

2017 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

EPA CCR RULE COMPLIANCE

SOUTH CAROLINA ELECTRIC & GAS: Williams Station: Class Three Landfill

January 2018

Prepared by:

No. 1178 CAROLOGIANIAN ONAL GENERAL CAROLOGIAN ON CAROLOGI

Brian S. Boutin, PG
Nautilus Geologic Consulting, PLLC

CAROLANIA CAROLA

Stefan Bray, PE Garrett & Moore, Inc.

Prepared for:

South Carolina Electric & Gas Company 220 Operation Way Mail Code C221 Cayce, SC 29033



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1.0 INTRODUCTION

This document presents the 2017 Annual Groundwater Monitoring and Corrective Action report for the Class 3 landfill at South Carolina Electric & Gas (SCE&G) Williams Station Highway 52 Class 3 Landfill in Goose Creek, Berkeley County, South Carolina in accordance with 40 CFR Part 257.90 (e). The Class 3 landfill is a coal combustion residuals (CCR) handling facility as defined by the US Environmental Protection Agency (EPA) CCR Rule (40 CFR Part 257.93).

This report presents the following information as required under 40 CFR Part 257.90 (e):

- 1. A facility map (aerial image) showing the Class 3 landfill and all background (or upgradient) and downgradient monitoring wells, including the well identification numbers, that are part of the groundwater monitoring program for the landfill;
- 2. Identification of additional monitoring wells that were installed during 2017, along with a narrative description of why the wells were installed;
- 3. 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;
- 4. A narrative discussion of transitions between monitoring programs (e.g., the date and circumstances for transitioning from detection monitoring to assessment monitoring in addition to identifying the constituent(s) detected at a statistically significant increase over background levels); and
- 5. Other information required to be included in the annual report as specified in Parts 257.90 through 257.98 of the CCR Rule.

The following sections present the components of the annual report.



2.0 GROUNDWATER MONITORING WELL SYSTEM

Nine Type II groundwater monitoring wells (designated MW-LF-20 through MW-LF-28, MW-LF-22D and MW-LF-23D) were installed at Williams Station Highway 52 Class Three Landfill in March, April and November 2016 to serve as EPA CCR Rule Compliance monitoring wells. Seven of the Type II groundwater monitoring wells (MW-LF-20 through GW-26) were initially installed at the site in March 2016. Subsequent groundwater gauging indicated that the volume of groundwater in wells MW-LF-22 and MW-LF-23 was insufficient to allow for collection of representative groundwater samples from the wells. Consequently, replacement wells were installed to greater depths immediately adjacent to MW-LF-22 and MWLF--23 in April 2016 to penetrate deeper into the surficial aquifer and allow for collection of representative groundwater samples at those locations. The replacement wells are designated MW-LF-22D and MW-LF-23D, respectively. Two additional background monitoring wells, designated MW-LF-27 and MW-LF-28, were installed at the site in November 2016 at locations hydraulically up gradient of the landfill. Rising head permeability (slug) tests were conducted at monitoring wells MW-LF-20, MW-LF-21, MW-LF-22D, MW-LF-23D, MW-LF-24, MW-LF-25 and MW-LF-26, as well as at existing monitoring well MW-LF-10, in May 2016; additional slug tests were conducted at monitoring wells MW-LF-27 and MW-LF-28 in January 2017. A site location map is presented as Figure 1 and a site map showing the locations and designations of the monitoring wells at Williams Station Highway 52 Landfill is presented as Figure 2. A South Carolina licensed well driller with S&ME, Inc. of Wilmington, North Carolina (SC License #1583) performed the drilling and installation of monitoring wells MW-LF-20 through MW-LF-26. A South Carolina licensed well driller with Red Dog Drilling of Charlotte, North Carolina (SC License #1230) performed the drilling and installation of monitoring wells MW-LF-22D, MW-LF-23D, MW-LF-27 and MW-LF-28. A South Carolina registered surveyor from the GEL Group, Inc. of Charleston, South Carolina (ELS SC license #15513) surveyed the monitoring wells for horizontal position, ground surface elevation and top of PVC pipe elevation.

The Type II groundwater monitoring wells were installed to monitor groundwater quality in the vicinity of the Class Three Landfill in compliance with the groundwater monitoring requirements of the US EPA CCR Rule (40 CFR Part 257.93). In addition, existing monitoring wells MW-LF-10 and MW-LF-11 are included as part of the monitoring well network for US groundwater monitoring. The locations and designations of the monitoring wells are shown in **Figure 2**. Existing monitoring wells MW-LF-10 and MW-



LF-11, as well as new monitoring wells MW-LF-27 and MW-LF-28, serve as up-gradient wells to monitor the quality of background groundwater in the surficial aquifer entering the area of the Class Three Landfill. The remaining monitoring wells (MW-LF-20, MW-LF-21, MW-LF-22D, MW-LF-23D, MW-LF-24, MW-LF-25 and MW-LF-26) serve as down gradient wells to monitor the quality of groundwater down gradient of the Class Three Landfill.



3.0 GROUNDWATER MONITORING

3.1 Groundwater Sampling

In accordance with 40 CFR Part 257.94 (b), eight independent groundwater samples were collected for field and laboratory analysis from monitoring wells MW-LF-10, MW-LF-11, MW-LF-20, MW-LF-21, MW-LF-22D, MW-LF-23D. MW-LF-24, MW-LF-25 and MW-LF-26 beginning in May 2016 and ending in July 2017. Groundwater samples were collected from monitoring wells MW-LF-10, MW-LF-11, MW-LF-20, MW-LF-21, MW-LF-22D, MW-LF-23D, MW-LF-24, MW-LF-25 and MW-LF-26 every other month throughout the monitoring period in accordance with the stipulations of the Groundwater Sampling and Analysis Plan for the Class 3 Landfill (May 2016; revised July 2016 and December 2016). One groundwater sample was collected for analysis during each of the independent monitoring events. Monitoring wells MW-LF-27 and MW-LF-28 were added to the monitoring well network as additional background monitoring wells beginning with the November 2016 groundwater monitoring event. Five independent groundwater samples were collected for field and laboratory analysis from background monitoring wells MW-LF-27 and MW-LF-28 during the period of November 2016 through July 2017 in accordance with the stipulations of the Groundwater Sampling and Analysis Plan for the Class 3 Landfill (May 2016; revised July 2016 and December 2016). One groundwater sample was collected from monitoring wells MW-LF-27 and MW-LF-28 during each of the independent monitoring events.

All independent groundwater samples collected from monitoring wells MW-LF-10, MW-LF-11, MW-LF-20, MW-LF-21, MW-LF-22D, MW-LF-23D, MW-LF-24, MW-LF-25, MW-LF-26, MW-LF-27 and MW-LF-28 in accordance with 40 CFR Part 257.84 (b) during the period of May 2016 through July 2017 were analyzed by South Carolina Certified laboratories (SCE&G Central Laboratory (Certification Number 32006) and GEL Laboratories, LLC (Certification Numbers 10120001 and 10120002) for the constituents listed in Appendix III and Appendix IV of the EPA CCR Rule (40 CFR Parts 257.50 through 257.107).

In accordance with 40 CFR Part 257.94, the first round of Detection Monitoring was conducted on September 27, 2017 and included groundwater sampling from monitoring wells MW-LF-10, MW-LF-11, MW-LF-20, MW-LF-21, MW-LF-22D, MW-LF-23D. MW-LF-24, MW-LF-25, MW-LF-26, MW-LF-27 and MW-LF-28. One groundwater sample was collected from each of the monitoring wells during the Detection Monitoring event. All groundwater samples collected from the monitoring wells for Detection Monitoring during the September 2017 Detection Monitoring event were analyzed by South



Carolina Certified laboratories (SCE&G Central Laboratory and GEL Laboratories, LLC) for the constituents listed in Appendix III of the EPA CCR Rule (40 CFR Parts 257.50 through 257.107).

3.2 Results of Field and Laboratory Analyses of Groundwater Samples

The results of the field and laboratory analyses of the groundwater samples collected from the monitoring wells during the independent rounds of monitoring and the first round of Detection Monitoring are presented **Appendix A**. The results indicate that the pH of the groundwater at the site, including at background locations, generally falls within the EPA CCR Rule standard range of 6.5 to 8.5 standard units. Notable exceptions are for groundwater samples collected from monitoring wells MW-24-LF and MW-26-LF which generally exhibited pH values slightly below the EPA CCR Rule standard range. The results further indicate that the reported concentrations of chloride, fluoride and sulfate for the groundwater samples collected from the monitoring wells during the September 2017 Detection Monitoring event were all below the corresponding maximum contaminant levels (MCLs). However, concentrations of total dissolved solids (TDS) exceeded the EPA Secondary MCL of 500 mg/L in the groundwater samples collected from monitoring wells MW-LF-20, MW-LF-21, MW-LF-22D, MW-LF-25 and MW-LF-26. It is noted that boron was not detected in any of the groundwater samples collected from the monitoring wells during the September 2017 Detection Monitoring event.

Statistical analysis to compare the groundwater quality in the downgradient monitoring wells to that of background water quality for the September 2017 Detection Monitoring event was completed on January 15, 2018 by O'Brien & Gere for South Carolina Electric & Gas. The results of the statistical analysis are presented in **Appendix B**. The statistical analysis indicates that the concentrations of calcium in the groundwater samples collected from compliance monitoring wells MW-LF-20, MW-LF-21, MW-LF-24, MW-LF-25 and MW-LF-26 show statistically significant increases over background concentrations (as determined from the data for groundwater samples collected from background monitoring wells MW-LF-10, MW-LF-11, MW-LF-27 and MW-LF-28). In addition, the statistical analysis indicates that chloride in the groundwater samples collected from compliance monitoring wells MW-LF-24, MW-LF-25 and MW-LF-26 and sulfate in the groundwater samples collected from compliance monitoring wells MW-LF-22D, MW-LF-23D, MW-LF-24, MW-LF-25 and MW-LF-26 also show statistically significant increases over background concentrations Furthermore, the statistical analysis indicates that the concentrations of TDS in the groundwater samples collected



from compliance monitoring wells MW-LF-20, MW-LF-21, MW-LF-22D, MW-LF-23D., MW-LF-24, MW-LF-25 and MW-LF-26 show statistically significant increases over background concentrations. No other statistically significant increases over background concentrations were observed for the CCR Rule Appendix III constituents in the groundwater samples collected from the monitoring wells during the September 2017 Detection Monitoring event.

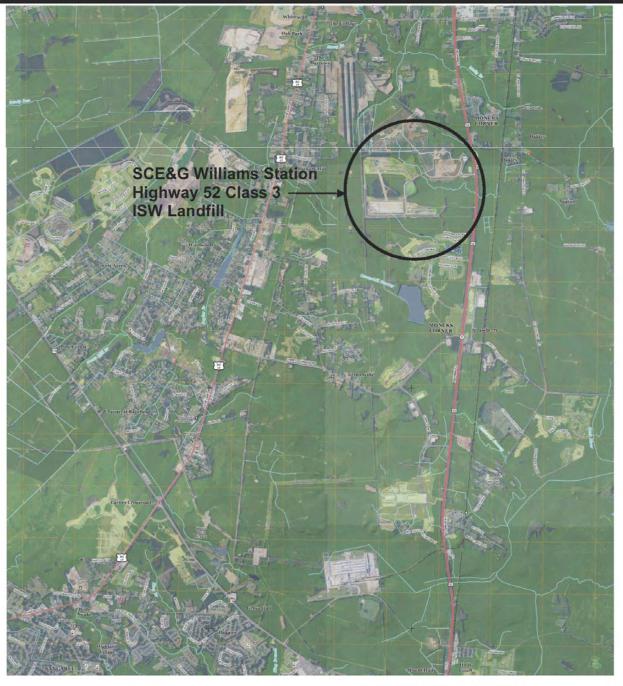
3.3 Alternate Source Demonstration

In accordance with 40 CFR Part 257.94 (e) (2), SCE&G intends to conduct an Alternate Source Demonstration (ASD) for the statistically significant increases in concentrations of calcium, chloride, sulfate and TDS relative to background concentrations at the CCR Rule background monitoring wells. The ASD will rely, at a minimum, on historical groundwater quality data, as well as additional groundwater quality data for groundwater samples collected contemporaneously from existing monitoring wells, as well as water samples collected from the landfill leachate pond and leachate samples from the Class 3 Landfill leachate outfall.



4.0 KEY PROJECT ACTIVITIES FOR 2018

In 2018, the ASD and report of results will be completed by April 15, 2018 for inclusion in the plant operating record. It is anticipated that the ASD will demonstrate that the statistically significant increases of calcium, chloride, sulfate, and TDS in the groundwater samples collected from the monitoring wells during the September 2017 Detection Monitoring event are likely attributable to a source(s) other than the Class 3 Landfill. Consequently, it is further anticipated that Detection Monitoring will be resumed in 2018. Two rounds of Detection Monitoring are, therefore, anticipated to be completed in 2018 with groundwater samples being collected from monitoring wells MW-LF-10, MW-LF-11, MW-LF-20, MW-LF-21, MW-LF-22D, MW-LF-23D,MW-LF-24, MW-LF-25, MW-LF-26, MW-LF-27 and MW-LF-28.



N

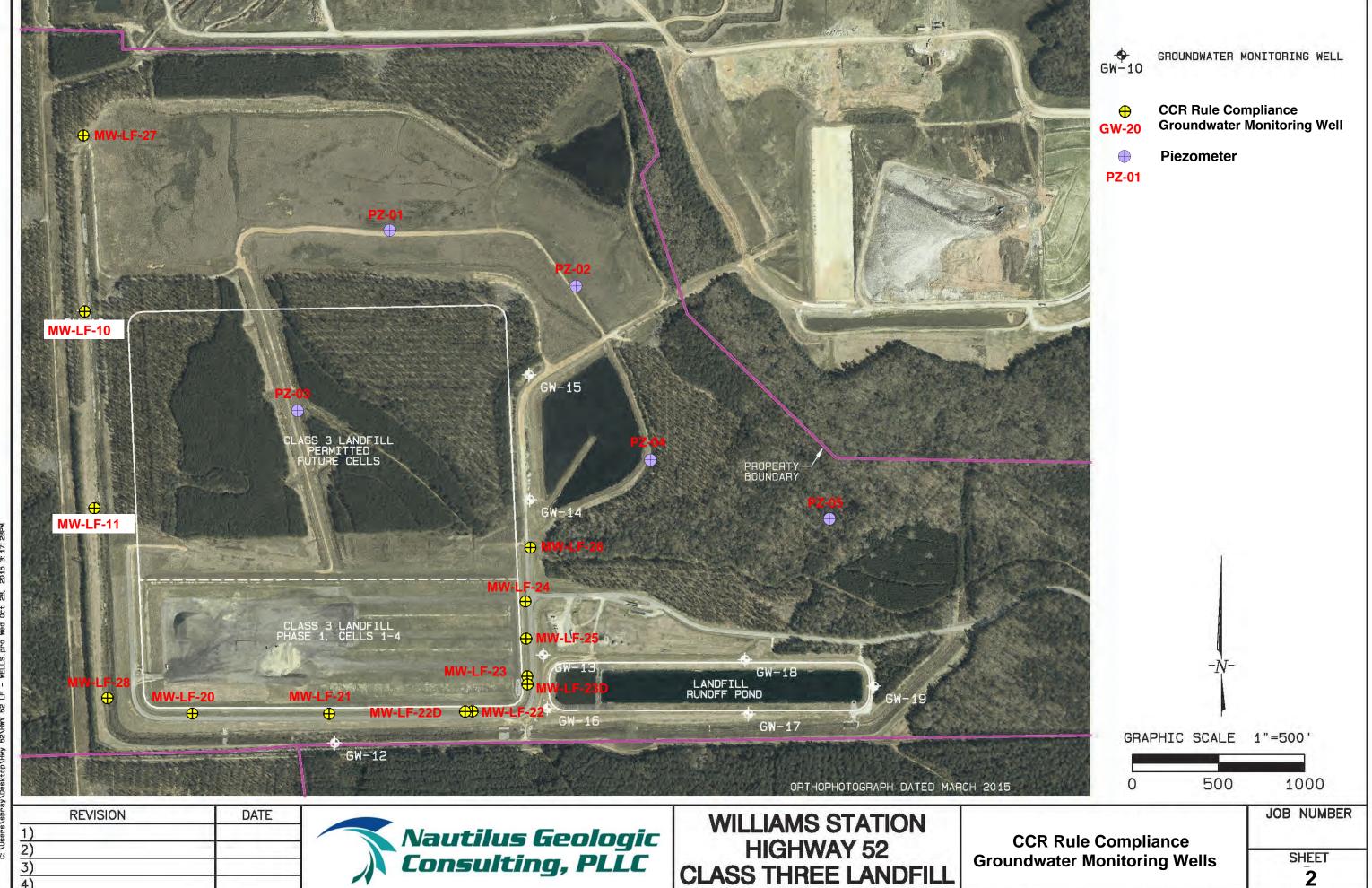
Source: USGS 7.5' Topographic Quadrangle Series Moncks Corner, SC 2014 and Mount Holly, SC 2014



SITE LOCATION MAP

SCE&G Williams Station Highway 52 Class 3 ISW Landfill Moncks Corner, Berkeley County, South Carolina

Drawn by:	Reviewed by:	Project #:	Drawing #:	Figure No.
USGS		Scale: 1:24,000	Drawing Date: 8/01/2016	1





APPENDIX A

Results of Field and Laboratory Analyses of Groundwater Samples

EPA CCR Rule Compliance Monitoring Wells

Groundwater Monitoring Data

South Carolina Electric & Gas: Williams Station Highway 52 Class Three Landfill

Williams Station Highway 52 Class Three Landfill

					Gauging Da	ate: 05/11/16							
		Well Data						1					
				Initial Gauging		Final G	Final Gauging		Final Water Quality Indicator Parameters				
		Ground											
	PVC Pipe	Surface		Depth to	Groundwater	Depth to	Groundwater	Temparature	рН	Sp. Cond.	Turbidity	ORP	DO
Monitoring Well ID	Elevation, ft.	Elevation, ft.	Stickup, ft.	Groundwater, ft.	Elevation, ft.	Groundwater, ft.	Elevation, ft.	°C	S.U.	μS/cm	NTU	mV	mg/L
GW-10	52.28	49.60	2.68	8.70	43.58	9.77	42.51	19.5	7.1	537	1.80	-2.0	0.96
GW-20	60.81	56.70	4.11	21.91	38.90	23.01	37.80	23.3	6.7	909	3.91	14.8	1.20
GW-21	56.14	52.50	3.64	18.97	37.17	19.61	36.53	22.3	7.0	804	3.28	19.7	2.04
GW-22D	50.36	47.10	3.26	26.04	24.32	27.22	23.14	24.7	7.3	742	9.87	-10.2	1.10
GW-23D	49.69	46.20	3.49	15.68	34.01	17.28	32.41	25.9	7.2	515	3.79	4.8	2.40
GW-24	52.40	48.70	3.70	16.06	36.34	16.68	35.72	22.4	6.6	877	3.91	36.9	3.01
GW-25	50.93	47.40	3.53	15.40	35.53	16.04	34.89	22.7	6.9	727	4.83	25.4	5.76
GW-26	55.21	51.20	4.01	25.06	30.15	25.44	29.77	25.4	6.4	1559	3.23	-27.9	1.01

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Certificate of Analysis Report for

GEEL003 GEL Engineering, LLC Client SDG: 397240 GEL Work Order: 397240

The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a Tracer compound
- ** Analyte is a surrogate compound
- J Value is estimated
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Jake Crook.

Jack H Crok

Reviewed by

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Certificate of Analysis

Project:

Client ID:

Report Date: May 25, 2016

SCEG01616C

94.3

(15%-125%)

GEEL003

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner
Project: Williams 52 RCRA

Client Sample ID: GW-10
Sample ID: 397240001
Matrix: Ground Water
Collect Date: 11-MAY-16 08:48

12-MAY-16

GFPC, Ra228, Liquid "As Received"

Collector: Client

Receive Date:

Parameter	Qualifier	Result	DL	RL	Units	DF Analyst Date	Time Batch Method
Ion Chromatography							
SW846 9056A Anion	s "As Received	."					
Fluoride		0.541	0.033	0.100	mg/L	1 MXL2 05/13/16	0024 1566745 1
Metals Analysis-ICP-	-MS						
SW846 3005A/6020A	A Liquid "As Re	eceived"					
Lithium	_	12.2	2.00	10.0	ug/L	1 BCD1 05/17/16	1507 1566761 2
Rad Gas Flow Propor	tional Counting	5					
GFPC, Ra228, Liquid	l "As Received"	'					
Radium-228	U	ND	1.70	3.00	pCi/L	AXM6 05/23/16	1425 1567148 3
Rad Radium-226							
Lucas Cell, Ra226, lie	quid "As Receiv	ved"					
Radium-226	_	1.37	0.472	1.00	pCi/L	LXP1 05/24/16	0725 1567602 4
The following Prep M	lethods were pe	erformed:					
Method	Description	1		Analyst	Date	Time Prep Batc	1
SW846 3005A	ICP-MS 3005	A PREP		JP1	05/12/16	1720 1566760	

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 9056A	
2	SW846 3005A/6020A	
3	EPA 904.0/SW846 9320 Modified	
4	EPA 903.1 Modified	
Surrogate/Trace	r Recovery Test	Result Nominal Recovery% Acceptable Limits

Notes:

Barium-133 Tracer

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: May 25, 2016

SCEG01616C

85.1

(15%-125%)

GEEL003

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner
Project: Williams 52 RCRA

Client Sample ID: GW-20 Sample ID: 397240002 Matrix: Ground Water Collect Date: 11-MAY-16 09:57

Receive Date: 12-MAY-16 Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	DF Analyst Date	Time Batch 1	Method
Ion Chromatography	y							
SW846 9056A Anio	ons "As Received	"						
Fluoride		0.127	0.033	0.100	mg/L	1 MXL2 05/13/16	0203 1566745	1
Metals Analysis-ICF	P-MS							
SW846 3005A/6020	A Liquid "As Re	eceived"						
Lithium	J	3.47	2.00	10.0	ug/L	1 BCD1 05/17/16	1535 1566761	2
Rad Gas Flow Propo	ortional Counting	;						
GFPC, Ra228, Liqui	id "As Received"							
Radium-228	U	ND	1.69	3.00	pCi/L	AXM6 05/23/16	1427 1567148	3
Rad Radium-226								
Lucas Cell, Ra226, 1	liquid "As Receiv	ved"						
Radium-226	-	0.383	0.306	1.00	pCi/L	LXP1 05/24/16	0725 1567602	4
The following Prep	Methods were pe	erformed:						
Method	Description	l		Analyst	Date	Time Prep Batch	1	
SW846 3005A	ICP-MS 3005	A PREP		JP1	05/12/16	1720 1566760		

The following Analytical Methods were performed:

GFPC, Ra228, Liquid "As Received"

The following .	Analytical Methods were performed.							
Method	Description	Analyst Comments						
1	SW846 9056A		-					
2	SW846 3005A/6020A							
3	EPA 904.0/SW846 9320 Modified							
4	EPA 903.1 Modified							
Surrogate/Trace	er Recovery Test	Result	Nominal	Recovery%	Acceptable Limits			

Notes:

Barium-133 Tracer

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Certificate of Analysis

Project:

Client ID:

Report Date: May 25, 2016

SCEG01616C

GEEL003

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner
Project: Williams 52 RCRA

Client Sample ID: GW-21 Sample ID: 397240003 Matrix: Ground Water Collect Date: 11-MAY-16 11:00

Receive Date: 12-MAY-16

Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	DF Ar	nalyst Date	Time Batch	Method
Ion Chromatograph	ıy								
SW846 9056A Ani	ons "As Received	l"							
Fluoride		0.155	0.033	0.100	mg/L	1 M	XL2 05/13/16	0236 1566745	1
Metals Analysis-IC	P-MS								
SW846 3005A/602	OA Liquid "As Re	eceived"							
Lithium	J	2.50	2.00	10.0	ug/L	1 BC	CD1 05/17/16	1539 1566761	2
Rad Gas Flow Prop	ortional Counting	g							
GFPC, Ra228, Liqu	uid "As Received"	"							
Radium-228	U	ND	1.60	3.00	pCi/L	A	XM6 05/23/16	1427 1567148	3
Rad Radium-226									
Lucas Cell, Ra226,	liquid "As Receiv	ved"							
Radium-226	U	ND	0.385	1.00	pCi/L	LX	XP1 05/24/16	0725 1567602	4
The following Prep	Methods were pe	erformed:							
Method	Description	n		Analyst	Date	Time	Prep Batcl	1	_
SW846 3005A	ICP-MS 3005	SA PREP		JP1	05/12/16	1720	1566760		

The following Analytical Methods were performed:

Method Description Analyst Comments

SW846 9056A

Analyst Comments

2 SW846 3005A/6020A

3 EPA 904.0/SW846 9320 Modified

4 EPA 903.1 Modified

Surrogate/Tracer RecoveryTestResultNominalRecovery%Acceptable LimitsBarium-133 TracerGFPC, Ra228, Liquid "As Received"93.2(15%-125%)

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Certificate of Analysis

Project:

Client ID:

Report Date: May 25, 2016

SCEG01616C

GEEL003

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner
Project: Williams 52 RCRA

Client Sample ID: DUP

Sample ID: 397240004 Matrix: Ground Water Collect Date: 11-MAY-16 11:20

Receive Date: 12-MAY-16 Collector: Client

Qualifier DL RLUnits Parameter Result DF Analyst Date Time Batch Method Ion Chromatography SW846 9056A Anions "As Received" 0.033 0.100 Fluoride 0.156 mg/L 1 MXL2 05/13/16 0309 1566745 1 Metals Analysis-ICP-MS SW846 3005A/6020A Liquid "As Received" 1 BCD1 05/17/16 1542 1566761 Lithium 2.00 10.0 2 2.43 ug/L Rad Gas Flow Proportional Counting GFPC, Ra228, Liquid "As Received" Radium-228 ND 1.52 3.00 pCi/L AXM6 05/23/16 1427 1567148 3 Rad Radium-226 Lucas Cell, Ra226, liquid "As Received" Radium-226 0.740 0.460 1.00 pCi/L LXP1 05/24/16 0725 1567602 4 The following Prep Methods were performed: Method Date Prep Batch Description Analyst Time SW846 3005A ICP-MS 3005A PREP JP1 05/12/16 1720 1566760

The following Analytical Methods were performed:

	<u> </u>	
Method	Description	Analyst Comments
1	SW846 9056A	•
2	SW846 3005A/6020A	
3	EPA 904 0/SW846 9320 Modified	

EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GEPC Ra228 Liquid "As Received"			90.4	(15%-125%)

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Certificate of Analysis

Project:

Client ID:

Report Date: May 25, 2016

SCEG01616C

GEEL003

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner
Project: Williams 52 RCRA

Client Sample ID: Field Blank Sample ID: 397240005

Matrix: Water

Collect Date: 11-MAY-16 12:00
Receive Date: 12-MAY-16
Collector: Client

Qualifier DL RL Units Parameter Result DF Analyst Date Time Batch Method Ion Chromatography SW846 9056A Anions "As Received" 0.033 0.100 Fluoride ND mg/L 1 MXL2 05/13/16 0341 1566745 1 Metals Analysis-ICP-MS SW846 3005A/6020A Liquid "As Received" 1 BCD1 05/17/16 1546 1566761 Lithium 2.00 10.0 2 ND ug/L Rad Gas Flow Proportional Counting GFPC, Ra228, Liquid "As Received" Radium-228 ND 1.51 3.00 pCi/L AXM6 05/23/16 1427 1567148 3 Rad Radium-226 Lucas Cell, Ra226, liquid "As Received" Radium-226 ND 0.494 1.00 pCi/L LXP1 05/24/16 0725 1567602 4 The following Prep Methods were performed: Method Date Prep Batch Description Analyst Time SW846 3005A ICP-MS 3005A PREP JP1 05/12/16 1720 1566760

The following Analytical Methods were performed:

Method	Description	Analyst Comments	
1	SW846 9056A	·	
2	SW846 3005A/6020A		
3	EPA 904.0/SW846 9320 Modified		
4	EPA 903.1 Modified		

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits

Barium-133 Tracer GFPC, Ra228, Liquid "As Received"

86.6 (15%-125%)

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Certificate of Analysis

Project:

Client ID:

Report Date: May 25, 2016

SCEG01616C

GEEL003

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner
Project: Williams 52 RCRA

Client Sample ID: GW-22D
Sample ID: 397240006
Matrix: Ground Water
Collect Date: 11-MAY-16 12:13

Receive Date: 12-MAY-16

Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	DF Analyst Dat	e Time Batch	Method
Ion Chromatograp	hy							
SW846 9056A An	ions "As Received	!"						
Fluoride		0.304	0.033	0.100	mg/L	1 MXL2 05/13/1	6 0414 1566745	1
Metals Analysis-IO	CP-MS							
SW846 3005A/602	20A Liquid "As Re	eceived"						
Lithium	J	5.78	2.00	10.0	ug/L	1 BCD1 05/17/1	5 1549 1566761	2
Rad Gas Flow Pro	portional Counting	7						
GFPC, Ra228, Liq	uid "As Received"	'						
Radium-228	U	ND	2.09	3.00	pCi/L	AXM6 05/23/1	5 1427 1567148	3
Rad Radium-226								
Lucas Cell, Ra226	, liquid "As Receiv	ved"						
Radium-226	_	1.49	0.525	1.00	pCi/L	LXP1 05/24/1	6 0725 1567602	4
The following Pre	p Methods were pe	erformed:						
Method	Description	1		Analyst	Date	Time Prep Bat	ch	
SW846 3005A	ICP-MS 3005	A PREP		JP1	05/12/16	1720 1566760		

The following Analytical Methods were performed:

Method	Description		Analyst Co	omments	
1	SW846 9056A				
2	SW846 3005A/6020A				
3	EPA 904.0/SW846 9320 Modified				
4	EPA 903.1 Modified				
Curro goto/Troco	Daggreen Tost	Dogult	Mominol	Daggreen 10/	A acontoble I imits

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits

Barium-133 Tracer GFPC, Ra228, Liquid "As Received"

70.8 (15%-125%)

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Certificate of Analysis

Project:

Client ID:

Report Date: May 25, 2016

SCEG01616C

GEEL003

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner
Project: Williams 52 RCRA

Client Sample ID: GW-23D
Sample ID: 397240007
Matrix: Ground Water
Collect Date: 11-MAY-16 14:01
Receive Date: 12-MAY-16

Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	DF Analyst Date	Time Batch Method
Ion Chromatography	y						
SW846 9056A Anio	ons "As Received	"					
Fluoride		0.366	0.033	0.100	mg/L	1 MXL2 05/13/16	0553 1566745 1
Metals Analysis-ICI	P-MS						
SW846 3005A/6020	A Liquid "As Re	eceived"					
Lithium	J	2.52	2.00	10.0	ug/L	1 BCD1 05/18/16	1358 1566761 2
Rad Gas Flow Propo	ortional Counting	5					
GFPC, Ra228, Liqui	id "As Received"	'					
Radium-228		1.50	1.49	3.00	pCi/L	AXM6 05/23/16	1427 1567148 3
Rad Radium-226							
Lucas Cell, Ra226, 1	liquid "As Receiv	ved"					
Radium-226		0.694	0.431	1.00	pCi/L	LXP1 05/24/16	0755 1567602 4
The following Prep	Methods were pe	erformed:					
Method	Description	1		Analyst	Date	Time Prep Batc	1
SW846 3005A	ICP-MS 3005	A PREP		JP1	05/12/16	1720 1566760	

The following Analytical Methods were performed:

Method	Description	Analyst Comments	
1	SW846 9056A	*	
2	SW846 3005A/6020A		
3	EPA 904.0/SW846 9320 Modified		
4	EPA 903.1 Modified		

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits

Barium-133 Tracer GFPC, Ra228, Liquid "As Received"

88.8 (15%-125%)

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Certificate of Analysis

Project:

Client ID:

Report Date: May 25, 2016

SCEG01616C

GEEL003

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner
Project: Williams 52 RCRA

Client Sample ID: GW-25 Sample ID: 397240008 Matrix: Ground Water Collect Date: 11-MAY-16 14:53

Receive Date: 12-MAY-16

Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	DF A	nalyst Date	Time Batch	Method
Ion Chromatograp	hy								
SW846 9056A An	ions "As Received	["							
Fluoride		0.424	0.033	0.100	mg/L	1 M	XL2 05/13/16	0626 1566745	1
Metals Analysis-IO	CP-MS								
SW846 3005A/602	20A Liquid "As Re	eceived"							
Lithium	J	2.36	2.00	10.0	ug/L	1 B0	CD1 05/18/16	1401 1566761	2
Rad Gas Flow Pro	portional Counting	9							
GFPC, Ra228, Liq	uid "As Received"	'							
Radium-228	U	ND	1.72	3.00	pCi/L	A	XM6 05/23/16	1427 1567148	3
Rad Radium-226									
Lucas Cell, Ra226	, liquid "As Receiv	ved"							
Radium-226	-	0.894	0.535	1.00	pCi/L	L	XP1 05/24/16	0755 1567602	4
The following Pre	p Methods were pe	erformed:							
Method	Description	n		Analyst	Date	Time	Prep Batcl	1	
SW846 3005A	ICP-MS 3005	A PREP		JP1	05/12/16	1720	1566760		
		2	_						

The following Analytical Methods were performed:

Method	Description		A == 1===4 C		
Method	Description		Analyst Co	omments	
1	SW846 9056A				
2	SW846 3005A/6020A				
3	EPA 904.0/SW846 9320 Modified				
4	EPA 903.1 Modified				
Curro goto/Troco	r Dogovoru Tost	Pacult	Nominal	Pagaragra 0/	Accontable Limits

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits

Barium-133 Tracer GFPC, Ra228, Liquid "As Received"

98.3 (15%-125%)

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Certificate of Analysis

Project:

Units

mg/L

Report Date: May 25, 2016

Time Batch Method

1

SCEG01616C

DF Analyst Date

1 MXL2 05/13/16 0659 1566745

87.8

(15%-125%)

Company: GEL Engineering, LLC 2040 Savage Rd Address:

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52 RCRA

Client Sample ID: GW-24 Sample ID: 397240009 Matrix: Ground Water Collect Date: 11-MAY-16 15:58

12-MAY-16 Receive Date: Collector: Client

Qualifier

Result

0.338

GFPC, Ra228, Liquid "As Received"

Client ID: GEEL003

DL

0.033

RL

0.100

	A Liquid "As Received"							
Lithium	J 3.93	2.00	10.0	ug/L	1	BCD1 05/18/16	1405 1566761	2
Rad Gas Flow Propo	rtional Counting							
GFPC, Ra228, Liqui	d "As Received"							
Radium-228	U ND	2.03	3.00	pCi/L		AXM6 05/25/16	0957 1567148	3
Rad Radium-226								
Lucas Cell, Ra226, li	quid "As Received"							
Radium-226	0.956	0.552	1.00	pCi/L		LXP1 05/24/16	0755 1567602	4
The following Prep N	Methods were performed:							
Method	Description		Analyst	Date	Time	e Prep Batc	h	
SW846 3005A	ICP-MS 3005A PREP		JP1	05/12/16	5 1720	1566760		
The following Analy	vtical Methods were performed:							
Method	Description				Analyst Cor	nments		
1	SW846 9056A							
2	SW846 3005A/6020A							
3	EPA 904.0/SW846 9320 Modified	!						
4	EPA 903.1 Modified							
Surrogate/Tracer Rec	covery Test			Result	Nominal	Recovery%	Acceptable Lin	nits

Notes:

Barium-133 Tracer

Parameter

Fluoride

Ion Chromatography

Metals Analysis-ICP-MS

SW846 9056A Anions "As Received"

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Certificate of Analysis

Project:

Client ID:

Report Date: May 25, 2016

SCEG01616C

96.9

(15%-125%)

GEEL003

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner
Project: Williams 52 RCRA

Client Sample ID: GW-26 Sample ID: 397240010 Matrix: Ground Water Collect Date: 11-MAY-16 16:44

Receive Date: 12-MAY-16

Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	DF An	nalyst Date	Time Ba	tch Method
Ion Chromatograp	hy								
SW846 9056A An	ions "As Received	."							
Fluoride		0.118	0.033	0.100	mg/L	1 M2	XL2 05/13/16	0732 1566	745 1
Metals Analysis-IO	CP-MS								
SW846 3005A/602	20A Liquid "As Re	eceived"							
Lithium	J	4.41	2.00	10.0	ug/L	1 BC	CD1 05/18/16	1408 1566	761 2
Rad Gas Flow Pro	portional Counting	7							
GFPC, Ra228, Lic	uid "As Received"	'							
Radium-228	•	1.49	1.31	3.00	pCi/L	ΑΣ	XM6 05/23/16	1427 1567	148 3
Rad Radium-226									
Lucas Cell, Ra226	, liquid "As Receiv	ved"							
Radium-226	•	1.18	0.454	1.00	pCi/L	LX	XP1 05/24/16	0755 1567	602 4
The following Pre	p Methods were pe	erformed:							
Method	Description	1		Analyst	Date	Time	Prep Batc	h	
SW846 3005A	ICP-MS 3005	A PREP		JP1	05/12/16	1720	1566760		
		_							

The following Analytical Methods were performed:

GFPC, Ra228, Liquid "As Received"

Method	Description	Analyst Comments
1	SW846 9056A	
2	SW846 3005A/6020A	
3	EPA 904.0/SW846 9320 Modified	
4	EPA 903.1 Modified	
Surrogate/Tracer	r Recovery Test	Result Nominal Recovery% Acceptable Limits

Notes:

Barium-133 Tracer

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QC Summary

Report Date: May 25, 2016

Page 1 of 3

GEL Engineering, LLC 2040 Savage Rd

Charleston, South Carolina

Contact: Robert Gardner

Workorder: 397240

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range Anlst	Date Time
Ion Chromatography Batch 1566745 ———									
QC1203547202 397240001 DUP Fluoride		0.541		0.541	mg/L	0.129		(0%-20%) MXL2	05/13/16 00:57
QC1203547201 LCS Fluoride	2.50			2.45	mg/L		98.1	(90%-110%)	05/12/16 23:51
QC1203547200 MB Fluoride			U	ND	mg/L				05/12/16 23:18
QC1203547203 397240001 PS Fluoride	2.50	0.541		2.93	mg/L		95.7	(90%-110%)	05/13/16 01:30
Metals Analysis - ICPMS Batch 1566761									
QC1203547236 397240001 DUP Lithium		12.2		12.9	ug/L	5.11 ^		(+/-10.0) BCD1	05/17/16 15:11
QC1203547235 LCS Lithium	50.0			53.2	ug/L		106	(80%-120%)	05/17/16 15:04
QC1203547234 MB Lithium			U	ND	ug/L				05/17/16 15:00
QC1203547237 397240001 MS Lithium	50.0	12.2		67.4	ug/L		110	(75%-125%)	05/17/16 15:14
QC1203547238 397240001 SDILT Lithium		12.2	J	2.66	ug/L	8.64		(0%-10%)	05/17/16 15:21
Rad Gas Flow Batch 1567148 ———									
QC1203548359 397097004 DUP Radium-228	U	0.294	U	1.11	pCi/L	N/A		N/A AXM6	05/23/16 14:31
QC1203548360 LCS Radium-228	46.0			46.2	pCi/L		100	(75%-125%)	05/23/16 14:31
QC1203548358 MB Radium-228			U	-1.48	pCi/L				05/23/16 14:31
Rad Ra-226 Batch 1567602 ——									

QC1203549576 397447007 DUP

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QC Summary

Workorder: 397240 Page 2 of 3 **Parmname NOM** Sample Qual QC Units RPD% REC% Range Anlst Date Time Rad Ra-226 1567602 Batch Radium-226 2.70 2.02 pCi/L 28.5* (0%-20%) LXP1 05/24/16 09:10 OC1203549578 LCS 26.6 pCi/L Radium-226 24.4 109 (75% - 125%)05/24/16 09:10 QC1203549575 MB Radium-226 U 0.192 pCi/L 05/24/16 09:10 QC1203549577 397447007 MS 122 2.70 Radium-226 127 pCi/L 102 (75% - 125%)05/24/16 09:10

Notes:

The Qualifiers in this report are defined as follows:

- ** Analyte is a Tracer compound
- < Result is less than value reported
- > Result is greater than value reported
- B The target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- E %difference of sample and SD is >10%. Sample concentration must meet flagging criteria
- E General Chemistry--Concentration of the target analyte exceeds the instrument calibration range
- FA Failed analysis.
- FB Mercury was found present at quantifiable concentrations in field blanks received with these samples. Data associated with the blank are deemed invalid for reporting to regulatory agencies
- H Analytical holding time was exceeded
- J Value is estimated
- K Analyte present. Reported value may be biased high. Actual value is expected to be lower.
- L Analyte present. Reported value may be biased low. Actual value is expected to be higher.
- M M if above MDC and less than LLD
- M REMP Result > MDC/CL and < RDL
- N Metals--The Matrix spike sample recovery is not within specified control limits
- N/A RPD or %Recovery limits do not apply.
- N1 See case narrative
- ND Analyte concentration is not detected above the detection limit
- NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Q One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
- R Per section 9.3.4.1 of Method 1664 Revision B, due to matrix spike recovery issues, this result may not be reported or used for regulatory compliance purposes.
- R Sample results are rejected

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QC Summary

Page 3 of 3 Sample Qual Parmname **NOM** OC Units RPD% REC% Range Anlst Date Time

- IJ Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- UI Gamma Spectroscopy--Uncertain identification

397240

Workorder:

- UJ Gamma Spectroscopy--Uncertain identification
- UL Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y Other specific qualifiers were required to properly define the results. Consult case narrative.
- Z Paint Filter Test--Particulates passed through the filter, however no free liquids were observed.
- ٨ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
- d 5-day BOD--The 2:1 depletion requirement was not met for this sample
- 5-day BOD--Test replicates show more than 30% difference between high and low values. The data is qualified per the method and can be used for e reporting purposes
- h Preparation or preservation holding time was exceeded

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

* Indicates that a Quality Control parameter was not within specifications.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.



Tel: (803)217-9384 Fax: (803) 217-9911

May 18, 2016

REPORT TO:

Mike Moore C221

Sample ID: AB22333

Williams Hwy 52 GW 10-NPDES/CCR

Date & Time Sampled:

May 11, 2016

08:48

Date & Time Submitted: May 12, 2016

15:00

Collected by: C.SANDEL

Location Code: WLG10TDS

GW 10

Login Record File: 160513002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	15.8	0.50	mg/L	5/16/16 04:12	LS
pH by SM4500HB	7.17	0.00	S.U.	5/13/16 11:15	CDB
Holding Time of 15 minutes has been	exceeded.				
Sulfates by IC EPA 300.0	3.31	0.50	mg/L	5/16/16 04:12	LS
Total Dissolved Solid-SM2540C	270	2.0	mg/L	5/16/16 12:46	CDB

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

09:57

15:00

May 18, 2016

REPORT TO:

Mike Moore C221

Sample ID: AB22334

Williams Hwy 52 GW 20-NPDES/CCR

Date & Time Sampled: May 11, 2016
Date & Time Submitted: May 12, 2016

Collected by: C.SANDEL Location Code: WLG20TDS

GW 20 Login Record File: 160513002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	7.81	0.50	mg/L	5/16/16 04:12	LS
pH by SM4500HB Holding Time of 15 minutes has been	6.87 exceeded.	0.00	S.U.	5/13/16 11:15	CDB
Sulfates by IC EPA 300.0	35.67	0.50	mg/L	5/16/16 04:12	LS
Total Dissolved Solid-SM2540C	510	2.0	mg/L	5/16/16 12:46	CDB

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

May 18, 2016

REPORT TO:

Mike Moore C221

Sample ID: AB22335

Williams Hwy 52 GW 21-NPDES/CCR

Date & Time Sampled:

May 11, 2016

11:00

Date & Time Submitted: May 12, 2016

15:00

Collected by: C.SANDEL

Location Code: WLG21TDS

GW 21

Login Record File: 160513002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	7.88	0.50	mg/L	5/16/16 04:12	LS
pH by SM4500HB	7.10	0.00	S.U.	5/13/16 11:15	CDB
Holding Time of 15 minutes has been	exceeded.				
Sulfates by IC EPA 300.0	30.3	0.50	mg/L	5/16/16 04:12	LS
Total Dissolved Solid-SM2540C	479	2.0	mg/L	5/16/16 12:46	CDB

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

May 18, 2016

REPORT TO:

Mike Moore C221

Sample ID: AB22336

Williams Hwy 52 DUP -NPDES/CCR

Date & Time Sampled:

May 11, 2016

11:20

Date & Time Submitted: May 12, 2016

15:00

Collected by: C.SANDEL

Location Code: WLGDUPTDS

GW 10

Login Record File: 160513002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	7.84	0.50	mg/L	5/16/16 04:12	LS
pH by SM4500HB	7.13	0.00	S.U.	5/13/16 11:15	CDB
Holding Time of 15 minutes has been	exceeded.				
Sulfates by IC EPA 300.0	30.4	0.50	mg/L	5/16/16 04:12	LS
Total Dissolved Solid-SM2540C	478	2.0	mg/L	5/16/16 12:46	CDB

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

May 18, 2016

REPORT TO:

Mike Moore C221

Sample ID: AB22337

Williams Hwy 52 FIELD BLANK-NPDES/CCR

Date & Time Sampled:

May 11, 2016

12:00

Date & Time Submitted: May 12, 2016

15:00

Collected by: C.SANDEL

Location Code: WLGFBTDS

GW 10

Login Record File: 160513002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	Less than	0.50	mg/L	5/16/16 04:12	LS
pH by SM4500HB	7.63	0.00	S.U.	5/13/16 11:15	CDB
Holding Time of 15 minutes has bee	n exceeded.				
Sulfates by IC EPA 300.0	Less than	0.50	mg/L	5/16/16 04:12	LS
Total Dissolved Solid-SM2540C	Less than	2.0	mg/L	5/16/16 12:46	CDB

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

May 18, 2016

REPORT TO:

Mike Moore C221

Sample ID: AB22338

Williams Hwy 52 GW 22D-NPDES/CCR

Date & Time Sampled: May 11, 2016 Date & Time Submitted: May 12, 2016

 11, 2016
 12:13

 12, 2016
 15:00

Collected by: C.SANDEL Location Code: WLG22DTDS

GW 22D Login Record File: 160513002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	11.2	0.50	mg/L	5/16/16 04:12	LS
pH by SM4500HB	7.36	0.00	S.U.	5/13/16 11:15	CDB
Holding Time of 15 minutes has been	exceeded.				
Sulfates by IC EPA 300.0	135	0.50	mg/L	5/16/16 04:12	LS
Total Dissolved Solid-SM2540C	476	2.0	mg/L	5/16/16 12:46	CDB

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

May 18, 2016

REPORT TO:

Mike Moore C221

Sample ID: AB22339

Williams Hwy 52 GW 23D-NPDES/CCR

Date & Time Sampled:

May 11, 2016

14:01

Date & Time Submitted: May 12, 2016

15:00

Collected by: C.SANDEL

Location Code: WLG23DTDS

GW 23D

Login Record File: 160513002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	12.6	0.50	mg/L	5/16/16 04:12	LS
pH by SM4500HB Holding Time of 15 minutes has been	7.62 exceeded.	0.00	S.U.	5/13/16 11:15	CDB
Sulfates by IC EPA 300.0	29.6	0.50	mg/L	5/16/16 04:12	LS
Total Dissolved Solid-SM2540C	196	2.0	mg/L	5/16/16 12:46	CDB

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

14:53

15:00

May 18, 2016

REPORT TO:

Mike Moore C221

Sample ID: AB22340

Williams Hwy 52 GW 25-NPDES/CCR

Date & Time Sampled: May 11, 2016
Date & Time Submitted: May 12, 2016

Collected by: C.SANDEL Location Code: WLG25TDS

GW 25 Login Record File: 160513002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	21.9	0.50	mg/L	5/16/16 04:12	LS
pH by SM4500HB	7.22	0.00	S.U.	5/13/16 11:15	CDB
Holding Time of 15 minutes has been	exceeded.				
Sulfates by IC EPA 300.0	16.9	0.50	mg/L	5/16/16 04:12	LS
Total Dissolved Solid-SM2540C	423	2.0	mg/L	5/16/16 12:46	CDB

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

May 18, 2016

REPORT TO:

Mike Moore C221

Sample ID: AB22341

Williams Hwy 52 GW 24-NPDES/CCR

Date & Time Sampled:

May 11, 2016

15:58

Date & Time Submitted: May 12, 2016

15:00

Collected by: C.SANDEL

Location Code: WLG24TDS

GW 24

Login Record File: 160513002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	17.9	0.50	mg/L	5/16/16 04:12	LS
pH by SM4500HB	6.84	0.00	S.U.	5/13/16 11:15	CDB
Holding Time of 15 minutes has been	exceeded.				
Sulfates by IC EPA 300.0	20.6	0.50	mg/L	5/16/16 04:12	LS
Total Dissolved Solid-SM2540C	509	2.0	mg/L	5/16/16 12:46	CDB

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

May 18, 2016

REPORT TO:

Mike Moore C221

Sample ID: AB22342

Williams Hwy 52 GW 26-NPDES/CCR

Date & Time Sampled: Date & Time Submitted: May 12, 2016

May 11, 2016 16:44

15:00

Collected by: C.SANDEL

Location Code: WLG26TDS

GW 26

Login Record File: 160513002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	154	0.50	mg/L	5/16/16 04:12	LS
pH by SM4500HB	6.56	0.00	S.U.	5/13/16 11:15	CDB
Holding Time of 15 minutes has been	exceeded.				
Sulfates by IC EPA 300.0	73.9	0.50	mg/L	5/16/16 04:12	LS
Total Dissolved Solid-SM2540C	876	2.0	mg/L	5/16/16 12:46	CDB

