in the annual groundwater monitoring and corrective action report required by § 257.90(e).

Not Applicable. Assessment monitoring has not been initiated, and no alternative assessment monitoring frequency has been proposed.

3.5.5 §257.95(d)(3) Assessment Monitoring Results and Standards

Include the recorded concentrations required by paragraph (d)(1) of this section, identify the background concentrations established under § 257.94(b), and identify the groundwater protection standards established under paragraph (d)(2) of this section in the annual groundwater monitoring and corrective action report required by § 257.90(e).

Not Applicable. Assessment monitoring was not performed in 2018.

3.5.6 §257.95(g)(3)(ii) Alternative Source Demonstration for Assessment Monitoring

The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by § 257.90(e), in addition to the certification by a qualified professional engineer.

Not Applicable. Assessment monitoring has not been initiated, and no alternative source demonstration for assessment monitoring was completed in 2018.

3.5.7 §257.96(a) Extension of Time for Corrective Measures Assessment

The assessment of corrective measures must be completed within 90 days, unless the owner or operator demonstrates the need for additional time to complete the assessment of corrective measure due to site-specific conditions or circumstances. The owner or operator must obtain a certification from a qualified professional engineer attesting that the demonstration is accurate. The 90-day deadline to complete the assessment of corrective measures may be extended for longer than 60 days. The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by § 257.90(e), in addition to the certification by a qualified professional engineer.

Not Applicable. Corrective measures assessment has not been initiated.

Table 1

CCR Rule Groundwater Samples Summary

Table 1. CCR Rule Groundwater Samples Summary
M.L. Kapp Generating Station / SCS Engineers Project #25219077.00

Sample Dates	Downgradient Wells					Background Well
	MW-301	MW-302	MW-303	MW-304	MW-305	MW-306
3/28/2018	B	B	B	B	B	B
5/22/2018	B	B	B	B	B	B
6/25/2018	B	B	B	B	B	B
7/25/2018	B	B	B	B	B	B
10/5/2018	B	B	B	B	B	B
11/29/2018	B	B	B	B	B	B
Total Samples	6	6	6	6	6	6

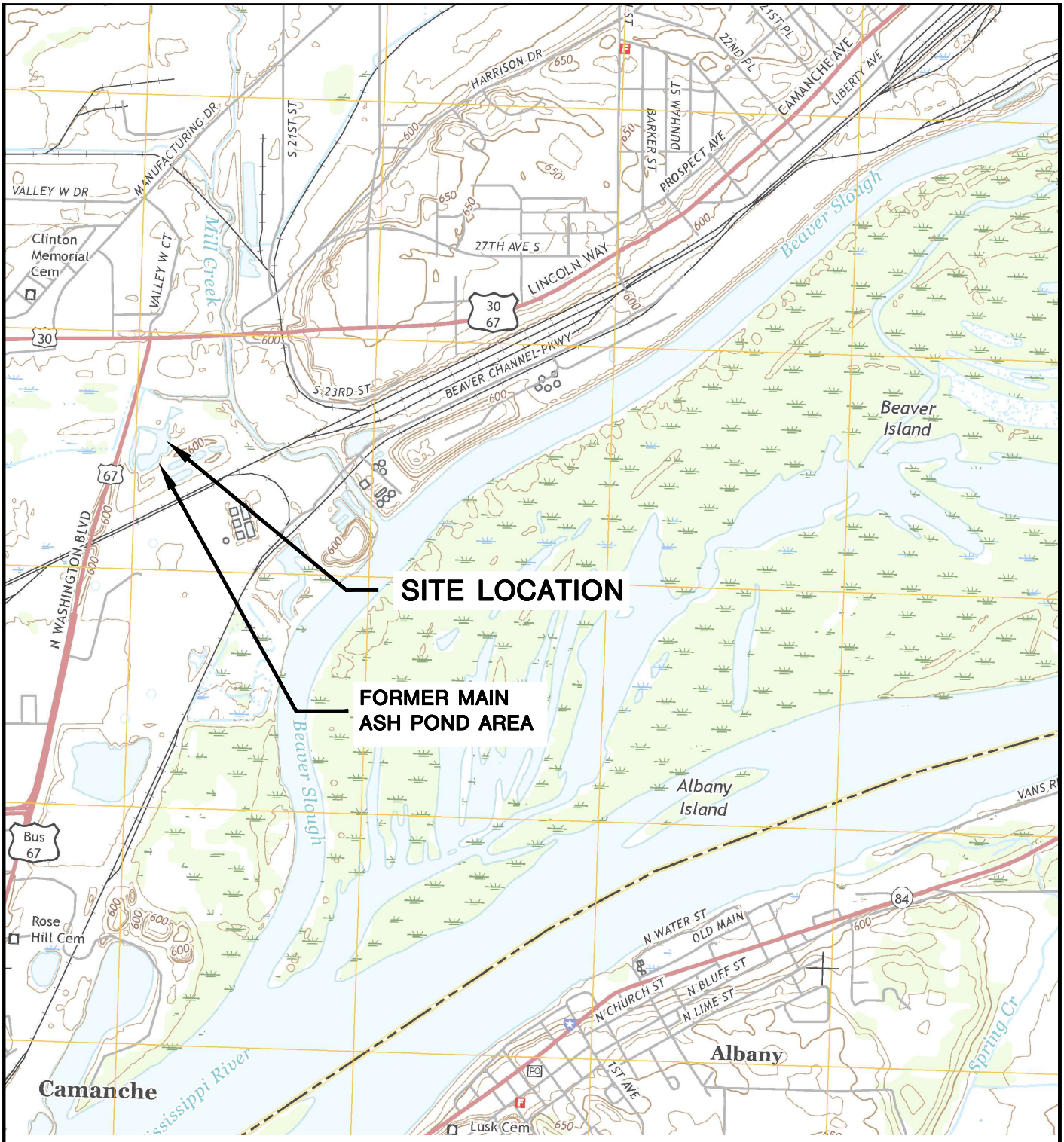
Abbreviations:
B = Background sampling event

Note: Detection monitoring will be initiated after completion of background monitoring.

Created by:	JR	Date:	6/5/2019
Last revision by:	JR	Date:	7/10/2019
Checked by:	NDK	Date:	7/10/2019

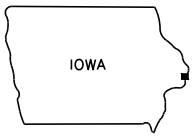
I:\25219077.00\Deliverables\2018 Federal Annual Report\[Table 1 GW_Samples_Summary_Table.xlsx]GW Summary

Figures



N

CLINTON QUADRANGLE
IOWA–ILLINOIS
7.5 MINUTE SERIES (TOPOGRAPHIC)
2015
SCALE: 1" = 2,000'



CLIENT	ALLIANT ENERGY ML–KAPP GENERATING STATION 2001 BEAVER CHANNEL PKWY, CLINTON, IA 52732	SITE	ML–KAPP 3301 HIGHWAY 67 S. CLINTON, IA 52732

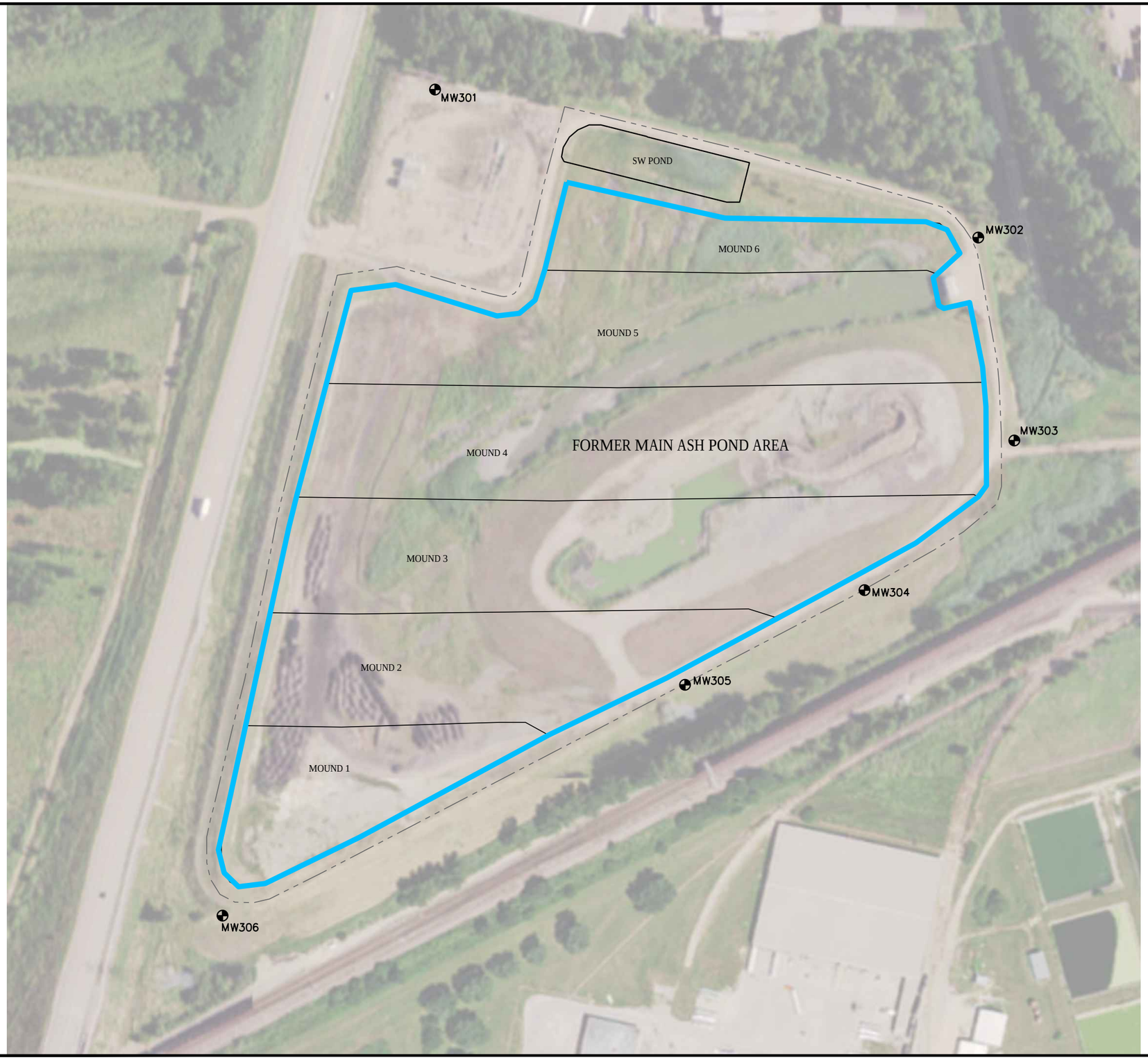
SITE LOCATION MAP

PROJECT NO.	25216127.00	DRAWN BY:	BJM
DRAWN:	04/04/18	CHECKED BY:	KK
REVISED:	07/29/19	APPROVED BY:	

ENGINEER
SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718–6751
PHONE: (608) 224–2830

FIGURE
1

I:\25216127.00\Drawings\1 Site Location Map.dwg, 8/1/2019 7:31:19 AM



LEGEND

- PROJECT BOUNDARY
- MOUND BOUNDARIES
- MW303 CCR MONITORING WELL
- CCR UNIT

N

200 0 200

SCALE: 1" = 200'

SITE PLAN AND WELL LOCATION MAP

SITE

M.L. KAPP GENERATING STATION
3301 HIGHWAY 67 S, CLINTON, IA 52732

CLIENT

ALLIANT ENERGY
M.L. KAPP GENERATING STATION
2001 BEAVER CHANNEL PKWY, CLINTON, IA 52732

FIGURE 2

ENGINEER

SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

PROJECT NO.	25219077.00
DRAWN:	03/14/19
REVISED:	06/12/19
DRAWN BY:	BJM
CHECKED BY:	NK
APPROVED BY:	

i:\25219077.00\Drawings\Site Plan.dwg, 7/3/2019 2:44:47 PM

Appendix A

Laboratory Reports

A1 Round 1 Background Sampling, Analytical Laboratory Report

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

April 19, 2018

Meghan Blodgett
SCS Engineers
2830 Dairy Drive
Madison, WI 53718

RE: Project: M.L. Kapp Ash Pond/25218061.00
Pace Project No.: 60267133

Dear Meghan Blodgett:
Enclosed are the analytical results for sample(s) received by the laboratory on March 30, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Trudy Gipson

Trudy Gipson
trudy.gipson@pacelabs.com
1(913)563-1405
Project Manager

Enclosures

cc: Tom Karwaski, SCS Engineers
Kyle Kramer, SCS Engineers
Jeff Maxted, Alliant Energy

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CERTIFICATIONS

Project: M.L. Kapp Ash Pond/25218061.00
Pace Project No.: 60267133

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991
Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 9526
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

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SAMPLE SUMMARY

Project: M.L. Kapp Ash Pond/25218061.00
Pace Project No.: 60267133

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60267133001	**MW-301**	Water	03/28/18 09:20	03/30/18 08:55
60267133002	**MW-302**	Water	03/28/18 11:10	03/30/18 08:55
60267133003	**MW-303**	Water	03/28/18 10:30	03/30/18 08:55
60267133004	**MW-304**	Water	03/28/18 11:15	03/30/18 08:55
60267133005	**MW-305**	Water	03/28/18 11:55	03/30/18 08:55
60267133006	**MW-306**	Water	03/28/18 12:15	03/30/18 08:55
60267133007	**FIELD BLANK**	Water	03/28/18 09:20	03/30/18 08:55

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SAMPLE ANALYTE COUNT

Project: M.L. Kapp Ash Pond/25218061.00
Pace Project No.: 60267133

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60267133001	**MW-301**	EPA 903.1	KAC	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60267133002	**MW-302**	EPA 903.1	KAC	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60267133003	**MW-303**	EPA 903.1	KAC	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60267133004	**MW-304**	EPA 903.1	KAC	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60267133005	**MW-305**	EPA 903.1	KAC	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60267133006	**MW-306**	EPA 903.1	KAC	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60267133007	**FIELD BLANK**	EPA 903.1	KAC	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: M.L. Kapp Ash Pond/25218061.00
Pace Project No.: 60267133

Sample: MW-301 **Lab ID: 60267133001** Collected: 03/28/18 09:20 Received: 03/30/18 08:55 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.676 ± 0.579 (0.784) C:NA T:84%**	pCi/L	04/13/18 20:57	13982-63-3	
Radium-228	EPA 904.0	**0.514 ± 0.390 (0.756) C:62% T:87%**	pCi/L	04/11/18 11:59	15262-20-1	
Total Radium	Total Radium Calculation	**1.19 ± 0.969 (1.54)**	pCi/L	04/19/18 11:36	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: M.L. Kapp Ash Pond/25218061.00
Pace Project No.: 60267133

Sample: MW-302 **Lab ID: 60267133002** Collected: 03/28/18 11:10 Received: 03/30/18 08:55 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.495 ± 0.516 (0.728) C:NA T:76%**	pCi/L	04/13/18 20:45	13982-63-3	
Radium-228	EPA 904.0	**0.523 ± 0.420 (0.843) C:78% T:84%**	pCi/L	04/11/18 11:59	15262-20-1	
Total Radium	Total Radium Calculation	**1.02 ± 0.936 (1.57)**	pCi/L	04/19/18 11:36	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: M.L. Kapp Ash Pond/25218061.00
Pace Project No.: 60267133

Sample: MW-303 **Lab ID: 60267133003** Collected: 03/28/18 10:30 Received: 03/30/18 08:55 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.519 ± 0.540 (0.804) C:NA T:87%**	pCi/L	04/13/18 20:57	13982-63-3	
Radium-228	EPA 904.0	**0.302 ± 0.422 (0.905) C:75% T:68%**	pCi/L	04/11/18 11:59	15262-20-1	
Total Radium	Total Radium Calculation	**0.821 ± 0.962 (1.71)**	pCi/L	04/19/18 11:36	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: M.L. Kapp Ash Pond/25218061.00
Pace Project No.: 60267133

Sample: MW-304 **Lab ID: 60267133004** Collected: 03/28/18 11:15 Received: 03/30/18 08:55 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.659 ± 0.516 (0.606) C:NA T:92%**	pCi/L	04/13/18 20:57	13982-63-3	
Radium-228	EPA 904.0	**0.437 ± 0.362 (0.727) C:78% T:88%**	pCi/L	04/11/18 11:59	15262-20-1	
Total Radium	Total Radium Calculation	**1.10 ± 0.878 (1.33)**	pCi/L	04/19/18 11:36	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: M.L. Kapp Ash Pond/25218061.00
Pace Project No.: 60267133

Sample: MW-305 **Lab ID: 60267133005** Collected: 03/28/18 11:55 Received: 03/30/18 08:55 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.425 ± 0.554 (0.914) C:NA T:85%**	pCi/L	04/13/18 21:11	13982-63-3	
Radium-228	EPA 904.0	**0.537 ± 0.344 (0.642) C:76% T:89%**	pCi/L	04/11/18 11:59	15262-20-1	
Total Radium	Total Radium Calculation	**0.962 ± 0.898 (1.56)**	pCi/L	04/19/18 11:36	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: M.L. Kapp Ash Pond/25218061.00
Pace Project No.: 60267133

Sample: MW-306 **Lab ID: 60267133006** Collected: 03/28/18 12:15 Received: 03/30/18 08:55 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.0948 ± 0.492 (1.02) C:NA T:81%**	pCi/L	04/13/18 20:58	13982-63-3	
Radium-228	EPA 904.0	**0.571 ± 0.354 (0.660) C:77% T:91%**	pCi/L	04/11/18 11:59	15262-20-1	
Total Radium	Total Radium Calculation	**0.666 ± 0.846 (1.68)**	pCi/L	04/19/18 11:36	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: M.L. Kapp Ash Pond/25218061.00
Pace Project No.: 60267133

Sample: FIELD BLANK **Lab ID: 60267133007** Collected: 03/28/18 09:20 Received: 03/30/18 08:55 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.365 ± 0.440 (0.671) C:NA T:87%**	pCi/L	04/13/18 21:10	13982-63-3	
Radium-228	EPA 904.0	**0.692 ± 0.448 (0.847) C:74% T:76%**	pCi/L	04/11/18 11:59	15262-20-1	
Total Radium	Total Radium Calculation	**1.06 ± 0.888 (1.52)**	pCi/L	04/19/18 11:36	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: M.L. Kapp Ash Pond/25218061.00
Pace Project No.: 60267133

QC Batch: 293700 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 60267133001, 60267133002, 60267133003, 60267133004, 60267133005, 60267133006, 60267133007

METHOD BLANK: 1437851 Matrix: Water
Associated Lab Samples: 60267133001, 60267133002, 60267133003, 60267133004, 60267133005, 60267133006, 60267133007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.411 ± 0.366 (0.743) C:76% T:84%	pCi/L	04/11/18 11:58	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL - RADIOCHEMISTRY

Project: M.L. Kapp Ash Pond/25218061.00
Pace Project No.: 60267133

QC Batch: 293576 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples: 60267133001, 60267133002, 60267133003, 60267133004, 60267133005, 60267133006, 60267133007

METHOD BLANK: 1437149 Matrix: Water
Associated Lab Samples: 60267133001, 60267133002, 60267133003, 60267133004, 60267133005, 60267133006, 60267133007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.086 ± 0.393 (0.799) C:NA T:88%	pCi/L	04/13/18 20:31	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALIFIERS

Project: M.L. Kapp Ash Pond/25218061.00
Pace Project No.: 60267133

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval). Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: M.L. Kapp Ash Pond/25218061.00
Pace Project No.: 60267133

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60267133001	**MW-301**	EPA 903.1	293576		
60267133002	**MW-302**	EPA 903.1	293576		
60267133003	**MW-303**	EPA 903.1	293576		
60267133004	**MW-304**	EPA 903.1	293576		
60267133005	**MW-305**	EPA 903.1	293576		
60267133006	**MW-306**	EPA 903.1	293576		
60267133007	**FIELD BLANK**	EPA 903.1	293576		
60267133001	**MW-301**	EPA 904.0	293700		
60267133002	**MW-302**	EPA 904.0	293700		
60267133003	**MW-303**	EPA 904.0	293700		
60267133004	**MW-304**	EPA 904.0	293700		
60267133005	**MW-305**	EPA 904.0	293700		
60267133006	**MW-306**	EPA 904.0	293700		
60267133007	**FIELD BLANK**	EPA 904.0	293700		
60267133001	**MW-301**	Total Radium Calculation	295021		
60267133002	**MW-302**	Total Radium Calculation	295021		
60267133003	**MW-303**	Total Radium Calculation	295021		
60267133004	**MW-304**	Total Radium Calculation	295021		
60267133005	**MW-305**	Total Radium Calculation	295021		
60267133006	**MW-306**	Total Radium Calculation	295021		
60267133007	**FIELD BLANK**	Total Radium Calculation	295021		

Pace Analytical
www.pacelabs.com

Sample Condition Upon Receipt

WO# : 60267133

60267133

Client Name: SCS

Courier: FedEx ☒ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☐ Client ☐ Other ☐

Tracking #: 4122 4444 4207 Pace Shipping Label Used? Yes ☐ No ☐

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☒ Other ☐

Thermometer Used: 216 **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): **As-read** 3.0 **Corr. Factor** +0.2 **Corrected** 3.2

Date and initials of person examining contents: 03/30

Temperature should be above freezing to 6°C

Chain of Custody present:	☒Yes ☐No ☐N/A	
Chain of Custody relinquished:	☒Yes ☐No ☐N/A	
Samples arrived within holding time:	☒Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☒No ☐N/A	
Rush Turn Around Time requested:	☐Yes ☒No ☐N/A	
Sufficient volume:	☒Yes ☐No ☐N/A	
Correct containers used:	☒Yes ☐No ☐N/A	
Pace containers used:	☒Yes ☐No ☐N/A	
Containers intact:	☒Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☒N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☒N/A	
Sample labels match COC: Date / time / ID / analyses	☒Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☐No ☒N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	☐Yes ☐No ☒N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☐Yes ☐No ☒N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☒N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☒N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☒N/A	

Client Notification/ Resolution: Copy COC to Client? Y / (N) Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: dmw for TDG Date: 3/30/18

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

Section A — Required Client Information:

Company:	SCS Engineers
Address:	2830 Dairy Drive
	Madison WI 53718
Email To:	mblodgett@scsengineers.com
Phone:	608-216-7362
Fax:	
Requested Due Date/TAT:	

Section B — Required Project Information:

Report To:	Meghan Blodgett
Copy To:	Tom Karwaski
Purchase Order No.:	
Project Name:	M.L. Kapp Ash Pond
Project Number:	25218061.00*

Section C — Invoice Information:

Attention:	Meghan Blodgett/Jess Valcheff
Company Name:	SCS Engineers
Address:	
Pace Quote Reference:	
Pace Project Manager:	Trudy Gipson 913-563-1405
Pace Profile #:	6696 Line 2

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER

☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: IA

Section D — Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

Requested Analysis Filtered (Y/N)

#	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED: COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N: 903.1 Radium-226	904.0 Radium-228	Total Radium	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-301	WT	G	xxx	xxx	3-28-18	0920		2			2						X	X	X		L0267133 001
2	MW-302	WT	G	xxx	xxx		1110		2			2						X	X	X		002
3	MW-303	WT	G	xxx	xxx		1030		2			2						X	X	X		003
4	MW-304	WT	G	xxx	xxx		1115		2			2						X	X	X		004
5	MW-305	WT	G	xxx	xxx		1155		2			2						X	X	X		005
6	MW-306	WT	G	xxx	xxx		1215		2			2						X	X	X		006
7	FIELD BLANK	WT	G	xxx	xxx		—		2			2						X	X	X		007
8																						
9																						
10																						
11																						
12																						

(2) BP10[29]

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Ship To: 9608 Loiret Boulevard, Lenexa, KS 66219	Kyle Kramer	3-28-18	1440		3/30	0855	3.2	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Kyle Kramer + Nicole Herms

SIGNATURE of SAMPLER: Kyle Kramer — DATE Signed (MM/DD/YY): 3-28-18

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-Feb-2007

Chain of Custody

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: IA

Pace Analytical® www.pacelabs.com

Workorder: 60267133 **Workorder Name:** M.L. KAPP ASH POND

Owner Received Date: 3/30/2018 **Results Requested By:** 4/20/2018

Report To	Subcontract To
Trudy Gipson Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone 1(913)563-1405	Pace Analytical Pittsburgh 1638 Roseytown Road Suites 2,3, & 4 Greensburg, PA 15601 Phone (724)850-5600

WO# : 30248102

30248102

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers HNO3	903.1 Radium-226 & Total Radium	904.0 Radium-228	LAB USE ONLY
1	MW-301	PS	3/28/2018 09:20	60267133001	Water	2	X	X	001
2	MW-302	PS	3/28/2018 11:10	60267133002	Water	2	X	X	002
3	MW-303	PS	3/28/2018 10:30	60267133003	Water	2	X	X	003
4	MW-304	PS	3/28/2018 11:15	60267133004	Water	2	X	X	004
5	MW-305	PS	3/28/2018 11:55	60267133005	Water	2	X	X	005
6	MW-306	PS	3/28/2018 12:15	60267133006	Water	2	X	X	006
7	FIELD BLANK	PS	3/28/2018 08:00	60267133007	Water	2	X	X	007

Transfers	Released By	Date/Time	Received By	Date/Time
1	E Brackett / Pasi	4/2/18 1620	[illegible]	4/3/18 1030
2				
3				

Comments

Cooler Temperature on Receipt NA °C | **Custody Seal** Y or (N) | **Received on Ice** Y or (N) | **Samples Intact** (Y) or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

08/30/2019 - Classification: Internal - ECRM6700181

Pittsburgh Lab Sample Condition Upon Receipt

30248102

Face Analytical

Client Name: Pace KS Project #

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other

Label 05

LIMS Login AH

Tracking #: 436877727498

Custody Seal on Cooler/Box Present: ☐ yes ☑ no Seals intact: ☐ yes ☐ no

Thermometer Used N/A Type of Ice: Wet Blue (None)

Cooler Temperature Observed Temp — °C Correction Factor: — °C Final Temp: — °C

Temp should be above freezing to 6°C

pH paper Lot# 10D1671 Date and Initials of person examining contents: 4/13/18 AH

Comments:	Yes	No	N/A	
Chain of Custody Present:	✓			1.
Chain of Custody Filled Out:	✓			2.
Chain of Custody Relinquished:	✓			3.
Sampler Name & Signature on COC:		✓		4.
Sample Labels match COC: -Includes date/time/ID Matrix: WT	✓			5.
Samples Arrived within Hold Time:	✓			6.
Short Hold Time Analysis (<72hr remaining):		✓		7.
Rush Turn Around Time Requested:		✓		8.
Sufficient Volume:	✓			9.
Correct Containers Used: -Pace Containers Used:	✓ ✓			10.
Containers Intact:	✓			11.
Orthophosphate field filtered			✓	12.
Hex Cr Aqueous Compliance/NPDES sample field filtered			✓	13.
Organic Samples checked for dechlorination:			✓	14.
Filtered volume received for Dissolved tests			✓	15.
All containers have been checked for preservation. All containers needing preservation are found to be in compliance with EPA recommendation. exceptions: VOA, coliform, TOC, O&G, Phenolics	✓ ✓			16. pH<2 Initial when completed AH Date/time of preservation Lot # of added preservative
Headspace in VOA Vials (>6mm):			✓	17.
Trip Blank Present:			✓	18.
Trip Blank Custody Seals Present			✓	
Rad Aqueous Samples Screened > 0.5 mrem/hr		✓		Initial when completed: AH Date: 4/13/18

Client Notification/ Resolution:

Person Contacted: Date/Time: Contacted By:

Comments/ Resolution:

☐ **A check in this box indicates that additional information has been stored in ereports.**

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

April 10, 2018

Meghan Blodgett
SCS Engineers
2830 Dairy Drive
Madison, WI 53718

RE: Project: M.L. Kapp Ash Pond/25218061.00
Pace Project No.: 60267024

Dear Meghan Blodgett:
Enclosed are the analytical results for sample(s) received by the laboratory on March 29, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Trudy Gipson

Trudy Gipson
trudy.gipson@pacelabs.com
1(913)563-1405
Project Manager

Enclosures

cc: Tom Karwaski, SCS Engineers
Kyle Kramer, SCS Engineers
Jeff Maxted, Alliant Energy

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: M.L. Kapp Ash Pond/25218061.00
Pace Project No.: 60267024

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 17-016-0
Illinois Certification #: 200030
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212018-1
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407
Utah Certification #: KS00021
Kansas Field Laboratory Accreditation: # E-92587
Missouri Certification: 10070

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: M.L. Kapp Ash Pond/25218061.00
Pace Project No.: 60267024

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60267024001	**MW-301**	Water	03/28/18 09:20	03/29/18 08:40
60267024002	**MW-302**	Water	03/28/18 11:10	03/29/18 08:40
60267024003	**MW-303**	Water	03/28/18 10:30	03/29/18 08:40
60267024004	**MW-304**	Water	03/28/18 11:15	03/29/18 08:40
60267024005	**MW-305**	Water	03/28/18 11:55	03/29/18 08:40
60267024006	**MW-306**	Water	03/28/18 12:15	03/29/18 08:40
60267024007	**FIELD BLANK**	Water	03/28/18 08:00	03/29/18 08:40

Pace Analytical Services, LLC
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(913)599-5665

SAMPLE ANALYTE COUNT

Project: M.L. Kapp Ash Pond/25218061.00
Pace Project No.: 60267024

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60267024001	**MW-301**	EPA 6010	SMW	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	JRS	1	PASI-K
		SM 2540C	OL	1	PASI-K
		EPA 9040	MJK	1	PASI-K
		EPA 9056	AGO	3	PASI-K
60267024002	**MW-302**	EPA 6010	SMW	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	JRS	1	PASI-K
		SM 2540C	OL	1	PASI-K
		EPA 9040	MJK	1	PASI-K
		EPA 9056	AGO	3	PASI-K
60267024003	**MW-303**	EPA 6010	SMW	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	JRS	1	PASI-K
		SM 2540C	OL	1	PASI-K
		EPA 9040	MJK	1	PASI-K
		EPA 9056	AGO	3	PASI-K
60267024004	**MW-304**	EPA 6010	SMW	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	JRS	1	PASI-K
		SM 2540C	OL	1	PASI-K
		EPA 9040	MJK	1	PASI-K
		EPA 9056	AGO	3	PASI-K
60267024005	**MW-305**	EPA 6010	SMW	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	JRS	1	PASI-K
		SM 2540C	OL	1	PASI-K
		EPA 9040	MJK	1	PASI-K
		EPA 9056	AGO	3	PASI-K
60267024006	**MW-306**	EPA 6010	SMW	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	JRS	1	PASI-K
		SM 2540C	OL	1	PASI-K
		EPA 9040	MJK	1	PASI-K
		EPA 9056	AGO	3	PASI-K
60267024007	**FIELD BLANK**	EPA 6010	SMW	3	PASI-K

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: M.L. Kapp Ash Pond/25218061.00
Pace Project No.: 60267024

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6020	JGP	11	PASI-K
		EPA 7470	JRS	1	PASI-K
		SM 2540C	OL	1	PASI-K
		EPA 9040	MJK	1	PASI-K
		EPA 9056	AGO	3	PASI-K

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: M.L. Kapp Ash Pond/25218061.00
Pace Project No.: 60267024

Sample: MW-301 **Lab ID: 60267024001** Collected: 03/28/18 09:20 Received: 03/29/18 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**CLIENT**				1		03/28/18 09:20		
Field pH	**6.83**	Std. Units	0.10	0.050	1		03/28/18 09:20		
Field Temperature	**11.1**	deg C	0.50	0.25	1		03/28/18 09:20		
Field Specific Conductance	**930.0**	umhos/cm	1.0	1.0	1		03/28/18 09:20		
Field Oxidation Potential	**-8.8**	mV			1		03/28/18 09:20		
Oxygen, Dissolved	**0.20**	mg/L			1		03/28/18 09:20	7782-44-7	
Turbidity	**.73**	NTU	1.0	1.0	1		03/28/18 09:20		
Groundwater Elevation	**577.65**	feet			1		03/28/18 09:20		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**15700**	ug/L	100	12.5	1	03/30/18 15:40	04/05/18 16:59	7440-42-8	
Calcium	**131**	mg/L	0.20	0.054	1	03/30/18 15:40	04/05/18 16:59	7440-70-2	
Lithium	**9.7J**	ug/L	10.0	4.6	1	03/30/18 15:40	04/05/18 16:59	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.092J**	ug/L	1.0	0.026	1	03/30/18 15:40	04/03/18 13:48	7440-36-0	
Arsenic	**0.66J**	ug/L	1.0	0.052	1	03/30/18 15:40	04/03/18 13:48	7440-38-2	
Barium	**72.9**	ug/L	1.0	0.095	1	03/30/18 15:40	04/03/18 13:48	7440-39-3	
Beryllium	ND	ug/L	0.50	0.012	1	03/30/18 15:40	04/03/18 13:48	7440-41-7	
Cadmium	**0.14J**	ug/L	0.50	0.018	1	03/30/18 15:40	04/03/18 13:48	7440-43-9	
Chromium	**0.24J**	ug/L	1.0	0.054	1	03/30/18 15:40	04/03/18 13:48	7440-47-3	
Cobalt	**3.3**	ug/L	1.0	0.014	1	03/30/18 15:40	04/03/18 13:48	7440-48-4	
Lead	**0.059J**	ug/L	1.0	0.033	1	03/30/18 15:40	04/03/18 13:48	7439-92-1	
Molybdenum	**345**	ug/L	1.0	0.058	1	03/30/18 15:40	04/03/18 13:48	7439-98-7	
Selenium	ND	ug/L	1.0	0.086	1	03/30/18 15:40	04/03/18 13:48	7782-49-2	
Thallium	ND	ug/L	1.0	0.036	1	03/30/18 15:40	04/03/18 13:48	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.090	1	04/03/18 15:00	04/04/18 09:22	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**776**	mg/L	5.0	5.0	1		04/01/18 09:35		
9040 pH	Analytical Method: EPA 9040								
pH	**7.1**	Std. Units	0.10	0.10	1		04/03/18 12:31		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**21.7**	mg/L	2.0	0.92	2		04/10/18 11:33	16887-00-6	
Fluoride	**0.32**	mg/L	0.20	0.063	1		04/06/18 14:40	16984-48-8	
Sulfate	**475**	mg/L	50.0	11.8	50		04/09/18 14:38	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: M.L. Kapp Ash Pond/25218061.00
Pace Project No.: 60267024

Sample: MW-302 **Lab ID: 60267024002** Collected: 03/28/18 11:10 Received: 03/29/18 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**CLIENT**				1		03/28/18 11:10		
Field pH	**8.32**	Std. Units	0.10	0.050	1		03/28/18 11:10		
Field Temperature	**11.0**	deg C	0.50	0.25	1		03/28/18 11:10		
Field Specific Conductance	**492.0**	umhos/cm	1.0	1.0	1		03/28/18 11:10		
Field Oxidation Potential	**-132.7**	mV			1		03/28/18 11:10		
Oxygen, Dissolved	**1.02**	mg/L			1		03/28/18 11:10	7782-44-7	
Turbidity	**1.83**	NTU	1.0	1.0	1		03/28/18 11:10		
Groundwater Elevation	**576.62**	feet			1		03/28/18 11:10		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**5620**	ug/L	100	12.5	1	03/30/18 15:40	04/05/18 17:01	7440-42-8	
Calcium	**67.9**	mg/L	0.20	0.054	1	03/30/18 15:40	04/05/18 17:01	7440-70-2	
Lithium	**17.2**	ug/L	10.0	4.6	1	03/30/18 15:40	04/05/18 17:01	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.27J**	ug/L	1.0	0.026	1	03/30/18 15:40	04/03/18 13:52	7440-36-0	
Arsenic	**8.5**	ug/L	1.0	0.052	1	03/30/18 15:40	04/03/18 13:52	7440-38-2	
Barium	**41.6**	ug/L	1.0	0.095	1	03/30/18 15:40	04/03/18 13:52	7440-39-3	
Beryllium	ND	ug/L	0.50	0.012	1	03/30/18 15:40	04/03/18 13:52	7440-41-7	
Cadmium	**0.046J**	ug/L	0.50	0.018	1	03/30/18 15:40	04/03/18 13:52	7440-43-9	
Chromium	**0.27J**	ug/L	1.0	0.054	1	03/30/18 15:40	04/03/18 13:52	7440-47-3	
Cobalt	**0.14J**	ug/L	1.0	0.014	1	03/30/18 15:40	04/03/18 13:52	7440-48-4	
Lead	**0.068J**	ug/L	1.0	0.033	1	03/30/18 15:40	04/03/18 13:52	7439-92-1	
Molybdenum	**281**	ug/L	1.0	0.058	1	03/30/18 15:40	04/03/18 13:52	7439-98-7	
Selenium	**5.1**	ug/L	1.0	0.086	1	03/30/18 15:40	04/03/18 13:52	7782-49-2	
Thallium	ND	ug/L	1.0	0.036	1	03/30/18 15:40	04/03/18 13:52	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.090	1	04/03/18 15:00	04/04/18 09:29	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**430**	mg/L	5.0	5.0	1		04/03/18 14:08		
9040 pH	Analytical Method: EPA 9040								
pH	**8.6**	Std. Units	0.10	0.10	1		04/03/18 12:34		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**18.8**	mg/L	1.0	0.46	1		04/06/18 16:01	16887-00-6	
Fluoride	**0.45**	mg/L	0.20	0.063	1		04/06/18 16:01	16984-48-8	
Sulfate	**221**	mg/L	25.0	5.9	25		04/09/18 14:51	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: M.L. Kapp Ash Pond/25218061.00
Pace Project No.: 60267024

Sample: MW-303 **Lab ID: 60267024003** Collected: 03/28/18 10:30 Received: 03/29/18 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**CLIENT**				1		03/28/18 10:30		
Field pH	**10.41**	Std. Units	0.10	0.050	1		03/28/18 10:30		
Field Temperature	**12.6**	deg C	0.50	0.25	1		03/28/18 10:30		
Field Specific Conductance	**608.7**	umhos/cm	1.0	1.0	1		03/28/18 10:30		
Field Oxidation Potential	**-42.7**	mV			1		03/28/18 10:30		
Oxygen, Dissolved	**0.77**	mg/L			1		03/28/18 10:30	7782-44-7	
Turbidity	**0.77**	NTU	1.0	1.0	1		03/28/18 10:30		
Groundwater Elevation	**577.37**	feet			1		03/28/18 10:30		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**2510**	ug/L	100	12.5	1	03/30/18 15:40	04/05/18 17:04	7440-42-8	
Calcium	**72.0**	mg/L	0.20	0.054	1	03/30/18 15:40	04/05/18 17:04	7440-70-2	
Lithium	**10.1**	ug/L	10.0	4.6	1	03/30/18 15:40	04/05/18 17:04	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.24J**	ug/L	1.0	0.026	1	03/30/18 15:40	04/03/18 13:56	7440-36-0	
Arsenic	**6.6**	ug/L	1.0	0.052	1	03/30/18 15:40	04/03/18 13:56	7440-38-2	
Barium	**28.5**	ug/L	1.0	0.095	1	03/30/18 15:40	04/03/18 13:56	7440-39-3	
Beryllium	ND	ug/L	0.50	0.012	1	03/30/18 15:40	04/03/18 13:56	7440-41-7	
Cadmium	ND	ug/L	0.50	0.018	1	03/30/18 15:40	04/03/18 13:56	7440-43-9	
Chromium	**0.11J**	ug/L	1.0	0.054	1	03/30/18 15:40	04/03/18 13:56	7440-47-3	
Cobalt	**0.18J**	ug/L	1.0	0.014	1	03/30/18 15:40	04/03/18 13:56	7440-48-4	
Lead	**0.039J**	ug/L	1.0	0.033	1	03/30/18 15:40	04/03/18 13:56	7439-92-1	
Molybdenum	**135**	ug/L	1.0	0.058	1	03/30/18 15:40	04/03/18 13:56	7439-98-7	
Selenium	**8.6**	ug/L	1.0	0.086	1	03/30/18 15:40	04/03/18 13:56	7782-49-2	
Thallium	ND	ug/L	1.0	0.036	1	03/30/18 15:40	04/03/18 13:56	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.090	1	04/03/18 15:00	04/04/18 09:31	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**438**	mg/L	5.0	5.0	1		04/03/18 14:09		
9040 pH	Analytical Method: EPA 9040								
pH	**9.7**	Std. Units	0.10	0.10	1		04/03/18 12:32		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**24.7**	mg/L	2.0	0.92	2		04/10/18 12:14	16887-00-6	
Fluoride	**0.45**	mg/L	0.20	0.063	1		04/06/18 16:27	16984-48-8	
Sulfate	**256**	mg/L	25.0	5.9	25		04/09/18 16:13	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: M.L. Kapp Ash Pond/25218061.00
Pace Project No.: 60267024

Sample: MW-304 **Lab ID: 60267024004** Collected: 03/28/18 11:15 Received: 03/29/18 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**CLIENT**				1		03/28/18 11:15		
Field pH	**7.87**	Std. Units	0.10	0.050	1		03/28/18 11:15		
Field Temperature	**12.0**	deg C	0.50	0.25	1		03/28/18 11:15		
Field Specific Conductance	**579.5**	umhos/cm	1.0	1.0	1		03/28/18 11:15		
Field Oxidation Potential	**-130.3**	mV			1		03/28/18 11:15		
Oxygen, Dissolved	**0.10**	mg/L			1		03/28/18 11:15	7782-44-7	
Turbidity	**2.90**	NTU	1.0	1.0	1		03/28/18 11:15		
Groundwater Elevation	**577.05**	feet			1		03/28/18 11:15		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**10900**	ug/L	100	12.5	1	03/30/18 15:40	04/05/18 17:07	7440-42-8	
Calcium	**63.2**	mg/L	0.20	0.054	1	03/30/18 15:40	04/05/18 17:07	7440-70-2	
Lithium	**4.7J**	ug/L	10.0	4.6	1	03/30/18 15:40	04/05/18 17:07	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.035J**	ug/L	1.0	0.026	1	03/30/18 15:40	04/03/18 14:00	7440-36-0	
Arsenic	**3.1**	ug/L	1.0	0.052	1	03/30/18 15:40	04/03/18 14:00	7440-38-2	
Barium	**59.4**	ug/L	1.0	0.095	1	03/30/18 15:40	04/03/18 14:00	7440-39-3	
Beryllium	ND	ug/L	0.50	0.012	1	03/30/18 15:40	04/03/18 14:00	7440-41-7	
Cadmium	**0.11J**	ug/L	0.50	0.018	1	03/30/18 15:40	04/03/18 14:00	7440-43-9	
Chromium	**0.49J**	ug/L	1.0	0.054	1	03/30/18 15:40	04/03/18 14:00	7440-47-3	
Cobalt	**0.44J**	ug/L	1.0	0.014	1	03/30/18 15:40	04/03/18 14:00	7440-48-4	
Lead	**0.19J**	ug/L	1.0	0.033	1	03/30/18 15:40	04/03/18 14:00	7439-92-1	
Molybdenum	**1530**	ug/L	1.0	0.058	1	03/30/18 15:40	04/03/18 14:00	7439-98-7	
Selenium	ND	ug/L	1.0	0.086	1	03/30/18 15:40	04/03/18 14:00	7782-49-2	
Thallium	ND	ug/L	1.0	0.036	1	03/30/18 15:40	04/03/18 14:00	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.090	1	04/03/18 15:00	04/04/18 09:33	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**441**	mg/L	5.0	5.0	1		04/03/18 14:10		
9040 pH	Analytical Method: EPA 9040								
pH	**7.5**	Std. Units	0.10	0.10	1		04/03/18 12:35		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**28.4**	mg/L	5.0	2.3	5		04/10/18 12:28	16887-00-6	
Fluoride	**0.20**	mg/L	0.20	0.063	1		04/06/18 16:41	16984-48-8	
Sulfate	**213**	mg/L	25.0	5.9	25		04/09/18 16:55	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: M.L. Kapp Ash Pond/25218061.00
Pace Project No.: 60267024