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

May 19, 2016

REPORT TO:

Mike Moore C221

Sample ID: AB22343

Williams Hwy 52 GW 10-NPDES/CCR

Date & Time Sampled:

May 11, 2016

08:48

Date & Time Submitted: May 12, 2016

15:00

Collected by: C.SANDEL

Location Code: WLG10TM

GW 10

Login Record File: 160513002

			U		
CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	S Chemist
Antimony by ICP-MS EPA 200.8	Less than	1.0	ppb	5/16/16 15:04	MC
Arsenic by ICP_MS EPA 200.8	1.0	1.0	ppb	5/16/16 15:04	MC
Barium (CWA) 200.7	15.7	10.0	ppb	5/19/16 07:58	MC
Beryllium EPA 200.7	Less than	1.0	ppb	5/19/16 07:58	MC
Boron - EPA 200.7	Less than	1000	ppb	5/19/16 07:58	MC
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	5/16/16 15:04	MC
Calcium EPA 200.7	58600	100	ppb	5/19/16 07:58	MC
Chromium by ICP_MS EPA 200.8	Less than	1.0	ppb	5/16/16 15:04	MC
Cobalt by ICP_MS EPA 200.8	Less than	1.0	ppb	5/16/16 15:04	MC
Lead by ICP-MS EPA 200.8	Less than	1.0	ppb	5/16/16 15:04	MC
Mercury (CWA) by EPA 245.2	Less than	1.0	ppb	5/18/16 14:08	MC
Molybdenum - EPA 200.8	2.2	1.0	ppb	5/16/16 15:04	MC
Selenium by ICP-MS EPA 200.8	Less than	5.0	ppb	5/16/16 15:04	MC
Thallium by ICP-MS EPA 200.8	Less than	1.0	ppb	5/16/16 15:04	MC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

May 19, 2016

REPORT TO:

Cobalt by ICP_MS EPA 200.8

Lead by ICP-MS EPA 200.8

Mercury (CWA) by EPA 245.2

Selenium by ICP-MS EPA 200.8

Thallium by ICP-MS EPA 200.8

Molybdenum - EPA 200.8

Mike Moore C221

Sample ID: AB22344

Williams Hwy 52 GW 20-NPDES/CCR

Date & Time Sampled:

May 11, 2016

09:57

5/16/16 15:04

5/16/16 15:04

5/18/16 14:08

5/16/16 15:04

5/16/16 15:04

5/16/16 15:04

MC

MC

MC

MC

MC

MC

Date & Time Submitted: May 12, 2016

15:00

Collected by: C.SANDEL

Location Code: WLG20TM

Login Record File: 160513002

GW 20

Completed Analysis Reporting Chemist **CERTIFIED BY SCDHEC (LAB ID 32006):** Units Result Limit(MRL) Date & Time 5/16/16 15:04 MC Antimony by ICP-MS EPA 200.8 Less than 1.0 ppb 5/16/16 15:04 MC Arsenic by ICP_MS EPA 200.8 1.7 1.0 ppb 5/19/16 07:58 Barium (CWA) 200.7 52.8 10.0 MC ppb Beryllium EPA 200.7 Less than 1.0 ppb 5/19/16 07:58 MC 5/19/16 07:58 1000 MC Boron - EPA 200.7 Less than ppb 5/16/16 15:04 MC Less than 1.0 ppb Cadmium by ICP MS EPA 200.8 MC 100 5/19/16 07:58 Calcium EPA 200.7 122000 ppb 5/16/16 15:04 MC Chromium by ICP MS EPA 200.8 Less than 1.0 ppb

1.0

1.0

1.0

1.0

5.0

1.0

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

1.5

Less than

Less than

2.9

Less than

Less than

Approved By:

ppb

ppb

ppb

ppb

ppb

ppb



Tel: (803)217-9384 Fax: (803) 217-9911

May 19, 2016

REPORT TO:

Mike Moore C221

Sample ID: AB22345

Williams Hwy 52 GW 21-NPDES/CCR

Date & Time Sampled: May 11, 2016 11:00 Date & Time Submitted: May 12, 2016 15:00

Collected by: C.SANDEL Location Code: WLG21TM

GW 21	Login Record File: 160513002						
CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed A		Chemist	
Antimony by ICP-MS EPA 200.8	Less than	1.0	ppb	5/16/16	15:04	МС	
Arsenic by ICP_MS EPA 200.8	Less than	1.0	ppb	5/16/16	15:04	МС	
Barium (CWA) 200.7	32.0	10.0	ppb	5/19/16	07:58	MC	
Beryllium EPA 200.7	Less than	1.0	ppb	5/19/16	07:58	MC	
Boron - EPA 200.7	Less than	1000	ppb	5/19/16	07:58	MC	
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	5/16/16	15:04	МС	
Calcium EPA 200.7	89400	100	ppb	5/19/16	07:58	MC	
Chromium by ICP_MS EPA 200.8	Less than	1.0	ppb	5/16/16	15:04	MC	
Cobalt by ICP_MS EPA 200,8	Less than	1.0	ppb	5/16/16	15:04	МС	
Lead by ICP-MS EPA 200.8	Less than	1.0	ppb	5/16/16	15:04	MC	
Mercury (CWA) by EPA 245.2	Less than	1.0	ppb	5/18/16	14:08	МС	
Molybdenum - EPA 200.8	3.3	1.0	ppb	5/16/16	15:04	МС	
Selenium by ICP-MS EPA 200.8	Less than	5.0	ppb	5/16/16	15:04	МС	
Thallium by ICP-MS EPA 200.8	Less than	1.0	ppb	5/16/16	15:04	MC	

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

May 19, 2016

REPORT TO:

Mike Moore C221

Sample ID: AB22346

Williams Hwy 52 DUP -NPDES/CCR

Date & Time Sampled:

May 11, 2016

11:20

Date & Time Submitted: May 12, 2016

15:00

Collected by: C.SANDEL Location Code: WLGDUPTM

GW 10

Login Record File: 160513002

GVV 10	Logiii Necola i ile. 1003 13002								
CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed / Date & T	CONTROL CONTROL OF STREET	Chemis			
Antimony by ICP-MS EPA 200.8	Less than	1.0	ppb	5/16/16	15:04	MC			
Arsenic by ICP_MS EPA 200.8	Less than	1.0	ppb	5/16/16	15:04	MC			
Barium (CWA) 200.7	32.9	10.0	ppb	5/19/16	07:58	MC			
Beryllium EPA 200.7	Less than	1.0	ppb	5/19/16	07:58	MC			
Boron - EPA 200.7	Less than	1000	ppb	5/19/16	07:58	MC			
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	5/16/16	15:04	MC			
Calcium EPA 200.7	88800	100	ppb	5/19/16	07:58	MC			
Chromium by ICP_MS EPA 200.8	Less than	1.0	ppb	5/16/16	15:04	MC			
Cobalt by ICP_MS EPA 200.8	Less than	1.0	ppb	5/16/16	15:04	MC			
Lead by ICP-MS EPA 200.8	Less than	1.0	ppb	5/16/16	15:04	MC			
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	5/18/16	14:08	MC			
Molybdenum - EPA 200.8	3.2	1.0	ppb	5/16/16	15:04	MC			
Selenium by ICP-MS EPA 200.8	Less than	5.0	ppb	5/16/16	15:04	MC			
Thallium by ICP-MS EPA 200.8	Less than	1.0	ppb	5/16/16	15:04	MC			

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

May 19, 2016

REPORT TO:

Mike Moore C221

Sample ID: AB22347

Williams Hwy 52 FIELD BLANK-NPDES/CCR

Date & Time Sampled:

May 11, 2016

12:00

Date & Time Submitted: May 12, 2016

15:00

Collected by: C.SANDEL

Location Code: WLGFBTM

GW 10

Login Record File: 160513002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed A	(Alberta Arbeita de la	Chemist
Antimony by ICP-MS EPA 200.8	Less than	1.0	ppb	5/16/16	15:04	MC
Arsenic by ICP_MS EPA 200.8	Less than	1.0	ppb	5/16/16	15:04	MC
Barium (CWA) 200.7	Less than	10.0	ppb	5/19/16	07:58	MC
Beryllium EPA 200.7	Less than	1.0	ppb	5/19/16	07:58	MC
Boron - EPA 200.7	Less than	1000	ppb	5/19/16	07:58	MC
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	5/16/16	15:04	MC
Calcium EPA 200.7	Less than	100	ppb	5/19/16	07:58	MC
Chromium by ICP_MS EPA 200.8	Less than	1.0	ppb	5/16/16	15:04	MC
Cobalt by ICP_MS EPA 200.8	Less than	1.0	ppb	5/16/16	15:04	MC
Lead by ICP-MS EPA 200.8	Less than	1.0	ppb	5/16/16	15:04	MC
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	5/18/16	14:08	MC
Molybdenum - EPA 200.8	Less than	1.0	ppb	5/16/16	15:04	MC
Selenium by ICP-MS EPA 200.8	Less than	5.0	ppb	5/16/16	15:04	MC
Thallium by ICP-MS EPA 200.8	Less than	1.0	ppb	5/16/16	15:04	MC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

May 19, 2016

REPORT TO:

Mike Moore C221

Sample ID: AB22348

Williams Hwy 52 GW 22D-NPDES/CCR

Date & Time Sampled:

May 11, 2016

12:13

Date & Time Submitted: May 12, 2016

15:00

Collected by: C.SANDEL

Location Code: WLG22DTM

Login Record File: 160513002

GW 22D

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Antimony by ICP-MS EPA 200.8	Less than	1.0	ppb	5/16/16 15:04	MC
Arsenic by ICP_MS EPA 200.8	2.3	1.0	ppb	5/16/16 15:04	MC
Barium (CWA) 200.7	15.8	10.0	ppb	5/19/16 07:58	MC
Beryllium EPA 200.7	Less than	1.0	ppb	5/19/16 07:58	MC
Boron - EPA 200.7	Less than	1000	ppb	5/19/16 07:58	МС
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	5/16/16 15:04	MC
Calcium EPA 200.7	85200	100	ppb	5/19/16 07:58	MC
Chromium by ICP_MS EPA 200.8	5.9	1.0	ppb	5/16/16 15:04	MC
Cobalt by ICP_MS EPA 200.8	Less than	1.0	ppb	5/16/16 15:04	MC
Lead by ICP-MS EPA 200.8	Less than	1.0	ppb	5/16/16 15:04	MC
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	5/18/16 14:08	MC
Molybdenum - EPA 200.8	37.0	1.0	ppb	5/16/16 15:04	МС
Selenium by ICP-MS EPA 200.8	Less than	5.0	ppb	5/16/16 15:04	MC
Thallium by ICP-MS EPA 200.8	Less than	1.0	ppb	5/16/16 15:04	MC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

May 19, 2016

REPORT TO:

Mike Moore C221

Sample ID: AB22349

Williams Hwy 52 GW 23D-NPDES/CCR

Date & Time Sampled:

May 11, 2016

14:01

Date & Time Submitted: May 12, 2016

15:00

Collected by: C.SANDEL

Location Code: WLG23DTM

GW 23D

Login Record File: 160513002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Units		Completed A	Chemist	
Antimony by ICP-MS EPA 200.8	Less than	1.0	ppb	5/16/16	15:04	MC
Arsenic by ICP_MS EPA 200.8	Less than	1.0	ppb	5/16/16	15:04	MC
Barium (CWA) 200.7	13.2	10.0	ppb	5/19/16	07:58	MC
Beryllium EPA 200.7	Less than	1.0	ppb	5/19/16	07:58	MC
Boron - EPA 200.7	Less than	1000	ppb	5/19/16	07:58	MC
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	5/16/16	15:04	MC
Calcium EPA 200.7	29300	100	ppb	5/19/16	07:58	MC
Chromium by ICP_MS EPA 200.8	Less than	1.0	ppb	5/16/16	15:04	MC
Cobalt by ICP_MS EPA 200.8	Less than	1.0	ppb	5/16/16	15:04	MC
Lead by ICP-MS EPA 200.8	Less than	1.0	ppb	5/16/16	15:04	MC
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	5/18/16	14:08	MC
Molybdenum - EPA 200.8	16.3	1.0	ppb	5/16/16	15:04	MC
Selenium by ICP-MS EPA 200.8	Less than	5.0	ppb	5/16/16	15:04	MC
Thallium by ICP-MS EPA 200.8	Less than	1.0	ppb	5/16/16	15:04	MC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

May 19, 2016

REPORT TO:

Mike Moore C221

Sample ID: AB22350

Williams Hwy 52 GW 25-NPDES/CCR

Date & Time Sampled:

May 11, 2016

14:53

Date & Time Submitted: May 12, 2016

15:00

Collected by: C.SANDEL

Location Code: WLG25TM

GW 25

Login Record File: 160513002

OW 20	20gii 1700010002								
CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysi Date & Time	s Chemist				
Antimony by ICP-MS EPA 200.8	Less than	1.0	ppb	5/16/16 15:04	MC				
Arsenic by ICP_MS EPA 200.8	Less than	1.0	ppb	5/16/16 15:04	MC				
Barium (CWA) 200.7	29.9	10.0	ppb	5/19/16 07:58	MC				
Beryllium EPA 200.7	Less than	1.0	ppb	5/19/16 07:58	MC				
Boron - EPA 200.7	Less than	1000	ppb	5/19/16 07:58	MC				
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	5/16/16 15:04	MC				
Calcium EPA 200.7	81500	100	ppb	5/19/16 07:58	MC				
Chromium by ICP_MS EPA 200.8	Less than	1.0	ppb	5/16/16 15:04	MC				
Cobalt by ICP_MS EPA 200.8	Less than	1.0	ppb	5/16/16 15:04	MC				
Lead by ICP-MS EPA 200.8	Less than	1.0	ppb	5/16/16 15:04	MC				
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	5/18/16 14:08	MC				
Molybdenum - EPA 200.8	4.8	1.0	ppb	5/16/16 15:04	MC				
Selenium by ICP-MS EPA 200.8	Less than	5.0	ppb	5/16/16 15:04	MC				
Thallium by ICP-MS EPA 200.8	Less than	1.0	ppb	5/16/16 15:04	МС				

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

May 19, 2016

REPORT TO:

Mike Moore C221

Sample ID: AB22351

Williams Hwy 52 GW 24-NPDES/CCR

Date & Time Sampled:

May 11, 2016

15:58

Date & Time Submitted: May 12, 2016

15:00

Collected by: C.SANDEL

Location Code: WLG24TM

GW 24	Login Record File: 160513002							
CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysi Date & Time	S Chemist			
Antimony by ICP-MS EPA 200.8	Less than	1.0	ppb	5/16/16 15:04	MC			
Arsenic by ICP_MS EPA 200.8	Less than	1.0	ppb	5/16/16 15:04	MC			
Barium (CWA) 200.7	58.0	10.0	ppb	5/19/16 07:58	. MC			
Beryllium EPA 200.7	Less than	1.0	ppb	5/19/16 07:58	MC			
Boron - EPA 200.7	Less than	1000	ppb	5/19/16 07:58	MC			
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	5/16/16 15:04	MC			
Calcium EPA 200.7	126000	100	ppb	5/19/16 07:58	МС			
Chromium by ICP_MS EPA 200.8	Less than	1.0	ppb	5/16/16 15:04	MC			
Cobalt by ICP_MS EPA 200.8	Less than	1.0	ppb	5/16/16 15:04	MC			
Lead by ICP-MS EPA 200.8	Less than	1.0	ppb	5/16/16 15:04	MC			
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	5/18/16 14:08	МС			
Molybdenum - EPA 200.8	2.2	1.0	ppb	5/16/16 15:04	MC			
Selenium by ICP-MS EPA 200.8	Less than	5.0	ppb	5/16/16 15:04	MC			
Thallium by ICP-MS EPA 200.8	Less than	1.0	ppb	5/16/16 15:04	MC			

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

May 19, 2016

REPORT TO:

Mike Moore C221

Sample ID: AB22352

Williams Hwy 52 GW 26-NPDES/CCR

Date & Time Sampled:

May 11, 2016

16:44

Date & Time Submitted: May 12, 2016

15:00

Collected by: C.SANDEL

Location Code: WLG26TM

Login Record File: 160513002

GW 26

GVV 20	Logit Necold Tile: 1000 10002								
CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed / Date & 7	AND REAL PROPERTY AND ADDRESS OF THE PERSON	Chemist			
Antimony by ICP-MS EPA 200.8	Less than	1.0	ppb	5/16/16	15:04	MC			
Arsenic by ICP_MS EPA 200.8	1.1	1.0	ppb	5/16/16	15:04	MC			
Barium (CWA) 200.7	81.8	10.0	ppb	5/19/16	07:58	MC			
Beryllium EPA 200.7	Less than	1.0	ppb	5/19/16	07:58	MC			
Boron - EPA 200.7	Less than	1000	ppb	5/19/16	07:58	MC			
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	5/16/16	15:04	MC			
Calcium EPA 200.7	160000	100	ppb	5/19/16	07:58	MC			
Chromium by ICP_MS EPA 200.8	Less than	1.0	ppb	5/16/16	15:04	MC			
Cobalt by ICP_MS EPA 200.8	6.1	1.0	ppb	5/16/16	15:04	MC			
Lead by ICP-MS EPA 200.8	Less than	1.0	ppb	5/16/16	15:04	MC			
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	5/18/16	14:08	MC			
Molybdenum - EPA 200.8	1.0	1.0	ppb	5/16/16	15:04	MC			
Selenium by ICP-MS EPA 200.8	Less than	5.0	ppb	5/16/16	15:04	MC			
Thallium by ICP-MS EPA 200.8	Less than	1.0	ppb	5/16/16	15:04	MC			

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

EPA CCR Rule Compliance Monitoring Wells

Groundwater Monitoring Data

South Carolina Electric & Gas: Williams Station Highway 52 Class Three Landfill

Williams Station Highway 52 Class Three Landfill

				Gauging Date:									
		Well Data		7/13	3/16	7/13	3/16						
				Initial G	Sauging	Final G	auging		Final W	ater Quality In	dicator Param	eters	
		Ground											
	PVC Pipe	Surface		Depth to	Groundwater	Depth to	Groundwater	Temparature	рН	Sp. Cond.	Turbidity	ORP	DO
Monitoring Well ID	Elevation, ft.	Elevation, ft.	Stickup, ft.	Groundwater, ft.	Elevation, ft.	Groundwater, ft.	Elevation, ft.	°C	S.U.	μS/cm	NTU	mV	mg/L
GW-10	52.28	49.60	2.68	8.72	43.56	8.93	43.35	23.9	7.0	435	9.66	-56.7	1.2
GW-20	60.81	56.70	4.11	21.52	39.29	22.50	38.31	23.4	6.1	889	20.70	-1.8	0.2
GW-21	56.14	52.50	3.64	17.28	38.86	18.20	37.94	24.1	6.4	793	15.60	18.0	0.1
GW-22D	50.36	47.10	3.26	15.59	34.77	16.43	33.93	29.6	6.9	918	13.00	-34.5	0.3
GW-23D	49.69	46.20	3.49	14.42	35.27	15.29	34.40	25.3	7.1	632	11.20	8.6	0.2
GW-24	52.40	48.70	3.70	15.05	37.35	15.34	37.06	24.4	5.8	648	12.50	30.3	0.2
GW-25	50.93	47.40	3.53	14.44	36.49	14.61	36.32	23.1	6.5	709	15.20	29.1	0.7
GW-26	55.21	51.20	4.01	24.51	30.70	24.71	30.50	24.7	6.2	1219	15.00	-51.3	0.3

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis Report for

GEEL003 GEL Engineering, LLC Client SDG: 401582 GEL Work Order: 401582

The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a Tracer compound
- ** Analyte is a surrogate compound
- J Value is estimated
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Jake Crook.

	Jack N	Crosh		
Reviewed by	,			

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: July 26, 2016

SCEG01616C

GEEL003

Company: Address:

GEL Engineering, LLC

2040 Savage Rd

Charleston, South Carolina 29417

Contact: Project:

Robert Gardner Williams 52 RCRA

Client Sample ID: GW-20

Sample ID:

401582001

Matrix: Collect Date: Ground Water

Receive Date:

13-JUL-16 09:49 14-JUL-16

Collector:

Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF A	Analyst Date	Time Batcl	n Method
Ion Chromatography										
SW846 9056A Anions	"As Received	l"								
Fluoride		0.137	0.033	0.100	mg/L		1 N	MXL2 07/14/16	1639 158184	3 1
Metals Analysis-ICP-N	ИS									
SW846 3005A/6020A	Liquid "As Ro	eceived"								
Lithium	J	3.75	2.00	10.0	ug/L	1.00	1 E	3AJ 07/20/16	1735 158186	4 2
Rad Gas Flow Proporti	ional Counting	2								
GFPC, Ra228, Liquid	"As Received"	"								
Radium-228	U	ND	2.01	3.00	pCi/L		A	AXM6 07/25/16	1138 158242	5 3
Rad Radium-226										
Lucas Cell, Ra226, liqu	uid "As Recei	ved"								
Radium-226		7.08	0.456	1.00	pCi/L		I	LXP1 07/26/16	0800 158202	8 4
The following Prep Me	ethods were pe	erformed:								
Method	Description	n		Analyst	Date		Time	Prep Batch		
SW846 3005A	ICP-MS 3005	SA PREP		JP1	07/14/16		1635	1581863		
The following Analyti	ical Methods v	vere performed:								

Method	Description	Analyst Comments
1	SW846 9056A	•
2	SW846 3005A/6020A	

EPA 904.0/SW846 9320 Modified 3 EPA 903.1 Modified

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits Barium-133 Tracer 92.9 (15%-125%) GFPC, Ra228, Liquid "As Received"

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level DL: Detection Limit PF: Prep Factor MDA: Minimum Detectable Activity **RL**: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: July 26, 2016

SCEG01616C

GEEL003

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner
Project: Williams 52 RCRA

Client Sample ID: GW-21 Sample ID: 401582002 Matrix: Ground Water Collect Date: 13-JUL-16 10:54

Receive Date: 14-JUL-16 Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatography												
SW846 9056A Anior	s "As Received	!"										
Fluoride		0.136	0.033	0.100	mg/L		1	MXL2	07/14/16	1709	1581843	1
Metals Analysis-ICP-	-MS											
SW846 3005A/6020A	A Liquid "As Re	eceived"										
Lithium	J	4.69	2.00	10.0	ug/L	1.00	1	BAJ	07/20/16	1748	1581864	2
Rad Gas Flow Propor	rtional Counting	ŗ										
GFPC, Ra228, Liquio	d "As Received"	'										
Radium-228	U	ND	1.70	3.00	pCi/L			AXM6	07/25/16	1138	1582425	3
Rad Radium-226												
Lucas Cell, Ra226, li	quid "As Receiv	ved"										
Radium-226		1.24	0.529	1.00	pCi/L			LXP1	07/26/16	0800	1582028	4
The following Prep M	Methods were pe	erformed:										
Method	Description	1		Analyst	Date		Time	Pro	ep Batch			
SW846 3005A	ICP-MS 3005	A PREP		JP1	07/14/16		1635	158	31863			

The following Analytical Methods were performed:

Method		Description	Analyst Comments
1		SW846 9056A	•
2		SW846 3005A/6020A	
3		EPA 904.0/SW846 9320 Modified	
4		EPA 903.1 Modified	
~	_	_	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			97.3	(15%-125%)

Notes:

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: July 26, 2016

SCEG01616C

GEEL003

Company: GEL Address: 2040

GEL Engineering, LLC 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner
Project: Williams 52 RCRA

Client Sample ID: GW-22D
Sample ID: 401582003
Matrix: Ground Water
Collect Date: 13-JUL-16 11:49

Receive Date: 14-JUL-16 Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatograph	ny											
SW846 9056A Ani	ons "As Received	"										
Fluoride		0.219	0.033	0.100	mg/L		1	MXL2	07/14/16	1739	1581843	1
Metals Analysis-IC	CP-MS											
SW846 3005A/602	OA Liquid "As Re	eceived"										
Lithium	J	6.23	2.00	10.0	ug/L	1.00	1	BAJ	07/20/16	1750	1581864	2
Rad Gas Flow Prop	ortional Counting	Ţ										
GFPC, Ra228, Liqu	uid "As Received"	1										
Radium-228	U	ND	2.01	3.00	pCi/L			AXM6	07/25/16	1138	1582425	3
Rad Radium-226												
Lucas Cell, Ra226,	liquid "As Receiv	ved"										
Radium-226	•	1.07	0.349	1.00	pCi/L			LXP1	07/26/16	0800	1582028	4
The following Prep	Methods were pe	erformed:										
Method	Description	1		Analyst	Date		Time	Pro	ep Batch			
SW846 3005A	ICP-MS 3005	A PREP		JP1	07/14/16		1635	158	81863			
			_									

The following Analytical Methods were performed:

Method Description Analyst Comments
SW846 9056A
Analyst Comments

2 SW846 3005A/6020A

3 EPA 904.0/SW846 9320 Modified

EPA 903.1 Modified

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits

Barium-133 Tracer GFPC, Ra228, Liquid "As Received"

61.4 (15%-125%)

Notes:

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

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Certificate of Analysis

Project:

Client ID:

PF

Units

Result

Nominal

Recovery%

93.1

Report Date: July 26, 2016

Time Batch Method

Acceptable Limits

(15%-125%)

SCEG01616C

GEEL003

DF Analyst Date

Company:

GEL Engineering, LLC

Address:

2040 Savage Rd

Charleston, South Carolina 29417

Robert Gardner

Contact: Project:

Williams 52 RCRA

Client Sample ID: GW-10

Sample ID:

401582004

Matrix:

Parameter

Ground Water

Collect Date:

13-JUL-16 12:56

Result

Receive Date: Collector:

14-JUL-16 Client

Qualifier

Ion Chromatography												
SW846 9056A Anior	ns "As Received"											
Fluoride		0.634	0.033	0.100	mg/L		1	MXL2	07/14/16	1809	1581843	1
Metals Analysis-ICP	-MS											
SW846 3005A/6020	A Liquid "As Rece	eived"										
Lithium	J	8.40	2.00	10.0	ug/L	1.00	1	BAJ	07/20/16	1801	1581864	2
Rad Gas Flow Propos	rtional Counting											
GFPC, Ra228, Liquio	d "As Received"											
Radium-228	U	ND	1.43	3.00	pCi/L			AXM6	07/25/16	1138	1582425	3
Rad Radium-226												
Lucas Cell, Ra226, li	quid "As Received	1 "										
Radium-226		2.78	0.445	1.00	pCi/L			LXP1	07/26/16	0800	1582028	4
The following Prep N	Methods were perf	ormed:										
Method	Description			Analyst	Date		Time	Pr	ep Batch			
SW846 3005A	ICP-MS 3005A	PREP		JP1	07/14/16		1635	15	81863			
The following Analy	tical Methods wer	re performed:										
Method	Description				A	Analys	st Cor	nment	8			
1	SW846 9056A											
2	SW846 3005A/60	020A										
3	EPA 904.0/SW84	16 9320 Modified										

DL

RL

Notes:

Barium-133 Tracer

Column headers are defined as follows:

Surrogate/Tracer Recovery

DF: Dilution Factor Lc/LC: Critical Level DL: Detection Limit PF: Prep Factor MDA: Minimum Detectable Activity **RL**: Reporting Limit

EPA 903.1 Modified

Test

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

GFPC, Ra228, Liquid "As Received"

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Certificate of Analysis

Project:

Units

Result

Nominal

Recovery%

103

Client ID:

PF

Report Date: July 26, 2016

Time Batch Method

Acceptable Limits

(15%-125%)

SCEG01616C

GEEL003

DF Analyst Date

Company:

GEL Engineering, LLC

Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Project:

Robert Gardner

Client Sample ID: Field Blank

Williams 52 RCRA

Sample ID:

401582005

Matrix:

Water

Collect Date:

13-JUL-16 13:05

Result

Receive Date:

14-JUL-16

Collector:

Parameter

Client

Qualifier

Ion Chromatography												
SW846 9056A Anions	"As Received"											
Fluoride	U	ND	0.033	0.100	mg/L		1	MXL2	07/14/16	1839	1581843	1
Metals Analysis-ICP-M	1S											
SW846 3005A/6020A	Liquid "As Rece	eived"										
Lithium	U	ND	2.00	10.0	ug/L	1.00	1	BAJ	07/20/16	1803	1581864	2
Rad Gas Flow Proportion	onal Counting											
GFPC, Ra228, Liquid "	'As Received"											
Radium-228	U	ND	1.36	3.00	pCi/L			AXM6	07/25/16	1139	1582425	3
Rad Radium-226												
Lucas Cell, Ra226, liqu	iid "As Received	l''										
Radium-226		0.515	0.370	1.00	pCi/L			LXP1	07/26/16	0800	1582028	4
The following Prep Me	thods were perfe	ormed:										
Method	Description		A	Analyst	Date	Т	Γim	e Pro	ep Batch			
SW846 3005A	ICP-MS 3005A I	PREP	J	P1	07/14/16	1	635	158	81863			
The following Analytic	cal Methods wer	e performed:										
Method	Description				A	Analyst	Co	mments	3			
1	SW846 9056A					-						
2	SW846 3005A/60)20A										
3	EPA 904.0/SW84											
4	EPA 903.1 Modif	ied										
4	EPA 903.1 Modif	ried										

DL

RL

Notes:

Barium-133 Tracer

Column headers are defined as follows:

Surrogate/Tracer Recovery

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

Test

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

GFPC, Ra228, Liquid "As Received"

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Certificate of Analysis

Project:

Client ID:

Report Date: July 26, 2016

SCEG01616C

GEEL003

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52 RCRA

Client Sample ID: GW-26 Sample ID: 401582006 Matrix: Ground Water Collect Date: 13-JUL-16 14:20

14-JUL-16 Receive Date: Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatograph	hy											
SW846 9056A An	ions "As Received	"										
Fluoride		0.111	0.033	0.100	mg/L		1	MXL2	07/14/16	2009	1581843	1
Metals Analysis-IC	CP-MS											
SW846 3005A/602	20A Liquid "As Re	eceived"										
Lithium	J	2.70	2.00	10.0	ug/L	1.00	1	BAJ	07/20/16	1806	1581864	2
Rad Gas Flow Prop	portional Counting	Ţ										
GFPC, Ra228, Liq	uid "As Received"	1										
Radium-228	U	ND	1.50	3.00	pCi/L			AXM6	07/25/16	1139	1582425	3
Rad Radium-226												
Lucas Cell, Ra226,	, liquid "As Receiv	ved"										
Radium-226	•	0.966	0.308	1.00	pCi/L			LXP1	07/26/16	0800	1582028	4
The following Prep	Methods were pe	erformed:										
Method	Description	1		Analyst	Date		Time	Pr	ep Batch			
SW846 3005A	ICP-MS 3005	A PREP		JP1	07/14/16		1635	158	81863			
TE1 6 11 : A	1 2 136 1 1	c										

The following Analytical Methods were performed:

Method Description **Analyst Comments** SW846 9056A

2 SW846 3005A/6020A EPA 904.0/SW846 9320 Modified

3

EPA 903.1 Modified

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits Barium-133 Tracer 94.5 (15%-125%) GFPC, Ra228, Liquid "As Received"

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level PF: Prep Factor DL: Detection Limit MDA: Minimum Detectable Activity **RL**: Reporting Limit

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Certificate of Analysis

Project:

Client ID:

Report Date: July 26, 2016

SCEG01616C

GEEL003

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner
Project: Williams 52 RCRA

Client Sample ID: DUP

Sample ID: 401582007 Matrix: Ground Water Collect Date: 13-JUL-16 14:40 Receive Date: 14-JUL-16

Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatograph	y											
SW846 9056A Anio	ons "As Received	l"										
Fluoride		0.106	0.033	0.100	mg/L		1	MXL2	07/14/16	2039	1581843	1
Metals Analysis-IC	P-MS											
SW846 3005A/6020	0A Liquid "As Re	eceived"										
Lithium	J	2.31	2.00	10.0	ug/L	1.00	1	BAJ	07/20/16	1808	1581864	2
Rad Gas Flow Prop	ortional Counting	3										
GFPC, Ra228, Liqu	id "As Received"	•										
Radium-228	U	ND	2.65	3.00	pCi/L			AXM6	07/25/16	1139	1582425	3
Rad Radium-226												
Lucas Cell, Ra226,	liquid "As Receiv	ved"										
Radium-226	•	1.44	0.431	1.00	pCi/L			LXP1	07/26/16	0835	1582028	4
The following Prep	Methods were pe	erformed:										
Method	Description	n		Analyst	Date		Time	Pr	ep Batch			
SW846 3005A	ICP-MS 3005	SA PREP		JP1	07/14/16		1635	15	81863			
The fellowing And	lution Mathadau	riono monfon	mad.									

The following Analytical Methods were performed:

MethodDescriptionAnalyst Comments1SW846 9056A

2 SW846 3005A/6020A

3 EPA 904.0/SW846 9320 Modified

EPA 903.1 Modified

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits

Barium-133 Tracer GFPC, Ra228, Liquid "As Received"

78.3 (15%-125%)

Notes:

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

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Certificate of Analysis

Project:

Client ID:

Report Date: July 26, 2016

SCEG01616C

GEEL003

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner
Project: Williams 52 RCRA

Client Sample ID: GW-24
Sample ID: 401582008
Matrix: Ground Water
Collect Date: 13-JUL-16 16:58

Receive Date: 14-JUL-16 Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatograp	hy											
SW846 9056A An	ions "As Received	!"										
Fluoride		0.399	0.033	0.100	mg/L		1	MXL2	07/14/16	2109	1581843	1
Metals Analysis-IO	CP-MS											
SW846 3005A/602	20A Liquid "As Re	eceived"										
Lithium	J	5.07	2.00	10.0	ug/L	1.00	1	BAJ	07/20/16	1811	1581864	2
Rad Gas Flow Pro	portional Counting	ŗ										
GFPC, Ra228, Liq	uid "As Received"	'										
Radium-228	U	ND	1.77	3.00	pCi/L			AXM6	07/25/16	1139	1582425	3
Rad Radium-226												
Lucas Cell, Ra226	, liquid "As Receiv	ved"										
Radium-226	_	0.638	0.459	1.00	pCi/L			LXP1	07/26/16	0835	1582028	4
The following Prep	p Methods were pe	erformed:										
Method	Description	1		Analyst	Date		Time	Pro	ep Batch			
SW846 3005A	ICP-MS 3005	A PREP		JP1	07/14/16		1635	158	81863			
TD1 C 11 : A	1 2 136 1 1	c	,									

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 9056A	
2	SW846 3005A/6020A	
3	EPA 904.0/SW846 9320 Modified	
4	EPA 903.1 Modified	

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits

Barium-133 Tracer GFPC, Ra228, Liquid "As Received"

100 (15%-125%)

Notes:

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: July 26, 2016

SCEG01616C

GEEL003

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner
Project: Williams 52 RCRA

Client Sample ID: GW-25 Sample ID: 401582009 Matrix: Ground Water Collect Date: 13-JUL-16 17:56

Receive Date: 14-JUL-16 Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analys	t Date	Time	Batch	Method
Ion Chromatography												
SW846 9056A Anions	"As Received	<u>[</u> "										
Fluoride		0.538	0.033	0.100	mg/L		1	MXL2	07/14/16	2138	1581843	1
Metals Analysis-ICP-M	IS											
SW846 3005A/6020A	Liquid "As Re	eceived"										
Lithium	J	5.78	2.00	10.0	ug/L	1.00	1	BAJ	07/20/16	1813	1581864	2
Rad Gas Flow Proportion	onal Counting	7										
GFPC, Ra228, Liquid "	'As Received'	'										
Radium-228	U	ND	1.37	3.00	pCi/L			AXM6	07/25/16	1139	1582425	3
Rad Radium-226												
Lucas Cell, Ra226, liqu	id "As Receiv	ved"										
Radium-226		0.309	0.247	1.00	pCi/L			LXP1	07/26/16	0835	1582028	4
The following Prep Me	thods were pe	erformed:										
Method	Description	1		Analyst	Date		Time	Pre	p Batch			
SW846 3005A	ICP-MS 3005	A PREP		JP1	07/14/16		1635	158	1863			

The following Analytical Methods were performed:

	7	
Method	Description	Analyst Comments
1	SW846 9056A	•
2	SW846 3005A/6020A	
3	EPA 904.0/SW846 9320 Modified	

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits

Barium-133 Tracer GFPC, Ra228, Liquid "As Received" 86.1 (15%-125%)

Notes:

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

EPA 903.1 Modified

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: July 26, 2016

SCEG01616C

GEEL003

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner
Project: Williams 52 RCRA

Client Sample ID: GW-23D Sample ID: 401582010 Matrix: Ground Water Collect Date: 13-JUL-16 18:55 Receive Date: 14-JUL-16

Receive Date: 14-JUI
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatograph	y											
SW846 9056A Anie	ons "As Received	"										
Fluoride		0.313	0.033	0.100	mg/L		1	MXL2	07/14/16	2208	1581843	1
Metals Analysis-IC	P-MS											
SW846 3005A/602	0A Liquid "As Re	eceived"										
Lithium	J	4.80	2.00	10.0	ug/L	1.00	1	BAJ	07/20/16	1816	1581864	2
Rad Gas Flow Prop	ortional Counting	;										
GFPC, Ra228, Liqu	id "As Received"	1										
Radium-228	U	ND	1.67	3.00	pCi/L			AXM6	07/25/16	1142	1582425	3
Rad Radium-226												
Lucas Cell, Ra226,	liquid "As Receiv	/ed"										
Radium-226	•	0.662	0.509	1.00	pCi/L			LXP1	07/26/16	0835	1582028	4
The following Prep	Methods were pe	erformed:										
Method	Description	l		Analyst	Date		Time	Pr	ep Batch			
SW846 3005A	ICP-MS 3005	A PREP		JP1	07/14/16		1635	158	81863			
Tris Calla Cara Ama	1-4: 1 M-41 d		1.									

The following Analytical Methods were performed:

 Method
 Description
 Analyst Comments

 1
 SW846 9056A

 2
 SW846 3005A/6020A

3 EPA 904.0/SW846 9320 Modified 4 EPA 903.1 Modified

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits

Barium-133 Tracer GFPC, Ra228, Liquid "As Received"

91.8 (15%-125%)

Notes:

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: July 26, 2016

Page 1 of 3

GEL Engineering, LLC 2040 Savage Rd

Charleston, South Carolina Robert Gardner

Contact:

Parmname			NOM	[Sample	Qual	QC	Units	RPD%	REC%	Range Anlst	Date Time
Ion Chromatography Batch 1583												
QC1203585137 Fluoride	401582010	DUP			0.313		0.315	mg/L	0.51 ^		(+/-0.100) MXL2	07/14/16 22:38
QC1203585136 Fluoride	LCS		2.50				2.45	mg/L		97.8	(90%-110%)	07/14/16 16:09
QC1203585135 Fluoride	MB					U	ND	mg/L				07/14/16 15:40
QC1203585138 Fluoride	401582010	PS	2.50		0.313		2.77	mg/L		98.3	(90%-110%)	07/14/16 23:08
Metals Analysis - ICI Batch 158	PMS 1864											
QC1203585215 Lithium	401582001	DUP		J	3.75	J	3.81	ug/L	1.75 ^		(+/-10.0) BAJ	07/20/16 17:38
QC1203585214 Lithium	LCS		50.0				57.1	ug/L		114	(80%-120%)	07/20/16 17:33
QC1203585213 Lithium	MB					U	ND	ug/L				07/20/16 17:30
QC1203585216 Lithium	401582001	MS	50.0	J	3.75		54.3	ug/L		101	(75%-125%)	07/20/16 17:40
QC1203585217 Lithium	401582001	SDILT		J	3.75	U	ND	ug/L	N/A		(0%-10%)	07/20/16 17:45
Rad Gas Flow Batch 1582	2425											
QC1203586518 Radium-228	401582008	DUP		U	-0.0616	U	0.930	pCi/L	N/A		N/A AXM6	5 07/25/16 11:42
QC1203586519 Radium-228	LCS		45.1				45.2	pCi/L		100	(75%-125%)	07/25/16 11:42
QC1203586517 Radium-228	MB					U	0.522	pCi/L				07/25/16 11:42
Rad Ra-226 Batch 1582	2028											

QC1203585538 401582001 DUP

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 401582									Page 2 of 3
Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range A	nlst	Date Time
Rad Ra-226 Batch 1582028									
Radium-226		7.08	7.31	pCi/L	3.16		(0%-20%)	LXP1	07/26/16 08:35
QC1203585540 LCS Radium-226	24.4		22.7	pCi/L		93.1	(75%-125%)		07/26/16 09:10
QC1203585537 MB Radium-226		U	0.211	pCi/L					07/26/16 08:35
QC1203585539 401582001 MS Radium-226	122	7.08	133	pCi/L		103	(75%-125%)		07/26/16 09:10

Notes:

The Qualifiers in this report are defined as follows:

Analyte is a Tracer compound

- Result is less than value reported <
- Result is greater than value reported
- В The target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- Ε % difference of sample and SD is >10%. Sample concentration must meet flagging criteria
- Е General Chemistry--Concentration of the target analyte exceeds the instrument calibration range
- FA Failed analysis.
- FΒ Mercury was found present at quantifiable concentrations in field blanks received with these samples. Data associated with the blank are deemed invalid for reporting to regulatory agencies
- Η Analytical holding time was exceeded
- Value is estimated
- K Analyte present. Reported value may be biased high. Actual value is expected to be lower.
- L Analyte present. Reported value may be biased low. Actual value is expected to be higher.
- M M if above MDC and less than LLD
- REMP Result > MDC/CL and < RDL M
- N Metals--The Matrix spike sample recovery is not within specified control limits
- N/A RPD or %Recovery limits do not apply.
- N1See case narrative
- ND Analyte concentration is not detected above the detection limit
- NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Q One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
- R Per section 9.3.4.1 of Method 1664 Revision B, due to matrix spike recovery issues, this result may not be reported or used for regulatory compliance purposes.
- R Sample results are rejected

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

OC Summary

401582 Page 3 of 3 Parmname **NOM** Sample Qual QC Units RPD% REC% Range Anlst Date Time

- IJ Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- UI Gamma Spectroscopy--Uncertain identification

Workorder:

- UJ Gamma Spectroscopy--Uncertain identification
- UL Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y Other specific qualifiers were required to properly define the results. Consult case narrative.
- Z Paint Filter Test--Particulates passed through the filter, however no free liquids were observed.
- ٨ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
- d 5-day BOD--The 2:1 depletion requirement was not met for this sample
- 5-day BOD--Test replicates show more than 30% difference between high and low values. The data is qualified per the method and can be used for e reporting purposes
- h Preparation or preservation holding time was exceeded

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

* Indicates that a Quality Control parameter was not within specifications.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.