Sample: MW-305 **Lab ID: 60267024005** Collected: 03/28/18 11:55 Received: 03/29/18 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**CLIENT**				1		03/28/18 11:55		
Field pH	**6.28**	Std. Units	0.10	0.050	1		03/28/18 11:55		
Field Temperature	**10.9**	deg C	0.50	0.25	1		03/28/18 11:55		
Field Specific Conductance	**934.0**	umhos/cm	1.0	1.0	1		03/28/18 11:55		
Field Oxidation Potential	**63.9**	mV			1		03/28/18 11:55		
Oxygen, Dissolved	**1.90**	mg/L			1		03/28/18 11:55	7782-44-7	
Turbidity	**11.92**	NTU	1.0	1.0	1		03/28/18 11:55		
Groundwater Elevation	**576.58**	feet			1		03/28/18 11:55		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**16800**	ug/L	100	12.5	1	03/30/18 15:40	04/05/18 17:09	7440-42-8	
Calcium	**131**	mg/L	0.20	0.054	1	03/30/18 15:40	04/05/18 17:09	7440-70-2	
Lithium	**21.4**	ug/L	10.0	4.6	1	03/30/18 15:40	04/05/18 17:09	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.23J**	ug/L	1.0	0.026	1	03/30/18 15:40	04/03/18 14:04	7440-36-0	
Arsenic	**0.62J**	ug/L	1.0	0.052	1	03/30/18 15:40	04/03/18 14:04	7440-38-2	
Barium	**83.9**	ug/L	1.0	0.095	1	03/30/18 15:40	04/03/18 14:04	7440-39-3	
Beryllium	ND	ug/L	0.50	0.012	1	03/30/18 15:40	04/03/18 14:04	7440-41-7	
Cadmium	**0.16J**	ug/L	0.50	0.018	1	03/30/18 15:40	04/03/18 14:04	7440-43-9	
Chromium	**0.44J**	ug/L	1.0	0.054	1	03/30/18 15:40	04/03/18 14:04	7440-47-3	
Cobalt	**0.62J**	ug/L	1.0	0.014	1	03/30/18 15:40	04/03/18 14:04	7440-48-4	
Lead	**0.099J**	ug/L	1.0	0.033	1	03/30/18 15:40	04/03/18 14:04	7439-92-1	
Molybdenum	**613**	ug/L	1.0	0.058	1	03/30/18 15:40	04/03/18 14:04	7439-98-7	
Selenium	**0.19J**	ug/L	1.0	0.086	1	03/30/18 15:40	04/03/18 14:04	7782-49-2	
Thallium	ND	ug/L	1.0	0.036	1	03/30/18 15:40	04/03/18 14:04	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.090	1	04/03/18 15:00	04/04/18 09:36	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**885**	mg/L	5.0	5.0	1		04/03/18 14:10		
9040 pH	Analytical Method: EPA 9040								
pH	**7.2**	Std. Units	0.10	0.10	1		04/03/18 12:36		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**20.2**	mg/L	2.0	0.92	2		04/10/18 13:23	16887-00-6	
Fluoride	**0.17J**	mg/L	0.20	0.063	1		04/06/18 16:54	16984-48-8	
Sulfate	**623**	mg/L	50.0	11.8	50		04/09/18 17:36	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(913)599-5665

ANALYTICAL RESULTS

Project: M.L. Kapp Ash Pond/25218061.00
Pace Project No.: 60267024

Sample: MW-306 **Lab ID: 60267024006** Collected: 03/28/18 12:15 Received: 03/29/18 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**CLIENT**				1		03/28/18 12:15		
Field pH	**7.42**	Std. Units	0.10	0.050	1		03/28/18 12:15		
Field Temperature	**10.0**	deg C	0.50	0.25	1		03/28/18 12:15		
Field Specific Conductance	**1355.0**	umhos/cm	1.0	1.0	1		03/28/18 12:15		
Field Oxidation Potential	**59.9**	mV			1		03/28/18 12:15		
Oxygen, Dissolved	**2.33**	mg/L			1		03/28/18 12:15	7782-44-7	
Turbidity	**3.95**	NTU	1.0	1.0	1		03/28/18 12:15		
Groundwater Elevation	**577.93**	feet			1		03/28/18 12:15		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**17600**	ug/L	100	12.5	1	03/30/18 15:40	04/05/18 17:17	7440-42-8	
Calcium	**168**	mg/L	0.20	0.054	1	03/30/18 15:40	04/05/18 17:17	7440-70-2	
Lithium	**58.0**	ug/L	10.0	4.6	1	03/30/18 15:40	04/05/18 17:17	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.13J**	ug/L	1.0	0.026	1	03/30/18 15:40	04/03/18 14:08	7440-36-0	
Arsenic	**0.054J**	ug/L	1.0	0.052	1	03/30/18 15:40	04/03/18 14:08	7440-38-2	
Barium	**53.6**	ug/L	1.0	0.095	1	03/30/18 15:40	04/03/18 14:08	7440-39-3	
Beryllium	ND	ug/L	0.50	0.012	1	03/30/18 15:40	04/03/18 14:08	7440-41-7	
Cadmium	**0.025J**	ug/L	0.50	0.018	1	03/30/18 15:40	04/03/18 14:08	7440-43-9	
Chromium	**0.22J**	ug/L	1.0	0.054	1	03/30/18 15:40	04/03/18 14:08	7440-47-3	
Cobalt	**0.10J**	ug/L	1.0	0.014	1	03/30/18 15:40	04/03/18 14:08	7440-48-4	
Lead	**0.033J**	ug/L	1.0	0.033	1	03/30/18 15:40	04/03/18 14:08	7439-92-1	
Molybdenum	**46.4**	ug/L	1.0	0.058	1	03/30/18 15:40	04/03/18 14:08	7439-98-7	
Selenium	**2.9**	ug/L	1.0	0.086	1	03/30/18 15:40	04/03/18 14:08	7782-49-2	
Thallium	ND	ug/L	1.0	0.036	1	03/30/18 15:40	04/03/18 14:08	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.090	1	04/03/18 15:00	04/04/18 09:38	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**1100**	mg/L	5.0	5.0	1		04/03/18 14:10		
9040 pH	Analytical Method: EPA 9040								
pH	**7.2**	Std. Units	0.10	0.10	1		04/03/18 12:37		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**52.1**	mg/L	5.0	2.3	5		04/10/18 13:36	16887-00-6	
Fluoride	**0.27**	mg/L	0.20	0.063	1		04/06/18 17:08	16984-48-8	
Sulfate	**488**	mg/L	50.0	11.8	50		04/09/18 18:03	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: M.L. Kapp Ash Pond/25218061.00
Pace Project No.: 60267024

Sample: FIELD BLANK **Lab ID: 60267024007** Collected: 03/28/18 08:00 Received: 03/29/18 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**50.8J**	ug/L	100	12.5	1	03/30/18 15:40	04/05/18 17:20	7440-42-8	
Calcium	ND	mg/L	0.20	0.054	1	03/30/18 15:40	04/05/18 17:20	7440-70-2	
Lithium	ND	ug/L	10.0	4.6	1	03/30/18 15:40	04/05/18 17:20	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	ND	ug/L	1.0	0.026	1	03/30/18 15:40	04/03/18 13:44	7440-36-0	
Arsenic	ND	ug/L	1.0	0.052	1	03/30/18 15:40	04/03/18 13:44	7440-38-2	
Barium	ND	ug/L	1.0	0.095	1	03/30/18 15:40	04/03/18 13:44	7440-39-3	
Beryllium	ND	ug/L	0.50	0.012	1	03/30/18 15:40	04/03/18 13:44	7440-41-7	
Cadmium	ND	ug/L	0.50	0.018	1	03/30/18 15:40	04/03/18 13:44	7440-43-9	
Chromium	ND	ug/L	1.0	0.054	1	03/30/18 15:40	04/03/18 13:44	7440-47-3	
Cobalt	ND	ug/L	1.0	0.014	1	03/30/18 15:40	04/03/18 13:44	7440-48-4	
Lead	ND	ug/L	1.0	0.033	1	03/30/18 15:40	04/03/18 13:44	7439-92-1	
Molybdenum	ND	ug/L	1.0	0.058	1	03/30/18 15:40	04/03/18 13:44	7439-98-7	
Selenium	ND	ug/L	1.0	0.086	1	03/30/18 15:40	04/03/18 13:44	7782-49-2	
Thallium	ND	ug/L	1.0	0.036	1	03/30/18 15:40	04/03/18 13:44	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.090	1	04/03/18 15:00	04/04/18 09:44	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	ND	mg/L	5.0	5.0	1		04/03/18 14:11		
9040 pH	Analytical Method: EPA 9040								
pH	**6.3**	Std. Units	0.10	0.10	1		04/03/18 12:30		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	ND	mg/L	1.0	0.46	1		04/06/18 17:21	16887-00-6	
Fluoride	ND	mg/L	0.20	0.063	1		04/06/18 17:21	16984-48-8	
Sulfate	ND	mg/L	1.0	0.24	1		04/06/18 17:21	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: M.L. Kapp Ash Pond/25218061.00
Pace Project No.: 60267024

QC Batch: 520303 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 60267024001, 60267024002, 60267024003, 60267024004, 60267024005, 60267024006, 60267024007

METHOD BLANK: 2129506 Matrix: Water
Associated Lab Samples: 60267024001, 60267024002, 60267024003, 60267024004, 60267024005, 60267024006, 60267024007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	0.090	04/04/18 09:18	

LABORATORY CONTROL SAMPLE: 2129507

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.2	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2129508 2129509

Parameter	Units	60267024001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	5.0	4.9	99	97	75-125	2	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: M.L. Kapp Ash Pond/25218061.00
Pace Project No.: 60267024

QC Batch: 519933 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET
Associated Lab Samples: 60267024001, 60267024002, 60267024003, 60267024004, 60267024005, 60267024006, 60267024007

METHOD BLANK: 2128123 Matrix: Water
Associated Lab Samples: 60267024001, 60267024002, 60267024003, 60267024004, 60267024005, 60267024006, 60267024007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	ug/L	ND	100	12.5	04/05/18 16:26	
Calcium	mg/L	ND	0.20	0.054	04/05/18 16:26	
Lithium	ug/L	ND	10.0	4.6	04/05/18 16:26	

LABORATORY CONTROL SAMPLE: 2128124

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	1000	100	80-120	
Calcium	mg/L	10	9.9	99	80-120	
Lithium	ug/L	1000	1020	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2128125 2128126

Parameter	Units	60266915001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	ug/L	246	1000	1000	1240	1230	99	99	75-125	0	20	
Calcium	mg/L	71.2	10	10	81.2	80.2	99	89	75-125	1	20	
Lithium	ug/L	6.5J	1000	1000	987	989	98	98	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: M.L. Kapp Ash Pond/25218061.00
Pace Project No.: 60267024

QC Batch: 519940 Analysis Method: EPA 6020
QC Batch Method: EPA 3010 Analysis Description: 6020 MET
Associated Lab Samples: 60267024001, 60267024002, 60267024003, 60267024004, 60267024005, 60267024006, 60267024007

METHOD BLANK: 2128134 Matrix: Water
Associated Lab Samples: 60267024001, 60267024002, 60267024003, 60267024004, 60267024005, 60267024006, 60267024007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	ND	1.0	0.026	04/03/18 12:54	
Arsenic	ug/L	ND	1.0	0.052	04/03/18 12:54	
Barium	ug/L	0.36J	1.0	0.095	04/03/18 12:54	
Beryllium	ug/L	ND	0.50	0.012	04/03/18 12:54	
Cadmium	ug/L	ND	0.50	0.018	04/03/18 12:54	
Chromium	ug/L	ND	1.0	0.054	04/03/18 12:54	
Cobalt	ug/L	ND	1.0	0.014	04/03/18 12:54	
Lead	ug/L	ND	1.0	0.033	04/03/18 12:54	
Molybdenum	ug/L	ND	1.0	0.058	04/03/18 12:54	
Selenium	ug/L	ND	1.0	0.086	04/03/18 12:54	
Thallium	ug/L	ND	1.0	0.036	04/03/18 12:54	

LABORATORY CONTROL SAMPLE: 2128135

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	40.7	102	80-120	
Arsenic	ug/L	40	40.3	101	80-120	
Barium	ug/L	40	39.4	98	80-120	
Beryllium	ug/L	40	41.0	103	80-120	
Cadmium	ug/L	40	40.7	102	80-120	
Chromium	ug/L	40	39.1	98	80-120	
Cobalt	ug/L	40	38.1	95	80-120	
Lead	ug/L	40	41.6	104	80-120	
Molybdenum	ug/L	40	39.1	98	80-120	
Selenium	ug/L	40	40.4	101	80-120	
Thallium	ug/L	40	41.9	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2128136 2128137

Parameter	Units	60266915002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	0.41J	40	40	40.7	40.3	101	100	75-125	1	20	
Arsenic	ug/L	1.4	40	40	41.4	41.6	100	100	75-125	0	20	
Barium	ug/L	93.6	40	40	131	131	94	93	75-125	0	20	
Beryllium	ug/L	ND	40	40	38.6	38.3	97	96	75-125	1	20	
Cadmium	ug/L	0.028J	40	40	39.2	39.1	98	98	75-125	0	20	
Chromium	ug/L	0.35J	40	40	38.5	38.3	95	95	75-125	1	20	
Cobalt	ug/L	1.8	40	40	38.2	38.5	91	92	75-125	1	20	

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QUALITY CONTROL DATA

Project: M.L. Kapp Ash Pond/25218061.00
Pace Project No.: 60267024

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2128136 2128137

Parameter	Units	60266915002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lead	ug/L	0.19J	40	40	40.0	41.2	100	103	75-125	3	20	
Molybdenum	ug/L	1.2	40	40	41.2	41.1	100	100	75-125	0	20	
Selenium	ug/L	8.0	40	40	46.8	47.5	97	99	75-125	2	20	
Thallium	ug/L	ND	40	40	40.7	42.2	102	106	75-125	4	20	

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QUALITY CONTROL DATA

Project: M.L. Kapp Ash Pond/25218061.00
Pace Project No.: 60267024

QC Batch: 519979 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60267024001

METHOD BLANK: 2128425 Matrix: Water
Associated Lab Samples: 60267024001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	5.0	04/01/18 09:24	

LABORATORY CONTROL SAMPLE: 2128426

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	983	98	80-120	

SAMPLE DUPLICATE: 2128427

Parameter	Units	60266758002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	477	498	4	10	

SAMPLE DUPLICATE: 2128428

Parameter	Units	60266759002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	478	504	5	10	

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QUALITY CONTROL DATA

Project: M.L. Kapp Ash Pond/25218061.00
Pace Project No.: 60267024

QC Batch: 520184 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60267024002, 60267024003, 60267024004, 60267024005, 60267024006, 60267024007

METHOD BLANK: 2129036 Matrix: Water
Associated Lab Samples: 60267024002, 60267024003, 60267024004, 60267024005, 60267024006, 60267024007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	5.0	04/03/18 14:07	

LABORATORY CONTROL SAMPLE: 2129037

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	989	99	80-120	

SAMPLE DUPLICATE: 2129038

Parameter	Units	60267024002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	430	433	1	10	

SAMPLE DUPLICATE: 2129039

Parameter	Units	60267024003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	438	452	3	10	

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QUALITY CONTROL DATA

Project: M.L. Kapp Ash Pond/25218061.00
Pace Project No.: 60267024

QC Batch: 520007 Analysis Method: EPA 9040
QC Batch Method: EPA 9040 Analysis Description: 9040 pH
Associated Lab Samples: 60267024001, 60267024002, 60267024003, 60267024004, 60267024005, 60267024006, 60267024007

SAMPLE DUPLICATE: 2128538

Parameter	Units	60267071001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	7.1	7.2	0	10	H6

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QUALITY CONTROL DATA

Project: M.L. Kapp Ash Pond/25218061.00
Pace Project No.: 60267024

QC Batch: 520601 Analysis Method: EPA 9056
QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions
Associated Lab Samples: 60267024001, 60267024002, 60267024003, 60267024004, 60267024005, 60267024006, 60267024007

METHOD BLANK: 2130856 Matrix: Water
Associated Lab Samples: 60267024001, 60267024002, 60267024003, 60267024004, 60267024005, 60267024006, 60267024007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.46	04/06/18 10:54	
Fluoride	mg/L	ND	0.20	0.063	04/06/18 10:54	
Sulfate	mg/L	ND	1.0	0.24	04/06/18 10:54	

LABORATORY CONTROL SAMPLE: 2130857

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	93	80-120	
Fluoride	mg/L	2.5	2.5	101	80-120	
Sulfate	mg/L	5	4.8	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2130858 2130859

Parameter	Units	60267024001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	0.32	2.5	2.5	2.6	2.6	91	92	80-120	1	15	

SAMPLE DUPLICATE: 2130860

Parameter	Units	60267024002 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	18.8	18.8	0	15	
Fluoride	mg/L	0.45	0.44	2	15	

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QUALITY CONTROL DATA

Project: M.L. Kapp Ash Pond/25218061.00
Pace Project No.: 60267024

QC Batch: 520999 Analysis Method: EPA 9056
QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions
Associated Lab Samples: 60267024001, 60267024002, 60267024003, 60267024004, 60267024005, 60267024006

METHOD BLANK: 2132877 Matrix: Water
Associated Lab Samples: 60267024001, 60267024002, 60267024003, 60267024004, 60267024005, 60267024006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.0	0.24	04/09/18 13:52	

LABORATORY CONTROL SAMPLE: 2132878

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	4.8	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2132879 2132880

Parameter	Units	60267024002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	221	125	125	337	340	93	95	80-120	1	15	

SAMPLE DUPLICATE: 2132881

Parameter	Units	60267024004 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfate	mg/L	213	198	8	15	

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QUALITY CONTROL DATA

Project: M.L. Kapp Ash Pond/25218061.00
Pace Project No.: 60267024

QC Batch: 521198 Analysis Method: EPA 9056
QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions
Associated Lab Samples: 60267024001, 60267024003, 60267024004, 60267024005, 60267024006

METHOD BLANK: 2133458 Matrix: Water
Associated Lab Samples: 60267024001, 60267024003, 60267024004, 60267024005, 60267024006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.46	04/10/18 11:06	

LABORATORY CONTROL SAMPLE: 2133459

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.6	93	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2133460 2133461

Parameter	Units	60267024001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	21.7	10	10	31.4	31.2	97	95	80-120	1	15	

SAMPLE DUPLICATE: 2133462

Parameter	Units	60267024004 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	28.4	27.1	5	15	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: M.L. Kapp Ash Pond/25218061.00
Pace Project No.: 60267024

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-K	Pace Analytical Services - Kansas City

ANALYTE QUALIFIERS

H6	Analysis initiated outside of the 15 minute EPA required holding time.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: M.L. Kapp Ash Pond/25218061.00
Pace Project No.: 60267024

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60267024001	**MW-301**		520985		
60267024002	**MW-302**		520985		
60267024003	**MW-303**		520985		
60267024004	**MW-304**		520985		
60267024005	**MW-305**		520985		
60267024006	**MW-306**		520985		
60267024001	**MW-301**	EPA 3010	519933	EPA 6010	519955
60267024002	**MW-302**	EPA 3010	519933	EPA 6010	519955
60267024003	**MW-303**	EPA 3010	519933	EPA 6010	519955
60267024004	**MW-304**	EPA 3010	519933	EPA 6010	519955
60267024005	**MW-305**	EPA 3010	519933	EPA 6010	519955
60267024006	**MW-306**	EPA 3010	519933	EPA 6010	519955
60267024007	**FIELD BLANK**	EPA 3010	519933	EPA 6010	519955
60267024001	**MW-301**	EPA 3010	519940	EPA 6020	519954
60267024002	**MW-302**	EPA 3010	519940	EPA 6020	519954
60267024003	**MW-303**	EPA 3010	519940	EPA 6020	519954
60267024004	**MW-304**	EPA 3010	519940	EPA 6020	519954
60267024005	**MW-305**	EPA 3010	519940	EPA 6020	519954
60267024006	**MW-306**	EPA 3010	519940	EPA 6020	519954
60267024007	**FIELD BLANK**	EPA 3010	519940	EPA 6020	519954
60267024001	**MW-301**	EPA 7470	520303	EPA 7470	520353
60267024002	**MW-302**	EPA 7470	520303	EPA 7470	520353
60267024003	**MW-303**	EPA 7470	520303	EPA 7470	520353
60267024004	**MW-304**	EPA 7470	520303	EPA 7470	520353
60267024005	**MW-305**	EPA 7470	520303	EPA 7470	520353
60267024006	**MW-306**	EPA 7470	520303	EPA 7470	520353
60267024007	**FIELD BLANK**	EPA 7470	520303	EPA 7470	520353
60267024001	**MW-301**	SM 2540C	519979		
60267024002	**MW-302**	SM 2540C	520184		
60267024003	**MW-303**	SM 2540C	520184		
60267024004	**MW-304**	SM 2540C	520184		
60267024005	**MW-305**	SM 2540C	520184		
60267024006	**MW-306**	SM 2540C	520184		
60267024007	**FIELD BLANK**	SM 2540C	520184		
60267024001	**MW-301**	EPA 9040	520007		
60267024002	**MW-302**	EPA 9040	520007		
60267024003	**MW-303**	EPA 9040	520007		
60267024004	**MW-304**	EPA 9040	520007		
60267024005	**MW-305**	EPA 9040	520007		
60267024006	**MW-306**	EPA 9040	520007		
60267024007	**FIELD BLANK**	EPA 9040	520007		
60267024001	**MW-301**	EPA 9056	520601		
60267024001	**MW-301**	EPA 9056	520999		
60267024001	**MW-301**	EPA 9056	521198		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: M.L. Kapp Ash Pond/25218061.00
Pace Project No.: 60267024

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60267024002	**MW-302**	EPA 9056	520601		
60267024002	**MW-302**	EPA 9056	520999		
60267024003	**MW-303**	EPA 9056	520601		
60267024003	**MW-303**	EPA 9056	520999		
60267024003	**MW-303**	EPA 9056	521198		
60267024004	**MW-304**	EPA 9056	520601		
60267024004	**MW-304**	EPA 9056	520999		
60267024004	**MW-304**	EPA 9056	521198		
60267024005	**MW-305**	EPA 9056	520601		
60267024005	**MW-305**	EPA 9056	520999		
60267024005	**MW-305**	EPA 9056	521198		
60267024006	**MW-306**	EPA 9056	520601		
60267024006	**MW-306**	EPA 9056	520999		
60267024006	**MW-306**	EPA 9056	521198		
60267024007	**FIELD BLANK**	EPA 9056	520601		

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Sample Condition Upon Receipt

WO# : 60267024

60267024

Client Name: SCS

Courier: FedEx ☑ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☐ Client ☐ Other ☐

Tracking #: 4122 4044 4160 Pace Shipping Label Used? Yes ☐ No ☐

Custody Seal on Cooler/Box Present: Yes ☑ No ☐ Seals intact: Yes ☐ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☑ Other ☐

Thermometer Used: 266 **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): **As-read** 0.7 **Corr. Factor** +0.2 **Corrected** 0.9

Date and initials of person examining contents: HE 3/29/18

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☑Yes ☐No ☐N/A	pH
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	
Sufficient volume:	☑Yes ☐No ☐N/A	
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	
Containers intact:	☑Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☑N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	
Sample labels match COC: Date / time / ID / analyses	☑Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☑No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	☑Yes ☐No ☐N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☑No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☑No	
Trip Blank present:	☐Yes ☐No ☑N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: Date: 3-29-2018

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

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Page: 1 of 1

Section A — Required Client Information:

Company:	SCS Engineers
Address:	2830 Dairy Drive
	Madison WI 53718
Email To:	mblodgett@scsengineers.com
Phone:	608-216-7362 Fax:
Requested Due Date/TAT:	

Section B — Required Project Information:

Report To:	Meghan Blodgett
Copy To:	Tom Karwaski
Purchase Order No.:	
Project Name:	M.L. Kapp Ash Pond
Project Number:	25218061.00*

Section C — Invoice Information:

Attention:	Meghan Blodgett/Jess Valcheff
Company Name:	SCS Engineers
Address:	
Pace Quote Reference:	
Pace Project Manager:	Trudy Gipson 913-563-1405
Pace Profile #:	6696 Line 2

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER

Site Location STATE: IA

08/30/2019 - Classification: Internal - ECRM0700181

Section D — Required Client Information

SAMPLE ID (A-Z, 0-9 / , -) Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	3010 Total Metals: B,Ca,Li	6020 Total Metals *	7470 Total Mercury	9056 Chloride-Fluoride-Sulfate	9040 pH	2540C TDS	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-301	WT	G	xxx	xxx	3-25-18	0920		3	1		2						N	X	X	X	X	X	X		60267024 01
2	MW-302	WT	G	xxx	xxx		1110		3	1		2						N	X	X	X	X	X	X		02
3	MW-303	WT	G	xxx	xxx		1030		3	1		2						N	X	X	X	X	X	X		03
4	MW-304	WT	G	xxx	xxx		1115		3	1		2						N	X	X	X	X	X	X		04
5	MW-305	WT	G	xxx	xxx		1155		3	1		2						N	X	X	X	X	X	X		05
6	MW-306	WT	G	xxx	xxx		1215		3	1		2						N	X	X	X	X	X	X		06
7	FIELD BLANK	WT	G	xxx	xxx		—		3	1		2						N	X	X	X	X	X	X		07
8																										
9																										
10																										
11																										
12																										

BP1U 2BP3N

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Ship To: 9608 Loiret Boulevard, Lenexa, KS 66219	Kyle Kramer	3-28-18	1440	Andrea Cotton-pool	3/29/18	0840	3/29/18 0.5 0.9 Y Y Y
* As-Ba-Be-Cd-Cr-Co-Pb-Mo-Sb-Se-Tl							

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Kyle Kramer + Nate Herms

SIGNATURE of SAMPLER: Kyle Kramer

DATE Signed (MM/DD/YY): 3-28-18

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-Feb-2007

A2 Round 2 Background Sampling, Analytical Laboratory Report

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

June 18, 2018

Meghan Blodgett
SCS Engineers
2830 Dairy Drive
Madison, WI 53718

RE: Project: M.L. KAPP ASH POND
Pace Project No.: 60271138

Dear Meghan Blodgett:
Enclosed are the analytical results for sample(s) received by the laboratory on May 23, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Hank Kapka
hank.kapka@pacelabs.com
(913)599-5665
PM Lab Management

Enclosures

cc: Tom Karwaski, SCS Engineers
Nicole Kron, SCS Engineers
Jeff Maxted, Alliant Energy
Jess Valcheff, SCS Engeineers

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CERTIFICATIONS

Project: M.L. KAPP ASH POND
Pace Project No.: 60271138

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219
Missouri Certification Number: 10090
WY STR Certification #: 2456.01
Arkansas Certification #: 17-016-0
Illinois Certification #: 200030
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212018-1
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407
Utah Certification #: KS00021
Kansas Field Laboratory Accreditation: # E-92587
Missouri Certification: 10070
Missouri Certification Number: 10090

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SAMPLE SUMMARY

Project: M.L. KAPP ASH POND
Pace Project No.: 60271138

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60271138001	**MW-301**	Water	05/22/18 13:49	05/23/18 09:00
60271138002	**MW-302**	Water	05/22/18 14:49	05/23/18 09:00
60271138003	**MW-303**	Water	05/22/18 15:54	05/23/18 09:00
60271138004	**MW-304**	Water	05/22/18 16:44	05/23/18 09:00
60271138005	**MW-305**	Water	05/22/18 17:29	05/23/18 09:00
60271138006	**MW-306**	Water	05/22/18 18:19	05/23/18 09:00
60271138007	**FIELD BLANK**	Water	05/22/18 14:38	05/23/18 09:00

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SAMPLE ANALYTE COUNT

Project: M.L. KAPP ASH POND
Pace Project No.: 60271138

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60271138001	MW-301	EPA 6010	AGO	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	TDS	1	PASI-K
		SM 2540C	JDA	1	PASI-K
		EPA 9040	ZMH	1	PASI-K
		EPA 9056	OL	3	PASI-K
60271138002	MW-302	EPA 6010	AGO	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	TDS	1	PASI-K
		SM 2540C	JDA	1	PASI-K
		EPA 9040	ZMH	1	PASI-K
		EPA 9056	OL	3	PASI-K
60271138003	MW-303	EPA 6010	AGO	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	TDS	1	PASI-K
		SM 2540C	JDA	1	PASI-K
		EPA 9040	ZMH	1	PASI-K
		EPA 9056	OL	3	PASI-K
60271138004	MW-304	EPA 6010	AGO	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	TDS	1	PASI-K
		SM 2540C	JDA	1	PASI-K
		EPA 9040	ZMH	1	PASI-K
		EPA 9056	OL	3	PASI-K
60271138005	MW-305	EPA 6010	AGO	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	TDS	1	PASI-K
		SM 2540C	JDA	1	PASI-K
		EPA 9040	ZMH	1	PASI-K
		EPA 9056	OL	3	PASI-K
60271138006	MW-306	EPA 6010	AGO	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	TDS	1	PASI-K
		SM 2540C	JDA	1	PASI-K
		EPA 9040	ZMH	1	PASI-K
		EPA 9056	OL	3	PASI-K
60271138007	FIELD BLANK	EPA 6010	AGO	3	PASI-K

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SAMPLE ANALYTE COUNT

Project: M.L. KAPP ASH POND
Pace Project No.: 60271138

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6020	JGP	11	PASI-K
		EPA 7470	TDS	1	PASI-K
		SM 2540C	JDA	1	PASI-K
		EPA 9040	ZMH	1	PASI-K
		EPA 9056	OL	3	PASI-K

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ANALYTICAL RESULTS

Project: M.L. KAPP ASH POND
Pace Project No.: 60271138

Sample: MW-301 **Lab ID: 60271138001** Collected: 05/22/18 13:49 Received: 05/23/18 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**CLIENT**				1		05/22/18 13:49		
Field pH	**6.94**	Std. Units	0.10	0.050	1		05/22/18 13:49		
Field Temperature	**11.3**	deg C	0.50	0.25	1		05/22/18 13:49		
Field Specific Conductance	**1060**	umhos/cm	1.0	1.0	1		05/22/18 13:49		
Field Oxidation Potential	**-106**	mV			1		05/22/18 13:49		
Oxygen, Dissolved	**.27**	mg/L			1		05/22/18 13:49	7782-44-7	
Turbidity	**3.16**	NTU	1.0	1.0	1		05/22/18 13:49		
Groundwater Elevation	**579.20**	feet			1		05/22/18 13:49		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**12500**	ug/L	100	12.5	1	05/30/18 11:20	05/30/18 18:48	7440-42-8	
Calcium	**123**	mg/L	0.20	0.054	1	05/30/18 11:20	05/30/18 18:48	7440-70-2	
Lithium	**<4.6**	ug/L	10.0	4.6	1	05/30/18 11:20	05/30/18 18:48	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**<0.15**	ug/L	1.0	0.15	1	05/30/18 11:20	06/15/18 13:00	7440-36-0	
Arsenic	**0.82J**	ug/L	1.0	0.15	1	05/30/18 11:20	06/15/18 13:00	7440-38-2	
Barium	**116**	ug/L	1.0	0.34	1	05/30/18 11:20	06/15/18 13:00	7440-39-3	
Beryllium	**<0.12**	ug/L	0.50	0.12	1	05/30/18 11:20	06/15/18 13:00	7440-41-7	
Cadmium	**0.13J**	ug/L	0.50	0.070	1	05/30/18 11:20	06/15/18 13:00	7440-43-9	
Chromium	**0.32J**	ug/L	1.0	0.19	1	05/30/18 11:20	06/15/18 13:00	7440-47-3	
Cobalt	**1.7**	ug/L	1.0	0.15	1	05/30/18 11:20	06/15/18 13:00	7440-48-4	
Lead	**0.12J**	ug/L	1.0	0.12	1	05/30/18 11:20	06/15/18 13:00	7439-92-1	
Molybdenum	**251**	ug/L	1.0	0.13	1	05/30/18 11:20	06/15/18 13:00	7439-98-7	
Selenium	**<0.16**	ug/L	1.0	0.16	1	05/30/18 11:20	06/15/18 13:00	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	05/30/18 11:20	06/15/18 13:00	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.090**	ug/L	0.20	0.090	1	06/01/18 09:55	06/01/18 15:03	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**833**	mg/L	5.0	5.0	1		05/29/18 15:24		
9040 pH	Analytical Method: EPA 9040								
pH	**6.8**	Std. Units	0.10	0.10	1		05/29/18 13:35		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**24.3**	mg/L	2.0	0.92	2		06/03/18 09:38	16887-00-6	
Fluoride	**0.25**	mg/L	0.20	0.063	1		06/02/18 23:20	16984-48-8	
Sulfate	**456**	mg/L	50.0	11.8	50		06/03/18 09:55	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: M.L. KAPP ASH POND
Pace Project No.: 60271138

Sample: MW-302 **Lab ID: 60271138002** Collected: 05/22/18 14:49 Received: 05/23/18 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**CLIENT**				1		05/22/18 14:49		
Field pH	**9.11**	Std. Units	0.10	0.050	1		05/22/18 14:49		
Field Temperature	**10.9**	deg C	0.50	0.25	1		05/22/18 14:49		
Field Specific Conductance	**687**	umhos/cm	1.0	1.0	1		05/22/18 14:49		
Field Oxidation Potential	**-27**	mV			1		05/22/18 14:49		
Oxygen, Dissolved	**.28**	mg/L			1		05/22/18 14:49	7782-44-7	
Turbidity	**38.63**	NTU	1.0	1.0	1		05/22/18 14:49		
Groundwater Elevation	**579.37**	feet			1		05/22/18 14:49		
6010 MET ICP	Analytical Method: EPA 6010	Preparation Method: EPA 3010							
Boron	**4720**	ug/L	100	12.5	1	05/30/18 11:20	05/30/18 18:54	7440-42-8	
Calcium	**73.0**	mg/L	0.20	0.054	1	05/30/18 11:20	05/30/18 18:54	7440-70-2	
Lithium	**14.2**	ug/L	10.0	4.6	1	05/30/18 11:20	05/30/18 18:54	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020	Preparation Method: EPA 3010							
Antimony	**0.33J**	ug/L	1.0	0.15	1	05/30/18 11:20	06/15/18 13:02	7440-36-0	
Arsenic	**8.8**	ug/L	1.0	0.15	1	05/30/18 11:20	06/15/18 13:02	7440-38-2	
Barium	**60.4**	ug/L	1.0	0.34	1	05/30/18 11:20	06/15/18 13:02	7440-39-3	
Beryllium	**<0.12**	ug/L	0.50	0.12	1	05/30/18 11:20	06/15/18 13:02	7440-41-7	
Cadmium	**0.12J**	ug/L	0.50	0.070	1	05/30/18 11:20	06/15/18 13:02	7440-43-9	
Chromium	**1.4**	ug/L	1.0	0.19	1	05/30/18 11:20	06/15/18 13:02	7440-47-3	
Cobalt	**0.46J**	ug/L	1.0	0.15	1	05/30/18 11:20	06/15/18 13:02	7440-48-4	
Lead	**0.60J**	ug/L	1.0	0.12	1	05/30/18 11:20	06/15/18 13:02	7439-92-1	
Molybdenum	**235**	ug/L	1.0	0.13	1	05/30/18 11:20	06/15/18 13:02	7439-98-7	
Selenium	**6.7**	ug/L	1.0	0.16	1	05/30/18 11:20	06/15/18 13:02	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	05/30/18 11:20	06/15/18 13:02	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470	Preparation Method: EPA 7470							
Mercury	**<0.090**	ug/L	0.20	0.090	1	06/01/18 09:55	06/01/18 15:06	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**494**	mg/L	5.0	5.0	1		05/29/18 15:24		
9040 pH	Analytical Method: EPA 9040								
pH	**8.2**	Std. Units	0.10	0.10	1		05/29/18 13:35		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**17.6**	mg/L	1.0	0.46	1		06/03/18 00:05	16887-00-6	
Fluoride	**0.39**	mg/L	0.20	0.063	1		06/03/18 00:05	16984-48-8	
Sulfate	**199**	mg/L	20.0	4.7	20		06/03/18 10:08	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: M.L. KAPP ASH POND
Pace Project No.: 60271138

Sample: MW-303 **Lab ID: 60271138003** Collected: 05/22/18 15:54 Received: 05/23/18 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**CLIENT**				1		05/22/18 15:54		
Field pH	**9.05**	Std. Units	0.10	0.050	1		05/22/18 15:54		
Field Temperature	**12.3**	deg C	0.50	0.25	1		05/22/18 15:54		
Field Specific Conductance	**797**	umhos/cm	1.0	1.0	1		05/22/18 15:54		
Field Oxidation Potential	**-180**	mV			1		05/22/18 15:54		
Oxygen, Dissolved	**.19**	mg/L			1		05/22/18 15:54	7782-44-7	
Turbidity	**1.32**	NTU	1.0	1.0	1		05/22/18 15:54		
Groundwater Elevation	**580.**	feet			1		05/22/18 15:54		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**3080**	ug/L	100	12.5	1	05/30/18 11:20	05/30/18 18:57	7440-42-8	
Calcium	**84.5**	mg/L	0.20	0.054	1	05/30/18 11:20	05/30/18 18:57	7440-70-2	
Lithium	**9.8J**	ug/L	10.0	4.6	1	05/30/18 11:20	05/30/18 18:57	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.64J**	ug/L	1.0	0.15	1	05/30/18 11:20	06/15/18 13:09	7440-36-0	
Arsenic	**6.2**	ug/L	1.0	0.15	1	05/30/18 11:20	06/15/18 13:09	7440-38-2	
Barium	**25.7**	ug/L	1.0	0.34	1	05/30/18 11:20	06/15/18 13:09	7440-39-3	
Beryllium	**0.35J**	ug/L	0.50	0.12	1	05/30/18 11:20	06/15/18 13:09	7440-41-7	
Cadmium	**0.46J**	ug/L	0.50	0.070	1	05/30/18 11:20	06/15/18 13:09	7440-43-9	
Chromium	**0.52J**	ug/L	1.0	0.19	1	05/30/18 11:20	06/15/18 13:09	7440-47-3	
Cobalt	**0.57J**	ug/L	1.0	0.15	1	05/30/18 11:20	06/15/18 13:09	7440-48-4	
Lead	**0.42J**	ug/L	1.0	0.12	1	05/30/18 11:20	06/15/18 13:09	7439-92-1	
Molybdenum	**152**	ug/L	1.0	0.13	1	05/30/18 11:20	06/15/18 13:09	7439-98-7	
Selenium	**1.4**	ug/L	1.0	0.16	1	05/30/18 11:20	06/15/18 13:09	7782-49-2	
Thallium	**0.36J**	ug/L	1.0	0.14	1	05/30/18 11:20	06/15/18 13:09	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.090**	ug/L	0.20	0.090	1	06/01/18 09:55	06/01/18 15:08	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**562**	mg/L	5.0	5.0	1		05/29/18 15:24		
9040 pH	Analytical Method: EPA 9040								
pH	**9.0**	Std. Units	0.10	0.10	1		05/29/18 13:35		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**23.5**	mg/L	2.0	0.92	2		06/03/18 11:17	16887-00-6	
Fluoride	**0.39**	mg/L	0.20	0.063	1		06/03/18 00:35	16984-48-8	
Sulfate	**308**	mg/L	20.0	4.7	20		06/03/18 11:30	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(913)599-5665

ANALYTICAL RESULTS

Project: M.L. KAPP ASH POND
Pace Project No.: 60271138

Sample: MW-304 **Lab ID: 60271138004** Collected: 05/22/18 16:44 Received: 05/23/18 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**CLIENT**				1		05/22/18 16:44		
Field pH	**7.65**	Std. Units	0.10	0.050	1		05/22/18 16:44		
Field Temperature	**11.8**	deg C	0.50	0.25	1		05/22/18 16:44		
Field Specific Conductance	**611**	umhos/cm	1.0	1.0	1		05/22/18 16:44		
Field Oxidation Potential	**-121**	mV			1		05/22/18 16:44		
Oxygen, Dissolved	**.57**	mg/L			1		05/22/18 16:44	7782-44-7	
Turbidity	**11.84**	NTU	1.0	1.0	1		05/22/18 16:44		
Groundwater Elevation	**579.47**	feet			1		05/22/18 16:44		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**6880**	ug/L	100	12.5	1	05/30/18 11:20	05/30/18 18:59	7440-42-8	
Calcium	**49.4**	mg/L	0.20	0.054	1	05/30/18 11:20	05/30/18 18:59	7440-70-2	
Lithium	**<4.6**	ug/L	10.0	4.6	1	05/30/18 11:20	05/30/18 18:59	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**<0.15**	ug/L	1.0	0.15	1	05/30/18 11:20	06/15/18 13:11	7440-36-0	
Arsenic	**3.0**	ug/L	1.0	0.15	1	05/30/18 11:20	06/15/18 13:11	7440-38-2	
Barium	**39.1**	ug/L	1.0	0.34	1	05/30/18 11:20	06/15/18 13:11	7440-39-3	
Beryllium	**<0.12**	ug/L	0.50	0.12	1	05/30/18 11:20	06/15/18 13:11	7440-41-7	
Cadmium	**0.48J**	ug/L	0.50	0.070	1	05/30/18 11:20	06/15/18 13:11	7440-43-9	
Chromium	**0.68J**	ug/L	1.0	0.19	1	05/30/18 11:20	06/15/18 13:11	7440-47-3	
Cobalt	**0.56J**	ug/L	1.0	0.15	1	05/30/18 11:20	06/15/18 13:11	7440-48-4	
Lead	**0.60J**	ug/L	1.0	0.12	1	05/30/18 11:20	06/15/18 13:11	7439-92-1	
Molybdenum	**1260**	ug/L	1.0	0.13	1	05/30/18 11:20	06/15/18 13:11	7439-98-7	
Selenium	**<0.16**	ug/L	1.0	0.16	1	05/30/18 11:20	06/15/18 13:11	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	05/30/18 11:20	06/15/18 13:11	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.090**	ug/L	0.20	0.090	1	06/01/18 09:55	06/01/18 15:10	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**419**	mg/L	5.0	5.0	1		05/29/18 15:24		
9040 pH	Analytical Method: EPA 9040								
pH	**7.7**	Std. Units	0.10	0.10	1		05/29/18 13:35		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**31.4**	mg/L	2.0	0.92	2		06/03/18 11:44	16887-00-6	
Fluoride	**0.26**	mg/L	0.20	0.063	1		06/03/18 00:50	16984-48-8	
Sulfate	**188**	mg/L	20.0	4.7	20		06/03/18 11:58	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: M.L. KAPP ASH POND
Pace Project No.: 60271138