Tel: (803)217-9384 Fax: (803) 217-9911

July 26, 2016

REPORT TO:

Mike Moore C221

Williams Hwy 52 GW 20-NPDES/CCR Sample ID: AB22979

Date & Time Sampled:

July 13, 2016

09:49

Date & Time Submitted: July 15, 2016

09:55

Collected by: ANDERSON,D

Location Code: WLG20TM

GW 20

Login Record File: 160715003

Completed Analysis Date & Time Chemist		Units	MDL	Result	CERTIFIED BY SCDHEC (LAB ID 32006):
7/22/16 09:17 MC	7/22/16	ppb	5.0	Less than	Antimony by ICP-MS EPA 200.8
7/26/16 14:28 MC	7/26/16	ppb	10.0	Less than	Arsenic by ICP_MS EPA 200.8
7/21/16 08:41 MC	7/21/16	ppb	10.0	53.7	Barium (CWA) 200.7
7/21/16 08:41 MC	7/21/16	ppb	1.0	Less than	Beryllium EPA 200.7
7/21/16 08:41 MC	7/21/16	ppb	1000	Less than	Boron - EPA 200.7
7/22/16 09:17 MC	7/22/16	ppb	1.0	Less than	Cadmium by ICP_MS EPA 200.8
7/21/16 08:41 MC	7/21/16	ppb	100	169000	Calcium EPA 200.7
7/26/16 14:28 MC	7/26/16	ppb	1.0	Less than	Chromium by ICP_MS EPA 200.8
7/26/16 14:28 MC	7/26/16	ppb	1.0	3.2	Cobalt by ICP_MS EPA 200.8
7/22/16 09:17 MC	7/22/16	ppb	1.0	Less than	Lead by ICP-MS EPA 200.8
7/19/16 14:13 MC	7/19/16	ppb	0.2	Less than	Mercury (CWA) by EPA 245.2
7/22/16 09:17 MC	7/22/16	ppb	1.0	1.8	Molybdenum - EPA 200.8
7/26/16 14:28 MC	7/26/16	ppb	10.0	Less than	Selenium by ICP-MS EPA 200.8
7/26/16 14:28 MC	7/26/16	ppb	1.0	Less than	Thallium by ICP-MS EPA 200.8
7/19/16 14:13 7/22/16 09:17 7/26/16 14:28	7/19/16 7/22/16 7/26/16	ppb ppb ppb	1.0 0.2 1.0 10.0	Less than 1.8 Less than	Lead by ICP-MS EPA 200.8 Mercury (CWA) by EPA 245.2 Molybdenum - EPA 200.8 Selenium by ICP-MS EPA 200.8

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

July 26, 2016

REPORT TO:

Mike Moore C221

Williams Hwy 52 GW 21-NPDES/CCR Sample ID: AB22981

Date & Time Sampled:

July 13, 2016

10:54

Date & Time Submitted: July 15, 2016

09:55

Collected by: ANDERSON,D

Location Code: WLG21TM

GW 21

Login Record File: 160715003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	MDL	Units	Completed Date &		Chemist
Antimony by ICP-MS EPA 200.8	Greater than	5.0	ppb	7/22/16	09:17	MC
Arsenic by ICP_MS EPA 200.8	Less than	10.0	ppb	7/26/16	14:28	МС
Barium (CWA) 200.7	27.2	10.0	ppb	7/21/16	08:41	MC
Beryllium EPA 200.7	Less than	1.0	ppb	7/21/16	08:41	MC
Boron - EPA 200.7	Less than	1000	ppb	7/21/16	08:41	MC
Cadmium by ICP_MS EPA 200.8	Greater than	1.0	ppb	7/22/16	09:17	MC
Calcium EPA 200.7	111000	100	ppb	7/21/16	08:41	MC
Chromium by ICP_MS EPA 200.8	Less than	1.0	ppb	7/26/16	14:28	MC
Cobalt by ICP_MS EPA 200.8	2.0	1.0	ppb	7/26/16	14:28	МС
Lead by ICP-MS EPA 200.8	Greater than	1.0	ppb	7/22/16	09:17	МС
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	7/19/16	14:13	MC
Molybdenum - EPA 200.8	1.8	1.0	ppb	7/22/16	09:17	MC
Selenium by ICP-MS EPA 200.8	Less than	10.0	ppb	7/26/16	14:28	MC
Thallium by ICP-MS EPA 200.8	Less than	1.0	ppb	7/26/16	14:28	MC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

July 26, 2016

Login Record File: 160715003

REPORT TO:

Mike Moore C221

Williams Hwy 52 GW 22D-NPDES/CCR Sample ID: AB22983

11:49 Date & Time Sampled: July 13, 2016

Date & Time Submitted: July 15, 2016 09:55

Location Code: WLG22DTM Collected by: ANDERSON,D

GW 22D

Completed Analysis Chemist Result MDL Units **CERTIFIED BY SCDHEC (LAB ID 32006):** Date & Time 7/22/16 ∩a·17

Antimony by ICP-MS EPA 200.8	Less than	5.0	ppb	7/22/16	09:17	MC
Arsenic by ICP_MS EPA 200.8	Less than	10.0	ppb	7/26/16	14:28	MC
Barium (CWA) 200.7	10.6	10.0	ppb	7/21/16	08:41	MC
Beryllium EPA 200.7	Less than	1.0	ppb	7/21/16	08:41	MC
Boron - EPA 200.7	Less than	1000	ppb	7/21/16	08:41	MC
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	7/22/16	09:17	MC
Calcium EPA 200.7	97800	100	ppb	7/21/16	08:41	MC
Chromium by ICP_MS EPA 200.8	Less than	1.0	ppb	7/26/16	14:28	MC
Cobalt by ICP_MS EPA 200.8	Less than	1.0	ppb	7/26/16	14:28	MC
Lead by ICP-MS EPA 200.8	Less than	1.0	ppb	7/22/16	09:17	MC
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	7/19/16	14:13	МС
Molybdenum - EPA 200.8	15.7	1.0	ppb	7/22/16	09:17	MC
Selenium by ICP-MS EPA 200.8	Less than	10.0	ppb	7/26/16	14:28	MC
Thallium by ICP-MS EPA 200.8	Less than	1.0	ppb	7/26/16	14:28	MC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

July 26, 2016

REPORT TO:

Mike Moore C221

Sample ID: AB22985 Williams Hwy 52 GW 10-NPDES/CCR

Date & Time Sampled: July 13, 2016 12:56

Date & Time Submitted: July 15, 2016 09:55

Collected by: ANDERSON,D Location Code: WLG10TM

GW 10

Login Record File: 160715003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	MDL	Units	Completed Date &	Contracting the Contract of th	Chemist
Antimony by ICP-MS EPA 200.8	Less than	5.0	ppb	7/22/16	09:17	MC
Arsenic by ICP_MS EPA 200.8	Less than	10.0	ppb	7/26/16	14:28	МС
Barium (CWA) 200.7	18.0	10.0	ppb	7/21/16	08:41	MC
Beryllium EPA 200.7	Less than	1.0	ppb	7/21/16	08:41	MC
Boron - EPA 200.7	Less than	1000	ppb	7/21/16	08:41	MC
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	7/22/16	09:17	MC
Calcium EPA 200.7	48800	100	ppb	7/21/16	08:41	MC
Chromium by ICP_MS EPA 200.8	Less than	1.0	ppb	7/26/16	14:28	MC
Cobalt by ICP_MS EPA 200.8	Less than	1.0	ppb	7/26/16	14:28	MC
Lead by ICP-MS EPA 200.8	Less than	1.0	ppb	7/22/16	09:17	MC
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	7/19/16	14:13	MC
Molybdenum - EPA 200.8	1.7	1.0	ppb	7/22/16	09:17	MC
Selenium by ICP-MS EPA 200.8	Less than	10.0	ppb	7/26/16	14:28	MC
Thallium by ICP-MS EPA 200.8	Less than	1.0	ppb	7/26/16	14:28	MC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

July 26, 2016

REPORT TO:

Mike Moore C221

Sample ID: AB22987 Williams Hwy 52 FIELD

Date & Time Sampled:

July 13, 2016

13:05

Date & Time Submitted: July 15, 2016

09:55

Collected by: ANDERSON,D

Location Code: WLGFBTM

GW 10

Login Record File: 160715003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	MDL	Units	Completed Date &		Chemist
Antimony by ICP-MS EPA 200.8	Less than	5.0	ppb	7/22/16	09:17	MC
Arsenic by ICP_MS EPA 200.8	Less than	10.0	ppb	7/26/16	14:28	MC
Barium (CWA) 200.7	Less than	10.0	ppb	7/21/16	08:41	MC
Beryllium EPA 200.7	Less than	1.0	ppb	7/21/16	08:41	MC
Boron - EPA 200.7	Less than	1000	ppb	7/21/16	08:41	MC
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	7/22/16	09:17	MC
Calcium EPA 200.7	Less than	100	ppb	7/21/16	08:41	MC
Chromium by ICP_MS EPA 200.8	Less than	1.0	ppb	7/26/16	14:28	MC
Cobalt by ICP_MS EPA 200.8	Less than	1.0	ppb	7/26/16	14:28	MC
Lead by ICP-MS EPA 200.8	Less than	1.0	ppb	7/22/16	09:17	MC
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	7/19/16	14:13	MC
Molybdenum - EPA 200.8	Less than	1.0	ppb	7/22/16	09:17	MC
Selenium by ICP-MS EPA 200.8	Less than	10.0	ppb	7/26/16	14:28	MC
Thallium by ICP-MS EPA 200.8	Less than	1.0	ppb	7/26/16	14:28	MC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

July 27, 2016

REPORT TO:

Mike Moore C221

Sample ID: AB22989

Williams Hwy 52 GW 26-NPDES/CCR

Date & Time Sampled:

July 13, 2016

14:20

Date & Time Submitted: July 15, 2016

09:55

Collected by: ANDERSON,D

Location Code: WLG26TM

GW 26

Login Record File: 160715003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed / Date &		Chemist
Antimony by ICP-MS EPA 200.8	Less than	1.0	ppb	7/27/16	12:24	MC
Arsenic by ICP_MS EPA 200.8	Less than	10.0	ppb	7/26/16	16:23	MC
Barium (CWA) 200.7	74.3	10.0	ppb	7/21/16	08:14	MC
Beryllium EPA 200.7	Less than	1.0	ppb	7/21/16	08:14	MC
Boron - EPA 200.7	Less than	1000	ppb	7/21/16	08:14	MC
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	7/27/16	12:24	MC
Calcium EPA 200.7	143000	100	ppb	7/21/16	08:14	MC
Chromium by ICP_MS EPA 200.8	Less than	1.0	ppb	7/26/16	16:23	MC
Cobalt by ICP_MS EPA 200.8	12.6	1.0	ppb	7/26/16	16:23	MC
Lead by ICP-MS EPA 200.8	Less than	1.0	ppb	7/27/16	12:24	МС
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	7/19/16	14:13	МС
Molybdenum - EPA 200.8	Less than	1.0	ppb	7/27/16	12:24	MC
Selenium by ICP-MS EPA 200.8	Less than	10.0	ppb	7/26/16	16:23	MC
Thallium by ICP-MS EPA 200.8	Less than	1.0	ppb	7/26/16	16:23	MC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

July 27, 2016

REPORT TO:

Mike Moore C221

Sample ID: AB22991

Williams Hwy 52 GW 26-NPDES/CCR

Date & Time Sampled:

July 13, 2016

14:40

Date & Time Submitted: July 15, 2016

09:55

Collected by: ANDERSON,D

Location Code: WLG26TM

GW 26

Login Record File: 160715003

Result	Reporting Limit(MRL)	Units	Completed A		Chemist
Less than	1.0	ppb	7/27/16	12:24	MC
Less than	10.0	ppb	7/26/16	16:23	MC
74.7	10.0	ppb	7/21/16	08:14	MC
Less than	1.0	ppb	7/21/16	08:14	MC
Less than	1000	ppb	7/21/16	08:14	MC
Less than	1.0	ppb	7/27/16	12:24	MC
146000	100	ppb	7/21/16	08:14	MC
Less than	1.0	ppb	7/26/16	16:23	MC
12.1	1.0	ppb	7/26/16	16:23	MC
Less than	1.0	ppb	7/27/16	12:24	MC
Less than	0.2	ppb	7/19/16	14:13	MC
Less than	1.0	ppb	7/27/16	12:24	MC
Less than	10.0	ppb	7/26/16	16:23	MC
Less than	1.0	ppb	7/26/16	16:23	MC
	Less than T4.7 Less than Less than Less than 146000 Less than 12.1 Less than Less than Less than Less than Less than Less than	Less than 1.0 Less than 10.0 74.7 10.0 Less than 1.0 Less than 1.0 Less than 1.0 146000 100 Less than 1.0 Less than 1.0 Less than 0.2 Less than 1.0 Less than 1.0 Less than 1.0 Less than 1.0	Less than 1.0 ppb Less than 10.0 ppb 74.7 10.0 ppb Less than 1.0 ppb Less than 1000 ppb Less than 1.0 ppb Less than 1.0 ppb Less than 1.0 ppb Less than 1.0 ppb Less than 0.2 ppb Less than 1.0 ppb Less than 1.0 ppb Less than 1.0 ppb Less than 1.0 ppb	Less than 1.0 ppb 7/27/16 Less than 10.0 ppb 7/26/16 74.7 10.0 ppb 7/21/16 Less than 1.0 ppb 7/21/16 Less than 1.00 ppb 7/21/16 Less than 1.0 ppb 7/21/16 Less than 1.0 ppb 7/26/16 Less than 1.0 ppb 7/26/16 Less than 1.0 ppb 7/27/16 Less than 0.2 ppb 7/19/16 Less than 1.0 ppb 7/27/16 Less than 1.0 ppb 7/27/16 Less than 1.0 ppb 7/27/16 Less than 1.0 ppb 7/27/16	Limit(MRL) Date & filte Less than 1.0 ppb 7/27/16 12:24 Less than 10.0 ppb 7/26/16 16:23 74.7 10.0 ppb 7/21/16 08:14 Less than 1.0 ppb 7/21/16 08:14 Less than 1.0 ppb 7/27/16 12:24 146000 100 ppb 7/21/16 08:14 Less than 1.0 ppb 7/26/16 16:23 12.1 1.0 ppb 7/26/16 16:23 Less than 1.0 ppb 7/27/16 12:24 Less than 0.2 ppb 7/19/16 14:13 Less than 1.0 ppb 7/27/16 12:24 Less than 1.0 ppb 7/27/16 12:24 Less than 1.0 ppb 7/26/16 16:23

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

July 27, 2016

REPORT TO:

Mike Moore C221

Sample ID: AB22993

Williams Hwy 52 GW 24-NPDES/CCR

Date & Time Sampled:

July 13, 2016

16:58

Date & Time Submitted: July 15, 2016

09:55

Collected by: ANDERSON,D

Location Code: WLG24TM

GW 24

Login Record File: 160715003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Date &		Chemist
Antimony by ICP-MS EPA 200.8	Less than	1.0	ppb	7/27/16	12:24	MC
Arsenic by ICP_MS EPA 200.8	Less than	10.0	ppb	7/26/16	16:23	MC
Barium (CWA) 200.7	46.0	10.0	ppb	7/21/16	08:14	MC
Beryllium EPA 200.7	Less than	1.0	ppb	7/21/16	08:14	MC
Boron - EPA 200.7	Less than	1000	ppb	7/21/16	08:14	MC
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	7/27/16	12:24	MC
Calcium EPA 200.7	118000	100	ppb	7/21/16	08:14	MC
Chromium by ICP_MS EPA 200.8	Less than	1.0	ppb	7/26/16	16:23	MC
Cobalt by ICP_MS EPA 200.8	2.2	1.0	ppb	7/26/16	16:23	МС
Lead by ICP-MS EPA 200.8	Less than	1.0	ppb	7/27/16	12:24	MC
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	7/19/16	14:13	MC
Molybdenum - EPA 200.8	1.0	1.0	ppb	7/27/16	12:24	MC
Selenium by ICP-MS EPA 200.8	Less than	10.0	ppb	7/26/16	16:23	MC
Thallium by ICP-MS EPA 200.8	Less than	1.0	ppb	7/26/16	16:23	МС

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

July 27, 2016

REPORT TO:

Mike Moore C221

Sample ID: AB22995

Williams Hwy 52 GW 25-NPDES/CCR

Date & Time Sampled:

July 13, 2016

17:56

09:55

Collected by: ANDERSON,D

Date & Time Submitted: July 15, 2016

Location Code: WLG25TM

GW 25

Login Record File: 160715003

CERTIFIED BY SCDHEC (LAB ID 32006): Antimony by ICP-MS EPA 200.8	Result Less than	Reporting Limit(MRL)	Units	Completed Analysis Date & Time		Chemist
		1.0		7/27/16	A CONSTRUCTION OF THE CONTROL OF THE	MC
Arsenic by ICP_MS EPA 200.8	Less than	10.0	ppb	7/26/16	16:23	MC
Barium (CWA) 200.7	20.8	10.0	ppb	7/21/16	08:14	MC
Beryllium EPA 200.7	Less than	1.0	ppb	7/21/16	08:14	MC
Boron - EPA 200.7	Less than	1000	ppb	7/21/16	08:14	MC
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	7/27/16	12:24	MC
Calcium EPA 200.7	110000	100	ppb	7/21/16	08:14	MC
Chromium by ICP_MS EPA 200.8	Less than	1.0	ppb	7/26/16	16:23	MC
Cobalt by ICP_MS EPA 200.8	Less than	1.0	ppb	7/26/16	16:23	MC
Lead by ICP-MS EPA 200.8	Less than	1.0	ppb	7/27/16	12:24	MC
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	7/19/16	14:13	MC
Molybdenum - EPA 200.8	3.8	1.0	ppb	7/27/16	12:24	MC
Selenium by ICP-MS EPA 200.8	Less than	10.0	ppb	7/26/16	16:23	МС
Thallium by ICP-MS EPA 200.8	Less than	1.0	ppb	7/26/16	16:23	MC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

July 27, 2016

REPORT TO:

Mike Moore C221

Sample ID: AB22997

Williams Hwy 52 GW 23D-NPDES/CCR

Date & Time Sampled:

July 13, 2016

18:55

Date & Time Submitted: July 15, 2016

09:55

Collected by: ANDERSON,D

Location Code: WLG23DTM

GW 23D

Login Record File: 160715003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time		Chemist
Antimony by ICP-MS EPA 200.8	Less than	1.0	ppb	7/27/16	12:24	MC
Arsenic by ICP_MS EPA 200.8	Less than	10.0	ppb	7/26/16	16:23	MC
Barium (CWA) 200.7	10.8	10.0	ppb	7/21/16	08:14	MC
Beryllium EPA 200.7	Less than	1.0	ppb	7/21/16	08:14	MC
Boron - EPA 200.7	Less than	1000	ppb	7/21/16	08:14	MC
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	7/27/16	12:24	MC
Calcium EPA 200.7	65400	100	ppb	7/21/16	08:14	MC
Chromium by ICP_MS EPA 200.8	Less than	1.0	ppb	7/26/16	16:23	MC
Cobalt by ICP_MS EPA 200.8	Less than	1.0	ppb	7/26/16	16:23	MC
Lead by ICP-MS EPA 200.8	Less than	1.0	ppb	7/27/16	12:24	MC
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	7/19/16	14:13	MC
Molybdenum - EPA 200.8	17.5	1.0	ppb	7/27/16	12:24	MC
Selenium by ICP-MS EPA 200.8	Less than	10.0	ppb	7/26/16	16:23	MC
Thallium by ICP-MS EPA 200.8	Less than	1.0	ppb	7/26/16	16:23	MC
						man - or recommend a second

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

July 26, 2016

REPORT TO:

Mike Moore C221

Williams Hwy 52 GW 20-NPDES/CCR Sample ID: AB22978

Date & Time Sampled:

July 13, 2016

09:49

Date & Time Submitted: July 15, 2016

09:55

Collected by: ANDERSON,D

Location Code: WLG20TDS

GW 20

Login Record File: 160715003

Result	MDL	Units		Chemist	
9.0	0.50	PPM	7/19/16	12:27	LS
6.84	0.00	S.U.	7/20/16	09:43	PRC
22.8	0.50	PPM	7/19/16	12:27	LS
648	2.0	. mg/L	7/18/16	15:23	PRC
	9.0 6.84 22.8	9.0 0.50 6.84 0.00 22.8 0.50	9.0 0.50 PPM 6.84 0.00 S.U. 22.8 0.50 PPM	9.0 0.50 PPM 7/19/16 6.84 0.00 S.U. 7/20/16 22.8 0.50 PPM 7/19/16	9.0 0.50 PPM 7/19/16 12:27 6.84 0.00 S.U. 7/20/16 09:43 22.8 0.50 PPM 7/19/16 12:27

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

July 26, 2016

REPORT TO:

Mike Moore C221

Williams Hwy 52 GW 21-NPDES/CCR Sample ID: **AB22980**

Date & Time Sampled:

July 13, 2016

10:54

Date & Time Submitted: July 15, 2016

09:55

Collected by: ANDERSON,D

Location Code: WLG21TDS

GW 21

Login Record File: 160715003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	MDL -	Units	Completed Date &	Chemist	
Chlorides by IC EPA 300.0	9.2	0.50	PPM	7/19/16	12:41	LS
pH by SM4500HB	6.74	0.00	S.U.	7/20/16	09:43	PRC
Sulfates by IC EPA 300.0	17.9	0.50	PPM	7/19/16	12:41	LS
Total Dissolved Solid-SM2540C	545	2.0	mg/L	7/15/16	14:29	PRC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

July 26, 2016

REPORT TO:

Mike Moore C221

Williams Hwy 52 GW 22D-NPDES/CCR Sample ID: AB22982

Date & Time Sampled:

July 13, 2016

11:49

Date & Time Submitted: July 15, 2016

09:55

Collected by: ANDERSON,D

Location Code: WLG22DTDS

GW 22D

Login Record File: 160715003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	MDL	Units	Completed Date &	Chemist	
Chlorides by IC EPA 300.0	10.1	2.5	PPM	7/19/16	12:56	LS
pH by SM4500HB	7.20	0.00	S.U.	7/20/16	09:43	PRC
Sulfates by IC EPA 300.0	119	2.5	PPM	7/19/16	12:56	LS
Total Dissolved Solid-SM2540C	622	2.0	mg/L	7/18/16	15:23	PRC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

July 26, 2016

REPORT TO:

Mike Moore C221

Williams Hwy 52 GW 10-NPDES/CCR Sample ID: AB22984

Date & Time Sampled:

July 13, 2016

12:56

Date & Time Submitted: July 15, 2016

09:55

Collected by: ANDERSON,D

Location Code: WLG10TDS

GW 10

Login Record File: 160715003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	MDL	Units	Completed Date &	Chemist	
Chlorides by IC EPA 300.0	15.6	0.50	PPM	7/19/16	15:04	LS
pH by SM4500HB	6.90	0.00	S.U.	7/20/16	09:43	PRC
Sulfates by IC EPA 300.0	3.4	0.50	PPM	7/19/16	15:04	LS
Total Dissolved Solid-SM2540C	234	2.0	mg/L	7/18/16	15:23	PRC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

July 26, 2016

REPORT TO:

Mike Moore C221

Williams Hwy 52 FIELD Sample ID: AB22986

Date & Time Sampled:

July 13, 2016

13:05

Date & Time Submitted: July 15, 2016

09:55

Collected by: ANDERSON,D

Location Code: WLGFBTDS

GW 10

Login Record File: 160715003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	MDL	Units	Completed Date &	Chemist	
Chlorides by IC EPA 300.0	LESS THAN	0.50	PPM	7/19/16	15:19	LS
pH by SM4500HB	7.21	0.00	S.U.	7/20/16	09:43	PRC
Sulfates by IC EPA 300.0	0.69	0.50	PPM	7/19/16	15:19	LS
Total Dissolved Solid-SM2540C	495	2.0	mg/L	7/15/16	14:29	PRC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

July 26, 2016

REPORT TO:

Mike Moore C221

Sample ID: AB22988 Williams Hwy 52 GW 26-NPDES/CCR

Date & Time Sampled: July 13, 2016 14:20

Date & Time Submitted: July 15, 2016 09:55

Collected by: ANDERSON,D Location Code: WLG26TDS

GW 26

Login Record File: 160715003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	MDL	Units	Completed Date &	Chemist	
Chlorides by IC EPA 300.0	161	2.5	PPM	7/19/16	15:33	LS
pH by SM4500HB	6.44	0.00	S.U.	7/20/16	09:43	PRC
Sulfates by IC EPA 300.0	85.7	2.5	PPM	7/19/16	15:33	LS
Total Dissolved Solid-SM2540C	873	2.0	mg/L	7/18/16	15:23	PRC

If there are any questions concerning this sample, please contact the lab at (803) 217,9384.



Tel: (803)217-9384 Fax: (803) 217-9911

July 26, 2016

REPORT TO:

Mike Moore C221

Williams Hwy 52 GW 26-NPDES/CCR Sample ID: AB22990

Date & Time Sampled:

July 13, 2016

14:40

Date & Time Submitted: July 15, 2016

09:55

Collected by: ANDERSON,D

Location Code: WLG26TDS

GW 26

Login Record File: 160715003

Result	MDL	Units		Chemist	
163	2.5	PPM	7/19/16	15:47	LS
6.42	0.00	S.U.	7/20/16	09:43	PRC
91.2	2.5	PPM	7/19/16	15:47	LS
857	2.0	mg/L	7/18/16	15:23	PRC
	163 6.42 91.2	163 2.5 6.42 0.00 91.2 2.5	163 2.5 PPM 6.42 0.00 S.U. 91.2 2.5 PPM	Result MDL Office Date & D	Date & Time 163 2.5 PPM 7/19/16 15:47 6.42 0.00 S.U. 7/20/16 09:43 91.2 2.5 PPM 7/19/16 15:47

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

July 26, 2016

REPORT TO:

Mike Moore C221

Sample ID: AB22992 Williams Hwy 52 GW 24-NPDES/CCR

Date & Time Sampled:

July 13, 2016

16:58

Date & Time Submitted: July 15, 2016

09:55

Collected by: ANDERSON,D

Location Code: WLG24TDS

GW 24

Login Record File: 160715003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	MDL	Units	Completed Date &	Chemist	
Chlorides by IC EPA 300.0	20.8	0.50	PPM	7/19/16 16:02		LS
pH by SM4500HB	6.69	0.00	S.U.	7/20/16	09:43	PRC
Sulfates by IC EPA 300.0	42.0	0.50	PPM	7/19/16	16:02	LS
Total Dissolved Solid-SM2540C	495	2.0	mg/L	7/15/16	14:29	PRC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

July 26, 2016

REPORT TO:

Mike Moore C221

Sample ID: AB22994 Williams Hwy 52 GW 25-NPDES/CCR

Date & Time Sampled: July 13, 2016 17:56

Date & Time Submitted: July 15, 2016 09:55

Collected by: ANDERSON,D Location Code: WLG25TDS

GW 25

Login Record File: 160715003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	MDL	Units	Completed Date &	Chemist	
Chlorides by IC EPA 300.0	21.6	0.50	PPM	7/19/16	17:13	LS
pH by SM4500HB	6.99	0.00	S.U.	7/20/16	09:43	PRC
Sulfates by IC EPA 300.0	20.1	0.50	PPM	7/19/16	17:13	LS
Total Dissolved Solid-SM2540C	523	2.0	mg/L	7/18/16	15:23	PRC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

July 26, 2016

REPORT TO:

Mike Moore C221

Williams Hwy 52 GW 23D-NPDES/CCR Sample ID: AB22996

Date & Time Sampled:

July 13, 2016

18:55

Date & Time Submitted: July 15, 2016

09:55

Collected by: ANDERSON,D

Location Code: WLG23DTDS

GW 23D

Login Record File: 160715003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	MDL	Units	Completed Date &	Chemist	
Chlorides by IC EPA 300.0	14.0	0.50	mg/L	7/19/16	16:16	LS
pH by SM4500HB	7.41	0.00	S.U.	7/20/16	09:43	PRC
Sulfates by IC EPA 300.0	44.4	0.50	PPM	7/19/16	16:16	LS
Total Dissolved Solid-SM2540C	456	2.0	mg/L	7/18/16	15:23	PRC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

EPA CCR Rule Compliance Monitoring Wells

Groundwater Monitoring Data

South Carolina Electric & Gas: Williams Station Highway 52 Class Three Landfill

Williams Station Highway 52 Class Three Landfill

					Gauging Da	ate: 09/13/16							
		Well Data											
				Initial G	auging	Final Gauging		Final Water Quality Indicator Parameters					
		Ground											
	PVC Pipe	Surface		Depth to	Groundwater	Depth to	Groundwater	Temparature	рН	Sp. Cond.	Turbidity	ORP	DO
Monitoring Well ID	Elevation, ft.	Elevation, ft.	Stickup, ft.	Groundwater, ft.	Elevation, ft.	Groundwater, ft.	Elevation, ft.	°C	S.U.	μS/cm	NTU	mV	mg/L
GW-10	52.28	49.60	2.68	9.14	43.14	10.97	41.31	24.0	6.8	147	4.61	55	3.16
GW-20	60.81	56.70	4.11	20.87	39.94	23.31	37.50	23.8	6.5	1100	9.67	-10	1.99
GW-21	56.14	52.50	3.64	15.66	40.48	18.75	37.39	26.7	6.7	1030	5.64	-7	1.01
GW-22D	50.36	47.10	3.26	13.83	36.53	19.12	31.24	27.2	7.0	917	9.73	-21	0.98
GW-23D	49.69	46.20	3.49	14.17	35.52	18.83	30.86	25.6	7.2	765	5.53	31	0.95
GW-24	52.40	48.70	3.70	15.00	37.40	16.05	36.35	27.8	6.6	938	5.74	-13	0.88
GW-25	50.93	47.40	3.53	14.15	36.78	15.25	35.68	25.7	6.9	886	6.17	81	1.07
GW-26	55.21	51.20	4.01	24.00	31.21	24.47	30.74	28.5	6.2	1370	5.38	-3	0.98

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis Report for

GEEL003 GEL Engineering, LLC Client SDG: 405773 GEL Work Order: 405773

The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a Tracer compound
- ** Analyte is a surrogate compound
- H Analytical holding time was exceeded
- J Value is estimated
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Jake Crook.

	Jack N	Crosh		
Reviewed by	,			

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: October 11, 2016

SCEG01616C

GEEL003

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52 RCRA

Client Sample ID: GW-10 Sample ID: 405773001 Matrix: Ground Water Collect Date: 13-SEP-16 08:50

13-SEP-16 Receive Date: Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatography												
EPA300.0 Fluoride in	n Liquid "As Re	eceived"										
Chloride	•	6.50	0.067	0.200	mg/L		1	MAR1	09/15/16	0029	1598494	1
Fluoride		0.119	0.033	0.100	mg/L		1					
Metals Analysis-ICP	-MS											
200.8/200.2 NPDES	Metals "As Red	ceived"										
Lithium	J	5.04	2.00	10.0	ug/L	1.00	1	SKJ	09/21/16	1833	1598376	2
Rad Gas Flow Propor	rtional Counting	7										
GFPC, Ra228, Liquid	d "As Received"	'										
Radium-228	U	ND	1.72	3.00	pCi/L			AXM6	10/03/16	1639	1602003	3
Rad Radium-226												
Lucas Cell, Ra226, li	quid "As Receiv	ved"										
Radium-226	U	ND	0.193	1.00	pCi/L			LXP1	10/05/16	0835	1600164	4
The following Prep N	Methods were pe	erformed:										
Method	Description	1		Analyst	Date	7	Гimе	Pr	ep Batch			
EPA 200.2	ICP-MS 200.2	2 PREP		SXW1	09/14/16	(0840	159	98375			

The following Analytical Methods were performed:

Method Description **Analyst Comments** EPA 300.0

2 EPA 200.8 SC_NPDES 3 EPA 904.0/SW846 9320 Modified

EPA 903.1 Modified

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits Barium-133 Tracer (15%-125%) GFPC, Ra228, Liquid "As Received" 94.4

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level DL: Detection Limit PF: Prep Factor MDA: Minimum Detectable Activity **RL**: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: October 11, 2016

SCEG01616C

GEEL003

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner
Project: Williams 52 RCRA

Client Sample ID: GW-20 Sample ID: 405773002 Matrix: Ground Water Collect Date: 13-SEP-16 10:01

Receive Date: 13-SEP-16 Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatography	y											
EPA300.0 Fluoride	in Liquid "As Re	eceived"										
Chloride	-	9.48	0.067	0.200	mg/L		1	MAR1	09/15/16	0205	1598494	1
Fluoride		0.193	0.033	0.100	mg/L		1					
Metals Analysis-ICI	P-MS											
200.8/200.2 NPDES	S Metals "As Red	ceived"										
Lithium	J	4.08	2.00	10.0	ug/L	1.00	1	SKJ	09/21/16	1857	1598376	2
Rad Gas Flow Propo	ortional Counting	3										
GFPC, Ra228, Liqui	id "As Received'	•										
Radium-228	U	ND	1.77	3.00	pCi/L			AXM6	10/03/16	1639	1602003	3
Rad Radium-226												
Lucas Cell, Ra226, l	liquid "As Receiv	ved"										
Radium-226	U	ND	0.366	1.00	pCi/L			LXP1	10/05/16	0835	1600164	4
The following Prep	Methods were pe	erformed:										
Method	Description	1		Analyst	Date	-	Гim	e Pr	ep Batch			
EPA 200.2	ICP-MS 200.			SXW1	09/14/16	(0840	159	98375			

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	EPA 200.8 SC_NPDES	
	TD 1 0010 (GYY)015 0000 3.5 11.01 1	

EPA 904.0/SW846 9320 Modified EPA 903.1 Modified

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits

Barium-133 Tracer GFPC, Ra228, Liquid "As Received"

103 (15%-125%)

Notes:

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: October 11, 2016

SCEG01616C

GEEL003

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner
Project: Williams 52 RCRA

Client Sample ID: DUP

Sample ID: 405773003 Matrix: Ground Water Collect Date: 13-SEP-16 10:20

Receive Date: 13-SEP-16 Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatograp	ohy											
EPA300.0 Fluorid	le in Liquid "As Re	eceived"										
Chloride	•	9.46	0.067	0.200	mg/L		1	MAR1	09/15/16	0237	1598494	1
Fluoride		0.192	0.033	0.100	mg/L		1					
Metals Analysis-I	CP-MS											
200.8/200.2 NPD	ES Metals "As Red	ceived"										
Lithium	J	4.29	2.00	10.0	ug/L	1.00	1	SKJ	09/21/16	1901	1598376	2
Rad Gas Flow Pro	portional Counting	3										
GFPC, Ra228, Lic	quid "As Received"	•										
Radium-228	•	2.32	1.41	3.00	pCi/L			AXM6	10/03/16	1639	1602003	3
Rad Radium-226												
Lucas Cell, Ra226	6, liquid "As Receiv	ved"										
Radium-226	•	0.575	0.422	1.00	pCi/L			LXP1	10/05/16	0835	1600164	4
The following Pre	p Methods were pe	erformed:										
Method	Description	n		Analyst	Date	Т	ime	e Pr	ep Batch			
EPA 200.2	ICP-MS 200.			SXW1	09/14/16	0	840	15	98375			
FF1 6.11 : .	1 . 13 . 1											

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	·
2	EPA 200.8 SC_NPDES	
3	EPA 904.0/SW846 9320 Modified	
4	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			76.1	(15%-125%)

Notes:

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: October 11, 2016

SCEG01616C

GEEL003

Company : Address :

GEL Engineering, LLC

2040 Savage Rd

Charleston, South Carolina 29417

Contact: Project:

Robert Gardner

Client Sample ID:

Williams 52 RCRA
Field Blank

Sample ID:

405773004

Matrix:

Water

Collect Date:

13-SEP-16 10:50

Receive Date:

13-SEP-16

Collector:

Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatography												
EPA300.0 Fluoride in	n Liquid "As Re	eceived"										
Chloride	U	ND	0.067	0.200	mg/L		1	MAR1	09/15/16	0309	1598494	1
Fluoride	U	ND	0.033	0.100	mg/L		1					
Metals Analysis-ICP-	-MS											
200.8/200.2 NPDES	Metals "As Red	ceived"										
Lithium	U	ND	2.00	10.0	ug/L	1.00	1	SKJ	09/21/16	1905	1598376	2
Rad Gas Flow Propor	tional Counting	3										
GFPC, Ra228, Liquio	l "As Received"	"										
Radium-228	U	ND	1.28	3.00	pCi/L			AXM6	10/03/16	1639	1602003	3
Rad Radium-226												
Lucas Cell, Ra226, li	quid "As Recei	ved"										
Radium-226		0.598	0.420	1.00	pCi/L			LXP1	10/05/16	0835	1600164	4
The following Prep M	lethods were pe	erformed:										
Method	Description	n		Analyst	Date	7	Γime	Pr	ep Batch			
EPA 200.2	ICP-MS 200.	2 PREP		SXW1	09/14/16	(0840	159	98375			

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	•

EPA 200.8 SC_NPDES

3 EPA 904.0/SW846 9320 Modified

EPA 903.1 Modified

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits
Barium-133 Tracer GFPC, Ra228, Liquid "As Received"
91.1 (15%-125%)

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: October 11, 2016

SCEG01616C

GEEL003

Company:

GEL Engineering, LLC

2040 Savage Rd Address:

Charleston, South Carolina 29417

Contact: Project:

Robert Gardner Williams 52 RCRA

Client Sample ID: GW-21

Sample ID:

405773005

Matrix: Collect Date: Ground Water

Receive Date:

13-SEP-16 11:10 13-SEP-16

Collector:

Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatography												
EPA300.0 Fluoride in	n Liquid "As Re	eceived"										
Fluoride	•	0.176	0.033	0.100	mg/L		1	MAR1	09/15/16	0340	1598494	1
Chloride		9.74	0.134	0.400	mg/L		2	MAR1	09/15/16	1154	1598494	2
Metals Analysis-ICP	-MS											
200.8/200.2 NPDES	Metals "As Re	ceived"										
Lithium	J	5.85	2.00	10.0	ug/L	1.00	1	SKJ	09/21/16	1909	1598376	3
Rad Gas Flow Propor	rtional Counting	3										
GFPC, Ra228, Liquio	d "As Received"	"										
Radium-228	U	ND	2.72	3.00	pCi/L			AXM6	10/03/16	1639	1602003	4
Rad Radium-226												
Lucas Cell, Ra226, li	quid "As Recei	ved"										
Radium-226		0.679	0.392	1.00	pCi/L			LXP1	10/05/16	0835	1600164	5
The following Prep N	Methods were pe	erformed:										
Method	Description	n		Analyst	Date	7	Гіте	Pr	ep Batch			
EPA 200.2	ICP-MS 200.	2 PREP		SXW1	09/14/16	(0840	159	98375			

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	-
2	EPA 300.0	
3	EPA 200.8 SC_NPDES	
4	EPA 904.0/SW846 9320 Modified	

EPA 903.1 Modified

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits (15%-125%) Barium-133 Tracer GFPC, Ra228, Liquid "As Received" 73.8

Notes:

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: October 11, 2016

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner
Project: Williams 52 RCRA

Client Sample ID: GW-21 Project: SCEG01616C Sample ID: 405773005 Client ID: GEEL003

Parameter Qualifier Result	DL	RL	Units	PF	DF Analyst Date	Time Batch Method
----------------------------	----	----	-------	----	-----------------	-------------------

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: October 11, 2016

SCEG01616C

GEEL003

Company: Address:

GEL Engineering, LLC

2040 Savage Rd

Charleston, South Carolina 29417

Contact: Project:

Robert Gardner Williams 52 RCRA

Client Sample ID: GW-22D

Sample ID:

405773006

13-SEP-16

Matrix:

Ground Water

Collect Date: Receive Date: 13-SEP-16 12:00

Collector:

Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatograp	ohy											
EPA300.0 Fluorid	le in Liquid "As Re	eceived"										
Fluoride	•	0.274	0.033	0.100	mg/L		1	MAR1	09/15/16	0412	1598494	1
Chloride		9.49	0.134	0.400	mg/L		2	MAR1	09/15/16	1226	1598494	2
Metals Analysis-I	CP-MS											
200.8/200.2 NPD	ES Metals "As Re	ceived"										
Lithium	J	8.78	2.00	10.0	ug/L	1.00	1	SKJ	09/21/16	1921	1598376	3
Rad Gas Flow Pro	portional Counting	g										
GFPC, Ra228, Lic	quid "As Received	"										
Radium-228	U	ND	2.98	3.00	pCi/L			AXM6	10/03/16	1639	1602003	4
Rad Radium-226												
Lucas Cell, Ra226	6, liquid "As Recei	ved"										
Radium-226	•	0.826	0.431	1.00	pCi/L			LXP1	10/05/16	0835	1600164	5
The following Pre	p Methods were p	erformed:										
Method	Description	n		Analyst	Date	r	Time	Pr	ep Batch			
EPA 200.2	ICP-MS 200.	2 PREP		SXW1	09/14/16	(0840	159	98375			
TD1 C 11 : A	1 . 13 6 . 1	c 1										

The following Analytical Methods were performed:

Method	Description	Analyst Comments	
1	EPA 300.0	·	
2	EPA 300.0		
3	EPA 200.8 SC_NPDES		
4	EPA 904.0/SW846 9320 Modified		
5	EPA 903.1 Modified		

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits (15%-125%) Barium-133 Tracer GFPC, Ra228, Liquid "As Received" 58.7

Notes:

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: October 11, 2016

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner
Project: Williams 52 RCRA

Client Sample ID: GW-22D Project: SCEG01616C Sample ID: 405773006 Client ID: GEEL003

Parameter Qualifier Result DL RL Units PF DF Analyst Date Time Batch Method

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: October 11, 2016

SCEG01616C

GEEL003

Company:

GEL Engineering, LLC

Address:

2040 Savage Rd

Charleston, South Carolina 29417

Contact: Project:

Robert Gardner Williams 52 RCRA

Client Sample ID: GW-23D

Sample ID:

405773007

Matrix: Collect Date: Ground Water

Receive Date:

13-SEP-16 12:40 13-SEP-16

Collector:

Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatography	7											
EPA300.0 Fluoride i	n Liquid "As Re	eceived"										
Fluoride	•	0.331	0.033	0.100	mg/L		1	MAR1	09/15/16	0548	1598494	1
Chloride		14.1	0.134	0.400	mg/L		2	MAR1	09/15/16	1258	1598494	2
Metals Analysis-ICP	P-MS											
200.8/200.2 NPDES	Metals "As Re	ceived"										
Lithium	J	4.71	2.00	10.0	ug/L	1.00	1	SKJ	09/21/16	1925	1598376	3
Rad Gas Flow Propo	rtional Counting	g										
GFPC, Ra228, Liqui	d "As Received	"										
Radium-228	U	ND	1.29	3.00	pCi/L			AXM6	10/03/16	1639	1602003	4
Rad Radium-226												
Lucas Cell, Ra226, 1	iquid "As Recei	ved"										
Radium-226	•	0.648	0.354	1.00	pCi/L			LXP1	10/05/16	0907	1600164	5
The following Prep l	Methods were p	erformed:										
Method	Description	n		Analyst	Date	7	Гіте	Pr	ep Batch			
EPA 200.2	ICP-MS 200.	2 PREP		SXW1	09/14/16	(0840	159	98375			

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	•
2	EPA 300.0	
3	EPA 200.8 SC_NPDES	
4	EPA 904.0/SW846 9320 Modified	
5	EPA 903.1 Modified	

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits 96.1 (15%-125%) Barium-133 Tracer GFPC, Ra228, Liquid "As Received"

Notes:

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: October 11, 2016

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner
Project: Williams 52 RCRA

Client Sample ID: GW-23D Project: SCEG01616C Sample ID: 405773007 Client ID: GEEL003

Parameter Qualifier Result DL RL Units PF DF Analyst Date Time Batch Method

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: October 11, 2016

SCEG01616C

GEEL003

Company: Address:

GEL Engineering, LLC

2040 Savage Rd

Charleston, South Carolina 29417

Contact: Project:

Robert Gardner Williams 52 RCRA

Client Sample ID: GW-25

Sample ID:

405773008

13-SEP-16

Matrix:

Ground Water

Collect Date: Receive Date: 13-SEP-16 13:22

Collector:

Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatogra	phy											
EPA300.0 Fluori	de in Liquid "As Re	eceived"										
Fluoride	•	0.733	0.033	0.100	mg/L		1	MAR1	09/15/16	0620	1598494	1
Chloride		19.6	0.335	1.00	mg/L		5	MAR1	09/15/16	1330	1598494	2
Metals Analysis-	ICP-MS											
200.8/200.2 NPI	DES Metals "As Red	ceived"										
Lithium	J	7.42	2.00	10.0	ug/L	1.00	1	SKJ	09/21/16	1929	1598376	3
Rad Gas Flow Pr	oportional Counting	g										
GFPC, Ra228, Li	iquid "As Received"	"										
Radium-228	U	ND	1.42	3.00	pCi/L			AXM6	10/03/16	1639	1602003	4
Rad Radium-226												
Lucas Cell, Ra22	6, liquid "As Recei	ved"										
Radium-226	. •	0.415	0.269	1.00	pCi/L			LXP1	10/05/16	0907	1600164	5
The following Pr	ep Methods were pe	erformed:										
Method	Description	n		Analyst	Date	,	Tim	e Pr	ep Batch			
EPA 200.2	ICP-MS 200.			SXW1	09/14/16		0840	159	98375			
FF1 C 11 : A	1 136 1	C 1										

The following Analytical Methods were performed:

Method	Description	Analyst Comments	
1	EPA 300.0	•	
2	EPA 300.0		
3	EPA 200.8 SC_NPDES		
4	EPA 904.0/SW846 9320 Modified		
5	EPA 903.1 Modified		

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits 89.3 (15%-125%) Barium-133 Tracer GFPC, Ra228, Liquid "As Received"

Notes:

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: October 11, 2016

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner
Project: Williams 52 RCRA

Client Sample ID: GW-25 Project: SCEG01616C Sample ID: 405773008 Client ID: GEEL003

Parameter Qualifier Result	DL	RL	Units	PF	DF Analyst Date	Time Batch Method
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Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: October 11, 2016

SCEG01616C

GEEL003

Company:

GEL Engineering, LLC 2040 Savage Rd

Address:

Charleston, South Carolina 29417

Contact: Project:

Robert Gardner Williams 52 RCRA

Client Sample ID: GW-24

Sample ID:

405773009

Matrix: Collect Date: Ground Water

Receive Date:

13-SEP-16 14:02 13-SEP-16

Collector:

Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatograph	y											
EPA300.0 Fluoride	in Liquid "As Re	ceived"										
Fluoride		0.371	0.033	0.100	mg/L		1	MAR1	09/15/16	0652	1598494	1
Chloride		17.1	0.335	1.00	mg/L		5	MAR1	09/15/16	1402	1598494	2
Metals Analysis-IC	P-MS											
200.8/200.2 NPDE	S Metals "As Red	ceived"										
Lithium	J	3.81	2.00	10.0	ug/L	1.00	1	SKJ	09/21/16	1932	1598376	3
Rad Gas Flow Prop	ortional Counting	ŗ										
GFPC, Ra228, Liqu	id "As Received"	'										
Radium-228		2.03	1.69	3.00	pCi/L			AXM6	10/03/16	1640	1602003	4
Rad Radium-226												
Lucas Cell, Ra226,	liquid "As Receiv	ved"										
Radium-226	U	ND	0.359	1.00	pCi/L			LXP1	10/05/16	0907	1600164	5
The following Prep	Methods were pe	erformed:										
Method	Description	1		Analyst	Date	-	Гіте	Pr	ep Batch			
EPA 200.2	ICP-MS 200.2	2 PREP		SXW1	09/14/16	(0840	159	98375			

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	•
2	EPA 300.0	
3	EPA 200.8 SC_NPDES	
4	EPA 904.0/SW846 9320 Modified	

EPA 903.1 Modified

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits Barium-133 Tracer GFPC, Ra228, Liquid "As Received" 80.5 (15%-125%)

Notes:

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: October 11, 2016

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner
Project: Williams 52 RCRA

Client Sample ID: GW-24 Project: SCEG01616C Sample ID: 405773009 Client ID: GEEL003

Parameter Qualifier Result	DL	RL	Units	PF	DF Analyst Date	Time Batch Method
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Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

Project:

Client ID:

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: October 11, 2016

SCEG01616C

GEEL003

Company:

GEL Engineering, LLC

Address:

2040 Savage Rd

Charleston, South Carolina 29417

Contact: Project:

Robert Gardner Williams 52 RCRA

Client Sample ID: GW-26

Sample ID:

405773010

Matrix: Collect Date: Ground Water

Receive Date:

13-SEP-16 14:40 13-SEP-16

Collector:

Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatograp	hy											
EPA300.0 Fluorid	le in Liquid "As Re	eceived"										
Fluoride	-	0.161	0.033	0.100	mg/L		1	MAR1	09/15/16	0724	1598494	1
Chloride		149	3.35	10.0	mg/L		50	MAR1	09/15/16	1434	1598494	2
Metals Analysis-I	CP-MS											
200.8/200.2 NPD	ES Metals "As Re	ceived"										
Lithium	U	ND	2.00	10.0	ug/L	1.00	1	SKJ	09/21/16	1936	1598376	3
Rad Gas Flow Pro	portional Counting	g										
GFPC, Ra228, Lic	quid "As Received	"										
Radium-228	•	1.99	1.45	3.00	pCi/L			AXM6	10/03/16	1640	1602003	4
Rad Radium-226												
Lucas Cell, Ra226	, liquid "As Recei	ved"										
Radium-226	•	1.10	0.356	1.00	pCi/L			LXP1	10/05/16	0907	1600164	5
The following Pre	p Methods were p	erformed:										
Method	Description	n		Analyst	Date	-	Time	e Pr	ep Batch			
EPA 200.2	ICP-MS 200.	2 PREP		SXW1	09/14/16	(0840	159	98375			
TD1 - C-11 - 1 - A -	.1 .21 M1 1 .											

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	·
2	EPA 300.0	
3	EPA 200.8 SC_NPDES	
4	EPA 904 0/SW846 9320 Modified	

EPA 903.1 Modified

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits (15%-125%) Barium-133 Tracer GFPC, Ra228, Liquid "As Received" 95.2

Notes:

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: October 11, 2016

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner
Project: Williams 52 RCRA

Client Sample ID: GW-26 Project: SCEG01616C Sample ID: 405773010 Client ID: GEEL003

Parameter Qualifier Result	DL	RL	Units	PF	DF Analyst Date	Time Batch Method
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Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: October 11, 2016

Page 1 of 3

GEL Engineering, LLC 2040 Savage Rd

Charleston, South Carolina

Contact: Robert Gardner

Workorder: 405773

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range An	ılst	Date Time
Ion Chromatography Batch 1598494 ——										
QC1203627131 405773001 DUP Chloride		6.50		6.51	mg/L	0.0892		(0%-20%) M	IAR1	09/15/16 01:01
Fluoride		0.119		0.119	mg/L	0.0838 ^		(+/-0.100)		
QC1203627130 LCS Chloride	5.00			4.77	mg/L		95.3	(90%-110%)		09/14/16 23:57
Fluoride	2.50			2.53	mg/L		101	(90%-110%)		
QC1203627129 MB Chloride			U	ND	mg/L					09/14/16 23:25
Fluoride			U	ND	mg/L					
QC1203627132 405773001 PS Chloride	5.00	6.50		11.8	mg/L		107	(90%-110%)		09/15/16 01:33
Fluoride	2.50	0.119		2.54	mg/L		97	(90%-110%)		
Metals Analysis - ICPMS Batch 1598376 ——										
QC1203626805 405773001 DUP Lithium	J	5.04	J	4.86	ug/L	3.53 ^		(+/-10.0)	SKJ	09/21/16 18:37
QC1203626804 LCS Lithium	50.0			51.6	ug/L		103	(80%-120%)		09/21/16 18:29
QC1203626803 MB Lithium			U	ND	ug/L					09/21/16 18:25
QC1203626806 405773001 MS Lithium	50.0 J	5.04		58.0	ug/L		106	(75%-125%)		09/21/16 18:41
QC1203626807 405773001 SDILT Lithium	J	5.04	U	ND	ug/L	N/A		(0%-10%)		09/21/16 18:45
Rad Gas Flow Batch 1602003 ——										
QC1203635577 406126004 DUP Radium-228	U	1.10	U	1.26	pCi/L	N/A		N/A A	XM6	10/03/16 16:39
QC1203635578 LCS										

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QC Summary

703773								Page 2 of 3
Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range Anlst	Date Time
Rad Gas Flow Batch 1602003								
Radium-228	22.0		20.5	pCi/L		93.2	(75%-125%)	10/03/16 16:39
QC1203635576 MB Radium-228		U	0.294	pCi/L			AXM6	10/10/16 18:36
Rad Ra-226 Batch 1600164								
QC1203631222 406126008 Radium-226	3 DUP	0.999	0.983	pCi/L	1.61		(0% - 100%) LXP1	10/05/16 10:10
QC1203631224 LCS Radium-226	24.4		21.2	pCi/L		86.7	(75%-125%)	10/05/16 10:10
QC1203631221 MB Radium-226		U	0.192	pCi/L				10/05/16 10:10
QC1203631223 406126008 Radium-226	3 MS 122	0.999	130	pCi/L		106	(75%-125%)	10/05/16 10:10

Notes:

Workorder:

405773

The Qualifiers in this report are defined as follows:

- ** Analyte is a Tracer compound
- < Result is less than value reported
- > Result is greater than value reported
- B The target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- E %difference of sample and SD is >10%. Sample concentration must meet flagging criteria
- E General Chemistry--Concentration of the target analyte exceeds the instrument calibration range
- FA Failed analysis.
- FB Mercury was found present at quantifiable concentrations in field blanks received with these samples. Data associated with the blank are deemed invalid for reporting to regulatory agencies
- H Analytical holding time was exceeded
- J Value is estimated
- K Analyte present. Reported value may be biased high. Actual value is expected to be lower.
- L Analyte present. Reported value may be biased low. Actual value is expected to be higher.
- M M if above MDC and less than LLD
- M REMP Result > MDC/CL and < RDL
- N Metals--The Matrix spike sample recovery is not within specified control limits
- N/A RPD or %Recovery limits do not apply.

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QC Summary

Page 3 of 3 Parmname **NOM** Sample Qual OC Units RPD% REC% Range Anlst Date Time

N1	See case	narrative

405773

Workorder:

- ND Analyte concentration is not detected above the detection limit
- NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- One or more quality control criteria have not been met. Refer to the applicable narrative or DER. Q
- R Per section 9.3.4.1 of Method 1664 Revision B, due to matrix spike recovery issues, this result may not be reported or used for regulatory compliance purposes.
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- UI Gamma Spectroscopy--Uncertain identification
- UJ Gamma Spectroscopy--Uncertain identification
- UL Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y Other specific qualifiers were required to properly define the results. Consult case narrative.
- Z Paint Filter Test--Particulates passed through the filter, however no free liquids were observed.
- ٨ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
- 5-day BOD--The 2:1 depletion requirement was not met for this sample d
- 5-day BOD--Test replicates show more than 30% difference between high and low values. The data is qualified per the method and can be used for e reporting purposes
- h Preparation or preservation holding time was exceeded

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.

- ^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
- * Indicates that a Quality Control parameter was not within specifications.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.



Tel: (803)217-9384 Fax: (803) 217-9911

September 20, 2016

REPORT TO:

Mike Moore

Williams Hwy 52 GW 10-NPDES/CCR Sample ID: AB23638

Date & Time Sampled:

September 13, 2016 08:50

Date & Time Submitted: September 15, 2016 11:05

Collected by: C.SANDEL

Location Code: WLG10TM

GW 10

Login Record File: 160915002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	MDL	Units	Completed Date &	Section 1997 Annual Control of the C	Chemist
Antimony by ICP-MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	MC
Arsenic by ICP_MS EPA 200.8	1.5	1.0	ppb	9/20/16	11:30	MC
Barium (CWA) 200.7	26.4	10.0	ppb	9/20/16	12:28	CDB
Beryllium EPA 200.7	Less than	2.0	ppb	9/20/16	12:28	CDB
Boron - EPA 200.7	Less than	1000	ppb	9/20/16	12:28	CDB
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	MC
Calcium EPA 200.7	21600	100	ppb	9/20/16	12:28	CDB
Chromium by ICP_MS EPA 200.8	2.0	1.0	ppb	9/20/16	11:30	MC
Cobalt by ICP_MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	MC
Lead by ICP-MS EPA 200.8	1.1	1.0	ppb	9/20/16	11:30	MC
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	9/20/16	18:35	MC
Molybdenum - EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	MC
Selenium by ICP-MS EPA 200.8	Less than	5.0	ppb	9/20/16	11:30	MC
Thallium by ICP-MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	MC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

September 20, 2016

REPORT TO:

Mike Moore

Sample ID: AB23639 Williams Hwy 52 GW 20-NPDES/CCR

Date & Time Sampled: September 13, 2016 10:01

Date & Time Submitted: September 15, 2016 11:05

Collected by: C.SANDEL Location Code: WLG20TM

GW 20

Login Record File: 160915002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	MDL	Units	Completed Date &	Company of the Compan	Chemist
Antimony by ICP-MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	MC
Arsenic by ICP_MS EPA 200.8	6.8	1.0	ppb	9/20/16	11:30	МС
Barium (CWA) 200.7	55.7	10.0	ppb	9/20/16	12:28	CDB
Beryllium EPA 200.7	Less than	2.0	ppb	9/20/16	12:28	CDB
Boron - EPA 200.7	Less than	1000	ppb	9/20/16	12:28	CDB
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	MC
Calcium EPA 200.7	173000	100	ppb	9/20/16	12:28	CDB
Chromium by ICP_MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	MC
Cobalt by ICP_MS EPA 200.8	2.6	1.0	ppb	9/20/16	11:30	MC
Lead by ICP-MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	MC
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	9/20/16	18:35	MC
Molybdenum - EPA 200.8	1.8	1.0	ppb	9/20/16	11:30	MC
Selenium by ICP-MS EPA 200.8	Less than	5.0	ppb	9/20/16	11:30	MC
Thallium by ICP-MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	МС

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

September 20, 2016

REPORT TO:

Mike Moore

Sample ID: AB23640 Williams Hwy 52 DUP -NPDES/CCR

Date & Time Sampled:

September 13, 2016 10:20

Date & Time Submitted: September 15, 2016 11:05

Collected by: C.SANDEL

Location Code: WLGDUPTM

GW 10

Login Record File: 160915002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	MDL	Units	Completed Date &		Chemist
Antimony by ICP-MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	MC
Arsenic by ICP_MS EPA 200.8	6.9	1.0	ppb	9/20/16	11:30	MC
Barium (CWA) 200.7	57.3	10.0	ppb	9/20/16	12:28	CDB
Beryllium EPA 200.7	Less than	2.0	ppb	9/20/16	12:28	CDB
Boron - EPA 200.7	Less than	1000	ppb	9/20/16	12:28	CDB
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	MC
Calcium EPA 200.7	176000	100	ppb	9/20/16	12:28	CDB
Chromium by ICP_MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	MC
Cobalt by ICP_MS EPA 200.8	2.9	1.0	ppb	9/20/16	11:30	MC
Lead by ICP-MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	MC
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	9/20/16	18:35	MC
Molybdenum - EPA 200.8	2.0	1.0	ppb	9/20/16	11:30	MC
Selenium by ICP-MS EPA 200.8	Less than	5.0	ppb	9/20/16	11:30	MC
Thallium by ICP-MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	MC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

September 20, 2016

REPORT TO:

Mike Moore

Sample ID: AB23641 Williams Hwy 52 GW 21-NPDES/CCR

Date & Time Sampled:

September 13, 2016 11:10

Date & Time Submitted: September 15, 2016 11:05

Collected by: C.SANDEL

Location Code: WLG21TM

GW 21

Login Record File: 160915002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	MDL	Units	Completed Date &		Chemist
Antimony by ICP-MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	MC
Arsenic by ICP_MS EPA 200.8	4.0	1.0	ppb	9/20/16	11:30	MC
Barium (CWA) 200.7	36.6	10.0	ppb	9/20/16	12:28	CDB
Beryllium EPA 200.7	Less than	2.0	ppb	9/20/16	12:28	CDB
Boron - EPA 200.7	Less than	1000	ppb	9/20/16	12:28	CDB
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	MC
Calcium EPA 200.7	139000	100	ppb	9/20/16	12:28	CDB
Chromium by ICP_MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	MC
Cobalt by ICP_MS EPA 200.8	2.4	1.0	ppb	9/20/16	11:30	MC
Lead by ICP-MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	MC
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	9/20/16	18:35	MC
Molybdenum - EPA 200.8	1.6	1.0	ppb	9/20/16	11:30	MC
Selenium by ICP-MS EPA 200.8	Less than	5.0	ppb	9/20/16	11:30	MC
Thallium by ICP-MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	MC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

September 20, 2016

REPORT TO:

Mike Moore

Sample ID: AB23642 Williams Hwy 52 FIELD

Date & Time Sampled:

September 13, 2016 10:50

Date & Time Submitted: September 15, 2016 11:05

Collected by: C.SANDEL

Location Code: WLGFBTM

GW 10

Login Record File: 160915002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	MDL	Units	Completed Date &	the country of the second property of the second second second second second	Chemist
Antimony by ICP-MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	MC
Arsenic by ICP_MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	MC
Barium (CWA) 200.7	Less than	10.0	ppb	9/20/16	12:28	CDB
Beryllium EPA 200.7	Less than	2.0	ppb	9/20/16	12:28	CDB
Boron - EPA 200.7	Less than	1000	ppb	9/20/16	12:28	CDB
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	MC
Calcium EPA 200.7	Less than	100	ppb	9/20/16	12:28	CDB
Chromium by ICP_MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	MC
Cobalt by ICP_MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	MC
Lead by ICP-MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	MC
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	9/20/16	18:35	MC
Molybdenum - EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	MC
Selenium by ICP-MS EPA 200.8	Less than	5.0	ppb	9/20/16	11:30	MC
Thallium by ICP-MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	MC
Thuman by for two El 71200.0	2000 0.001		I- I- ··			

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved by:	



Tel: (803)217-9384 Fax: (803) 217-9911

September 20, 2016

REPORT TO:

Mike Moore

Sample ID: AB23643 Williams Hwy 52 GW 22D-NPDES/CCR

Date & Time Sampled: September 13, 2016 12:00

Date & Time Submitted: September 15, 2016 11:05

Collected by: C.SANDEL Location Code: WLG22DTM

GW 22D

Login Record File: 160915002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	MDL	Units	Completed Date &		Chemist
Antimony by ICP-MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	MC
Arsenic by ICP_MS EPA 200.8	4.7	1.0	ppb	9/20/16	11:30	MC
Barium (CWA) 200.7	Less than	10.0	ppb	9/20/16	12:28	CDB
Beryllium EPA 200.7	Less than	2.0	ppb	9/20/16	12:28	CDB
Boron - EPA 200.7	Less than	1000	ppb	9/20/16	12:28	CDB
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	MC
Calcium EPA 200.7	96800	100	ppb	9/20/16	12:28	CDB
Chromium by ICP_MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	MC
Cobalt by ICP_MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	MC
Lead by ICP-MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	MC
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	9/20/16	18:35	MC
Molybdenum - EPA 200.8	12.2	1.0	ppb	9/20/16	11:30	MC
Selenium by ICP-MS EPA 200.8	Less than	5.0	ppb	9/20/16	11:30	MC
Thallium by ICP-MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	МС

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved by:	\bigcup	√	\vee	\bigcirc	
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Tel: (803)217-9384 Fax: (803) 217-9911

September 20, 2016

REPORT TO:

Mike Moore

Williams Hwy 52 GW 23-NPDES/CCR Sample ID: AB23644

Date & Time Sampled:

September 13, 2016 12:40

Date & Time Submitted: September 15, 2016 11:05

Collected by: C.SANDEL

Location Code: WLG23TM

GW 23

Login Record File: 160915002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	MDL	Units	Completed Date &		Chemist
Antimony by ICP-MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	MC
Arsenic by ICP_MS EPA 200.8	1.7	1.0	ppb	9/20/16	11:30	MC
Barium (CWA) 200.7	12.8	10.0	ppb	9/20/16	12:28	CDB
Beryllium EPA 200.7	Less than	2.0	ppb	9/20/16	12:28	CDB
Boron - EPA 200.7	Less than	1000	ppb	9/20/16	12:28	CDB
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	MC
Calcium EPA 200.7	70300	100	ppb	9/20/16	12:28	CDB
Chromium by ICP_MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	MC
Cobalt by ICP_MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	MC
Lead by ICP-MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	MC
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	9/20/16	18:35	MC
Molybdenum - EPA 200.8	14.3	1.0	ppb	9/20/16	11:30	MC
Selenium by ICP-MS EPA 200.8	Less than	5.0	ppb	9/20/16	11:30	MC
Thallium by ICP-MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	MC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Approved by:	<u> </u>	/VV	The second secon

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Tel: (803)217-9384 Fax: (803) 217-9911

September 20, 2016

REPORT TO:

Mike Moore

Sample ID: AB23645 Williams Hwy 52 GW 25-NPDES/CCR

Date & Time Sampled:

September 13, 2016 13:22

Date & Time Submitted: September 15, 2016 11:05

Collected by: C.SANDEL

Location Code: WLG25TM

GW 25

Login Record File: 160915002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	MDL	Units	Completed Date &		Chemist
Antimony by ICP-MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	MC
Arsenic by ICP_MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	МС
Barium (CWA) 200.7	20.2	10.0	ppb	9/20/16	12:28	CDB
Beryllium EPA 200.7	Less than	2.0	ppb	9/20/16	12:28	CDB
Boron - EPA 200.7	Less than	1000	ppb	9/20/16	12:28	CDB
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	MC
Calcium EPA 200.7	119000	100	ppb	9/20/16	12:28	CDB
Chromium by ICP_MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	MC
Cobalt by ICP_MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	MC
Lead by ICP-MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	MC
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	9/20/16	18:35	MC
Molybdenum - EPA 200.8	4.6	1.0	ppb	9/20/16	11:30	MC
Selenium by ICP-MS EPA 200.8	Less than	5.0	ppb	9/20/16	11:30	MC
Thallium by ICP-MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	МС

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

September 20, 2016

REPORT TO:

Mike Moore

Sample ID: AB23646 Williams Hwy 52 GW 24-NPDES/CCR

Date & Time Sampled:

September 13, 2016 14:02

Date & Time Submitted: September 15, 2016 11:05

Collected by: C.SANDEL

Location Code: WLG24TM

GW 24

Login Record File: 160915002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	MDL	Units		Completed Analysis Date & Time		
Antimony by ICP-MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	MC	
Arsenic by ICP_MS EPA 200.8	3.2	1.0	ppb	9/20/16	11:30	MC	
Barium (CWA) 200.7	50.8	10.0	ppb	9/20/16	12:28	CDB	
Beryllium EPA 200.7	Less than	2.0	ppb	9/20/16	12:28	CDB	
Boron - EPA 200.7	Less than	1000	ppb	9/20/16	12:28	CDB	
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	MC	
Calcium EPA 200.7	145000	100	ppb	9/20/16	12:28	CDB	
Chromium by ICP_MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	MC	
Cobalt by ICP_MS EPA 200.8	2.2	1.0	ppb	9/20/16	11:30	MC	
Lead by ICP-MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	MC	
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	9/20/16	18:35	MC	
Molybdenum - EPA 200.8	1.5	1.0	ppb	9/20/16	11:30	MC	
Selenium by ICP-MS EPA 200.8	Less than	5.0	ppb	9/20/16	11:30	MC	
Thallium by ICP-MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	MC	

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

September 20, 2016

REPORT TO:

Mike Moore

Williams Hwy 52 GW 26-NPDES/CCR Sample ID: AB23647

Date & Time Sampled:

September 13, 2016 14:40

Date & Time Submitted: September 15, 2016 11:05

Collected by: C.SANDEL

Location Code: WLG26TM

GW 26

Login Record File: 160915002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	MDL	Units	Completed Date &		Chemist
Antimony by ICP-MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	MC
Arsenic by ICP_MS EPA 200.8	4.0	1.0	ppb	9/20/16	11:30	МС
Barium (CWA) 200.7	80.6	10.0	ppb	9/20/16	12:28	CDB
Beryllium EPA 200.7	Less than	2.0	ppb	9/20/16	12:28	CDB
Boron - EPA 200.7	Less than	1000	ppb	9/20/16	12:28	CDB
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	MC
Calcium EPA 200.7	168000	100	ppb	9/20/16	12:28	CDB
Chromium by ICP_MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	MC
Cobalt by ICP_MS EPA 200.8	10.5	1.0	ppb	9/20/16	11:30	MC
Lead by ICP-MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	MC
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	9/20/16	18:35	MC
Molybdenum - EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	MC
Selenium by ICP-MS EPA 200.8	Less than	5.0	ppb	9/20/16	11:30	МС
Thallium by ICP-MS EPA 200.8	Less than	1.0	ppb	9/20/16	11:30	MC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

September 30, 2016

REPORT TO:

Mike Moore

Sample ID: AB23613

Williams Hwy 52 GW 10-NPDES/CCR

Date & Time Sampled:

September 13, 2016 08:50

Date & Time Submitted: September 15, 2016 11:05 Collected by: C.SANDEL

Location Code: WLG10TDS

GW 10

Login Record File: 160915002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	6.37	0.50	mg/L	9/22/16 05:33	LS
Sulfates by IC EPA 300.0	7.57	0.50	mg/L	9/22/16 05:33	LS
Total Dissolved Solid-SM2540C	149	2.0	mg/L	9/16/16 14:07	PRC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

September 30, 2016

REPORT TO:

Mike Moore

Sample ID: AB23614

Williams Hwy 52 GW 20-NPDES/CCR

Date & Time Sampled:

September 13, 2016 10:01

Date & Time Submitted: September 15, 2016 11:05

Collected by: C.SANDEL

Location Code: WLG20TDS

GW 20

Login Record File: 160915002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed A		Chemist
Chlorides by IC EPA 300.0	8.92	0.50	mg/L	9/22/16	05:33	LS
Sulfates by IC EPA 300.0	15.8	0.50	mg/L	9/22/16	05:33	LS
Total Dissolved Solid-SM2540C	668	2.0	mg/L	9/16/16	14:07	PRC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

September 30, 2016

REPORT TO:

Mike Moore

Sample ID: AB23615

Williams Hwy 52 DUP -NPDES/CCR

Date & Time Sampled:

September 13, 2016 10:20

Date & Time Submitted: September 15, 2016 11:05

Collected by: C.SANDEL

Location Code: WLGDUPTDS

GW 10

Login Record File: 160915002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	8.92	0.50	mg/L	9/22/16 05:33	LS
Sulfates by IC EPA 300.0	15.9	0.50	mg/L	9/22/16 05:33	LS
Total Dissolved Solid-SM2540C	667	2.0	mg/L	9/16/16 14:07	PRC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

September 30, 2016

REPORT TO:

Mike Moore

Sample ID: AB23616

Williams Hwy 52 GW 21-NPDES/CCR

Date & Time Sampled:

September 13, 2016 11:10

Date & Time Submitted: September 15, 2016 11:05 Collected by: C.SANDEL

Location Code: WLG21TDS

GW 21

Login Record File: 160915002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed A Date & Ti		Chemist
Chlorides by IC EPA 300.0	10.0	0.50	mg/L	9/22/16	05:33	LS
Sulfates by IC EPA 300.0	12.7	0.50	mg/L	9/22/16	05:33	LS
Total Dissolved Solid-SM2540C	646	2.0	mg/L	9/16/16	14:07	PRC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

September 30, 2016

REPORT TO:

Mike Moore

Sample ID: AB23617

Williams Hwy 52 FIELD BLANK-NPDES/CCR

Date & Time Sampled:

September 13, 2016 10:50

Date & Time Submitted: September 15, 2016 11:05 Collected by: C.SANDEL

Location Code: WLGFBTDS

GW 10

Login Record File: 160915002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	LESS THAN	0.50	mg/L	9/22/16 05:33	LS
Sulfates by IC EPA 300.0	LESS THAN	0.50	mg/L	9/22/16 05:33	LS
Total Dissolved Solid-SM2540C	4.0	2.0	mg/L	9/16/16 14:07	PRC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

September 30, 2016

REPORT TO:

Mike Moore

Sample ID: AB23618

Williams Hwy 52 GW 22D-NPDES/CCR

Date & Time Sampled:

September 13, 2016 12:00

Date & Time Submitted: September 15, 2016 11:05

Collected by: C.SANDEL

Location Code: WLG22DTDS

GW 22D

Login Record File: 160915002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	9.960	1.0	mg/L	9/22/16 05:33	LS
Sulfates by IC EPA 300.0	79.4	1.0	mg/L	9/22/16 05:33	LS
Total Dissolved Solid-SM2540C	602	2.0	mg/L	9/16/16 14:07	PRC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

September 30, 2016

REPORT TO:

Mike Moore

Sample ID: AB23619

Williams Hwy 52 GW 23D-NPDES/CCR

Date & Time Sampled:

September 13, 2016 12:40

Date & Time Submitted: September 15, 2016 11:05

Collected by: C.SANDEL

Location Code: WLG23DTDS

GW 23D

Login Record File: 160915002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	14.3	0.50	mg/L	9/22/16 05:33	LS
Sulfates by IC EPA 300.0	35.5	0.50	mg/L	9/22/16 05:33	LS
Total Dissolved Solid-SM2540C	474	2.0	mg/L	9/16/16 14:07	PRC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

September 30, 2016

REPORT TO:

Mike Moore

Sample ID: AB23620

Williams Hwy 52 GW 25-NPDES/CCR

Date & Time Sampled:

September 13, 2016 13:22

Date & Time Submitted: September 15, 2016 11:05 Collected by: C.SANDEL

Location Code: WLG25TDS

GW 25

Login Record File: 160915002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	20.5	0.50	mg/L	9/22/16 05:33	LS
Sulfates by IC EPA 300.0	23.1	0.50	mg/L	9/22/16 05:33	LS
Total Dissolved Solid-SM2540C	545	2.0	mg/L	9/20/16 09:19	PRC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

September 30, 2016

REPORT TO:

Mike Moore

Sample ID: AB23621

Williams Hwy 52 GW 24-NPDES/CCR

Date & Time Sampled:

September 13, 2016 14:02

Date & Time Submitted: September 15, 2016 11:05

Collected by: C.SANDEL

Location Code: WLG24TDS

GW 24

Login Record File: 160915002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	MDL	Units	Completed Date &	Chemist	
Chlorides by IC EPA 300.0	19.0	0.50	mg/L	9/22/16	05:33	LS
Sulfates by IC EPA 300.0	24.6	0.50	mg/L	9/22/16	05:33	LS
Total Dissolved Solid-SM2540C	539	2.0	mg/L	9/20/16	09:19	PRC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

September 30, 2016

REPORT TO:

Mike Moore

Sample ID: AB23622

Williams Hwy 52 GW 26-NPDES/CCR

Date & Time Sampled:

September 13, 2016 14:40

Date & Time Submitted: September 15, 2016 11:05 Collected by: C.SANDEL

Location Code: WLG26TDS

GW 26

Login Record File: 160915002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	163	0.50	mg/L	9/22/16 05:33	LS
Sulfates by IC EPA 300.0	82.4	0.50	mg/L	9/22/16 05:33	LS
Total Dissolved Solid-SM2540C	865	2.0	mg/L	9/20/16 09:19	PRC

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

Williams Station Highway 52 Class Three Landfill EPA CCR Rule Compliance Monitoring Wells Groundwater Monitoring Data

Groundwater Monitoring Data
South Carolina Electric & Gas: Williams Station Highway 52 Class Three Landfill

					Gauging Date	:11/16-17/16]					
		Well Data						1					
		_		Initial Gauging Final Gauging Final Water Quality Indicator Para						cator Para	meters		
Monitoring Well ID	PVC Pipe Elevation, ft.	Ground Surface Elevation, ft.	Stickup, ft.	Depth to Groundwater, ft.	Groundwater Elevation, ft.	Depth to Groundwater, ft.	Groundwater Elevation, ft.	Temparature °C	pH S.U.	Sp. Cond. µS/cm	Turbidity NTU	ORP mV	DO mg/L
GW-10	52.28	49.60	2.68	9.02	43.26	10.11	42.17	22.8	6.9	281	5.04	134.2	2.41
GW-11	51.72	17.00	2.00	11.49	43.26	11.64	42.17	23.3	6.3	167	3.20	199.3	0.67
GW-20	60.81	56.70	4.11	20.60	40.21	22.88	37.93	23.0	6.6	1100	4.64	3.1	1.36
GW-21	56.14	52.50	3.64	15.31	40.83	18.22	37.92	23.3	6.6	1081	4.10	3.1	0.57
GW-22	50.33	46.90	3.43		50.33		50.33						
GW-22D	50.36	47.10	3.26	14.17	36.19	18.69	31.67	23.1	7.0	954	4.09	23.6	0.50
GW-23	49.99	46.20	3.79		49.99		49.99						
GW-23D	49.69	46.20	3.49	13.59	36.10	17.26	32.43	24.0	7.1	826	3.24	76.4	0.47
GW-24	52.40	48.70	3.70	16.05	36.35	17.01	35.39	24.3	6.2	900	4.95	11.4	0.79
GW-25	50.93	47.40	3.53	15.04	35.89	16.02	34.91	24.3	6.8	929	4.04	98.7	1.11
GW-26	55.21	51.20	4.01	24.13	31.08	24.49	30.72	22.1	6.0	1517	4.52	15.6	1.01
GW-27	53.26			9.36	43.90	9.65	43.61	22.0	7.2	355	5.40	99.1	3.88
GW-28	51.23			10.58	40.65	10.73	40.50	23.1	6.6	226	3.96	131.1	5.49

Page 1 of 1

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Certificate of Analysis Report for

GEEL003 GEL Engineering, LLC Client SDG: 410763 GEL Work Order: 410763

The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a Tracer compound
- ** Analyte is a surrogate compound
- H Analytical holding time was exceeded
- J Value is estimated
- U Analyte was analyzed for but not detected above the Lc
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Jake Crook.

	Johne Cotes		
Reviewed by			

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: December 13, 2016

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-20 Project: SCEG01616C Sample ID: 410763001 Client ID: GEEL003

Matrix: Ground Water
Collect Date: 16-NOV-16 15:16
Receive Date: 17-NOV-16
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatography												
EPA300.0 Fluoride in	n Liquid "As Re	ceived"										
Chloride	_	9.44	0.067	0.200	mg/L		1	MAR1	12/01/16	1743	1618157	1
Fluoride		0.231	0.033	0.100	mg/L		1					
Metals Analysis-ICP-	-MS											
200.8/200.2 NPDES	Metals "As Red	ceived"										
Lithium	J	5.51	2.00	10.0	ug/L	1.00	1	BAJ	11/19/16	1949	1617315	2
Rad Gas Flow Propor	tional Counting	ŗ										
GFPC, Ra228, Liquid	l "As Received"	'										
Radium-228	U	ND	1.67	3.00	pCi/L			AXM6	12/13/16	1124	1619875	3
Rad Radium-226												
Lucas Cell, Ra226, lie	quid "As Recei	ved"										
Radium-226	U	ND	0.280	1.00	pCi/L			LXP1	12/08/16	0915	1620646	4
The following Prep Methods were performed:												
Method	Description	1		Analyst	Date	-	Гimе	Pr	ep Batch			
EPA 200.2	ICP-MS 200.	2 PREP		CXW4	11/17/16		1828	16	17314			

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	EPA 200.8 SC_NPDES	
3	EPA 904.0/SW846 9320 Modified	
4	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			98.5	(15%-125%)

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

SCEG01616C

GEEL003

Report Date: December 13, 2016

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-21 Sample ID: 410763002 Matrix: Ground Water

Matrix: Ground Water
Collect Date: 16-NOV-16 16:20
Receive Date: 17-NOV-16
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	e Batch	Method
Ion Chromatography	7											
EPA300.0 Fluoride i	in Liquid "As Re	eceived"										
Fluoride	•	0.233	0.033	0.100	mg/L		1	MAR1	12/01/16	1909	1618157	1
Chloride		10.1	0.134	0.400	mg/L		2	MAR1	12/02/16	1126	1618157	2
Metals Analysis-ICP	P-MS											
200.8/200.2 NPDES	Metals "As Red	ceived"										
Lithium	J	6.04	2.00	10.0	ug/L	1.00	1	BAJ	11/19/16	2000	1617315	3
Rad Gas Flow Propo	ortional Counting	g										
GFPC, Ra228, Liqui	id "As Received"	•										
Radium-228	U	ND	1.98	3.00	pCi/L			AXM6	12/13/16	1124	1619875	4
Rad Radium-226												
Lucas Cell, Ra226, 1	iquid "As Receiv	ved"										
Radium-226	U	ND	0.778	1.00	pCi/L			LXP1	12/08/16	0915	1620646	5
The following Prep	Methods were pe	erformed:										
Method	Description	1		Analyst	Date	-	Гіте	e Pr	ep Batch			
EPA 200.2	ICP-MS 200.2	2 PREP		CXW4	11/17/16	1	1828	16	17314			

The following Analytical Methods were performed:

Method	Description	Analyst Comments								
1	EPA 300.0		-							
2	EPA 300.0									
3	EPA 200.8 SC_NPDES									
4	EPA 904.0/SW846 9320 Modified									
5	EPA 903.1 Modified									
Surrogate/Trace	r Recovery Test	Result	Nominal	Recoverv%	Acceptable Limits					

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits

Barium-133 Tracer GFPC, Ra228, Liquid "As Received"

92.9 (15%-125%)

Notes:

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: December 13, 2016

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner
Project: Williams 52

Client Sample ID: GW-21 Project: SCEG01616C Sample ID: 410763002 Client ID: GEEL003

Parameter Qualifier Result	DL	RL	Units	PF	DF Analyst Date	Time Batch Method
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Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: December 13, 2016

Page 1 of 3

GEL Engineering, LLC

2040 Savage Rd Charleston, South Carolina

Contact: Robert Gardner

Workorder: 410763

Parmname			NOM		Sample	Qual	QC	Units	RPD%	REC%	Range Anl	st	Date Time
Ion Chromatography Batch 1618	157												
QC1203674940 4 Chloride	410763001	DUP			9.44		9.45	mg/L	0.0529		(0%-20%) MA	AR1	12/01/16 18:12
Fluoride					0.231		0.237	mg/L	2.73 ^		(+/-0.100)		
QC1203674941 4 Chloride	410911011	DUP			147		148	mg/L	0.935		(0%-20%)		12/02/16 16:15
Fluoride					0.196		0.167	mg/L	16.4 ^		(+/-0.100)		12/02/16 17:13
QC1203674939 Chloride	LCS		5.00				4.81	mg/L		96.1	(90%-110%)		12/01/16 17:14
Fluoride			2.50				2.55	mg/L		102	(90%-110%)		
QC1203674938 Chloride	MB					U	ND	mg/L					12/01/16 16:45
Fluoride						U	ND	mg/L					
QC1203674942 4 Chloride	410763001	PS	5.00		9.44		15.2	mg/L		116*	(90%-110%)		12/01/16 18:40
Fluoride			2.50		0.231		2.58	mg/L		94.1	(90%-110%)		
QC1203674943 4 Chloride	410911011	PS	5.00		2.94		8.21	mg/L		105	(90%-110%)		12/02/16 16:44
Fluoride			2.50		0.196		2.57	mg/L		95	(90%-110%)		12/02/16 01:55
Metals Analysis - ICP Batch 1617													
QC1203672743 4 Lithium		DUP		J	5.51	J	5.62	ug/L	2 ^		(+/-10.0) I	BAJ	11/19/16 19:52
QC1203672742 Lithium	LCS		50.0				49.1	ug/L		98.1	(80%-120%)		11/19/16 19:47
QC1203672741 Lithium	MB					U	ND	ug/L					11/19/16 19:44
QC1203672744	410763001	MS	50.0	J	5.51		55.1	ug/L		99.2	(75%-125%)		11/19/16 19:54

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QC Summary

				<u> </u>	diffilat	<u>.,, </u>						
Workorder: 410763											Pag	ge 2 of 3
Parmname		NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Metals Analysis - ICPMS Batch 1617315												
QC1203672745 410763001 Lithium	SDILT	J	5.51	U	ND	ug/L	N/A		(0%-10%)	BAJ	11/19/	16 19:57
Rad Gas Flow Batch 1619875												
QC1203679413 411026008 Radium-228	DUP	U	1.52	U	1.30	pCi/L	N/A		N/A	AXM6	12/13/1	16 11:28
QC1203679414 LCS Radium-228		21.5			24.0	pCi/L		111	(75%-125%)		12/13/1	16 11:30
QC1203679412 MB Radium-228				U	0.751	pCi/L					12/13/1	16 11:28
Rad Ra-226 Batch 1620646												
QC1203681508 411381001 Radium-226	DUP		10.7		9.43	pCi/L	12.7		(0%-20%)	LXP1	12/08/1	16 10:55
QC1203681510 LCS Radium-226		24.4			18.7	pCi/L		76.8	(75%-125%)		12/08/	16 11:25
QC1203681507 MB Radium-226				U	0.119	pCi/L					12/08/	16 10:55
QC1203681509 411381001 Radium-226	MS	122	10.7		137	pCi/L		104	(75%-125%)		12/08/	16 10:55

Notes:

The Qualifiers in this report are defined as follows:

- ** Analyte is a Tracer compound
- < Result is less than value reported
- > Result is greater than value reported
- B The target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- E %difference of sample and SD is >10%. Sample concentration must meet flagging criteria
- E General Chemistry--Concentration of the target analyte exceeds the instrument calibration range
- FA Failed analysis.
- FB Mercury was found present at quantifiable concentrations in field blanks received with these samples. Data associated with the blank are deemed invalid for reporting to regulatory agencies

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Page 3 of 3 Parmname NOM Sample Qual \mathbf{OC} Units RPD% REC% Range Anlst Date Time Η Analytical holding time was exceeded J Value is estimated

Workorder:

- K Analyte present. Reported value may be biased high. Actual value is expected to be lower.
- L Analyte present. Reported value may be biased low. Actual value is expected to be higher.
- M M if above MDC and less than LLD

410763

- REMP Result > MDC/CL and < RDL M
- N Metals--The Matrix spike sample recovery is not within specified control limits
- N/A RPD or %Recovery limits do not apply.
- N1 See case narrative
- ND Analyte concentration is not detected above the detection limit
- NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- One or more quality control criteria have not been met. Refer to the applicable narrative or DER. Q
- R Per section 9.3.4.1 of Method 1664 Revision B, due to matrix spike recovery issues, this result may not be reported or used for regulatory compliance purposes.
- R Sample results are rejected
- U Analyte was analyzed for but not detected above the Lc
- IJ Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- UI Gamma Spectroscopy--Uncertain identification
- UJ Gamma Spectroscopy--Uncertain identification
- UL Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y Other specific qualifiers were required to properly define the results. Consult case narrative.
- Z Paint Filter Test--Particulates passed through the filter, however no free liquids were observed.
- Λ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
- 5-day BOD--The 2:1 depletion requirement was not met for this sample d
- 5-day BOD--Test replicates show more than 30% difference between high and low values. The data is qualified per the method and can be used for e reporting purposes
- h Preparation or preservation holding time was exceeded

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable. ^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

* Indicates that a Quality Control parameter was not within specifications.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis Report for

GEEL003 GEL Engineering, LLC Client SDG: 410911 GEL Work Order: 410911

The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a Tracer compound
- ** Analyte is a surrogate compound
- H Analytical holding time was exceeded
- J Value is estimated
- U Analyte was analyzed for but not detected above the Lc
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Jake Crook.

	Jathere Cates	
Reviewed by	•	

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: December 14, 2016

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-27 Project: SCEG01616C Sample ID: 410911001 Client ID: GEEL003

Matrix: Ground Water
Collect Date: 17-NOV-16 09:57
Receive Date: 18-NOV-16
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatography												
EPA300.0 Fluoride in	n Liquid "As Re	ceived"										
Chloride	•	4.85	0.067	0.200	mg/L		1	MAR1	12/01/16	1938	1618157	1
Fluoride		0.318	0.033	0.100	mg/L		1					
Metals Analysis-ICP	-MS											
200.8/200.2 NPDES	Metals "As Red	ceived"										
Lithium	U	ND	2.00	10.0	ug/L	1.00	1	BAJ	11/28/16	2203	1617848	2
Rad Gas Flow Propos	rtional Counting	ŗ										
GFPC, Ra228, Liquio	d "As Received"	'										
Radium-228	U	ND	1.75	3.00	pCi/L			AXM6	12/13/16	1519	1622076	3
Rad Radium-226												
Lucas Cell, Ra226, li	quid "As Receiv	ved"										
Radium-226		0.943	0.423	1.00	pCi/L			LXP1	12/12/16	0900	1620873	4
The following Prep N	Methods were pe	erformed:										
Method	Description	1		Analyst	Date	-	Гimе	Pr	ep Batch			
EPA 200.2	ICP-MS 200.	2 PREP		SXW1	11/21/16	(0714	16	17847			

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	•
2	EPA 200.8 SC_NPDES	
3	EPA 904.0/SW846 9320 Modified	
4	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			93.9	(15%-125%)

Notes:

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: December 14, 2016

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-10 Project: SCEG01616C Sample ID: 410911002 Client ID: GEEL003

Matrix: Ground Water
Collect Date: 17-NOV-16 11:00
Receive Date: 18-NOV-16
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analys	t Date	Time	Batch	Method
Ion Chromatography	y											
EPA300.0 Fluoride	in Liquid "As Re	eceived"										
Fluoride	-	0.330	0.033	0.100	mg/L		1	MAR1	12/01/16	2007	1618157	1
Chloride		10.7	0.134	0.400	mg/L		2	MAR1	12/02/16	1155	1618157	2
Metals Analysis-ICI	P-MS											
200.8/200.2 NPDES	S Metals "As Re	ceived"										
Lithium	J	4.16	2.00	10.0	ug/L	1.00	1	BAJ	11/28/16	2214	1617848	3
Rad Gas Flow Propo	ortional Counting	g										
GFPC, Ra228, Liqui	id "As Received"	"										
Radium-228	U	ND	2.15	3.00	pCi/L			AXM6	12/13/16	1519	1622076	4
Rad Radium-226												
Lucas Cell, Ra226, 1	liquid "As Recei	ved"										
Radium-226	U	ND	0.530	1.00	pCi/L			LXP1	12/12/16	0900	1620873	5
The following Prep	Methods were pe	erformed:										
Method	Description	n		Analyst	Date	Т	ime	Pre	p Batch			
EPA 200.2	ICP-MS 200.	2 PREP		SXW1	11/21/16	0	714	1617	7847			

The following Analytical Methods were performed:

Method		Description	Analyst Comments
1		EPA 300.0	•
2		EPA 300.0	
3		EPA 200.8 SC_NPDES	
4		EPA 904.0/SW846 9320 Modified	
5		EPA 903.1 Modified	
~	_	_	

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits

Barium-133 Tracer GFPC, Ra228, Liquid "As Received"

85.3 (15%-125%)

Notes:

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: December 14, 2016

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner
Project: Williams 52

Client Sample ID: GW-10 Project: SCEG01616C Sample ID: 410911002 Client ID: GEEL003

	Result DL	RL	Units	PF	DF Analyst Date	Time Batch	Method
--	-----------	----	-------	----	-----------------	------------	--------

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: December 14, 2016

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-11 Project: SCEG01616C Sample ID: 410911003 Client ID: GEEL003

Matrix: Ground Water
Collect Date: 17-NOV-16 12:02
Receive Date: 18-NOV-16
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatography												
EPA300.0 Fluoride in	Liquid "As Re	eceived"										
Chloride	-	5.68	0.067	0.200	mg/L		1	MAR1	12/01/16	2036	1618157	1
Fluoride		0.407	0.033	0.100	mg/L		1					
Metals Analysis-ICP-N	MS											
200.8/200.2 NPDES N	Metals "As Red	ceived"										
Lithium	J	4.33	2.00	10.0	ug/L	1.00	1	BAJ	11/28/16	2216	1617848	2
Rad Gas Flow Proport	ional Counting	3										
GFPC, Ra228, Liquid	"As Received"	•										
Radium-228	U	ND	1.13	3.00	pCi/L			AXM6	12/13/16	1519	1622076	3
Rad Radium-226												
Lucas Cell, Ra226, liq	uid "As Recei	ved"										
Radium-226		1.69	0.458	1.00	pCi/L			LXP1	12/12/16	0900	1620873	4
The following Prep Me	ethods were pe	erformed:										
Method	Description	n		Analyst	Date	7	Γim	e Pr	ep Batch			
EPA 200.2	ICP-MS 200.			SXW1	11/21/16	C)714	16	17847			

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	·
2	EPA 200.8 SC_NPDES	
3	EPA 904.0/SW846 9320 Modified	
4	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			92.5	(15%-125%)

Notes:

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: December 14, 2016

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-28 Project: SCEG01616C Sample ID: 410911004 Client ID: GEEL003

Matrix: Ground Water
Collect Date: 17-NOV-16 12:59
Receive Date: 18-NOV-16
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatograp	phy											
EPA300.0 Fluorio	de in Liquid "As Re	eceived"										
Chloride	•	4.05	0.067	0.200	mg/L		1	MAR1	12/01/16	2105	1618157	1
Fluoride		0.120	0.033	0.100	mg/L		1					
Metals Analysis-l	ICP-MS											
200.8/200.2 NPI	DES Metals "As Red	ceived"										
Lithium	U	ND	2.00	10.0	ug/L	1.00	1	BAJ	11/28/16	2219	1617848	2
Rad Gas Flow Pro	oportional Counting	g										
GFPC, Ra228, Li	quid "As Received'											
Radium-228	U	ND	1.32	3.00	pCi/L			AXM6	12/13/16	1519	1622076	3
Rad Radium-226												
Lucas Cell, Ra22	6, liquid "As Recei	ved"										
Radium-226	_	0.897	0.500	1.00	pCi/L			LXP1	12/12/16	0900	1620873	4
The following Pro	ep Methods were pe	erformed:										
Method	Description	n		Analyst	Date	-	Гim	e Pro	ep Batch			
EPA 200.2	ICP-MS 200.	2 PREP		SXW1	11/21/16	(0714	161	17847			
The fellowing A		c	_ J.									

The following Analytical Methods were performed:

Method	Description	Analyst Comments	
1	EPA 300.0	•	
2	EPA 200.8 SC_NPDES		
3	EPA 904.0/SW846 9320 Modified		
4	EPA 903.1 Modified		

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			88.6	(15%-125%)

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: December 14, 2016

SCEG01616C

GEEL003

Company:

GEL Engineering, LLC

Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Project:

Robert Gardner Williams 52

Client Sample ID: GW-22D

GW 22D

Sample ID:

410911005

18-NOV-16

Matrix:

Ground Water

Collect Date:

17-NOV-16 13:55

Receive Date: Collector:

Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatogra	phy											
EPA300.0 Fluori	de in Liquid "As Re	eceived"										
Fluoride	•	0.311	0.033	0.100	mg/L		1	MAR1	12/01/16	2232	1618157	1
Chloride		9.75	0.134	0.400	mg/L		2	MAR1	12/02/16	1224	1618157	2
Metals Analysis-	ICP-MS											
200.8/200.2 NPI	DES Metals "As Red	ceived"										
Lithium		10.2	2.00	10.0	ug/L	1.00	1	BAJ	11/28/16	2227	1617848	3
Rad Gas Flow Pr	oportional Counting	g										
GFPC, Ra228, Li	iquid "As Received'	"										
Radium-228	•	2.30	2.01	3.00	pCi/L			AXM6	12/13/16	1519	1622076	4
Rad Radium-226												
Lucas Cell, Ra22	6, liquid "As Recei	ved"										
Radium-226	•	0.324	0.191	1.00	pCi/L			LXP1	12/12/16	0900	1620873	5
The following Pr	ep Methods were pe	erformed:										
Method	Description	n		Analyst	Date	,	Гim	e Pr	ep Batch			
EPA 200.2	ICP-MS 200.	2 PREP		SXW1	11/21/16	(0714	16	17847			
TP1 - C-11 - 1 - A												

The following Analytical Methods were performed:

Method	Description	Analyst Comments	
1	EPA 300.0	•	
2	EPA 300.0		
3	EPA 200.8 SC_NPDES		
4	EPA 904.0/SW846 9320 Modified		
5	EPA 903.1 Modified		

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits

Barium-133 Tracer GFPC, Ra228, Liquid "As Received"

96.6 (15%-125%)

Notes:

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Certificate of Analysis

Report Date: December 14, 2016

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner
Project: Williams 52

Client Sample ID: GW-22D Project: SCEG01616C Sample ID: 410911005 Client ID: GEEL003

Parameter Qualifier Result	DL	RL	Units	PF	DF Analyst Date	Time Batch Method
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Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

SCEG01616C

GEEL003

Report Date: December 14, 2016

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-23D
Sample ID: 410911006

Matrix: Ground Water
Collect Date: 17-NOV-16 14:50
Receive Date: 18-NOV-16
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatograph	y											
EPA300.0 Fluoride	in Liquid "As Re	ceived"										
Fluoride	_	0.381	0.033	0.100	mg/L		1	MAR1	12/01/16	2301	1618157	1
Chloride		14.8	0.134	0.400	mg/L		2	MAR1	12/02/16	1253	1618157	2
Metals Analysis-IC	P-MS											
200.8/200.2 NPDE	S Metals "As Red	ceived"										
Lithium	J	5.69	2.00	10.0	ug/L	1.00	1	BAJ	11/28/16	2230	1617848	3
Rad Gas Flow Prop	ortional Counting	ŗ										
GFPC, Ra228, Liqu	id "As Received"	'										
Radium-228	U	ND	1.97	3.00	pCi/L			AXM6	12/13/16	1519	1622076	4
Rad Radium-226												
Lucas Cell, Ra226,	liquid "As Receiv	ved"										
Radium-226	-	0.518	0.466	1.00	pCi/L			LXP1	12/12/16	0900	1620873	5
The following Prep	Methods were pe	erformed:										
Method	Description	1		Analyst	Date	7	Гіт	e Pr	ep Batch			
EPA 200.2	ICP-MS 200.2	2 PREP		SXW1	11/21/16	(0714	16	17847			

The following Analytical Methods were performed:

Method	Description		Analyst Co	omments	
1	EPA 300.0		-		
2	EPA 300.0				
3	EPA 200.8 SC_NPDES				
4	EPA 904.0/SW846 9320 Modified				
5	EPA 903.1 Modified				
Surrogate/Trace	r Recovery Test	Pacult	Nominal	Pacovary%	Acceptable Limits

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits

Barium-133 Tracer GFPC, Ra228, Liquid "As Received"

96.4 (15%-125%)

Notes:

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: December 14, 2016

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-23D Project: SCEG01616C Sample ID: 410911006 Client ID: GEEL003

Parameter Qualifier Result DL RL Units PF DF Analyst Date Time Batch Method

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

Project:

Client ID:

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: December 14, 2016

SCEG01616C

GEEL003

Company: GEL Address: 2040

GEL Engineering, LLC 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-25 Sample ID: 4109110

410911007 Ground Water

Matrix: Ground Water
Collect Date: 17-NOV-16 15:41
Receive Date: 18-NOV-16
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatograph	у											
EPA300.0 Fluoride	in Liquid "As Re	eceived"										
Fluoride	•	0.839	0.033	0.100	mg/L		1	MAR1	12/01/16	2330	1618157	1
Chloride		19.9	0.335	1.00	mg/L		5	MAR1	12/02/16	1321	1618157	2
Metals Analysis-IC	P-MS											
200.8/200.2 NPDE	S Metals "As Red	ceived"										
Lithium	J	6.80	2.00	10.0	ug/L	1.00	1	BAJ	11/28/16	2232	1617848	3
Rad Gas Flow Prop	ortional Counting	3										
GFPC, Ra228, Liqu	iid "As Received"	•										
Radium-228		1.30	1.21	3.00	pCi/L			AXM6	12/13/16	1519	1622076	4
Rad Radium-226												
Lucas Cell, Ra226,	liquid "As Recei	ved"										
Radium-226	_	0.694	0.384	1.00	pCi/L			LXP1	12/12/16	0935	1620873	5
The following Prep	Methods were pe	erformed:										
Method	Description	n		Analyst	Date	-	Гim	e Pr	ep Batch			
EPA 200.2	ICP-MS 200.	2 PREP		SXW1	11/21/16	(0714	16	17847			

The following Analytical Methods were performed:

Method	Description		Analyst Co	omments	
1	EPA 300.0		-		
2	EPA 300.0				
3	EPA 200.8 SC_NPDES				
4	EPA 904.0/SW846 9320 Modified				
5	EPA 903.1 Modified				
Surrogate/Trace	r Recovery Test	Recult	Nominal	Recovery%	Acceptable Limits

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits

Barium-133 Tracer GFPC, Ra228, Liquid "As Received"

97.1 (15%-125%)

Notes:

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: December 14, 2016

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-25 Project: SCEG01616C Sample ID: 410911007 Client ID: GEEL003

Parameter Qualifier Result	DL	RL	Units	PF	DF Analyst Date	Time Batch Method
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Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: December 14, 2016

SCEG01616C

GEEL003

Company:

GEL Engineering, LLC

Address:

2040 Savage Rd

Charleston, South Carolina 29417

Contact: Project:

Robert Gardner Williams 52

Client Sample ID: DUP

Sample ID: 410911008

Matrix:

Ground Water

Collect Date:

17-NOV-16 16:10

Receive Date: Collector:

18-NOV-16 Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatograp	hy											
EPA300.0 Fluorid	e in Liquid "As Re	eceived"										
Fluoride	_	0.843	0.033	0.100	mg/L		1	MAR1	12/01/16	2358	1618157	1
Chloride		20.2	0.335	1.00	mg/L		5	MAR1	12/02/16	1350	1618157	2
Metals Analysis-IO	CP-MS											
200.8/200.2 NPD	ES Metals "As Re	ceived"										
Lithium	J	6.27	2.00	10.0	ug/L	1.00	1	BAJ	11/28/16	2235	1617848	3
Rad Gas Flow Pro	portional Counting	g										
GFPC, Ra228, Lic	juid "As Received	"										
Radium-228	U	ND	1.43	3.00	pCi/L			AXM6	12/13/16	1519	1622076	4
Rad Radium-226												
Lucas Cell, Ra226	, liquid "As Recei	ved"										
Radium-226		0.962	0.199	1.00	pCi/L			LXP1	12/12/16	0935	1620873	5
The following Pre	p Methods were p	erformed:										
Method	Descriptio	n		Analyst	Date	-	Γim	e Pr	ep Batch			
EPA 200.2	ICP-MS 200.	2 PREP		SXW1	11/21/16	(0714	16	17847			
FF1 6 11 1 1			•									

The following Analytical Methods were performed:

Method	Description	Analyst Comments							
1	EPA 300.0		•						
2	EPA 300.0								
3	EPA 200.8 SC_NPDES								
4	EPA 904.0/SW846 9320 Modified								
5	EPA 903.1 Modified								
Surrogate/Tracer Recovery Test		Result	Nominal	Recovery%	Acceptable Limits				

92.7 (15%-125%) Barium-133 Tracer GFPC, Ra228, Liquid "As Received"

Notes:

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Certificate of Analysis

Report Date: December 14, 2016

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner
Project: Williams 52

Client Sample ID: DUP Project: SCEG01616C Sample ID: 410911008 Client ID: GEEL003

Parameter Qualifier Result	DL	RL	Units	PF	DF Analyst Date	Time Batch Method
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Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: December 14, 2016

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: Field Blank Project: SCEG01616C Sample ID: 410911009 Client ID: GEEL003

Matrix: Ground Water
Collect Date: 17-NOV-16 16:20
Receive Date: 18-NOV-16
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatography	y											
EPA300.0 Fluoride	in Liquid "As Re	eceived"										
Chloride	J	0.0932	0.067	0.200	mg/L		1	MAR1	12/02/16	0027	1618157	1
Fluoride	U	ND	0.033	0.100	mg/L		1					
Metals Analysis-ICI	P-MS											
200.8/200.2 NPDE	S Metals "As Red	ceived"										
Lithium	U	ND	2.00	10.0	ug/L	1.00	1	BAJ	11/28/16	2238	1617848	2
Rad Gas Flow Propo	ortional Counting	3										
GFPC, Ra228, Liqu	id "As Received"	•										
Radium-228		1.98	1.47	3.00	pCi/L			AXM6	12/13/16	1519	1622076	3
Rad Radium-226												
Lucas Cell, Ra226,	liquid "As Recei	ved"										
Radium-226	•	0.297	0.207	1.00	pCi/L			LXP1	12/12/16	0935	1620873	4
The following Prep	Methods were pe	erformed:										
Method	Description	n		Analyst	Date	7	Гim	e Pr	ep Batch			
EPA 200.2	ICP-MS 200.			SXW1	11/21/16	(0714	16	17847			

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	·
2	EPA 200.8 SC_NPDES	
3	EPA 904.0/SW846 9320 Modified	

4 EPA 903.1 Modified

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits

Barium-133 Tracer GFPC, Ra228, Liquid "As Received"

92.7 (15%-125%)

Notes:

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: December 14, 2016

SCEG01616C

GEEL003

Company:

GEL Engineering, LLC

Address:

2040 Savage Rd

Charleston, South Carolina 29417

Contact: Project:

Robert Gardner Williams 52

Client Sample ID: GW-24

Sample ID:

410911010

Matrix:

Ground Water

Collect Date:

17-NOV-16 17:03

Receive Date: Collector:

18-NOV-16 Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatograp	phy											
EPA300.0 Fluorio	de in Liquid "As Re	eceived"										
Fluoride	•	0.343	0.033	0.100	mg/L		1	MAR1	12/02/16	0056	1618157	1
Chloride		18.2	0.335	1.00	mg/L		5	MAR1	12/02/16	1419	1618157	2
Metals Analysis-l	ICP-MS											
200.8/200.2 NPD	DES Metals "As Red	ceived"										
Lithium	U	ND	2.00	10.0	ug/L	1.00	1	BAJ	11/28/16	2240	1617848	3
Rad Gas Flow Pro	oportional Counting	g S										
GFPC, Ra228, Li	quid "As Received'	"										
Radium-228		1.55	1.49	3.00	pCi/L			AXM6	12/13/16	1519	1622076	4
Rad Radium-226												
Lucas Cell, Ra22	6, liquid "As Recei	ved"										
Radium-226	•	0.533	0.345	1.00	pCi/L			LXP1	12/12/16	0935	1620873	5
The following Pro	ep Methods were pe	erformed:										
Method	Description	n		Analyst	Date	,	Гim	e Pro	ep Batch			
EPA 200.2	ICP-MS 200.	2 PREP		SXW1	11/21/16		0714	161	17847			
The fellowing A	nolvitical Mathada v	riana manfanna	4.									