Sample: MW-305 **Lab ID: 60271138005** Collected: 05/22/18 17:29 Received: 05/23/18 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**CLIENT**				1		05/22/18 17:29		
Field pH	**7.27**	Std. Units	0.10	0.050	1		05/22/18 17:29		
Field Temperature	**11.4**	deg C	0.50	0.25	1		05/22/18 17:29		
Field Specific Conductance	**1155**	umhos/cm	1.0	1.0	1		05/22/18 17:29		
Field Oxidation Potential	**17**	mV			1		05/22/18 17:29		
Oxygen, Dissolved	**.64**	mg/L			1		05/22/18 17:29	7782-44-7	
Turbidity	**4.18**	NTU	1.0	1.0	1		05/22/18 17:29		
Groundwater Elevation	**579.34**	feet			1		05/22/18 17:29		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**14000**	ug/L	100	12.5	1	05/30/18 11:20	05/30/18 19:01	7440-42-8	
Calcium	**122**	mg/L	0.20	0.054	1	05/30/18 11:20	05/30/18 19:01	7440-70-2	
Lithium	**13.6**	ug/L	10.0	4.6	1	05/30/18 11:20	05/30/18 19:01	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**<0.15**	ug/L	1.0	0.15	1	05/30/18 11:20	06/15/18 13:13	7440-36-0	
Arsenic	**0.86J**	ug/L	1.0	0.15	1	05/30/18 11:20	06/15/18 13:13	7440-38-2	
Barium	**81.7**	ug/L	1.0	0.34	1	05/30/18 11:20	06/15/18 13:13	7440-39-3	
Beryllium	**<0.12**	ug/L	0.50	0.12	1	05/30/18 11:20	06/15/18 13:13	7440-41-7	
Cadmium	**0.30J**	ug/L	0.50	0.070	1	05/30/18 11:20	06/15/18 13:13	7440-43-9	
Chromium	**0.20J**	ug/L	1.0	0.19	1	05/30/18 11:20	06/15/18 13:13	7440-47-3	
Cobalt	**0.49J**	ug/L	1.0	0.15	1	05/30/18 11:20	06/15/18 13:13	7440-48-4	
Lead	**0.24J**	ug/L	1.0	0.12	1	05/30/18 11:20	06/15/18 13:13	7439-92-1	
Molybdenum	**671**	ug/L	1.0	0.13	1	05/30/18 11:20	06/15/18 13:13	7439-98-7	
Selenium	**0.50J**	ug/L	1.0	0.16	1	05/30/18 11:20	06/15/18 13:13	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	05/30/18 11:20	06/15/18 13:13	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.090**	ug/L	0.20	0.090	1	06/01/18 09:55	06/01/18 15:12	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**872**	mg/L	5.0	5.0	1		05/29/18 15:24		
9040 pH	Analytical Method: EPA 9040								
pH	**7.2**	Std. Units	0.10	0.10	1		05/29/18 13:35		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**21.7**	mg/L	2.0	0.92	2		06/03/18 12:11	16887-00-6	
Fluoride	**0.21**	mg/L	0.20	0.063	1		06/03/18 01:05	16984-48-8	
Sulfate	**468**	mg/L	50.0	11.8	50		06/03/18 12:25	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(913)599-5665

ANALYTICAL RESULTS

Project: M.L. KAPP ASH POND
Pace Project No.: 60271138

Sample: MW-306 **Lab ID: 60271138006** Collected: 05/22/18 18:19 Received: 05/23/18 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**CLIENT**				1		05/22/18 18:19		
Field pH	**7.33**	Std. Units	0.10	0.050	1		05/22/18 18:19		
Field Temperature	**10.6**	deg C	0.50	0.25	1		05/22/18 18:19		
Field Specific Conductance	**1511**	umhos/cm	1.0	1.0	1		05/22/18 18:19		
Field Oxidation Potential	**87**	mV			1		05/22/18 18:19		
Oxygen, Dissolved	**.44**	mg/L			1		05/22/18 18:19	7782-44-7	
Turbidity	**1.12**	NTU	1.0	1.0	1		05/22/18 18:19		
Groundwater Elevation	**579.47**	feet			1		05/22/18 18:19		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**18600**	ug/L	100	12.5	1	05/30/18 11:20	05/30/18 19:03	7440-42-8	
Calcium	**164**	mg/L	0.20	0.054	1	05/30/18 11:20	05/30/18 19:03	7440-70-2	
Lithium	**63.5**	ug/L	10.0	4.6	1	05/30/18 11:20	05/30/18 19:03	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.16J**	ug/L	1.0	0.15	1	05/30/18 11:20	06/15/18 13:15	7440-36-0	
Arsenic	**0.42J**	ug/L	1.0	0.15	1	05/30/18 11:20	06/15/18 13:15	7440-38-2	
Barium	**56.8**	ug/L	1.0	0.34	1	05/30/18 11:20	06/15/18 13:15	7440-39-3	
Beryllium	**<0.12**	ug/L	0.50	0.12	1	05/30/18 11:20	06/15/18 13:15	7440-41-7	
Cadmium	**0.080J**	ug/L	0.50	0.070	1	05/30/18 11:20	06/15/18 13:15	7440-43-9	
Chromium	**<0.19**	ug/L	1.0	0.19	1	05/30/18 11:20	06/15/18 13:15	7440-47-3	
Cobalt	**0.16J**	ug/L	1.0	0.15	1	05/30/18 11:20	06/15/18 13:15	7440-48-4	
Lead	**<0.12**	ug/L	1.0	0.12	1	05/30/18 11:20	06/15/18 13:15	7439-92-1	
Molybdenum	**75.3**	ug/L	1.0	0.13	1	05/30/18 11:20	06/15/18 13:15	7439-98-7	
Selenium	**0.51J**	ug/L	1.0	0.16	1	05/30/18 11:20	06/15/18 13:15	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	05/30/18 11:20	06/15/18 13:15	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.090**	ug/L	0.20	0.090	1	06/01/18 09:55	06/01/18 15:19	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**1130**	mg/L	5.0	5.0	1		05/29/18 15:24		
9040 pH	Analytical Method: EPA 9040								
pH	**7.4**	Std. Units	0.10	0.10	1		05/29/18 13:35		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**59.9**	mg/L	5.0	2.3	5		06/03/18 12:38	16887-00-6	
Fluoride	**0.18J**	mg/L	0.20	0.063	1		06/03/18 01:20	16984-48-8	
Sulfate	**600**	mg/L	50.0	11.8	50		06/03/18 12:52	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(913)599-5665

ANALYTICAL RESULTS

Project: M.L. KAPP ASH POND
Pace Project No.: 60271138

Sample: FIELD BLANK **Lab ID: 60271138007** Collected: 05/22/18 14:38 Received: 05/23/18 09:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**61.2J**	ug/L	100	12.5	1	05/30/18 11:20	05/30/18 19:06	7440-42-8	
Calcium	**<0.054**	mg/L	0.20	0.054	1	05/30/18 11:20	05/30/18 19:06	7440-70-2	
Lithium	**<4.6**	ug/L	10.0	4.6	1	05/30/18 11:20	05/30/18 19:06	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**<0.15**	ug/L	1.0	0.15	1	05/30/18 11:20	06/15/18 13:22	7440-36-0	
Arsenic	**<0.15**	ug/L	1.0	0.15	1	05/30/18 11:20	06/15/18 13:22	7440-38-2	
Barium	**<0.34**	ug/L	1.0	0.34	1	05/30/18 11:20	06/15/18 13:22	7440-39-3	
Beryllium	**<0.12**	ug/L	0.50	0.12	1	05/30/18 11:20	06/15/18 13:22	7440-41-7	
Cadmium	**<0.070**	ug/L	0.50	0.070	1	05/30/18 11:20	06/15/18 13:22	7440-43-9	
Chromium	**<0.19**	ug/L	1.0	0.19	1	05/30/18 11:20	06/15/18 13:22	7440-47-3	
Cobalt	**<0.15**	ug/L	1.0	0.15	1	05/30/18 11:20	06/15/18 13:22	7440-48-4	
Lead	**<0.12**	ug/L	1.0	0.12	1	05/30/18 11:20	06/15/18 13:22	7439-92-1	
Molybdenum	**<0.13**	ug/L	1.0	0.13	1	05/30/18 11:20	06/15/18 13:22	7439-98-7	
Selenium	**<0.16**	ug/L	1.0	0.16	1	05/30/18 11:20	06/15/18 13:22	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	05/30/18 11:20	06/15/18 13:22	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.090**	ug/L	0.20	0.090	1	06/01/18 09:55	06/01/18 15:21	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**7.0**	mg/L	5.0	5.0	1		05/29/18 15:24		
9040 pH	Analytical Method: EPA 9040								
pH	**5.3**	Std. Units	0.10	0.10	1		05/29/18 13:35		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**<0.46**	mg/L	1.0	0.46	1		06/03/18 02:04	16887-00-6	
Fluoride	**<0.063**	mg/L	0.20	0.063	1		06/03/18 02:04	16984-48-8	
Sulfate	**<0.24**	mg/L	1.0	0.24	1		06/03/18 02:04	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: M.L. KAPP ASH POND
Pace Project No.: 60271138

QC Batch: 528205 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 60271138001, 60271138002, 60271138003, 60271138004, 60271138005, 60271138006, 60271138007

METHOD BLANK: 2163757 Matrix: Water
Associated Lab Samples: 60271138001, 60271138002, 60271138003, 60271138004, 60271138005, 60271138006, 60271138007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.090	0.20	0.090	06/01/18 14:52	

LABORATORY CONTROL SAMPLE: 2163758

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.1	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2163759 2163760

Parameter	Units	60271138002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.090	5	5	4.3	4.8	87	96	75-125	11	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: M.L. KAPP ASH POND
Pace Project No.: 60271138

QC Batch: 527865 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET
Associated Lab Samples: 60271138001, 60271138002, 60271138003, 60271138004, 60271138005, 60271138006, 60271138007

METHOD BLANK: 2162509 Matrix: Water
Associated Lab Samples: 60271138001, 60271138002, 60271138003, 60271138004, 60271138005, 60271138006, 60271138007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	ug/L	<12.5	100	12.5	05/30/18 18:46	
Calcium	mg/L	<0.054	0.20	0.054	05/30/18 18:46	
Lithium	ug/L	<4.6	10.0	4.6	05/30/18 18:46	

LABORATORY CONTROL SAMPLE: 2162510

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	907	91	80-120	
Calcium	mg/L	10	9.9	99	80-120	
Lithium	ug/L	1000	996	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2162511 2162512

Parameter	Units	60271138001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	ug/L	12500	1000	1000	13500	13600	93	108	75-125	1	20	
Calcium	mg/L	123	10	10	132	134	92	106	75-125	1	20	
Lithium	ug/L	<4.6	1000	1000	1020	1030	102	103	75-125	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

QUALITY CONTROL DATA

Project: M.L. KAPP ASH POND
Pace Project No.: 60271138

QC Batch: 527867 Analysis Method: EPA 6020
QC Batch Method: EPA 3010 Analysis Description: 6020 MET
Associated Lab Samples: 60271138001, 60271138002, 60271138003, 60271138004, 60271138005, 60271138006, 60271138007

METHOD BLANK: 2162518 Matrix: Water
Associated Lab Samples: 60271138001, 60271138002, 60271138003, 60271138004, 60271138005, 60271138006, 60271138007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.15	1.0	0.15	06/15/18 12:55	
Arsenic	ug/L	<0.15	1.0	0.15	06/15/18 12:55	
Barium	ug/L	<0.34	1.0	0.34	06/15/18 12:55	
Beryllium	ug/L	<0.12	0.50	0.12	06/15/18 12:55	
Cadmium	ug/L	<0.070	0.50	0.070	06/15/18 12:55	
Chromium	ug/L	<0.19	1.0	0.19	06/15/18 12:55	
Cobalt	ug/L	<0.15	1.0	0.15	06/15/18 12:55	
Lead	ug/L	<0.12	1.0	0.12	06/15/18 12:55	
Molybdenum	ug/L	<0.13	1.0	0.13	06/15/18 12:55	
Selenium	ug/L	<0.16	1.0	0.16	06/15/18 12:55	
Thallium	ug/L	<0.14	1.0	0.14	06/15/18 12:55	

LABORATORY CONTROL SAMPLE: 2162519

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	42.0	105	80-120	
Arsenic	ug/L	40	41.0	103	80-120	
Barium	ug/L	40	40.7	102	80-120	
Beryllium	ug/L	40	41.2	103	80-120	
Cadmium	ug/L	40	41.4	104	80-120	
Chromium	ug/L	40	40.7	102	80-120	
Cobalt	ug/L	40	39.3	98	80-120	
Lead	ug/L	40	39.5	99	80-120	
Molybdenum	ug/L	40	40.9	102	80-120	
Selenium	ug/L	40	39.8	99	80-120	
Thallium	ug/L	40	37.5	94	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2162520 2162521

Parameter	Units	60271138002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	0.33J	40	40	41.7	41.8	103	104	75-125	0	20	
Arsenic	ug/L	8.8	40	40	49.0	48.7	100	100	75-125	1	20	
Barium	ug/L	60.4	40	40	101	100	101	99	75-125	1	20	
Beryllium	ug/L	<0.12	40	40	40.6	40.3	101	101	75-125	1	20	
Cadmium	ug/L	0.12J	40	40	40.2	40.4	100	101	75-125	0	20	
Chromium	ug/L	1.4	40	40	40.9	40.8	99	98	75-125	0	20	
Cobalt	ug/L	0.46J	40	40	39.1	39.2	97	97	75-125	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: M.L. KAPP ASH POND
Pace Project No.: 60271138

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2162520 2162521

Parameter	Units	60271138002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lead	ug/L	0.60J	40	40	38.2	38.3	94	94	75-125	0	20	
Molybdenum	ug/L	235	40	40	278	274	108	99	75-125	1	20	
Selenium	ug/L	6.7	40	40	43.4	43.0	92	91	75-125	1	20	
Thallium	ug/L	<0.14	40	40	36.2	35.9	90	90	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: M.L. KAPP ASH POND
Pace Project No.: 60271138

QC Batch: 527615 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60271138001, 60271138002, 60271138003, 60271138004, 60271138005, 60271138006, 60271138007

METHOD BLANK: 2161667 Matrix: Water
Associated Lab Samples: 60271138001, 60271138002, 60271138003, 60271138004, 60271138005, 60271138006, 60271138007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	05/29/18 15:24	

LABORATORY CONTROL SAMPLE: 2161668

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	987	99	80-120	

SAMPLE DUPLICATE: 2161669

Parameter	Units	60271049001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	664	657	1	10	

SAMPLE DUPLICATE: 2161670

Parameter	Units	60271138001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	833	827	1	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: M.L. KAPP ASH POND
Pace Project No.: 60271138

QC Batch: 527614 Analysis Method: EPA 9040
QC Batch Method: EPA 9040 Analysis Description: 9040 pH
Associated Lab Samples: 60271138001, 60271138002, 60271138003, 60271138004, 60271138005, 60271138006, 60271138007

SAMPLE DUPLICATE: 2161666

Parameter	Units	60271238001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	7.7	7.8	1	10	H6

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: M.L. KAPP ASH POND
Pace Project No.: 60271138

QC Batch: 528369 Analysis Method: EPA 9056
QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions
Associated Lab Samples: 60271138001, 60271138002, 60271138003, 60271138004, 60271138005, 60271138006, 60271138007

METHOD BLANK: 2164566 Matrix: Water
Associated Lab Samples: 60271138001, 60271138002, 60271138003, 60271138004, 60271138005, 60271138006, 60271138007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.46	1.0	0.46	06/02/18 22:21	
Fluoride	mg/L	<0.063	0.20	0.063	06/02/18 22:21	
Sulfate	mg/L	<0.24	1.0	0.24	06/02/18 22:21	

LABORATORY CONTROL SAMPLE: 2164567

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	93	80-120	
Fluoride	mg/L	2.5	2.4	97	80-120	
Sulfate	mg/L	5	4.9	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2164568 2164569

Parameter	Units	60271138001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	0.25	2.5	2.5	2.9	3.1	104	113	80-120	7	15	

SAMPLE DUPLICATE: 2164570

Parameter	Units	60271138002 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	17.6	17.7	1	15	
Fluoride	mg/L	0.39	0.39	0	15	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: M.L. KAPP ASH POND
Pace Project No.: 60271138

QC Batch: 528383 Analysis Method: EPA 9056
QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions
Associated Lab Samples: 60271138001, 60271138002, 60271138003, 60271138004, 60271138005, 60271138006

METHOD BLANK: 2164741 Matrix: Water
Associated Lab Samples: 60271138001, 60271138002, 60271138003, 60271138004, 60271138005, 60271138006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.46	1.0	0.46	06/03/18 09:10	
Sulfate	mg/L	<0.24	1.0	0.24	06/03/18 09:10	

LABORATORY CONTROL SAMPLE: 2164742

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.0	99	80-120	
Sulfate	mg/L	5	5.1	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2164743 2164744

Parameter	Units	60271138002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	199	100	100	301	300	102	101	80-120	0	15	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: M.L. KAPP ASH POND
Pace Project No.: 60271138

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-K	Pace Analytical Services - Kansas City

ANALYTE QUALIFIERS

H6	Analysis initiated outside of the 15 minute EPA required holding time.

Pace Analytical Services, LLC
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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: M.L. KAPP ASH POND
Pace Project No.: 60271138

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60271138001	**MW-301**		528699		
60271138002	**MW-302**		528699		
60271138003	**MW-303**		528699		
60271138004	**MW-304**		528699		
60271138005	**MW-305**		528699		
60271138006	**MW-306**		528699		
60271138001	**MW-301**	EPA 3010	527865	EPA 6010	527895
60271138002	**MW-302**	EPA 3010	527865	EPA 6010	527895
60271138003	**MW-303**	EPA 3010	527865	EPA 6010	527895
60271138004	**MW-304**	EPA 3010	527865	EPA 6010	527895
60271138005	**MW-305**	EPA 3010	527865	EPA 6010	527895
60271138006	**MW-306**	EPA 3010	527865	EPA 6010	527895
60271138007	**FIELD BLANK**	EPA 3010	527865	EPA 6010	527895
60271138001	**MW-301**	EPA 3010	527867	EPA 6020	527896
60271138002	**MW-302**	EPA 3010	527867	EPA 6020	527896
60271138003	**MW-303**	EPA 3010	527867	EPA 6020	527896
60271138004	**MW-304**	EPA 3010	527867	EPA 6020	527896
60271138005	**MW-305**	EPA 3010	527867	EPA 6020	527896
60271138006	**MW-306**	EPA 3010	527867	EPA 6020	527896
60271138007	**FIELD BLANK**	EPA 3010	527867	EPA 6020	527896
60271138001	**MW-301**	EPA 7470	528205	EPA 7470	528262
60271138002	**MW-302**	EPA 7470	528205	EPA 7470	528262
60271138003	**MW-303**	EPA 7470	528205	EPA 7470	528262
60271138004	**MW-304**	EPA 7470	528205	EPA 7470	528262
60271138005	**MW-305**	EPA 7470	528205	EPA 7470	528262
60271138006	**MW-306**	EPA 7470	528205	EPA 7470	528262
60271138007	**FIELD BLANK**	EPA 7470	528205	EPA 7470	528262
60271138001	**MW-301**	SM 2540C	527615		
60271138002	**MW-302**	SM 2540C	527615		
60271138003	**MW-303**	SM 2540C	527615		
60271138004	**MW-304**	SM 2540C	527615		
60271138005	**MW-305**	SM 2540C	527615		
60271138006	**MW-306**	SM 2540C	527615		
60271138007	**FIELD BLANK**	SM 2540C	527615		
60271138001	**MW-301**	EPA 9040	527614		
60271138002	**MW-302**	EPA 9040	527614		
60271138003	**MW-303**	EPA 9040	527614		
60271138004	**MW-304**	EPA 9040	527614		
60271138005	**MW-305**	EPA 9040	527614		
60271138006	**MW-306**	EPA 9040	527614		
60271138007	**FIELD BLANK**	EPA 9040	527614		
60271138001	**MW-301**	EPA 9056	528369		
60271138001	**MW-301**	EPA 9056	528383		
60271138002	**MW-302**	EPA 9056	528369		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: M.L. KAPP ASH POND
Pace Project No.: 60271138

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60271138002	**MW-302**	EPA 9056	528383		
60271138003	**MW-303**	EPA 9056	528369		
60271138003	**MW-303**	EPA 9056	528383		
60271138004	**MW-304**	EPA 9056	528369		
60271138004	**MW-304**	EPA 9056	528383		
60271138005	**MW-305**	EPA 9056	528369		
60271138005	**MW-305**	EPA 9056	528383		
60271138006	**MW-306**	EPA 9056	528369		
60271138006	**MW-306**	EPA 9056	528383		
60271138007	**FIELD BLANK**	EPA 9056	528369		

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Sample Condition Upon Receipt

WO# : 60271138

60271138

Client Name: SCS Engineers

Courier: FedEx ☒ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☐ Client ☐ Other ☐

Tracking #: 4316 8274 4302 Pace Shipping Label Used? Yes ☒ No ☐

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☒ Other ☐

Thermometer Used: T-297 **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): **As-read** 1.8 **Corr. Factor** +0.9 **Corrected** 2.7

Date and initials of person examining contents: AC 5/23

Temperature should be above freezing to 6°C

Chain of Custody present:	☒Yes ☐No ☐N/A	
Chain of Custody relinquished:	☒Yes ☐No ☐N/A	
Samples arrived within holding time:	☐Yes ☒No ☐N/A	pH arrived out of Hold Time (15 min)
Short Hold Time analyses (<72hr):	☒Yes ☐No ☐N/A	
Rush Turn Around Time requested:	☐Yes ☒No ☐N/A	
Sufficient volume:	☒Yes ☐No ☐N/A	
Correct containers used:	☒Yes ☐No ☐N/A	
Pace containers used:	☒Yes ☐No ☐N/A	
Containers intact:	☒Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☒N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☒N/A	
Sample labels match COC: Date / time / ID / analyses	☒Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☒No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	☒Yes ☐No ☐N/A 5/23/18 AC	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☒No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☒No	
Trip Blank present:	☐Yes ☐No ☒N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☒N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☒N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☒N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: HWK Date: 5-24-2018

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: of

Section A
Required Client Information:
Company: SCS Engineers
Address: 2830 Dairy Drive
Madison WI 53718
Email To: mblodgett@scsengineers.com
Phone: 608-216-7362 Fax:
Requested Due Date/TAT: standard

Section B
Required Project Information:
Report To: Meghan Blodgett
Copy To: Tom Karwaski
Purchase Order No.:
Project Name: M.L. Kapp Ash Pond
Project Number: 25218061.00.

Section C
Invoice Information:
Attention: Meghan Blodgett/Jess Valcheff
Company Name: SCS Engineers
Address:
Pace Quote Reference:
Pace Project Manager: Trudy Gipson 913-563-1405
Pace Profile #: 6696 Line 2

REGULATORY AGENCY
☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER ______

Site Location STATE: IA

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Valid Matrix Codes MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

Requested Analysis Filtered (Y/N): N N N N N N

Pace Project No./ Lab I.D.: 60271138

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	6010 Total Metals: B-Ca-Li	6020 Total Metals *	7470 Total Mercury	9056 Chloride-Fluoride-Sulfate	9040 pH	2540C TDS						Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-301	WT	G	xxx	xxx	5/22/18	1349	11.3	3	1		2						X	X	X	X	X	X	BP1U			2BP3N			001
2	MW-302	WT	G	xxx	xxx	5/22/18	1449	10.9	3	1		2						X	X	X	X	X	X	↓			↓			002
3	MW-303	WT	G	xxx	xxx	5/22/18	1554	12.3	3	1		2						X	X	X	X	X	X	↓			↓			003
4	MW-304	WT	G	xxx	xxx	5/22/18	1644	11.8	3	1		2						X	X	X	X	X	X	↓			↓			004
5	MW-305	WT	G	xxx	xxx	5/22/18	1729	11.4	3	1		2						X	X	X	X	X	X	↓			↓			005
6	MW-306	WT	G	xxx	xxx	5/22/18	1819	10.6	3	1		2						X	X	X	X	X	X	↓			↓			006
7	FIELD BLANK	WT	G	xxx	xxx	5/22/18	1438		3	1		2						X	X	X	X	X	X	↓			↓			007
8																														
9																														
10																														
11																														
12																														

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Ship To: 9608 Loiret Boulevard, Lenexa, KS 66219	Charles [signature] SCS	5/22/18	2000	[signature] Pace	5/23/18	0900	2.7	Y	Y	Y
* As-Ba-Be-Cd-Cr-Co-Pb-Mo-Sb-Se-Tl										

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER:
SIGNATURE of SAMPLER:
DATE Signed (MM/DD/YY):

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-Feb-2007

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

June 15, 2018

Meghan Blodgett
SCS Engineers
2830 Dairy Drive
Madison, WI 53718

RE: Project: M.L. KAPP ASH POND
Pace Project No.: 60271066

Dear Meghan Blodgett:
Enclosed are the analytical results for sample(s) received by the laboratory on May 23, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Hank Kapka
hank.kapka@pacelabs.com
(913)599-5665
PM Lab Management

Enclosures

cc: Tom Karwaski, SCS Engineers
Nicole Kron, SCS Engineers
Jeff Maxted, Alliant Energy
Jess Valcheff, SCS Engeineers

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: M.L. KAPP ASH POND
Pace Project No.: 60271066

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991
Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 9526
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

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SAMPLE SUMMARY

Project: M.L. KAPP ASH POND
Pace Project No.: 60271066

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60271066001	**MW-301**	Water	05/22/18 13:49	05/23/18 09:00
60271066002	**MW-302**	Water	05/22/18 14:49	05/23/18 09:00
60271066003	**MW-303**	Water	05/22/18 15:54	05/23/18 09:00
60271066004	**MW-304**	Water	05/22/18 16:44	05/23/18 09:00
60271066005	**MW-305**	Water	05/22/18 17:29	05/23/18 09:00
60271066006	**MW-306**	Water	05/22/18 18:19	05/23/18 09:00
60271066007	**FIELD BLANK**	Water	05/22/18 14:38	05/23/18 09:00

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SAMPLE ANALYTE COUNT

Project: M.L. KAPP ASH POND
Pace Project No.: 60271066

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60271066001	**MW-301**	EPA 903.1	KAC	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60271066002	**MW-302**	EPA 903.1	KAC	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60271066003	**MW-303**	EPA 903.1	KAC	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60271066004	**MW-304**	EPA 903.1	KAC	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60271066005	**MW-305**	EPA 903.1	KAC	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60271066006	**MW-306**	EPA 903.1	KAC	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60271066007	**FIELD BLANK**	EPA 903.1	KAC	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: M.L. KAPP ASH POND
Pace Project No.: 60271066

Sample: MW-301 **Lab ID: 60271066001** Collected: 05/22/18 13:49 Received: 05/23/18 09:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.573 ± 0.455 (0.592) C:NA T:85%**	pCi/L	06/13/18 20:28	13982-63-3	
Radium-228	EPA 904.0	**0.299 ± 0.400 (0.856) C:81% T:87%**	pCi/L	06/14/18 15:54	15262-20-1	
Total Radium	Total Radium Calculation	**0.872 ± 0.855 (1.45)**	pCi/L	06/15/18 11:29	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: M.L. KAPP ASH POND
Pace Project No.: 60271066

Sample: MW-302 **Lab ID: 60271066002** Collected: 05/22/18 14:49 Received: 05/23/18 09:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.399 ± 0.372 (0.490) C:NA T:88%**	pCi/L	06/13/18 20:28	13982-63-3	
Radium-228	EPA 904.0	**0.588 ± 0.438 (0.863) C:77% T:81%**	pCi/L	06/14/18 15:46	15262-20-1	
Total Radium	Total Radium Calculation	**0.987 ± 0.810 (1.35)**	pCi/L	06/15/18 11:29	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: M.L. KAPP ASH POND
Pace Project No.: 60271066

Sample: MW-303 **Lab ID: 60271066003** Collected: 05/22/18 15:54 Received: 05/23/18 09:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.0661 ± 0.302 (0.179) C:NA T:84%**	pCi/L	06/13/18 20:44	13982-63-3	
Radium-228	EPA 904.0	**0.548 ± 0.391 (0.757) C:76% T:82%**	pCi/L	06/14/18 15:46	15262-20-1	
Total Radium	Total Radium Calculation	**0.614 ± 0.693 (0.936)**	pCi/L	06/15/18 11:29	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: M.L. KAPP ASH POND
Pace Project No.: 60271066

Sample: MW-304 **Lab ID: 60271066004** Collected: 05/22/18 16:44 Received: 05/23/18 09:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.867 ± 0.501 (0.196) C:NA T:79%**	pCi/L	06/13/18 20:59	13982-63-3	
Radium-228	EPA 904.0	**0.769 ± 0.722 (1.49) C:78% T:83%**	pCi/L	06/14/18 18:50	15262-20-1	
Total Radium	Total Radium Calculation	**1.64 ± 1.22 (1.69)**	pCi/L	06/15/18 11:29	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: M.L. KAPP ASH POND
Pace Project No.: 60271066

Sample: MW-305 **Lab ID: 60271066005** Collected: 05/22/18 17:29 Received: 05/23/18 09:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.189 ± 0.327 (0.584) C:NA T:86%**	pCi/L	06/13/18 20:59	13982-63-3	
Radium-228	EPA 904.0	**-0.0380 ± 0.482 (1.13) C:79% T:87%**	pCi/L	06/14/18 18:22	15262-20-1	
Total Radium	Total Radium Calculation	**0.189 ± 0.809 (1.71)**	pCi/L	06/15/18 11:29	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: M.L. KAPP ASH POND
Pace Project No.: 60271066

Sample: MW-306 **Lab ID: 60271066006** Collected: 05/22/18 18:19 Received: 05/23/18 09:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.000 ± 0.303 (0.489) C:NA T:84%**	pCi/L	06/13/18 20:59	13982-63-3	
Radium-228	EPA 904.0	**-0.204 ± 0.447 (1.08) C:79% T:89%**	pCi/L	06/14/18 18:50	15262-20-1	
Total Radium	Total Radium Calculation	**0.000 ± 0.750 (1.57)**	pCi/L	06/15/18 11:29	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: M.L. KAPP ASH POND
Pace Project No.: 60271066

Sample: FIELD BLANK **Lab ID: 60271066007** Collected: 05/22/18 14:38 Received: 05/23/18 09:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.276 ± 0.317 (0.187) C:NA T:81%**	pCi/L	06/13/18 21:13	13982-63-3	
Radium-228	EPA 904.0	**0.274 ± 0.594 (1.31) C:76% T:77%**	pCi/L	06/14/18 18:50	15262-20-1	
Total Radium	Total Radium Calculation	**0.550 ± 0.911 (1.50)**	pCi/L	06/15/18 11:29	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: M.L. KAPP ASH POND
Pace Project No.: 60271066

QC Batch: 300523 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples: 60271066001, 60271066002, 60271066003

METHOD BLANK: 1470765 Matrix: Water
Associated Lab Samples: 60271066001, 60271066002, 60271066003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.201 ± 0.307 (0.182) C:NA T:86%	pCi/L	06/13/18 19:45	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: M.L. KAPP ASH POND
Pace Project No.: 60271066

QC Batch: 300553 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 60271066001, 60271066002, 60271066003, 60271066004, 60271066005, 60271066006, 60271066007

METHOD BLANK: 1470874 Matrix: Water
Associated Lab Samples: 60271066001, 60271066002, 60271066003, 60271066004, 60271066005, 60271066006, 60271066007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.382 ± 0.364 (0.743) C:76% T:82%	pCi/L	06/14/18 15:46	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: M.L. KAPP ASH POND
Pace Project No.: 60271066

QC Batch: 300526 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples: 60271066004, 60271066005, 60271066006, 60271066007

METHOD BLANK: 1470773 Matrix: Water
Associated Lab Samples: 60271066004, 60271066005, 60271066006, 60271066007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0589 ± 0.269 (0.547) C:NA T:90%	pCi/L	06/13/18 20:44	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: M.L. KAPP ASH POND
Pace Project No.: 60271066

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval). Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

Pace Analytical Services, LLC
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Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: M.L. KAPP ASH POND
Pace Project No.: 60271066

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60271066001	**MW-301**	EPA 903.1	300523		
60271066002	**MW-302**	EPA 903.1	300523		
60271066003	**MW-303**	EPA 903.1	300523		
60271066004	**MW-304**	EPA 903.1	300526		
60271066005	**MW-305**	EPA 903.1	300526		
60271066006	**MW-306**	EPA 903.1	300526		
60271066007	**FIELD BLANK**	EPA 903.1	300526		
60271066001	**MW-301**	EPA 904.0	300553		
60271066002	**MW-302**	EPA 904.0	300553		
60271066003	**MW-303**	EPA 904.0	300553		
60271066004	**MW-304**	EPA 904.0	300553		
60271066005	**MW-305**	EPA 904.0	300553		
60271066006	**MW-306**	EPA 904.0	300553		
60271066007	**FIELD BLANK**	EPA 904.0	300553		
60271066001	**MW-301**	Total Radium Calculation	302325		
60271066002	**MW-302**	Total Radium Calculation	302325		
60271066003	**MW-303**	Total Radium Calculation	302325		
60271066004	**MW-304**	Total Radium Calculation	302325		
60271066005	**MW-305**	Total Radium Calculation	302325		
60271066006	**MW-306**	Total Radium Calculation	302325		
60271066007	**FIELD BLANK**	Total Radium Calculation	302325		

Pace Analytical
www.pacelabs.com

Sample Condition Upon Receipt

WO# : 60271066

60271066

Client Name: SCS Engineers

Courier: FedEx ☒ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☐ Client ☐ Other ☐

Tracking #: 4368 7274 4354 Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☒ Other ☐

Thermometer Used: T-297 **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): **As-read** 2.6 **Corr. Factor** +0.9 **Corrected** 3.5

Date and initials of person examining contents: AE 5/23

Temperature should be above freezing to 6°C

Chain of Custody present:	☒Yes ☐No ☐N/A	
Chain of Custody relinquished:	☒Yes ☐No ☐N/A	
Samples arrived within holding time:	☒Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☒No ☐N/A	
Rush Turn Around Time requested:	☐Yes ☒No ☐N/A	
Sufficient volume:	☒Yes ☐No ☐N/A	
Correct containers used:	☒Yes ☐No ☐N/A	
Pace containers used:	☒Yes ☐No ☐N/A	
Containers intact:	☒Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☒N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☒N/A	
Sample labels match COC: Date / time / ID / analyses	☒Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: LWT	☐Yes ☒No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	☒Yes ☐No ☐N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks:		
Lead acetate strip turns dark? (Record only)	☐Yes ☒No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☒No	
Trip Blank present:	☐Yes ☐No ☒N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☒N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☒N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☒N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: HWK Date: 5-23-2018

CHAIN-OF-CUSTODY / Analytical Request Document

Pace Analytical — www.pacelabs.com

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: of

Section A — **Required** Client Information:

Company:	SCS Engineers
Address:	2830 Dairy Drive
	Madison WI 53718
Email To:	mblodgett@scsengineers.com
Phone:	608-216-7362 Fax:
Requested Due Date/TAT:	Standard

Section B — **Required** Project Information:

Report To:	Meghan Blodgett
Copy To:	Tom Karwaski
Purchase Order No.:	
Project Name:	M.L. Kapp Ash Pond
Project Number:	25218061.00.

Section C — Invoice Information:

Attention:	Meghan Blodgett/Jess Valcheff
Company Name:	SCS Engineers
Address:	2830 Dairy Dr, Madison WI
Pace Quote Reference:	
Pace Project Manager:	Trudy Gipson 913-563-1405
Pace Profile #:	6696 Line 2

REGULATORY AGENCY

☐ NPDES ☒ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER

Site Location STATE: IA

Section D Required Client Information

Valid Matrix Codes: DRINKING WATER DW; WATER WT; WASTE WATER WW; PRODUCT P; SOIL/SOLID SL; OIL OL; WIPE WP; AIR AR; OTHER OT; TISSUE TS

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N): N N N

Pace Project No./Lab I.D.: 0027106 6

2BPIN ~~2BP4U~~ 5/23/18

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	Composite Start DATE	Composite Start TIME	Composite End/Grab DATE	Composite End/Grab TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	903.1 Radium-226	904.0 Radium-228	Total Radium	Residual Chlorine (Y/N)	Pace Project No./Lab I.D.
1	MW-301	WT	G	xxx	xxx	5/22/18	1349	11.3	2			2						X	X	X		001
2	MW-302	WT	G	xxx	xxx	5/22/18	1449	10.9	2			2						X	X	X		002
3	MW-303	WT	G	xxx	xxx	5/22/18	1554	12.3	2			2						X	X	X		003
4	MW-304	WT	G	xxx	xxx	5/22/18	1644	11.8	2			2						X	X	X		004
5	MW-305	WT	G	xxx	xxx	5/22/18	1729	11.4	2			2						X	X	X		005
6	MW-306	WT	G	xxx	xxx	5/22/18	1819	10.6	2			2						X	X	X		006
7	FIELD BLANK	WT	G	xxx	xxx	5/22/18	1438		2			2						X	X	X		007
8																						
9																						
10																						
11																						
12																						

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Ship To: 9608 Loiret Boulevard, Lenexa, KS 66219	Charleston SCS	5/22/18	2000	[signature] pasi	5/23/18	0900	3.5	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:

SIGNATURE of SAMPLER: DATE Signed (MM/DD/YY):

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-Feb-2007

A3 Round 3 Background Sampling, Analytical Laboratory Report

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

July 19, 2018

Meghan Blodgett
SCS Engineers
2830 Dairy Drive
Madison, WI 53718

RE: Project: M.L. Kapp Ash Pond
Pace Project No.: 60273578

Dear Meghan Blodgett:
Enclosed are the analytical results for sample(s) received by the laboratory on June 27, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Hank Kapka
hank.kapka@pacelabs.com
(913)599-5665
PM Lab Management

Enclosures

cc: Tom Karwaski, SCS Engineers
Nicole Kron, SCS Engineers
Jeff Maxted, Alliant Energy
Jess Valcheff, SCS Engeineers

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CERTIFICATIONS

Project: M.L. Kapp Ash Pond
Pace Project No.: 60273578

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991
Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 9526
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

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SAMPLE SUMMARY

Project: M.L. Kapp Ash Pond
Pace Project No.: 60273578

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60273578001	**MW-301**	Water	06/25/18 11:41	06/27/18 08:30
60273578002	**MW-302**	Water	06/25/18 15:51	06/27/18 08:30
60273578003	**MW-303**	Water	06/25/18 15:06	06/27/18 08:30
60273578004	**MW-304**	Water	06/25/18 14:21	06/27/18 08:30
60273578005	**MW-305**	Water	06/25/18 13:15	06/27/18 08:30
60273578006	**MW-306**	Water	06/25/18 12:29	06/27/18 08:30
60273578007	**Field Blank**	Water	06/25/18 11:30	06/27/18 08:30

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SAMPLE ANALYTE COUNT

Project: M.L. Kapp Ash Pond
Pace Project No.: 60273578

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60273578001	**MW-301**	EPA 903.1	KAC	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60273578002	**MW-302**	EPA 903.1	KAC	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60273578003	**MW-303**	EPA 903.1	KAC	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60273578004	**MW-304**	EPA 903.1	KAC	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60273578005	**MW-305**	EPA 903.1	KAC	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60273578006	**MW-306**	EPA 903.1	KAC	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
60273578007	**Field Blank**	EPA 903.1	KAC	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: M.L. Kapp Ash Pond
Pace Project No.: 60273578

Sample: MW-301 **Lab ID: 60273578001** Collected: 06/25/18 11:41 Received: 06/27/18 08:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.481 ± 0.547 (0.862) C:NA T:91%**	pCi/L	07/13/18 10:24	13982-63-3	
Radium-228	EPA 904.0	**0.332 ± 0.296 (0.595) C:73% T:86%**	pCi/L	07/17/18 13:04	15262-20-1	
Total Radium	Total Radium Calculation	**0.813 ± 0.843 (1.46)**	pCi/L	07/19/18 14:28	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: M.L. Kapp Ash Pond
Pace Project No.: 60273578

Sample: MW-302 **Lab ID: 60273578002** Collected: 06/25/18 15:51 Received: 06/27/18 08:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.370 ± 0.514 (0.858) C:NA T:79%**	pCi/L	07/13/18 10:24	13982-63-3	
Radium-228	EPA 904.0	**0.241 ± 0.337 (0.723) C:74% T:79%**	pCi/L	07/17/18 13:04	15262-20-1	
Total Radium	Total Radium Calculation	**0.611 ± 0.851 (1.58)**	pCi/L	07/19/18 14:28	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: M.L. Kapp Ash Pond
Pace Project No.: 60273578

Sample: MW-303 **Lab ID: 60273578003** Collected: 06/25/18 15:06 Received: 06/27/18 08:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.0823 ± 0.427 (0.886) C:NA T:91%**	pCi/L	07/13/18 10:38	13982-63-3	
Radium-228	EPA 904.0	**0.794 ± 0.446 (0.800) C:66% T:79%**	pCi/L	07/17/18 13:04	15262-20-1	
Total Radium	Total Radium Calculation	**0.876 ± 0.873 (1.69)**	pCi/L	07/19/18 14:28	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: M.L. Kapp Ash Pond
Pace Project No.: 60273578

Sample: MW-304 **Lab ID: 60273578004** Collected: 06/25/18 14:21 Received: 06/27/18 08:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.266 ± 0.461 (0.823) C:NA T:88%**	pCi/L	07/13/18 10:38	13982-63-3	
Radium-228	EPA 904.0	**0.375 ± 0.348 (0.707) C:74% T:84%**	pCi/L	07/17/18 13:04	15262-20-1	
Total Radium	Total Radium Calculation	**0.641 ± 0.809 (1.53)**	pCi/L	07/19/18 14:28	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: M.L. Kapp Ash Pond
Pace Project No.: 60273578

Sample: MW-305 **Lab ID: 60273578005** Collected: 06/25/18 13:15 Received: 06/27/18 08:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.649 ± 0.607 (0.861) C:NA T:80%**	pCi/L	07/13/18 10:38	13982-63-3	
Radium-228	EPA 904.0	**1.02 ± 0.547 (0.963) C:68% T:70%**	pCi/L	07/17/18 16:35	15262-20-1	
Total Radium	Total Radium Calculation	**1.67 ± 1.15 (1.82)**	pCi/L	07/19/18 14:28	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: M.L. Kapp Ash Pond
Pace Project No.: 60273578

Sample: MW-306 **Lab ID: 60273578006** Collected: 06/25/18 12:29 Received: 06/27/18 08:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.267 ± 0.525 (0.959) C:NA T:82%**	pCi/L	07/13/18 10:38	13982-63-3	
Radium-228	EPA 904.0	**-0.0597 ± 0.268 (0.654) C:72% T:86%**	pCi/L	07/17/18 16:35	15262-20-1	
Total Radium	Total Radium Calculation	**0.267 ± 0.793 (1.61)**	pCi/L	07/19/18 14:28	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: M.L. Kapp Ash Pond
Pace Project No.: 60273578

Sample: Field Blank **Lab ID: 60273578007** Collected: 06/25/18 11:30 Received: 06/27/18 08:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**-0.174 ± 0.418 (1.04) C:NA T:86%**	pCi/L	07/13/18 10:51	13982-63-3	
Radium-228	EPA 904.0	**-0.0444 ± 0.361 (0.859) C:72% T:76%**	pCi/L	07/17/18 16:35	15262-20-1	
Total Radium	Total Radium Calculation	**0.000 ± 0.779 (1.90)**	pCi/L	07/19/18 14:28	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: M.L. Kapp Ash Pond
Pace Project No.: 60273578

QC Batch: 304664 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples: 60273578001, 60273578002, 60273578003, 60273578004, 60273578005, 60273578006, 60273578007

METHOD BLANK: 1490530 Matrix: Water
Associated Lab Samples: 60273578001, 60273578002, 60273578003, 60273578004, 60273578005, 60273578006, 60273578007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.093 ± 0.426 (1.00) C:NA T:91%	pCi/L	07/13/18 10:24	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: M.L. Kapp Ash Pond
Pace Project No.: 60273578

QC Batch: 304672 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 60273578001, 60273578002, 60273578003, 60273578004, 60273578005, 60273578006, 60273578007

METHOD BLANK: 1490538 Matrix: Water
Associated Lab Samples: 60273578001, 60273578002, 60273578003, 60273578004, 60273578005, 60273578006, 60273578007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.971 ± 0.409 (0.623) C:77% T:76%	pCi/L	07/17/18 13:04	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: M.L. Kapp Ash Pond
Pace Project No.: 60273578

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval). Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

Pace Analytical Services, LLC
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Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: M.L. Kapp Ash Pond
Pace Project No.: 60273578

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60273578001	**MW-301**	EPA 903.1	304664		
60273578002	**MW-302**	EPA 903.1	304664		
60273578003	**MW-303**	EPA 903.1	304664		
60273578004	**MW-304**	EPA 903.1	304664		
60273578005	**MW-305**	EPA 903.1	304664		
60273578006	**MW-306**	EPA 903.1	304664		
60273578007	**Field Blank**	EPA 903.1	304664		
60273578001	**MW-301**	EPA 904.0	304672		
60273578002	**MW-302**	EPA 904.0	304672		
60273578003	**MW-303**	EPA 904.0	304672		
60273578004	**MW-304**	EPA 904.0	304672		
60273578005	**MW-305**	EPA 904.0	304672		
60273578006	**MW-306**	EPA 904.0	304672		
60273578007	**Field Blank**	EPA 904.0	304672		
60273578001	**MW-301**	Total Radium Calculation	306465		
60273578002	**MW-302**	Total Radium Calculation	306465		
60273578003	**MW-303**	Total Radium Calculation	306465		
60273578004	**MW-304**	Total Radium Calculation	306465		
60273578005	**MW-305**	Total Radium Calculation	306465		
60273578006	**MW-306**	Total Radium Calculation	306465		
60273578007	**Field Blank**	Total Radium Calculation	306465		

Pace Analytical
www.pacelabs.com

Sample Condition Upon Receipt

WO# : 60273578

60273578

Client Name: SCS Engineers

Courier: FedEx ☒ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☐ Client ☐ Other ☐

Tracking #: 4308 7277 1840 Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☐ Other ☐

Thermometer Used: T-297 **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): **As-read** 5.0 **Corr. Factor** +0.9 **Corrected** 5.9

Date and initials of person examining contents: AC 6/27

Temperature should be above freezing to 6°C

Chain of Custody present:	☒Yes ☐No ☐N/A	
Chain of Custody relinquished:	☒Yes ☐No ☐N/A	
Samples arrived within holding time:	☒Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☒No ☐N/A	
Rush Turn Around Time requested:	☐Yes ☒No ☐N/A	
Sufficient volume:	☒Yes ☐No ☐N/A	
Correct containers used:	☒Yes ☐No ☐N/A	
Pace containers used:	☒Yes ☐No ☐N/A	
Containers intact:	☒Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☒N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☒N/A	
Sample labels match COC: Date / time / ID / analyses	☒Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☒No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	☒Yes ☐No ☐N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☒No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☒No	
Trip Blank present:	☐Yes ☐No ☒N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☒N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☒N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☒N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: HWK Date: 6-27-2019

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Pace Analytical — www.pacelabs.com

Page: of

Section A — Required Client Information:

Company:	SCS Engineers
Address:	2830 Dairy Drive, Madison WI 53718
Email To:	mblodgett@scsengineers.com
Phone:	608-216-7362 Fax:
Requested Due Date/TAT:	

Section B — Required Project Information:

Report To:	Meghan Blodgett
Copy To:	Tom Karwaski
Purchase Order No.:	
Project Name:	M.L. Kapp Ash Pond
Project Number:	25218061.00

Section C — Invoice Information:

Attention:	Meghan Blodgett/Jess Valcheff
Company Name:	SCS Engineers
Address:	
Pace Quote Reference:	
Pace Project Manager:	Trudy Gipson 913-563-1405
Pace Profile #:	6696 Line 2

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER ______

Site Location STATE: IA

Section D — Required Client Information

Valid Matrix Codes: DRINKING WATER DW; WATER WT; WASTE WATER WW; PRODUCT P; SOIL/SOLID SL; OIL OL; WIPE WP; AIR AR; OTHER OT; TISSUE TS

Requested Analysis Filtered (Y/N)

Pace Project No./ Lab I.D.: 60273578

#	SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	Composite Start DATE	Composite Start TIME	Composite End/Grab DATE	Composite End/Grab TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	903.1 Radium-226	904.0 Radium-228	Total Radium	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-301	WT	G	xxx	xxx	6/25/18	1141	13	2			2						X	X	X		2BPIN
2	MW-302	WT	G	xxx	xxx	6/25/18	1551	12.4	2			2						X	X	X		
3	MW-303	WT	G	xxx	xxx	6/25/18	1506	14	2			2						X	X	X		
4	MW-304	WT	G	xxx	xxx	6/25/18	1421	13.7	2			2						X	X	X		
5	MW-305	WT	G	xxx	xxx	6/25/18	1315	14.3	2			2						X	X	X		
6	MW-306	WT	G	xxx	xxx	6/25/18	1229	11.9	2			2						X	X	X		
7	FIELD BLANK	WT	G	xxx	xxx	6/25/18	1130		2			2						X	X	X		
8																						
9																						
10																						
11																						
12																						

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Ship To: 9608 Loiret Boulevard, Lenexa, KS 66219	Charlie [signature] SCS	6/25/18	1700	[signature] PASI	6/27/18	08:30	5.9	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:

SIGNATURE of SAMPLER: DATE Signed (MM/DD/YY):

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-Feb-2007

Chain of Custody

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: IA

Workorder: 60273578 **Workorder Name:** M.L. Kapp Ash Pond

Owner Received Date: 6/27/2018 **Results Requested By:** 7/19/2018

Report To	Subcontract To
Hank Kapka Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone (913)599-5665	Pace Analytical Pittsburgh 1638 Roseytown Road Suites 2,3, & 4 Greensburg, PA 15601 Phone (724)850-5600

WO#: 30257671

30257671

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: HNO3	Radium 226/228	Total Radium	LAB USE ONLY
1	MW-301	PS	6/25/2018 11:41	60273578001	Water	2	X	X	001
2	MW-302	PS	6/25/2018 15:51	60273578002	Water	2	X	X	002
3	MW-303	PS	6/25/2018 15:06	60273578003	Water	2	X	X	003
4	MW-304	PS	6/25/2018 14:21	60273578004	Water	2	X	X	004
5	MW-305	PS	6/25/2018 13:15	60273578005	Water	2	X	X	005
6	MW-306	PS	6/25/2018 12:29	60273578006	Water	2	X	X	006
7	Field Blank	PS	6/25/2018 11:30	60273578007	Water	2	X	X	007

Transfers	Released By	Date/Time	Received By	Date/Time
1	[illegible signature]	6/27/18 [illegible]	Ashley [illegible] Pace	6-28-18/0935
2				
3				

Comments:

Cooler Temperature on Receipt 9.2 °C | Custody Seal (Y) or (N) | Received on Ice (Y) or N | Samples Intact (Y) or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

AM 6-28-18

Pittsburgh Lab Sample Condition Upon Receipt

30257671

Pace Analytical

Client Name: Pace, ~~GB~~ Kansas Project #

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other AM 628 18

Tracking #: 4368 7277 5125

Label ANV
LIMS Login ANV

Custody Seal on Cooler/Box Present: ☑ yes ☐ no Seals intact: ☑ yes ☐ no

Thermometer Used 9 Type of Ice: (Wet) Blue None

Cooler Temperature Observed Temp 9.1 °C Correction Factor: +0.1 °C Final Temp: 9.2 °C

Temp should be above freezing to 6°C

pH paper Lot# 10D4671 Date and Initials of person examining contents: AM 6-28-18

Comments:	Yes	No	N/A	
Chain of Custody Present:	X			1.
Chain of Custody Filled Out:	X			2.
Chain of Custody Relinquished:	X			3.
Sampler Name & Signature on COC:		X		4.
Sample Labels match COC:	X			5.
-Includes date/time/ID Matrix: WT				
Samples Arrived within Hold Time:	X			6.
Short Hold Time Analysis (<72hr remaining):		X		7.
Rush Turn Around Time Requested:		X		8.
Sufficient Volume:	X			9.
Correct Containers Used:	X			10.
-Pace Containers Used:	X			
Containers Intact:	X			11.
Orthophosphate field filtered			X	12.
Hex Cr Aqueous Compliance/NPDES sample field filtered			X	13.
Organic Samples checked for dechlorination:			X	14.
Filtered volume received for Dissolved tests			X	15.
All containers have been checked for preservation.	X			16. pH<2
All containers needing preservation are found to be in compliance with EPA recommendation.	X			
exceptions: VOA, coliform, TOC, O&G, Phenolics				Initial when completed AM Date/time of preservation
				Lot # of added preservative
Headspace in VOA Vials (>6mm):			X	17.
Trip Blank Present:		X		18.
Trip Blank Custody Seals Present			X	
Rad Aqueous Samples Screened > 0.5 mrem/hr		X		Initial when completed: AM Date: 6-28-18

Client Notification/ Resolution:

Person Contacted: Date/Time: Contacted By:

Comments/ Resolution:

☐ **A check in this box indicates that additional information has been stored in ereports.**

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

July 09, 2018

Meghan Blodgett
SCS Engineers
2830 Dairy Drive
Madison, WI 53718

RE: Project: M.L. KAPP ASH POND
Pace Project No.: 60273458

Dear Meghan Blodgett:
Enclosed are the analytical results for sample(s) received by the laboratory on June 26, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Hank Kapka
hank.kapka@pacelabs.com
(913)599-5665
PM Lab Management

Enclosures

cc: Tom Karwaski, SCS Engineers
Nicole Kron, SCS Engineers
Jeff Maxted, Alliant Energy
Jess Valcheff, SCS Engeineers

Pace Analytical Services, LLC
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CERTIFICATIONS

Project: M.L. KAPP ASH POND
Pace Project No.: 60273458

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219
Missouri Certification Number: 10090
WY STR Certification #: 2456.01
Arkansas Certification #: 17-016-0
Illinois Certification #: 200030
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212018-1
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407
Utah Certification #: KS00021
Kansas Field Laboratory Accreditation: # E-92587
Missouri Certification: 10070
Missouri Certification Number: 10090

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: M.L. KAPP ASH POND
Pace Project No.: 60273458

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60273458001	**MW-301**	Water	06/25/18 11:41	06/26/18 08:55
60273458002	**MW-302**	Water	06/25/18 15:51	06/26/18 08:55
60273458003	**MW-303**	Water	06/25/18 15:06	06/26/18 08:55
60273458004	**MW-304**	Water	06/25/18 14:21	06/26/18 08:55
60273458005	**MW-305**	Water	06/25/18 13:15	06/26/18 08:55
60273458006	**MW-306**	Water	06/25/18 12:29	06/26/18 08:55
60273458007	**FIELD BLANK**	Water	06/25/18 11:30	06/26/18 08:55

Pace Analytical Services, LLC
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SAMPLE ANALYTE COUNT

Project: M.L. KAPP ASH POND
Pace Project No.: 60273458

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60273458001	**MW-301**	EPA 6010	SMW	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	TDS	1	PASI-K
		SM 2540C	CMS	1	PASI-K
		EPA 9040	ZMH	1	PASI-K
		EPA 9056	WNM	3	PASI-K
60273458002	**MW-302**	EPA 6010	SMW	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	TDS	1	PASI-K
		SM 2540C	CMS	1	PASI-K
		EPA 9040	ZMH	1	PASI-K
		EPA 9056	WNM	3	PASI-K
60273458003	**MW-303**	EPA 6010	SMW	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	TDS	1	PASI-K
		SM 2540C	CMS	1	PASI-K
		EPA 9040	ZMH	1	PASI-K
		EPA 9056	WNM	3	PASI-K
60273458004	**MW-304**	EPA 6010	SMW	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	TDS	1	PASI-K
		SM 2540C	CMS	1	PASI-K
		EPA 9040	ZMH	1	PASI-K
		EPA 9056	WNM	3	PASI-K
60273458005	**MW-305**	EPA 6010	SMW	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	TDS	1	PASI-K
		SM 2540C	CMS	1	PASI-K
		EPA 9040	ZMH	1	PASI-K
		EPA 9056	WNM	3	PASI-K
60273458006	**MW-306**	EPA 6010	SMW	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	TDS	1	PASI-K
		SM 2540C	CMS	1	PASI-K
		EPA 9040	ZMH	1	PASI-K
		EPA 9056	WNM	3	PASI-K
60273458007	**FIELD BLANK**	EPA 6010	SMW	3	PASI-K

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SAMPLE ANALYTE COUNT

Project: M.L. KAPP ASH POND
Pace Project No.: 60273458

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6020	JGP	11	PASI-K
		EPA 7470	TDS	1	PASI-K
		SM 2540C	CMS	1	PASI-K
		EPA 9040	ZMH	1	PASI-K
		EPA 9056	WNM	3	PASI-K

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: M.L. KAPP ASH POND
Pace Project No.: 60273458

Sample: MW-301 **Lab ID: 60273458001** Collected: 06/25/18 11:41 Received: 06/26/18 08:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		06/25/18 11:41		
Field pH	**7.25**	Std. Units	0.10	0.050	1		06/25/18 11:41		
Field Temperature	**13.0**	deg C	0.50	0.25	1		06/25/18 11:41		
Field Specific Conductance	**902**	umhos/cm	1.0	1.0	1		06/25/18 11:41		
Field Oxidation Potential	**-153**	mV			1		06/25/18 11:41		
Oxygen, Dissolved	**0.47**	mg/L			1		06/25/18 11:41	7782-44-7	
Turbidity	**4.13**	NTU	1.0	1.0	1		06/25/18 11:41		
Groundwater Elevation	**578.57**	feet			1		06/25/18 11:41		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**2280**	ug/L	100	12.5	1	06/27/18 10:45	07/06/18 15:34	7440-42-8	
Calcium	**105**	mg/L	0.20	0.054	1	06/27/18 10:45	07/06/18 15:34	7440-70-2	
Lithium	**6.5J**	ug/L	10.0	4.6	1	06/27/18 10:45	07/06/18 15:34	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**<0.15**	ug/L	1.0	0.15	1	06/27/18 10:45	07/06/18 13:52	7440-36-0	
Arsenic	**0.67J**	ug/L	1.0	0.15	1	06/27/18 10:45	07/06/18 13:52	7440-38-2	
Barium	**167**	ug/L	1.0	0.34	1	06/27/18 10:45	07/06/18 13:52	7440-39-3	
Beryllium	**<0.12**	ug/L	0.50	0.12	1	06/27/18 10:45	07/08/18 16:15	7440-41-7	
Cadmium	**<0.070**	ug/L	0.50	0.070	1	06/27/18 10:45	07/08/18 16:15	7440-43-9	
Chromium	**0.25J**	ug/L	1.0	0.19	1	06/27/18 10:45	07/09/18 10:28	7440-47-3	
Cobalt	**0.17J**	ug/L	1.0	0.15	1	06/27/18 10:45	07/06/18 13:52	7440-48-4	
Lead	**<0.12**	ug/L	1.0	0.12	1	06/27/18 10:45	07/06/18 13:52	7439-92-1	
Molybdenum	**33.1**	ug/L	1.0	0.13	1	06/27/18 10:45	07/06/18 13:52	7439-98-7	
Selenium	**<0.16**	ug/L	1.0	0.16	1	06/27/18 10:45	07/08/18 16:15	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	06/27/18 10:45	07/06/18 13:52	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.090**	ug/L	0.20	0.090	1	07/02/18 16:05	07/03/18 11:36	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**567**	mg/L	5.0	5.0	1		06/27/18 16:08		
9040 pH	Analytical Method: EPA 9040								
pH	**7.0**	Std. Units	0.10	0.10	1		06/27/18 12:33		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**67.1**	mg/L	5.0	2.3	5		07/06/18 00:44	16887-00-6	
Fluoride	**0.23**	mg/L	0.20	0.063	1		07/06/18 00:29	16984-48-8	
Sulfate	**61.0**	mg/L	5.0	1.2	5		07/06/18 00:44	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: M.L. KAPP ASH POND
Pace Project No.: 60273458

Sample: MW-302 **Lab ID: 60273458002** Collected: 06/25/18 15:51 Received: 06/26/18 08:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		06/25/18 15:51		
Field pH	**10.11**	Std. Units	0.10	0.050	1		06/25/18 15:51		
Field Temperature	**12.4**	deg C	0.50	0.25	1		06/25/18 15:51		
Field Specific Conductance	**633**	umhos/cm	1.0	1.0	1		06/25/18 15:51		
Field Oxidation Potential	**-183**	mV			1		06/25/18 15:51		
Oxygen, Dissolved	**0.21**	mg/L			1		06/25/18 15:51	7782-44-7	
Turbidity	**1.74**	NTU	1.0	1.0	1		06/25/18 15:51		
Groundwater Elevation	**578.04**	feet			1		06/25/18 15:51		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**4100**	ug/L	100	12.5	1	06/27/18 10:45	07/06/18 15:40	7440-42-8	
Calcium	**46.7**	mg/L	0.20	0.054	1	06/27/18 10:45	07/06/18 15:40	7440-70-2	
Lithium	**<4.6**	ug/L	10.0	4.6	1	06/27/18 10:45	07/06/18 15:40	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.29J**	ug/L	1.0	0.15	1	06/27/18 10:45	07/06/18 13:54	7440-36-0	
Arsenic	**10.3**	ug/L	1.0	0.15	1	06/27/18 10:45	07/06/18 13:54	7440-38-2	
Barium	**43.4**	ug/L	1.0	0.34	1	06/27/18 10:45	07/06/18 13:54	7440-39-3	
Beryllium	**<0.12**	ug/L	0.50	0.12	1	06/27/18 10:45	07/08/18 16:22	7440-41-7	
Cadmium	**0.084J**	ug/L	0.50	0.070	1	06/27/18 10:45	07/08/18 16:22	7440-43-9	
Chromium	**0.59J**	ug/L	1.0	0.19	1	06/27/18 10:45	07/09/18 10:29	7440-47-3	
Cobalt	**0.24J**	ug/L	1.0	0.15	1	06/27/18 10:45	07/06/18 13:54	7440-48-4	
Lead	**0.13J**	ug/L	1.0	0.12	1	06/27/18 10:45	07/06/18 13:54	7439-92-1	
Molybdenum	**274**	ug/L	1.0	0.13	1	06/27/18 10:45	07/06/18 13:54	7439-98-7	
Selenium	**0.50J**	ug/L	1.0	0.16	1	06/27/18 10:45	07/08/18 16:22	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	06/27/18 10:45	07/06/18 13:54	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.090**	ug/L	0.20	0.090	1	07/02/18 16:05	07/03/18 11:38	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**426**	mg/L	5.0	5.0	1		06/27/18 16:08		
9040 pH	Analytical Method: EPA 9040								
pH	**9.1**	Std. Units	0.10	0.10	1		06/27/18 12:42		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**19.4**	mg/L	2.0	0.92	2		07/06/18 21:43	16887-00-6	
Fluoride	**0.50**	mg/L	0.20	0.063	1		07/06/18 21:28	16984-48-8	
Sulfate	**201**	mg/L	20.0	4.7	20		07/06/18 21:58	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: M.L. KAPP ASH POND
Pace Project No.: 60273458

Sample: MW-303 **Lab ID: 60273458003** Collected: 06/25/18 15:06 Received: 06/26/18 08:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		06/25/18 15:06		
Field pH	**9.86**	Std. Units	0.10	0.050	1		06/25/18 15:06		
Field Temperature	**14.0**	deg C	0.50	0.25	1		06/25/18 15:06		
Field Specific Conductance	**927**	umhos/cm	1.0	1.0	1		06/25/18 15:06		
Field Oxidation Potential	**-257**	mV			1		06/25/18 15:06		
Oxygen, Dissolved	**0.23**	mg/L			1		06/25/18 15:06	7782-44-7	
Turbidity	**2.97**	NTU	1.0	1.0	1		06/25/18 15:06		
Groundwater Elevation	**577.24**	feet			1		06/25/18 15:06		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**3500**	ug/L	100	12.5	1	06/27/18 10:45	07/06/18 15:43	7440-42-8	
Calcium	**109**	mg/L	0.20	0.054	1	06/27/18 10:45	07/06/18 15:43	7440-70-2	
Lithium	**13.6**	ug/L	10.0	4.6	1	06/27/18 10:45	07/06/18 15:43	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.26J**	ug/L	1.0	0.15	1	06/27/18 10:45	07/06/18 14:01	7440-36-0	
Arsenic	**6.4**	ug/L	1.0	0.15	1	06/27/18 10:45	07/06/18 14:01	7440-38-2	
Barium	**35.8**	ug/L	1.0	0.34	1	06/27/18 10:45	07/06/18 14:01	7440-39-3	
Beryllium	**<0.12**	ug/L	0.50	0.12	1	06/27/18 10:45	07/08/18 16:24	7440-41-7	
Cadmium	**<0.070**	ug/L	0.50	0.070	1	06/27/18 10:45	07/08/18 16:24	7440-43-9	
Chromium	**0.45J**	ug/L	1.0	0.19	1	06/27/18 10:45	07/09/18 10:32	7440-47-3	
Cobalt	**0.44J**	ug/L	1.0	0.15	1	06/27/18 10:45	07/06/18 14:01	7440-48-4	
Lead	**0.18J**	ug/L	1.0	0.12	1	06/27/18 10:45	07/06/18 14:01	7439-92-1	
Molybdenum	**122**	ug/L	1.0	0.13	1	06/27/18 10:45	07/06/18 14:01	7439-98-7	
Selenium	**1.7**	ug/L	1.0	0.16	1	06/27/18 10:45	07/08/18 16:24	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	06/27/18 10:45	07/06/18 14:01	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.090**	ug/L	0.20	0.090	1	07/02/18 16:05	07/03/18 11:41	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**690**	mg/L	5.0	5.0	1		06/27/18 16:08		
9040 pH	Analytical Method: EPA 9040								
pH	**8.9**	Std. Units	0.10	0.10	1		06/27/18 12:39		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**19.7**	mg/L	1.0	0.46	1		07/06/18 22:13	16887-00-6	
Fluoride	**0.31**	mg/L	0.20	0.063	1		07/06/18 22:13	16984-48-8	
Sulfate	**379**	mg/L	20.0	4.7	20		07/06/18 22:43	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: M.L. KAPP ASH POND
Pace Project No.: 60273458

Sample: MW-304 **Lab ID: 60273458004** Collected: 06/25/18 14:21 Received: 06/26/18 08:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		06/25/18 14:21		
Field pH	**7.81**	Std. Units	0.10	0.050	1		06/25/18 14:21		
Field Temperature	**13.7**	deg C	0.50	0.25	1		06/25/18 14:21		
Field Specific Conductance	**629**	umhos/cm	1.0	1.0	1		06/25/18 14:21		
Field Oxidation Potential	**-113**	mV			1		06/25/18 14:21		
Oxygen, Dissolved	**0.41**	mg/L			1		06/25/18 14:21	7782-44-7	
Turbidity	**78.20**	NTU	1.0	1.0	1		06/25/18 14:21		
Groundwater Elevation	**570.77**	feet			1		06/25/18 14:21		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**8530**	ug/L	100	12.5	1	06/27/18 10:45	07/06/18 15:45	7440-42-8	
Calcium	**52.0**	mg/L	0.20	0.054	1	06/27/18 10:45	07/06/18 15:45	7440-70-2	
Lithium	**<4.6**	ug/L	10.0	4.6	1	06/27/18 10:45	07/06/18 15:45	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**<0.15**	ug/L	1.0	0.15	1	06/27/18 10:45	07/06/18 14:04	7440-36-0	
Arsenic	**3.7**	ug/L	1.0	0.15	1	06/27/18 10:45	07/06/18 14:04	7440-38-2	
Barium	**55.7**	ug/L	1.0	0.34	1	06/27/18 10:45	07/06/18 14:04	7440-39-3	
Beryllium	**0.13J**	ug/L	0.50	0.12	1	06/27/18 10:45	07/08/18 16:26	7440-41-7	
Cadmium	**0.24J**	ug/L	0.50	0.070	1	06/27/18 10:45	07/08/18 16:26	7440-43-9	
Chromium	**3.9**	ug/L	1.0	0.19	1	06/27/18 10:45	07/09/18 10:32	7440-47-3	
Cobalt	**1.9**	ug/L	1.0	0.15	1	06/27/18 10:45	07/06/18 14:04	7440-48-4	
Lead	**2.3**	ug/L	1.0	0.12	1	06/27/18 10:45	07/06/18 14:04	7439-92-1	
Molybdenum	**807**	ug/L	1.0	0.13	1	06/27/18 10:45	07/06/18 14:04	7439-98-7	
Selenium	**1.0J**	ug/L	1.0	0.16	1	06/27/18 10:45	07/08/18 16:26	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	06/27/18 10:45	07/06/18 14:04	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.090**	ug/L	0.20	0.090	1	07/02/18 16:05	07/03/18 11:47	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**443**	mg/L	5.0	5.0	1		06/27/18 16:08		
9040 pH	Analytical Method: EPA 9040								
pH	**7.4**	Std. Units	0.10	0.10	1		06/27/18 12:38		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**28.4**	mg/L	2.0	0.92	2		07/06/18 23:13	16887-00-6	
Fluoride	**0.25**	mg/L	0.20	0.063	1		07/06/18 22:58	16984-48-8	
Sulfate	**186**	mg/L	20.0	4.7	20		07/06/18 23:58	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

ANALYTICAL RESULTS

Project: M.L. KAPP ASH POND
Pace Project No.: 60273458

Sample: MW-305 **Lab ID: 60273458005** Collected: 06/25/18 13:15 Received: 06/26/18 08:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		06/25/18 13:15		
Field pH	**9.01**	Std. Units	0.10	0.050	1		06/25/18 13:15		
Field Temperature	**14.3**	deg C	0.50	0.25	1		06/25/18 13:15		
Field Specific Conductance	**1405**	umhos/cm	1.0	1.0	1		06/25/18 13:15		
Field Oxidation Potential	**-83**	mV			1		06/25/18 13:15		
Oxygen, Dissolved	**0.54**	mg/L			1		06/25/18 13:15	7782-44-7	
Turbidity	**41.01**	NTU	1.0	1.0	1		06/25/18 13:15		
Groundwater Elevation	**571.28**	feet			1		06/25/18 13:15		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**16400**	ug/L	100	12.5	1	06/27/18 10:45	07/06/18 15:47	7440-42-8	
Calcium	**148**	mg/L	0.20	0.054	1	06/27/18 10:45	07/06/18 15:47	7440-70-2	
Lithium	**17.9**	ug/L	10.0	4.6	1	06/27/18 10:45	07/06/18 15:47	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.27J**	ug/L	1.0	0.15	1	06/27/18 10:45	07/06/18 14:06	7440-36-0	
Arsenic	**2.1**	ug/L	1.0	0.15	1	06/27/18 10:45	07/06/18 14:06	7440-38-2	
Barium	**89.5**	ug/L	1.0	0.34	1	06/27/18 10:45	07/06/18 14:06	7440-39-3	
Beryllium	**<0.12**	ug/L	0.50	0.12	1	06/27/18 10:45	07/08/18 16:29	7440-41-7	
Cadmium	**0.15J**	ug/L	0.50	0.070	1	06/27/18 10:45	07/08/18 16:29	7440-43-9	
Chromium	**0.93J**	ug/L	1.0	0.19	1	06/27/18 10:45	07/09/18 10:33	7440-47-3	
Cobalt	**0.80J**	ug/L	1.0	0.15	1	06/27/18 10:45	07/06/18 14:06	7440-48-4	
Lead	**0.58J**	ug/L	1.0	0.12	1	06/27/18 10:45	07/06/18 14:06	7439-92-1	
Molybdenum	**724**	ug/L	1.0	0.13	1	06/27/18 10:45	07/06/18 14:06	7439-98-7	
Selenium	**0.23J**	ug/L	1.0	0.16	1	06/27/18 10:45	07/08/18 16:29	7782-49-2	
Thallium	**0.21J**	ug/L	1.0	0.14	1	06/27/18 10:45	07/06/18 14:06	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.090**	ug/L	0.20	0.090	1	07/02/18 16:05	07/03/18 11:49	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**1080**	mg/L	5.0	5.0	1		06/27/18 16:08		
9040 pH	Analytical Method: EPA 9040								
pH	**7.6**	Std. Units	0.10	0.10	1		06/27/18 12:36		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**17.7**	mg/L	1.0	0.46	1		07/07/18 00:12	16887-00-6	
Fluoride	**0.39**	mg/L	0.20	0.063	1		07/07/18 00:12	16984-48-8	
Sulfate	**673**	mg/L	50.0	11.8	50		07/07/18 00:42	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: M.L. KAPP ASH POND
Pace Project No.: 60273458

Sample: MW-306 **Lab ID: 60273458006** Collected: 06/25/18 12:29 Received: 06/26/18 08:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		06/25/18 12:29		
Field pH	**8.13**	Std. Units	0.10	0.050	1		06/25/18 12:29		
Field Temperature	**11.9**	deg C	0.50	0.25	1		06/25/18 12:29		
Field Specific Conductance	**1498**	umhos/cm	1.0	1.0	1		06/25/18 12:29		
Field Oxidation Potential	**83**	mV			1		06/25/18 12:29		
Oxygen, Dissolved	**0.40**	mg/L			1		06/25/18 12:29	7782-44-7	
Turbidity	**0.88**	NTU	1.0	1.0	1		06/25/18 12:29		
Groundwater Elevation	**576.93**	feet			1		06/25/18 12:29		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**15600**	ug/L	100	12.5	1	06/27/18 10:45	07/06/18 15:49	7440-42-8	
Calcium	**165**	mg/L	0.20	0.054	1	06/27/18 10:45	07/06/18 15:49	7440-70-2	
Lithium	**56.4**	ug/L	10.0	4.6	1	06/27/18 10:45	07/06/18 15:49	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**<0.15**	ug/L	1.0	0.15	1	06/27/18 10:45	07/06/18 14:08	7440-36-0	
Arsenic	**0.33J**	ug/L	1.0	0.15	1	06/27/18 10:45	07/06/18 14:08	7440-38-2	
Barium	**55.5**	ug/L	1.0	0.34	1	06/27/18 10:45	07/06/18 14:08	7440-39-3	
Beryllium	**<0.12**	ug/L	0.50	0.12	1	06/27/18 10:45	07/08/18 16:31	7440-41-7	
Cadmium	**<0.070**	ug/L	0.50	0.070	1	06/27/18 10:45	07/08/18 16:31	7440-43-9	
Chromium	**<0.19**	ug/L	1.0	0.19	1	06/27/18 10:45	07/09/18 10:34	7440-47-3	
Cobalt	**<0.15**	ug/L	1.0	0.15	1	06/27/18 10:45	07/06/18 14:08	7440-48-4	
Lead	**<0.12**	ug/L	1.0	0.12	1	06/27/18 10:45	07/06/18 14:08	7439-92-1	
Molybdenum	**53.3**	ug/L	1.0	0.13	1	06/27/18 10:45	07/06/18 14:08	7439-98-7	
Selenium	**1.2**	ug/L	1.0	0.16	1	06/27/18 10:45	07/08/18 16:31	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	06/27/18 10:45	07/06/18 14:08	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.090**	ug/L	0.20	0.090	1	07/02/18 16:05	07/03/18 11:52	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**1080**	mg/L	5.0	5.0	1		06/27/18 16:08		
9040 pH	Analytical Method: EPA 9040								
pH	**7.1**	Std. Units	0.10	0.10	1		06/27/18 12:34		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**78.5**	mg/L	5.0	2.3	5		07/07/18 01:12	16887-00-6	
Fluoride	**0.27**	mg/L	0.20	0.063	1		07/07/18 00:57	16984-48-8	
Sulfate	**396**	mg/L	50.0	11.8	50		07/07/18 01:27	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(913)599-5665

ANALYTICAL RESULTS

Project: M.L. KAPP ASH POND
Pace Project No.: 60273458

Sample: FIELD BLANK **Lab ID: 60273458007** Collected: 06/25/18 11:30 Received: 06/26/18 08:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**<12.5**	ug/L	100	12.5	1	06/27/18 10:45	07/06/18 15:56	7440-42-8	
Calcium	**<0.054**	mg/L	0.20	0.054	1	06/27/18 10:45	07/06/18 15:56	7440-70-2	
Lithium	**<4.6**	ug/L	10.0	4.6	1	06/27/18 10:45	07/06/18 15:56	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**<0.15**	ug/L	1.0	0.15	1	06/27/18 10:45	07/06/18 14:16	7440-36-0	
Arsenic	**<0.15**	ug/L	1.0	0.15	1	06/27/18 10:45	07/06/18 14:16	7440-38-2	
Barium	**<0.34**	ug/L	1.0	0.34	1	06/27/18 10:45	07/06/18 14:16	7440-39-3	
Beryllium	**<0.12**	ug/L	0.50	0.12	1	06/27/18 10:45	07/08/18 16:37	7440-41-7	
Cadmium	**<0.070**	ug/L	0.50	0.070	1	06/27/18 10:45	07/08/18 16:37	7440-43-9	
Chromium	**<0.19**	ug/L	1.0	0.19	1	06/27/18 10:45	07/09/18 10:37	7440-47-3	
Cobalt	**<0.15**	ug/L	1.0	0.15	1	06/27/18 10:45	07/06/18 14:16	7440-48-4	
Lead	**<0.12**	ug/L	1.0	0.12	1	06/27/18 10:45	07/06/18 14:16	7439-92-1	
Molybdenum	**<0.13**	ug/L	1.0	0.13	1	06/27/18 10:45	07/06/18 14:16	7439-98-7	
Selenium	**<0.16**	ug/L	1.0	0.16	1	06/27/18 10:45	07/08/18 16:37	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	06/27/18 10:45	07/06/18 14:16	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.090**	ug/L	0.20	0.090	1	07/02/18 16:05	07/03/18 11:54	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**5.0**	mg/L	5.0	5.0	1		06/27/18 16:08		
9040 pH	Analytical Method: EPA 9040								
pH	**7.0**	Std. Units	0.10	0.10	1		06/27/18 12:31		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**<0.46**	mg/L	1.0	0.46	1		07/07/18 01:42	16887-00-6	
Fluoride	**<0.063**	mg/L	0.20	0.063	1		07/07/18 01:42	16984-48-8	
Sulfate	**<0.24**	mg/L	1.0	0.24	1		07/07/18 01:42	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: M.L. KAPP ASH POND
Pace Project No.: 60273458

QC Batch: 532638 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 60273458001, 60273458002, 60273458003, 60273458004, 60273458005, 60273458006, 60273458007

METHOD BLANK: 2181649 Matrix: Water
Associated Lab Samples: 60273458001, 60273458002, 60273458003, 60273458004, 60273458005, 60273458006, 60273458007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.090	0.20	0.090	07/03/18 10:52	

LABORATORY CONTROL SAMPLE: 2181650

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.1	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2181651 2181652

Parameter	Units	60273353010 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	7.4	6.8	147	137	75-125	7	20	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2181653 2181654

Parameter	Units	60273354004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	5.2	4.8	105	97	75-125	8	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: M.L. KAPP ASH POND
Pace Project No.: 60273458

QC Batch: 531887 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET
Associated Lab Samples: 60273458001, 60273458002, 60273458003, 60273458004, 60273458005, 60273458006, 60273458007

METHOD BLANK: 2178319 Matrix: Water
Associated Lab Samples: 60273458001, 60273458002, 60273458003, 60273458004, 60273458005, 60273458006, 60273458007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	ug/L	<12.5	100	12.5	07/06/18 15:29	
Calcium	mg/L	<0.054	0.20	0.054	07/06/18 15:29	
Lithium	ug/L	<4.6	10.0	4.6	07/06/18 15:29	

LABORATORY CONTROL SAMPLE: 2178320

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	957	96	80-120	
Calcium	mg/L	10	9.8	98	80-120	
Lithium	ug/L	1000	971	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2178321 2178322

Parameter	Units	60273458001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	ug/L	2280	1000	1000	3310	3200	103	92	75-125	3	20	
Calcium	mg/L	105	10	10	117	113	123	88	75-125	3	20	
Lithium	ug/L	6.5J	1000	1000	999	987	99	98	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: M.L. KAPP ASH POND
Pace Project No.: 60273458

QC Batch: 531889 Analysis Method: EPA 6020
QC Batch Method: EPA 3010 Analysis Description: 6020 MET
Associated Lab Samples: 60273458001, 60273458002, 60273458003, 60273458004, 60273458005, 60273458006, 60273458007

METHOD BLANK: 2178323 Matrix: Water
Associated Lab Samples: 60273458001, 60273458002, 60273458003, 60273458004, 60273458005, 60273458006, 60273458007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.15	1.0	0.15	07/06/18 13:47	
Arsenic	ug/L	<0.15	1.0	0.15	07/06/18 13:47	
Barium	ug/L	<0.34	1.0	0.34	07/06/18 13:47	
Beryllium	ug/L	<0.12	0.50	0.12	07/08/18 16:11	
Cadmium	ug/L	<0.070	0.50	0.070	07/08/18 16:11	
Chromium	ug/L	<0.19	1.0	0.19	07/09/18 10:26	
Cobalt	ug/L	<0.15	1.0	0.15	07/06/18 13:47	
Lead	ug/L	<0.12	1.0	0.12	07/06/18 13:47	
Molybdenum	ug/L	<0.13	1.0	0.13	07/06/18 13:47	
Selenium	ug/L	<0.16	1.0	0.16	07/08/18 16:11	
Thallium	ug/L	<0.14	1.0	0.14	07/06/18 13:47	

LABORATORY CONTROL SAMPLE: 2178324

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	40.4	101	80-120	
Arsenic	ug/L	40	40.9	102	80-120	
Barium	ug/L	40	39.8	99	80-120	
Beryllium	ug/L	40	39.1	98	80-120	
Cadmium	ug/L	40	40.6	102	80-120	
Chromium	ug/L	40	41.9	105	80-120	
Cobalt	ug/L	40	38.8	97	80-120	
Lead	ug/L	40	40.4	101	80-120	
Molybdenum	ug/L	40	41.0	102	80-120	
Selenium	ug/L	40	39.6	99	80-120	
Thallium	ug/L	40	38.4	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2178325 2178326

Parameter	Units	60273458002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	0.29J	40	40	40.3	40.2	100	100	75-125	0	20	
Arsenic	ug/L	10.3	40	40	51.2	50.7	102	101	75-125	1	20	
Barium	ug/L	43.4	40	40	82.8	81.4	98	95	75-125	2	20	
Beryllium	ug/L	<0.12	40	40	37.7	38.2	94	95	75-125	2	20	
Cadmium	ug/L	0.084J	40	40	36.6	36.7	91	91	75-125	0	20	
Chromium	ug/L	0.59J	40	40	39.5	39.3	97	97	75-125	1	20	
Cobalt	ug/L	0.24J	40	40	38.5	38.6	96	96	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: M.L. KAPP ASH POND
Pace Project No.: 60273458

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2178325 2178326

Parameter	Units	60273458002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lead	ug/L	0.13J	40	40	41.6	41.3	104	103	75-125	1	20	
Molybdenum	ug/L	274	40	40	314	307	100	82	75-125	2	20	
Selenium	ug/L	0.50J	40	40	37.2	37.9	92	93	75-125	2	20	
Thallium	ug/L	<0.14	40	40	38.7	38.4	97	96	75-125	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: M.L. KAPP ASH POND
Pace Project No.: 60273458

QC Batch: 532018 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60273458001, 60273458002, 60273458003, 60273458004, 60273458005, 60273458006, 60273458007

METHOD BLANK: 2178659 Matrix: Water
Associated Lab Samples: 60273458001, 60273458002, 60273458003, 60273458004, 60273458005, 60273458006, 60273458007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	06/27/18 16:08	

LABORATORY CONTROL SAMPLE: 2178660

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1000	100	80-120	

SAMPLE DUPLICATE: 2178661

Parameter	Units	60273434001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	126	124	1	10	

SAMPLE DUPLICATE: 2178662

Parameter	Units	60273353010 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	2960	2520	16	10	D6

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: M.L. KAPP ASH POND
Pace Project No.: 60273458

QC Batch: 531912 Analysis Method: EPA 9040
QC Batch Method: EPA 9040 Analysis Description: 9040 pH
Associated Lab Samples: 60273458001, 60273458002, 60273458003, 60273458004, 60273458005, 60273458006, 60273458007

SAMPLE DUPLICATE: 2178372

Parameter	Units	60272886009 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	7.9	7.9	1	10	H6

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: M.L. KAPP ASH POND
Pace Project No.: 60273458

QC Batch: 532959 Analysis Method: EPA 9056
QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions
Associated Lab Samples: 60273458001

METHOD BLANK: 2182869 Matrix: Water
Associated Lab Samples: 60273458001, 60273458002, 60273458003, 60273458004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.46	1.0	0.46	07/05/18 18:46	
Fluoride	mg/L	<0.063	0.20	0.063	07/05/18 18:46	
Sulfate	mg/L	0.98J	1.0	0.24	07/05/18 18:46	

LABORATORY CONTROL SAMPLE: 2182870

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	96	80-120	
Fluoride	mg/L	2.5	2.4	97	80-120	
Sulfate	mg/L	5	5.0	99	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

QUALITY CONTROL DATA

Project: M.L. KAPP ASH POND
Pace Project No.: 60273458

QC Batch: 533220 Analysis Method: EPA 9056
QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions
Associated Lab Samples: 60273458002, 60273458003, 60273458004, 60273458005, 60273458006, 60273458007

METHOD BLANK: 2183886 Matrix: Water
Associated Lab Samples: 60273458002, 60273458003, 60273458004, 60273458005, 60273458006, 60273458007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.46	1.0	0.46	07/06/18 09:45	
Fluoride	mg/L	<0.063	0.20	0.063	07/06/18 09:45	
Sulfate	mg/L	<0.24	1.0	0.24	07/06/18 09:45	

LABORATORY CONTROL SAMPLE: 2183887

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	96	80-120	
Fluoride	mg/L	2.5	2.4	95	80-120	
Sulfate	mg/L	5	4.9	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2183888 2183889

Parameter	Units	60273281001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	ND	25	25	26.5	26.1	106	104	80-120	2	15	
Sulfate	mg/L	113	50	50	164	163	102	100	80-120	0	15	

SAMPLE DUPLICATE: 2183890

Parameter	Units	60273281001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	21.7	22.0	1	15	
Fluoride	mg/L	ND	<0.63		15	
Sulfate	mg/L	113	103	9	15	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: M.L. KAPP ASH POND
Pace Project No.: 60273458

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-K	Pace Analytical Services - Kansas City

ANALYTE QUALIFIERS

D6	The precision between the sample and sample duplicate exceeded laboratory control limits.
H6	Analysis initiated outside of the 15 minute EPA required holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: M.L. KAPP ASH POND
Pace Project No.: 60273458

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60273458001	**MW-301**		532338		
60273458002	**MW-302**		532338		
60273458003	**MW-303**		532338		
60273458004	**MW-304**		532338		
60273458005	**MW-305**		532338		
60273458006	**MW-306**		532338		
60273458001	**MW-301**	EPA 3010	531887	EPA 6010	531947
60273458002	**MW-302**	EPA 3010	531887	EPA 6010	531947
60273458003	**MW-303**	EPA 3010	531887	EPA 6010	531947
60273458004	**MW-304**	EPA 3010	531887	EPA 6010	531947
60273458005	**MW-305**	EPA 3010	531887	EPA 6010	531947
60273458006	**MW-306**	EPA 3010	531887	EPA 6010	531947
60273458007	**FIELD BLANK**	EPA 3010	531887	EPA 6010	531947
60273458001	**MW-301**	EPA 3010	531889	EPA 6020	531948
60273458002	**MW-302**	EPA 3010	531889	EPA 6020	531948
60273458003	**MW-303**	EPA 3010	531889	EPA 6020	531948
60273458004	**MW-304**	EPA 3010	531889	EPA 6020	531948
60273458005	**MW-305**	EPA 3010	531889	EPA 6020	531948
60273458006	**MW-306**	EPA 3010	531889	EPA 6020	531948
60273458007	**FIELD BLANK**	EPA 3010	531889	EPA 6020	531948
60273458001	**MW-301**	EPA 7470	532638	EPA 7470	532663
60273458002	**MW-302**	EPA 7470	532638	EPA 7470	532663
60273458003	**MW-303**	EPA 7470	532638	EPA 7470	532663
60273458004	**MW-304**	EPA 7470	532638	EPA 7470	532663
60273458005	**MW-305**	EPA 7470	532638	EPA 7470	532663
60273458006	**MW-306**	EPA 7470	532638	EPA 7470	532663
60273458007	**FIELD BLANK**	EPA 7470	532638	EPA 7470	532663
60273458001	**MW-301**	SM 2540C	532018		
60273458002	**MW-302**	SM 2540C	532018		
60273458003	**MW-303**	SM 2540C	532018		
60273458004	**MW-304**	SM 2540C	532018		
60273458005	**MW-305**	SM 2540C	532018		
60273458006	**MW-306**	SM 2540C	532018		
60273458007	**FIELD BLANK**	SM 2540C	532018		
60273458001	**MW-301**	EPA 9040	531912		
60273458002	**MW-302**	EPA 9040	531912		
60273458003	**MW-303**	EPA 9040	531912		
60273458004	**MW-304**	EPA 9040	531912		
60273458005	**MW-305**	EPA 9040	531912		
60273458006	**MW-306**	EPA 9040	531912		
60273458007	**FIELD BLANK**	EPA 9040	531912		
60273458001	**MW-301**	EPA 9056	532959		
60273458002	**MW-302**	EPA 9056	533220		
60273458003	**MW-303**	EPA 9056	533220		
60273458004	**MW-304**	EPA 9056	533220		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: M.L. KAPP ASH POND
Pace Project No.: 60273458

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60273458005	**MW-305**	EPA 9056	533220		
60273458006	**MW-306**	EPA 9056	533220		
60273458007	**FIELD BLANK**	EPA 9056	533220		

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www.pacelabs.com

Sample Condition Upon Receipt

WO# : 60273458

60273458

Client Name: SCS Engineers

Courier: FedEx ☒ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☐ Client ☐ Other ☐

Tracking #: 436872762570 Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☐ Other ☒ Zplc

Thermometer Used: T300 **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): **As-read** 3.4 **Corr. Factor** +1.2 **Corrected** 4.6

Date and initials of person examining contents: 6/26/18 HZ

Temperature should be above freezing to 6°C

Chain of Custody present:	☒Yes ☐No ☐N/A	
Chain of Custody relinquished:	☐Yes ☒No ☐N/A	
Samples arrived within holding time:	☒Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☒Yes ☐No ☐N/A	pH
Rush Turn Around Time requested:	☐Yes ☒No ☐N/A	
Sufficient volume:	☒Yes ☐No ☐N/A	
Correct containers used:	☒Yes ☐No ☐N/A	
Pace containers used:	☒Yes ☐No ☐N/A	
Containers intact:	☒Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☒N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☒N/A	
Sample labels match COC: Date / time / ID / analyses	☒Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☒No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	☒Yes ☐No ☐N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks:		
Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☐Yes ☐No ☒N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☒N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☒N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☒N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: HWK Date: 6-26-2018

F-KS-C-003-Rev.11

CHAIN-OF-CUSTODY / Analytical Request Document

Pace Analytical www.pacelabs.com

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: of

Section A – Required Client Information:

- Company: SCS Engineers
- Address: 2830 Dairy Drive, Madison WI 53718
- Email To: mblodgett@scsengineers.com
- Phone: 608-216-7362 Fax:
- Requested Due Date/TAT:

Section B – Required Project Information:

- Report To: Meghan Blodgett
- Copy To: Tom Karwaski
- Purchase Order No.:
- Project Name: M.L. Kapp Ash Pond
- Project Number: 25218061.00.