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	•
2	EPA 300.0	
3	EPA 200.8 SC_NPDES	
4	EPA 904.0/SW846 9320 Modified	
5	EPA 903.1 Modified	

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits 92.3 (15%-125%) Barium-133 Tracer GFPC, Ra228, Liquid "As Received"

Notes:

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: December 14, 2016

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner
Project: Williams 52

Client Sample ID: GW-24 Project: SCEG01616C Sample ID: 410911010 Client ID: GEEL003

	Result DL	RL	Units	PF	DF Analyst Date	Time Batch	Method
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Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: December 14, 2016

SCEG01616C

GEEL003

Company:

GEL Engineering, LLC

2040 Savage Rd Address:

Charleston, South Carolina 29417

Contact: Project:

Robert Gardner Williams 52

Client Sample ID: GW-26

Sample ID:

410911011

Matrix:

Ground Water

Collect Date:

17-NOV-16 18:00

Receive Date: Collector:

18-NOV-16 Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatography												
EPA300.0 Fluoride in	Liquid "As Re	eceived"										
Fluoride	-	0.196	0.033	0.100	mg/L		1	MAR1	12/02/16	0125	1618157	1
Chloride		147	3.35	10.0	mg/L		50	MAR1	12/02/16	1546	1618157	2
Metals Analysis-ICP-	MS											
200.8/200.2 NPDES	Metals "As Red	ceived"										
Lithium	U	ND	2.00	10.0	ug/L	1.00	1	BAJ	11/30/16	1910	1620155	3
Rad Gas Flow Propor	tional Counting	9										
GFPC, Ra228, Liquid	l "As Received"	'										
Radium-228		2.25	1.92	3.00	pCi/L			AXM6	12/13/16	1519	1622076	4
Rad Radium-226												
Lucas Cell, Ra226, lic	quid "As Recei	ved"										
Radium-226		1.49	0.534	1.00	pCi/L			LXP1	12/12/16	0935	1620873	5
The following Prep M	lethods were pe	erformed:										
Method	Description	1		Analyst	Date	7	Γim	e Pr	ep Batch			
EPA 200.2	ICP-MS 200.	2 PREP		SXW1	11/30/16	()731	16	20154			

The following Analytical Methods were performed:

Method	Description	Analyst Comments	
1	EPA 300.0	•	
2	EPA 300.0		
3	EPA 200.8 SC_NPDES		
4	EPA 904.0/SW846 9320 Modified		
5	EPA 903.1 Modified		

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits 79 (15%-125%) Barium-133 Tracer GFPC, Ra228, Liquid "As Received"

Notes:

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: December 14, 2016

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-26 Project: SCEG01616C Sample ID: 410911011 Client ID: GEEL003

	Result DL	RL	Units	PF	DF Analyst Date	Time Batch	Method
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Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: December 14, 2016

Page 1 of 4

GEL Engineering, LLC 2040 Savage Rd

Charleston, South Carolina

Contact: Robert Gardner

Workorder: 410911

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range Anlst	Date Time
Ion Chromatography									
Batch 1618157 ———									
QC1203674940 410763001 DUP Chloride		9.44		9.45	mg/L	0.0529		(0%-20%) MAR	11 12/01/16 18:12
Fluoride		0.231		0.237	mg/L	2.73 ^		(+/-0.100)	
QC1203674941 410911011 DUP Chloride		147		148	mg/L	0.935		(0%-20%)	12/02/16 16:15
Fluoride		0.196		0.167	mg/L	16.4 ^		(+/-0.100)	12/02/16 17:13
QC1203674939 LCS Chloride	5.00			4.81	mg/L		96.1	(90%-110%)	12/01/16 17:14
Fluoride	2.50			2.55	mg/L		102	(90%-110%)	
QC1203674938 MB Chloride			U	ND	mg/L				12/01/16 16:45
Fluoride			U	ND	mg/L				
QC1203674942 410763001 PS Chloride	5.00	9.44		15.2	mg/L		116*	(90%-110%)	12/01/16 18:40
Fluoride	2.50	0.231		2.58	mg/L		94.1	(90%-110%)	
QC1203674943 410911011 PS Chloride	5.00	2.94		8.21	mg/L		105	(90%-110%)	12/02/16 16:44
Fluoride	2.50	0.196		2.57	mg/L		95	(90%-110%)	12/02/16 01:55
Metals Analysis - ICPMS					8			(22.0 220.0)	
Batch 1617848 ———									
QC1203674046 410911001 DUP Lithium		U ND	U	ND	ug/L	N/A		BA	J 11/28/16 22:06
QC1203674045 LCS Lithium	50.0			50.7	ug/L		101	(80%-120%)	11/28/16 22:00
QC1203674044 MB Lithium			U	ND	ug/L				11/28/16 21:58
QC1203674048 410911001 MS Lithium	50.0	U ND		54.1	ug/L		104	(75%-125%)	11/28/16 22:08

GEL LABORATORIES LLC 2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

	_			_					Page	e 2 of 4
NOM	Sample	Qual	QC	Units	RPD%	REC%	Range A	Anlst	Date	Time
T U	ND	U	ND	ug/L	N/A		(0%-10%)	BAJ	11/28/1	16 22:11
U	ND	J	2.10	ug/L	200			BAJ	11/30/1	6 19:13
50.0			50.1	ug/L		100	(80%-120%)		11/30/1	16 19:07
		U	ND	ug/L					11/30/1	16 19:05
50.0 U	ND		47.2	ug/L		90.4	(75%-125%)		11/30/1	16 19:15
T U	ND	U	ND	ug/L	N/A		(0%-10%)		11/30/1	16 19:18
	1.55		1.94	pCi/L	22		(0% - 100%)	AXM6	12/13/1	6 15:18
21.5			20.9	pCi/L		97.3	(75%-125%)		12/13/1	16 15:21
		U	1.14	pCi/L					12/13/1	16 15:18
	0.943		1.22	pCi/L	25.4		(0% - 100%)	LXP1	12/12/1	6 10:10
24.4			19.7	pCi/L		80.6	(75%-125%)		12/12/1	16 10:40
			0.196	pCi/L					12/12/1	16 10:10
122	0.943		97.2	pCi/L		78.9	(75%-125%)		12/12/1	16 10:40
	T U 50.0 50.0 U T U 21.5	U ND 50.0 50.0 U ND T U ND 1.55 21.5	T U ND U U ND J 50.0 U ND T U ND U 1.55 21.5 0.943	T U ND U ND U ND J 2.10 50.0 50.1 U ND 50.0 U ND 47.2 T U ND U ND 1.55 1.94 21.5 20.9 U 1.14	T U ND U ND ug/L U ND J 2.10 ug/L 50.0 U ND U ND ug/L 50.0 U ND 47.2 ug/L T U ND U ND ug/L 1.55 1.94 pCi/L 21.5 U 1.14 pCi/L 0.943 1.22 pCi/L 24.4 19.7 pCi/L	T U ND U ND ug/L N/A U ND J 2.10 ug/L 200 50.0 U ND U ND ug/L 50.0 U ND 47.2 ug/L T U ND U ND ug/L 1.55 1.94 pCi/L 22 21.5 20.9 pCi/L U 1.14 pCi/L 24.4 19.7 pCi/L 0.196 pCi/L	T U ND U ND ug/L N/A U ND J 2.10 ug/L 200 50.0 U ND Ug/L 100 U ND ug/L 90.4 T U ND U ND ug/L 90.4 T U ND U ND ug/L 97.3 U 1.14 pCi/L 22 21.5 U 1.14 pCi/L 25.4 24.4 19.7 pCi/L 25.4 24.6 0.196 pCi/L 80.6	T U ND U ND ug/L N/A (0%-10%) U ND J 2.10 ug/L 200 50.0 U ND U ND ug/L 50.0 U ND 47.2 ug/L 90.4 (75%-125%) T U ND U ND ug/L N/A (0%-10%) 21.5 1.94 pCi/L 22 (0%-100%) 21.5 20.9 pCi/L 97.3 (75%-125%) U 1.14 pCi/L 0.943 1.22 pCi/L 25.4 (0%-100%) 24.4 19.7 pCi/L 80.6 (75%-125%) 0.196 pCi/L	T U ND U ND ug/L N/A (0%-10%) BAJ U ND J 2.10 ug/L 200 BAJ 50.0 U ND ug/L 50.0 U ND 47.2 ug/L 90.4 (75%-125%) T U ND U ND ug/L 1.55 1.94 pCi/L 22 (0%-100%) AXM6 21.5 U 1.14 pCi/L 0.943 1.22 pCi/L 25.4 (0%-100%) LXP1 24.4 19.7 pCi/L 80.6 (75%-125%) 0.196 pCi/L	NOM Sample Qual QC Units RPD% REC% Range Anlst Date T U ND U ND ug/L N/A (0%-10%) BAJ 11/28/1 U ND J 2.10 ug/L 200 BAJ 11/30/1 50.0 U ND ug/L 100 (80%-120%) 11/30/1 T U ND U ND ug/L 90.4 (75%-125%) 11/30/1 T U ND U ND ug/L N/A (0%-10%) AXM6 12/13/1 21.5 1.94 pCi/L 22 (0%-100%) AXM6 12/13/1 21.5 20.9 pCi/L 97.3 (75%-125%) 12/13/1 0.943 1.22 pCi/L 25.4 (0%-100%) LXP1 12/13/1 24.4 19.7 pCi/L 80.6 (75%-125%) 12/12/1

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QC Summary

410911 Page 3 of 4

Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time

Notes:

Workorder:

The Qualifiers in this report are defined as follows:

- Analyte is a Tracer compound
- < Result is less than value reported
- > Result is greater than value reported
- В The target analyte was detected in the associated blank.
- Results are either below the MDC or tracer recovery is low BD
- Е % difference of sample and SD is >10%. Sample concentration must meet flagging criteria
- Е General Chemistry--Concentration of the target analyte exceeds the instrument calibration range
- Failed analysis. FA
- Mercury was found present at quantifiable concentrations in field blanks received with these samples. Data associated with the blank are deemed FΒ invalid for reporting to regulatory agencies
- Η Analytical holding time was exceeded
- J Value is estimated
- K Analyte present. Reported value may be biased high. Actual value is expected to be lower.
- L Analyte present. Reported value may be biased low. Actual value is expected to be higher.
- M M if above MDC and less than LLD
- M REMP Result > MDC/CL and < RDL
- N Metals--The Matrix spike sample recovery is not within specified control limits
- N/A RPD or %Recovery limits do not apply.
- N1 See case narrative
- ND Analyte concentration is not detected above the detection limit
- NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- One or more quality control criteria have not been met. Refer to the applicable narrative or DER. Q
- R Per section 9.3.4.1 of Method 1664 Revision B, due to matrix spike recovery issues, this result may not be reported or used for regulatory compliance purposes.
- R Sample results are rejected
- U Analyte was analyzed for but not detected above the Lc
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- UI Gamma Spectroscopy--Uncertain identification
- UJ Gamma Spectroscopy--Uncertain identification
- UL Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y Other specific qualifiers were required to properly define the results. Consult case narrative.
- Z Paint Filter Test--Particulates passed through the filter, however no free liquids were observed.
- Λ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
- d 5-day BOD--The 2:1 depletion requirement was not met for this sample

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QC Summary

Page 4 of 4 QC **Parmname NOM** Sample Qual Units RPD% REC% Range Anlst Date Time

- 5-day BOD--Test replicates show more than 30% difference between high and low values. The data is qualified per the method and can be used for e reporting purposes
- h Preparation or preservation holding time was exceeded

Workorder:

410911

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable. ^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

* Indicates that a Quality Control parameter was not within specifications.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.



Tel: (803)217-9384 Fax: (803) 217-9911

REPORT TO:

Mike Moore C221

December 19, 2016

Sample ID: AB24676

Williams Hwy 52 GW 20-NPDES/CCR

Date & Time Submitted:

November 16, 2016 15:16

Date & Time Submitted: November 18, 2016 10:40

Collected by: RUCKER,S

Location Code: WLG20TDS

GW 20

Login Record File: 161118002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	9.64	0.5	mg/L	11/23/16 23:50	LS
pH by SM4500HB	6.83	0.00	S.U.	11/18/16 12:05	BF
Holding Time of 15 minutes has been	exceeded.			•	
Sulfates by IC EPA 300.0	13.7	0.5	mg/L	11/23/16 23:50	LS
Total Dissolved Solid-SM2540C	646	2.0	mg/L	11/21/16 15:30	BF

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

REPORT TO:

Mike Moore C221

December 19, 2016

Sample ID: AB24678

Williams Hwy 52 GW 21-NPDES/CCR

Date & Time Sampled:

November 16, 2016 16:20

Date & Time Submitted: November 18, 2016 10:40

Collected by: RUCKER,S

Location Code: WLG21TDS

GW 21

Login Record File: 161118002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Anal	
Chlorides by IC EPA 300.0	10.6	0.5	mg/L	11/23/16 23:	50 LS
pH by SM4500HB	6.78	0.00	S.U.	11/18/16 12:	05 BF
Holding Time of 15 minutes has been	exceeded.				
Sulfates by IC EPA 300.0	10.4	0.5	mg/L	11/23/16 23:	50 LS
Total Dissolved Solid-SM2540C	710	2.0	mg/L	11/21/16 15:	30 BF

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

REPORT TO:

Mike Moore C221

December 19, 2016

Sample ID: AB24680

Williams Hwy 52 GW 27-NPDES/CCR

Date & Time Sampled:

November 17, 2016 09:57

Date & Time Submitted: November 18, 2016 10:40

Collected by: RUCKER,S

Location Code: WLG27TDS

GW 27

Login Record File: 161118002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed 2		Chemist
Chlorides by IC EPA 300.0	4.84	1.0	mg/L	11/23/16	23:50	LS
pH by SM4500HB	7.28	0.00	S.U.	11/18/16	12:05	BF
Holding Time of 15 minutes has been	exceeded.				•	
Sulfates by IC EPA 300.0	5.69	1.0	mg/L	11/23/16	23:50	LS
Total Dissolved Solid-SM2540C	189	2.0	mg/L	11/21/16	15:30	BF

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

REPORT TO:

Mike Moore C221

December 19, 2016

Sample ID: AB24682

Williams Hwy 52 GW 10-NPDES/CCR

Date & Time Sampled:

November 17, 2016 11:00

Date & Time Submitted: November 18, 2016 10:40

Collected by: RUCKER,S

Location Code: WLG10TDS

GW 10

Login Record File: 161118002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	10.9	0.5	mg/L	11/23/16 23:50	LS
pH by SM4500HB	6.84	0.00	S.U.	11/18/16 12:05	BF
Holding Time of 15 minutes has been	exceeded.				
Sulfates by IC EPA 300.0	4.12	0.5	mg/L	11/23/16 23:50	LS
Total Dissolved Solid-SM2540C	174	2.0	mg/L	11/21/16 15:30	BF

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

REPORT TO:

Mike Moore C221

December 19, 2016

Sample ID: AB24684

Williams Hwy 52 GW 11-NPDES/CCR

Date & Time Sampled:

November 17, 2016 12:02

Date & Time Submitted: November 18, 2016 10:40

Collected by: RUCKER,S

Location Code: WLG11TDS

GW 11

Login Record File: 161118002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Anal Date & Time	
Chlorides by IC EPA 300.0	5.93	0.5	mg/L	11/23/16 23:	50 LS
pH by SM4500HB Holding Time of 15 minutes has been	6.62	0.00	S.U.	11/18/16 12:	05 BF
Sulfates by IC EPA 300.0	1.73	0.5	mg/L	11/23/16 23:	50 LS
Total Dissolved Solid-SM2540C	94	2.0	mg/L	11/21/16 15:	30 BF

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

REPORT TO:

Mike Moore C221

December 19, 2016

Sample ID: AB24686

Williams Hwy 52 GW 28-NPDES/CCR

Date & Time Sampled:

November 17, 2016 12:59

Date & Time Submitted: November 18, 2016 10:40

Collected by: RUCKER,S

Location Code: WLG28TDS

GW 28

Login Record File: 161118002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed / Date &		Chemist
Chlorides by IC EPA 300.0	4.26	1.0	mg/L	11/23/16	23:50	LS
pH by SM4500HB	6.86	0.00	S.U.	11/18/16	12:05	BF
Holding Time of 15 minutes has been	exceeded.					
Sulfates by IC EPA 300.0	4.85	1.0	mg/L	11/23/16	23:50	LS
Total Dissolved Solid-SM2540C	120	2.0	mg/L	11/21/16	15:30	BF

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

December 19, 2016

REPORT TO:

Mike Moore C221

Sample ID: AB24688

Williams Hwy 52 GW 22D-NPDES/CCR

Date & Time Sampled:

November 17, 2016 13:55

Date & Time Submitted: November 18, 2016 10:40

Collected by: RUCKER,S

Location Code: WLG22DTDS

GW 22D

Login Record File: 161118002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	10.1	1.0	mg/L	11/23/16 23:50	LS
pH by SM4500HB Holding Time of 15 minutes has been	7.13 exceeded.	0.00	S.U.	11/18/16 12:05	BF
Sulfates by IC EPA 300.0	65.7	1.0	mg/L	11/23/16 23:50	LS
Total Dissolved Solid-SM2540C	529	2.0	mg/L	11/21/16 15:30	BF

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

December 19, 2016

REPORT TO:

Mike Moore C221

Sample ID: AB24690

Williams Hwy 52 GW 23D-NPDES/CCR

Date & Time Sampled:

November 17, 2016 14:50

Date & Time Submitted: November 18, 2016 10:40

Collected by: RUCKER,S

Location Code: WLG23DTDS

GW 23D

Login Record File: 161118002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	14.8	0.5	mg/L	11/23/16 23:50	LS
pH by SM4500HB Holding Time of 15 minutes has been	7.27 exceeded.	0.00	S.U.	11/18/16 12:05	BF
Sulfates by IC EPA 300.0	31.3	0.5	mg/L	11/23/16 23:50	LS
Total Dissolved Solid-SM2540C	463	2.0	mg/L	11/21/16 15:30	BF

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

REPORT TO:

Mike Moore C221

December 19, 2016

Sample ID: AB24692

Williams Hwy 52 GW 25-NPDES/CCR

Date & Time Sampled:

November 17, 2016 15:41

Date & Time Submitted: November 18, 2016 10:40

Collected by: RUCKER,S

Location Code: WLG25TDS

GW 25

Login Record File: 161118002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	21.0	0.5	mg/L	11/23/16 23:50	LS
pH by SM4500HB Holding Time of 15 minutes has been	6.94 exceeded.	0.00	S.U.	11/18/16 12:05	BF
Sulfates by IC EPA 300.0	29.6	0.5	mg/L	11/23/16 23:50	LS
Total Dissolved Solid-SM2540C	537	2.0	mg/L	11/21/16 15:30	BF

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

December 19, 2016

REPORT TO:

Mike Moore C221

Sample ID: AB24694

Williams Hwy 52 DUP -NPDES/CCR

Date & Time Sampled:

November 17, 2016 16:10

Date & Time Submitted: November 18, 2016 10:40 Collected by: RUCKER,S

Location Code: WLGDUPTDS

GW 10

Login Record File: 161118002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	21.0	0.5	mg/L	11/23/16 23:50	LS
pH by SM4500HB Holding Time of 15 minutes has been	6.97 exceeded.	0.00	S.U.	11/18/16 12:05	BF
Sulfates by IC EPA 300.0	29.4	0.5	mg/L	11/23/16 23:50	LS
Total Dissolved Solid-SM2540C	535	2.0	mg/L	11/21/16 15:30	BF

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

REPORT TO:

Mike Moore C221

December 19, 2016

Sample ID: AB24696

Williams Hwy 52 FIELD BLANK-NPDES/CCR

Date & Time Sampled: November 17, 2016 16:20 Date & Time Submitted: November 18, 2016 10:40

Collected by: RUCKER,S Location Code: WLGFBTDS

GW 10

Login Record File: 161118002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	less than	0.5	mg/L	11/23/16 23:50	LS
pH by SM4500HB	7.70	0.00	S.U.	11/18/16 12:05	BF
Holding Time of 15 minutes has been	n exceeded.				
Sulfates by IC EPA 300.0	less than	0.5	mg/L	11/23/16 23:50	LS
Total Dissolved Solid-SM2540C	6	2.0	mg/L	11/21/16 15:30	BF

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

REPORT TO:

Mike Moore C221

December 19, 2016

Sample ID: AB24698

Williams Hwy 52 GW 24-NPDES/CCR

Date & Time Sampled:

November 17, 2016 17:03

Date & Time Submitted: November 18, 2016 10:40

Collected by: RUCKER,S

Location Code: WLG24TDS

GW 24

Login Record File: 161118002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed A		Chemist
Chlorides by IC EPA 300.0	19.4	0.5	mg/L	11/23/16	23:50	LS
pH by SM4500HB Holding Time of 15 minutes has been	6.42 exceeded.	0.00	S.U.	11/18/16	12:05	BF
Sulfates by IC EPA 300.0	22.0	0.5	mg/L	11/23/16	23:50	LS
Total Dissolved Solid-SM2540C	520	2.0	mg/L	11/21/16	15:30	BF

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.



Tel: (803)217-9384 Fax: (803) 217-9911

December 19, 2016

REPORT TO:

Mike Moore C221

Sample ID: AB24700

Williams Hwy 52 GW 26-NPDES/CCR

Date & Time Sampled:

November 17, 2016 18:00

Date & Time Submitted: November 18, 2016 10:40

10vember 10, 2010 10.40

Collected by: RUCKER,S

Location Code: WLG26TDS

GW 26

Login Record File: 161118002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed A		Chemist
Chlorides by IC EPA 300.0	156	1.0	mg/L	11/23/16	23:50	LS
pH by SM4500HB	6.29	0.00	S.U.	11/18/16	12:05	BF
Holding Time of 15 minutes has been	exceeded.					
Sulfates by IC EPA 300.0	76.3	1.0	mg/L	11/23/16	23:50	LS
Total Dissolved Solid-SM2540C	860	2.0	mg/L	11/21/16	15:30	BF

If there are any questions concerning this sample, please contact the lab at (803) 217-9384.

EPA CCR Rule Compliance Monitoring Wells

Groundwater Monitoring Data

South Carolina Electric & Gas: Williams Station Highway 52 Class Three Landfill

Williams Station Highway 52 Class Three Landfill

					Gauging Date:	1/19- 1/20/2017								
		Well Data						1						
				Initial G	auging	Final G	Final Gauging Final Water Quality Indicator Parame					ieters		
	PVC Pipe	Ground Surface		Depth to	Groundwater	Depth to	Groundwater	Temparature	рН	Sp. Cond.	Turbidity	ORP	DO	
Monitoring Well ID	Elevation, ft.		Stickup, ft.	Groundwater, ft.	Elevation, ft.	Groundwater, ft.	Elevation, ft.	°C	S.U.	μS/cm	NTU	mV	mg/L	
	ı	_	1										<u> </u>	
GW-10	52.28	49.60	2.68	7.44	44.84	10.10	42.18	18.2	6.9	281	5.04	134.2	2.41	
GW-11	51.72			10.68	41.04	11.13	40.59	19.2	6.4	137	9.15	85.7	3.24	
GW-20	60.81	56.70	4.11	21.22	39.59	23.20	37.61	21.5	6.6	1090	4.95	-26.3	0.89	
GW-21	56.14	52.50	3.64	16.78	39.36	18.60	37.54	21.8	6.7	1050	9.39	36.1	0.63	
GW-22	50.33	46.90	3.43		50.33		50.33							
GW-22D	50.36	47.10	3.26	16.27	34.09	19.52	30.84	21.6	7.1	936	9.25	54.5	0.57	
GW-23	49.99	46.20	3.79		49.99		49.99							
GW-23D	49.69	46.20	3.49	12.67	37.02	17.23	32.46	21.8	7.2	807	7.22	57.6	2.23	
GW-24	52.40	48.70	3.70	16.88	35.52	17.64	34.76	21.6	6.5	974	9.85	50.5	0.73	
GW-25	50.93	47.40	3.53	16.21	34.72	17.15	33.78	22.5	6.9	898	6.93	57.5	0.94	
GW-26	55.21	51.20	4.01	24.70	30.51	25.30	29.91	21.2	6.1	1542	6.43	-6.0	1.18	
GW-27	53.26			6.67	46.59	7.18	46.08	20.4	6.9	519	1.17	6.0	8.37	
GW-28	51.23			9.42	41.81	9.78	41.45	19.1	6.6	200	7.93	79	3.28	

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Certificate of Analysis Report for

GEEL003 GEL Engineering, LLC Client SDG: 414775 GEL Work Order: 414775

The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a Tracer compound
- ** Analyte is a surrogate compound
- H Analytical holding time was exceeded
- J Value is estimated
- U Analyte was analyzed for but not detected above the Lc
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Jake Crook.

	Johns Cotos	
Reviewed by		

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: February 16, 2017

SCEG01616C

GEEL003

Company: Address:

GEL Engineering, LLC

2040 Savage Rd

Charleston, South Carolina 29417

Contact: Project:

Robert Gardner Williams 52

Client Sample ID: GW-24

Sample ID:

414775001

Matrix:

Ground Water

Collect Date:

20-JAN-17 08:33

Receive Date: Collector:

20-JAN-17 Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatography	y											
EPA300.0 Fluoride	in Liquid "As Re	eceived"										
Fluoride	_	0.460	0.033	0.100	mg/L		1	MAR1	01/25/17	0003	1633027	1
Chloride		17.0	0.335	1.00	mg/L		5	MAR1	01/26/17	1336	1633027	2
Metals Analysis-ICI	P-MS											
200.8/200.2 NPDES	S Metals "As Re	ceived"										
Lithium	J	2.92	2.00	10.0	ug/L	1.00	1	BAJ	01/25/17	2107	1633222	3
Rad Gas Flow Propo	ortional Counting	<u> </u>										
GFPC, Ra228, Liqui	id "As Received"	"										
Radium-228	U	ND	1.26	3.00	pCi/L			AXM6	01/30/17	0907	1633606	4
Rad Radium-226												
Lucas Cell, Ra226, 1	liquid "As Recei	ved"										
Radium-226		2.36	0.508	1.00	pCi/L			LXP1	02/13/17	1040	1633270	5
The following Prep	Methods were po	erformed:										
Method	Description	n		Analyst	Date	7	Гіте	Pro	ep Batch			
EPA 200.2	ICP-MS 200.	2 PREP		SXW1	01/23/17	()839	163	33221			

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	•
2	EPA 300.0	
3	EPA 200.8 SC_NPDES	
4	EPA 904.0/SW846 9320 Modified	

EPA 903.1 Modified

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits 90.3 (15%-125%) Barium-133 Tracer GFPC, Ra228, Liquid "As Received"

Notes:

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Certificate of Analysis

Report Date: February 16, 2017

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-24 Project: SCEG01616C Sample ID: 414775001 Client ID: GEEL003

Parameter Qualifier Result	DL	RL	Units	PF	DF Analyst Date	Time Batch Method
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Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: February 16, 2017

SCEG01616C

GEEL003

Company: Address:

GEL Engineering, LLC

2040 Savage Rd

Charleston, South Carolina 29417

Contact: Project:

Robert Gardner Williams 52

Client Sample ID: GW-26

Sample ID:

414775002

20-JAN-17

Matrix: Collect Date: Ground Water

20-JAN-17 09:17

Receive Date: Collector:

Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatograp	ohy											
EPA300.0 Fluorid	le in Liquid "As Re	eceived"										
Fluoride	•	0.215	0.033	0.100	mg/L		1	MAR1	01/25/17	0032	1633027	1
Chloride		146	3.35	10.0	mg/L		50	MAR1	01/26/17	1404	1633027	2
Metals Analysis-I	CP-MS											
200.8/200.2 NPD	ES Metals "As Re	ceived"										
Lithium	J	2.29	2.00	10.0	ug/L	1.00	1	BAJ	01/25/17	2109	1633222	3
Rad Gas Flow Pro	portional Counting	g										
GFPC, Ra228, Lie	quid "As Received	"										
Radium-228	U	ND	2.03	3.00	pCi/L			AXM6	01/30/17	0907	1633606	4
Rad Radium-226												
Lucas Cell, Ra226	6, liquid "As Recei	ved"										
Radium-226	-	0.604	0.185	1.00	pCi/L			LXP1	02/13/17	1040	1633270	5
The following Pre	ep Methods were p	erformed:										
Method	Description	n		Analyst	Date	-	Time	Pro	ep Batch			
EPA 200.2	ICP-MS 200.	2 PREP		SXW1	01/23/17	(0839	163	33221			
TE1 6 11 : A	1 13 6 .1 1	6 1										

The following Analytical Methods were performed:

Method	Description	Analyst Comments	
1	EPA 300.0	•	
2	EPA 300.0		
3	EPA 200.8 SC_NPDES		
4	EPA 904.0/SW846 9320 Modified		
5	EPA 903.1 Modified		

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits 93.4 (15%-125%) Barium-133 Tracer GFPC, Ra228, Liquid "As Received"

Notes:

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: February 16, 2017

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner
Project: Williams 52

Client Sample ID: GW-26 Project: SCEG01616C Sample ID: 414775002 Client ID: GEEL003

Parameter (Oualifier	Result	DL	RL	Units	PF	DF Analyst Date	Time Batch Method
1 didilictei	Qualifici	resurt	בע	ILL	CIII	11	DI Imaryst Date	Time Datem Method

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

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Certificate of Analysis

Project:

Client ID:

Report Date: February 16, 2017

SCEG01616C

GEEL003

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-27
Sample ID: 414775003
Matrix: Ground Water
Collect Date: 20-JAN-17 10:32

Receive Date: 20-JAN-17 Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatograph	ıy											
EPA300.0 Fluoride	in Liquid "As Re	eceived"										
Fluoride	_	0.288	0.033	0.100	mg/L		1	MAR1	01/25/17	0101	1633027	1
Chloride		10.1	0.134	0.400	mg/L		2	MAR1	01/26/17	1433	1633027	2
Metals Analysis-IC	P-MS											
200.8/200.2 NPDE	ES Metals "As Red	ceived"										
Lithium	U	ND	2.00	10.0	ug/L	1.00	1	BAJ	01/25/17	2112	1633222	3
Rad Gas Flow Prop	ortional Counting	3										
GFPC, Ra228, Liqu	uid "As Received"	•										
Radium-228		1.46	1.35	3.00	pCi/L			AXM6	01/30/17	0907	1633606	4
Rad Radium-226												
Lucas Cell, Ra226,	liquid "As Receiv	ved"										
Radium-226		1.06	0.490	1.00	pCi/L			LXP1	02/13/17	1040	1633270	5
The following Prep	Methods were pe	erformed:										
Method	Description	n		Analyst	Date	-	Гіте	Pr	ep Batch			
EPA 200.2	ICP-MS 200.	2 PREP		SXW1	01/23/17	(0839	16	33221			

The following Analytical Methods were performed:

Method	Description		Analyst Co	omments	
1	EPA 300.0		-		
2	EPA 300.0				
3	EPA 200.8 SC_NPDES				
4	EPA 904.0/SW846 9320 Modified				
5	EPA 903.1 Modified				
Surrogate/Trace	r Recovery Test	Pacult	Nominal	Pacovary%	Acceptable Limits

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits

Barium-133 Tracer GFPC, Ra228, Liquid "As Received"

93.2 (15%-125%)

Notes:

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: February 16, 2017

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-27 Project: SCEG01616C Sample ID: 414775003 Client ID: GEEL003

	Result DL	RL	Units	PF	DF Analyst Date	Time Batch	Method
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Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

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QC Summary

Report Date: February 16, 2017

Page 1 of 4

GEL Engineering, LLC 2040 Savage Rd Charleston, South Carolina

Robert Gardner

Contact:

Workorder: 414775 Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range Anlst	Date Time
Ion Chromatography Batch 1633027	110111	Sample Quar	- Qc	Cints	KI D /u	REC 70	Kange Amst	Date Time
QC1203712222 414666010 DUP Chloride		21.6	21.5	mg/L	0.363		(0%-20%) MAR1	01/27/17 16:47
Fluoride		0.723	0.727	mg/L	0.551		(0%-20%)	01/24/17 22:36
QC1203714085 414775003 DUP Chloride		10.1	10.1	mg/L	0.0258		(0%-20%)	01/26/17 15:02
Fluoride		0.288	0.290	mg/L	0.865 ^		(+/-0.100)	01/25/17 01:30
QC1203712221 LCS Chloride	5.00		4.91	mg/L		98.2	(90%-110%)	01/24/17 16:21
Fluoride	2.50		2.53	mg/L		101	(90%-110%)	
QC1203712220 MB Chloride		U	ND	mg/L				01/24/17 15:52
Fluoride		U	ND	mg/L				
QC1203712223 414666010 PS Chloride	5.00	4.31	9.77	mg/L		109	(90%-110%)	01/27/17 17:15
Fluoride	2.50	0.723	3.20	mg/L		99.1	(90%-110%)	01/24/17 23:05
QC1203714086 414775003 PS Chloride	5.00	5.03	10.6	mg/L		111*	(90%-110%)	01/26/17 15:31
Fluoride	2.50	0.288	2.75	mg/L		98.3	(90%-110%)	01/25/17 01:59

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QC Summary

Workorder: 414775 Page 2 of 4 Sample Qual **Parmname NOM** \mathbf{QC} Units RPD% REC% Range Anlst Date Time Metals Analysis - ICPMS 1633222 Batch QC1203712687 414773008 DUP 2.53 2.51 Lithium J ug/L 0.555 ^ (+/-10.0)BAJ 01/25/17 20:06 QC1203712688 414773009 DUP Lithium U ND U ND N/A 01/25/17 20:17 ug/L QC1203712686 LCS 48.5 ug/L 50.0 (80%-120%) 01/25/17 20:01 Lithium 96.9 QC1203712685 ND Lithium U ug/L 01/25/17 19:58 OC1203712689 414773008 MS Lithium 50.0 2.53 51.6 ug/L 98.1 (75% - 125%)01/25/17 20:09 QC1203712690 414773009 MS Lithium U ND 45.2 50.0 ug/L 89.9 (75% - 125%)01/25/17 20:19 QC1203712691 414773008 SDILT Lithium 2.53 U ND (0%-10%)01/25/17 20:11 ug/L N/A QC1203712692 414773009 SDILT Lithium U ND U ND (0%-10%)01/25/17 20:22 ug/L N/A Rad Gas Flow 1633606 Batch QC1203713806 414833009 DUP Radium-228 U 0.494 U -0.153 pCi/L N/A N/AAXM6 01/30/17 09:14 QC1203713807 LCS Radium-228 21.1 22.2 pCi/L 105 (75% - 125%)01/30/17 09:14 QC1203713805 Radium-228 U 0.638 01/30/17 09:11 pCi/L

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QC Summary

414775 Page 3 of 4 **Parmname NOM** Sample Qual QC Units RPD% REC% Range Anlst Date Time Rad Ra-226 1633270 Batch QC1203712844 414666001 DUP U 0.345 Radium-226 0.198 pCi/L 54.2 (0% - 100%) LXP1 02/13/17 11:10 QC1203712846 LCS 26.0 24.3 pCi/L 93.7 Radium-226 (75% - 125%)02/13/17 11:40 QC1203712843 MB 0.314 pCi/L 02/13/17 11:10 Radium-226 QC1203712845 414666001 MS 102 Radium-226 130 U 0.198 133 pCi/L 02/13/17 11:10 (75% - 125%)

Notes:

Workorder:

The Qualifiers in this report are defined as follows:

- ** Analyte is a Tracer compound
- Result is less than value reported <
- > Result is greater than value reported
- В The target analyte was detected in the associated blank.
- BDResults are either below the MDC or tracer recovery is low
- Ε % difference of sample and SD is >10%. Sample concentration must meet flagging criteria
- Ε General Chemistry--Concentration of the target analyte exceeds the instrument calibration range
- FA Failed analysis.
- FΒ Mercury was found present at quantifiable concentrations in field blanks received with these samples. Data associated with the blank are deemed invalid for reporting to regulatory agencies
- Η Analytical holding time was exceeded
- J Value is estimated
- K Analyte present. Reported value may be biased high. Actual value is expected to be lower.
- L Analyte present. Reported value may be biased low. Actual value is expected to be higher.
- M M if above MDC and less than LLD
- M REMP Result > MDC/CL and < RDL
- N Metals--The Matrix spike sample recovery is not within specified control limits
- N/A RPD or %Recovery limits do not apply.
- N1See case narrative
- ND Analyte concentration is not detected above the detection limit
- NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

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QC Summary

Parmname NOM Sample Qual QC Units RPD% REC% Range Anlst Date Time

- Q One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
- R Per section 9.3.4.1 of Method 1664 Revision B, due to matrix spike recovery issues, this result may not be reported or used for regulatory compliance purposes.
- R Sample results are rejected

414775

Workorder:

- U Analyte was analyzed for but not detected above the Lc
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- UI Gamma Spectroscopy--Uncertain identification
- UJ Gamma Spectroscopy--Uncertain identification
- UL Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y Other specific qualifiers were required to properly define the results. Consult case narrative.
- Z Paint Filter Test--Particulates passed through the filter, however no free liquids were observed.
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
- d 5-day BOD--The 2:1 depletion requirement was not met for this sample
- e 5-day BOD--Test replicates show more than 30% difference between high and low values. The data is qualified per the method and can be used for reporting purposes
- h Preparation or preservation holding time was exceeded

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

* Indicates that a Quality Control parameter was not within specifications.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis Report for

GEEL003 GEL Engineering, LLC Client SDG: 414666 GEL Work Order: 414666

The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a Tracer compound
- ** Analyte is a surrogate compound
- H Analytical holding time was exceeded
- J Value is estimated
- U Analyte was analyzed for but not detected above the Lc
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Jake Crook.

	Jack N	lroh		
Reviewed by	,			

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: February 16, 2017

SCEG01616C

GEEL003

Company:

GEL Engineering, LLC

Address:

2040 Savage Rd

Charleston, South Carolina 29417

Contact: Project:

Robert Gardner Williams 52

Client Sample ID: GW-10

Sample ID:

414666001

20-JAN-17

Matrix:

Ground Water

Collect Date:

19-JAN-17 09:26

Receive Date: Collector:

Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatograp	ohy											
EPA300.0 Fluorid	le in Liquid "As Re	eceived"										
Fluoride	-	0.534	0.033	0.100	mg/L		1	MAR1	01/24/17	1649	1633027	1
Chloride		16.8	0.134	0.400	mg/L		2	MAR1	01/26/17	0818	1633027	2
Metals Analysis-I	CP-MS											
200.8/200.2 NPD	ES Metals "As Re	ceived"										
Lithium		21.3	2.00	10.0	ug/L	1.00	1	BAJ	01/24/17	2138	1633112	3
Rad Gas Flow Pro	portional Counting	g										
GFPC, Ra228, Lic	quid "As Received	"										
Radium-228	U	ND	1.94	3.00	pCi/L			AXM6	01/31/17	1013	1633896	4
Rad Radium-226												
Lucas Cell, Ra226	, liquid "As Recei	ved"										
Radium-226	U	ND	0.237	1.00	pCi/L			LXP1	02/13/17	0930	1633270	5
The following Pre	p Methods were po	erformed:										
Method	Description	n		Analyst	Date	,	Tim	e Pr	ep Batch			
EPA 200.2	ICP-MS 200.	2 PREP		CXW4	01/20/17		1700	163	33111			
TEI C 11 : A	1 136 1	c	•									

The following Analytical Methods were performed:

Method	Description		Analyst Co	omments	
1	EPA 300.0		-		
2	EPA 300.0				
3	EPA 200.8 SC_NPDES				
4	EPA 904.0/SW846 9320 Modified				
5	EPA 903.1 Modified				
Surrogate/Trace	r Recovery Test	Result	Nominal	Recovery%	Acceptable Limits

80.5 (15%-125%) Barium-133 Tracer GFPC, Ra228, Liquid "As Received"

Notes:

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: February 16, 2017

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-10 Project: SCEG01616C Sample ID: 414666001 Client ID: GEEL003

Parameter Qualifier Result DL RL Units PF DF Analyst Date Time Batch Method

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: February 16, 2017

SCEG01616C

GEEL003

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-11
Sample ID: 414666002
Matrix: Ground Water
Collect Date: 19-JAN-17 10:10

Receive Date: 20-JAN-17 Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatograph	ny											
EPA300.0 Fluoride	in Liquid "As Re	ceived"										
Chloride	•	5.06	0.067	0.200	mg/L		1	MAR1	01/24/17	1718	1633027	1
Fluoride		0.337	0.033	0.100	mg/L		1					
Metals Analysis-IC	CP-MS											
200.8/200.2 NPDE	ES Metals "As Rec	ceived"										
Lithium	J	3.85	2.00	10.0	ug/L	1.00	1	BAJ	01/24/17	2149	1633112	2
Rad Gas Flow Prop	ortional Counting	Ţ										
GFPC, Ra228, Liqu	uid "As Received"	1										
Radium-228	U	ND	1.72	3.00	pCi/L			AXM6	01/31/17	1013	1633896	3
Rad Radium-226												
Lucas Cell, Ra226,	liquid "As Receiv	ved"										
Radium-226	•	1.16	0.507	1.00	pCi/L			LXP1	02/13/17	0930	1633270	4
The following Prep	Methods were pe	erformed:										
Method	Description	1		Analyst	Date	r	Time	Pr	ep Batch			
EPA 200.2	ICP-MS 200.2			CXW4	01/20/17		1700	16.	33111			

The following Analytical Methods were performed:

 Method
 Description
 Analyst Comments

 1
 EPA 300.0

 2
 EPA 200.8 SC_NPDES

3 EPA 904.0/SW846 9320 Modified

EPA 903.1 Modified

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits

Barium-133 Tracer GFPC, Ra228, Liquid "As Received"

95.3 (15%-125%)

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: February 16, 2017

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-28 Project: SCEG01616C Sample ID: 414666003 Client ID: GEEL003

Matrix: Ground Water
Collect Date: 19-JAN-17 10:59
Receive Date: 20-JAN-17
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatograph	y											
EPA300.0 Fluoride	in Liquid "As Re	eceived"										
Chloride		3.97	0.067	0.200	mg/L		1	MAR1	01/24/17	1747	1633027	1
Fluoride		0.146	0.033	0.100	mg/L		1					
Metals Analysis-IC	P-MS											
200.8/200.2 NPDE	S Metals "As Red	ceived"										
Lithium	U	ND	2.00	10.0	ug/L	1.00	1	BAJ	01/24/17	2157	1633112	2
Rad Gas Flow Prop	ortional Counting	2										
GFPC, Ra228, Liqu	iid "As Received"	'										
Radium-228	U	ND	1.37	3.00	pCi/L			AXM6	01/31/17	1013	1633896	3
Rad Radium-226												
Lucas Cell, Ra226,	liquid "As Receiv	ved"										
Radium-226	_	0.792	0.408	1.00	pCi/L			LXP1	02/13/17	1005	1633270	4
The following Prep Methods were performed:												
Method	Description	1		Analyst	Date	-	Гime	Pr	ep Batch			
EPA 200.2	ICP-MS 200.2	2 PREP		CXW4	01/20/17		1700	163	33111			

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	·
2	EPA 200.8 SC_NPDES	
3	EPA 904.0/SW846 9320 Modified	
4	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			84.1	(15%-125%)

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: February 16, 2017

SCEG01616C

GEEL003

Company:

GEL Engineering, LLC

Address:

2040 Savage Rd

Contact:

Charleston, South Carolina 29417

Project:

Robert Gardner Williams 52

Client Sample ID: GW-20

Sample ID:

414666004

Matrix:

Ground Water

Collect Date:

19-JAN-17 12:06

Receive Date: Collector:

20-JAN-17 Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatography	y											
EPA300.0 Fluoride	in Liquid "As Re	eceived"										
Fluoride	_	0.285	0.033	0.100	mg/L		1	MAR1	01/24/17	1816	1633027	1
Chloride		9.94	0.134	0.400	mg/L		2	MAR1	01/26/17	0847	1633027	2
Metals Analysis-ICI	P-MS											
200.8/200.2 NPDE	S Metals "As Re	ceived"										
Lithium	J	5.19	2.00	10.0	ug/L	1.00	1	BAJ	01/24/17	2159	1633112	3
Rad Gas Flow Propo	ortional Counting	3										
GFPC, Ra228, Liqu	id "As Received"	"										
Radium-228	U	ND	2.13	3.00	pCi/L			AXM6	01/31/17	1013	1633896	4
Rad Radium-226												
Lucas Cell, Ra226,	liquid "As Recei	ved"										
Radium-226		5.90	0.383	1.00	pCi/L			LXP1	02/13/17	1005	1633270	5
The following Prep												
Method	Description	n		Analyst	Date	-	Гітє	Pr	ep Batch			
EPA 200.2	ICP-MS 200.	2 PREP		CXW4	01/20/17		1700	16.	33111			

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	EPA 300.0	
3	EPA 200.8 SC_NPDES	
4	EPA 904.0/SW846 9320 Modified	

EPA 903.1 Modified

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits Barium-133 Tracer 95 (15%-125%) GFPC, Ra228, Liquid "As Received"

Notes:

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: February 16, 2017

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-20 Project: SCEG01616C Sample ID: 414666004 Client ID: GEEL003

Parameter Qualifier Result	DL	RL	Units	PF	DF Analyst Date	Time Batch Method
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Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

Project:

Client ID:

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: February 16, 2017

SCEG01616C

GEEL003

Company:

GEL Engineering, LLC

Address:

2040 Savage Rd

Charleston, South Carolina 29417

Contact: Project:

Robert Gardner Williams 52

Client Sample ID: GW-21

Sample ID:

414666005

20-JAN-17

Matrix:

Ground Water

Collect Date:

19-JAN-17 12:54

Receive Date: Collector:

Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatograp	hy											
EPA300.0 Fluorid	e in Liquid "As Re	eceived"										
Fluoride	_	0.288	0.033	0.100	mg/L		1	MAR1	01/24/17	1845	1633027	1
Chloride		10.7	0.134	0.400	mg/L		2	MAR1	01/26/17	0915	1633027	2
Metals Analysis-IO	CP-MS											
200.8/200.2 NPD	ES Metals "As Re	ceived"										
Lithium	J	6.05	2.00	10.0	ug/L	1.00	1	BAJ	01/24/17	2202	1633112	3
Rad Gas Flow Pro	portional Counting	g										
GFPC, Ra228, Liq	juid "As Received	"										
Radium-228	U	ND	1.99	3.00	pCi/L			AXM6	01/31/17	1014	1633896	4
Rad Radium-226												
Lucas Cell, Ra226	, liquid "As Recei	ved"										
Radium-226	U	ND	0.261	1.00	pCi/L			LXP1	02/13/17	1005	1633270	5
The following Pre	p Methods were p	erformed:										
Method	Description	n		Analyst	Date	-	Гim	e Pr	ep Batch			
EPA 200.2	ICP-MS 200.	2 PREP		CXW4	01/20/17	1	1700	16	33111			
FF1 6 11												

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	·
2	EPA 300.0	
3	EPA 200.8 SC_NPDES	
4	EPA 904.0/SW846 9320 Modified	

EPA 903.1 Modified

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits (15%-125%) Barium-133 Tracer GFPC, Ra228, Liquid "As Received" 96.9

Notes:

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: February 16, 2017

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner
Project: Williams 52

Client Sample ID: GW-21 Project: SCEG01616C Sample ID: 414666005 Client ID: GEEL003

Parameter Qualifier Result DL RL Units PF DF Analyst Date Time Batch Method

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: February 16, 2017

SCEG01616C

GEEL003

Company:

GEL Engineering, LLC 2040 Savage Rd

Address: 204

Charleston, South Carolina 29417

Contact:

Robert Gardner

Project: Willi Client Sample ID: DUP

Williams 52

Sample ID:

414666006

Matrix:

Ground Water

Collect Date:

19-JAN-17 13:15

Receive Date: Collector:

20-JAN-17 Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatograph	hy											
EPA300.0 Fluoride	e in Liquid "As Re	eceived"										
Fluoride	•	0.287	0.033	0.100	mg/L		1	MAR1	01/24/17	1914	1633027	1
Chloride		10.8	0.134	0.400	mg/L		2	MAR1	01/26/17	0944	1633027	2
Metals Analysis-IO	CP-MS											
200.8/200.2 NPDI	ES Metals "As Re	ceived"										
Lithium	J	5.62	2.00	10.0	ug/L	1.00	1	BAJ	01/24/17	2205	1633112	3
Rad Gas Flow Prop	portional Counting	g										
GFPC, Ra228, Liq	uid "As Received	"										
Radium-228	U	ND	1.56	3.00	pCi/L			AXM6	01/31/17	1014	1633896	4
Rad Radium-226												
Lucas Cell, Ra226	, liquid "As Recei	ved"										
Radium-226	•	0.793	0.506	1.00	pCi/L			LXP1	02/13/17	1005	1633270	5
The following Prep	p Methods were p	erformed:										
Method	Description	n		Analyst	Date	,	Time	Pre	ep Batch			
EPA 200.2	ICP-MS 200.	2 PREP		CXW4	01/20/17		1700	163	33111			
TT1 C-11 A	.1 .21 M . 4 1.											