Section C – Invoice Information:

- Attention: Meghan Blodgett/Jess Valcheff
- Company Name: SCS Engineers
- Address:
- Pace Quote Reference:
- Pace Project Manager: Hank Kapka 913-563-1404
- Pace Profile #: 6696 Line 2

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER

Site Location STATE: IA

Section D – Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

Requested Analysis Filtered (Y/N): N N

Pace Project No./ Lab I.D.: 60273458

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED – COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	6010 Total Metals: B-Ca-Li	6020 Total Metals *	7470 Total Mercury	9056 Chloride-Fluoride-Sulfate	9040 pH	2540C TDS		Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-301	WT	G	xxx	xxx	6/25/18	1141	13	3	1		2						X	X	X	X	X	X	RPIO, 2B, 3	N	001
2	MW-302	WT	G	xxx	xxx	6/25/18	1551	12.4	3	1		2						X	X	X	X	X	X			002
3	MW-303	WT	G	xxx	xxx	6/25/18	1506	14	3	1		2						X	X	X	X	X	X			003
4	MW-304	WT	G	xxx	xxx	6/25/18	1421	13.7	3	1		2						X	X	X	X	X	X			004
5	MW-305	WT	G	xxx	xxx	6/25/18	1315	14.3	3	1		2						X	X	X	X	X	X			005
6	MW-306	WT	G	xxx	xxx	6/25/18	1229	11.9	3	1		2						X	X	X	X	X	X			006
7	FIELD BLANK	WT	G	xxx	xxx	6/25/18	1130		3	1		2						X	X	X	X	X	X			007
8																										
9																										
10																										
11																										
12																										

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Ship To: 9608 Loiret Boulevard, Lenexa, KS 66219				4 Zipf /Pace	6/26/18	0855	4.6	Y	Y	Y
* As-Ba-Be-Cd-Cr-Co-Pb-Mo-Sb-Se-Tl										

SAMPLE CONDITIONS

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:

SIGNATURE of SAMPLER: DATE Signed (MM/DD/YY):

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-Feb-2007

A4 Round 4 Background Sampling, Analytical Laboratory Report

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

August 10, 2018

Meghan Blodgett
SCS Engineers
2830 Dairy Drive
Madison, WI 53718

RE: Project: M.L. KAPP ASH POND
Pace Project No.: 60275876

Dear Meghan Blodgett:
Enclosed are the analytical results for sample(s) received by the laboratory on July 26, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Hank Kapka
hank.kapka@pacelabs.com
(913)599-5665
PM Lab Management

Enclosures

cc: Tom Karwaski, SCS Engineers
Nicole Kron, SCS Engineers
Jeff Maxted, Alliant Energy
Jess Valcheff, SCS Engeineers

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Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: M.L. KAPP ASH POND
Pace Project No.: 60275876

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219
Missouri Certification Number: 10090
WY STR Certification #: 2456.01
Arkansas Certification #: 17-016-0
Illinois Certification #: 200030
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212018-1
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407
Utah Certification #: KS00021
Kansas Field Laboratory Accreditation: # E-92587
Missouri Certification: 10070
Missouri Certification Number: 10090

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: M.L. KAPP ASH POND
Pace Project No.: 60275876

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60275876001	**MW-301**	Water	07/25/18 11:34	07/26/18 08:30
60275876002	**MW-302**	Water	07/25/18 12:26	07/26/18 08:30
60275876003	**MW-303**	Water	07/25/18 13:14	07/26/18 08:30
60275876004	**MW-304**	Water	07/25/18 13:59	07/26/18 08:30
60275876005	**MW-305**	Water	07/25/18 14:40	07/26/18 08:30
60275876006	**MW-306**	Water	07/25/18 15:26	07/26/18 08:30
60275876007	**FIELD BLANK**	Water	07/25/18 11:15	07/26/18 08:30

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SAMPLE ANALYTE COUNT

Project: M.L. KAPP ASH POND
Pace Project No.: 60275876

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60275876001	MW-301	EPA 6010	TDS	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	CRN	1	PASI-K
		SM 2540C	JDA	1	PASI-K
		EPA 9040	ZMH	1	PASI-K
		EPA 9056	WNM	3	PASI-K
60275876002	MW-302	EPA 6010	TDS	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	CRN	1	PASI-K
		SM 2540C	JDA	1	PASI-K
		EPA 9040	ZMH	1	PASI-K
		EPA 9056	WNM	3	PASI-K
60275876003	MW-303	EPA 6010	TDS	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	CRN	1	PASI-K
		SM 2540C	JDA	1	PASI-K
		EPA 9040	ZMH	1	PASI-K
		EPA 9056	WNM	3	PASI-K
60275876004	MW-304	EPA 6010	TDS	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	CRN	1	PASI-K
		SM 2540C	JDA	1	PASI-K
		EPA 9040	ZMH	1	PASI-K
		EPA 9056	WNM	3	PASI-K
60275876005	MW-305	EPA 6010	TDS	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	CRN	1	PASI-K
		SM 2540C	JDA	1	PASI-K
		EPA 9040	ZMH	1	PASI-K
		EPA 9056	WNM	3	PASI-K
60275876006	MW-306	EPA 6010	TDS	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	CRN	1	PASI-K
		SM 2540C	JDA	1	PASI-K
		EPA 9040	ZMH	1	PASI-K
		EPA 9056	WNM	3	PASI-K
60275876007	FIELD BLANK	EPA 6010	TDS	3	PASI-K

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SAMPLE ANALYTE COUNT

Project: M.L. KAPP ASH POND
Pace Project No.: 60275876

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6020	JGP	11	PASI-K
		EPA 7470	CRN	1	PASI-K
		SM 2540C	JDA	1	PASI-K
		EPA 9040	ZMH	1	PASI-K
		EPA 9056	WNM	3	PASI-K

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ANALYTICAL RESULTS

Project: M.L. KAPP ASH POND
Pace Project No.: 60275876

Sample: MW-301 **Lab ID: 60275876001** Collected: 07/25/18 11:34 Received: 07/26/18 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**CLIENT**				1		07/25/18 14:39		
Collected Date	**7/25/18**				1		07/25/18 14:39		
Collected Time	**14:39**				1		07/25/18 14:39		
Field pH	**8.39**	Std. Units	0.10	0.050	1		07/25/18 14:39		
Field Temperature	**13.3**	deg C	0.50	0.25	1		07/25/18 14:39		
Field Specific Conductance	**953**	umhos/cm	1.0	1.0	1		07/25/18 14:39		
Field Oxidation Potential	**-180**	mV			1		07/25/18 14:39		
Oxygen, Dissolved	**0.09**	mg/L			1		07/25/18 14:39	7782-44-7	
Turbidity	**9.40**	NTU	1.0	1.0	1		07/25/18 14:39		
Groundwater Elevation	**577.83**	feet			1		07/25/18 14:39		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**2040**	ug/L	100	12.5	1	08/01/18 17:10	08/02/18 15:55	7440-42-8	
Calcium	**118**	mg/L	0.20	0.054	1	08/01/18 17:10	08/02/18 15:55	7440-70-2	M1
Lithium	**6.1J**	ug/L	10.0	4.6	1	08/01/18 17:10	08/02/18 15:55	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.21J**	ug/L	1.0	0.15	1	07/27/18 16:23	08/06/18 13:50	7440-36-0	
Arsenic	**1.0J**	ug/L	1.0	0.15	1	07/27/18 16:23	08/06/18 13:50	7440-38-2	
Barium	**193**	ug/L	1.0	0.34	1	07/27/18 16:23	08/06/18 13:50	7440-39-3	
Beryllium	**0.13J**	ug/L	0.50	0.12	1	07/27/18 16:23	08/06/18 13:50	7440-41-7	
Cadmium	**0.16J**	ug/L	0.50	0.070	1	07/27/18 16:23	08/06/18 13:50	7440-43-9	
Chromium	**0.30J**	ug/L	1.0	0.19	1	07/27/18 16:23	08/06/18 13:50	7440-47-3	B
Cobalt	**0.29J**	ug/L	1.0	0.15	1	07/27/18 16:23	08/06/18 13:50	7440-48-4	
Lead	**0.28J**	ug/L	1.0	0.12	1	07/27/18 16:23	08/06/18 13:50	7439-92-1	
Molybdenum	**31.1**	ug/L	1.0	0.13	1	07/27/18 16:23	08/06/18 13:50	7439-98-7	
Selenium	**0.23J**	ug/L	1.0	0.16	1	07/27/18 16:23	08/06/18 13:50	7782-49-2	
Thallium	**0.19J**	ug/L	1.0	0.14	1	07/27/18 16:23	08/06/18 13:50	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.090**	ug/L	0.20	0.090	1	07/31/18 14:00	08/01/18 10:40	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**611**	mg/L	5.0	5.0	1		07/30/18 11:37		
9040 pH	Analytical Method: EPA 9040								
pH	**7.0**	Std. Units	0.10	0.10	1		07/30/18 13:47		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**75.5**	mg/L	5.0	2.3	5		07/27/18 17:47	16887-00-6	
Fluoride	**0.22**	mg/L	0.20	0.063	1		07/27/18 17:32	16984-48-8	
Sulfate	**54.3**	mg/L	5.0	1.2	5		07/27/18 17:47	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: M.L. KAPP ASH POND
Pace Project No.: 60275876

Sample: MW-302 **Lab ID: 60275876002** Collected: 07/25/18 12:26 Received: 07/26/18 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**CLIENT**				1		07/25/18 12:26		
Collected Date	**7/25/19**				1		07/25/18 12:26		
Collected Time	**12:26**				1		07/25/18 12:26		
Field pH	**10.64**	Std. Units	0.10	0.050	1		07/25/18 12:26		
Field Temperature	**13.2**	deg C	0.50	0.25	1		07/25/18 12:26		
Field Specific Conductance	**641**	umhos/cm	1.0	1.0	1		07/25/18 12:26		
Field Oxidation Potential	**-45**	mV			1		07/25/18 12:26		
Oxygen, Dissolved	**0.19**	mg/L			1		07/25/18 12:26	7782-44-7	
Turbidity	**4.32**	NTU	1.0	1.0	1		07/25/18 12:26		
Groundwater Elevation	**577.62**	feet			1		07/25/18 12:26		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**4950**	ug/L	100	12.5	1	08/01/18 17:10	08/07/18 20:24	7440-42-8	
Calcium	**54.8**	mg/L	0.20	0.054	1	08/01/18 17:10	08/07/18 20:24	7440-70-2	
Lithium	**7.2J**	ug/L	10.0	4.6	1	08/01/18 17:10	08/07/18 20:24	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.32J**	ug/L	1.0	0.15	1	07/27/18 16:23	08/06/18 13:59	7440-36-0	
Arsenic	**8.7**	ug/L	1.0	0.15	1	07/27/18 16:23	08/06/18 13:59	7440-38-2	
Barium	**50.1**	ug/L	1.0	0.34	1	07/27/18 16:23	08/06/18 13:59	7440-39-3	
Beryllium	**<0.12**	ug/L	0.50	0.12	1	07/27/18 16:23	08/06/18 13:59	7440-41-7	
Cadmium	**0.087J**	ug/L	0.50	0.070	1	07/27/18 16:23	08/06/18 13:59	7440-43-9	
Chromium	**<0.19**	ug/L	1.0	0.19	1	07/27/18 16:23	08/06/18 13:59	7440-47-3	
Cobalt	**<0.15**	ug/L	1.0	0.15	1	07/27/18 16:23	08/06/18 13:59	7440-48-4	
Lead	**<0.12**	ug/L	1.0	0.12	1	07/27/18 16:23	08/06/18 13:59	7439-92-1	
Molybdenum	**260**	ug/L	1.0	0.13	1	07/27/18 16:23	08/06/18 13:59	7439-98-7	
Selenium	**1.1**	ug/L	1.0	0.16	1	07/27/18 16:23	08/06/18 13:59	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	07/27/18 16:23	08/06/18 13:59	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.090**	ug/L	0.20	0.090	1	07/31/18 14:00	08/01/18 10:43	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**442**	mg/L	5.0	5.0	1		07/30/18 11:37		
9040 pH	Analytical Method: EPA 9040								
pH	**8.6**	Std. Units	0.10	0.10	1		07/30/18 13:49		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**19.0**	mg/L	1.0	0.46	1		07/27/18 18:15	16887-00-6	
Fluoride	**0.43**	mg/L	0.20	0.063	1		07/27/18 18:15	16984-48-8	
Sulfate	**208**	mg/L	20.0	4.7	20		07/27/18 18:43	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: M.L. KAPP ASH POND
Pace Project No.: 60275876

Sample: MW-303 **Lab ID: 60275876003** Collected: 07/25/18 13:14 Received: 07/26/18 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**CLIENT**				1		07/25/18 12:26		
Collected Date	**7/25/18**				1		07/25/18 12:26		
Collected Time	**13:14**				1		07/25/18 12:26		
Field pH	**10.74**	Std. Units	0.10	0.050	1		07/25/18 12:26		
Field Temperature	**13.8**	deg C	0.50	0.25	1		07/25/18 12:26		
Field Specific Conductance	**706**	umhos/cm	1.0	1.0	1		07/25/18 12:26		
Field Oxidation Potential	**-98**	mV			1		07/25/18 12:26		
Oxygen, Dissolved	**0.11**	mg/L			1		07/25/18 12:26	7782-44-7	
Turbidity	**2.17**	NTU	1.0	1.0	1		07/25/18 12:26		
Groundwater Elevation	**577.83**	feet			1		07/25/18 12:26		
6010 MET ICP	Analytical Method: EPA 6010	Preparation Method: EPA 3010							
Boron	**1910**	ug/L	100	12.5	1	08/01/18 17:10	08/07/18 20:27	7440-42-8	
Calcium	**69.3**	mg/L	0.20	0.054	1	08/01/18 17:10	08/07/18 20:27	7440-70-2	
Lithium	**<4.6**	ug/L	10.0	4.6	1	08/01/18 17:10	08/07/18 20:27	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020	Preparation Method: EPA 3010							
Antimony	**0.27J**	ug/L	1.0	0.15	1	07/27/18 16:23	08/06/18 14:02	7440-36-0	
Arsenic	**8.8**	ug/L	1.0	0.15	1	07/27/18 16:23	08/06/18 14:02	7440-38-2	
Barium	**21.7**	ug/L	1.0	0.34	1	07/27/18 16:23	08/06/18 14:02	7440-39-3	
Beryllium	**<0.12**	ug/L	0.50	0.12	1	07/27/18 16:23	08/06/18 14:02	7440-41-7	
Cadmium	**<0.070**	ug/L	0.50	0.070	1	07/27/18 16:23	08/06/18 14:02	7440-43-9	
Chromium	**<0.19**	ug/L	1.0	0.19	1	07/27/18 16:23	08/06/18 14:02	7440-47-3	
Cobalt	**<0.15**	ug/L	1.0	0.15	1	07/27/18 16:23	08/06/18 14:02	7440-48-4	
Lead	**<0.12**	ug/L	1.0	0.12	1	07/27/18 16:23	08/06/18 14:02	7439-92-1	
Molybdenum	**145**	ug/L	1.0	0.13	1	07/27/18 16:23	08/06/18 14:02	7439-98-7	
Selenium	**6.5**	ug/L	1.0	0.16	1	07/27/18 16:23	08/06/18 14:02	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	07/27/18 16:23	08/06/18 14:02	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470	Preparation Method: EPA 7470							
Mercury	**<0.090**	ug/L	0.20	0.090	1	07/31/18 14:00	08/01/18 10:45	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**452**	mg/L	5.0	5.0	1		07/30/18 11:37		
9040 pH	Analytical Method: EPA 9040								
pH	**10.6**	Std. Units	0.10	0.10	1		07/30/18 13:50		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**23.9**	mg/L	2.0	0.92	2		08/01/18 18:46	16887-00-6	
Fluoride	**0.66**	mg/L	0.20	0.063	1		07/27/18 18:58	16984-48-8	
Sulfate	**243**	mg/L	20.0	4.7	20		07/27/18 19:54	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: M.L. KAPP ASH POND
Pace Project No.: 60275876

Sample: MW-304 **Lab ID: 60275876004** Collected: 07/25/18 13:59 Received: 07/26/18 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**CLIENT**				1		07/25/18 13:59		
Collected Date	**07/25/2018**				1		07/25/18 13:59		
Collected Time	**13:59**				1		07/25/18 13:59		
Field pH	**7.64**	Std. Units	0.10	0.050	1		07/25/18 13:59		
Field Temperature	**13.6**	deg C	0.50	0.25	1		07/25/18 13:59		
Field Specific Conductance	**607**	umhos/cm	1.0	1.0	1		07/25/18 13:59		
Field Oxidation Potential	**-117**	mV			1		07/25/18 13:59		
Oxygen, Dissolved	**0.12**	mg/L			1		07/25/18 13:59	7782-44-7	
Turbidity	**51.08**	NTU	1.0	1.0	1		07/25/18 13:59		
Groundwater Elevation	**577.56**	feet			1		07/25/18 13:59		
6010 MET ICP	Analytical Method: EPA 6010	Preparation Method: EPA 3010							
Boron	**8330**	ug/L	100	12.5	1	08/01/18 17:10	08/07/18 20:29	7440-42-8	
Calcium	**48.5**	mg/L	0.20	0.054	1	08/01/18 17:10	08/07/18 20:29	7440-70-2	
Lithium	**<4.6**	ug/L	10.0	4.6	1	08/01/18 17:10	08/07/18 20:29	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020	Preparation Method: EPA 3010							
Antimony	**0.23J**	ug/L	1.0	0.15	1	07/27/18 16:23	08/06/18 14:05	7440-36-0	
Arsenic	**4.5**	ug/L	1.0	0.15	1	07/27/18 16:23	08/06/18 14:05	7440-38-2	
Barium	**60.2**	ug/L	1.0	0.34	1	07/27/18 16:23	08/06/18 14:05	7440-39-3	
Beryllium	**0.15J**	ug/L	0.50	0.12	1	07/27/18 16:23	08/06/18 14:05	7440-41-7	
Cadmium	**0.38J**	ug/L	0.50	0.070	1	07/27/18 16:23	08/06/18 14:05	7440-43-9	
Chromium	**1.8**	ug/L	1.0	0.19	1	07/27/18 16:23	08/06/18 14:05	7440-47-3	B
Cobalt	**1.4**	ug/L	1.0	0.15	1	07/27/18 16:23	08/06/18 14:05	7440-48-4	
Lead	**2.6**	ug/L	1.0	0.12	1	07/27/18 16:23	08/06/18 14:05	7439-92-1	
Molybdenum	**828**	ug/L	1.0	0.13	1	07/27/18 16:23	08/06/18 14:05	7439-98-7	
Selenium	**0.79J**	ug/L	1.0	0.16	1	07/27/18 16:23	08/06/18 14:05	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	07/27/18 16:23	08/06/18 14:05	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470	Preparation Method: EPA 7470							
Mercury	**<0.090**	ug/L	0.20	0.090	1	07/31/18 14:00	08/01/18 10:51	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**443**	mg/L	5.0	5.0	1		08/01/18 08:36		
9040 pH	Analytical Method: EPA 9040								
pH	**7.7**	Std. Units	0.10	0.10	1		07/30/18 13:52		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**28.7**	mg/L	2.0	0.92	2		08/01/18 19:57	16887-00-6	
Fluoride	**0.28**	mg/L	0.20	0.063	1		07/27/18 20:09	16984-48-8	
Sulfate	**177**	mg/L	20.0	4.7	20		07/27/18 20:37	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: M.L. KAPP ASH POND
Pace Project No.: 60275876

Sample: MW-305 **Lab ID: 60275876005** Collected: 07/25/18 14:40 Received: 07/26/18 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**CLIENT**				1		07/25/18 14:40		
Collected Date	**7/25/18**				1		07/25/18 14:40		
Collected Time	**14:40**				1		07/25/18 14:40		
Field pH	**7.60**	Std. Units	0.10	0.050	1		07/25/18 14:40		
Field Temperature	**13.7**	deg C	0.50	0.25	1		07/25/18 14:40		
Field Specific Conductance	**954**	umhos/cm	1.0	1.0	1		07/25/18 14:40		
Field Oxidation Potential	**-36**	mV			1		07/25/18 14:40		
Oxygen, Dissolved	**0.15**	mg/L			1		07/25/18 14:40	7782-44-7	
Turbidity	**3.29**	NTU	1.0	1.0	1		07/25/18 14:40		
Groundwater Elevation	**577.52**	feet			1		07/25/18 14:40		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**11900**	ug/L	100	12.5	1	08/01/18 17:10	08/07/18 20:31	7440-42-8	
Calcium	**88.4**	mg/L	0.20	0.054	1	08/01/18 17:10	08/07/18 20:31	7440-70-2	
Lithium	**10.9**	ug/L	10.0	4.6	1	08/01/18 17:10	08/07/18 20:31	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.20J**	ug/L	1.0	0.15	1	07/27/18 16:23	08/06/18 14:08	7440-36-0	
Arsenic	**1.2**	ug/L	1.0	0.15	1	07/27/18 16:23	08/06/18 14:08	7440-38-2	
Barium	**61.0**	ug/L	1.0	0.34	1	07/27/18 16:23	08/06/18 14:08	7440-39-3	
Beryllium	**<0.12**	ug/L	0.50	0.12	1	07/27/18 16:23	08/06/18 14:08	7440-41-7	
Cadmium	**0.18J**	ug/L	0.50	0.070	1	07/27/18 16:23	08/06/18 14:08	7440-43-9	
Chromium	**<0.19**	ug/L	1.0	0.19	1	07/27/18 16:23	08/06/18 14:08	7440-47-3	
Cobalt	**0.29J**	ug/L	1.0	0.15	1	07/27/18 16:23	08/06/18 14:08	7440-48-4	
Lead	**0.15J**	ug/L	1.0	0.12	1	07/27/18 16:23	08/06/18 14:08	7439-92-1	
Molybdenum	**886**	ug/L	1.0	0.13	1	07/27/18 16:23	08/06/18 14:08	7439-98-7	
Selenium	**0.23J**	ug/L	1.0	0.16	1	07/27/18 16:23	08/06/18 14:08	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	07/27/18 16:23	08/06/18 14:08	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.090**	ug/L	0.20	0.090	1	07/31/18 14:00	08/01/18 10:54	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**690**	mg/L	5.0	5.0	1		08/01/18 08:36		
9040 pH	Analytical Method: EPA 9040								
pH	**7.4**	Std. Units	0.10	0.10	1		07/30/18 13:53		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**25.5**	mg/L	2.0	0.92	2		08/01/18 20:26	16887-00-6	
Fluoride	**0.32**	mg/L	0.20	0.063	1		07/27/18 20:51	16984-48-8	
Sulfate	**341**	mg/L	20.0	4.7	20		08/01/18 20:40	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: M.L. KAPP ASH POND
Pace Project No.: 60275876

Sample: MW-306 **Lab ID: 60275876006** Collected: 07/25/18 15:26 Received: 07/26/18 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**CLIENT**				1		07/25/18 15:26		
Collected Date	**07/25/2018**				1		07/25/18 15:26		
Collected Time	**15:26**				1		07/25/18 15:26		
Field pH	**8.31**	Std. Units	0.10	0.050	1		07/25/18 15:26		
Field Temperature	**13.2**	deg C	0.50	0.25	1		07/25/18 15:26		
Field Specific Conductance	**1431**	umhos/cm	1.0	1.0	1		07/25/18 15:26		
Field Oxidation Potential	**99**	mV			1		07/25/18 15:26		
Oxygen, Dissolved	**0.14**	mg/L			1		07/25/18 15:26	7782-44-7	
Turbidity	**3.58**	NTU	1.0	1.0	1		07/25/18 15:26		
Groundwater Elevation	**577.97**	feet			1		07/25/18 15:26		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**17900**	ug/L	100	12.5	1	08/01/18 17:10	08/07/18 20:33	7440-42-8	
Calcium	**155**	mg/L	0.20	0.054	1	08/01/18 17:10	08/07/18 20:33	7440-70-2	
Lithium	**60.2**	ug/L	10.0	4.6	1	08/01/18 17:10	08/07/18 20:33	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.17J**	ug/L	1.0	0.15	1	07/27/18 16:23	08/06/18 14:10	7440-36-0	
Arsenic	**0.49J**	ug/L	1.0	0.15	1	07/27/18 16:23	08/06/18 14:10	7440-38-2	
Barium	**53.8**	ug/L	1.0	0.34	1	07/27/18 16:23	08/06/18 14:10	7440-39-3	
Beryllium	**<0.12**	ug/L	0.50	0.12	1	07/27/18 16:23	08/06/18 14:10	7440-41-7	
Cadmium	**0.070J**	ug/L	0.50	0.070	1	07/27/18 16:23	08/06/18 14:10	7440-43-9	
Chromium	**<0.19**	ug/L	1.0	0.19	1	07/27/18 16:23	08/06/18 14:10	7440-47-3	
Cobalt	**0.17J**	ug/L	1.0	0.15	1	07/27/18 16:23	08/06/18 14:10	7440-48-4	
Lead	**<0.12**	ug/L	1.0	0.12	1	07/27/18 16:23	08/06/18 14:10	7439-92-1	
Molybdenum	**92.0**	ug/L	1.0	0.13	1	07/27/18 16:23	08/06/18 14:10	7439-98-7	
Selenium	**1.0**	ug/L	1.0	0.16	1	07/27/18 16:23	08/06/18 14:10	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	07/27/18 16:23	08/06/18 14:10	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.090**	ug/L	0.20	0.090	1	07/31/18 14:00	08/01/18 10:56	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**1090**	mg/L	5.0	5.0	1		08/01/18 08:36		
9040 pH	Analytical Method: EPA 9040								
pH	**7.4**	Std. Units	0.10	0.10	1		07/30/18 13:55		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**63.7**	mg/L	5.0	2.3	5		07/27/18 21:34	16887-00-6	
Fluoride	**0.29**	mg/L	0.20	0.063	1		07/27/18 21:20	16984-48-8	
Sulfate	**454**	mg/L	50.0	11.8	50		08/08/18 15:45	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

ANALYTICAL RESULTS

Project: M.L. KAPP ASH POND
Pace Project No.: 60275876

Sample: FIELD BLANK **Lab ID: 60275876007** Collected: 07/25/18 11:15 Received: 07/26/18 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**46.2J**	ug/L	100	12.5	1	08/01/18 17:10	08/07/18 20:36	7440-42-8	
Calcium	**<0.054**	mg/L	0.20	0.054	1	08/01/18 17:10	08/07/18 20:36	7440-70-2	
Lithium	**<4.6**	ug/L	10.0	4.6	1	08/01/18 17:10	08/07/18 20:36	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**<0.15**	ug/L	1.0	0.15	1	07/27/18 16:23	08/06/18 14:19	7440-36-0	
Arsenic	**<0.15**	ug/L	1.0	0.15	1	07/27/18 16:23	08/06/18 14:19	7440-38-2	
Barium	**<0.34**	ug/L	1.0	0.34	1	07/27/18 16:23	08/06/18 14:19	7440-39-3	
Beryllium	**<0.12**	ug/L	0.50	0.12	1	07/27/18 16:23	08/06/18 14:19	7440-41-7	
Cadmium	**<0.070**	ug/L	0.50	0.070	1	07/27/18 16:23	08/06/18 14:19	7440-43-9	
Chromium	**<0.19**	ug/L	1.0	0.19	1	07/27/18 16:23	08/06/18 14:19	7440-47-3	
Cobalt	**<0.15**	ug/L	1.0	0.15	1	07/27/18 16:23	08/06/18 14:19	7440-48-4	
Lead	**<0.12**	ug/L	1.0	0.12	1	07/27/18 16:23	08/06/18 14:19	7439-92-1	
Molybdenum	**<0.13**	ug/L	1.0	0.13	1	07/27/18 16:23	08/06/18 14:19	7439-98-7	
Selenium	**<0.16**	ug/L	1.0	0.16	1	07/27/18 16:23	08/06/18 14:19	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	07/27/18 16:23	08/06/18 14:19	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.090**	ug/L	0.20	0.090	1	07/31/18 14:00	08/01/18 10:58	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**<5.0**	mg/L	5.0	5.0	1		08/01/18 08:36		
9040 pH	Analytical Method: EPA 9040								
pH	**6.0**	Std. Units	0.10	0.10	1		07/30/18 13:42		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**<0.46**	mg/L	1.0	0.46	1		08/01/18 20:54	16887-00-6	
Fluoride	**<0.063**	mg/L	0.20	0.063	1		08/01/18 20:54	16984-48-8	
Sulfate	**<0.24**	mg/L	1.0	0.24	1		08/01/18 20:54	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: M.L. KAPP ASH POND
Pace Project No.: 60275876

QC Batch: 537116 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 60275876001, 60275876002, 60275876003, 60275876004, 60275876005, 60275876006, 60275876007

METHOD BLANK: 2200228 Matrix: Water
Associated Lab Samples: 60275876001, 60275876002, 60275876003, 60275876004, 60275876005, 60275876006, 60275876007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.090	0.20	0.090	08/01/18 10:05	

LABORATORY CONTROL SAMPLE: 2200229

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.0	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2200230 2200231

Parameter	Units	2081136004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	4.5	4.8	91	96	75-125	5	20	

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QUALITY CONTROL DATA

Project: M.L. KAPP ASH POND
Pace Project No.: 60275876

QC Batch: 537435 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET
Associated Lab Samples: 60275876001, 60275876002, 60275876003, 60275876004, 60275876005, 60275876006, 60275876007

METHOD BLANK: 2201359 Matrix: Water
Associated Lab Samples: 60275876001, 60275876002, 60275876003, 60275876004, 60275876005, 60275876006, 60275876007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	ug/L	<12.5	100	12.5	08/02/18 15:51	
Calcium	mg/L	<0.054	0.20	0.054	08/02/18 15:51	
Lithium	ug/L	<4.6	10.0	4.6	08/02/18 15:51	

LABORATORY CONTROL SAMPLE: 2201360

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	1000	100	80-120	
Calcium	mg/L	10	10.0	100	80-120	
Lithium	ug/L	1000	999	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2201361 2201362

Parameter	Units	60275876001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	ug/L	2040	1000	1000	2970	3060	92	102	75-125	3	20	
Calcium	mg/L	118	10	10	124	127	65	94	75-125	2	20	M1
Lithium	ug/L	6.1J	1000	1000	983	1000	98	100	75-125	2	20	

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QUALITY CONTROL DATA

Project: M.L. KAPP ASH POND
Pace Project No.: 60275876

QC Batch: 536704 Analysis Method: EPA 6020
QC Batch Method: EPA 3010 Analysis Description: 6020 MET
Associated Lab Samples: 60275876001, 60275876002, 60275876003, 60275876004, 60275876005, 60275876006, 60275876007

METHOD BLANK: 2198659 Matrix: Water
Associated Lab Samples: 60275876001, 60275876002, 60275876003, 60275876004, 60275876005, 60275876006, 60275876007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.15	1.0	0.15	08/06/18 13:45	
Arsenic	ug/L	<0.15	1.0	0.15	08/06/18 13:45	
Barium	ug/L	<0.34	1.0	0.34	08/06/18 13:45	
Beryllium	ug/L	<0.12	0.50	0.12	08/06/18 13:45	
Cadmium	ug/L	<0.070	0.50	0.070	08/06/18 13:45	
Chromium	ug/L	0.27J	1.0	0.19	08/06/18 13:45	
Cobalt	ug/L	<0.15	1.0	0.15	08/06/18 13:45	
Lead	ug/L	<0.12	1.0	0.12	08/06/18 13:45	
Molybdenum	ug/L	<0.13	1.0	0.13	08/06/18 13:45	
Selenium	ug/L	<0.16	1.0	0.16	08/06/18 13:45	
Thallium	ug/L	<0.14	1.0	0.14	08/06/18 13:45	

LABORATORY CONTROL SAMPLE: 2198660

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	38.7	97	80-120	
Arsenic	ug/L	40	38.9	97	80-120	
Barium	ug/L	40	39.6	99	80-120	
Beryllium	ug/L	40	38.4	96	80-120	
Cadmium	ug/L	40	38.5	96	80-120	
Chromium	ug/L	40	37.6	94	80-120	
Cobalt	ug/L	40	37.3	93	80-120	
Lead	ug/L	40	39.1	98	80-120	
Molybdenum	ug/L	40	39.6	99	80-120	
Selenium	ug/L	40	39.1	98	80-120	
Thallium	ug/L	40	36.7	92	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2198661 2198662

Parameter	Units	60275876001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	0.21J	40	40	38.8	37.4	96	93	75-125	4	20	
Arsenic	ug/L	1.0J	40	40	39.5	38.5	96	94	75-125	3	20	
Barium	ug/L	193	40	40	236	234	107	104	75-125	1	20	
Beryllium	ug/L	0.13J	40	40	37.2	35.6	93	89	75-125	4	20	
Cadmium	ug/L	0.16J	40	40	36.8	35.4	92	88	75-125	4	20	
Chromium	ug/L	0.30J	40	40	38.7	37.5	96	93	75-125	3	20	
Cobalt	ug/L	0.29J	40	40	37.1	35.9	92	89	75-125	3	20	

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QUALITY CONTROL DATA

Project: M.L. KAPP ASH POND
Pace Project No.: 60275876

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2198661 2198662

Parameter	Units	60275876001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lead	ug/L	0.28J	40	40	36.3	34.9	90	87	75-125	4	20	
Molybdenum	ug/L	31.1	40	40	74.7	72.8	109	104	75-125	3	20	
Selenium	ug/L	0.23J	40	40	36.9	36.1	92	90	75-125	2	20	
Thallium	ug/L	0.19J	40	40	35.0	33.7	87	84	75-125	4	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: M.L. KAPP ASH POND
Pace Project No.: 60275876

QC Batch: 536873 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60275876001, 60275876002, 60275876003

METHOD BLANK: 2199534 Matrix: Water
Associated Lab Samples: 60275876001, 60275876002, 60275876003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	07/30/18 11:37	

LABORATORY CONTROL SAMPLE: 2199535

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1000	100	80-120	

SAMPLE DUPLICATE: 2199536

Parameter	Units	60275930004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1910	1910	0	10	

SAMPLE DUPLICATE: 2199537

Parameter	Units	60276051001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	402	401	0	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: M.L. KAPP ASH POND
Pace Project No.: 60275876

QC Batch: 537164 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60275876004, 60275876005, 60275876006, 60275876007

METHOD BLANK: 2200425 Matrix: Water
Associated Lab Samples: 60275876004, 60275876005, 60275876006, 60275876007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	08/01/18 08:36	

LABORATORY CONTROL SAMPLE: 2200426

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	998	100	80-120	

SAMPLE DUPLICATE: 2200427

Parameter	Units	60276013001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	579	578	0	10	

SAMPLE DUPLICATE: 2200428

Parameter	Units	60276049003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	638	637	0	10	

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QUALITY CONTROL DATA

Project: M.L. KAPP ASH POND
Pace Project No.: 60275876

QC Batch: 536935 Analysis Method: EPA 9040
QC Batch Method: EPA 9040 Analysis Description: 9040 pH
Associated Lab Samples: 60275876001, 60275876002, 60275876003, 60275876004, 60275876005, 60275876006, 60275876007

SAMPLE DUPLICATE: 2199648

Parameter	Units	60275876007 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	6.0	5.6	7	10	H6

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: M.L. KAPP ASH POND
Pace Project No.: 60275876

QC Batch: 536423 Analysis Method: EPA 9056
QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions
Associated Lab Samples: 60275876001, 60275876002, 60275876003, 60275876004, 60275876005, 60275876006

METHOD BLANK: 2197484 Matrix: Water
Associated Lab Samples: 60275876001, 60275876002, 60275876003, 60275876004, 60275876005, 60275876006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.46	1.0	0.46	07/27/18 14:52	
Fluoride	mg/L	<0.063	0.20	0.063	07/27/18 14:52	
Sulfate	mg/L	<0.24	1.0	0.24	07/27/18 14:52	

LABORATORY CONTROL SAMPLE: 2197485

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.6	92	80-120	
Fluoride	mg/L	2.5	2.4	98	80-120	
Sulfate	mg/L	5	4.8	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2197486 2197487

Parameter	Units	2080344002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	481	250	250	723	739	97	103	80-120	2	15	

SAMPLE DUPLICATE: 2197488

Parameter	Units	60275374001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	223	215	4	15	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: M.L. KAPP ASH POND
Pace Project No.: 60275876

QC Batch: 537316 Analysis Method: EPA 9056
QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions
Associated Lab Samples: 60275876003, 60275876004, 60275876005, 60275876007

METHOD BLANK: 2200931 Matrix: Water
Associated Lab Samples: 60275876003, 60275876004, 60275876005, 60275876007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.46	1.0	0.46	08/01/18 18:17	
Fluoride	mg/L	<0.063	0.20	0.063	08/01/18 18:17	
Sulfate	mg/L	<0.24	1.0	0.24	08/01/18 18:17	

LABORATORY CONTROL SAMPLE: 2200932

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.9	97	80-120	
Fluoride	mg/L	2.5	2.6	103	80-120	
Sulfate	mg/L	5	4.9	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2200933 2200934

Parameter	Units	60275876003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	23.9	10	10	34.9	35.3	110	114	80-120	1	15	

SAMPLE DUPLICATE: 2200935

Parameter	Units	60275876004 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	28.7	28.9	1	15	

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QUALITY CONTROL DATA

Project: M.L. KAPP ASH POND
Pace Project No.: 60275876

QC Batch: 538395 Analysis Method: EPA 9056
QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions
Associated Lab Samples: 60275876006

METHOD BLANK: 2205467 Matrix: Water
Associated Lab Samples: 60275876006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	<0.24	1.0	0.24	08/08/18 16:17	

LABORATORY CONTROL SAMPLE: 2205468

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	5.0	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2205469 2205470

Parameter	Units	60275876006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	454	250	250	722	713	107	103	80-120	1	15	

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QUALIFIERS

Project: M.L. KAPP ASH POND
Pace Project No.: 60275876

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-K	Pace Analytical Services - Kansas City

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
H6	Analysis initiated outside of the 15 minute EPA required holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: M.L. KAPP ASH POND
Pace Project No.: 60275876

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60275876001	MW-301		537975		
60275876002	MW-302		537975		
60275876003	MW-303		537975		
60275876004	MW-304		537975		
60275876005	MW-305		537975		
60275876006	MW-306		537975		
60275876001	MW-301	EPA 3010	537435	EPA 6010	537488
60275876002	MW-302	EPA 3010	537435	EPA 6010	537488
60275876003	MW-303	EPA 3010	537435	EPA 6010	537488
60275876004	MW-304	EPA 3010	537435	EPA 6010	537488
60275876005	MW-305	EPA 3010	537435	EPA 6010	537488
60275876006	MW-306	EPA 3010	537435	EPA 6010	537488
60275876007	FIELD BLANK	EPA 3010	537435	EPA 6010	537488
60275876001	MW-301	EPA 3010	536704	EPA 6020	536774
60275876002	MW-302	EPA 3010	536704	EPA 6020	536774
60275876003	MW-303	EPA 3010	536704	EPA 6020	536774
60275876004	MW-304	EPA 3010	536704	EPA 6020	536774
60275876005	MW-305	EPA 3010	536704	EPA 6020	536774
60275876006	MW-306	EPA 3010	536704	EPA 6020	536774
60275876007	FIELD BLANK	EPA 3010	536704	EPA 6020	536774
60275876001	MW-301	EPA 7470	537116	EPA 7470	537175
60275876002	MW-302	EPA 7470	537116	EPA 7470	537175
60275876003	MW-303	EPA 7470	537116	EPA 7470	537175
60275876004	MW-304	EPA 7470	537116	EPA 7470	537175
60275876005	MW-305	EPA 7470	537116	EPA 7470	537175
60275876006	MW-306	EPA 7470	537116	EPA 7470	537175
60275876007	FIELD BLANK	EPA 7470	537116	EPA 7470	537175
60275876001	MW-301	SM 2540C	536873		
60275876002	MW-302	SM 2540C	536873		
60275876003	MW-303	SM 2540C	536873		
60275876004	MW-304	SM 2540C	537164		
60275876005	MW-305	SM 2540C	537164		
60275876006	MW-306	SM 2540C	537164		
60275876007	FIELD BLANK	SM 2540C	537164		
60275876001	MW-301	EPA 9040	536935		
60275876002	MW-302	EPA 9040	536935		
60275876003	MW-303	EPA 9040	536935		
60275876004	MW-304	EPA 9040	536935		
60275876005	MW-305	EPA 9040	536935		
60275876006	MW-306	EPA 9040	536935		
60275876007	FIELD BLANK	EPA 9040	536935		
60275876001	MW-301	EPA 9056	536423		
60275876002	MW-302	EPA 9056	536423		
60275876003	MW-303	EPA 9056	536423		
60275876003	MW-303	EPA 9056	537316		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: M.L. KAPP ASH POND
Pace Project No.: 60275876

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60275876004	**MW-304**	EPA 9056	536423		
60275876004	**MW-304**	EPA 9056	537316		
60275876005	**MW-305**	EPA 9056	536423		
60275876005	**MW-305**	EPA 9056	537316		
60275876006	**MW-306**	EPA 9056	536423		
60275876006	**MW-306**	EPA 9056	538395		
60275876007	**FIELD BLANK**	EPA 9056	537316		

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Sample Condition Upon Receipt

WO# : 60275876

60275876

Client Name: SCS

Courier: FedEx ☑ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☐ Client ☐ Other ☐

Tracking #: 4368 7278 7057 Pace Shipping Label Used? Yes ☐ No ☑

Custody Seal on Cooler/Box Present: Yes ☐ No ☑ Seals intact: Yes ☐ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☐ Other ☑

Thermometer Used: T299 **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): **As-read** 2.9 **Corr. Factor** +1.0 **Corrected** 3.9

Date and Initials of person examining contents: AK 7-26-18

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☑Yes ☐No ☐N/A	pH
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	
Sufficient volume:	☑Yes ☐No ☐N/A	
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	
Containers intact:	☑Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☑N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	
Sample labels match COC: Date / time / ID / analyses	☑Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☑No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	☑Yes ☐No ☐N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☐Yes ☐No ☑N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: HWK Date: 7-26-20B

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

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Page: of

Section A Required Client Information:

Company: SCS Engineers
Address: 2830 Dairy Drive
Madison WI 53718
Email To: mblodgett@scsengineers.com
Phone: 608-216-7362 Fax:
Requested Due Date/TAT:

Section B Required Project Information:

Report To: Meghan Blodgett
Copy To: Tom Karwaski
Purchase Order No.:
Project Name: M.L. Kapp Ash Pond
Project Number: 25218061.00.

Section C Invoice Information:

Attention: Meghan Blodgett/Jess Valcheff
Company Name: SCS Engineers
Address:
Pace Quote Reference:
Pace Project Manager: Hank Kapka 913-563-1404
Pace Profile #: 6696 Line 2

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER

Site Location STATE: IA

Section D Required Client Information

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	6010 Total Metals: B-Ca-Li	6020 Total Metals *	7470 Total Mercury	9056 Chloride-Fluoride-Sulfate	9040 pH	2540C TDS								Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
										N	N																				60275876
1	MW-301	WT	G	xxx	xxx	7/25/18	1134	13.3	3	1		2						X	X	X	X	X	X	ISPH, BP3N						2	001
2	MW-302	WT	G	xxx	xxx	7/25/18	1226	13.2	3	1		2						X	X	X	X	X	X								002
3	MW-303	WT	G	xxx	xxx	7/25/18	1314	13.8	3	1		2						X	X	X	X	X	X								003
4	MW-304	WT	G	xxx	xxx	7/25/18	1359	13.6	3	1		2						X	X	X	X	X	X								004
5	MW-305	WT	G	xxx	xxx	7/25/18	1440	13.7	3	1		2						X	X	X	X	X	X								005
6	MW-306	WT	G	xxx	xxx	7/25/18	1526	13.2	3	1		2						X	X	X	X	X	X								006
7	FIELD BLANK	WT	G	xxx	xxx	7/25/18	1115		3	1		2						X	X	X	X	X	X								007
8																															
9																															
10																															
11																															
12																															

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Ship To: 9608 Loiret Boulevard, Lenexa, KS 66219	Charles Ann SCS	7/25/18	1700	PACE	7-26-18	0930	3.9	Y	Y	Y
* As-Ba-Be-Cd-Cr-Co-Pb-Mo-Sb-Se-Tl										

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:
SIGNATURE of SAMPLER:
DATE Signed (MM/DD/YY):

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-Feb-2007

08/30/2019 - Classification: Internal - ECRM6700181

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

August 14, 2018

Meghan Blodgett
SCS Engineers
2830 Dairy Drive
Madison, WI 53718

RE: Project: M.L. KAPP ASH POND
Pace Project No.: 60275850

Dear Meghan Blodgett:
Enclosed are the analytical results for sample(s) received by the laboratory on July 26, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Hank Kapka
hank.kapka@pacelabs.com
(913)599-5665
PM Lab Management

Enclosures

cc: Tom Karwaski, SCS Engineers
Nicole Kron, SCS Engineers
Jeff Maxted, Alliant Energy
Jess Valcheff, SCS Engeineers

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CERTIFICATIONS

Project: M.L. KAPP ASH POND
Pace Project No.: 60275850

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991
Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 9526
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

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SAMPLE SUMMARY

Project: M.L. KAPP ASH POND
Pace Project No.: 60275850

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60275850001	**MW-301**	Water	07/25/18 11:34	07/26/18 08:30
60275850002	**MW-302**	Water	07/25/18 12:26	07/26/18 08:30
60275850003	**MW-303**	Water	07/25/18 13:14	07/26/18 08:30
60275850004	**MW-304**	Water	07/25/18 13:59	07/26/18 08:30
60275850005	**MW-305**	Water	07/25/18 14:40	07/26/18 08:30
60275850006	**MW-306**	Water	07/25/18 15:26	07/26/18 08:30
60275850007	**FIELD BLANK**	Water	07/25/18 11:15	07/26/18 08:30

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SAMPLE ANALYTE COUNT

Project: M.L. KAPP ASH POND
Pace Project No.: 60275850

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60275850001	**MW-301**	EPA 903.1	KAC	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60275850002	**MW-302**	EPA 903.1	KAC	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60275850003	**MW-303**	EPA 903.1	KAC	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60275850004	**MW-304**	EPA 903.1	KAC	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60275850005	**MW-305**	EPA 903.1	KAC	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60275850006	**MW-306**	EPA 903.1	KAC	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60275850007	**FIELD BLANK**	EPA 903.1	KAC	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: M.L. KAPP ASH POND
Pace Project No.: 60275850

Sample: MW-301 **Lab ID: 60275850001** Collected: 07/25/18 11:34 Received: 07/26/18 08:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.589 ± 0.546 (0.831) C:NA T:86%**	pCi/L	08/09/18 19:44	13982-63-3	
Radium-228	EPA 904.0	**0.587 ± 0.509 (1.04) C:74% T:80%**	pCi/L	08/09/18 14:55	15262-20-1	
Total Radium	Total Radium Calculation	**1.18 ± 1.06 (1.87)**	pCi/L	08/14/18 14:44	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: M.L. KAPP ASH POND
Pace Project No.: 60275850

Sample: MW-302 **Lab ID: 60275850002** Collected: 07/25/18 12:26 Received: 07/26/18 08:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.367 ± 0.558 (0.961) C:NA T:70%**	pCi/L	08/09/18 19:44	13982-63-3	
Radium-228	EPA 904.0	**-0.106 ± 0.404 (0.954) C:74% T:76%**	pCi/L	08/09/18 14:56	15262-20-1	
Total Radium	Total Radium Calculation	**0.367 ± 0.962 (1.92)**	pCi/L	08/14/18 14:44	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: M.L. KAPP ASH POND
Pace Project No.: 60275850

Sample: MW-303 **Lab ID: 60275850003** Collected: 07/25/18 13:14 Received: 07/26/18 08:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.276 ± 0.391 (0.662) C:NA T:93%**	pCi/L	08/09/18 19:57	13982-63-3	
Radium-228	EPA 904.0	**0.305 ± 0.347 (0.727) C:73% T:83%**	pCi/L	08/09/18 14:56	15262-20-1	
Total Radium	Total Radium Calculation	**0.581 ± 0.738 (1.39)**	pCi/L	08/14/18 14:44	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: M.L. KAPP ASH POND
Pace Project No.: 60275850

Sample: MW-304 **Lab ID: 60275850004** Collected: 07/25/18 13:59 Received: 07/26/18 08:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.249 ± 0.423 (0.746) C:NA T:86%**	pCi/L	08/09/18 19:57	13982-63-3	
Radium-228	EPA 904.0	**0.396 ± 0.378 (0.775) C:74% T:82%**	pCi/L	08/09/18 14:56	15262-20-1	
Total Radium	Total Radium Calculation	**0.645 ± 0.801 (1.52)**	pCi/L	08/14/18 14:51	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: M.L. KAPP ASH POND
Pace Project No.: 60275850

Sample: MW-305 **Lab ID: 60275850005** Collected: 07/25/18 14:40 Received: 07/26/18 08:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.134 ± 0.524 (1.00) C:NA T:77%**	pCi/L	08/09/18 19:57	13982-63-3	
Radium-228	EPA 904.0	**0.568 ± 0.406 (0.788) C:77% T:80%**	pCi/L	08/09/18 14:56	15262-20-1	
Total Radium	Total Radium Calculation	**0.702 ± 0.930 (1.79)**	pCi/L	08/14/18 14:51	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: M.L. KAPP ASH POND
Pace Project No.: 60275850

Sample: MW-306 **Lab ID: 60275850006** Collected: 07/25/18 15:26 Received: 07/26/18 08:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.168 ± 0.365 (0.674) C:NA T:96%**	pCi/L	08/09/18 19:57	13982-63-3	
Radium-228	EPA 904.0	**0.00726 ± 0.285 (0.668) C:79% T:82%**	pCi/L	08/09/18 14:56	15262-20-1	
Total Radium	Total Radium Calculation	**0.175 ± 0.650 (1.34)**	pCi/L	08/14/18 14:51	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: M.L. KAPP ASH POND
Pace Project No.: 60275850

Sample: FIELD BLANK **Lab ID: 60275850007** Collected: 07/25/18 11:15 Received: 07/26/18 08:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.000 ± 0.445 (0.910) C:NA T:91%**	pCi/L	08/09/18 19:57	13982-63-3	
Radium-228	EPA 904.0	**0.423 ± 0.403 (0.823) C:75% T:75%**	pCi/L	08/09/18 14:56	15262-20-1	
Total Radium	Total Radium Calculation	**0.423 ± 0.848 (1.73)**	pCi/L	08/14/18 14:51	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL - RADIOCHEMISTRY

Project: M.L. KAPP ASH POND
Pace Project No.: 60275850

QC Batch: 307664 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples: 60275850001, 60275850002, 60275850003, 60275850004, 60275850005, 60275850006, 60275850007

METHOD BLANK: 1503853 Matrix: Water
Associated Lab Samples: 60275850001, 60275850002, 60275850003, 60275850004, 60275850005, 60275850006, 60275850007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.121 ± 0.276 (0.445) C:NA T:89%	pCi/L	08/09/18 19:26	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL - RADIOCHEMISTRY

Project: M.L. KAPP ASH POND
Pace Project No.: 60275850

QC Batch: 308030 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 60275850001, 60275850002, 60275850003, 60275850004, 60275850005, 60275850006, 60275850007

METHOD BLANK: 1505670 Matrix: Water
Associated Lab Samples: 60275850001, 60275850002, 60275850003, 60275850004, 60275850005, 60275850006, 60275850007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.112 ± 0.353 (0.798) C:71% T:78%	pCi/L	08/09/18 11:39	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Lenexa, KS 66219
(913)599-5665

QUALIFIERS

Project: M.L. KAPP ASH POND
Pace Project No.: 60275850

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval). Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: M.L. KAPP ASH POND
Pace Project No.: 60275850

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60275850001	**MW-301**	EPA 903.1	307664		
60275850002	**MW-302**	EPA 903.1	307664		
60275850003	**MW-303**	EPA 903.1	307664		
60275850004	**MW-304**	EPA 903.1	307664		
60275850005	**MW-305**	EPA 903.1	307664		
60275850006	**MW-306**	EPA 903.1	307664		
60275850007	**FIELD BLANK**	EPA 903.1	307664		
60275850001	**MW-301**	EPA 904.0	308030		
60275850002	**MW-302**	EPA 904.0	308030		
60275850003	**MW-303**	EPA 904.0	308030		
60275850004	**MW-304**	EPA 904.0	308030		
60275850005	**MW-305**	EPA 904.0	308030		
60275850006	**MW-306**	EPA 904.0	308030		
60275850007	**FIELD BLANK**	EPA 904.0	308030		
60275850001	**MW-301**	Total Radium Calculation	309544		
60275850002	**MW-302**	Total Radium Calculation	309544		
60275850003	**MW-303**	Total Radium Calculation	309544		
60275850004	**MW-304**	Total Radium Calculation	309545		
60275850005	**MW-305**	Total Radium Calculation	309545		
60275850006	**MW-306**	Total Radium Calculation	309545		
60275850007	**FIELD BLANK**	Total Radium Calculation	309545		

Pace Analytical
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Sample Condition Upon Receipt

WO# : 60275850

60275850

HWK

Client Name: SCS Eng.

Courier: FedEx ☑ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☐ Client ☐ Other ☐

Tracking #: 4368 7278 7060 Pace Shipping Label Used? Yes ☐ No ☐

Custody Seal on Cooler/Box Present: Yes ☑ No ☐ Seals intact: Yes ☑ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☑ Other ☐

Thermometer Used: 296 **Type of Ice:** (Wet) Blue None melted

Cooler Temperature (°C): **As-read** 5.4 **Corr. Factor** +1.3 **Corrected** 6.7

Date and initials of person examining contents: 07/26/19

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☑No ☐N/A	
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	
Sufficient volume:	☑Yes ☐No ☐N/A	
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	
Containers intact:	☑Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☑N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	
Sample labels match COC: Date / time / ID / analyses	☑Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☑No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	☑Yes ☐No ☐N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☐Yes ☑No ☐N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: HWK Date: 7-26-2019

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: of

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	SCS Engineers	Report To:	Meghan Blodgett	Attention:	Meghan Blodgett/Jess Valcheff
Address:	2830 Dairy Drive	Copy To:	Tom Karwaski	Company Name:	SCS Engineers
	Madison WI 53718			Address:	
Email To:	mblodgett@scsengineers.com	Purchase Order No.:		Pace Quote Reference:	
Phone:	608-216-7362 Fax:	Project Name:	M.L. Kapp Ash Pond	Pace Project Manager:	Trudy Gipson 913-563-1405
Requested Due Date/TAT:		Project Number:	25218061.00.	Pace Profile #:	6696 Line 2

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER

☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: IA

08/30/2019 - Classification: Internal - ECRM67000181

Section D Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	903.1 Radium-226	904.0 Radium-228	Total Radium	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D. 60275850
1	MW-301	WT	G	xxx	xxx	7/25/18	1134	13.3	2			2						X	X	X		2(BAN)	001
2	MW-302	WT	G	xxx	xxx	7/25/18	1226	13.2	2			2						X	X	X			002
3	MW-303	WT	G	xxx	xxx	7/25/18	1314	13.8	2			2						X	X	X			003
4	MW-304	WT	G	xxx	xxx	7/25/18	1359	13.4	2			2						X	X	X			004
5	MW-305	WT	G	xxx	xxx	7/25/18	1440	13.7	2			2						X	X	X			005
6	MW-306	WT	G	xxx	xxx	7/25/18	1526	13.2	2			2						X	X	X			006
7	FIELD BLANK	WT	G	xxx	xxx	7/25/18	1115		2			2						X	X	X			007
8																							
9																							
10																							
11																							
12																							

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Ship To: 9608 Loiret Boulevard, Lenexa, KS 66219	Charles Ann SCS	7/25/18	1700	PACE	07/26/18	0830	6.7	N	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:

SIGNATURE of SAMPLER: DATE Signed (MM/DD/YY):

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-Feb-2007

Chain of Custody

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: IA

Pace Analytical® www.pacelabs.com

Workorder: 60275850 **Workorder Name:** M.L. KAPP ASH POND **Owner Received Date:** 7/26/2018 **Results Requested By:** 8/16/2018

Report To	Subcontract To
Hank Kapka Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone (913)599-5665	Pace Analytical Pittsburgh 1638 Roseytown Road Suites 2,3, & 4 Greensburg, PA 15601 Phone (724)850-5600

WO# : 30260549

30260549

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers HNO3						903.1 Ra-226/ 904.0 Ra-228	Total Ra										LAB USE ONLY
1	MW-301	PS	7/25/2018 11:34	60275850001	Water	1						X	X										001
2	MW-302	PS	7/25/2018 12:26	60275850002	Water	1						X	X										002
3	MW-303	PS	7/25/2018 13:14	60275850003	Water	1						X	X										003
4	MW-304	PS	7/25/2018 13:59	60275850004	Water	1						X	X										004
5	MW-305	PS	7/25/2018 14:40	60275850005	Water	1						X	X										005
6	MW-306	PS	7/25/2018 15:26	60275850006	Water	1						X	X										006
7	FIELD BLANK	PS	7/25/2018 11:15	60275850007	Water	1						X	X										007

Transfers	Released By	Date/Time	Received By	Date/Time
1	[signature]	7/26 1700	[signature]	7/27/18 1030
2				
3				

Comments

Cooler Temperature on Receipt 8.2 °C | Custody Seal (Y) or N | Received on Ice (Y) or N | Samples Intact (Y) or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

Pittsburgh Lab Sample Condition Upon Receipt

Pace Analytical

Client Name: PaceKS Project # 30260549

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other _____

Label MJS

LIMS Login BATH

Tracking #: 4310872789956

Custody Seal on Cooler/Box Present: ☑ yes ☐ no Seals intact: ☑ yes ☐ no

Thermometer Used 7 Type of Ice: (Wet) Blue None melted

Cooler Temperature Observed Temp 8.3 °C Correction Factor: -0.1 °C Final Temp: 8.2 °C

Temp should be above freezing to 6°C

Comments:	Yes	No	N/A	pH paper Lot# 10D3071 / Date and Initials of person examining contents: MJS 7-27-18
Chain of Custody Present:	✓			1.
Chain of Custody Filled Out:	✓			2.
Chain of Custody Relinquished:	✓			3.
Sampler Name & Signature on COC:		✓		4.
Sample Labels match COC: -Includes date/time/ID Matrix: WT	✓			5.
Samples Arrived within Hold Time:	✓			6.
Short Hold Time Analysis (<72hr remaining):		✓		7.
Rush Turn Around Time Requested:		✓		8.
Sufficient Volume:	✓			9.
Correct Containers Used: -Pace Containers Used:	✓ ✓			10.
Containers Intact:	✓			11.
Orthophosphate field filtered			✓	12.
Hex Cr Aqueous Compliance/NPDES sample field filtered			✓	13.
Organic Samples checked for dechlorination:			✓	14.
Filtered volume received for Dissolved tests			✓	15.
All containers have been checked for preservation. All containers needing preservation are found to be in compliance with EPA recommendation.	✓ ✓			16. pH<2
exceptions: VOA, coliform, TOC, O&G, Phenolics				Initial when completed MJS / Date/time of preservation / Lot # of added preservative
Headspace in VOA Vials (>6mm):			✓	17.
Trip Blank Present:			✓	18.
Trip Blank Custody Seals Present			✓	
Rad Aqueous Samples Screened > 0.5 mrem/hr		✓		Initial when completed: MJS Date: 7-27-18

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____ Contacted By: _____

Comments/ Resolution: _____

☐ **A check in this box indicates that additional information has been stored in ereports.**

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

A5 Round 5 Background Sampling, Analytical Laboratory Report

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

October 22, 2018

Meghan Blodgett
SCS Engineers
2830 Dairy Drive
Madison, WI 53718

RE: Project: M.L. KAPP ASH POND
Pace Project No.: 60282953

Dear Meghan Blodgett:
Enclosed are the analytical results for sample(s) received by the laboratory on October 06, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Hank Kapka
hank.kapka@pacelabs.com
(913)599-5665
PM Lab Management

Enclosures

cc: Tom Karwaski, SCS Engineers
Nicole Kron, SCS Engineers
Jeff Maxted, Alliant Energy
Jess Valcheff, SCS Engeineers

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: M.L. KAPP ASH POND
Pace Project No.: 60282953

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991
Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 9526
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: M.L. KAPP ASH POND
Pace Project No.: 60282953

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60282953001	**MW-301**	Water	10/05/18 09:00	10/06/18 08:30
60282953002	**MW-302**	Water	10/05/18 11:50	10/06/18 08:30
60282953003	**MW-303**	Water	10/05/18 11:45	10/06/18 08:30
60282953004	**MW-304**	Water	10/05/18 10:55	10/06/18 08:30
60282953005	**MW-305**	Water	10/05/18 09:55	10/06/18 08:30
60282953006	**MW-306**	Water	10/05/18 10:49	10/06/18 08:30
60282953007	**FIELD BLANK**	Water	10/05/18 10:50	10/06/18 08:30

Pace Analytical Services, LLC
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(913)599-5665

SAMPLE ANALYTE COUNT

Project: M.L. KAPP ASH POND
Pace Project No.: 60282953

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60282953001	**MW-301**	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60282953002	**MW-302**	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60282953003	**MW-303**	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60282953004	**MW-304**	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60282953005	**MW-305**	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60282953006	**MW-306**	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60282953007	**FIELD BLANK**	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: M.L. KAPP ASH POND
Pace Project No.: 60282953

Sample: MW-301 **Lab ID: 60282953001** Collected: 10/05/18 09:00 Received: 10/06/18 08:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.281 ± 0.551 (1.01) C:NA T:76%**	pCi/L	10/19/18 19:11	13982-63-3	
Radium-228	EPA 904.0	**1.03 ± 0.450 (0.739) C:71% T:90%**	pCi/L	10/18/18 13:05	15262-20-1	
Total Radium	Total Radium Calculation	**1.31 ± 1.00 (1.75)**	pCi/L	10/22/18 12:29	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: M.L. KAPP ASH POND
Pace Project No.: 60282953

Sample: MW-302 **Lab ID: 60282953002** Collected: 10/05/18 11:50 Received: 10/06/18 08:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.0932 ± 0.548 (1.12) C:NA T:79%**	pCi/L	10/19/18 19:11	13982-63-3	
Radium-228	EPA 904.0	**0.537 ± 0.363 (0.695) C:77% T:87%**	pCi/L	10/18/18 13:05	15262-20-1	
Total Radium	Total Radium Calculation	**0.630 ± 0.911 (1.82)**	pCi/L	10/22/18 12:29	7440-14-4	

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: M.L. KAPP ASH POND
Pace Project No.: 60282953

Sample: MW-303 **Lab ID: 60282953003** Collected: 10/05/18 11:45 Received: 10/06/18 08:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.424 ± 0.554 (0.914) C:NA T:85%**	pCi/L	10/19/18 19:11	13982-63-3	
Radium-228	EPA 904.0	**0.668 ± 0.399 (0.730) C:71% T:81%**	pCi/L	10/18/18 13:05	15262-20-1	
Total Radium	Total Radium Calculation	**1.09 ± 0.953 (1.64)**	pCi/L	10/22/18 12:29	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: M.L. KAPP ASH POND
Pace Project No.: 60282953

Sample: MW-304 **Lab ID: 60282953004** Collected: 10/05/18 10:55 Received: 10/06/18 08:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.0953 ± 0.494 (1.03) C:NA T:77%**	pCi/L	10/19/18 19:11	13982-63-3	
Radium-228	EPA 904.0	**0.371 ± 0.454 (0.966) C:75% T:91%**	pCi/L	10/18/18 13:03	15262-20-1	
Total Radium	Total Radium Calculation	**0.466 ± 0.948 (2.00)**	pCi/L	10/22/18 12:29	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: M.L. KAPP ASH POND
Pace Project No.: 60282953

Sample: MW-305 **Lab ID: 60282953005** Collected: 10/05/18 09:55 Received: 10/06/18 08:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.398 ± 0.782 (1.40) C:NA T:79%**	pCi/L	10/19/18 19:11	13982-63-3	
Radium-228	EPA 904.0	**1.61 ± 0.653 (1.11) C:71% T:88%**	pCi/L	10/18/18 13:03	15262-20-1	
Total Radium	Total Radium Calculation	**2.01 ± 1.44 (2.51)**	pCi/L	10/22/18 12:29	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: M.L. KAPP ASH POND
Pace Project No.: 60282953

Sample: MW-306 **Lab ID: 60282953006** Collected: 10/05/18 10:49 Received: 10/06/18 08:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.370 ± 0.515 (0.860) C:NA T:74%**	pCi/L	10/19/18 19:26	13982-63-3	
Radium-228	EPA 904.0	**0.207 ± 0.447 (0.986) C:76% T:82%**	pCi/L	10/18/18 13:03	15262-20-1	
Total Radium	Total Radium Calculation	**0.577 ± 0.962 (1.85)**	pCi/L	10/22/18 12:29	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: M.L. KAPP ASH POND
Pace Project No.: 60282953

Sample: FIELD BLANK **Lab ID: 60282953007** Collected: 10/05/18 10:50 Received: 10/06/18 08:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.247 ± 0.582 (1.08) C:NA T:84%**	pCi/L	10/19/18 19:26	13982-63-3	
Radium-228	EPA 904.0	**-0.366 ± 0.460 (1.10) C:77% T:85%**	pCi/L	10/18/18 13:03	15262-20-1	
Total Radium	Total Radium Calculation	**0.247 ± 1.04 (2.18)**	pCi/L	10/22/18 12:29	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: M.L. KAPP ASH POND
Pace Project No.: 60282953

QC Batch: 316247 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples: 60282953001, 60282953002, 60282953003, 60282953004, 60282953005, 60282953006, 60282953007

METHOD BLANK: 1543379 Matrix: Water
Associated Lab Samples: 60282953001, 60282953002, 60282953003, 60282953004, 60282953005, 60282953006, 60282953007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.511 ± 0.582 (0.918) C:NA T:82%	pCi/L	10/19/18 18:42	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: M.L. KAPP ASH POND
Pace Project No.: 60282953

QC Batch: 316249 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 60282953001, 60282953002, 60282953003, 60282953004, 60282953005, 60282953006, 60282953007

METHOD BLANK: 1543384 Matrix: Water
Associated Lab Samples: 60282953001, 60282953002, 60282953003, 60282953004, 60282953005, 60282953006, 60282953007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.143 ± 0.240 (0.523) C:73% T:97%	pCi/L	10/18/18 13:05	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: M.L. KAPP ASH POND
Pace Project No.: 60282953

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval). Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: M.L. KAPP ASH POND
Pace Project No.: 60282953

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60282953001	**MW-301**	EPA 903.1	316247		
60282953002	**MW-302**	EPA 903.1	316247		
60282953003	**MW-303**	EPA 903.1	316247		
60282953004	**MW-304**	EPA 903.1	316247		
60282953005	**MW-305**	EPA 903.1	316247		
60282953006	**MW-306**	EPA 903.1	316247		
60282953007	**FIELD BLANK**	EPA 903.1	316247		
60282953001	**MW-301**	EPA 904.0	316249		
60282953002	**MW-302**	EPA 904.0	316249		
60282953003	**MW-303**	EPA 904.0	316249		
60282953004	**MW-304**	EPA 904.0	316249		
60282953005	**MW-305**	EPA 904.0	316249		
60282953006	**MW-306**	EPA 904.0	316249		
60282953007	**FIELD BLANK**	EPA 904.0	316249		
60282953001	**MW-301**	Total Radium Calculation	317515		
60282953002	**MW-302**	Total Radium Calculation	317515		
60282953003	**MW-303**	Total Radium Calculation	317515		
60282953004	**MW-304**	Total Radium Calculation	317515		
60282953005	**MW-305**	Total Radium Calculation	317515		
60282953006	**MW-306**	Total Radium Calculation	317515		
60282953007	**FIELD BLANK**	Total Radium Calculation	317515		

Pace Analytical® www.pacelabs.com

Sample Condition Upon Receipt

WO#: 60282953

60282953

Client Name: SCS Engineers

Courier: FedEx ☑ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☐ Client ☐ Other ☐

Tracking #: 8130 2340 5933 Pace Shipping Label Used? Yes ☐ No ☑

Custody Seal on Cooler/Box Present: Yes ☐ No ☑ Seals intact: Yes ☐ No ☑

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☐ Other ☑ Ziplc

Thermometer Used: T-298 **Type of Ice:** Wet Blue None ☑

Cooler Temperature (°C): As-read 17.7 **Corr. Factor** 0.0 **Corrected** 17.7

Date and initials of person examining contents: 10/6/18 MK

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☑No ☐N/A	
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	
Sufficient volume:	☑Yes ☐No ☐N/A	
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	
Containers intact:	☑Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☑N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	
Sample labels match COC: Date / time / ID / analyses	☑Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☑No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	☑Yes ☐No ☐N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only) Potassium iodide test strip turns blue/purple? (Preserve)	 ☐Yes ☐No ☐Yes ☐No	
Trip Blank present:	☐Yes ☐No ☑N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: ____________ Date/Time: ____________

Comments/ Resolution: ____________

Project Manager Review: HWK Date: 10-8-2018

F-KS-C-003-Rev.11, February 28, 2018

Pace Analytical
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: of

Section A — **Required** Client Information:

Company:	SCS Engineers
Address:	2830 Dairy Drive
	Madison WI 53718
Email To:	mblodgett@scsengineers.com
Phone: 608-216-7362	Fax:
Requested Due Date/TAT:	

Section B — **Required** Project Information:

Report To:	Meghan Blodgett
Copy To:	Tom Karwaski
Purchase Order No.:	
Project Name:	M.L. Kapp Ash Pond
Project Number	25218061.00.

Section C — Invoice Information:

Attention:	Meghan Blodgett/Jess Valcheff
Company Name:	SCS Engineers
Address:	
Pace Quote Reference:	
Pace Project Manager:	Trudy Gipson 913-563-1405
Pace Profile #:	6696 Line 2

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: IA

Section D — **Required** Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

Requested Analysis Filtered (Y/N)

ITEM #	Sample ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED: COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	903.1 Radium-226	904.0 Radium-228	Total Radium	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-301	WT	G	xxx	xxx	1015	960		2			2							X	X	X		2 DPIN 001
2	MW-302	WT	G	xxx	xxx	1015	1150		2			2							X	X	X		002
3	MW-303	WT	G	xxx	xxx	1015	1145		2			2							X	X	X		003
4	MW-304	WT	G	xxx	xxx	1015	1055		2			2							X	X	X		004
5	MW-305	WT	G	xxx	xxx	1015	955		2			2							X	X	X		005
6	MW-306	WT	G	xxx	xxx	1015	1049		2			2							X	X	X		006
7	FIELD BLANK	WT	G	xxx	xxx	1015	1050		2			2							X	X	X		007
8																							
9																							
10																							
11																							
12																							

6282953

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Ship To: 9608 Loiret Boulevard, Lenexa, KS 66219	SCS	1015	1600	EBrackett / Pace	10/16/18	0830	17.7	N	N	Y

SAMPLER NAME AND SIGNATURE	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER:				
SIGNATURE of SAMPLER: DATE Signed (MM/DD/YY):				

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-Feb-2007

Chain of Custody

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: IA
Cert. Needed: ☒ Yes ☐ No
Owner Received Date: 10/6/2018 **Results Requested By:** 10/29/2018

Workorder: 60282953 **Workorder Name:** M.L. KAPP ASH POND

Report To	Subcontract To
Hank Kapka Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone (913)599-5665	Pace Analytical Pittsburgh 1638 Roseytown Road Suites 2,3, & 4 Greensburg, PA 15601 Phone (724)850-5600

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: HNO3	Combined Ra	Ra 226/228	LAB USE ONLY
1	MW-301	PS	10/5/2018 09:00	60282953001	Water	2	X	X	
2	MW-302	PS	10/5/2018 11:50	60282953002	Water	2	X	X	
3	MW-303	PS	10/5/2018 11:45	60282953003	Water	2	X	X	
4	MW-304	PS	10/5/2018 10:55	60282953004	Water	2	X	X	
5	MW-305	PS	10/5/2018 09:55	60282953005	Water	2	X	X	
6	MW-306	PS	10/5/2018 10:49	60282953006	Water	2	X	X	
7	FIELD BLANK	PS	10/5/2018 10:50	60282953007	Water	2	X	X	

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	Wzipt Pcsi	10/8/18 1600	[signature] PACE	10/09/18 1000	
2					
3					

Cooler Temperature on Receipt — °C | Custody Seal Y or (N) | Received on Ice Y or (N) | Samples Intact (Y) or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.*
This chain of custody is considered complete as is since this information is available in the owner laboratory.

WO#: 30267604
30267604

Pittsburgh Lab Sample Condition Upon Receipt

Face Analytical

Client Name: Pacics

Project # 30267604

Label JVB

LIMS Login MJD

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other _____

Tracking #: 4542 7783 7458

Custody Seal on Cooler/Box Present: ☐ yes ☑ no Seals intact: ☐ yes ☑ no

Thermometer Used NA Type of Ice: Wet Blue (None)

Cooler Temperature Observed Temp _____ °C Correction Factor: _____ °C Final Temp: _____ °C

Temp should be above freezing to 6°C

pH paper Lot# 10D-1671 Date and Initials of person examining contents: 10/09/18 JVB

Comments:	Yes	No	N/A	
Chain of Custody Present:	✓			1.
Chain of Custody Filled Out:	✓			2.
Chain of Custody Relinquished:	✓			3.
Sampler Name & Signature on COC:		✓		4.
Sample Labels match COC: -Includes date/time/ID Matrix: WT	✓			5.
Samples Arrived within Hold Time:	✓			6.
Short Hold Time Analysis (<72hr remaining):		✓		7.
Rush Turn Around Time Requested:		✓		8.
Sufficient Volume:	✓			9.
Correct Containers Used: -Pace Containers Used:	✓			10.
Containers Intact:	✓			11.
Orthophosphate field filtered			✓	12.
Hex Cr Aqueous Compliance/NPDES sample field filtered			✓	13.
Organic Samples checked for dechlorination:			✓	14.
Filtered volume received for Dissolved tests			✓	15.
All containers have been checked for preservation. All containers needing preservation are found to be in compliance with EPA recommendation. exceptions: VOA, coliform, TOC, O&G, Phenolics	✓ ✓			16. pH<2 Initial when completed JVB Date/time of preservation Lot # of added preservative
Headspace in VOA Vials (>6mm):			✓	17.
Trip Blank Present:		✓		18.
Trip Blank Custody Seals Present			✓	
Rad Aqueous Samples Screened > 0.5 mrem/hr		✓		Initial when completed JVB Date: 10/09/18

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____ Contacted By: _____

Comments/ Resolution: _____

☐ **A check in this box indicates that additional information has been stored in ereports.**

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

November 05, 2018

Meghan Blodgett
SCS Engineers
2830 Dairy Drive
Madison, WI 53718

RE: Project: M.L. KAPP ASH POND 25218061.00
Pace Project No.: 60282950

Dear Meghan Blodgett:
Enclosed are the analytical results for sample(s) received by the laboratory on October 06, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Hank Kapka
hank.kapka@pacelabs.com
(913)599-5665
PM Lab Management

Enclosures

cc: Tom Karwaski, SCS Engineers
Nicole Kron, SCS Engineers
Jeff Maxted, Alliant Energy
Jess Valcheff, SCS Engeineers

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CERTIFICATIONS

Project: M.L. KAPP ASH POND 25218061.00
Pace Project No.: 60282950

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219
Missouri Certification Number: 10090
Arkansas Drinking Water
WY STR Certification #: 2456.01
Arkansas Certification #: 18-016-0
Arkansas Drinking Water
Illinois Certification #: 004455
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212018-1
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407-18-11
Utah Certification #: KS000212018-8
Kansas Field Laboratory Accreditation: # E-92587
Missouri Certification: 10070
Missouri Certification Number: 10090

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: M.L. KAPP ASH POND 25218061.00
Pace Project No.: 60282950

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60282950001	**MW-301**	Water	10/05/18 09:00	10/06/18 08:30
60282950002	**MW-302**	Water	10/05/18 11:50	10/06/18 08:30
60282950003	**MW-303**	Water	10/05/18 11:45	10/06/18 08:30
60282950004	**MW-304**	Water	10/05/18 10:55	10/06/18 08:30
60282950005	**MW-305**	Water	10/05/18 09:55	10/06/18 08:30
60282950006	**MW-306**	Water	10/05/18 10:49	10/06/18 08:30
60282950007	**FIELD BLANK**	Water	10/05/18 10:50	10/06/18 08:30

Pace Analytical Services, LLC
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(913)599-5665

SAMPLE ANALYTE COUNT

Project: M.L. KAPP ASH POND 25218061.00
Pace Project No.: 60282950

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60282950001	**MW-301**	EPA 6010	CTR	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	SMW	1	PASI-K
		SM 2540C	JDA	1	PASI-K
		EPA 9040	ZMH	1	PASI-K
		EPA 9056	WNM	3	PASI-K
60282950002	**MW-302**	EPA 6010	CTR	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	SMW	1	PASI-K
		SM 2540C	JDA	1	PASI-K
		EPA 9040	ZMH	1	PASI-K
		EPA 9056	WNM	3	PASI-K
60282950003	**MW-303**	EPA 6010	CTR	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	SMW	1	PASI-K
		SM 2540C	JDA	1	PASI-K
		EPA 9040	ZMH	1	PASI-K
		EPA 9056	WNM	3	PASI-K
60282950004	**MW-304**	EPA 6010	CTR	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	SMW	1	PASI-K
		SM 2540C	JDA	1	PASI-K
		EPA 9040	ZMH	1	PASI-K
		EPA 9056	WNM	3	PASI-K
60282950005	**MW-305**	EPA 6010	CTR	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	SMW	1	PASI-K
		SM 2540C	JDA	1	PASI-K
		EPA 9040	ZMH	1	PASI-K
		EPA 9056	WNM	3	PASI-K
60282950006	**MW-306**	EPA 6010	CTR	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	SMW	1	PASI-K
		SM 2540C	JDA	1	PASI-K
		EPA 9040	ZMH	1	PASI-K
		EPA 9056	WNM	3	PASI-K
60282950007	**FIELD BLANK**	EPA 6010	CTR	3	PASI-K

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SAMPLE ANALYTE COUNT

Project: M.L. KAPP ASH POND 25218061.00
Pace Project No.: 60282950

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6020	JGP	11	PASI-K
		EPA 7470	SMW	1	PASI-K
		SM 2540C	JDA	1	PASI-K
		EPA 9040	ZMH	1	PASI-K
		EPA 9056	WNM	3	PASI-K

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ANALYTICAL RESULTS

Project: M.L. KAPP ASH POND 25218061.00
Pace Project No.: 60282950

Sample: MW-301 **Lab ID: 60282950001** Collected: 10/05/18 09:00 Received: 10/06/18 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**CLIENT**				1		10/05/18 09:00		
Field pH	**7.05**	Std. Units	0.10	0.050	1		10/05/18 09:00		
Field Temperature	**13.8**	deg C	0.50	0.25	1		10/05/18 09:00		
Field Specific Conductance	**780**	umhos/cm	1.0	1.0	1		10/05/18 09:00		
Field Oxidation Potential	**-110**	mV			1		10/05/18 09:00		
Oxygen, Dissolved	**0.18**	mg/L			1		10/05/18 09:00	7782-44-7	
Turbidity	**3.94**	NTU	1.0	1.0	1		10/05/18 09:00		
Groundwater Elevation	**580.04**	feet			1		10/05/18 09:00		
6010 MET ICP	Analytical Method: EPA 6010	Preparation Method: EPA 3010							
Boron	**3620**	ug/L	100	12.5	1	10/16/18 15:00	10/17/18 13:11	7440-42-8	
Calcium	**114**	mg/L	0.20	0.054	1	10/16/18 15:00	10/17/18 13:11	7440-70-2	
Lithium	**5.8J**	ug/L	10.0	4.6	1	10/16/18 15:00	10/17/18 13:11	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020	Preparation Method: EPA 3010							
Antimony	**0.10J**	ug/L	1.0	0.078	1	11/01/18 12:50	11/02/18 17:01	7440-36-0	
Arsenic	**0.99J**	ug/L	1.0	0.065	1	11/01/18 12:50	11/02/18 17:01	7440-38-2	
Barium	**165**	ug/L	1.0	0.28	1	11/01/18 12:50	11/02/18 17:01	7440-39-3	
Beryllium	**<0.089**	ug/L	0.50	0.089	1	11/01/18 12:50	11/02/18 17:01	7440-41-7	
Cadmium	**0.050J**	ug/L	0.50	0.033	1	11/01/18 12:50	11/02/18 17:01	7440-43-9	
Chromium	**0.13J**	ug/L	1.0	0.079	1	11/01/18 12:50	11/02/18 17:01	7440-47-3	
Cobalt	**0.22J**	ug/L	1.0	0.062	1	11/01/18 12:50	11/02/18 17:01	7440-48-4	
Lead	**<0.13**	ug/L	1.0	0.13	1	11/01/18 12:50	11/02/18 17:01	7439-92-1	
Molybdenum	**42.8**	ug/L	1.0	0.57	1	11/01/18 12:50	11/02/18 17:01	7439-98-7	
Selenium	**0.086J**	ug/L	1.0	0.085	1	11/01/18 12:50	11/02/18 17:01	7782-49-2	
Thallium	**<0.099**	ug/L	1.0	0.099	1	11/01/18 12:50	11/02/18 17:01	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470	Preparation Method: EPA 7470							
Mercury	**0.15J**	ug/L	0.20	0.090	1	10/15/18 17:35	10/16/18 12:34	7439-97-6	B
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**608**	mg/L	5.0	5.0	1		10/10/18 14:50		
9040 pH	Analytical Method: EPA 9040								
pH	**7.0**	Std. Units	0.10	0.10	1		10/10/18 12:29		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**63.5**	mg/L	5.0	1.4	5		10/18/18 00:51	16887-00-6	
Fluoride	**0.30**	mg/L	0.20	0.19	1		10/18/18 00:35	16984-48-8	
Sulfate	**130**	mg/L	50.0	12.0	50		10/18/18 01:07	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: M.L. KAPP ASH POND 25218061.00
Pace Project No.: 60282950

Sample: MW-302 **Lab ID: 60282950002** Collected: 10/05/18 11:50 Received: 10/06/18 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**CLIENT**				1		10/05/18 11:50		
Field pH	**7.83**	Std. Units	0.10	0.050	1		10/05/18 11:50		
Field Temperature	**14.9**	deg C	0.50	0.25	1		10/05/18 11:50		
Field Specific Conductance	**11.0**	umhos/cm	1.0	1.0	1		10/05/18 11:50		
Field Oxidation Potential	**194.0**	mV			1		10/05/18 11:50		
Oxygen, Dissolved	**3.79**	mg/L			1		10/05/18 11:50	7782-44-7	
Turbidity	**3.65**	NTU	1.0	1.0	1		10/05/18 11:50		
Groundwater Elevation	**579.88**	feet			1		10/05/18 11:50		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**5190**	ug/L	100	12.5	1	10/16/18 15:00	10/17/18 13:15	7440-42-8	
Calcium	**58.9**	mg/L	0.20	0.054	1	10/16/18 15:00	10/17/18 13:15	7440-70-2	
Lithium	**9.9J**	ug/L	10.0	4.6	1	10/16/18 15:00	10/17/18 13:15	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.25J**	ug/L	1.0	0.078	1	11/01/18 12:50	11/02/18 17:07	7440-36-0	
Arsenic	**8.7**	ug/L	1.0	0.065	1	11/01/18 12:50	11/02/18 17:07	7440-38-2	
Barium	**42.3**	ug/L	1.0	0.28	1	11/01/18 12:50	11/02/18 17:07	7440-39-3	
Beryllium	**<0.089**	ug/L	0.50	0.089	1	11/01/18 12:50	11/02/18 17:07	7440-41-7	
Cadmium	**0.087J**	ug/L	0.50	0.033	1	11/01/18 12:50	11/02/18 17:07	7440-43-9	
Chromium	**0.29J**	ug/L	1.0	0.079	1	11/01/18 12:50	11/02/18 17:07	7440-47-3	
Cobalt	**0.12J**	ug/L	1.0	0.062	1	11/01/18 12:50	11/02/18 17:07	7440-48-4	
Lead	**<0.13**	ug/L	1.0	0.13	1	11/01/18 12:50	11/02/18 17:07	7439-92-1	
Molybdenum	**212**	ug/L	1.0	0.57	1	11/01/18 12:50	11/02/18 17:07	7439-98-7	M1
Selenium	**0.40J**	ug/L	1.0	0.085	1	11/01/18 12:50	11/02/18 17:07	7782-49-2	
Thallium	**<0.099**	ug/L	1.0	0.099	1	11/01/18 12:50	11/02/18 17:07	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**0.14J**	ug/L	0.20	0.090	1	10/15/18 17:35	10/16/18 12:36	7439-97-6	B
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**467**	mg/L	5.0	5.0	1		10/10/18 14:50		
9040 pH	Analytical Method: EPA 9040								
pH	**8.4**	Std. Units	0.10	0.10	1		10/10/18 12:40		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**18.2**	mg/L	1.0	0.29	1		10/18/18 01:24	16887-00-6	
Fluoride	**0.45**	mg/L	0.20	0.19	1		10/18/18 01:24	16984-48-8	
Sulfate	**215**	mg/L	50.0	12.0	50		10/18/18 01:57	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: M.L. KAPP ASH POND 25218061.00
Pace Project No.: 60282950