The following Analytical Methods were performed:

Method	Description	Analyst Comments	
1	EPA 300.0	•	
2	EPA 300.0		
3	EPA 200.8 SC_NPDES		
4	EPA 904.0/SW846 9320 Modified		
5	EPA 903.1 Modified		

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits

Barium-133 Tracer GFPC, Ra228, Liquid "As Received"

90.4 (15%-125%)

Notes:

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: February 16, 2017

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: DUP Project: SCEG01616C Sample ID: 414666006 Client ID: GEEL003

Parameter Qualifier Result	DL	RL	Units	PF	DF Analyst Date	Time Batch Method
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Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: February 16, 2017

SCEG01616C

GEEL003

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: Field Blank Sample ID: 414666007

Matrix: Water

Collect Date: 19-JAN-17 13:30
Receive Date: 20-JAN-17
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatography	y											
EPA300.0 Fluoride	in Liquid "As Re	ceived"										
Chloride	J	0.0822	0.067	0.200	mg/L		1	MAR1	01/24/17	1943	1633027	1
Fluoride	U	ND	0.033	0.100	mg/L		1					
Metals Analysis-ICI	P-MS											
200.8/200.2 NPDE	S Metals "As Red	eived"										
Lithium	U	ND	2.00	10.0	ug/L	1.00	1	BAJ	01/24/17	2207	1633112	2
Rad Gas Flow Propo	ortional Counting	,										
GFPC, Ra228, Liqu	id "As Received"	1										
Radium-228	U	ND	1.59	3.00	pCi/L			AXM6	01/31/17	1014	1633896	3
Rad Radium-226												
Lucas Cell, Ra226,	liquid "As Receiv	/ed"										
Radium-226	U	ND	0.327	1.00	pCi/L			LXP1	02/13/17	1005	1633270	4
The following Prep	Methods were pe	erformed:										
Method	Description	1		Analyst	Date	-	Time	Pr	ep Batch			
EPA 200.2	ICP-MS 200.2	2 PREP		CXW4	01/20/17		1700	163	33111			

The following Analytical Methods were performed:

MethodDescriptionAnalyst Comments1EPA 300.02EPA 200.8 SC_NPDES

3 EPA 904.0/SW846 9320 Modified

4 EPA 903.1 Modified

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits

Barium-133 Tracer GFPC, Ra228, Liquid "As Received" 90.6 (15%-125%)

Notes:

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: February 16, 2017

SCEG01616C

GEEL003

Company:

GEL Engineering, LLC

Address:

2040 Savage Rd

Charleston, South Carolina 29417

Contact: Project:

Robert Gardner Williams 52

Client Sample ID: GW-22D

Sample ID:

414666008

Matrix: Collect Date: Ground Water

Receive Date:

19-JAN-17 13:56 20-JAN-17

Collector:

Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatograph	y											
EPA300.0 Fluoride	in Liquid "As Re	ceived"										
Fluoride	•	0.366	0.033	0.100	mg/L		1	MAR1	01/24/17	2012	1633027	1
Chloride		10.1	0.134	0.400	mg/L		2	MAR1	01/26/17	1013	1633027	2
Metals Analysis-IC	P-MS											
200.8/200.2 NPDE	S Metals "As Red	ceived"										
Lithium		16.1	2.00	10.0	ug/L	1.00	1	BAJ	01/24/17	2210	1633112	3
Rad Gas Flow Prop	ortional Counting	Ţ,										
GFPC, Ra228, Liqu	id "As Received"	1										
Radium-228	U	ND	2.08	3.00	pCi/L			AXM6	01/31/17	1014	1633896	4
Rad Radium-226												
Lucas Cell, Ra226,	liquid "As Receiv	ved"										
Radium-226	U	ND	0.426	1.00	pCi/L			LXP1	02/13/17	1005	1633270	5
The following Prep	Methods were pe	erformed:										
Method	Description	1		Analyst	Date	7	Гіте	e Pr	ep Batch			
EPA 200.2	ICP-MS 200.2	2 PREP		CXW4	01/20/17	1	1700	16	33111			

The following Analytical Methods were performed:

Method	Description	Analyst Comments	
1	EPA 300.0	•	
2	EPA 300.0		
3	EPA 200.8 SC_NPDES		
4	EPA 904.0/SW846 9320 Modified		
5	EPA 903.1 Modified		

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits 92.5 (15%-125%) Barium-133 Tracer GFPC, Ra228, Liquid "As Received"

Notes:

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: February 16, 2017

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner
Project: Williams 52

Client Sample ID: GW-22D Project: SCEG01616C Sample ID: 414666008 Client ID: GEEL003

Parameter Qualifier Result	DL	RL	Units	PF	DF Analyst Date	Time Batch Method
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Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: February 16, 2017

SCEG01616C

GEEL003

Company:

GEL Engineering, LLC

Address:

2040 Savage Rd

Charleston, South Carolina 29417

Contact: Project:

Robert Gardner Williams 52

Client Sample ID: GW-23D

Sample ID:

414666009

Matrix: Collect Date: Ground Water 19-JAN-17 14:43

Receive Date:

20-JAN-17

Collector:

Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatograp	hy											
EPA300.0 Fluorid	e in Liquid "As Re	eceived"										
Fluoride	•	0.434	0.033	0.100	mg/L		1	MAR1	01/24/17	2139	1633027	1
Chloride		15.0	0.134	0.400	mg/L		2	MAR1	01/26/17	1042	1633027	2
Metals Analysis-IO	CP-MS											
200.8/200.2 NPD	ES Metals "As Re	ceived"										
Lithium	J	6.66	2.00	10.0	ug/L	1.00	1	BAJ	01/24/17	2213	1633112	3
Rad Gas Flow Pro	portional Counting	g										
GFPC, Ra228, Lic	uid "As Received	"										
Radium-228	U	ND	1.72	3.00	pCi/L			AXM6	01/31/17	1018	1633896	4
Rad Radium-226												
Lucas Cell, Ra226	, liquid "As Recei	ved"										
Radium-226	•	0.617	0.345	1.00	pCi/L			LXP1	02/13/17	1040	1633270	5
The following Pre	p Methods were p	erformed:										
Method	Description	n		Analyst	Date	,	Time	Pre	ep Batch			
EPA 200.2	ICP-MS 200.	2 PREP		CXW4	01/20/17		1700	163	33111			
TD1 - C-11 - ' A	.1 .41 M1 1 .											

The following Analytical Methods were performed:

Method	Description	Analyst Comments	
1	EPA 300.0	•	
2	EPA 300.0		
3	EPA 200.8 SC_NPDES		
4	EPA 904.0/SW846 9320 Modified		
5	EPA 903.1 Modified		

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits 89.9 (15%-125%) Barium-133 Tracer GFPC, Ra228, Liquid "As Received"

Notes:

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: February 16, 2017

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-23D Project: SCEG01616C Sample ID: 414666009 Client ID: GEEL003

Parameter Qualifier Result	DL RL	Units PF DF Analyst Date Time Batch Method
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Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: February 16, 2017

SCEG01616C

GEEL003

Company:

GEL Engineering, LLC

2040 Savage Rd Address:

Charleston, South Carolina 29417

Contact: Project:

Robert Gardner Williams 52

Client Sample ID: GW-25

Sample ID:

414666010

20-JAN-17

Matrix: Collect Date: Ground Water

Receive Date:

19-JAN-17 15:36

Collector:

Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatogra	phy											
EPA300.0 Fluorio	de in Liquid "As Re	eceived"										
Fluoride	•	0.723	0.033	0.100	mg/L		1	MAR1	01/24/17	2207	1633027	1
Chloride		21.6	0.335	1.00	mg/L		5	MAR1	01/27/17	1618	1633027	2
Metals Analysis-	ICP-MS											
200.8/200.2 NPI	DES Metals "As Red	ceived"										
Lithium	J	8.16	2.00	10.0	ug/L	1.00	1	BAJ	01/24/17	2215	1633112	3
Rad Gas Flow Pr	oportional Counting	g S										
GFPC, Ra228, Li	iquid "As Received'	"										
Radium-228	U	ND	1.14	3.00	pCi/L			AXM6	01/31/17	1018	1633896	4
Rad Radium-226												
Lucas Cell, Ra22	6, liquid "As Recei	ved"										
Radium-226	•	0.306	0.234	1.00	pCi/L			LXP1	02/13/17	1040	1633270	5
The following Pr	ep Methods were pe	erformed:										
Method	Description	n		Analyst	Date	1	Tim	e Pr	ep Batch			
EPA 200.2	ICP-MS 200.			CXW4	01/20/17		1700	16	33111			
TD1 - C-11	1		1.									

The following Analytical Methods were performed:

Method	Description		Analyst Co	omments	
1	EPA 300.0		-		
2	EPA 300.0				
3	EPA 200.8 SC_NPDES				
4	EPA 904.0/SW846 9320 Modified				
5	EPA 903.1 Modified				
Surrogate/Trace	r Recovery Test	Pacult	Nominal	Pacovary%	Acceptable Limits

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits Barium-133 Tracer GFPC, Ra228, Liquid "As Received" 97.1 (15%-125%)

Notes:

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: February 16, 2017

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-25 Project: SCEG01616C Sample ID: 414666010 Client ID: GEEL003

Parameter Qualifier Result DL RL Units PF DF Analyst Date Time Batch Method

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: February 16, 2017

Page 1 of 4

GEL Engineering, LLC 2040 Savage Rd

Charleston, South Carolina

Contact: Robert Gardner

Workorder: 414666

Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range Anlst	Date Time
Ion Chromatography Batch 1633027								
QC1203712222 414666010 DUP Chloride		21.6	21.5	mg/L	0.363		(0%-20%) MAR1	01/27/17 16:47
Fluoride		0.723	0.727	mg/L	0.551		(0%-20%)	01/24/17 22:36
QC1203714085 414775003 DUP Chloride		10.1	10.1	mg/L	0.0258		(0%-20%)	01/26/17 15:02
Fluoride		0.288	0.290	mg/L	0.865	\	(+/-0.100)	01/25/17 01:30
QC1203712221 LCS Chloride	5.00		4.91	mg/L		98.2	(90%-110%)	01/24/17 16:21
Fluoride	2.50		2.53	mg/L		101	(90%-110%)	
QC1203712220 MB Chloride		U	ND	mg/L				01/24/17 15:52
Fluoride		U	ND	mg/L				
QC1203712223 414666010 PS Chloride	5.00	4.31	9.77	mg/L		109	(90%-110%)	01/27/17 17:15
Fluoride	2.50	0.723	3.20	mg/L		99.1	(90%-110%)	01/24/17 23:05
QC1203714086 414775003 PS Chloride	5.00	5.03	10.6	mg/L		111*	(90%-110%)	01/26/17 15:31
Fluoride	2.50	0.288	2.75	mg/L		98.3	(90%-110%)	01/25/17 01:59

GEL LABORATORIES LLC 2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

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Workorder: 414666								Page 2 of 4
Parmname	NOM	Sample (Qual QC	Units	RPD%	REC%	Range Anlst	Date Time
Metals Analysis - ICPMS Batch 1633112 —								
QC1203712445 414666001 DUI Lithium	Р	21.3	21.5	ug/L	0.654 ^		(+/-10.0) BAJ	01/24/17 21:41
QC1203712444 LCS Lithium	50.0		50.4	ug/L		101	(80%-120%)	01/24/17 21:36
QC1203712443 MB Lithium			U ND	ug/L				01/24/17 21:33
QC1203712446 414666001 MS Lithium	50.0	21.3	73.8	ug/L		105	(75%-125%)	01/24/17 21:44
QC1203712447 414666001 SDI Lithium	LT	21.3	J 4.25	ug/L	.488		(0%-10%)	01/24/17 21:46
Rad Gas Flow Batch 1633896 —								
QC1203714548 414945004 DUI Radium-228	P U	0.961	1.84	pCi/L	62.8		(0% - 100%) AXM6	01/31/17 10:21
QC1203714549 LCS Radium-228	21.1		22.6	pCi/L		107	(75%-125%)	01/31/17 10:21
QC1203714547 MB Radium-228			U 0.988	pCi/L				01/31/17 11:37
Rad Ra-226 Batch 1633270 —								
QC1203712844 414666001 DUI Radium-226	P U	0.198	0.345	pCi/L	54.2		(0% - 100%) LXP1	02/13/17 11:10
QC1203712846 LCS Radium-226	26.0		24.3	pCi/L		93.7	(75%-125%)	02/13/17 11:40

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QC Summary

Workorder: 414666									Page 3 of 4
Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range A	Anlst	Date Time
Rad Ra-226									
Batch 1633270									
QC1203712843 MB									
Radium-226			0.314	pCi/L				LXP1	02/13/17 11:10
QC1203712845 414666001 MS									
Radium-226	130 U	0.198	133	pCi/L		102	(75%-125%)		02/13/17 11:10

Notes:

The Qualifiers in this report are defined as follows:

Analyte is a Tracer compound

- Result is less than value reported <
- Result is greater than value reported >
- В The target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- Ε % difference of sample and SD is >10%. Sample concentration must meet flagging criteria
- Ε General Chemistry--Concentration of the target analyte exceeds the instrument calibration range
- FA Failed analysis.
- FΒ Mercury was found present at quantifiable concentrations in field blanks received with these samples. Data associated with the blank are deemed invalid for reporting to regulatory agencies
- Analytical holding time was exceeded Η
- Value is estimated
- K Analyte present. Reported value may be biased high. Actual value is expected to be lower.
- L Analyte present. Reported value may be biased low. Actual value is expected to be higher.
- M M if above MDC and less than LLD
- M REMP Result > MDC/CL and < RDL
- Metals--The Matrix spike sample recovery is not within specified control limits N
- N/A RPD or %Recovery limits do not apply.
- N1See case narrative
- ND Analyte concentration is not detected above the detection limit
- NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Q One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
- R Per section 9.3.4.1 of Method 1664 Revision B, due to matrix spike recovery issues, this result may not be reported or used for regulatory compliance purposes.
- R Sample results are rejected
- U Analyte was analyzed for but not detected above the Lc
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 414666

Page 4 of 4

Parmname NOM Sample Qual QC Units RPD% REC% Range AnIst Date Time

Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time

- UI Gamma Spectroscopy--Uncertain identification
- UJ Gamma Spectroscopy--Uncertain identification
- UL Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y Other specific qualifiers were required to properly define the results. Consult case narrative.
- Z Paint Filter Test--Particulates passed through the filter, however no free liquids were observed.
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
- d 5-day BOD--The 2:1 depletion requirement was not met for this sample
- e 5-day BOD--Test replicates show more than 30% difference between high and low values. The data is qualified per the method and can be used for reporting purposes
- h Preparation or preservation holding time was exceeded

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable. ^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

* Indicates that a Quality Control parameter was not within specifications.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.



Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

REPORT TO:

Mike Moore C221

Sample ID: AB25389

Williams Hwy 52 GW 10-NPDES/CCR

Date & Time Sampled: January 19, 2017 09:26

Date & Time Submitted: January 20, 2017 14:35

Collected by: C.SANDEL Location Code: WLG10TDS

GW 10 Login Record File: 170123003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	17.1	0.50	mg/L	2/1/17 12:50	EB
pH by SM4500HB	10.36	0.00	S.U.	1/23/17 10:47	BF
Holding Time of 15 minutes has been e	xceeded.				
Sulfates by IC EPA 300.0	9.54	0.50	mg/L	2/1/17 12:50	EB
Total Dissolved Solid-SM2540C	204	2.0	mg/L	1/24/17 13:30	BF

Approved By:		



Tel: (803)217-9384 Fax: (803) 217-9911

REPORT TO:

Mike Moore C221

January 25, 2018

Sample ID: AB25390

Williams Hwy 52 GW 11-NPDES/CCR

Date & Time Sampled: January 19, 2017 10:10

Date & Time Submitted: January 20, 2017 14:35

Collected by: C.SANDEL Location Code: WLG11TDS

GW 11 Login Record File: 170123003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	3.04	0.50	mg/L	2/1/17 12:50	EB
pH by SM4500HB	6.58	0.00	S.U.	1/23/17 10:47	BF
Holding Time of 15 minutes has been	exceeded.				
Sulfates by IC EPA 300.0	5.13	0.50	mg/L	2/1/17 12:50	EB
Total Dissolved Solid-SM2540C	89	2.0	mg/L	1/24/17 13:30	BF



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REPORT TO:

Mike Moore C221

January 25, 2018

Sample ID: AB25391

Williams Hwy 52 GW 28-NPDES/CCR

Date & Time Sampled: January 19, 2017 10:59

Date & Time Submitted: January 20, 2017 14:35

Collected by: C.SANDEL Location Code: WLG28TDS

GW 28 Login Record File: 170123003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysi Date & Time	Chemist
Chlorides by IC EPA 300.0	3.98	0.50	mg/L	2/1/17 12:50) EB
pH by SM4500HB	6.68	0.00	S.U.	1/23/17 10:4	7 BF
Holding Time of 15 minutes has been	exceeded.				
Sulfates by IC EPA 300.0	.827	0.50	mg/L	2/1/17 12:50) EB
Total Dissolved Solid-SM2540C	96	2.0	mg/L	1/24/17 13:30) BF



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January 25, 2018

REPORT TO:

Mike Moore C221

Sample ID: AB25392

Williams Hwy 52 GW 20-NPDES/CCR

Date & Time Sampled: January 19, 2017 12:06

Date & Time Submitted: January 20, 2017 14:35

Collected by: C.SANDEL Location Code: WLG20TDS

GW 20 Login Record File: 170123003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysi Date & Time	S Chemist
Chlorides by IC EPA 300.0	10.2	0.50	mg/L	2/1/17 12:50) ЕВ
pH by SM4500HB	6.75	0.00	S.U.	1/23/17 10:4	7 BF
Holding Time of 15 minutes has been ex	xceeded.				
Sulfates by IC EPA 300.0	12.1	0.50	mg/L	2/1/17 12:50) EB
Total Dissolved Solid-SM2540C	624	2.0	mg/L	1/24/17 13:30) BF

Approved By:		



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REPORT TO:

Mike Moore C221

January 25, 2018

Sample ID: AB25393

Williams Hwy 52 GW 21-NPDES/CCR

Date & Time Sampled: January 19, 2017 12:54

Date & Time Submitted: January 20, 2017 14:35

Collected by: C.SANDEL Location Code: WLG21TDS

GW 21 Login Record File: 170123003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	11.0	0.50	mg/L	2/1/17 12:50	EB
pH by SM4500HB	6.82	0.00	S.U.	1/23/17 10:47	BF
Holding Time of 15 minutes has been e	exceeded.				
Sulfates by IC EPA 300.0	9.78	0.50	mg/L	2/1/17 12:50	EB
Total Dissolved Solid-SM2540C	590	2.0	mg/L	1/24/17 13:30	BF

Approved By:		
AUDIOVED DV.		



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January 25, 2018

REPORT TO:

Mike Moore C221

Sample ID: AB25394

Williams Hwy 52 DUP -NPDES/CCR

Date & Time Sampled: January 19, 2017 13:15

Date & Time Submitted: January 20, 2017 14:35

Collected by: C.SANDEL Location Code: WLGDUPTDS

GW 10 Login Record File: 170123003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed An Date & Tir	_	Chemist
Chlorides by IC EPA 300.0	11.0	0.50	mg/L	2/1/17	12:50	EB
pH by SM4500HB	6.83	0.00	S.U.	1/23/17	10:47	BF
Holding Time of 15 minutes has been exceeded.						
Sulfates by IC EPA 300.0	8.15	0.50	mg/L	2/1/17	12:50	EB
Total Dissolved Solid-SM2540C	608	2.0	mg/L	1/24/17	13:30	BF

Approved By:		



REPORT TO:

Central Laboratory (P-08) 2102 North Lake Drive Columbia, SC 29212

Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

Mike Moore C221

Sample ID: AB25395

Williams Hwy 52 FIELD BLANK-NPDES/CCR

Date & Time Sampled: January 19, 2017 13:30

Date & Time Submitted: January 20, 2017 14:35

Collected by: C.SANDEL Location Code: WLGFBTDS

GW 10 Login Record File: 170123003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	Less than	0.50	mg/L	2/1/17 12:50	EB
pH by SM4500HB	8.13	0.00	S.U.	1/23/17 10:47	BF
Holding Time of 15 minutes has been e	xceeded.				
Sulfates by IC EPA 300.0	Less than	0.50	mg/L	2/1/17 12:50	EB
Total Dissolved Solid-SM2540C	3	2.0	mg/L	1/24/17 13:30	BF

Approved By:		



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REPORT TO:

Mike Moore C221

January 25, 2018

Sample ID: AB25396

Williams Hwy 52 GW 22D-NPDES/CCR

Date & Time Sampled: January 19, 2017 13:56

Date & Time Submitted: January 20, 2017 14:35

Collected by: C.SANDEL Location Code: WLG22DTDS

GW 22D Login Record File: 170123003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	10.2	0.50	mg/L	2/1/17 12:50	EB
pH by SM4500HB	7.26	0.00	S.U.	1/23/17 10:47	BF
Holding Time of 15 minutes has been e	exceeded.				
Sulfates by IC EPA 300.0	63.0	0.50	mg/L	2/1/17 12:50	EB
Total Dissolved Solid-SM2540C	544	2.0	mg/L	1/24/17 13:30	BF



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January 25, 2018

REPORT TO:

Mike Moore C221

Sample ID: AB25397

Williams Hwy 52 GW 23D-NPDES/CCR

Date & Time Sampled: January 19, 2017 14:43 Date & Time Submitted: January 20, 2017 14:35

Collected by: C.SANDEL Location Code: WLG23DTDS

GW 23D Login Record File: 170123003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist	
Chlorides by IC EPA 300.0	14.8	0.50	mg/L	2/1/17 12:50	EB	
pH by SM4500HB	7.35	0.00	S.U.	1/23/17 10:47	BF	
Holding Time of 15 minutes has been exceeded.						
Sulfates by IC EPA 300.0	32.6	0.50	mg/L	2/1/17 12:50	EB	
Total Dissolved Solid-SM2540C	421	2.0	mg/L	1/24/17 13:30	BF	

Approved By:		



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REPORT TO:

Mike Moore C221

January 25, 2018
Sample ID: AB25398

Williams Hwy 52 GW 25-NPDES/CCR

Date & Time Sampled: January 19, 2017 15:36

Date & Time Submitted: January 20, 2017 14:35

Collected by: C.SANDEL Location Code: WLG25TDS

GW 25 Login Record File: 170123003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysi Date & Time	Chemist
Chlorides by IC EPA 300.0	22.3	0.50	mg/L	2/1/17 12:50	0 EB
pH by SM4500HB	7.11	0.00	S.U.	1/23/17 10:4	7 BF
Holding Time of 15 minutes has been	exceeded.				
Sulfates by IC EPA 300.0	40.3	0.50	mg/L	2/1/17 12:50	O EB
Total Dissolved Solid-SM2540C	519	2.0	mg/L	1/24/17 13:30	0 BF

Approved By:		



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REPORT TO:

Mike Moore C221

January 25, 2018

Sample ID: AB25399

Williams Hwy 52 GW 24-NPDES/CCR

Date & Time Sampled: January 20, 2017 08:33

Date & Time Submitted: January 20, 2017 14:35

Collected by: C.SANDEL Location Code: WLG24TDS

GW 24 Login Record File: 170123003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist	
Chlorides by IC EPA 300.0	17.8	0.50	mg/L	2/1/17 12:50	EB	
pH by SM4500HB	6.69	0.00	S.U.	1/23/17 10:47	BF	
Holding Time of 15 minutes has been exceeded.						
Sulfates by IC EPA 300.0	12.0	0.50	mg/L	2/1/17 12:50	EB	
Total Dissolved Solid-SM2540C	543	2.0	mg/L	1/24/17 13:30	BF	

Approved By:		



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January 25, 2018

REPORT TO:

Mike Moore C221

Sample ID: AB25400

Williams Hwy 52 GW 26-NPDES/CCR

Date & Time Sampled: January 20, 2017 09:17

Date & Time Submitted: January 20, 2017 14:35

Collected by: C.SANDEL Location Code: WLG26TDS

GW 26 Login Record File: 170123003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analys Date & Time	Chemist
Chlorides by IC EPA 300.0	155	1.00	mg/L	2/1/17 12:5	0 EB
pH by SM4500HB	6.28	0.00	S.U.	1/23/17 10:4	7 BF
Holding Time of 15 minutes has been e	xceeded.				
Sulfates by IC EPA 300.0	75.6	1.00	mg/L	2/1/17 12:5	0 EB
Total Dissolved Solid-SM2540C	884	2.0	mg/L	1/24/17 13:3	0 BF



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January 25, 2018

REPORT TO:

Mike Moore C221

Sample ID: AB25401

Williams Hwy 52 GW 27-NPDES/CCR

Date & Time Sampled: January 20, 2017 10:32

Date & Time Submitted: January 20, 2017 14:35

Collected by: C.SANDEL Location Code: WLG27TDS

GW 27 Login Record File: 170123003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	10.1	0.50	mg/L	2/1/17 12:50	EB
pH by SM4500HB	7.07	0.00	S.U.	1/23/17 10:47	BF
Holding Time of 15 minutes has been ex	xceeded.				
Sulfates by IC EPA 300.0	12.0	0.50	mg/L	2/1/17 12:50	EB
Total Dissolved Solid-SM2540C	294	2.0	mg/L	1/24/17 13:30	BF

Approved By:		



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_____ January 25, 2018

REPORT TO:

Mike Moore C221

Sample ID: AB25402

Williams Hwy 52 GW 10-NPDES/CCR

Date & Time Sampled: January 19, 2017 09:26

Date & Time Submitted: January 20, 2017 14:35

Collected by: C.SANDEL Location Code: WLG10TM

GW 10 Login Record File: 170123003

1							
Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist			
Less than	1.0	ppb	1/23/17 15:49	MC			
2.5	1.0	ppb	1/23/17 15:49	MC			
54.3	10	ppb	1/25/17 15:26	PRC			
Less than	2.0	ppb	1/25/17 15:26	PRC			
Less than	1000	ppb	1/25/17 15:26	PRC			
Less than	1.0	ppb	1/23/17 15:49	MC			
14830	100	ppb	1/25/17 15:26	PRC			
Less than	1.0	ppb	1/23/17 15:49	MC			
Less than	1.0	ppb	1/23/17 15:49	MC			
Less than	1.0	ppb	1/23/17 15:49	MC			
20.6	2	ppb	1/25/17 15:26	PRC			
Less than	0.2	ppb	1/24/17 15:58	PRC			
4.7	1.0	ppb	1/23/17 15:49	MC			
Less than	5.0	ppb	1/23/17 15:49	MC			
Less than	1.0	ppb	1/23/17 15:49	MC			
	Less than 2.5 54.3 Less than Less than 14830 Less than Less than Less than 4.7 Less than	Result Limit(MRL) Less than 1.0 2.5 1.0 54.3 10 Less than 2.0 Less than 1000 Less than 1.0 Less than 1.0 Less than 1.0 Less than 1.0 Less than 0.2 Less than 0.2 Less than 5.0	Result Limit(MRL) Units Less than 1.0 ppb 2.5 1.0 ppb 54.3 10 ppb Less than 2.0 ppb Less than 1000 ppb Less than 1.0 ppb Less than 0.2 ppb Less than 0.2 ppb Less than 5.0 ppb	Result Limit(MRL) Units Date & Time Less than 1.0 ppb 1/23/17 15:49 2.5 1.0 ppb 1/23/17 15:49 54.3 10 ppb 1/25/17 15:26 Less than 2.0 ppb 1/25/17 15:26 Less than 1000 ppb 1/25/17 15:26 Less than 1.0 ppb 1/23/17 15:49 Less than 0.2 ppb 1/25/17 15:26 Less than 0.2 ppb 1/23/17 15:58 4.7 1.0 ppb 1/23/17 15:49 Less than 5.0 ppb 1/23/17 15:49			

Approved By:



Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

REPORT TO:

Mike Moore C221

Sample ID: AB25403

Williams Hwy 52 GW 11-NPDES/CCR

Date & Time Sampled: January 19, 2017 10:10

Date & Time Submitted: January 20, 2017 14:35

Collected by: C.SANDEL Location Code: WLG11TM

GW 11 Login Record File: 170123003

200 Ti					<u> </u>	
CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist	
Antimony by ICP-MS 200.8	Less than	1.0	ppb	1/23/17 15:49	MC	
Arsenic by ICP_MS 200.8	1.4	1.0	ppb	1/23/17 15:49	MC	
Barium by ICP-OES 200.7	Less than	10	ppb	1/25/17 15:26	PRC	
Beryllium EPA 200.7	Less than	2.0	ppb	1/25/17 15:26	PRC	
Boron - EPA 200.7	Less than	1000	ppb	1/25/17 15:26	PRC	
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	1/23/17 15:49	MC	
Calcium EPA 200.7	15600	100	ppb	1/25/17 15:26	PRC	
Chromium by ICP_MS 200.8	4.5	1.0	ppb	1/23/17 15:49	MC	
Cobalt by ICP_MS 200.8	Less than	1.0	ppb	1/23/17 15:49	MC	
Lead by ICP-MS 200.8	1.0	1.0	ppb	1/23/17 15:49	MC	
Lithium (CWA) 200.7	4.6	2	ppb	1/25/17 15:26	PRC	
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	1/24/17 15:58	PRC	
Molybdenum - EPA 200.8	Less than	1.0	ppb	1/23/17 15:49	MC	
Selenium by ICP-MS 200.8	Less than	5.0	ppb	1/23/17 15:49	MC	
Thallium by ICP-MS 200.8	Less than	1.0	ppb	1/23/17 15:49	MC	

Approved By:	



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January 25, 2018

REPORT TO:

Mike Moore C221

Sample ID: AB25404

Williams Hwy 52 GW 28-NPDES/CCR

Date & Time Sampled: January 19, 2017 10:59

Date & Time Submitted: January 20, 2017 14:35

Collected by: C.SANDEL Location Code: WLG28TM

GW 28 Login Record File: 170123003

Desuit	Reporting		Completed Analysis	
Result	Limit(MRL)	Units	Date & Time	Chemist
Less than	1.0	ppb	1/23/17 15:49	MC
Less than	1.0	ppb	1/23/17 15:49	MC
10.1	10	ppb	1/26/17 15:26	PRC
Less than	2.0	ppb	1/26/17 15:26	PRC
Less than	1000	ppb	1/26/17 15:26	PRC
Less than	1.0	ppb	1/23/17 15:49	MC
29900	100	ppb	1/26/17 15:26	PRC
Less than	1.0	ppb	1/23/17 15:49	MC
Less than	1.0	ppb	1/23/17 15:49	MC
Less than	1.0	ppb	1/23/17 15:49	MC
Less than	2	ppb	1/26/17 15:26	PRC
Less than	0.2	ppb	1/24/17 15:58	PRC
Less than	1.0	ppb	1/23/17 15:49	MC
Less than	5.0	ppb	1/23/17 15:49	MC
Less than	1.0	ppb	1/23/17 15:49	MC
	Less than 10.1 Less than Less than 29900 Less than Less than	Less than 1.0 Less than 1.0 10.1 10 Less than 2.0 Less than 1000 Less than 1.0 29900 100 Less than 1.0 Less than 1.0 Less than 2 Less than 0.2 Less than 1.0 Less than 5.0	Less than 1.0 ppb Less than 1.0 ppb 10.1 10 ppb Less than 2.0 ppb Less than 1000 ppb Less than 1.0 ppb Less than 1.0 ppb Less than 1.0 ppb Less than 1.0 ppb Less than 2 ppb Less than 0.2 ppb Less than 1.0 ppb Less than 5.0 ppb	Less than 1.0 ppb 1/23/17 15:49 Less than 1.0 ppb 1/23/17 15:49 10.1 10 ppb 1/26/17 15:26 Less than 2.0 ppb 1/26/17 15:26 Less than 1000 ppb 1/26/17 15:26 Less than 1.0 ppb 1/23/17 15:49 Less than 2 ppb 1/26/17 15:58 Less than 0.2 ppb 1/23/17 15:49 Less than 1.0 ppb 1/23/17 15:49 Less than 5.0 ppb 1/23/17 15:49

Approved By:	



Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

REPORT TO:

Mike Moore C221

Sample ID: AB25405

Williams Hwy 52 GW 20-NPDES/CCR

Date & Time Sampled: January 19, 2017 12:06

Date & Time Submitted: January 20, 2017 14:35

Collected by: C.SANDEL Location Code: WLG20TM

GW 20 Login Record File: 170123003

011 20		_5gm (1000/4 / me. 170120000			
CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Antimony by ICP-MS 200.8	Less than	1.0	ppb	1/23/17 15:49	MC
Arsenic by ICP_MS 200.8	5.2	1.0	ppb	1/23/17 15:49	MC
Barium by ICP-OES 200.7	47.6	10	ppb	1/25/17 15:26	PRC
Beryllium EPA 200.7	Less than	2.0	ppb	1/25/17 15:26	PRC
Boron - EPA 200.7	Less than	1000	ppb	1/25/17 15:26	PRC
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	1/23/17 15:49	MC
Calcium EPA 200.7	154000	100	ppb	1/25/17 15:26	PRC
Chromium by ICP_MS 200.8	Less than	1.0	ppb	1/23/17 15:49	MC
Cobalt by ICP_MS 200.8	1.9	1.0	ppb	1/23/17 15:49	MC
Lead by ICP-MS 200.8	Less than	1.0	ppb	1/23/17 15:49	MC
Lithium (CWA) 200.7	5.0	2	ppb	1/25/17 15:26	PRC
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	1/24/17 15:58	PRC
Molybdenum - EPA 200.8	1.4	1.0	ppb	1/23/17 15:49	MC
Selenium by ICP-MS 200.8	Less than	5.0	ppb	1/23/17 15:49	MC
Thallium by ICP-MS 200.8	Less than	1.0	ppb	1/23/17 15:49	MC

Approved By:



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_____ January 25, 2018

REPORT TO:

Mike Moore C221

Sample ID: AB25406

Williams Hwy 52 GW 21-NPDES/CCR

Date & Time Sampled: January 19, 2017 12:54

Date & Time Submitted: January 20, 2017 14:35

Collected by: C.SANDEL Location Code: WLG21TM

GW 21 Login Record File: 170123003

			- 3		
CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Antimony by ICP-MS 200.8	Less than	1.0	ppb	1/23/17 15:49	MC
Arsenic by ICP_MS 200.8	3.0	1.0	ppb	1/23/17 15:49	MC
Barium by ICP-OES 200.7	33.5	10	ppb	1/25/17 15:26	PRC
Beryllium EPA 200.7	Less than	2.0	ppb	1/25/17 15:26	PRC
Boron - EPA 200.7	Less than	1000	ppb	1/25/17 15:26	PRC
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	1/23/17 15:49	MC
Calcium EPA 200.7	128600	1000	ppb	1/25/17 15:26	PRC
Chromium by ICP_MS 200.8	Less than	1.0	ppb	1/23/17 15:49	MC
Cobalt by ICP_MS 200.8	2.1	1.0	ppb	1/23/17 15:49	MC
Lead by ICP-MS 200.8	Less than	1.0	ppb	1/23/17 15:49	MC
Lithium (CWA) 200.7	5.7	2	ppb	1/25/17 15:26	PRC
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	1/24/17 15:58	PRC
Molybdenum - EPA 200.8	1.3	1.0	ppb	1/23/17 15:49	MC
Selenium by ICP-MS 200.8	Less than	5.0	ppb	1/23/17 15:49	MC
Thallium by ICP-MS 200.8	Less than	1.0	ppb	1/23/17 15:49	MC
<u> </u>					



Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

REPORT TO:

Mike Moore C221

Sample ID: AB25407

Williams Hwy 52 DUP -NPDES/CCR

Date & Time Sampled: January 19, 2017 13:15

Date & Time Submitted: January 20, 2017 14:35

Collected by: C.SANDEL Location Code: WLGDUPTM

GW 10 Login Record File: 170123003

011 10			g		
CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Antimony by ICP-MS 200.8	Less than	1.0	ppb	1/23/17 15:49	MC
Arsenic by ICP_MS 200.8	2.9	1.0	ppb	1/23/17 15:49	MC
Barium by ICP-OES 200.7	33.6	10	ppb	1/25/17 15:26	PRC
Beryllium EPA 200.7	Less than	2.0	ppb	1/25/17 15:26	PRC
Boron - EPA 200.7	Less than	1000	ppb	1/25/17 15:26	PRC
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	1/23/17 15:49	MC
Calcium EPA 200.7	128400	1000	ppb	1/25/17 15:26	PRC
Chromium by ICP_MS 200.8	Less than	1.0	ppb	1/23/17 15:49	MC
Cobalt by ICP_MS 200.8	2.1	1.0	ppb	1/23/17 15:49	MC
Lead by ICP-MS 200.8	Less than	1.0	ppb	1/23/17 15:49	MC
Lithium (CWA) 200.7	5.8	2	ppb	1/25/17 15:26	PRC
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	1/24/17 15:58	PRC
Molybdenum - EPA 200.8	1.3	1.0	ppb	1/23/17 15:49	MC
Selenium by ICP-MS 200.8	Less than	5.0	ppb	1/23/17 15:49	MC
Thallium by ICP-MS 200.8	Less than	1.0	ppb	1/23/17 15:49	MC

Approved By:		



Tel: (803)217-9384 Fax: (803) 217-9911

____ January 25, 2018

REPORT TO:

Mike Moore C221

Sample ID: AB25408

Williams Hwy 52 FIELD BLANK-NPDES/CCR

Date & Time Sampled: January 19, 2017 13:30

Date & Time Submitted: January 20, 2017 14:35

Collected by: C.SANDEL Location Code: WLGFBTM

GW 10 Login Record File: 170123003

			- 5		
CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Antimony by ICP-MS 200.8	Less than	1.0	ppb	1/23/17 15:49	MC
Arsenic by ICP_MS 200.8	Less than	1.0	ppb	1/23/17 15:49	MC
Barium by ICP-OES 200.7	Less than	10	ppb	1/25/17 15:26	PRC
Beryllium EPA 200.7	Less than	2.0	ppb	1/25/17 15:26	PRC
Boron - EPA 200.7	Less than	1000	ppb	1/25/17 15:26	PRC
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	1/23/17 15:49	MC
Calcium EPA 200.7	Less than	100	ppb	1/25/17 15:26	PRC
Chromium by ICP_MS 200.8	Less than	1.0	ppb	1/23/17 15:49	MC
Cobalt by ICP_MS 200.8	Less than	1.0	ppb	1/23/17 15:49	MC
Lead by ICP-MS 200.8	Less than	1.0	ppb	1/23/17 15:49	MC
Lithium (CWA) 200.7	Less than	2.0	ppb	1/25/17 15:26	PRC
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	1/24/17 15:58	PRC
Molybdenum - EPA 200.8	Less than	1.0	ppb	1/23/17 15:49	MC
Selenium by ICP-MS 200.8	Less than	5.0	ppb	1/23/17 15:49	MC
Thallium by ICP-MS 200.8	Less than	1.0	ppb	1/23/17 15:49	MC

Approved By:



REPORT TO:

Central Laboratory (P-08) 2102 North Lake Drive Columbia, SC 29212

Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

Mike Moore C221

Sample ID: AB25409

Williams Hwy 52 GW 22D-NPDES/CCR

Date & Time Sampled: January 19, 2017 13:56

Date & Time Submitted: January 20, 2017 14:35

Collected by: C.SANDEL Location Code: WLG22DTM

GW 22D Login Record File: 170123003

		J		
Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Less than	1.0	ppb	1/23/17 15:49	MC
1.9	1.0	ppb	1/23/17 15:49	MC
10.9	10	ppb	1/25/17 15:26	PRC
Less than	2.0	ppb	1/25/17 15:26	PRC
Less than	1000	ppb	1/25/17 15:26	PRC
Less than	1.0	ppb	1/23/17 15:49	MC
89200	100	ppb	1/25/17 15:26	PRC
2.4	1.0	ppb	1/23/17 15:49	MC
Less than	1.0	ppb	1/23/17 15:49	MC
Less than	1.0	ppb	1/23/17 15:49	MC
14.7	2.0	ppb	1/25/17 15:26	PRC
Less than	0.2	ppb	1/24/17 15:58	PRC
8.8	1.0	ppb	1/23/17 15:49	MC
Less than	5.0	ppb	1/23/17 15:49	MC
Less than	1.0	ppb	1/23/17 15:49	MC
	Less than 1.9 10.9 Less than Less than 89200 2.4 Less than Less than 14.7 Less than 8.8 Less than	Result Limit(MRL) Less than 1.0 1.9 1.0 10.9 10 Less than 2.0 Less than 1000 Less than 1.0 89200 100 2.4 1.0 Less than 1.0 Less than 1.0 Less than 0.2 8.8 1.0 Less than 5.0	Result Limit(MRL) Units Less than 1.0 ppb 1.9 1.0 ppb 10.9 10 ppb Less than 2.0 ppb Less than 1000 ppb Less than 1.0 ppb 2.4 1.0 ppb Less than 1.0 ppb Less than 1.0 ppb Less than 0.2 ppb Less than 0.2 ppb Less than 5.0 ppb	Result Limit(MRL) Units Date & Time Less than 1.0 ppb 1/23/17 15:49 1.9 1.0 ppb 1/23/17 15:49 10.9 10 ppb 1/25/17 15:26 Less than 2.0 ppb 1/25/17 15:26 Less than 1000 ppb 1/25/17 15:26 Less than 1.0 ppb 1/23/17 15:49 89200 100 ppb 1/23/17 15:49 Less than 1.0 ppb 1/23/17 15:49 Less than 1.0 ppb 1/23/17 15:49 Less than 1.0 ppb 1/23/17 15:49 Less than 0.2 ppb 1/25/17 15:58 8.8 1.0 ppb 1/23/17 15:49 Less than 5.0 ppb 1/23/17 15:49

Approved By:



Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

REPORT TO:

Mike Moore C221

Sample ID: AB25410

Williams Hwy 52 GW 23D-NPDES/CCR

Date & Time Sampled: January 19, 2017 14:43

Date & Time Submitted: January 20, 2017 14:35

Collected by: C.SANDEL Location Code: WLG23DTM

GW 23D Login Record File: 170123003

011 200			5		
CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Antimony by ICP-MS 200.8	Less than	1.0	ppb	1/23/17 15:49	MC
Arsenic by ICP_MS 200.8	1.0	1.0	ppb	1/23/17 15:49	MC
Barium by ICP-OES 200.7	10.7	10	ppb	1/25/17 15:26	PRC
Beryllium EPA 200.7	Less than	2.0	ppb	1/25/17 15:26	PRC
Boron - EPA 200.7	Less than	1000	ppb	1/25/17 15:26	PRC
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	1/23/17 15:49	MC
Calcium EPA 200.7	68500	100	ppb	1/25/17 15:26	PRC
Chromium by ICP_MS 200.8	Less than	1.0	ppb	1/23/17 15:49	MC
Cobalt by ICP_MS 200.8	Less than	1.0	ppb	1/23/17 15:49	MC
Lead by ICP-MS 200.8	Less than	1.0	ppb	1/23/17 15:49	MC
Lithium (CWA) 200.7	6.2	2.0	ppb	1/25/17 15:26	PRC
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	1/24/17 15:58	PRC
Molybdenum - EPA 200.8	9.5	1.0	ppb	1/23/17 15:49	MC
Selenium by ICP-MS 200.8	Less than	5.0	ppb	1/23/17 15:49	MC
Thallium by ICP-MS 200.8	Less than	1.0	ppb	1/23/17 15:49	MC
Thallium by ICP-MS 200.8	Less than	1.0	ppb	1	/23/17 15:49



Tel: (803)217-9384 Fax: (803) 217-9911

_____ January 25, 2018

REPORT TO:

Mike Moore C221

Sample ID: AB25411

Williams Hwy 52 GW 25-NPDES/CCR

Date & Time Sampled: January 19, 2017 15:36

Date & Time Submitted: January 20, 2017 14:35

Collected by: C.SANDEL Location Code: WLG25TM

GW 25 Login Record File: 170123003

Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Less than	1.0	ppb	1/23/17 15:49	MC
Less than	1.0	ppb	1/23/17 15:49	MC
16.0	10	ppb	1/25/17 15:26	PRC
Less than	2.0	ppb	1/25/17 15:26	PRC
Less than	1000	ppb	1/25/17 15:26	PRC
Less than	1.0	ppb	1/23/17 15:49	MC
107700	1000	ppb	1/25/17 15:26	PRC
Less than	1.0	ppb	1/23/17 15:49	MC
Less than	1.0	ppb	1/23/17 15:49	MC
Less than	1.0	ppb	1/23/17 15:49	MC
8.3	2.0	ppb	1/25/17 15:26	PRC
Less than	0.2	ppb	1/24/17 15:58	PRC
4.1	1.0	ppb	1/23/17 15:49	MC
Less than	5.0	ppb	1/23/17 15:49	MC
Less than	1.0	ppb	1/23/17 15:49	MC
	Less than Less than 16.0 Less than Less than 107700 Less than Less than Less than 4.1 Less than	Result Limit(MRL) Less than 1.0 Less than 1.0 16.0 10 Less than 2.0 Less than 1000 Less than 1.0 107700 1000 Less than 1.0 Less than 1.0 Less than 1.0 Less than 0.2 4.1 1.0 Less than 5.0	Result Limit(MRL) Units Less than 1.0 ppb Less than 1.0 ppb 16.0 10 ppb Less than 2.0 ppb Less than 1.0 ppb Less than 0.2 ppb Less than 0.2 ppb Less than 5.0 ppb	Result Limit(MRL) Units Date & Time Less than 1.0 ppb 1/23/17 15:49 Less than 1.0 ppb 1/23/17 15:49 16.0 10 ppb 1/25/17 15:26 Less than 2.0 ppb 1/25/17 15:26 Less than 1000 ppb 1/25/17 15:26 Less than 1.0 ppb 1/23/17 15:49 Less than 1.0 ppb 1/23/17 15:49 Less than 1.0 ppb 1/23/17 15:49 Less than 1.0 ppb 1/23/17 15:26 Less than 0.2 ppb 1/23/17 15:26 Less than 0.2 ppb 1/23/17 15:58 4.1 1.0 ppb 1/23/17 15:49 Less than 5.0 ppb 1/23/17 15:49

Approved By:	
Approved By:	



Tel: (803)217-9384 Fax: (803) 217-9911

_____ January 25, 2018

REPORT TO:

Mike Moore C221

Sample ID: AB25412

Williams Hwy 52 GW 24-NPDES/CCR

Date & Time Sampled: January 20, 2017 08:33 Date & Time Submitted: January 20, 2017 14:35

Collected by: C.SANDEL Location Code: WLG24TM

GW 24 Login Record File: 170123003

Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Less than	1.0	ppb	1/23/17 15:49	MC
1.6	1.0	ppb	1/23/17 15:49	MC
46.4	10	ppb	1/25/17 15:26	PRC
Less than	2.0	ppb	1/25/17 15:26	PRC
Less than	1000	ppb	1/25/17 15:26	PRC
Less than	1.0	ppb	1/23/17 15:49	MC
147000	1000	ppb	1/25/17 15:26	PRC
Less than	1.0	ppb	1/23/17 15:49	MC
2.6	1.0	ppb	1/23/17 15:49	MC
Less than	1.0	ppb	1/23/17 15:49	MC
3.3	2.0	ppb	1/25/17 15:26	PRC
Less than	0.2	ppb	1/24/17 15:58	PRC
1.2	1.0	ppb	1/23/17 15:49	MC
Less than	5.0	ppb	1/23/17 15:49	MC
Less than	1.0	ppb	1/23/17 15:49	MC
	Less than 1.6 46.4 Less than Less than 147000 Less than 2.6 Less than 3.3 Less than 1.2 Less than	Result Limit(MRL) Less than 1.0 1.6 1.0 46.4 10 Less than 2.0 Less than 1000 Less than 1.0 147000 1000 Less than 1.0 Less than 1.0 Less than 0.2 Less than 0.2 Less than 5.0	Result Limit(MRL) Units Less than 1.0 ppb 1.6 1.0 ppb 46.4 10 ppb Less than 2.0 ppb Less than 1.00 ppb Less than 1.0 ppb Less than 1.0 ppb Less than 1.0 ppb Less than 1.0 ppb Less than 0.2 ppb Less than 0.2 ppb Less than 5.0 ppb	Result Limit(MRL) Units Date & Time Less than 1.0 ppb 1/23/17 15:49 1.6 1.0 ppb 1/23/17 15:49 46.4 10 ppb 1/25/17 15:26 Less than 2.0 ppb 1/25/17 15:26 Less than 1000 ppb 1/25/17 15:26 Less than 1.0 ppb 1/23/17 15:49 147000 1000 ppb 1/23/17 15:49 Less than 1.0 ppb 1/23/17 15:49 Less than 1.0 ppb 1/23/17 15:49 Less than 0.2 ppb 1/25/17 15:58 Less than 0.2 ppb 1/23/17 15:49 Less than 5.0 ppb 1/23/17 15:49

Approved By:



Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

REPORT TO:

Mike Moore C221

Sample ID: AB25413

Williams Hwy 52 GW 26-NPDES/CCR

Date & Time Sampled: January 20, 2017 09:17 Date & Time Submitted: January 20, 2017 14:35

Collected by: C.SANDEL Location Code: WLG26TM

GW 26 Login Record File: 170123003

Result Less than 5.0 74.7	Reporting Limit(MRL) 1.0 1.0	Units ppb ppb	Completed A Date & T 1/23/17	15:49	Chemist MC
5.0	1.0				
		ppb	1/23/17	15:40	
74.7	10			10.40	MC
	10	ppb	1/25/17	15:26	PRC
Less than	2.0	ppb	1/25/17	15:26	PRC
Less than	1000	ppb	1/25/17	15:26	PRC
Less than	1.0	ppb	1/23/17	15:49	MC
164200	1000	ppb	1/25/17	15:26	PRC
Less than	1.0	ppb	1/23/17	15:49	MC
7.4	1.0	ppb	1/23/17	15:49	MC
Less than	1.0	ppb	1/23/17	15:49	MC
2.5	2.0	ppb	1/25/17	15:26	PRC
Less than	0.2	ppb	1/31/17	15:22	PRC
Less than	1.0	ppb	1/23/17	15:49	MC
Less than	5.0	ppb	1/23/17	15:49	MC
Less than	1.0	ppb	1/23/17	15:49	MC
	Less than Less than 164200 Less than 7.4 Less than 2.5 Less than Less than Less than	Less than 2.0 Less than 1000 Less than 1.0 164200 1000 Less than 1.0 7.4 1.0 Less than 1.0 Less than 0.2 Less than 1.0 Less than 5.0	Less than 2.0 ppb Less than 1000 ppb Less than 1.0 ppb 164200 1000 ppb Less than 1.0 ppb 7.4 1.0 ppb Less than 1.0 ppb Less than 0.2 ppb Less than 1.0 ppb Less than 1.0 ppb Less than 5.0 ppb	Less than 2.0 ppb 1/25/17 Less than 1000 ppb 1/25/17 Less than 1.0 ppb 1/23/17 164200 1000 ppb 1/25/17 Less than 1.0 ppb 1/23/17 7.4 1.0 ppb 1/23/17 Less than 1.0 ppb 1/23/17 Less than 1.0 ppb 1/23/17 Less than 0.2 ppb 1/25/17 Less than 0.2 ppb 1/31/17 Less than 1.0 ppb 1/23/17 Less than 5.0 ppb 1/23/17	Less than 2.0 ppb 1/25/17 15:26 Less than 1000 ppb 1/25/17 15:26 Less than 1.0 ppb 1/23/17 15:49 164200 1000 ppb 1/25/17 15:26 Less than 1.0 ppb 1/23/17 15:49 7.4 1.0 ppb 1/23/17 15:49 Less than 1.0 ppb 1/23/17 15:49 2.5 2.0 ppb 1/25/17 15:26 Less than 0.2 ppb 1/31/17 15:22 Less than 1.0 ppb 1/23/17 15:49 Less than 0.2 ppb 1/23/17 15:49 Less than 0.2 ppb 1/23/17 15:49 Less than 5.0 ppb 1/23/17 15:49

Approved By:



Tel: (803)217-9384 Fax: (803) 217-9911

_____ January 25, 2018

REPORT TO:

Mike Moore C221

Sample ID: AB25414

Williams Hwy 52 GW 27-NPDES/CCR

Date & Time Sampled: January 20, 2017 10:32 Date & Time Submitted: January 20, 2017 14:35

Collected by: C.SANDEL Location Code: WLG27TM

GW 27 Login Record File: 170123003

Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Less than	1.0	ppb	1/23/17 15:49	MC
Less than	1.0	ppb	1/23/17 15:49	MC
24.6	10	ppb	1/25/17 15:26	PRC
Less than		ppb	1/25/17 15:26	PRC
Less than	1000	ppb	1/25/17 15:26	PRC
Less than	1.0	ppb	1/23/17 15:49	MC
81640	1000	ppb	1/25/17 15:26	PRC
Less than	1.0	ppb	1/23/17 15:49	MC
Less than	1.0	ppb	1/23/17 15:49	MC
Less than	1.0	ppb	1/23/17 15:49	MC
Less than	2.0	ppb	1/25/17 15:26	PRC
Less than	0.2	ppb	1/31/17 15:22	PRC
1.6	1.0	ppb	1/23/17 15:49	MC
Less than	5.0	ppb	1/23/17 15:49	MC
Less than	1.0	ppb	1/23/17 15:49	МС
	Less than 24.6 Less than Less than Less than 81640 Less than Less than	Result Limit(MRL) Less than 1.0 Less than 1.0 24.6 10 Less than 1000 Less than 1.0 81640 1000 Less than 1.0 Less than 1.0 Less than 2.0 Less than 0.2 1.6 1.0 Less than 5.0	Result Limit(MRL) Units Less than 1.0 ppb Less than 1.0 ppb Less than ppb Less than 1000 ppb Less than 1.0 ppb Less than 1.0 ppb Less than 1.0 ppb Less than 1.0 ppb Less than 2.0 ppb Less than 0.2 ppb Less than 5.0 ppb Less than 5.0 ppb	Result Limit(MRL) Units Date & Time Less than 1.0 ppb 1/23/17 15:49 Less than 1.0 ppb 1/23/17 15:49 24.6 10 ppb 1/25/17 15:26 Less than ppb 1/25/17 15:26 Less than 1.00 ppb 1/25/17 15:26 Less than 1.0 ppb 1/23/17 15:49 Less than 1.0 ppb 1/23/17 15:49 Less than 1.0 ppb 1/23/17 15:49 Less than 2.0 ppb 1/25/17 15:26 Less than 0.2 ppb 1/23/17 15:26 Less than 0.2 ppb 1/23/17 15:26 Less than 0.2 ppb 1/23/17 15:49 Less than 0.2 ppb 1/23/17 15:49 Less than 5.0 ppb 1/23/17 15:49

Approved By:

EPA CCR Rule Compliance Monitoring Wells Groundwater Monitoring Data South Carolina Electric & Gas: Williams Station Highway 52 Class Three Landfill

Gauging Date:03/27/2017			Final Water Quality Indicator Parameters						
Monitoring Well ID	PVC Pipe Elevation, ft.	Depth to Groundwater, ft.	Groundwater Elevation, ft.	Temparature ⁰C	pH S.U.	Sp. Cond. μS/cm	Turbidity NTU	ORP mV	DO mg/L
GW-10	52.28	8.25	44.03	19.1	7.4	367	7.27	130.1	0.8
GW-11	51.72	10.58	41.14	20.2	6.4	136	9.26	188.0	1.57
GW-20	60.81	21.72	39.09	22.8	6.5	912	5.47	103.3	0.54
GW-21	56.14	17.95	38.19	20.1	6.7	835	9.18	73.7	0.44
GW-22D	50.36	17.58	32.78	22.6	7.1	774	8.93	143.7	0.98
GW-23D	49.69	15.18	34.51	23.2	7.2	710	7.92	139.2	1.77
GW-24	52.40	17.06	35.34	22.8	6.5	840	9.28	85.2	0.32
GW-25	50.93	16.34	34.59	22.5	6.8	768	6.97	110.9	0.48
GW-26	55.21	25.40	29.81	24.0	6.0	1340	6.28	22.2	0.44
GW-27	53.25	7.89	45.36	20.9	6.8	467	8.03	121.7	0.34
GW-28	51.20	10.27	40.93	19.0	6.4	130	8.12	200.7	2.59

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis Report for

GEEL003 GEL Engineering, LLC Client SDG: 419419 GEL Work Order: 419419

The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a Tracer compound
- ** Analyte is a surrogate compound
- H Analytical holding time was exceeded
- J Value is estimated
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Jake Crook.