Sample: MW-303 **Lab ID: 60282950003** Collected: 10/05/18 11:45 Received: 10/06/18 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**CLIENT**				1		10/05/18 11:44		
Field pH	**8.70**	Std. Units	0.10	0.050	1		10/05/18 11:44		
Field Temperature	**13.9**	deg C	0.50	0.25	1		10/05/18 11:44		
Field Specific Conductance	**872**	umhos/cm	1.0	1.0	1		10/05/18 11:44		
Field Oxidation Potential	**-211.8**	mV			1		10/05/18 11:44		
Oxygen, Dissolved	**0.09**	mg/L			1		10/05/18 11:44	7782-44-7	
Turbidity	**4.61**	NTU	1.0	1.0	1		10/05/18 11:44		
Groundwater Elevation	**579.74**	feet			1		10/05/18 11:44		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**3980**	ug/L	100	12.5	1	10/16/18 15:00	10/17/18 13:18	7440-42-8	
Calcium	**129**	mg/L	0.20	0.054	1	10/16/18 15:00	10/17/18 13:18	7440-70-2	
Lithium	**15.6**	ug/L	10.0	4.6	1	10/16/18 15:00	10/17/18 13:18	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.26J**	ug/L	1.0	0.078	1	11/01/18 12:50	11/02/18 17:08	7440-36-0	
Arsenic	**5.6**	ug/L	1.0	0.065	1	11/01/18 12:50	11/02/18 17:08	7440-38-2	
Barium	**39.0**	ug/L	1.0	0.28	1	11/01/18 12:50	11/02/18 17:08	7440-39-3	
Beryllium	**<0.089**	ug/L	0.50	0.089	1	11/01/18 12:50	11/02/18 17:08	7440-41-7	
Cadmium	**0.12J**	ug/L	0.50	0.033	1	11/01/18 12:50	11/02/18 17:08	7440-43-9	
Chromium	**0.20J**	ug/L	1.0	0.079	1	11/01/18 12:50	11/02/18 17:08	7440-47-3	
Cobalt	**0.33J**	ug/L	1.0	0.062	1	11/01/18 12:50	11/02/18 17:08	7440-48-4	
Lead	**<0.13**	ug/L	1.0	0.13	1	11/01/18 12:50	11/02/18 17:08	7439-92-1	
Molybdenum	**110**	ug/L	1.0	0.57	1	11/01/18 12:50	11/02/18 17:08	7439-98-7	
Selenium	**0.72J**	ug/L	1.0	0.085	1	11/01/18 12:50	11/02/18 17:08	7782-49-2	
Thallium	**<0.099**	ug/L	1.0	0.099	1	11/01/18 12:50	11/02/18 17:08	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**0.15J**	ug/L	0.20	0.090	1	10/15/18 17:35	10/16/18 12:39	7439-97-6	B
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**753**	mg/L	5.0	5.0	1		10/10/18 14:50		
9040 pH	Analytical Method: EPA 9040								
pH	**8.7**	Std. Units	0.10	0.10	1		10/10/18 12:39		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**14.7**	mg/L	1.0	0.29	1		10/18/18 02:13	16887-00-6	
Fluoride	**0.35**	mg/L	0.20	0.19	1		10/18/18 02:13	16984-48-8	
Sulfate	**459**	mg/L	50.0	12.0	50		10/18/18 02:46	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: M.L. KAPP ASH POND 25218061.00
Pace Project No.: 60282950

Sample: MW-304 **Lab ID: 60282950004** Collected: 10/05/18 10:55 Received: 10/06/18 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**CLIENT**				1		10/05/18 10:54		
Field pH	**7.47**	Std. Units	0.10	0.050	1		10/05/18 10:54		
Field Temperature	**13.6**	deg C	0.50	0.25	1		10/05/18 10:54		
Field Specific Conductance	**560.5**	umhos/cm	1.0	1.0	1		10/05/18 10:54		
Field Oxidation Potential	**-96.7**	mV			1		10/05/18 10:54		
Oxygen, Dissolved	**0.10**	mg/L			1		10/05/18 10:54	7782-44-7	
Turbidity	**13.86**	NTU	1.0	1.0	1		10/05/18 10:54		
Groundwater Elevation	**579.32**	feet			1		10/05/18 10:54		
6010 MET ICP	Analytical Method: EPA 6010	Preparation Method: EPA 3010							
Boron	**8820**	ug/L	100	12.5	1	10/16/18 15:00	10/17/18 13:20	7440-42-8	
Calcium	**56.0**	mg/L	0.20	0.054	1	10/16/18 15:00	10/17/18 13:20	7440-70-2	
Lithium	**<4.6**	ug/L	10.0	4.6	1	10/16/18 15:00	10/17/18 13:20	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020	Preparation Method: EPA 3010							
Antimony	**<0.078**	ug/L	1.0	0.078	1	11/01/18 12:50	11/02/18 17:10	7440-36-0	
Arsenic	**3.3**	ug/L	1.0	0.065	1	11/01/18 12:50	11/02/18 17:10	7440-38-2	
Barium	**47.7**	ug/L	1.0	0.28	1	11/01/18 12:50	11/02/18 17:10	7440-39-3	
Beryllium	**<0.089**	ug/L	0.50	0.089	1	11/01/18 12:50	11/02/18 17:10	7440-41-7	
Cadmium	**0.25J**	ug/L	0.50	0.033	1	11/01/18 12:50	11/02/18 17:10	7440-43-9	
Chromium	**0.33J**	ug/L	1.0	0.079	1	11/01/18 12:50	11/02/18 17:10	7440-47-3	
Cobalt	**0.56J**	ug/L	1.0	0.062	1	11/01/18 12:50	11/02/18 17:10	7440-48-4	
Lead	**0.26J**	ug/L	1.0	0.13	1	11/01/18 12:50	11/02/18 17:10	7439-92-1	
Molybdenum	**788**	ug/L	1.0	0.57	1	11/01/18 12:50	11/02/18 17:10	7439-98-7	
Selenium	**0.11J**	ug/L	1.0	0.085	1	11/01/18 12:50	11/02/18 17:10	7782-49-2	
Thallium	**<0.099**	ug/L	1.0	0.099	1	11/01/18 12:50	11/02/18 17:10	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470	Preparation Method: EPA 7470							
Mercury	**0.14J**	ug/L	0.20	0.090	1	10/15/18 17:35	10/16/18 12:46	7439-97-6	B
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**459**	mg/L	5.0	5.0	1		10/10/18 14:50		
9040 pH	Analytical Method: EPA 9040								
pH	**7.4**	Std. Units	0.10	0.10	1		10/10/18 12:37		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**35.3**	mg/L	20.0	5.8	20		10/18/18 03:51	16887-00-6	
Fluoride	**0.36**	mg/L	0.20	0.19	1		10/18/18 03:35	16984-48-8	
Sulfate	**206**	mg/L	20.0	4.8	20		10/18/18 03:51	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: M.L. KAPP ASH POND 25218061.00
Pace Project No.: 60282950

Sample: MW-305 **Lab ID: 60282950005** Collected: 10/05/18 09:55 Received: 10/06/18 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**CLIENT**				1		10/05/18 09:54		
Field pH	**7.31**	Std. Units	0.10	0.050	1		10/05/18 09:54		
Field Temperature	**14.3**	deg C	0.50	0.25	1		10/05/18 09:54		
Field Specific Conductance	**1069**	umhos/cm	1.0	1.0	1		10/05/18 09:54		
Field Oxidation Potential	**-50.2**	mV			1		10/05/18 09:54		
Oxygen, Dissolved	**0.14**	mg/L			1		10/05/18 09:54	7782-44-7	
Turbidity	**4.18**	NTU	1.0	1.0	1		10/05/18 09:54		
Groundwater Elevation	**579.15**	feet			1		10/05/18 09:54		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**16500**	ug/L	100	12.5	1	10/16/18 15:00	10/17/18 13:22	7440-42-8	
Calcium	**137**	mg/L	0.20	0.054	1	10/16/18 15:00	10/17/18 13:22	7440-70-2	
Lithium	**16.6**	ug/L	10.0	4.6	1	10/16/18 15:00	10/17/18 13:22	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.088J**	ug/L	1.0	0.078	1	11/01/18 12:50	11/02/18 17:12	7440-36-0	
Arsenic	**1.1**	ug/L	1.0	0.065	1	11/01/18 12:50	11/02/18 17:12	7440-38-2	
Barium	**78.6**	ug/L	1.0	0.28	1	11/01/18 12:50	11/02/18 17:12	7440-39-3	
Beryllium	**<0.089**	ug/L	0.50	0.089	1	11/01/18 12:50	11/02/18 17:12	7440-41-7	
Cadmium	**0.23J**	ug/L	0.50	0.033	1	11/01/18 12:50	11/02/18 17:12	7440-43-9	
Chromium	**<0.079**	ug/L	1.0	0.079	1	11/01/18 12:50	11/02/18 17:12	7440-47-3	
Cobalt	**0.38J**	ug/L	1.0	0.062	1	11/01/18 12:50	11/02/18 17:12	7440-48-4	
Lead	**<0.13**	ug/L	1.0	0.13	1	11/01/18 12:50	11/02/18 17:12	7439-92-1	
Molybdenum	**666**	ug/L	1.0	0.57	1	11/01/18 12:50	11/02/18 17:12	7439-98-7	
Selenium	**0.088J**	ug/L	1.0	0.085	1	11/01/18 12:50	11/02/18 17:12	7782-49-2	
Thallium	**<0.099**	ug/L	1.0	0.099	1	11/01/18 12:50	11/02/18 17:12	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**0.15J**	ug/L	0.20	0.090	1	10/15/18 17:35	10/16/18 12:48	7439-97-6	B
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**941**	mg/L	5.0	5.0	1		10/10/18 14:50		
9040 pH	Analytical Method: EPA 9040								
pH	**7.3**	Std. Units	0.10	0.10	1		10/10/18 12:32		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**19.6**	mg/L	1.0	0.29	1		10/18/18 04:08	16887-00-6	
Fluoride	**0.31**	mg/L	0.20	0.19	1		10/18/18 04:08	16984-48-8	
Sulfate	**472**	mg/L	100	24.0	100		10/19/18 01:28	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: M.L. KAPP ASH POND 25218061.00
Pace Project No.: 60282950

Sample: MW-306 **Lab ID: 60282950006** Collected: 10/05/18 10:49 Received: 10/06/18 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**CLIENT**				1		10/05/18 10:49		
Field pH	**7.33**	Std. Units	0.10	0.050	1		10/05/18 10:49		
Field Temperature	**13.8**	deg C	0.50	0.25	1		10/05/18 10:49		
Field Specific Conductance	**15.4**	umhos/cm	1.0	1.0	1		10/05/18 10:49		
Field Oxidation Potential	**228.1**	mV			1		10/05/18 10:49		
Oxygen, Dissolved	**5.30**	mg/L			1		10/05/18 10:49	7782-44-7	
Turbidity	**8.14**	NTU	1.0	1.0	1		10/05/18 10:49		
Groundwater Elevation	**579.46**	feet			1		10/05/18 10:49		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**17000**	ug/L	100	12.5	1	10/16/18 15:00	10/17/18 13:24	7440-42-8	
Calcium	**154**	mg/L	0.20	0.054	1	10/16/18 15:00	10/17/18 13:24	7440-70-2	
Lithium	**65.4**	ug/L	10.0	4.6	1	10/16/18 15:00	10/17/18 13:24	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.14J**	ug/L	1.0	0.078	1	11/01/18 12:50	11/02/18 17:14	7440-36-0	
Arsenic	**0.37J**	ug/L	1.0	0.065	1	11/01/18 12:50	11/02/18 17:14	7440-38-2	
Barium	**51.1**	ug/L	1.0	0.28	1	11/01/18 12:50	11/02/18 17:14	7440-39-3	
Beryllium	**<0.089**	ug/L	0.50	0.089	1	11/01/18 12:50	11/02/18 17:14	7440-41-7	
Cadmium	**0.041J**	ug/L	0.50	0.033	1	11/01/18 12:50	11/02/18 17:14	7440-43-9	
Chromium	**0.13J**	ug/L	1.0	0.079	1	11/01/18 12:50	11/02/18 17:14	7440-47-3	
Cobalt	**0.13J**	ug/L	1.0	0.062	1	11/01/18 12:50	11/02/18 17:14	7440-48-4	
Lead	**<0.13**	ug/L	1.0	0.13	1	11/01/18 12:50	11/02/18 17:14	7439-92-1	
Molybdenum	**87.6**	ug/L	1.0	0.57	1	11/01/18 12:50	11/02/18 17:14	7439-98-7	
Selenium	**2.8**	ug/L	1.0	0.085	1	11/01/18 12:50	11/02/18 17:14	7782-49-2	
Thallium	**<0.099**	ug/L	1.0	0.099	1	11/01/18 12:50	11/02/18 17:14	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**0.14J**	ug/L	0.20	0.090	1	10/15/18 17:35	10/16/18 12:50	7439-97-6	B
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**1020**	mg/L	5.0	5.0	1		10/10/18 14:50		
9040 pH	Analytical Method: EPA 9040								
pH	**7.3**	Std. Units	0.10	0.10	1		10/10/18 12:33		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**83.8**	mg/L	5.0	1.4	5		10/18/18 04:57	16887-00-6	
Fluoride	**0.26**	mg/L	0.20	0.19	1		10/18/18 04:41	16984-48-8	
Sulfate	**419**	mg/L	100	24.0	100		10/19/18 01:44	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
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(913)599-5665

ANALYTICAL RESULTS

Project: M.L. KAPP ASH POND 25218061.00
Pace Project No.: 60282950

Sample: FIELD BLANK **Lab ID: 60282950007** Collected: 10/05/18 10:50 Received: 10/06/18 08:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**46.2J**	ug/L	100	12.5	1	10/16/18 15:00	10/17/18 13:26	7440-42-8	
Calcium	**<0.054**	mg/L	0.20	0.054	1	10/16/18 15:00	10/17/18 13:26	7440-70-2	
Lithium	**<4.6**	ug/L	10.0	4.6	1	10/16/18 15:00	10/17/18 13:26	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**<0.078**	ug/L	1.0	0.078	1	11/01/18 12:50	11/02/18 17:42	7440-36-0	
Arsenic	**<0.065**	ug/L	1.0	0.065	1	11/01/18 12:50	11/02/18 17:42	7440-38-2	
Barium	**<0.28**	ug/L	1.0	0.28	1	11/01/18 12:50	11/02/18 17:42	7440-39-3	
Beryllium	**<0.089**	ug/L	0.50	0.089	1	11/01/18 12:50	11/02/18 17:42	7440-41-7	
Cadmium	**<0.033**	ug/L	0.50	0.033	1	11/01/18 12:50	11/02/18 17:42	7440-43-9	
Chromium	**<0.079**	ug/L	1.0	0.079	1	11/01/18 12:50	11/02/18 17:42	7440-47-3	
Cobalt	**<0.062**	ug/L	1.0	0.062	1	11/01/18 12:50	11/02/18 17:42	7440-48-4	
Lead	**<0.13**	ug/L	1.0	0.13	1	11/01/18 12:50	11/02/18 17:42	7439-92-1	
Molybdenum	**<0.57**	ug/L	1.0	0.57	1	11/01/18 12:50	11/02/18 17:42	7439-98-7	
Selenium	**<0.085**	ug/L	1.0	0.085	1	11/01/18 12:50	11/02/18 17:42	7782-49-2	
Thallium	**<0.099**	ug/L	1.0	0.099	1	11/01/18 12:50	11/02/18 17:42	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**0.12J**	ug/L	0.20	0.090	1	10/15/18 17:35	10/16/18 12:52	7439-97-6	B
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**6.0**	mg/L	5.0	5.0	1		10/10/18 14:50		
9040 pH	Analytical Method: EPA 9040								
pH	**5.4**	Std. Units	0.10	0.10	1		10/10/18 12:36		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**<0.29**	mg/L	1.0	0.29	1		10/18/18 05:30	16887-00-6	
Fluoride	**<0.19**	mg/L	0.20	0.19	1		10/18/18 05:30	16984-48-8	
Sulfate	**<0.24**	mg/L	1.0	0.24	1		10/18/18 05:30	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: M.L. KAPP ASH POND 25218061.00
Pace Project No.: 60282950

QC Batch: 549649 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 60282950001, 60282950002, 60282950003, 60282950004, 60282950005, 60282950006, 60282950007

METHOD BLANK: 2253959 Matrix: Water
Associated Lab Samples: 60282950001, 60282950002, 60282950003, 60282950004, 60282950005, 60282950006, 60282950007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	0.14J	0.20	0.090	10/16/18 11:58	

LABORATORY CONTROL SAMPLE: 2253960

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.6	92	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2253961 2253962

Parameter	Units	60282669001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	4.4	4.5	85	88	75-125	2	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: M.L. KAPP ASH POND 25218061.00
Pace Project No.: 60282950

QC Batch: 549876 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET
Associated Lab Samples: 60282950001, 60282950002, 60282950003, 60282950004, 60282950005, 60282950006, 60282950007

METHOD BLANK: 2254710 Matrix: Water
Associated Lab Samples: 60282950001, 60282950002, 60282950003, 60282950004, 60282950005, 60282950006, 60282950007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	ug/L	<12.5	100	12.5	10/17/18 13:07	
Calcium	mg/L	<0.054	0.20	0.054	10/17/18 13:07	
Lithium	ug/L	<4.6	10.0	4.6	10/17/18 13:07	

LABORATORY CONTROL SAMPLE: 2254711

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	972	97	80-120	
Calcium	mg/L	10	10.2	102	80-120	
Lithium	ug/L	1000	959	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2254712 2254713

Parameter	Units	60282950001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	ug/L	3620	1000	1000	4610	4580	100	97	75-125	1	20	
Calcium	mg/L	114	10	10	125	125	109	105	75-125	0	20	
Lithium	ug/L	5.8J	1000	1000	991	995	98	99	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: M.L. KAPP ASH POND 25218061.00
Pace Project No.: 60282950

QC Batch: 550090 Analysis Method: EPA 6020
QC Batch Method: EPA 3010 Analysis Description: 6020 MET
Associated Lab Samples: 60282950001, 60282950002, 60282950003, 60282950004, 60282950005, 60282950006, 60282950007

METHOD BLANK: 2255522 Matrix: Water
Associated Lab Samples: 60282950001, 60282950002, 60282950003, 60282950004, 60282950005, 60282950006, 60282950007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.078	1.0	0.078	11/02/18 16:57	
Arsenic	ug/L	<0.065	1.0	0.065	11/02/18 16:57	
Barium	ug/L	<0.28	1.0	0.28	11/02/18 16:57	
Beryllium	ug/L	<0.089	0.50	0.089	11/02/18 16:57	
Cadmium	ug/L	<0.033	0.50	0.033	11/02/18 16:57	
Chromium	ug/L	<0.079	1.0	0.079	11/02/18 16:57	
Cobalt	ug/L	<0.062	1.0	0.062	11/02/18 16:57	
Lead	ug/L	<0.13	1.0	0.13	11/02/18 16:57	
Molybdenum	ug/L	<0.57	1.0	0.57	11/02/18 16:57	
Selenium	ug/L	<0.085	1.0	0.085	11/02/18 16:57	
Thallium	ug/L	<0.099	1.0	0.099	11/02/18 16:57	

LABORATORY CONTROL SAMPLE: 2255523

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	38.8	97	80-120	
Arsenic	ug/L	40	38.9	97	80-120	
Barium	ug/L	40	37.9	95	80-120	
Beryllium	ug/L	40	37.6	94	80-120	
Cadmium	ug/L	40	38.6	96	80-120	
Chromium	ug/L	40	39.8	99	80-120	
Cobalt	ug/L	40	39.1	98	80-120	
Lead	ug/L	40	37.6	94	80-120	
Molybdenum	ug/L	40	39.6	99	80-120	
Selenium	ug/L	40	38.6	97	80-120	
Thallium	ug/L	40	36.2	91	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2255524 2255525

Parameter	Units	60282950002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	0.25J	40	40	39.4	39.6	98	98	75-125	1	20	
Arsenic	ug/L	8.7	40	40	49.6	49.2	102	101	75-125	1	20	
Barium	ug/L	42.3	40	40	81.5	81.5	98	98	75-125	0	20	
Beryllium	ug/L	<0.089	40	40	38.5	38.7	96	97	75-125	1	20	
Cadmium	ug/L	0.087J	40	40	38.0	37.9	95	95	75-125	0	20	
Chromium	ug/L	0.29J	40	40	41.7	42.7	104	106	75-125	2	20	
Cobalt	ug/L	0.12J	40	40	40.0	39.9	100	100	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: M.L. KAPP ASH POND 25218061.00
Pace Project No.: 60282950

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2255524 2255525

Parameter	Units	60282950002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lead	ug/L	<0.13	40	40	35.1	35.3	88	88	75-125	1	20	
Molybdenum	ug/L	212	40	40	264	263	129	127	75-125	0	20	M1
Selenium	ug/L	0.40J	40	40	38.2	38.0	94	94	75-125	0	20	
Thallium	ug/L	<0.099	40	40	34.2	34.2	86	86	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: M.L. KAPP ASH POND 25218061.00
Pace Project No.: 60282950

QC Batch: 548850 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60282950001, 60282950002, 60282950003, 60282950004, 60282950005, 60282950006, 60282950007

METHOD BLANK: 2250218 Matrix: Water
Associated Lab Samples: 60282950001, 60282950002, 60282950003, 60282950004, 60282950005, 60282950006, 60282950007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	10/10/18 14:50	

LABORATORY CONTROL SAMPLE: 2250219

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1010	101	80-120	

SAMPLE DUPLICATE: 2250220

Parameter	Units	60282881016 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	391	390	0	10	

SAMPLE DUPLICATE: 2250221

Parameter	Units	60282950004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	459	452	2	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: M.L. KAPP ASH POND 25218061.00
Pace Project No.: 60282950

QC Batch: 548819 Analysis Method: EPA 9040
QC Batch Method: EPA 9040 Analysis Description: 9040 pH
Associated Lab Samples: 60282950001, 60282950002, 60282950003, 60282950004, 60282950005, 60282950006, 60282950007

SAMPLE DUPLICATE: 2250051

Parameter	Units	60282950001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	7.0	7.0	0	10	H6

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: M.L. KAPP ASH POND 25218061.00
Pace Project No.: 60282950

QC Batch: 549941 Analysis Method: EPA 9056
QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions
Associated Lab Samples: 60282950001, 60282950002, 60282950003, 60282950004, 60282950005, 60282950006, 60282950007

METHOD BLANK: 2254864 Matrix: Water
Associated Lab Samples: 60282950001, 60282950002, 60282950003, 60282950004, 60282950005, 60282950006, 60282950007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.29	1.0	0.29	10/17/18 21:50	
Fluoride	mg/L	<0.19	0.20	0.19	10/17/18 21:50	
Sulfate	mg/L	<0.24	1.0	0.24	10/17/18 21:50	

LABORATORY CONTROL SAMPLE: 2254865

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.0	99	80-120	
Fluoride	mg/L	2.5	2.5	102	80-120	
Sulfate	mg/L	5	5.4	108	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2254866 2254867

Parameter	Units	2084813001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	21.2	50	50	77.6	76.6	113	111	80-120	1	15	
Fluoride	mg/L	10.6	25	25	38.4	38.7	111	113	80-120	1	15	
Sulfate	mg/L	16.6	50	50	83.5	86.0	134	139	80-120	3	15	M1

SAMPLE DUPLICATE: 2254868

Parameter	Units	40176962001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	8.6	8.5	1	15	
Sulfate	mg/L	12.4	12.5	1	15	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: M.L. KAPP ASH POND 25218061.00
Pace Project No.: 60282950

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-K	Pace Analytical Services - Kansas City

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
H6	Analysis initiated outside of the 15 minute EPA required holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: M.L. KAPP ASH POND 25218061.00
Pace Project No.: 60282950

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60282950001	**MW-301**		550027		
60282950002	**MW-302**		550027		
60282950003	**MW-303**		550027		
60282950004	**MW-304**		550027		
60282950005	**MW-305**		550027		
60282950006	**MW-306**		550027		
60282950001	**MW-301**	EPA 3010	549876	EPA 6010	550031
60282950002	**MW-302**	EPA 3010	549876	EPA 6010	550031
60282950003	**MW-303**	EPA 3010	549876	EPA 6010	550031
60282950004	**MW-304**	EPA 3010	549876	EPA 6010	550031
60282950005	**MW-305**	EPA 3010	549876	EPA 6010	550031
60282950006	**MW-306**	EPA 3010	549876	EPA 6010	550031
60282950007	**FIELD BLANK**	EPA 3010	549876	EPA 6010	550031
60282950001	**MW-301**	EPA 3010	550090	EPA 6020	550198
60282950002	**MW-302**	EPA 3010	550090	EPA 6020	550198
60282950003	**MW-303**	EPA 3010	550090	EPA 6020	550198
60282950004	**MW-304**	EPA 3010	550090	EPA 6020	550198
60282950005	**MW-305**	EPA 3010	550090	EPA 6020	550198
60282950006	**MW-306**	EPA 3010	550090	EPA 6020	550198
60282950007	**FIELD BLANK**	EPA 3010	550090	EPA 6020	550198
60282950001	**MW-301**	EPA 7470	549649	EPA 7470	549752
60282950002	**MW-302**	EPA 7470	549649	EPA 7470	549752
60282950003	**MW-303**	EPA 7470	549649	EPA 7470	549752
60282950004	**MW-304**	EPA 7470	549649	EPA 7470	549752
60282950005	**MW-305**	EPA 7470	549649	EPA 7470	549752
60282950006	**MW-306**	EPA 7470	549649	EPA 7470	549752
60282950007	**FIELD BLANK**	EPA 7470	549649	EPA 7470	549752
60282950001	**MW-301**	SM 2540C	548850		
60282950002	**MW-302**	SM 2540C	548850		
60282950003	**MW-303**	SM 2540C	548850		
60282950004	**MW-304**	SM 2540C	548850		
60282950005	**MW-305**	SM 2540C	548850		
60282950006	**MW-306**	SM 2540C	548850		
60282950007	**FIELD BLANK**	SM 2540C	548850		
60282950001	**MW-301**	EPA 9040	548819		
60282950002	**MW-302**	EPA 9040	548819		
60282950003	**MW-303**	EPA 9040	548819		
60282950004	**MW-304**	EPA 9040	548819		
60282950005	**MW-305**	EPA 9040	548819		
60282950006	**MW-306**	EPA 9040	548819		
60282950007	**FIELD BLANK**	EPA 9040	548819		
60282950001	**MW-301**	EPA 9056	549941		
60282950002	**MW-302**	EPA 9056	549941		
60282950003	**MW-303**	EPA 9056	549941		
60282950004	**MW-304**	EPA 9056	549941		
60282950005	**MW-305**	EPA 9056	549941		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: M.L. KAPP ASH POND 25218061.00
Pace Project No.: 60282950

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60282950006	**MW-306**	EPA 9056	549941		
60282950007	**FIELD BLANK**	EPA 9056	549941		

Pace Analytical
www.pacelabs.com

Sample Condition Upon Receipt

WO# : 60282950

60282950

Client Name: SCS Engineers

Courier: FedEx ☑ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☐ Client ☐ Other ☐

Tracking #: 8130 2340 5944 Pace Shipping Label Used? Yes ☐ No ☑

Custody Seal on Cooler/Box Present: Yes ☐ No ☑ Seals intact: Yes ☐ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☐ Other ☑ zip lc

Thermometer Used: T-298 **Type of Ice:** Wet Blue None

HK

Cooler Temperature (°C): As-read 1.6 Corr. Factor 0.0 Corrected 1.6

Date and initials of person examining contents: 10/6/18 HK

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☑Yes ☐No ☐N/A	ph
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	
Sufficient volume:	☑Yes ☐No ☐N/A	
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	
Containers intact:	☑Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☑N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	
Sample labels match COC: Date / time / ID / analyses	☑Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☑No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	☑Yes ☐No ☐N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks:		
Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☐Yes ☐No ☑N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Hank

Project Manager Review: 09:13 am,Oct 08,2018 Date: _____

Kapka

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: of

Section A Required Client Information:

Company:	SCS Engineers
Address:	2830 Dairy Drive
	Madison WI 53718
Email To:	mblodgett@scsengineers.com
Phone: 608-216-7362	Fax:
Requested Due Date/TAT:	

Section B Required Project Information:

Report To:	Meghan Blodgett
Copy To:	Tom Karwaski
Purchase Order No.:	
Project Name:	M.L. Kapp Ash Pond
Project Number:	25218061.00.

Section C Invoice Information:

Attention:	Meghan Blodgett/Jess Valcheff
Company Name:	SCS Engineers
Address:	
Pace Quote Reference:	
Pace Project Manager:	Hank Kapka 913-563-1404
Pace Profile #:	6696 Line 2

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER

☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: IA

Requested Analysis Filtered (Y/N)

Section D Required Client Information

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	6010 Total Metals: B,Ca,Li	6020 Total Metals *	7470 Total Mercury	9056 Chloride-Fluoride-Sulfate	9040 pH	2540C TDS	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
																	N	N						60282950	
MW-301	WT	G	xxx	xxx	1015	900		3	1		2						X	X	X	X	X	X		BPLL, 2BP3N	001
MW-302	WT	G	xxx	xxx	~~1015~~	~~1145~~ 1150		3	1		2						X	X	X	X	X	X			002
MW-303	WT	G	xxx	xxx	1015	1145		3	1		2						X	X	X	X	X	X			003
MW-304	WT	G	xxx	xxx	1015	1055		3	1		2						X	X	X	X	X	X			004
MW-305	WT	G	xxx	xxx	1015	955		3	1		2						X	X	X	X	X	X			005
MW-306	WT	G	xxx	xxx	1015	1049		3	1		2						X	X	X	X	X	X			006
FIELD BLANK	WT	G	xxx	xxx	1015	1050		3	1		2						X	X	X	X	X	X			007

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Ship To: 9608 Loiret Boulevard, Lenexa, KS 66219		1015	1600	EBrockett/Pace	10/6/18	0830	1.6	Y	N	Y
* As-Ba-Be-Cd-Cr-Co-Pb-Mo-Sb-Se-Tl										

SAMPLER NAME AND SIGNATURE		Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER:					
SIGNATURE of SAMPLER:	DATE Signed (MM/DD/YY):				

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-Feb-2007

A6 Round 6 Background Sampling, Analytical Laboratory Report

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

December 26, 2018

Meghan Blodgett
SCS Engineers
2830 Dairy Drive
Madison, WI 53718

RE: Project: M.L. KAPP ASH POND
Pace Project No.: 60288197

Dear Meghan Blodgett:
Enclosed are the analytical results for sample(s) received by the laboratory on November 30, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Hank Kapka
hank.kapka@pacelabs.com
(913)599-5665
PM Lab Management

Enclosures

cc: Tom Karwaski, SCS Engineers
Nicole Kron, SCS Engineers
Jeff Maxted, Alliant Energy
Jess Valcheff, SCS Engeineers

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CERTIFICATIONS

Project: M.L. KAPP ASH POND
Pace Project No.: 60288197

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991
Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 9526
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

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SAMPLE SUMMARY

Project: M.L. KAPP ASH POND
Pace Project No.: 60288197

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60288197001	**MW-301**	Water	11/29/18 13:42	11/30/18 09:50
60288197002	**MW-302**	Water	11/29/18 10:08	11/30/18 09:50
60288197003	**MW-303**	Water	11/29/18 10:53	11/30/18 09:50
60288197004	**MW-304**	Water	11/29/18 11:31	11/30/18 09:50
60288197005	**MW-305**	Water	11/29/18 12:11	11/30/18 09:50
60288197006	**MW-306**	Water	11/29/18 12:50	11/30/18 09:50
60288197007	**FILED BLANK**	Water	11/29/18 13:40	11/30/18 09:50

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SAMPLE ANALYTE COUNT

Project: M.L. KAPP ASH POND
Pace Project No.: 60288197

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60288197001	**MW-301**	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60288197002	**MW-302**	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60288197003	**MW-303**	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60288197004	**MW-304**	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60288197005	**MW-305**	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60288197006	**MW-306**	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA
60288197007	**FILED BLANK**	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	JLW	1	PASI-PA
		Total Radium Calculation	CMC	1	PASI-PA

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: M.L. KAPP ASH POND
Pace Project No.: 60288197

Sample: MW-301 **Lab ID: 60288197001** Collected: 11/29/18 13:42 Received: 11/30/18 09:50 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.973 ± 0.722 (0.903) C:NA T:82%**	pCi/L	12/21/18 11:10	13982-63-3	
Radium-228	EPA 904.0	**0.701 ± 0.454 (0.868) C:82% T:78%**	pCi/L	12/20/18 17:45	15262-20-1	
Total Radium	Total Radium Calculation	**1.67 ± 1.18 (1.77)**	pCi/L	12/26/18 12:25	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: M.L. KAPP ASH POND
Pace Project No.: 60288197

Sample: MW-302 **Lab ID: 60288197002** Collected: 11/29/18 10:08 Received: 11/30/18 09:50 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.344 ± 0.631 (1.13) C:NA T:90%**	pCi/L	12/21/18 11:10	13982-63-3	
Radium-228	EPA 904.0	**0.300 ± 0.384 (0.817) C:82% T:81%**	pCi/L	12/20/18 17:45	15262-20-1	
Total Radium	Total Radium Calculation	**0.644 ± 1.02 (1.95)**	pCi/L	12/26/18 12:25	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: M.L. KAPP ASH POND
Pace Project No.: 60288197

Sample: MW-303 **Lab ID: 60288197003** Collected: 11/29/18 10:53 Received: 11/30/18 09:50 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**-0.248 ± 0.378 (0.993) C:NA T:91%**	pCi/L	12/21/18 11:10	13982-63-3	
Radium-228	EPA 904.0	**0.202 ± 0.333 (0.724) C:81% T:87%**	pCi/L	12/20/18 17:45	15262-20-1	
Total Radium	Total Radium Calculation	**0.202 ± 0.711 (1.72)**	pCi/L	12/26/18 12:25	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: M.L. KAPP ASH POND
Pace Project No.: 60288197

Sample: MW-304 **Lab ID: 60288197004** Collected: 11/29/18 11:31 Received: 11/30/18 09:50 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.501 ± 0.657 (1.09) C:NA T:93%**	pCi/L	12/21/18 11:10	13982-63-3	
Radium-228	EPA 904.0	**0.702 ± 0.422 (0.787) C:84% T:79%**	pCi/L	12/20/18 17:45	15262-20-1	
Total Radium	Total Radium Calculation	**1.20 ± 1.08 (1.88)**	pCi/L	12/26/18 12:25	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: M.L. KAPP ASH POND
Pace Project No.: 60288197

Sample: MW-305 **Lab ID: 60288197005** Collected: 11/29/18 12:11 Received: 11/30/18 09:50 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.157 ± 0.535 (1.03) C:NA T:90%**	pCi/L	12/21/18 11:10	13982-63-3	
Radium-228	EPA 904.0	**0.459 ± 0.408 (0.834) C:82% T:87%**	pCi/L	12/20/18 17:45	15262-20-1	
Total Radium	Total Radium Calculation	**0.616 ± 0.943 (1.86)**	pCi/L	12/26/18 12:25	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: M.L. KAPP ASH POND
Pace Project No.: 60288197

Sample: MW-306 **Lab ID: 60288197006** Collected: 11/29/18 12:50 Received: 11/30/18 09:50 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.275 ± 0.477 (0.852) C:NA T:82%**	pCi/L	12/21/18 11:29	13982-63-3	
Radium-228	EPA 904.0	**0.363 ± 0.354 (0.730) C:83% T:88%**	pCi/L	12/20/18 17:45	15262-20-1	
Total Radium	Total Radium Calculation	**0.638 ± 0.831 (1.58)**	pCi/L	12/26/18 12:25	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: M.L. KAPP ASH POND
Pace Project No.: 60288197

Sample: FILED BLANK **Lab ID: 60288197007** Collected: 11/29/18 13:40 Received: 11/30/18 09:50 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.000 ± 0.399 (0.896) C:NA T:89%**	pCi/L	12/21/18 11:29	13982-63-3	
Radium-228	EPA 904.0	**0.736 ± 0.508 (0.987) C:74% T:77%**	pCi/L	12/21/18 12:42	15262-20-1	
Total Radium	Total Radium Calculation	**0.736 ± 0.907 (1.88)**	pCi/L	12/26/18 12:25	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: M.L. KAPP ASH POND
Pace Project No.: 60288197

QC Batch: 322944 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples: 60288197001, 60288197002, 60288197003, 60288197004, 60288197005, 60288197006, 60288197007

METHOD BLANK: 1573835 Matrix: Water
Associated Lab Samples: 60288197001, 60288197002, 60288197003, 60288197004, 60288197005, 60288197006, 60288197007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.339 ± 0.409 (0.625) C:NA T:86%	pCi/L	12/21/18 10:32	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: M.L. KAPP ASH POND
Pace Project No.: 60288197

QC Batch: 322940 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 60288197007

METHOD BLANK: 1573829 Matrix: Water
Associated Lab Samples: 60288197007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.262 ± 0.395 (0.852) C:78% T:85%	pCi/L	12/21/18 12:42	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: M.L. KAPP ASH POND
Pace Project No.: 60288197

QC Batch: 322938 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 60288197001, 60288197002, 60288197003, 60288197004, 60288197005, 60288197006

METHOD BLANK: 1573825 Matrix: Water
Associated Lab Samples: 60288197001, 60288197002, 60288197003, 60288197004, 60288197005, 60288197006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.328 ± 0.318 (0.652) C:86% T:80%	pCi/L	12/20/18 14:38	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALIFIERS

Project: M.L. KAPP ASH POND
Pace Project No.: 60288197

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval). Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: M.L. KAPP ASH POND
Pace Project No.: 60288197

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60288197001	**MW-301**	EPA 903.1	322944		
60288197002	**MW-302**	EPA 903.1	322944		
60288197003	**MW-303**	EPA 903.1	322944		
60288197004	**MW-304**	EPA 903.1	322944		
60288197005	**MW-305**	EPA 903.1	322944		
60288197006	**MW-306**	EPA 903.1	322944		
60288197007	**FILED BLANK**	EPA 903.1	322944		
60288197001	**MW-301**	EPA 904.0	322938		
60288197002	**MW-302**	EPA 904.0	322938		
60288197003	**MW-303**	EPA 904.0	322938		
60288197004	**MW-304**	EPA 904.0	322938		
60288197005	**MW-305**	EPA 904.0	322938		
60288197006	**MW-306**	EPA 904.0	322938		
60288197007	**FILED BLANK**	EPA 904.0	322940		
60288197001	**MW-301**	Total Radium Calculation	325146		
60288197002	**MW-302**	Total Radium Calculation	325146		
60288197003	**MW-303**	Total Radium Calculation	325146		
60288197004	**MW-304**	Total Radium Calculation	325146		
60288197005	**MW-305**	Total Radium Calculation	325146		
60288197006	**MW-306**	Total Radium Calculation	325146		
60288197007	**FILED BLANK**	Total Radium Calculation	325146		

Pace Analytical
www.pacelabs.com

Sample Condition Upon Receipt

WO# : 60288197

60288197

Client Name: SCS Engineers

Courier: FedEx ☒ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☐ Client ☐ Other ☐

Tracking #: 4542 2786 4110 Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☒ Other ☐

Thermometer Used: T-301 **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): **As-read** 5.7 **Corr. Factor** +0.0 **Corrected** 5.7

Date and initials of person examining contents: HC 12/1

Temperature should be above freezing to 6°C

Chain of Custody present:	☒Yes ☐No ☐N/A	
Chain of Custody relinquished:	☒Yes ☐No ☐N/A	
Samples arrived within holding time:	☒Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☒No ☐N/A	
Rush Turn Around Time requested:	☐Yes ☒No ☐N/A	
Sufficient volume:	☒Yes ☐No ☐N/A	
Correct containers used:	☒Yes ☐No ☐N/A	
Pace containers used:	☐Yes ☐No ☐N/A	
Containers intact:	☒Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☒N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☒N/A	
Sample labels match COC: Date / time / ID / analyses	☒Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☒No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	☒Yes ☐No ☐N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☒No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☒No	
Trip Blank present:	☐Yes ☐No ☒N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☒N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☒N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☒N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: HWK Date: 12-3-2018

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Pace Analytical™ www.pacelabs.com

Page: of

Section A Required Client Information:

Company:	SCS Engineers
Address:	2830 Dairy Drive
	Madison WI 53718
Email To:	mblodgett@scsengineers.com
Phone:	608-216-7362 Fax:
Requested Due Date/TAT:	

Section B Required Project Information:

Report To:	Meghan Blodgett
Copy To:	Tom Karwaski
Purchase Order No.:	
Project Name:	M.L. Kapp Ash Pond
Project Number:	25218061.00.

Section C Invoice Information:

Attention:	Meghan Blodgett/Jess Valcheff
Company Name:	SCS Engineers
Address:	
Pace Quote Reference:	
Pace Project Manager:	Trudy Gipson 913-563-1405
Pace Profile #:	6696 Line 2

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER

☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: IA

Section D Required Client Information

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	903.1 Radium-226	904.0 Radium-228	Total Radium	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-301	WT	G	xxx	xxx	112918	1342		2			2							X	X	X		001
2	MW-302	WT	G	xxx	xxx	112918	1008		2			2							X	X	X		002
3	MW-303	WT	G	xxx	xxx	112918	1053		2			2							X	X	X		003
4	MW-304	WT	G	xxx	xxx	112918	1131		2			2							X	X	X		004
5	MW-305	WT	G	xxx	xxx	112918	1211		2			2							X	X	X		005
6	MW-306	WT	G	xxx	xxx	112918	1250		2			2							X	X	X		006
7	FIELD BLANK	WT	G	xxx	xxx	112918	1340		2			2							X	X	X		007
8																							
9																							
10																							
11																							
12																							

2BPIN

60288197

Pace Project No./ Lab I.D.

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Ship To: 9608 Loiret Boulevard, Lenexa, KS 66219	Nick Stemmel / SCS Engineers	112918	1600	[signature] pasi	11.30.18	09:55	5.7	4	4	4

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:

SIGNATURE of SAMPLER: DATE Signed (MM/DD/YY):

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-Feb-2007

Chain of Custody

Pace Analytical®
www.pacelabs.com

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: IA
Cert. Needed: ☐ Yes ☐ No

Workorder: 60288197 **Workorder Name:** M.L. KAPP ASH POND

Owner Received Date: 11/30/2018 **Results Requested By:** 12/21/2018

Report To	Subcontract To
Hank Kapka Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone (913)599-5665	Pace Analytical Pittsburgh 1638 Roseytown Road Suites 2,3, & 4 Greensburg, PA 15601 Phone (724)850-5600

WO# : 30273257

30273257

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: HNO3						Requested Analysis: Combined Ra	Requested Analysis: Ra 226 / 228										LAB USE ONLY
1	MW-301	PS	11/29/2018 13:42	60288197001	Water	2						X	X										001
2	MW-302	PS	11/29/2018 10:08	60288197002	Water	2						X	X										002
3	MW-303	PS	11/29/2018 10:53	60288197003	Water	2						X	X										003
4	MW-304	PS	11/29/2018 11:31	60288197004	Water	2						X	X										004
5	MW-305	PS	11/29/2018 12:11	60288197005	Water	2						X	X										005
6	MW-306	PS	11/29/2018 12:50	60288197006	Water	2						X	X										006
7	FILED BLANK	PS	11/29/2018 13:40	60288197007	Water	2						X	X										007

Transfers	Released By	Date/Time	Received By	Date/Time
1	62:of IPasi	12-3-18 1600	PACE	12/4/18 1000
2				
3				

Comments

Cooler Temperature on Receipt — °C | Custody Seal Y or (N) | Received on Ice Y or (N) | Samples Intact (Y) or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

Pittsburgh Lab Sample Condition Upon Receipt

Face Analytical

Client Name: Pace KS

Project #: 30273257

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other _____

Label BJH
LIMS Login BJH

Tracking #: 4746 8737 9860

Custody Seal on Cooler/Box Present: ☐ yes ☑ no Seals intact: ☐ yes ☑ no

Thermometer Used NA Type of Ice: Wet Blue (None)

Cooler Temperature Observed Temp _____ °C Correction Factor: _____ °C Final Temp: _____ °C

Temp should be above freezing to 6°C

Comments:	Yes	No	N/A	pH paper Lot# 10D2981 / Date and initials of person examining contents: 12/4/18 JLB
Chain of Custody Present:	✓			1.
Chain of Custody Filled Out:	✓			2.
Chain of Custody Relinquished:	✓			3.
Sampler Name & Signature on COC:		✓		4.
Sample Labels match COC: -Includes date/time/ID Matrix: WT	✓			5.
Samples Arrived within Hold Time:	✓			6.
Short Hold Time Analysis (<72hr remaining):		✓		7.
Rush Turn Around Time Requested:		✓		8.
Sufficient Volume:	✓			9.
Correct Containers Used: -Pace Containers Used:	✓ ✓			10.
Containers Intact:	✓			11.
Orthophosphate field filtered			✓	12.
Hex Cr Aqueous Compliance/NPDES sample field filtered			✓	13.
Organic Samples checked for dechlorination:			✓	14.
Filtered volume received for Dissolved tests			✓	15.
All containers have been checked for preservation. All containers needing preservation are found to be in compliance with EPA recommendation. exceptions: VOA, coliform, TOC, O&G, Phenolics	✓ ✓			16. pH<2 Initial when completed: JLB Date/time of preservation: Lot # of added preservative:
Headspace in VOA Vials (>6mm):			✓	17.
Trip Blank Present: Trip Blank Custody Seals Present		✓	✓	18.
Rad Aqueous Samples Screened > 0.5 mrem/hr		✓		Initial when completed: JLB Date: 12/4/18

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____ Contacted By: _____

Comments/ Resolution: _____

☐ **A check in this box indicates that additional information has been stored in ereports.**

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

December 13, 2018

Meghan Blodgett
SCS Engineers
2830 Dairy Drive
Madison, WI 53718

RE: Project: M.L. KAPP ASH POND
Pace Project No.: 60288198

Dear Meghan Blodgett:
Enclosed are the analytical results for sample(s) received by the laboratory on November 30, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Hank Kapka
hank.kapka@pacelabs.com
(913)599-5665
PM Lab Management

Enclosures

cc: Tom Karwaski, SCS Engineers
Nicole Kron, SCS Engineers
Jeff Maxted, Alliant Energy
Jess Valcheff, SCS Engeineers

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: M.L. KAPP ASH POND
Pace Project No.: 60288198

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219
Missouri Certification Number: 10090
Arkansas Drinking Water
WY STR Certification #: 2456.01
Arkansas Certification #: 18-016-0
Arkansas Drinking Water
Illinois Certification #: 004455
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116 / E10426
Louisiana Certification #: 03055
Nevada Certification #: KS000212018-1
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407-18-11
Utah Certification #: KS000212018-8
Kansas Field Laboratory Accreditation: # E-92587
Missouri Certification: 10070
Missouri Certification Number: 10090

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: M.L. KAPP ASH POND
Pace Project No.: 60288198

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60288198001	**MW-301**	Water	11/29/18 13:42	11/30/18 09:50
60288198002	**MW-302**	Water	11/29/18 10:08	11/30/18 09:50
60288198003	**MW-303**	Water	11/29/18 10:53	11/30/18 09:50
60288198004	**MW-304**	Water	11/29/18 11:31	11/30/18 09:50
60288198005	**MW-305**	Water	11/29/18 12:11	11/30/18 09:50
60288198006	**MW-306**	Water	11/29/18 12:50	11/30/18 09:50
60288198007	**FIELD BLANK**	Water	11/29/18 23:40	11/30/18 09:50

Pace Analytical Services, LLC
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Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: M.L. KAPP ASH POND
Pace Project No.: 60288198

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60288198001	MW-301	EPA 6010	JGP	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	JDE	1	PASI-K
		SM 2540C	RLG	1	PASI-K
		EPA 9040	MJK	1	PASI-K
		EPA 9056	WNM	3	PASI-K
60288198002	MW-302	EPA 6010	JGP	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	JDE	1	PASI-K
		SM 2540C	RLG	1	PASI-K
		EPA 9040	MJK	1	PASI-K
		EPA 9056	WNM	3	PASI-K
60288198003	MW-303	EPA 6010	JGP	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	JDE	1	PASI-K
		SM 2540C	RLG	1	PASI-K
		EPA 9040	MJK	1	PASI-K
		EPA 9056	WNM	3	PASI-K
60288198004	MW-304	EPA 6010	JGP	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	JDE	1	PASI-K
		SM 2540C	RLG	1	PASI-K
		EPA 9040	MJK	1	PASI-K
		EPA 9056	WNM	3	PASI-K
60288198005	MW-305	EPA 6010	JGP	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	JDE	1	PASI-K
		SM 2540C	RLG	1	PASI-K
		EPA 9040	MJK	1	PASI-K
		EPA 9056	WNM	3	PASI-K
60288198006	MW-306	EPA 6010	JGP	3	PASI-K
		EPA 6020	JGP	11	PASI-K
		EPA 7470	JDE	1	PASI-K
		SM 2540C	RLG	1	PASI-K
		EPA 9040	MJK	1	PASI-K
		EPA 9056	WNM	3	PASI-K
60288198007	FIELD BLANK	EPA 6010	JGP	3	PASI-K

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: M.L. KAPP ASH POND
Pace Project No.: 60288198

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6020	JGP	11	PASI-K
		EPA 7470	JDE	1	PASI-K
		SM 2540C	RLG	1	PASI-K
		EPA 9040	MJK	1	PASI-K
		EPA 9056	WNM	3	PASI-K

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: M.L. KAPP ASH POND
Pace Project No.: 60288198

Sample: MW-301 **Lab ID: 60288198001** Collected: 11/29/18 13:42 Received: 11/30/18 09:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		11/29/18 13:42		
Collected Date	**11/29/2018**				1		11/29/18 13:42		
Collected Time	**13:42**				1		11/29/18 13:42		
Field pH	**6.79**	Std. Units	0.10	0.050	1		11/29/18 13:42		
Field Temperature	**13.57**	deg C	0.50	0.25	1		11/29/18 13:42		
Field Specific Conductance	**690**	umhos/cm	1.0	1.0	1		11/29/18 13:42		
Oxygen, Dissolved	**0.22**	mg/L			1		11/29/18 13:42	7782-44-7	
REDOX	**-89.7**	mV			1		11/29/18 13:42		
Turbidity	**0.91**	NTU	1.0	1.0	1		11/29/18 13:42		
Groundwater Elevation	**577.55**	feet			1		11/29/18 13:42		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**10900**	ug/L	100	12.5	1	12/06/18 11:52	12/06/18 18:08	7440-42-8	
Calcium	**121**	mg/L	0.20	0.054	1	12/06/18 11:52	12/06/18 18:08	7440-70-2	
Lithium	**10.1**	ug/L	10.0	4.6	1	12/06/18 11:52	12/06/18 18:08	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**<0.078**	ug/L	1.0	0.078	1	12/07/18 15:45	12/10/18 13:46	7440-36-0	
Arsenic	**1.2**	ug/L	1.0	0.065	1	12/07/18 15:45	12/10/18 13:46	7440-38-2	
Barium	**208**	ug/L	1.0	0.28	1	12/07/18 15:45	12/10/18 13:46	7440-39-3	
Beryllium	**<0.089**	ug/L	0.50	0.089	1	12/07/18 15:45	12/10/18 14:52	7440-41-7	
Cadmium	**0.044J**	ug/L	0.50	0.033	1	12/07/18 15:45	12/10/18 13:46	7440-43-9	
Chromium	**0.58J**	ug/L	1.0	0.078	1	12/07/18 15:45	12/10/18 13:46	7440-47-3	
Cobalt	**2.0**	ug/L	1.0	0.062	1	12/07/18 15:45	12/10/18 13:46	7440-48-4	
Lead	**<0.13**	ug/L	1.0	0.13	1	12/07/18 15:45	12/10/18 13:46	7439-92-1	
Molybdenum	**237**	ug/L	1.0	0.57	1	12/07/18 15:45	12/10/18 13:46	7439-98-7	
Selenium	**<0.085**	ug/L	1.0	0.085	1	12/07/18 15:45	12/10/18 13:46	7782-49-2	
Thallium	**<0.099**	ug/L	1.0	0.099	1	12/07/18 15:45	12/10/18 13:46	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.090**	ug/L	0.20	0.090	1	12/07/18 13:52	12/10/18 12:40	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**762**	mg/L	5.0	5.0	1		12/04/18 09:20		
9040 pH	Analytical Method: EPA 9040								
pH	**7.0**	Std. Units	0.10	0.10	1		12/12/18 18:28		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**32.1**	mg/L	5.0	1.4	5		12/10/18 22:56	16887-00-6	
Fluoride	**0.25**	mg/L	0.20	0.19	1		12/10/18 22:38	16984-48-8	
Sulfate	**306**	mg/L	50.0	12.0	50		12/10/18 23:13	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: M.L. KAPP ASH POND
Pace Project No.: 60288198

Sample: MW-302 **Lab ID: 60288198002** Collected: 11/29/18 10:08 Received: 11/30/18 09:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		11/29/18 10:08		
Collected Date	**11/29/2018**				1		11/29/18 10:08		
Collected Time	**10:08**				1		11/29/18 10:08		
Field pH	**8.16**	Std. Units	0.10	0.050	1		11/29/18 10:08		
Field Temperature	**13.76**	deg C	0.50	0.25	1		11/29/18 10:08		
Field Specific Conductance	**495**	umhos/cm	1.0	1.0	1		11/29/18 10:08		
Oxygen, Dissolved	**0.47**	mg/L			1		11/29/18 10:08	7782-44-7	
REDOX	**-179.8**	mV			1		11/29/18 10:08		
Turbidity	**9.12**	NTU	1.0	1.0	1		11/29/18 10:08		
Groundwater Elevation	**576.52**	feet			1		11/29/18 10:08		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**6300**	ug/L	100	12.5	1	12/06/18 11:52	12/06/18 18:10	7440-42-8	
Calcium	**63.7**	mg/L	0.20	0.054	1	12/06/18 11:52	12/06/18 18:10	7440-70-2	
Lithium	**19.5**	ug/L	10.0	4.6	1	12/06/18 11:52	12/06/18 18:10	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.30J**	ug/L	1.0	0.078	1	12/07/18 15:45	12/10/18 13:49	7440-36-0	
Arsenic	**9.3**	ug/L	1.0	0.065	1	12/07/18 15:45	12/10/18 13:49	7440-38-2	
Barium	**47.1**	ug/L	1.0	0.28	1	12/07/18 15:45	12/10/18 13:49	7440-39-3	
Beryllium	**<0.089**	ug/L	0.50	0.089	1	12/07/18 15:45	12/10/18 14:54	7440-41-7	
Cadmium	**0.052J**	ug/L	0.50	0.033	1	12/07/18 15:45	12/10/18 13:49	7440-43-9	
Chromium	**0.32J**	ug/L	1.0	0.078	1	12/07/18 15:45	12/10/18 13:49	7440-47-3	
Cobalt	**0.24J**	ug/L	1.0	0.062	1	12/07/18 15:45	12/10/18 13:49	7440-48-4	
Lead	**0.28J**	ug/L	1.0	0.13	1	12/07/18 15:45	12/10/18 13:49	7439-92-1	
Molybdenum	**185**	ug/L	1.0	0.57	1	12/07/18 15:45	12/10/18 13:49	7439-98-7	
Selenium	**1.5**	ug/L	1.0	0.085	1	12/07/18 15:45	12/10/18 13:49	7782-49-2	
Thallium	**<0.099**	ug/L	1.0	0.099	1	12/07/18 15:45	12/10/18 13:49	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.090**	ug/L	0.20	0.090	1	12/07/18 13:52	12/10/18 12:42	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**505**	mg/L	5.0	5.0	1		12/04/18 09:20		
9040 pH	Analytical Method: EPA 9040								
pH	**8.4**	Std. Units	0.10	0.10	1		12/12/18 18:18		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**15.0**	mg/L	1.0	0.29	1		12/10/18 23:31	16887-00-6	
Fluoride	**0.30**	mg/L	0.20	0.19	1		12/10/18 23:31	16984-48-8	
Sulfate	**203**	mg/L	50.0	12.0	50		12/11/18 00:07	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: M.L. KAPP ASH POND
Pace Project No.: 60288198

Sample: MW-303 **Lab ID: 60288198003** Collected: 11/29/18 10:53 Received: 11/30/18 09:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		11/29/18 10:53		
Collected Date	**11/29/2018**				1		11/29/18 10:53		
Collected Time	**10:53**				1		11/29/18 10:53		
Field pH	**9.28**	Std. Units	0.10	0.050	1		11/29/18 10:53		
Field Temperature	**13.58**	deg C	0.50	0.25	1		11/29/18 10:53		
Field Specific Conductance	**668**	umhos/cm	1.0	1.0	1		11/29/18 10:53		
Oxygen, Dissolved	**0.20**	mg/L			1		11/29/18 10:53	7782-44-7	
REDOX	**-286.5**	mV			1		11/29/18 10:53		
Turbidity	**0.58**	NTU	1.0	1.0	1		11/29/18 10:53		
Groundwater Elevation	**578.74**	feet			1		11/29/18 10:53		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**3080**	ug/L	100	12.5	1	12/06/18 11:52	12/06/18 18:13	7440-42-8	
Calcium	**116**	mg/L	0.20	0.054	1	12/06/18 11:52	12/06/18 18:13	7440-70-2	
Lithium	**17.2**	ug/L	10.0	4.6	1	12/06/18 11:52	12/06/18 18:13	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.22J**	ug/L	1.0	0.078	1	12/07/18 15:45	12/10/18 13:51	7440-36-0	
Arsenic	**7.9**	ug/L	1.0	0.065	1	12/07/18 15:45	12/10/18 13:51	7440-38-2	
Barium	**44.2**	ug/L	1.0	0.28	1	12/07/18 15:45	12/10/18 13:51	7440-39-3	
Beryllium	**<0.089**	ug/L	0.50	0.089	1	12/07/18 15:45	12/10/18 14:57	7440-41-7	
Cadmium	**<0.033**	ug/L	0.50	0.033	1	12/07/18 15:45	12/10/18 13:51	7440-43-9	
Chromium	**<0.078**	ug/L	1.0	0.078	1	12/07/18 15:45	12/10/18 13:51	7440-47-3	
Cobalt	**0.18J**	ug/L	1.0	0.062	1	12/07/18 15:45	12/10/18 13:51	7440-48-4	
Lead	**<0.13**	ug/L	1.0	0.13	1	12/07/18 15:45	12/10/18 13:51	7439-92-1	
Molybdenum	**127**	ug/L	1.0	0.57	1	12/07/18 15:45	12/10/18 13:51	7439-98-7	
Selenium	**3.0**	ug/L	1.0	0.085	1	12/07/18 15:45	12/10/18 13:51	7782-49-2	
Thallium	**<0.099**	ug/L	1.0	0.099	1	12/07/18 15:45	12/10/18 13:51	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.090**	ug/L	0.20	0.090	1	12/07/18 13:52	12/10/18 12:45	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**703**	mg/L	5.0	5.0	1		12/04/18 09:20		
9040 pH	Analytical Method: EPA 9040								
pH	**9.0**	Std. Units	0.10	0.10	1		12/12/18 18:20		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**14.6**	mg/L	1.0	0.29	1		12/11/18 00:25	16887-00-6	
Fluoride	**0.37**	mg/L	0.20	0.19	1		12/11/18 00:25	16984-48-8	
Sulfate	**378**	mg/L	50.0	12.0	50		12/11/18 01:36	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: M.L. KAPP ASH POND
Pace Project No.: 60288198

Sample: MW-304 **Lab ID: 60288198004** Collected: 11/29/18 11:31 Received: 11/30/18 09:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		11/29/18 11:31		
Collected Date	**11/29/2018**				1		11/29/18 11:31		
Collected Time	**11:31**				1		11/29/18 11:31		
Field pH	**7.51**	Std. Units	0.10	0.050	1		11/29/18 11:31		
Field Temperature	**13.55**	deg C	0.50	0.25	1		11/29/18 11:31		
Field Specific Conductance	**587**	umhos/cm	1.0	1.0	1		11/29/18 11:31		
Oxygen, Dissolved	**0.36**	mg/L			1		11/29/18 11:31	7782-44-7	
REDOX	**-69.0**	mV			1		11/29/18 11:31		
Turbidity	**18.9**	NTU	1.0	1.0	1		11/29/18 11:31		
Groundwater Elevation	**578.43**	feet			1		11/29/18 11:31		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**9140**	ug/L	100	12.5	1	12/06/18 11:52	12/06/18 18:22	7440-42-8	
Calcium	**70.9**	mg/L	0.20	0.054	1	12/06/18 11:52	12/06/18 18:22	7440-70-2	
Lithium	**<4.6**	ug/L	10.0	4.6	1	12/06/18 11:52	12/06/18 18:22	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**<0.078**	ug/L	1.0	0.078	1	12/07/18 15:45	12/10/18 13:53	7440-36-0	
Arsenic	**4.5**	ug/L	1.0	0.065	1	12/07/18 15:45	12/10/18 13:53	7440-38-2	
Barium	**73.3**	ug/L	1.0	0.28	1	12/07/18 15:45	12/10/18 13:53	7440-39-3	
Beryllium	**<0.089**	ug/L	0.50	0.089	1	12/07/18 15:45	12/10/18 14:59	7440-41-7	
Cadmium	**0.17J**	ug/L	0.50	0.033	1	12/07/18 15:45	12/10/18 13:53	7440-43-9	
Chromium	**0.10J**	ug/L	1.0	0.078	1	12/07/18 15:45	12/10/18 13:53	7440-47-3	
Cobalt	**0.73J**	ug/L	1.0	0.062	1	12/07/18 15:45	12/10/18 13:53	7440-48-4	
Lead	**<0.13**	ug/L	1.0	0.13	1	12/07/18 15:45	12/10/18 13:53	7439-92-1	
Molybdenum	**790**	ug/L	1.0	0.57	1	12/07/18 15:45	12/10/18 13:53	7439-98-7	
Selenium	**<0.085**	ug/L	1.0	0.085	1	12/07/18 15:45	12/10/18 13:53	7782-49-2	
Thallium	**<0.099**	ug/L	1.0	0.099	1	12/07/18 15:45	12/10/18 13:53	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.090**	ug/L	0.20	0.090	1	12/07/18 13:52	12/10/18 12:47	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**601**	mg/L	5.0	5.0	1		12/04/18 09:20		
9040 pH	Analytical Method: EPA 9040								
pH	**7.6**	Std. Units	0.10	0.10	1		12/12/18 18:22		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**28.0**	mg/L	10.0	2.9	10		12/11/18 02:11	16887-00-6	
Fluoride	**0.24**	mg/L	0.20	0.19	1		12/11/18 01:54	16984-48-8	
Sulfate	**286**	mg/L	20.0	4.8	20		12/11/18 02:29	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: M.L. KAPP ASH POND
Pace Project No.: 60288198

Sample: MW-305 **Lab ID: 60288198005** Collected: 11/29/18 12:11 Received: 11/30/18 09:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		11/29/18 12:11		
Collected Date	**11/29/2018**				1		11/29/18 12:11		
Collected Time	**12:11**				1		11/29/18 12:11		
Field pH	**7.27**	Std. Units	0.10	0.050	1		11/29/18 12:11		
Field Temperature	**13.73**	deg C	0.50	0.25	1		11/29/18 12:11		
Field Specific Conductance	**950**	umhos/cm	1.0	1.0	1		11/29/18 12:11		
Oxygen, Dissolved	**0.20**	mg/L			1		11/29/18 12:11	7782-44-7	
REDOX	**-72.0**	mV			1		11/29/18 12:11		
Turbidity	**0.69**	NTU	1.0	1.0	1		11/29/18 12:11		
Groundwater Elevation	**578.69**	feet			1		11/29/18 12:11		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**18500**	ug/L	100	12.5	1	12/06/18 11:52	12/06/18 18:24	7440-42-8	
Calcium	**150**	mg/L	0.20	0.054	1	12/06/18 11:52	12/06/18 18:24	7440-70-2	
Lithium	**21.8**	ug/L	10.0	4.6	1	12/06/18 11:52	12/06/18 18:24	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**<0.078**	ug/L	1.0	0.078	1	12/07/18 15:45	12/10/18 13:55	7440-36-0	
Arsenic	**1.4**	ug/L	1.0	0.065	1	12/07/18 15:45	12/10/18 13:55	7440-38-2	
Barium	**95.9**	ug/L	1.0	0.28	1	12/07/18 15:45	12/10/18 13:55	7440-39-3	
Beryllium	**<0.089**	ug/L	0.50	0.089	1	12/07/18 15:45	12/10/18 15:01	7440-41-7	
Cadmium	**0.17J**	ug/L	0.50	0.033	1	12/07/18 15:45	12/10/18 13:55	7440-43-9	
Chromium	**<0.078**	ug/L	1.0	0.078	1	12/07/18 15:45	12/10/18 13:55	7440-47-3	
Cobalt	**0.40J**	ug/L	1.0	0.062	1	12/07/18 15:45	12/10/18 13:55	7440-48-4	
Lead	**<0.13**	ug/L	1.0	0.13	1	12/07/18 15:45	12/10/18 13:55	7439-92-1	
Molybdenum	**670**	ug/L	1.0	0.57	1	12/07/18 15:45	12/10/18 13:55	7439-98-7	
Selenium	**<0.085**	ug/L	1.0	0.085	1	12/07/18 15:45	12/10/18 13:55	7782-49-2	
Thallium	**<0.099**	ug/L	1.0	0.099	1	12/07/18 15:45	12/10/18 13:55	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.090**	ug/L	0.20	0.090	1	12/07/18 13:52	12/10/18 12:49	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**1040**	mg/L	5.0	5.0	1		12/04/18 09:20		
9040 pH	Analytical Method: EPA 9040								
pH	**7.6**	Std. Units	0.10	0.10	1		12/12/18 18:24		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**16.3**	mg/L	1.0	0.29	1		12/11/18 02:47	16887-00-6	
Fluoride	**0.22**	mg/L	0.20	0.19	1		12/11/18 02:47	16984-48-8	
Sulfate	**<0.24**	mg/L	1.0	0.24	1		12/11/18 02:47	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: M.L. KAPP ASH POND
Pace Project No.: 60288198

Sample: MW-306 **Lab ID: 60288198006** Collected: 11/29/18 12:50 Received: 11/30/18 09:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Collected By	**Client**				1		11/29/18 12:50		
Collected Date	**11/29/2018**				1		11/29/18 12:50		
Collected Time	**12:50**				1		11/29/18 12:50		
Field pH	**7.30**	Std. Units	0.10	0.050	1		11/29/18 12:50		
Field Temperature	**13.22**	deg C	0.50	0.25	1		11/29/18 12:50		
Field Specific Conductance	**936**	umhos/cm	1.0	1.0	1		11/29/18 12:50		
Oxygen, Dissolved	**0.26**	mg/L			1		11/29/18 12:50	7782-44-7	
REDOX	**-7.7**	mV			1		11/29/18 12:50		
Turbidity	**0.64**	NTU	1.0	1.0	1		11/29/18 12:50		
Groundwater Elevation	**579.28**	feet			1		11/29/18 12:50		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**17600**	ug/L	100	12.5	1	12/06/18 11:52	12/06/18 18:26	7440-42-8	
Calcium	**141**	mg/L	0.20	0.054	1	12/06/18 11:52	12/06/18 18:26	7440-70-2	
Lithium	**72.6**	ug/L	10.0	4.6	1	12/06/18 11:52	12/06/18 18:26	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**0.092J**	ug/L	1.0	0.078	1	12/07/18 15:45	12/10/18 14:06	7440-36-0	
Arsenic	**0.53J**	ug/L	1.0	0.065	1	12/07/18 15:45	12/10/18 14:06	7440-38-2	
Barium	**54.7**	ug/L	1.0	0.28	1	12/07/18 15:45	12/10/18 14:06	7440-39-3	
Beryllium	**<0.089**	ug/L	0.50	0.089	1	12/07/18 15:45	12/10/18 15:03	7440-41-7	
Cadmium	**<0.033**	ug/L	0.50	0.033	1	12/07/18 15:45	12/10/18 14:06	7440-43-9	
Chromium	**0.16J**	ug/L	1.0	0.078	1	12/07/18 15:45	12/10/18 14:06	7440-47-3	
Cobalt	**0.090J**	ug/L	1.0	0.062	1	12/07/18 15:45	12/10/18 14:06	7440-48-4	
Lead	**<0.13**	ug/L	1.0	0.13	1	12/07/18 15:45	12/10/18 14:06	7439-92-1	
Molybdenum	**96.1**	ug/L	1.0	0.57	1	12/07/18 15:45	12/10/18 14:06	7439-98-7	
Selenium	**2.3**	ug/L	1.0	0.085	1	12/07/18 15:45	12/10/18 14:06	7782-49-2	
Thallium	**<0.099**	ug/L	1.0	0.099	1	12/07/18 15:45	12/10/18 14:06	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.090**	ug/L	0.20	0.090	1	12/07/18 13:52	12/10/18 12:51	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**1030**	mg/L	5.0	5.0	1		12/04/18 09:20		
9040 pH	Analytical Method: EPA 9040								
pH	**7.6**	Std. Units	0.10	0.10	1		12/12/18 18:25		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**79.4**	mg/L	5.0	1.4	5		12/11/18 03:58	16887-00-6	
Fluoride	**<0.19**	mg/L	0.20	0.19	1		12/11/18 03:40	16984-48-8	
Sulfate	**416**	mg/L	50.0	12.0	50		12/11/18 04:16	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: M.L. KAPP ASH POND
Pace Project No.: 60288198

Sample: FIELD BLANK **Lab ID: 60288198007** Collected: 11/29/18 23:40 Received: 11/30/18 09:50 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Boron	**<12.5**	ug/L	100	12.5	1	12/06/18 11:52	12/06/18 18:19	7440-42-8	
Calcium	**0.086J**	mg/L	0.20	0.054	1	12/06/18 11:52	12/06/18 18:19	7440-70-2	
Lithium	**<4.6**	ug/L	10.0	4.6	1	12/06/18 11:52	12/06/18 18:19	7439-93-2	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Antimony	**<0.078**	ug/L	1.0	0.078	1	12/07/18 15:45	12/10/18 14:08	7440-36-0	
Arsenic	**<0.065**	ug/L	1.0	0.065	1	12/07/18 15:45	12/10/18 14:08	7440-38-2	
Barium	**<0.28**	ug/L	1.0	0.28	1	12/07/18 15:45	12/10/18 14:08	7440-39-3	
Beryllium	**<0.089**	ug/L	0.50	0.089	1	12/07/18 15:45	12/10/18 14:30	7440-41-7	
Cadmium	**<0.033**	ug/L	0.50	0.033	1	12/07/18 15:45	12/10/18 14:08	7440-43-9	
Chromium	**<0.078**	ug/L	1.0	0.078	1	12/07/18 15:45	12/10/18 14:08	7440-47-3	
Cobalt	**<0.062**	ug/L	1.0	0.062	1	12/07/18 15:45	12/10/18 14:08	7440-48-4	
Lead	**<0.13**	ug/L	1.0	0.13	1	12/07/18 15:45	12/10/18 14:08	7439-92-1	
Molybdenum	**<0.57**	ug/L	1.0	0.57	1	12/07/18 15:45	12/10/18 14:08	7439-98-7	
Selenium	**<0.085**	ug/L	1.0	0.085	1	12/07/18 15:45	12/10/18 14:08	7782-49-2	
Thallium	**<0.099**	ug/L	1.0	0.099	1	12/07/18 15:45	12/10/18 14:08	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.090**	ug/L	0.20	0.090	1	12/07/18 13:52	12/10/18 12:54	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**<5.0**	mg/L	5.0	5.0	1		12/04/18 09:20		
9040 pH	Analytical Method: EPA 9040								
pH	**7.6**	Std. Units	0.10	0.10	1		12/12/18 18:35		H6
9056 IC Anions	Analytical Method: EPA 9056								
Chloride	**<0.29**	mg/L	1.0	0.29	1		12/11/18 05:09	16887-00-6	
Fluoride	**<0.19**	mg/L	0.20	0.19	1		12/11/18 05:09	16984-48-8	
Sulfate	**<0.24**	mg/L	1.0	0.24	1		12/11/18 05:09	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: M.L. KAPP ASH POND
Pace Project No.: 60288198

QC Batch: 558997 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 60288198001, 60288198002, 60288198003, 60288198004, 60288198005, 60288198006, 60288198007

METHOD BLANK: 2293769 Matrix: Water
Associated Lab Samples: 60288198001, 60288198002, 60288198003, 60288198004, 60288198005, 60288198006, 60288198007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.090	0.20	0.090	12/10/18 12:03	

LABORATORY CONTROL SAMPLE: 2293770

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.1	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2293771 2293772

Parameter	Units	60287953001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	5	5	4.9	5.0	95	98	75-125	2	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: M.L. KAPP ASH POND
Pace Project No.: 60288198

QC Batch: 558709 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET
Associated Lab Samples: 60288198001, 60288198002, 60288198003, 60288198004, 60288198005, 60288198006, 60288198007

METHOD BLANK: 2292392 Matrix: Water
Associated Lab Samples: 60288198001, 60288198002, 60288198003, 60288198004, 60288198005, 60288198006, 60288198007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	ug/L	<12.5	100	12.5	12/06/18 17:26	
Calcium	mg/L	<0.054	0.20	0.054	12/06/18 17:26	
Lithium	ug/L	<4.6	10.0	4.6	12/06/18 17:26	

LABORATORY CONTROL SAMPLE: 2292393

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	991	99	80-120	
Calcium	mg/L	10	9.6	96	80-120	
Lithium	ug/L	1000	972	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2292394 2292395

Parameter	Units	60288012001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	ug/L	749	1000	1000	1740	1740	99	100	75-125	0	20	
Calcium	mg/L	230000 ug/L	10	10	240	239	102	90	75-125	1	20	
Lithium	ug/L	57.4	1000	1000	1040	1040	98	98	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: M.L. KAPP ASH POND
Pace Project No.: 60288198

QC Batch: 558904 Analysis Method: EPA 6020
QC Batch Method: EPA 3010 Analysis Description: 6020 MET
Associated Lab Samples: 60288198001, 60288198002, 60288198003, 60288198004, 60288198005, 60288198006, 60288198007

METHOD BLANK: 2293324 Matrix: Water
Associated Lab Samples: 60288198001, 60288198002, 60288198003, 60288198004, 60288198005, 60288198006, 60288198007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.078	1.0	0.078	12/10/18 13:01	
Arsenic	ug/L	<0.065	1.0	0.065	12/10/18 13:01	
Barium	ug/L	<0.28	1.0	0.28	12/10/18 13:01	
Beryllium	ug/L	<0.089	0.50	0.089	12/10/18 13:01	
Cadmium	ug/L	<0.033	0.50	0.033	12/10/18 13:01	
Chromium	ug/L	<0.078	1.0	0.078	12/10/18 13:01	
Cobalt	ug/L	<0.062	1.0	0.062	12/10/18 13:01	
Lead	ug/L	<0.13	1.0	0.13	12/10/18 13:01	
Molybdenum	ug/L	<0.57	1.0	0.57	12/10/18 13:01	
Selenium	ug/L	<0.085	1.0	0.085	12/10/18 13:01	
Thallium	ug/L	<0.099	1.0	0.099	12/10/18 13:01	

LABORATORY CONTROL SAMPLE: 2293325

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	41.9	105	80-120	
Arsenic	ug/L	40	41.2	103	80-120	
Barium	ug/L	40	39.7	99	80-120	
Beryllium	ug/L	40	40.1	100	80-120	
Cadmium	ug/L	40	40.9	102	80-120	
Chromium	ug/L	40	39.3	98	80-120	
Cobalt	ug/L	40	41.0	103	80-120	
Lead	ug/L	40	38.9	97	80-120	
Molybdenum	ug/L	40	41.9	105	80-120	
Selenium	ug/L	40	41.4	104	80-120	
Thallium	ug/L	40	37.4	94	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2293326 2293327

Parameter	Units	60288195003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	<0.078	40	40	42.3	42.2	106	106	75-125	0	20	
Arsenic	ug/L	1.3	40	40	43.4	43.3	105	105	75-125	0	20	
Barium	ug/L	48.4	40	40	89.9	88.3	104	100	75-125	2	20	
Beryllium	ug/L	<0.089	40	40	38.7	37.7	97	94	75-125	3	20	
Cadmium	ug/L	<0.033	40	40	41.7	41.8	104	104	75-125	0	20	
Chromium	ug/L	<0.078	40	40	40.3	40.6	101	102	75-125	1	20	
Cobalt	ug/L	0.89J	40	40	40.4	41.0	99	100	75-125	2	20	

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QUALITY CONTROL DATA

Project: M.L. KAPP ASH POND
Pace Project No.: 60288198

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2293326 2293327

Parameter	Units	60288195003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lead	ug/L	<0.13	40	40	37.9	37.7	95	94	75-125	0	20	
Molybdenum	ug/L	32.6	40	40	75.8	76.5	108	110	75-125	1	20	
Selenium	ug/L	<0.085	40	40	40.9	41.3	102	103	75-125	1	20	
Thallium	ug/L	<0.099	40	40	37.0	37.0	92	93	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: M.L. KAPP ASH POND
Pace Project No.: 60288198

QC Batch: 558161 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60288198001, 60288198002, 60288198003, 60288198004, 60288198005, 60288198006, 60288198007

METHOD BLANK: 2289976 Matrix: Water
Associated Lab Samples: 60288198001, 60288198002, 60288198003, 60288198004, 60288198005, 60288198006, 60288198007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	12/04/18 09:20	

LABORATORY CONTROL SAMPLE: 2289977

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	985	98	80-120	

SAMPLE DUPLICATE: 2289978

Parameter	Units	60288055003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	739	757	2	10	

SAMPLE DUPLICATE: 2289979

Parameter	Units	60288198004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	601	604	0	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: M.L. KAPP ASH POND
Pace Project No.: 60288198

QC Batch: 559875 Analysis Method: EPA 9040
QC Batch Method: EPA 9040 Analysis Description: 9040 pH
Associated Lab Samples: 60288198001, 60288198002, 60288198003, 60288198004, 60288198005, 60288198006, 60288198007

SAMPLE DUPLICATE: 2297528

Parameter	Units	60288198002 Result	Dup Result	RPD	Max RPD	Qualifiers
pH	Std. Units	8.4	8.4	0	10	H6

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: M.L. KAPP ASH POND
Pace Project No.: 60288198

QC Batch: 559268 Analysis Method: EPA 9056
QC Batch Method: EPA 9056 Analysis Description: 9056 IC Anions
Associated Lab Samples: 60288198001, 60288198002, 60288198003, 60288198004, 60288198005, 60288198006, 60288198007

METHOD BLANK: 2295312 Matrix: Water
Associated Lab Samples: 60288198001, 60288198002, 60288198003, 60288198004, 60288198005, 60288198006, 60288198007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.29	1.0	0.29	12/10/18 10:05	
Fluoride	mg/L	<0.19	0.20	0.19	12/10/18 10:05	
Sulfate	mg/L	<0.24	1.0	0.24	12/10/18 10:05	

LABORATORY CONTROL SAMPLE: 2295313

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.9	97	80-120	
Fluoride	mg/L	2.5	2.3	91	80-120	
Sulfate	mg/L	5	4.5	91	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2295314 2295315

Parameter	Units	60288054001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	55.5	50	50	105	105	98	99	80-120	0	15	
Fluoride	mg/L	ND	25	25	23.7	23.5	91	90	80-120	1	15	
Sulfate	mg/L	95.0	50	50	143	142	96	93	80-120	1	15	

SAMPLE DUPLICATE: 2295316

Parameter	Units	60288054002 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfate	mg/L	52.9	52.2	1	15	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: M.L. KAPP ASH POND
Pace Project No.: 60288198

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-K	Pace Analytical Services - Kansas City

ANALYTE QUALIFIERS

H6	Analysis initiated outside of the 15 minute EPA required holding time.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: M.L. KAPP ASH POND
Pace Project No.: 60288198

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60288198001	**MW-301**		559262		
60288198002	**MW-302**		559262		
60288198003	**MW-303**		559262		
60288198004	**MW-304**		559262		
60288198005	**MW-305**		559262		
60288198006	**MW-306**		559262		
60288198001	**MW-301**	EPA 3010	558709	EPA 6010	558766
60288198002	**MW-302**	EPA 3010	558709	EPA 6010	558766
60288198003	**MW-303**	EPA 3010	558709	EPA 6010	558766
60288198004	**MW-304**	EPA 3010	558709	EPA 6010	558766
60288198005	**MW-305**	EPA 3010	558709	EPA 6010	558766
60288198006	**MW-306**	EPA 3010	558709	EPA 6010	558766
60288198007	**FIELD BLANK**	EPA 3010	558709	EPA 6010	558766
60288198001	**MW-301**	EPA 3010	558904	EPA 6020	559067
60288198002	**MW-302**	EPA 3010	558904	EPA 6020	559067
60288198003	**MW-303**	EPA 3010	558904	EPA 6020	559067
60288198004	**MW-304**	EPA 3010	558904	EPA 6020	559067
60288198005	**MW-305**	EPA 3010	558904	EPA 6020	559067
60288198006	**MW-306**	EPA 3010	558904	EPA 6020	559067
60288198007	**FIELD BLANK**	EPA 3010	558904	EPA 6020	559067
60288198001	**MW-301**	EPA 7470	558997	EPA 7470	559161
60288198002	**MW-302**	EPA 7470	558997	EPA 7470	559161
60288198003	**MW-303**	EPA 7470	558997	EPA 7470	559161
60288198004	**MW-304**	EPA 7470	558997	EPA 7470	559161
60288198005	**MW-305**	EPA 7470	558997	EPA 7470	559161
60288198006	**MW-306**	EPA 7470	558997	EPA 7470	559161
60288198007	**FIELD BLANK**	EPA 7470	558997	EPA 7470	559161
60288198001	**MW-301**	SM 2540C	558161		
60288198002	**MW-302**	SM 2540C	558161		
60288198003	**MW-303**	SM 2540C	558161		
60288198004	**MW-304**	SM 2540C	558161		
60288198005	**MW-305**	SM 2540C	558161		
60288198006	**MW-306**	SM 2540C	558161		
60288198007	**FIELD BLANK**	SM 2540C	558161		
60288198001	**MW-301**	EPA 9040	559875		
60288198002	**MW-302**	EPA 9040	559875		
60288198003	**MW-303**	EPA 9040	559875		
60288198004	**MW-304**	EPA 9040	559875		
60288198005	**MW-305**	EPA 9040	559875		
60288198006	**MW-306**	EPA 9040	559875		
60288198007	**FIELD BLANK**	EPA 9040	559875		
60288198001	**MW-301**	EPA 9056	559268		
60288198002	**MW-302**	EPA 9056	559268		
60288198003	**MW-303**	EPA 9056	559268		
60288198004	**MW-304**	EPA 9056	559268		
60288198005	**MW-305**	EPA 9056	559268		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: M.L. KAPP ASH POND
Pace Project No.: 60288198

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60288198006	**MW-306**	EPA 9056	559268		
60288198007	**FIELD BLANK**	EPA 9056	559268		

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Sample Condition Upon Receipt

WO# : 60288198

60288198

Client Name: SCS Engineers

Courier: FedEx ☒ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☐ Client ☐ Other ☐

Tracking #: 4512 2786 4040 Pace Shipping Label Used? Yes ☐ No ☒

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☒ Other ☐

Thermometer Used: T-301 **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): **As-read** 4.6 **Corr. Factor** 4.6 − 0.0 (12-1-18 KE) **Corrected** 4.6

Date and initials of person examining contents: AC 12/1

Temperature should be above freezing to 6°C

Chain of Custody present:	☒Yes ☐No ☐N/A	
Chain of Custody relinquished:	☒Yes ☐No ☐N/A	
Samples arrived within holding time:	☒Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☒No ☐N/A	
Rush Turn Around Time requested:	☐Yes ☒No ☐N/A	
Sufficient volume:	☒Yes ☐No ☐N/A	
Correct containers used:	☒Yes ☐No ☐N/A	
Pace containers used:	☒Yes ☐No ☐N/A	
Containers intact:	☒Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☒N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☒N/A	
Sample labels match COC: Date / time / ID / analyses	☒Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☒No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	☒Yes ☐No ☐N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☒No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☒No	
Trip Blank present:	☐Yes ☐No ☒N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☒N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☒N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☒N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: HWK Date: 12-3-2018

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: of

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	SCS Engineers	Report To:	Meghan Blodgett	Attention:	Meghan Blodgett/Jess Valcheff
Address:	2830 Dairy Drive	Copy To:	Tom Karwaski	Company Name:	SCS Engineers
	Madison WI 53718			Address:	
Email To:	mblodgett@scsengineers.com	Purchase Order No.:		Pace Quote Reference:	
Phone:	608-216-7362 Fax:	Project Name:	M.L. Kapp Ash Pond	Pace Project Manager:	Hank Kapka 913-563-1404
Requested Due Date/TAT:		Project Number:	25218061.00.	Pace Profile #:	6696 Line 2

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: IA

08/30/2019 - Classification: Internal - ECRM6700181

Section D Required Client Information

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

	SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	6010 Total Metals: B-Ca-Li	6020 Total Metals *	7470 Total Mercury	9056 Chloride-Fluoride-Sulfate	9040 pH	2540C TDS							Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
																		Requested Analysis Filtered (Y/N)	N	N														60288198
1	MW-301	WT	G	xxx	xxx	11/29/18	1342		3	1		2							X	X	X	X	X	X	BP1U	2BP3N						001
2	MW-302	WT	G	xxx	xxx	11/29/18	1045		3	1		2							X	X	X	X	X	X								002
3	MW-303	WT	G	xxx	xxx	11/29/18	1053		3	1		2							X	X	X	X	X	X								003
4	MW-304	WT	G	xxx	xxx	11/29/18	1131		3	1		2							X	X	X	X	X	X								004
5	MW-305	WT	G	xxx	xxx	11/29/18	1211		3	1		2							X	X	X	X	X	X								005
6	MW-306	WT	G	xxx	xxx	11/29/18	1250		3	1		2							X	X	X	X	X	X								006
7	FIELD BLANK	WT	G	xxx	xxx	11/29/18	1340		3	1		2							X	X	X	X	X	X								007
8																																
9																																
10																																
11																																
12																																

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Ship To: 9608 Loiret Boulevard, Lenexa, KS 66219	Nick Shammel / SCS Engineers	11/29/18	16:00	[signature] P251	11.30.18	09:50	4	4	4	4
* As-Ba-Be-Cd-Cr-Co-Pb-Mo-Sb-Se-Tl										

SAMPLER NAME AND SIGNATURE			Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER:						
SIGNATURE of SAMPLER:	DATE Signed (MM/DD/YY):					

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-Feb-2007