	Harano Catas		
Reviewed by			

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: April 24, 2017

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-21 Sample ID: 419419001 Matrix: Ground Water Collect Date: 28-MAR-17 08:35

Receive Date: 29-MAR-17 Collector: Client

Project: SCEG01616C Client ID: GEEL003

Parameter	Qualifier	Result	DL	RL	Units	PF D	F Ar	nalyst Date	Time	Batch	Method
Ion Chromatography											
EPA300.0 Fluoride in	Liquid "As Re	eceived"									
Fluoride		0.243	0.033	0.100	mg/L		1 M2	XL2 03/29/17	1926	1651888	1
Chloride		11.0	0.134	0.400	mg/L	2	2 M2	XL2 03/30/17	1634	1651888	2
Metals Analysis-ICP-	MS										
200.8/200.2 NPDES	Metals "As Red	ceived"									
Lithium	J	5.26	2.00	10.0	ug/L	1.00	1 BA	AJ 03/31/17	2046	1651686	3
Rad Gas Flow Propor	tional Counting	2									
GFPC, Ra228, Liquid	l "As Received"	'									
Radium-228	U	ND	1.12	3.00	pCi/L		ΑΣ	KM6 04/14/17	1110	1652760	4
Rad Radium-226											
Lucas Cell, Ra226, lic	quid "As Receiv	ved"									
Radium-226	•	0.470	0.345	1.00	pCi/L		M	XH8 04/21/17	0750	1652782	5
The following Prep M	lethods were pe	erformed:									
Method	Description	1		Analyst	Date	Tiı	me	Prep Batch			
EPA 200.2	ICP-MS 200.	2 PREP		SXW1	03/29/17	084	49	1651685			

The following Analytical Methods were performed:

Method	Description		Analyst Co	omments	
1	EPA 300.0		-		
2	EPA 300.0				
3	EPA 200.8 SC_NPDES				
4	EPA 904.0/SW846 9320 Modified				
5	EPA 903.1 Modified				
Surrogate/Trace	r Recovery Test	Recult	Nominal	Recovery%	Acceptable Limits

Surrogate/Tracer Recovery Test Recovery% Acceptable Limits Barium-133 Tracer GFPC, Ra228, Liquid "As Received" 92.2 (15%-125%)

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: April 24, 2017

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-21 Project: SCEG01616C Sample ID: 419419001 Client ID: GEEL003

	Result DL	RL	Units	PF	DF Analyst Date	Time Batch	Method
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Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: April 24, 2017

SCEG01616C

GEEL003

Company: Address:

GEL Engineering, LLC 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: DUP

419419002

Sample ID: Matrix: Ground Water Collect Date: 28-MAR-17 09:00 29-MAR-17 Receive Date:

Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF D	Ρ	Analyst Date	Time	Batch	Method
Ion Chromatography											
EPA300.0 Fluoride in	n Liquid "As Re	eceived"									
Fluoride	•	0.243	0.033	0.100	mg/L		1	MXL2 03/29/17	2053	1651888	1
Chloride		11.0	0.134	0.400	mg/L		2	MXL2 03/30/17	1703	1651888	2
Metals Analysis-ICP-	-MS										
200.8/200.2 NPDES	Metals "As Red	ceived"									
Lithium	J	4.96	2.00	10.0	ug/L	1.00	1	BAJ 03/31/17	2057	1651686	3
Rad Gas Flow Propor	tional Counting	3									
GFPC, Ra228, Liquid	l "As Received"	•									
Radium-228	U	ND	1.93	3.00	pCi/L			AXM6 04/14/17	1110	1652760	4
Rad Radium-226											
Lucas Cell, Ra226, lie	quid "As Recei	ved"									
Radium-226	•	0.353	0.180	1.00	pCi/L			MXH8 04/21/17	0750	1652782	5
The following Prep M	lethods were pe	erformed:									
Method	Description	n		Analyst	Date	Ti	me	Prep Batcl	1		
EPA 200.2	ICP-MS 200.			SXW1	03/29/17	084	49	1651685			

The following Analytical Methods were performed:

Method	Description		Analyst Co	omments	
1	EPA 300.0		-		
2	EPA 300.0				
3	EPA 200.8 SC_NPDES				
4	EPA 904.0/SW846 9320 Modified				
5	EPA 903.1 Modified				
Surrogate/Trace	r Recovery Test	Result	Nominal	Recovery%	Acceptable Limits

GFPC, Ra228, Liquid "As Received" 96.7 (15%-125%) Barium-133 Tracer

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Certificate of Analysis

Report Date: April 24, 2017

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: DUP Project: SCEG01616C Sample ID: 419419002 Client ID: GEEL003

Parameter Qualifier Result	DL	RL	Units	PF	DF Analyst Date	Time Batch Method
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Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: April 24, 2017

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: Field Blank Project: SCEG01616C Sample ID: 419419003 Client ID: GEEL003

Matrix: Water

Collect Date: 28-MAR-17 09:15 Receive Date: 29-MAR-17 Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatograph	у											
EPA300.0 Fluoride	in Liquid "As Re	eceived"										
Chloride	J	0.0975	0.067	0.200	mg/L		1	MXL2	03/29/17	2122	1651888	1
Fluoride	U	ND	0.033	0.100	mg/L		1					
Metals Analysis-IC	P-MS											
200.8/200.2 NPDE	S Metals "As Re	ceived"										
Lithium	U	ND	2.00	10.0	ug/L	1.00	1	BAJ	03/31/17	2105	1651686	2
Rad Gas Flow Prop	ortional Counting	3										
GFPC, Ra228, Liqu	iid "As Received"	"										
Radium-228		2.42	2.10	3.00	pCi/L			AXM6	04/14/17	1111	1652760	3
Rad Radium-226												
Lucas Cell, Ra226,	liquid "As Recei	ved"										
Radium-226		0.169	0.161	1.00	pCi/L			MXH8	04/21/17	0750	1652782	4
The following Prep	Methods were po	erformed:										
Method	Description	n		Analyst	Date	-	Гітє	Pr	ep Batch			
EPA 200.2	ICP-MS 200.	2 PREP		SXW1	03/29/17	(0849	16	51685			

The following Analytical Methods were performed:

Method Description **Analyst Comments** EPA 300.0

2 EPA 200.8 SC_NPDES

3 EPA 904.0/SW846 9320 Modified

EPA 903.1 Modified

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits Barium-133 Tracer 88.7 (15%-125%) GFPC, Ra228, Liquid "As Received"

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level DL: Detection Limit PF: Prep Factor MDA: Minimum Detectable Activity **RL**: Reporting Limit

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Certificate of Analysis

Report Date: April 24, 2017

SCEG01616C

GEEL003

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-22D Project:
Sample ID: 419419004 Client ID:

Matrix: Ground Water
Collect Date: 28-MAR-17 10:29
Receive Date: 29-MAR-17
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatography	7											
EPA300.0 Fluoride i	in Liquid "As Re	eceived"										
Fluoride	-	0.305	0.033	0.100	mg/L		1	MXL2	03/29/17	2150	1651888	1
Chloride		10.4	0.134	0.400	mg/L		2	MXL2	03/30/17	1830	1651888	2
Metals Analysis-ICF	P-MS											
200.8/200.2 NPDES	S Metals "As Re	ceived"										
Lithium		10.5	2.00	10.0	ug/L	1.00	1	BAJ	03/31/17	2108	1651686	3
Rad Gas Flow Propo	ortional Counting	g										
GFPC, Ra228, Liqui	id "As Received	"										
Radium-228	U	ND	1.46	3.00	pCi/L			AXM6	04/14/17	1111	1652760	4
Rad Radium-226												
Lucas Cell, Ra226, 1	iquid "As Recei	ved"										
Radium-226	U	ND	0.195	1.00	pCi/L			MXH8	04/21/17	0750	1652782	5
The following Prep	Methods were p	erformed:										
Method	Description	n		Analyst	Date	7	Гіте	Pr	ep Batch			
EPA 200.2	ICP-MS 200.	2 PREP		SXW1	03/29/17	C)849	165	51685			

The following Analytical Methods were performed:

Method		Description	Analyst Comments
1		EPA 300.0	•
2		EPA 300.0	
3		EPA 200.8 SC_NPDES	
4		EPA 904.0/SW846 9320 Modified	
5		EPA 903.1 Modified	
G . /TD	ъ	T	

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits

Barium-133 Tracer GFPC, Ra228, Liquid "As Received"

85.3 (15%-125%)

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Certificate of Analysis

Report Date: April 24, 2017

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner
Project: Williams 52

Client Sample ID: GW-22D Project: SCEG01616C Sample ID: 419419004 Client ID: GEEL003

Parameter Qualifier Result DL RL Units PF DF Analyst Date Time Batch Method

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

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Certificate of Analysis

Report Date: April 24, 2017

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-23D Project: SCEG01616C Sample ID: 419419005 Client ID: GEEL003

Matrix: Ground Water
Collect Date: 28-MAR-17 11:36
Receive Date: 29-MAR-17
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatography	y											
EPA300.0 Fluoride	in Liquid "As Re	eceived"										
Fluoride	_	0.361	0.033	0.100	mg/L		1	MXL2	03/29/17	2219	1651888	1
Chloride		15.6	0.134	0.400	mg/L		2	MXL2	03/30/17	1858	1651888	2
Metals Analysis-ICI	P-MS											
200.8/200.2 NPDES	S Metals "As Re	ceived"										
Lithium	J	6.95	2.00	10.0	ug/L	1.00	1	BAJ	03/31/17	2110	1651686	3
Rad Gas Flow Propo	ortional Counting	g										
GFPC, Ra228, Liqui	id "As Received"	"										
Radium-228		1.80	1.52	3.00	pCi/L			AXM6	04/14/17	1111	1652760	4
Rad Radium-226												
Lucas Cell, Ra226, 1	liquid "As Recei	ved"										
Radium-226	U	ND	0.157	1.00	pCi/L			MXH8	04/21/17	0750	1652782	5
The following Prep	Methods were po	erformed:										
Method	Description	n		Analyst	Date	7	Гime	Pre	ep Batch			
EPA 200.2	ICP-MS 200.	2 PREP		SXW1	03/29/17	()849	165	51685			

The following Analytical Methods were performed:

Method	Description		Analyst Co	omments	
1	EPA 300.0		-		
2	EPA 300.0				
3	EPA 200.8 SC_NPDES				
4	EPA 904.0/SW846 9320 Modified				
5	EPA 903.1 Modified				
Surrogate/Trace	r Recovery Test	Result	Nominal	Recovery%	Acceptable Limits

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits

Barium-133 Tracer GFPC, Ra228, Liquid "As Received" 91.7 (15%-125%)

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Certificate of Analysis

Report Date: April 24, 2017

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-23D Project: SCEG01616C Sample ID: 419419005 Client ID: GEEL003

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: April 24, 2017

SCEG01616C

GEEL003

Company:

GEL Engineering, LLC

2040 Savage Rd Address:

Charleston, South Carolina 29417

Contact: Project:

Robert Gardner Williams 52

Client Sample ID: GW-25

Sample ID:

419419006

Matrix: Collect Date: Ground Water 28-MAR-17 12:34

Receive Date:

29-MAR-17

Collector:

Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatograp	hy											
EPA300.0 Fluorid	e in Liquid "As Re	eceived"										
Fluoride		0.630	0.033	0.100	mg/L		1	MXL2	03/29/17	2248	1651888	1
Chloride		22.7	0.335	1.00	mg/L		5	MXL2	03/30/17	1927	1651888	2
Metals Analysis-IO	CP-MS											
200.8/200.2 NPD	ES Metals "As Re	ceived"										
Lithium	J	9.06	2.00	10.0	ug/L	1.00	1	BAJ	03/31/17	2113	1651686	3
Rad Gas Flow Pro	portional Counting	g										
GFPC, Ra228, Liq	uid "As Received	"										
Radium-228	U	ND	1.62	3.00	pCi/L			AXM6	04/14/17	1111	1652760	4
Rad Radium-226												
Lucas Cell, Ra226	, liquid "As Recei	ved"										
Radium-226	U	ND	0.255	1.00	pCi/L			MXH8	04/21/17	0750	1652782	5
The following Pre	p Methods were p	erformed:										
Method	Description	n		Analyst	Date]	Γime	e Pro	ep Batch			
EPA 200.2	ICP-MS 200.	2 PREP		SXW1	03/29/17	()849	165	51685			
FF1 6 11 1 4												

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	•
2	EPA 300.0	
3	EPA 200.8 SC_NPDES	
4	EPA 904.0/SW846 9320 Modified	
5	EPA 903.1 Modified	

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits 83.5 (15%-125%) Barium-133 Tracer GFPC, Ra228, Liquid "As Received"

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Certificate of Analysis

Report Date: April 24, 2017

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-25 Project: SCEG01616C Sample ID: 419419006 Client ID: GEEL003

Parameter Qualifier Result	DL	RL	Units	PF	DF Analyst Date	Time Batch Method
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Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: April 24, 2017

SCEG01616C

GEEL003

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-24
Sample ID: 419419007
Matrix: Ground Water

Collect Date: 28-MAR-17 13:31
Receive Date: 29-MAR-17
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF I	OF A	nalyst Date	Time	Batch	Method
Ion Chromatography	I										
EPA300.0 Fluoride	in Liquid "As Re	eceived"									
Fluoride	_	0.460	0.033	0.100	mg/L		1 N	IXL2 03/29/17	2317	1651888	1
Chloride		18.0	0.335	1.00	mg/L		5 N	IXL2 03/30/17	1956	1651888	2
Metals Analysis-ICF	P-MS										
200.8/200.2 NPDES	Metals "As Re	ceived"									
Lithium	J	4.26	2.00	10.0	ug/L	1.00	1 B	AJ 03/31/17	2116	1651686	3
Rad Gas Flow Propo	ortional Counting	g									
GFPC, Ra228, Liqui	d "As Received"	"									
Radium-228		2.12	1.50	3.00	pCi/L		A	XM6 04/17/17	1636	1652760	4
Rad Radium-226											
Lucas Cell, Ra226, 1	iquid "As Recei	ved"									
Radium-226	U	ND	0.253	1.00	pCi/L		M	IXH8 04/21/17	0750	1652782	5
The following Prep	Methods were po	erformed:									
Method	Description	n		Analyst	Date	Ti	me	Prep Batch			
EPA 200.2	ICP-MS 200.	2 PREP		SXW1	03/29/17	08	49	1651685			

The following Analytical Methods were performed:

Method	Description	Description					
1	EPA 300.0		-				
2	EPA 300.0						
3	EPA 200.8 SC_NPDES						
4	EPA 904.0/SW846 9320 Modified						
5	EPA 903.1 Modified						
Surrogate/Tracer Pecovery Test		Recult	Nominal	Recovery%	Acceptable Limits		

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits

Barium-133 Tracer GFPC, Ra228, Liquid "As Received"

79.2 (15%-125%)

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Certificate of Analysis

Report Date: April 24, 2017

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-24 Project: SCEG01616C Sample ID: 419419007 Client ID: GEEL003

	Result DL	RL	Units	PF	DF Analyst Date	Time Batch	Method
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Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

Project:

Client ID:

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: April 24, 2017

SCEG01616C

GEEL003

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-26 Sample ID: 419419008

Matrix: Ground Water
Collect Date: 28-MAR-17 14:47
Receive Date: 29-MAR-17
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatography	y											
EPA300.0 Fluoride	in Liquid "As Re	eceived"										
Fluoride		0.232	0.033	0.100	mg/L		1	MXL2	03/29/17	2346	1651888	1
Chloride		155	3.35	10.0	mg/L		50	MXL2	03/30/17	2025	1651888	2
Metals Analysis-ICI	P-MS											
200.8/200.2 NPDES	S Metals "As Red	ceived"										
Lithium	J	2.75	2.00	10.0	ug/L	1.00	1	BAJ	03/31/17	2119	1651686	3
Rad Gas Flow Propo	ortional Counting	2										
GFPC, Ra228, Liqui	id "As Received"	'										
Radium-228	U	ND	1.76	3.00	pCi/L			AXM6	04/14/17	1111	1652760	4
Rad Radium-226												
Lucas Cell, Ra226, 1	liquid "As Recei	ved"										
Radium-226	•	0.795	0.190	1.00	pCi/L			MXH8	04/21/17	0750	1652782	5
The following Prep	The following Prep Methods were performed:											
Method	Description	1		Analyst	Date	-	Гіте	e Pr	ep Batch			
EPA 200.2	ICP-MS 200.	2 PREP		SXW1	03/29/17	()849	16	51685			

The following Analytical Methods were performed:

Method	Description		Analyst Comments								
1	EPA 300.0		-								
2	EPA 300.0										
3	EPA 200.8 SC_NPDES										
4	EPA 904.0/SW846 9320 Modified										
5	EPA 903.1 Modified										
Surrogate/Tracer Recovery Test		Result	Nominal	Recoverv%	Acceptable Limits						

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits

Barium-133 Tracer GFPC, Ra228, Liquid "As Received"

99.2 (15%-125%)

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: April 24, 2017

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-26 Project: SCEG01616C Sample ID: 419419008 Client ID: GEEL003

	Result DL	RL	Units	PF	DF Analyst Date	Time Batch	Method
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Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: April 24, 2017

Page 1 of 4

GEL Engineering, LLC 2040 Savage Rd

Charleston, South Carolina

Contact: Robert Gardner

Workorder: 419419

Parmname	NOM	Sample Qual	QC	Units	RPD% RI	EC% Range A	Anlst Date Time
Ion Chromatography Batch 1651888 ———							
QC1203757880 419304001 DUP Chloride		17.2	17.2	mg/L	0.169	(0%-20%) I	MXL2 03/30/17 14:38
Fluoride		0.442	0.442	mg/L	0.136 ^	(+/-0.100)	03/29/17 16:33
QC1203757881 419419008 DUP Chloride		155	155	mg/L	0.0935	(0%-20%)	03/30/17 20:54
Fluoride		0.232	0.229	mg/L	1.3 ^	(+/-0.100)	03/30/17 00:15
QC1203757879 LCS Chloride	5.00		4.92	mg/L	9	8.5 (90%-110%)	03/29/17 15:35
Fluoride	2.50		2.52	mg/L	1	101 (90%-110%)	
QC1203757878 MB Chloride		U	ND	mg/L			03/29/17 15:06
Fluoride		U	ND	mg/L			
QC1203757882 419304001 PS Chloride	5.00	3.44	8.90	mg/L	1	109 (90%-110%)	03/30/17 15:07
Fluoride	2.50	0.442	3.02	mg/L	1	103 (90%-110%)	03/29/17 17:02
QC1203757883 419419008 PS Chloride	5.00	3.10	8.60	mg/L	1	110 (90%-110%)	03/30/17 21:23
Fluoride	2.50	0.232	2.61	mg/L		95 (90%-110%)	03/30/17 00:44

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QC Summary

							ummai	<u>y</u>						
Workorder:	419419												Page	2 of 4
Parmname			NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Metals Analysis - Batch	ICPMS 1651686													
QC120375736 Lithium	66 419419001	DUP		J	5.26	J	5.18	ug/L	1.65 ^		(+/-10.0)	BAJ	03/31/17	7 20:49
QC120375736 Lithium	55 LCS		50.0				50.6	ug/L		101	(80%-120%)		03/31/17	7 20:43
QC120375736 Lithium	54 MB					U	ND	ug/L					03/31/17	7 20:41
QC120375736 Lithium	57 419419001	MS	50.0	J	5.26		51.0	ug/L		91.4	(75%-125%)		03/31/17	7 20:51
QC120375736 Lithium	58 419419001	SDILT		J	5.26	U	ND	ug/L	N/A		(0%-10%)		03/31/17	7 20:54
Rad Gas Flow Batch	1652760													
QC120375983 Radium-228	32 419419008	DUP		U	0.353	U	0.170	pCi/L	N/A		N/A	.AXM6	04/14/17	7 11:17
QC120375983 Radium-228	33 LCS		20.6				21.4	pCi/L		104	(75%-125%)		04/14/17	7 11:17
QC120375983 Radium-228	31 MB						1.46	pCi/L					04/14/17	7 11:16
Rad Ra-226 Batch	1652782													
QC120375988 Radium-226	419419006	DUP		U	0.124	U	0.184	pCi/L	N/A		N/A	MXH8	04/21/17	7 08:55
QC120375988 Radium-226	36 LCS		26.0				24.0	pCi/L		92.4	(75%-125%)		04/21/17	7 08:55

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QC Summary

Workorder: 419419		-			_					Page 3 of 4
Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Ra-226 Batch 1652782										
QC1203759883 MB Radium-226			U	0.112	pCi/L				MXH8	04/21/17 08:55
QC1203759885 419419006 MS Radium-226	130 U	0.124		105	pCi/L		81	(75%-125%)	04/21/17 08:55

Notes:

The Qualifiers in this report are defined as follows:

Analyte is a Tracer compound

- Result is less than value reported <
- Result is greater than value reported >
- В The target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- Ε % difference of sample and SD is >10%. Sample concentration must meet flagging criteria
- Ε General Chemistry--Concentration of the target analyte exceeds the instrument calibration range
- FA Failed analysis.
- FΒ Mercury was found present at quantifiable concentrations in field blanks received with these samples. Data associated with the blank are deemed invalid for reporting to regulatory agencies
- Analytical holding time was exceeded Η
- Value is estimated
- K Analyte present. Reported value may be biased high. Actual value is expected to be lower.
- L Analyte present. Reported value may be biased low. Actual value is expected to be higher.
- M M if above MDC and less than LLD
- M REMP Result > MDC/CL and < RDL
- Metals--The Matrix spike sample recovery is not within specified control limits N
- N/A RPD or %Recovery limits do not apply.
- N1See case narrative
- ND Analyte concentration is not detected above the detection limit
- NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Q One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
- R Per section 9.3.4.1 of Method 1664 Revision B, due to matrix spike recovery issues, this result may not be reported or used for regulatory compliance purposes.
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- UI Gamma Spectroscopy--Uncertain identification

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QC Summary

Workorder: 419419

Parmname

NOM Sample Qual QC Units RPD% REC% Range Anlst Date Time

- UJ Gamma Spectroscopy--Uncertain identification
- UL Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y Other specific qualifiers were required to properly define the results. Consult case narrative.
- Z Paint Filter Test--Particulates passed through the filter, however no free liquids were observed.
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
- d 5-day BOD--The 2:1 depletion requirement was not met for this sample
- e 5-day BOD--Test replicates show more than 30% difference between high and low values. The data is qualified per the method and can be used for reporting purposes
- h Preparation or preservation holding time was exceeded

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

* Indicates that a Quality Control parameter was not within specifications.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

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Certificate of Analysis Report for

GEEL003 GEL Engineering, LLC Client SDG: 419304 GEL Work Order: 419304

The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a Tracer compound
- ** Analyte is a surrogate compound
- H Analytical holding time was exceeded
- J Value is estimated
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Jake Crook.

	Johnne Cotes	
Reviewed by	-	

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: April 14, 2017

Company : GEL Engineering, LLC Address : 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-10 Project: SCEG01616C Sample ID: 419304001 Client ID: GEEL003

Matrix: Ground Water
Collect Date: 27-MAR-17 11:19
Receive Date: 28-MAR-17
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatography												
EPA300.0 Fluoride i	n Liquid "As Re	eceived"										
Fluoride	_	0.442	0.033	0.100	mg/L		1	MXL2	03/29/17	1604	1651888	1
Chloride		17.2	0.335	1.00	mg/L		5	MXL2	03/30/17	1410	1651888	2
Metals Analysis-ICP	-MS											
200.8/200.2 NPDES	Metals "As Re	ceived"										
Lithium		11.8	2.00	10.0	ug/L	1.00	1	BAJ	04/07/17	2009	1651280	3
Rad Gas Flow Propo	Rad Gas Flow Proportional Counting											
GFPC, Ra228, Liqui	d "As Received"	"										
Radium-228	U	ND	0.487	3.00	pCi/L			AXM6	04/11/17	1203	1651318	4
Rad Radium-226												
Lucas Cell, Ra226, li	iquid "As Recei	ved"										
Radium-226	•	0.944	0.391	1.00	pCi/L			MXH8	04/13/17	1045	1651331	5
The following Prep Methods were performed:												
Method	Description	n		Analyst	Date	-	Time	Pre	ep Batch			
EPA 200.2	ICP-MS 200.	2 PREP		SXW1	03/28/17	(0843	165	51279			

The following Analytical Methods were performed:

Method	Description	Analyst Comments							
1	EPA 300.0		-						
2	EPA 300.0								
3	EPA 200.8 SC_NPDES								
4	EPA 904.0/SW846 9320 Modified								
5	EPA 903.1 Modified								
Surrogate/Trace	r Recovery Test	Pacult	Nominal	Pacovary%	Acceptable Limits				

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits

Barium-133 Tracer GFPC, Ra228, Liquid "As Received" 91 (15%-125%)

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: April 14, 2017

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-10 Project: SCEG01616C Sample ID: 419304001 Client ID: GEEL003

Parameter Qualifier Result	DL	RL	Units	PF	DF Analyst Date	Time Batch Method
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Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: April 14, 2017

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-11 Project: SCEG01616C Sample ID: 419304002 Client ID: GEEL003

Matrix: Ground Water
Collect Date: 27-MAR-17 12:11
Receive Date: 28-MAR-17
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF I	OF A	Analyst Date	Time	Batch	Method
Ion Chromatography											
EPA300.0 Fluoride in	n Liquid "As Re	eceived"									
Chloride	_	5.09	0.067	0.200	mg/L		1	MXL2 03/29/17	1730	1651888	1
Fluoride		0.310	0.033	0.100	mg/L		1				
Metals Analysis-ICP	-MS										
200.8/200.2 NPDES	Metals "As Red	ceived"									
Lithium	J	3.48	2.00	10.0	ug/L	1.00	1	BAJ 04/07/17	2019	1651280	2
Rad Gas Flow Propor	rtional Counting	3									
GFPC, Ra228, Liquio	d "As Received"	1									
Radium-228	U	ND	0.528	3.00	pCi/L			AXM6 04/11/17	1203	1651318	3
Rad Radium-226											
Lucas Cell, Ra226, li	quid "As Recei	ved"									
Radium-226		5.50	0.352	1.00	pCi/L			MXH8 04/13/17	1045	1651331	4
The following Prep Methods were performed:											
Method	Description	n		Analyst	Date	Ti	me	Prep Batch			
EPA 200.2	ICP-MS 200.	2 PREP		SXW1	03/28/17	08	43	1651279			

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	EPA 200.8 SC_NPDES	
3	EPA 904.0/SW846 9320 Modified	
4	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			89.7	(15%-125%)

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

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Certificate of Analysis

Project:

Client ID:

Report Date: April 14, 2017

SCEG01616C

GEEL003

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-28
Sample ID: 419304003
Matrix: Ground Water

Matrix: Ground Water

Collect Date: 27-MAR-17 13:00

Receive Date: 28-MAR-17

Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF I	DF	Analyst Date	Time	Batch	Method
Ion Chromatography											
EPA300.0 Fluoride in	Liquid "As Re	eceived"									
Chloride	-	3.71	0.067	0.200	mg/L		1	MXL2 03/29/17	1759	1651888	1
Fluoride		0.145	0.033	0.100	mg/L		1				
Metals Analysis-ICP-I	MS										
200.8/200.2 NPDES I	Metals "As Red	ceived"									
Lithium	U	ND	2.00	10.0	ug/L	1.00	1	BAJ 04/07/17	2022	1651280	2
Rad Gas Flow Proport	tional Counting	7									
GFPC, Ra228, Liquid	"As Received"	'									
Radium-228	U	ND	0.510	3.00	pCi/L			AXM6 04/11/17	1203	1651318	3
Rad Radium-226											
Lucas Cell, Ra226, liq	uid "As Recei	ved"									
Radium-226		2.51	0.287	1.00	pCi/L			MXH8 04/13/17	1045	1651331	4
The following Prep M											
Method	Description	1		Analyst	Date	T	ime	Prep Batch			
EPA 200.2	ICP-MS 200.	2 PREP		SXW1	03/28/17	08	343	1651279			

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	•
2	EPA 200.8 SC_NPDES	
3	EPA 904.0/SW846 9320 Modified	
4	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			74.9	(15%-125%)

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Project:

Client ID:

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: April 14, 2017

SCEG01616C

GEEL003

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-27 Sample ID: 419304004 Matrix: Ground Water Collect Date: 27-MAR-17 13:53

Receive Date: 28-MAR-17
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst Dat	e	Time	Batch	Method
Ion Chromatography	y											
EPA300.0 Fluoride	in Liquid "As Re	ceived"										
Fluoride		0.273	0.033	0.100	mg/L		1	MXL2 03/29/	17	1828	1651888	1
Chloride		13.3	0.134	0.400	mg/L		2	MXL2 03/30/	17	1536	1651888	2
Metals Analysis-ICI	P-MS											
200.8/200.2 NPDE	S Metals "As Red	ceived"										
Lithium	U	ND	2.00	10.0	ug/L	1.00	1	BAJ 04/07/	17	2025	1651280	3
Rad Gas Flow Propo	ortional Counting	ŗ										
GFPC, Ra228, Liqu	id "As Received"	'										
Radium-228	U	ND	0.558	3.00	pCi/L			AXM6 04/11/	17	1203	1651318	4
Rad Radium-226												
Lucas Cell, Ra226,	liquid "As Receiv	ved"										
Radium-226	_	3.45	0.422	1.00	pCi/L			MXH8 04/13/	17	1045	1651331	5
The following Prep Methods were performed:												
Method	Description	1		Analyst	Date	-	Гimе	Prep Bat	ch			
EPA 200.2	ICP-MS 200.2	2 PREP		SXW1	03/28/17	(0843	1651279				

The following Analytical Methods were performed:

Method	Description	Description Analyst Comments								
1	EPA 300.0		-							
2	EPA 300.0									
3	EPA 200.8 SC_NPDES									
4	EPA 904.0/SW846 9320 Modified									
5	EPA 903.1 Modified									
Surrogate/Trace	Surrogata/Tracar Dacayary Tast		Nominal	Pacovary%	Acceptable Limits					

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits

Barium-133 Tracer GFPC, Ra228, Liquid "As Received"

83.1 (15%-125%)

Notes:

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Certificate of Analysis

Report Date: April 14, 2017

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-27 Project: SCEG01616C Sample ID: 419304004 Client ID: GEEL003

Parameter Qualifier Result	DL	RL	Units	PF	DF Analyst Date	Time Batch Method
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Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

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Certificate of Analysis

Project:

Client ID:

Report Date: April 14, 2017

SCEG01616C

GEEL003

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-20 Sample ID: 419304005 Matrix: Ground Water Collect Date: 27-MAR-17 15:05

Receive Date: 28-MAR-17
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatography												
EPA300.0 Fluoride in	n Liquid "As Re	eceived"										
Fluoride	_	0.239	0.033	0.100	mg/L		1	MXL2	03/29/17	1857	1651888	1
Chloride		10.2	0.134	0.400	mg/L		2	MXL2	03/30/17	1605	1651888	2
Metals Analysis-ICP-	-MS											
200.8/200.2 NPDES	Metals "As Re	ceived"										
Lithium	J	5.04	2.00	10.0	ug/L	1.00	1	BAJ	04/07/17	2027	1651280	3
Rad Gas Flow Propor	rtional Counting	3										
GFPC, Ra228, Liquio	d "As Received"	"										
Radium-228	U	ND	0.551	3.00	pCi/L			AXM6	04/11/17	1203	1651318	4
Rad Radium-226												
Lucas Cell, Ra226, li	quid "As Recei	ved"										
Radium-226	-	0.566	0.249	1.00	pCi/L			MXH8	04/13/17	1045	1651331	5
The following Prep M	Methods were po	erformed:										
Method	Description	n		Analyst	Date	r	Time	Pre	ep Batch			
EPA 200.2	ICP-MS 200.	2 PREP		SXW1	03/28/17		0843	165	51279			

The following Analytical Methods were performed:

Method	Description	Description Analyst Comments									
1	EPA 300.0		-								
2	EPA 300.0										
3	EPA 200.8 SC_NPDES										
4	EPA 904.0/SW846 9320 Modified										
5	EPA 903.1 Modified										
Surrogate/Tracer Recovery Test		Result	Nominal	Recovery%	Acceptable Limits						

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits

Barium-133 Tracer GFPC, Ra228, Liquid "As Received"

79.7 (15%-125%)

Notes:

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Certificate of Analysis

Report Date: April 14, 2017

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-20 Project: SCEG01616C Sample ID: 419304005 Client ID: GEEL003

Parameter Qualifier Result	DL	RL	Units	PF	DF Analyst Date	Time Batch Method
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Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

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QC Summary

Report Date: April 14, 2017

Page 1 of 4

GEL Engineering, LLC 2040 Savage Rd Charleston, South Carolina

Contact: Robert Gardner

Workorder: 419304

Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range Anlst	Date Time
Ion Chromatography Batch 1651888								
QC1203757880 419304001 DUP Chloride		17.2	17.2	mg/L	0.169		(0%-20%) MXL2	03/30/17 14:38
Fluoride		0.442	0.442	mg/L	0.136 ^		(+/-0.100)	03/29/17 16:33
QC1203757881 419419008 DUP Chloride		155	155	mg/L	0.0935		(0%-20%)	03/30/17 20:54
Fluoride		0.232	0.229	mg/L	1.3 ^		(+/-0.100)	03/30/17 00:15
QC1203757879 LCS Chloride	5.00		4.92	mg/L		98.5	(90%-110%)	03/29/17 15:35
Fluoride	2.50		2.52	mg/L		101	(90%-110%)	
QC1203757878 MB Chloride		U	ND	mg/L				03/29/17 15:06
Fluoride		U	ND	mg/L				
QC1203757882 419304001 PS Chloride	5.00	3.44	8.90	mg/L		109	(90%-110%)	03/30/17 15:07
Fluoride	2.50	0.442	3.02	mg/L		103	(90%-110%)	03/29/17 17:02
QC1203757883 419419008 PS Chloride	5.00	3.10	8.60	mg/L		110	(90%-110%)	03/30/17 21:23
Fluoride	2.50	0.232	2.61	mg/L		95	(90%-110%)	03/30/17 00:44

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QC Summary

					<u> </u>	ummai	<u>.y</u>				
Workorder: 419304											Page 2 of 4
Parmname		NOM		Sample	Qual	QC	Units	RPD%	REC%	Range Anlst	Date Time
Metals Analysis - ICPMS Batch 1651280											
QC1203756291 41930400 Lithium	1 DUP			11.8		11.3	ug/L	3.7 ^		(+/-10.0) BA	AJ 04/07/17 20:12
QC1203756290 LCS Lithium		50.0				49.3	ug/L		98.5	(80%-120%)	04/07/17 20:06
QC1203756289 MB Lithium					U	ND	ug/L				04/07/17 20:04
QC1203756292 41930400 Lithium	1 MS	50.0		11.8		58.5	ug/L		93.4	(75%-125%)	04/07/17 20:14
QC1203756293 41930400 Lithium	1 SDILT			11.8	J	2.38	ug/L	1.14		(0%-10%)	04/07/17 20:17
Rad Gas Flow Batch 1651318											
QC1203756431 41904300 Radium-228	4 DUP		U	0.569		1.24	pCi/L	74.5		(0% - 100%) AXM	I6 04/11/17 12:05
QC1203756432 LCS Radium-228		6.89				7.53	pCi/L		109	(75%-125%)	04/11/17 12:05
QC1203756430 MB Radium-228					U	0.358	pCi/L				04/11/17 12:03
Rad Ra-226 Batch 1651331											
QC1203756459 41904300 Radium-226	6 DUP			0.517		0.846	pCi/L	48.3		(0% - 100%) MXF	I8 04/13/17 11:20
QC1203756461 LCS Radium-226		26.0				23.3	pCi/L		89.9	(75%-125%)	04/13/17 11:20

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QC Summary

Workorder: 419304									Pag	e 3 of 4
Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Ra-226 Batch 1651331										
QC1203756458 MB Radium-226		U	0.0848	pCi/L				MXH8	04/13/1	7 10:45
QC1203756460 419043006 MS Radium-226	130	0.517	120	pCi/L		92	(75%-125%)	04/13/1	7 11:20

Notes:

The Qualifiers in this report are defined as follows:

- Analyte is a Tracer compound
- Result is less than value reported <
- Result is greater than value reported >
- В The target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- Ε % difference of sample and SD is >10%. Sample concentration must meet flagging criteria
- Ε General Chemistry--Concentration of the target analyte exceeds the instrument calibration range
- FA Failed analysis.
- FΒ Mercury was found present at quantifiable concentrations in field blanks received with these samples. Data associated with the blank are deemed invalid for reporting to regulatory agencies
- Analytical holding time was exceeded Η
- Value is estimated
- K Analyte present. Reported value may be biased high. Actual value is expected to be lower.
- L Analyte present. Reported value may be biased low. Actual value is expected to be higher.
- M M if above MDC and less than LLD
- M REMP Result > MDC/CL and < RDL
- Metals--The Matrix spike sample recovery is not within specified control limits N
- N/A RPD or %Recovery limits do not apply.
- N1See case narrative
- ND Analyte concentration is not detected above the detection limit
- NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Q One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
- R Per section 9.3.4.1 of Method 1664 Revision B, due to matrix spike recovery issues, this result may not be reported or used for regulatory compliance purposes.
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- UI Gamma Spectroscopy--Uncertain identification

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QC Summary

Workorder: 419304

Parmname

NOM Sample Qual QC Units RPD% REC% Range Anlst Date Time

- UJ Gamma Spectroscopy--Uncertain identification
- UL Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y Other specific qualifiers were required to properly define the results. Consult case narrative.
- Z Paint Filter Test--Particulates passed through the filter, however no free liquids were observed.
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
- d 5-day BOD--The 2:1 depletion requirement was not met for this sample
- e 5-day BOD--Test replicates show more than 30% difference between high and low values. The data is qualified per the method and can be used for reporting purposes
- h Preparation or preservation holding time was exceeded

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

* Indicates that a Quality Control parameter was not within specifications.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.



Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

REPORT TO:

Mike Moore C221

Sample ID: AB26448

Williams Hwy 52 GW 10-NPDES/CCR

Date & Time Sampled: March 27, 2017 11:19
Date & Time Submitted: March 29, 2017 09:10

Collected by: S.RUCKER Location Code: WLG10TDS

GW 10 Login Record File: 170329002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	17.15	0.50	mg/L	4/12/17 00:04	EB
pH by SM4500HB(2011)	7.14	0.00	S.U.	3/29/17 12:20	BF
Holding Time of 15 minutes has been e	xceeded.				
Sulfates by IC EPA 300.0	5.40	0.50	mg/L	4/12/17 00:04	EB
Total Dissolved Solid-SM2540C	277	2.0	mg/L	3/31/17 14:00	CDB



Tel: (803)217-9384 Fax: (803) 217-9911

REPORT TO:

Mike Moore C221

January 25, 2018

Sample ID: AB26449

Williams Hwy 52 GW 11-NPDES/CCR

Date & Time Sampled: March 27, 2017 12:11

Date & Time Submitted: March 29, 2017 09:10

Collected by: S.RUCKER Location Code: WLG11TDS

GW 11 Login Record File: 170329002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	5.04	0.50	mg/L	4/12/17 00:04	EB
pH by SM4500HB(2011)	6.46	0.00	S.U.	3/29/17 12:20	BF
Holding Time of 15 minutes has been e	xceeded.				
Sulfates by IC EPA 300.0	1.45	0.50	mg/L	4/12/17 00:04	EB
Total Dissolved Solid-SM2540C	101	2.0	mg/L	3/31/17 14:00	CDB

Approved By:		
AUUIUVEU DV.		



Tel: (803)217-9384 Fax: (803) 217-9911

REPORT TO:

Mike Moore C221

January 25, 2018

Sample ID: AB26450

Williams Hwy 52 GW 28-NPDES/CCR

Date & Time Sampled: March 27, 2017 13:00

Date & Time Submitted: March 29, 2017 09:10

Collected by: S.RUCKER Location Code: WLG28TDS

GW 28 Login Record File: 170329002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	3.68	0.50	mg/L	4/12/17 00:04	EB
pH by SM4500HB(2011)	6.60	0.00	S.U.	3/29/17 12:20	BF
Holding Time of 15 minutes has been ex	xceeded.				
Sulfates by IC EPA 300.0	0.92	0.50	mg/L	4/12/17 00:04	EB
Total Dissolved Solid-SM2540C	95	2.0	mg/L	3/31/17 14:00	CDB



Tel: (803)217-9384 Fax: (803) 217-9911

REPORT TO:

Mike Moore C221

January 25, 2018

Sample ID: AB26451

Williams Hwy 52 GW 27-NPDES/CCR

Date & Time Sampled: March 27, 2017 13:53

Date & Time Submitted: March 29, 2017 09:10

Collected by: S.RUCKER Location Code: WLG27TDS

GW 27 Login Record File: 170329002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	12.78	0.50	mg/L	4/12/17 00:04	EB
pH by SM4500HB(2011)	6.98	0.00	S.U.	3/29/17 12:20	BF
Holding Time of 15 minutes has been	exceeded.				
Sulfates by IC EPA 300.0	11.33	0.50	mg/L	4/12/17 00:04	EB
Total Dissolved Solid-SM2540C	314	2.0	mg/L	3/31/17 14:00	CDB



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January 25, 2018

REPORT TO:

Mike Moore C221

Sample ID: AB26452

Williams Hwy 52 GW 20-NPDES/CCR

Date & Time Sampled: March 27, 2017 15:05

Date & Time Submitted: March 29, 2017 09:10

Collected by: S.RUCKER Location Code: WLG20TDS

GW 20 Login Record File: 170329002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	10.05	0.50	mg/L	4/12/17 00:04	EB
pH by SM4500HB(2011)	6.73	0.00	S.U.	3/29/17 12:20	BF
Holding Time of 15 minutes has been ex	xceeded.				
Sulfates by IC EPA 300.0	10.30	0.50	mg/L	4/12/17 00:04	EB
Total Dissolved Solid-SM2540C	644	2.0	mg/L	3/31/17 14:00	CDB

Approved By:		



Tel: (803)217-9384 Fax: (803) 217-9911

REPORT TO:

Mike Moore C221

January 25, 2018

Sample ID: AB26453

Williams Hwy 52 GW 21-NPDES/CCR

Date & Time Sampled: March 28, 2017 08:35

Date & Time Submitted: March 29, 2017 09:10

Collected by: S.RUCKER Location Code: WLG21TDS

GW 21 Login Record File: 170329002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	10.76	0.50	mg/L	4/12/17 00:04	EB
pH by SM4500HB(2011)	6.94	0.00	S.U.	3/29/17 12:20	BF
Holding Time of 15 minutes has been e	xceeded.				
Sulfates by IC EPA 300.0	8.42	0.50	mg/L	4/12/17 00:04	EB
Total Dissolved Solid-SM2540C	613	2.0	mg/L	3/31/17 14:00	CDB



Tel: (803)217-9384 Fax: (803) 217-9911

REPORT TO:

Mike Moore C221

January 25, 2018

Sample ID: AB26454

Williams Hwy 52 DUP -NPDES/CCR

Date & Time Sampled: March 28, 2017 09:00

Date & Time Submitted: March 29, 2017 09:10

Collected by: S.RUCKER Location Code: WLGDUPTDS

GW 10 Login Record File: 170329002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	10.75	0.50	mg/L	4/12/17 00:04	EB
pH by SM4500HB(2011)	6.94	0.00	S.U.	3/29/17 12:20	BF
Holding Time of 15 minutes has been ex	xceeded.				
Sulfates by IC EPA 300.0	8.46	0.50	mg/L	4/12/17 00:04	EB
Total Dissolved Solid-SM2540C	608	2.0	mg/L	3/31/17 14:00	CDB



Tel: (803)217-9384 Fax: (803) 217-9911

____ January 25, 2018

REPORT TO:

Mike Moore C221

Sample ID: AB26455

Williams Hwy 52 FIELD BLANK-NPDES/CCR

Date & Time Sampled: March 28, 2017 09:15

Date & Time Submitted: March 29, 2017 09:10

Collected by: S.RUCKER Location Code: WLGFBTDS

GW 10 Login Record File: 170329002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	Less than	0.50	mg/L	4/12/17 00:04	EB
pH by SM4500HB(2011)	7.55	0.00	S.U.	3/29/17 12:20	BF
Holding Time of 15 minutes has been e.	xceeded.				
Sulfates by IC EPA 300.0	Less than	0.50	mg/L	4/12/17 00:04	EB
Total Dissolved Solid-SM2540C	14	2.0	mg/L	3/31/17 14:00	CDB



REPORT TO:

Central Laboratory (P-08) 2102 North Lake Drive Columbia, SC 29212

Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

Mike Moore C221

Sample ID: AB26456

Williams Hwy 52 GW 22D-NPDES/CCR

Date & Time Sampled: March 28, 2017 10:29
Date & Time Submitted: March 29, 2017 09:10

Collected by: S.RUCKER Location Code: WLG22DTDS

GW 22D Login Record File: 170329002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	10.18	0.50	mg/L	4/12/17 00:04	EB
pH by SM4500HB(2011)	7.22	0.00	S.U.	3/29/17 12:20	BF
Holding Time of 15 minutes has been ex	xceeded.				
Sulfates by IC EPA 300.0	60.9	0.50	mg/L	4/12/17 00:04	EB
Total Dissolved Solid-SM2540C	533	2.0	mg/L	3/31/17 14:00	CDB



Tel: (803)217-9384 Fax: (803) 217-9911

REPORT TO:

Mike Moore C221

Sample ID: AB26457

January 25, 2018

Williams Hwy 52 GW 23D-NPDES/CCR

Date & Time Sampled: March 28, 2017 11:36

Date & Time Submitted: March 29, 2017 09:10

Collected by: S.RUCKER Location Code: WLG23DTDS

GW 23D Login Record File: 170329002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	14.80	0.50	mg/L	4/12/17 00:04	EB
pH by SM4500HB(2011)	7.18	0.00	S.U.	3/29/17 12:20	BF
Holding Time of 15 minutes has been	exceeded.				
Sulfates by IC EPA 300.0	29.89	0.50	mg/L	4/12/17 00:04	EB
Total Dissolved Solid-SM2540C	483	2.0	mg/L	3/31/17 14:00	CDB

Approved By:		



Tel: (803)217-9384 Fax: (803) 217-9911

REPORT TO:

Mike Moore C221

January 25, 2018

Sample ID: AB26458

Williams Hwy 52 GW 25-NPDES/CCR

Date & Time Sampled: March 28, 2017 12:34
Date & Time Submitted: March 29, 2017 09:10

Collected by: S.RUCKER Location Code: WLG25TDS

GW 25 Login Record File: 170329002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	22.21	0.50	mg/L	4/12/17 00:04	EB
pH by SM4500HB(2011)	7.05	0.00	S.U.	3/29/17 12:20	BF
Holding Time of 15 minutes has been e.	xceeded.				
Sulfates by IC EPA 300.0	41.24	0.50	mg/L	4/12/17 00:04	EB
Total Dissolved Solid-SM2540C	534	2.0	mg/L	3/31/17 14:00	CDB

Approved By:		



Tel: (803)217-9384 Fax: (803) 217-9911

REPORT TO:

Mike Moore C221

January 25, 2018

Sample ID: AB26459

Williams Hwy 52 GW 24-NPDES/CCR

Date & Time Sampled: March 28, 2017 13:31

Date & Time Submitted: March 29, 2017 09:10

Collected by: S.RUCKER Location Code: WLG24TDS

GW 24 Login Record File: 170329002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	17.41	0.50	mg/L	4/12/17 00:04	EB
pH by SM4500HB(2011)	6.66	0.00	S.U.	3/29/17 12:20	BF
Holding Time of 15 minutes has been ex	xceeded.				
Sulfates by IC EPA 300.0	9.28	0.50	mg/L	4/12/17 00:04	EB
Total Dissolved Solid-SM2540C	561	2.0	mg/L	3/31/17 14:00	CDB



Tel: (803)217-9384 Fax: (803) 217-9911

REPORT TO:

Mike Moore C221

January 25, 2018

Sample ID: AB26460

Williams Hwy 52 GW 26-NPDES/CCR

Date & Time Sampled: March 28, 2017 14:47

Date & Time Submitted: March 29, 2017 09:10

Collected by: S.RUCKER Location Code: WLG26TDS

GW 26 Login Record File: 170329002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	151.5	2.5	mg/L	4/12/17 00:04	EB
pH by SM4500HB(2011)	6.25	0.00	S.U.	3/29/17 12:20	BF
Holding Time of 15 minutes has been ex	xceeded.				
Sulfates by IC EPA 300.0	71.5	2.5	mg/L	4/12/17 00:04	EB
Total Dissolved Solid-SM2540C	910	2.0	mg/L	3/31/17 14:00	CDB



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January 25, 2018

REPORT TO:

Mike Moore C221

Sample ID: AB26461

Williams Hwy 52 GW 10-NPDES/CCR

Date & Time Sampled: March 27, 2017 Date & Time Submitted:

11:19 March 29, 2017 09:10

Collected by: S.RUCKER Location Code: WLG10TM

GW 10 Login Record File: 170329002

			g		
CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Antimony by ICP-MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Arsenic by ICP_MS 200.8	1.3	1.0	ppb	3/29/17 16:00	MC
Barium by ICP-OES 200.7	39.7	10.0	ppb	3/30/17 09:47	MC
Beryllium EPA 200.7	Less than	2.0	ppb	3/30/17 09:47	MC
Boron - EPA 200.7	Less than	1000	ppb	3/30/17 09:47	MC
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Calcium EPA 200.7	38600	1000	ppb	3/30/17 09:47	MC
Chromium by ICP_MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Cobalt by ICP_MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Lead by ICP-MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Lithium (CWA) 200.7	11.8	2.0	ppb	3/30/17 09:47	MC
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	3/30/17 14:26	PRC
Molybdenum - EPA 200.8	1.9	1.0	ppb	3/29/17 16:00	MC
Selenium by ICP-MS 200.8	Less than	5.0	ppb	3/29/17 16:00	MC
Thallium by ICP-MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC

Approved By:



Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

REPORT TO:

Mike Moore C221

Sample ID: AB26462

Williams Hwy 52 GW 11-NPDES/CCR

Date & Time Sampled: March 27, 2017 12:11

Date & Time Submitted: March 29, 2017 09:10

Collected by: S.RUCKER Location Code: WLG11TM

GW 11 Login Record File: 170329002

OII 11			g		
CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Antimony by ICP-MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Arsenic by ICP_MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Barium by ICP-OES 200.7	Less than	10.0	ppb	3/30/17 09:47	MC
Beryllium EPA 200.7	Less than	2.0	ppb	3/30/17 09:47	MC
Boron - EPA 200.7	Less than	1000	ppb	3/30/17 09:47	MC
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Calcium EPA 200.7	16600	1000	ppb	3/30/17 09:47	MC
Chromium by ICP_MS 200.8	1.4	1.0	ppb	3/29/17 16:00	MC
Cobalt by ICP_MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Lead by ICP-MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Lithium (CWA) 200.7	3.8	2.0	ppb	3/30/17 09:47	MC
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	3/30/17 14:26	PRC
Molybdenum - EPA 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Selenium by ICP-MS 200.8	Less than	5.0	ppb	3/29/17 16:00	MC
Thallium by ICP-MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC

Approved By:		



Tel: (803)217-9384 Fax: (803) 217-9911

_____ January 25, 2018

REPORT TO:

Mike Moore C221

Sample ID: AB26463

Williams Hwy 52 GW 28-NPDES/CCR

Date & Time Sampled: March 27, 2017 13:00

Date & Time Submitted: March 29, 2017 09:10

Collected by: S.RUCKER Location Code: WLG28TM

GW 28 Login Record File: 170329002

011 20			_09	0.0	
CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Antimony by ICP-MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Arsenic by ICP_MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Barium by ICP-OES 200.7	Less than	10.0	ppb	3/30/17 09:47	MC
Beryllium EPA 200.7	Less than	2.0	ppb	3/30/17 09:47	MC
Boron - EPA 200.7	Less than	1000	ppb	3/30/17 09:47	MC
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Calcium EPA 200.7	23800	1000	ppb	3/30/17 09:47	MC
Chromium by ICP_MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Cobalt by ICP_MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Lead by ICP-MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Lithium (CWA) 200.7	Less than	2.0	ppb	3/30/17 09:47	MC
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	3/30/17 14:26	PRC
Molybdenum - EPA 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Selenium by ICP-MS 200.8	Less than	5.0	ppb	3/29/17 16:00	MC
Thallium by ICP-MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC

Approved By:



Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

REPORT TO:

Mike Moore C221

Sample ID: AB26464

Williams Hwy 52 GW 27-NPDES/CCR

Date & Time Sampled: March 27, 2017 Date & Time Submitted:

13:53 March 29, 2017 09:10

Collected by: S.RUCKER Location Code: WLG27TM

GW 27 Login Record File: 170329002

O11 21			g		
CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Antimony by ICP-MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Arsenic by ICP_MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Barium by ICP-OES 200.7	22.4	10.0	ppb	3/30/17 09:47	MC
Beryllium EPA 200.7	Less than	2.0	ppb	3/30/17 09:47	MC
Boron - EPA 200.7	Less than	1000	ppb	3/30/17 09:47	MC
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Calcium EPA 200.7	87100	1000	ppb	3/30/17 09:47	MC
Chromium by ICP_MS 200.8	1.7	1.0	ppb	3/29/17 16:00	MC
Cobalt by ICP_MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Lead by ICP-MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Lithium (CWA) 200.7	Less than	2.0	ppb	3/30/17 09:47	MC
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	3/30/17 14:26	PRC
Molybdenum - EPA 200.8	1.6	1.0	ppb	3/29/17 16:00	MC
Selenium by ICP-MS 200.8	Less than	5.0	ppb	3/29/17 16:00	MC
Thallium by ICP-MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC

pproved By	y:		
pproved By	y:		



Tel: (803)217-9384 Fax: (803) 217-9911

_____ January 25, 2018

REPORT TO:

Mike Moore C221

Sample ID: AB26465

Williams Hwy 52 GW 20-NPDES/CCR

Date & Time Sampled: March 27, 2017 15:05

Date & Time Submitted: March 29, 2017 09:10

Collected by: S.RUCKER Location Code: WLG20TM

GW 20 Login Record File: 170329002

011 20			g		
CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Antimony by ICP-MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Arsenic by ICP_MS 200.8	4.0	1.0	ppb	3/29/17 16:00	MC
Barium by ICP-OES 200.7	54.1	10.0	ppb	3/30/17 09:47	MC
Beryllium EPA 200.7	Less than	2.0	ppb	3/30/17 09:47	MC
Boron - EPA 200.7	Less than	1000	ppb	3/30/17 09:47	MC
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Calcium EPA 200.7	157000	1000	ppb	3/30/17 09:47	MC
Chromium by ICP_MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Cobalt by ICP_MS 200.8	1.3	1.0	ppb	3/29/17 16:00	MC
Lead by ICP-MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Lithium (CWA) 200.7	5.4	2.0	ppb	3/30/17 09:47	MC
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	3/30/17 14:26	PRC
Molybdenum - EPA 200.8	1.1	1.0	ppb	3/29/17 16:00	MC
Selenium by ICP-MS 200.8	Less than	5.0	ppb	3/29/17 16:00	MC
Thallium by ICP-MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC

Approved By:



Tel: (803)217-9384 Fax: (803) 217-9911

09:10

January 25, 2018

REPORT TO:

Mike Moore C221

Sample ID: AB26466

Williams Hwy 52 GW 21-NPDES/CCR

Date & Time Sampled: March 28, 2017 08:35 Date & Time Submitted: March 29, 2017

Collected by: S.RUCKER Location Code: WLG21TM

GW 21 Login Record File: 170329002

0.1			g		
CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Antimony by ICP-MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Arsenic by ICP_MS 200.8	2.3	1.0	ppb	3/29/17 16:00	MC
Barium by ICP-OES 200.7	33.2	10.0	ppb	3/30/17 09:47	MC
Beryllium EPA 200.7	Less than	2.0	ppb	3/30/17 09:47	MC
Boron - EPA 200.7	Less than	1000	ppb	3/30/17 09:47	MC
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Calcium EPA 200.7	130000	1000	ppb	3/30/17 09:47	MC
Chromium by ICP_MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Cobalt by ICP_MS 200.8	2.1	1.0	ppb	3/29/17 16:00	MC
Lead by ICP-MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Lithium (CWA) 200.7	5.0	2.0	ppb	3/30/17 09:47	MC
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	3/30/17 14:26	PRC
Molybdenum - EPA 200.8	1.1	1.0	ppb	3/29/17 16:00	MC
Selenium by ICP-MS 200.8	Less than	5.0	ppb	3/29/17 16:00	MC
Thallium by ICP-MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC

Approved By:



Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

REPORT TO:

Mike Moore C221

Sample ID: AB26467

Williams Hwy 52 DUP -NPDES/CCR

Date & Time Sampled: March 28, 2017 09:00

Date & Time Submitted: March 29, 2017 09:10

Collected by: S.RUCKER Location Code: WLGDUPTM

GW 10 Login Record File: 170329002

011 10			g		
CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Antimony by ICP-MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Arsenic by ICP_MS 200.8	2.3	1.0	ppb	3/29/17 16:00	MC
Barium by ICP-OES 200.7	33.5	10.0	ppb	3/30/17 09:47	MC
Beryllium EPA 200.7	Less than	2.0	ppb	3/30/17 09:47	MC
Boron - EPA 200.7	Less than	1000	ppb	3/30/17 09:47	MC
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Calcium EPA 200.7	130000	1000	ppb	3/30/17 09:47	MC
Chromium by ICP_MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Cobalt by ICP_MS 200.8	2.0	1.0	ppb	3/29/17 16:00	MC
Lead by ICP-MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Lithium (CWA) 200.7	5.0	2.0	ppb	3/30/17 09:47	MC
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	3/30/17 14:26	PRC
Molybdenum - EPA 200.8	1.1	1.0	ppb	3/29/17 16:00	MC
Selenium by ICP-MS 200.8	Less than	5.0	ppb	3/29/17 16:00	MC
Thallium by ICP-MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC

Approved By:		



REPORT TO:

Central Laboratory (P-08) 2102 North Lake Drive Columbia, SC 29212

Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

Mike Moore C221 Sample ID: AB26468

Williams Hwy 52 FIELD BLANK-NPDES/CCR

Date & Time Sampled: March 28, 2017 09:15

Date & Time Submitted: March 29, 2017 09:10

Collected by: S.RUCKER Location Code: WLGFBTM

GW 10 Login Record File: 170329002

			5		
CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Antimony by ICP-MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Arsenic by ICP_MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Barium by ICP-OES 200.7	Less than	10.0	ppb	3/30/17 09:47	MC
Beryllium EPA 200.7	Less than	2.0	ppb	3/30/17 09:47	MC
Boron - EPA 200.7	Less than	1000	ppb	3/30/17 09:47	MC
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Calcium EPA 200.7	Less than	100	ppb	3/30/17 09:47	MC
Chromium by ICP_MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Cobalt by ICP_MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Lead by ICP-MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Lithium (CWA) 200.7	Less than	2.0	ppb	3/30/17 09:47	MC
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	3/30/17 14:26	PRC
Molybdenum - EPA 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Selenium by ICP-MS 200.8	Less than	5.0	ppb	3/29/17 16:00	MC
Thallium by ICP-MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC



REPORT TO:

Central Laboratory (P-08) 2102 North Lake Drive Columbia, SC 29212

Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

Mike Moore C221

Sample ID: AB26469

Williams Hwy 52 GW 22D-NPDES/CCR

Date & Time Sampled: March 28, 2017 10:29

Date & Time Submitted: March 29, 2017 09:10

Collected by: S.RUCKER Location Code: WLG22DTM

GW 22D Login Record File: 170329002

011 225			_09	1,0020002	
CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Antimony by ICP-MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Arsenic by ICP_MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Barium by ICP-OES 200.7	Less than	10.0	ppb	3/30/17 09:47	MC
Beryllium EPA 200.7	Less than	2.0	ppb	3/30/17 09:47	MC
Boron - EPA 200.7	Less than	1000	ppb	3/30/17 09:47	MC
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Calcium EPA 200.7	79800	1000	ppb	3/30/17 09:47	MC
Chromium by ICP_MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Cobalt by ICP_MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Lead by ICP-MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Lithium (CWA) 200.7	10.3	2.0	ppb	3/30/17 09:47	MC
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	3/30/17 14:26	PRC
Molybdenum - EPA 200.8	8.6	1.0	ppb	3/29/17 16:00	MC
Selenium by ICP-MS 200.8	Less than	5.0	ppb	3/29/17 16:00	MC
Thallium by ICP-MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC

Approved By	v :		



Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

REPORT TO:

Mike Moore C221

Sample ID: AB26470

Williams Hwy 52 GW 23D-NPDES/CCR

Date & Time Sampled: March 28, 2017 11:36

Date & Time Submitted: March 29, 2017 09:10

Collected by: S.RUCKER Location Code: WLG23DTM

GW 23D Login Record File: 170329002

0.1. 202			g		
CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Antimony by ICP-MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Arsenic by ICP_MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Barium by ICP-OES 200.7	10.5	10.0	ppb	3/30/17 09:47	MC
Beryllium EPA 200.7	Less than	2.0	ppb	3/30/17 09:47	MC
Boron - EPA 200.7	Less than	1000	ppb	3/30/17 09:47	MC
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Calcium EPA 200.7	71700	1000	ppb	3/30/17 09:47	MC
Chromium by ICP_MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Cobalt by ICP_MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Lead by ICP-MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Lithium (CWA) 200.7	6.9	2.0	ppb	3/30/17 09:47	MC
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	3/30/17 14:26	PRC
Molybdenum - EPA 200.8	9.9	1.0	ppb	3/29/17 16:00	MC
Selenium by ICP-MS 200.8	Less than	5.0	ppb	3/29/17 16:00	MC
Thallium by ICP-MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC

Approved By:	



Tel: (803)217-9384 Fax: (803) 217-9911

____ January 25, 2018

REPORT TO:

Mike Moore C221

Sample ID: AB26471

Williams Hwy 52 GW 25-NPDES/CCR

Date & Time Sampled: March 28, 2017 12:34

Date & Time Submitted: March 29, 2017 09:10

Collected by: S.RUCKER Location Code: WLG25TM

GW 25 Login Record File: 170329002

011 20			5	1,0020002	
CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Antimony by ICP-MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Arsenic by ICP_MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Barium by ICP-OES 200.7	17.4	10.0	ppb	3/30/17 09:47	MC
Beryllium EPA 200.7	Less than	2.0	ppb	3/30/17 09:47	MC
Boron - EPA 200.7	Less than	1000	ppb	3/30/17 09:47	MC
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Calcium EPA 200.7	110000	1000	ppb	3/30/17 09:47	MC
Chromium by ICP_MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Cobalt by ICP_MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Lead by ICP-MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC
Lithium (CWA) 200.7	9.3	2.0	ppb	3/30/17 09:47	MC
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	3/30/17 14:26	PRC
Molybdenum - EPA 200.8	3.7	1.0	ppb	3/29/17 16:00	MC
Selenium by ICP-MS 200.8	Less than	5.0	ppb	3/29/17 16:00	MC
Thallium by ICP-MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC

Approved By:



REPORT TO:

Central Laboratory (P-08) 2102 North Lake Drive Columbia, SC 29212

Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

Mike Moore C221

Sample ID: AB26472

Williams Hwy 52 GW 24-NPDES/CCR

Date & Time Sampled: March 28, 2017 13:31

Date & Time Submitted: March 29, 2017 09:10

Collected by: S.RUCKER Location Code: WLG24TM

GW 24 Login Record File: 170329002

0.1.2.								
CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist			
Antimony by ICP-MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC			
Arsenic by ICP_MS 200.8	1.5	1.0	ppb	3/29/17 16:00	MC			
Barium by ICP-OES 200.7	51.1	10.0	ppb	3/30/17 09:47	MC			
Beryllium EPA 200.7	Less than	2.0	ppb	3/30/17 09:47	MC			
Boron - EPA 200.7	Less than	1000	ppb	3/30/17 09:47	MC			
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	3/29/17 16:00	MC			
Calcium EPA 200.7	146000	1000	ppb	3/30/17 09:47	MC			
Chromium by ICP_MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC			
Cobalt by ICP_MS 200.8	1.6	1.0	ppb	3/29/17 16:00	MC			
Lead by ICP-MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC			
Lithium (CWA) 200.7	4.2	2.0	ppb	3/30/17 09:47	MC			
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	3/30/17 14:26	PRC			
Molybdenum - EPA 200.8	1.1	1.0	ppb	3/29/17 16:00	MC			
Selenium by ICP-MS 200.8	Less than	5.0	ppb	3/29/17 16:00	MC			
Thallium by ICP-MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC			

Approved By	:			
Approved By	:			



REPORT TO:

Central Laboratory (P-08) 2102 North Lake Drive Columbia, SC 29212

Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

Mike Moore C221

Sample ID: AB26473

Williams Hwy 52 GW 26-NPDES/CCR

Date & Time Sampled: March 28, 2017 14:47

Date & Time Submitted: March 29, 2017 09:10

Collected by: S.RUCKER Location Code: WLG26TM

GW 26 Login Record File: 170329002

011 20								
CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist			
Antimony by ICP-MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC			
Arsenic by ICP_MS 200.8	4.4	1.0	ppb	3/29/17 16:00	MC			
Barium by ICP-OES 200.7	78.9	10.0	ppb	3/30/17 09:47	MC			
Beryllium EPA 200.7	Less than	2.0	ppb	3/30/17 09:47	MC			
Boron - EPA 200.7	Less than	1000	ppb	3/30/17 09:47	MC			
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	3/29/17 16:00	MC			
Calcium EPA 200.7	165000	1000	ppb	3/30/17 09:47	MC			
Chromium by ICP_MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC			
Cobalt by ICP_MS 200.8	7.1	1.0	ppb	3/29/17 16:00	MC			
Lead by ICP-MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC			
Lithium (CWA) 200.7	2.5	2.0	ppb	3/30/17 09:47	MC			
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	3/30/17 14:26	PRC			
Molybdenum - EPA 200.8	Less than	1.0	ppb	3/29/17 16:00	MC			
Selenium by ICP-MS 200.8	Less than	5.0	ppb	3/29/17 16:00	MC			
Thallium by ICP-MS 200.8	Less than	1.0	ppb	3/29/17 16:00	MC			

Approved By:

EPA CCR Rule Compliance Monitoring Wells Groundwater Monitoring Data

South Carolina Electric & Gas: Williams Station Highway 52 Class Three Landfill

Gauging Date:05/23-25/2017			Final Water Quality Indicator Parameters						
Monitoring Well ID	PVC Pipe Elevation, ft.	Depth to Groundwater, ft.	Groundwater Elevation, ft.	Temparature °C	pH S.U.	Sp. Cond. µS/cm	Turbidity NTU	ORP mV	DO mg/L
GW-10	52.28	7.96	44.32	20	7.4	506	7.36	-85.0	1.01
GW-11	51.72	11.10	40.62	20.6	7.0	250	7.28	-7.5	1.28
GW-20	60.81	21.56	39.25	22.1	6.3	1,065	9.56	5.6	0.73
GW-21	56.14	17.70	38.44	21.5	6.5	1,026	6.47	0.9	0.77
GW-22D	50.36	16.97	33.39	22.2	6.9	885	6.36	151	1.07
GW-23D	49.69	14.72	34.97	21.7	7.0	794	5.69	3.8	0.87
GW-24	52.40	16.35	36.05	21.7	6.4	917	6.12	-13.4	0.64
GW-25	50.93	15.69	35.24	21.7	6.8	889	5.63	-2.4	1.14
GW-26	55.21	25.25	29.96	22.4	5.9	1,452	5.74	-14.8	0.79
GW-27	53.25	8.33	44.92	20.1	6.6	599	6.54	-24.5	1.05
GW-28	51.22	10.38	40.84	20.8	6.4	165	5.69	31.7	3.61

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis Report for

GEEL003 GEL Engineering, LLC Client SDG: 424115 GEL Work Order: 424115

The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a Tracer compound
- ** Analyte is a surrogate compound
- H Analytical holding time was exceeded
- J Value is estimated
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Jake Crook.

	Jack N	Crosh		
Reviewed by	,			

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: June 21, 2017

SCEG01616C

GEEL003

Project:

Client ID:

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-22D Sample ID: 424115001

Matrix: Ground Water
Collect Date: 24-MAY-17 09:12
Receive Date: 25-MAY-17
Collector: Client

DL RL PF Qualifier Units DF Analyst Date Time Batch Method Parameter Result Ion Chromatography EPA300.0 Fluoride in Liquid "As Received" Fluoride 0.033 0.252 0.100 mg/L MXL2 06/03/17 0838 1670502 1 Chloride 9.17 0.134 0.400 MXL2 06/05/17 1616 1670502 2 mg/L Metals Analysis-ICP-MS 200.8/200.2 NPDES Metals "As Received" Lithium 12.4 2.00 10.0 ug/L 1.00 1 BAJ 05/27/17 1708 1668713 3 Rad Gas Flow Proportional Counting GFPC, Ra228, Liquid "As Received" Radium-228 ND 1.16 3.00 pCi/L BXF1 06/19/17 1529 1668804 Rad Radium-226 Lucas Cell, Ra226, liquid "As Received" 0.232 Radium-226 0.273 1.00 pCi/L MXH8 06/21/17 0820 1668815 5 The following Prep Methods were performed: Method Prep Batch Description Date Time Analyst EPA 200.2 ICP-MS 200.2 PREP 05/26/17 0852 1668711 SXW1

The following Analytical Methods were performed:

 Method
 Description
 Analyst Comments

 1
 EPA 300.0
 EPA 300.0

 3
 EPA 200.8 SC_NPDES
 EPA 904.0/SW846 9320 Modified

 5
 EPA 903.1 Modified

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits

Barium-133 Tracer GFPC, Ra228, Liquid "As Received"

92.2 (15%-125%)

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: June 21, 2017

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-22D Project: SCEG01616C Sample ID: 424115001 Client ID: GEEL003

Parameter Qualifier Result	DL	RL	Units	PF	DF Analyst Date	Time Batch Method
----------------------------	----	----	-------	----	-----------------	-------------------

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: June 21, 2017

Company: GEL Engineering, LLC 2040 Savage Rd Address:

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-23D Sample ID: 424115002 Matrix: Ground Water Collect Date: 24-MAY-17 10:05

25-MAY-17 Receive Date: Collector: Client

Project: SCEG01616C Client ID: GEEL003

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst Date	Tim	e Batch	Method
Ion Chromatography	,										
EPA300.0 Fluoride i	n Liquid "As Re	eceived"									
Fluoride	•	0.317	0.033	0.100	mg/L		1	MXL2 06/03/1	7 0907	1670502	1
Chloride		14.2	0.134	0.400	mg/L		2	MXL2 06/05/1	7 1645	1670502	2
Metals Analysis-ICP	P-MS										
200.8/200.2 NPDES	Metals "As Re	ceived"									
Lithium	J	8.90	2.00	10.0	ug/L	1.00	1	BAJ 05/27/1	7 1727	1668713	3
Rad Gas Flow Propo	rtional Counting	g									
GFPC, Ra228, Liqui	d "As Received	"									
Radium-228	U	ND	1.80	3.00	pCi/L			BXF1 06/19/1	7 1529	1668804	4
Rad Radium-226											
Lucas Cell, Ra226, li	iquid "As Recei	ved"									
Radium-226	•	0.471	0.180	1.00	pCi/L			MXH8 06/21/1	7 0820	1668815	5
The following Prep I	Methods were p	erformed:									
Method	Descriptio	n		Analyst	Date	-	Гіте	Prep Batc	h		
EPA 200.2	ICP-MS 200.	2 PREP		SXW1	05/26/17	()852	1668711			

The following Analytical Methods were performed:

Method	Description		Analyst Co	omments	
1	EPA 300.0		-		
2	EPA 300.0				
3	EPA 200.8 SC_NPDES				
4	EPA 904.0/SW846 9320 Modified				
5	EPA 903.1 Modified				
Surrogate/Trace	r Recovery Test	Result	Nominal	Recoverv%	Acceptable Limits

GFPC, Ra228, Liquid "As Received" 97.6 (15%-125%) Barium-133 Tracer

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: June 21, 2017

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-23D Project: SCEG01616C Sample ID: 424115002 Client ID: GEEL003

Parameter Qualifier Result	DL	RL	Units	PF	DF Analyst Date	Time Batch Method
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Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: June 21, 2017

SCEG01616C

GEEL003

Company: Address:

GEL Engineering, LLC

2040 Savage Rd

Charleston, South Carolina 29417

Contact: Project:

Robert Gardner Williams 52

Client Sample ID: GW-25

Sample ID:

424115003

Matrix:

Ground Water

Collect Date:

24-MAY-17 10:56

Receive Date:

25-MAY-17

Collector:

Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatogra	phy											
EPA300.0 Fluorio	de in Liquid "As Re	eceived"										
Fluoride	•	0.546	0.033	0.100	mg/L		1	MXL2 0	6/03/17	0937	1670502	1
Chloride		20.3	0.335	1.00	mg/L		5	MXL2 0	6/05/17	1714	1670502	2
Metals Analysis-	ICP-MS											
200.8/200.2 NPI	DES Metals "As Rec	ceived"										
Lithium		10.5	2.00	10.0	ug/L	1.00	1	BAJ 0	5/27/17	1740	1668713	3
Rad Gas Flow Pro	oportional Counting	g										
GFPC, Ra228, Li	quid "As Received"	"										
Radium-228	U	ND	1.10	3.00	pCi/L			BXF1 0	6/19/17	1529	1668804	4
Rad Radium-226												
Lucas Cell, Ra22	6, liquid "As Recei	ved"										
Radium-226	•	0.202	0.172	1.00	pCi/L			MXH8 0	6/21/17	0820	1668815	5
The following Pr	ep Methods were pe	erformed:										
Method	Description	n		Analyst	Date	,	Time	Prep	Batch			
EPA 200.2	ICP-MS 200.			SXW1	05/26/17	(0852	16687	711			
TPI - C-11 - C- A	1		. 1.									

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	•
2	EPA 300.0	
3	EPA 200.8 SC_NPDES	
4	EPA 904.0/SW846 9320 Modified	
5	EPA 903.1 Modified	

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits (15%-125%) Barium-133 Tracer GFPC, Ra228, Liquid "As Received" 92

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: June 21, 2017

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-25 Project: SCEG01616C Sample ID: 424115003 Client ID: GEEL003

Parameter Qualifier Result	DL	RL	Units	PF	DF Analyst Date	Time Batch Method
----------------------------	----	----	-------	----	-----------------	-------------------

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: June 21, 2017

SCEG01616C

GEEL003

Company:

GEL Engineering, LLC

Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Project:

Robert Gardner Williams 52

Client Sample ID: GW-24

Sample ID:

424115004

Matrix:

Ground Water

Collect Date:

24-MAY-17 12:00

Receive Date:

25-MAY-17

Collector:

Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst Date	Time Batch	Method
Ion Chromatograph	ıy									
EPA300.0 Fluoride	e in Liquid "As Re	eceived"								
Fluoride	•	0.390	0.033	0.100	mg/L		1	MXL2 06/03/1	7 1006 1670502	2 1
Chloride		17.2	0.134	0.400	mg/L		2	MXL2 06/05/1	7 1744 1670502	2 2
Metals Analysis-IC	CP-MS									
200.8/200.2 NPDE	ES Metals "As Re	ceived"								
Lithium	J	3.84	2.00	10.0	ug/L	1.00	1	BAJ 05/27/1	7 1743 1668713	3
Rad Gas Flow Prop	ortional Counting	<u> </u>								
GFPC, Ra228, Liqu	uid "As Received"	"								
Radium-228	U	ND	1.63	3.00	pCi/L			BXF1 06/19/1	7 1529 1668804	4
Rad Radium-226										
Lucas Cell, Ra226,	liquid "As Recei	ved"								
Radium-226	•	0.266	0.157	1.00	pCi/L			MXH8 06/21/1	7 0820 1668815	5 5
The following Prep	Methods were po	erformed:								
Method	Description	n		Analyst	Date	,	Γime	e Prep Batc	h	
EPA 200.2	ICP-MS 200.	2 PREP		SXW1	05/26/17	()852	1668711		
	1								h	

The following Analytical Methods were performed:

Method	Description		Analyst Co	omments	
1	EPA 300.0		-		
2	EPA 300.0				
3	EPA 200.8 SC_NPDES				
4	EPA 904.0/SW846 9320 Modified				
5	EPA 903.1 Modified				
Surrogate/Trace	r Recovery Test	Result	Nominal	Recovery%	Acceptable Limits

Surrogate/Tracer Recovery Test Recovery% Acceptable Limits Barium-133 Tracer GFPC, Ra228, Liquid "As Received" 94.7 (15%-125%)

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: June 21, 2017

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-24 Project: SCEG01616C Sample ID: 424115004 Client ID: GEEL003

Parameter Qualifier Result	DL	RL	Units	PF	DF Analyst Date	Time Batch Method
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Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: June 21, 2017

SCEG01616C

GEEL003

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-26 Sample ID: 424115005

Matrix: Ground Water
Collect Date: 24-MAY-17 13:06
Receive Date: 25-MAY-17

Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatograph	y											
EPA300.0 Fluoride	in Liquid "As Re	eceived"										
Fluoride	_	0.165	0.033	0.100	mg/L		1	MXL2	06/03/17	1035	1670502	1
Chloride		137	3.35	10.0	mg/L		50	MXL2	06/05/17	1813	1670502	2
Metals Analysis-IC	P-MS											
200.8/200.2 NPDE	S Metals "As Red	ceived"										
Lithium	J	2.86	2.00	10.0	ug/L	1.00	1	BAJ	05/27/17	1746	1668713	3
Rad Gas Flow Prop	ortional Counting	2										
GFPC, Ra228, Liqu	id "As Received"	'										
Radium-228	U	ND	1.36	3.00	pCi/L			BXF1	06/19/17	1529	1668804	4
Rad Radium-226												
Lucas Cell, Ra226,	liquid "As Receiv	ved"										
Radium-226	U	ND	0.372	1.00	pCi/L			MXH8	06/21/17	0820	1668815	5
The following Prep	Methods were pe	erformed:										
Method	Description	1		Analyst	Date	-	Гim	e Pr	ep Batch			
EPA 200.2	ICP-MS 200.2	2 PREP		SXW1	05/26/17	(0852	16	68711			

The following Analytical Methods were performed:

Method		Description	Analyst Comments
1		EPA 300.0	•
2		EPA 300.0	
3		EPA 200.8 SC_NPDES	
4		EPA 904.0/SW846 9320 Modified	
5		EPA 903.1 Modified	
G . /TD	ъ	T	

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits

Barium-133 Tracer GFPC, Ra228, Liquid "As Received"

78 (15%-125%)

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: June 21, 2017

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-26 Project: SCEG01616C Sample ID: 424115005 Client ID: GEEL003

Parameter Qualifier Result	DL	RL	Units	PF	DF Analyst Date	Time Batch Method
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Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: June 21, 2017

SCEG01616C

GEEL003

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-10
Sample ID: 424115006
Matrix: Ground Water
Collect Date: 25-MAY-17 09:20

Receive Date: 25-MAY-17
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatography												
EPA300.0 Fluoride in	n Liquid "As Re	eceived"										
Fluoride	_	0.368	0.033	0.100	mg/L		1	MXL2	06/03/17	1204	1670502	1
Chloride		15.7	0.134	0.400	mg/L		2	MXL2	06/05/17	1843	1670502	2
Metals Analysis-ICP	-MS											
200.8/200.2 NPDES	Metals "As Re	ceived"										
Lithium		39.8	2.00	10.0	ug/L	1.00	1	BAJ	05/27/17	1750	1668713	3
Rad Gas Flow Propo	rtional Counting	g										
GFPC, Ra228, Liquio	d "As Received	"										
Radium-228	U	ND	1.29	3.00	pCi/L			BXF1	06/19/17	1650	1668804	4
Rad Radium-226												
Lucas Cell, Ra226, li	quid "As Recei	ved"										
Radium-226		0.630	0.166	1.00	pCi/L			MXH8	06/21/17	0820	1668815	5
The following Prep N	Methods were p	erformed:										
Method	Description	n		Analyst	Date	7	Гіте	Pr	ep Batch			
EPA 200.2	ICP-MS 200.	2 PREP		SXW1	05/26/17	(0852	16	68711			

The following Analytical Methods were performed:

Method	Description		Analyst Co	omments	
1	EPA 300.0		-		
2	EPA 300.0				
3	EPA 200.8 SC_NPDES				
4	EPA 904.0/SW846 9320 Modified				
5	EPA 903.1 Modified				
Surrogate/Trace	r Recovery Test	Result	Nominal	Recoverv%	Acceptable Limits

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits

Barium-133 Tracer GFPC, Ra228, Liquid "As Received"

96.4 (15%-125%)

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: June 21, 2017

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-10 Project: SCEG01616C Sample ID: 424115006 Client ID: GEEL003

Parameter Qualifier Result	DL	RL	Units	PF	DF Analyst Date	Time Batch Method
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Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: June 21, 2017

SCEG01616C

GEEL003

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-11 Sample ID: 424115007

Matrix: Ground Water Collect Date: 25-MAY-17 10:20 25-MAY-17 Receive Date: Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatography												
EPA300.0 Fluoride in	n Liquid "As Re	ceived"										
Chloride	-	5.33	0.067	0.200	mg/L		1	MXL2	06/03/17	1233	1670502	1
Fluoride		0.336	0.033	0.100	mg/L		1					
Metals Analysis-ICP-	-MS											
200.8/200.2 NPDES	Metals "As Red	ceived"										
Lithium	J	4.00	2.00	10.0	ug/L	1.00	1	BAJ	05/27/17	1759	1668713	2
Rad Gas Flow Propor	tional Counting	ŗ										
GFPC, Ra228, Liquio	l "As Received"	'										
Radium-228	U	ND	1.01	3.00	pCi/L			BXF1	06/19/17	1529	1668804	3
Rad Radium-226												
Lucas Cell, Ra226, li	quid "As Recei	ved"										
Radium-226	_	0.435	0.145	1.00	pCi/L			MXH8	06/21/17	0820	1668815	4
The following Prep M	lethods were pe	erformed:										
Method	Description	1		Analyst	Date	7	Гітє	Pr	ep Batch			
EPA 200.2	ICP-MS 200.	2 PREP		SXW1	05/26/17	(0852	160	58711			

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	EPA 200.8 SC_NPDES	
3	EPA 904.0/SW846 9320 Modified	
4	EPA 903.1 Modified	

Surrogate/Tracer Recovery Acceptable Limits Test Result Nominal Recovery%

Barium-133 Tracer GFPC, Ra228, Liquid "As Received" 95.3 (15%-125%)

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level DL: Detection Limit PF: Prep Factor MDA: Minimum Detectable Activity **RL**: Reporting Limit

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: June 21, 2017

Page 1 of 4

GEL Engineering, LLC 2040 Savage Rd

Charleston, South Carolina

Contact: Robert Gardner

Workorder: 424115

Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range Anlst	Date Time
Ion Chromatography Batch 1670502								
QC1203802629 424115007 DUP Chloride		5.33	5.33	mg/L	0.00375		(0%-20%) MXL2	06/03/17 13:02
Fluoride		0.336	0.345	mg/L	2.44 ^		(+/-0.100)	
QC1203802628 LCS Chloride	5.00		4.57	mg/L		91.5	(90%-110%)	06/03/17 08:08
Fluoride	2.50		2.31	mg/L		92.4	(90%-110%)	
QC1203802627 MB Chloride		U	ND	mg/L				06/03/17 07:39
Fluoride		U	ND	mg/L				
QC1203802630 424115007 PS Chloride	5.00	5.33	10.6	mg/L		105	(90%-110%)	06/03/17 13:32
Fluoride	2.50	0.336	2.70	mg/L		94.7	(90%-110%)	
Metals Analysis - ICPMS Batch 1668713 ———								
QC1203798168 424115001 DUP Lithium		12.4	12.2	ug/L	0.919 ^		(+/-10.0) BAJ	05/27/17 17:12
QC1203798169 424115002 DUP Lithium	J	J 8.90 J	9.32	ug/L	4.65 ^		(+/-10.0)	05/27/17 17:31
QC1203798167 LCS Lithium	50.0		52.4	ug/L		105	(80%-120%)	05/27/17 17:05

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QC Summary

						<u>70 p</u>	oumman.	<u>y</u>				
Workorder:	424115											Page 2 of 4
Parmname			NOM		Sample	Qual	QC	Units	RPD%	REC%	Range Anlst	Date Time
Metals Analysis - Batch	ICPMS 1668713											
QC120379816 Lithium	66 MB					U	ND	ug/L			BAJ	05/27/17 17:02
QC120379817 Lithium	70 424115001	MS	50.0		12.4		61.0	ug/L		97.3	(75%-125%)	05/27/17 17:15
QC120379817 Lithium	71 424115002	MS	50.0	J	8.90		59.6	ug/L		101	(75%-125%)	05/27/17 17:34
QC120379817 Lithium	72 424115001	SDILT			12.4	J	2.45	ug/L	.777		(0%-10%)	05/27/17 17:18
QC120379817 Lithium	73 424115002	SDILT		J	8.90	U	ND	ug/L	N/A		(0%-10%)	05/27/17 17:37
Rad Gas Flow Batch	1668804											
QC120379840 Radium-228	09 424115006	DUP		U	0.561	U	0.390	pCi/L	N/A		N/A BXF1	06/19/17 16:50
QC120379841 Radium-228	0 LCS		20.2				19.0	pCi/L		94.1	(75%-125%)	06/19/17 15:33
QC120379840 Radium-228	08 MB					U	0.546	pCi/L				06/19/17 15:29
Rad Ra-226 Batch	1668815											
QC120379844 Radium-226	49 424115006	DUP			0.630		0.725	pCi/L	14.1		(0% - 100%) MXH8	06/21/17 09:30
QC120379845 Radium-226	51 LCS		26.0				20.0	pCi/L		77.2	(75%-125%)	06/21/17 09:30

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QC Summary

Workorder: 424115 Page 3 of 4 **Parmname NOM** Sample Qual QC Units RPD% REC% Range Anlst Date Time Rad Ra-226 1668815 Batch OC1203798448 MR U 0.0822 Radium-226 pCi/L MXH8 06/21/17 09:30 QC1203798450 424115006 MS

120

pCi/L

91.8

(75%-125%)

06/21/17 09:30

0.630

Notes:

Radium-226

The Qualifiers in this report are defined as follows:

- ** Analyte is a Tracer compound
- < Result is less than value reported
- > Result is greater than value reported
- B The target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- E %difference of sample and SD is >10%. Sample concentration must meet flagging criteria

130

- E General Chemistry--Concentration of the target analyte exceeds the instrument calibration range
- FA Failed analysis.
- FB Mercury was found present at quantifiable concentrations in field blanks received with these samples. Data associated with the blank are deemed invalid for reporting to regulatory agencies
- H Analytical holding time was exceeded
- J Value is estimated
- K Analyte present. Reported value may be biased high. Actual value is expected to be lower.
- L Analyte present. Reported value may be biased low. Actual value is expected to be higher.
- M M if above MDC and less than LLD
- M REMP Result > MDC/CL and < RDL
- N Metals--The Matrix spike sample recovery is not within specified control limits
- $\ensuremath{N/A}$ $\ensuremath{\mbox{ RPD}}$ or %Recovery limits do not apply.
- N1 See case narrative
- ND Analyte concentration is not detected above the detection limit
- NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Q One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
- R Per section 9.3.4.1 of Method 1664 Revision B, due to matrix spike recovery issues, this result may not be reported or used for regulatory compliance purposes.
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- UI Gamma Spectroscopy--Uncertain identification

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

424115 Page 4 of 4 Parmname **NOM** Sample Qual QC Units RPD% REC% Range Anlst Date Time

UJ Gamma Spectroscopy--Uncertain identification

Workorder:

- UL Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y Other specific qualifiers were required to properly define the results. Consult case narrative.
- Z Paint Filter Test--Particulates passed through the filter, however no free liquids were observed.
- ٨ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
- 5-day BOD--The 2:1 depletion requirement was not met for this sample d
- 5-day BOD--Test replicates show more than 30% difference between high and low values. The data is qualified per the method and can be used for e reporting purposes
- h Preparation or preservation holding time was exceeded

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

* Indicates that a Quality Control parameter was not within specifications.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis Report for

GEEL003 GEL Engineering, LLC Client SDG: 423868 GEL Work Order: 423868

The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a Tracer compound
- ** Analyte is a surrogate compound
- H Analytical holding time was exceeded
- J Value is estimated
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Jake Crook.

	Jetheure Cotes		
Reviewed by			

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: June 15, 2017

SCEG01616C

GEEL003

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-27
Sample ID: 423868001
Matrix: Ground Water

Collect Date: 23-MAY-17 10:45
Receive Date: 23-MAY-17
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatography	y											
EPA300.0 Fluoride	in Liquid "As Re	eceived"										
Fluoride		0.244	0.033	0.100	mg/L		1	MAR1	06/01/17	1212	1668347	1
Chloride		12.2	0.134	0.400	mg/L		2	MAR1	06/02/17	1430	1668347	2
Metals Analysis-ICI	P-MS											
200.8/200.2 NPDES	S Metals "As Red	ceived"										
Lithium	U	ND	2.00	10.0	ug/L	1.00	1	BAJ	05/30/17	1407	1667907	3
Rad Gas Flow Propo	ortional Counting	2										
GFPC, Ra228, Liqui	id "As Received'	'										
Radium-228	U	ND	1.51	3.00	pCi/L			BXF1	06/13/17	1501	1668800	4
Rad Radium-226												
Lucas Cell, Ra226, 1	liquid "As Receiv	ved"										
Radium-226		0.537	0.287	1.00	pCi/L			MXH8	06/14/17	0920	1668812	5
The following Prep	Methods were pe	erformed:										
Method	Description	1		Analyst	Date	Т	Γime	Pr	ep Batch			
EPA 200.2	ICP-MS 200.2	2 PREP		SXW1	05/24/17	0	735	16	67906			

The following Analytical Methods were performed:

Method	Description		Analyst Co	omments	
1	EPA 300.0		-		
2	EPA 300.0				
3	EPA 200.8 SC_NPDES				
4	EPA 904.0/SW846 9320 Modified				
5	EPA 903.1 Modified				
Surrogate/Trace	r Recovery Test	Result	Nominal	Recovery%	Acceptable Limits

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits

Barium-133 Tracer GFPC, Ra228, Liquid "As Received"

95.9 (15%-125%)

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: June 15, 2017

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-27 Project: SCEG01616C Sample ID: 423868001 Client ID: GEEL003

Parameter Qualifier Result	DL	RL	Units	PF	DF Analyst Date	Time Batch Method
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Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: June 15, 2017

SCEG01616C

GEEL003

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-28 Sample ID: 423868002 Matrix: Ground Water Collect Date: 23-MAY-17 11:37

Receive Date: 23-MAY-17 Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatograph	y											
EPA300.0 Fluoride	in Liquid "As Re	ceived"										
Chloride	•	3.52	0.067	0.200	mg/L		1	MAR1	06/01/17	1241	1668347	1
Fluoride	J	0.0851	0.033	0.100	mg/L		1					
Metals Analysis-ICl	P-MS											
200.8/200.2 NPDE	S Metals "As Red	ceived"										
Lithium	U	ND	2.00	10.0	ug/L	1.00	1	BAJ	05/30/17	1427	1667907	2
Rad Gas Flow Prope	ortional Counting	ŗ										
GFPC, Ra228, Liqu	id "As Received"	'										
Radium-228	U	ND	1.52	3.00	pCi/L			BXF1	06/13/17	1501	1668800	3
Rad Radium-226												
Lucas Cell, Ra226,	liquid "As Receiv	ved"										
Radium-226	U	ND	0.337	1.00	pCi/L			MXH8	06/14/17	0920	1668812	4
The following Prep	Methods were pe	erformed:										
Method	Description	1		Analyst	Date	,	Time	Pr	ep Batch			
EPA 200.2	ICP-MS 200.2	2 PREP		SXW1	05/24/17	(0735	160	67906			

The following Analytical Methods were performed:

Method Description **Analyst Comments** EPA 300.0

2 EPA 200.8 SC_NPDES 3 EPA 904.0/SW846 9320 Modified

EPA 903.1 Modified

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits Barium-133 Tracer 97.1 (15%-125%) GFPC, Ra228, Liquid "As Received"

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level DL: Detection Limit PF: Prep Factor MDA: Minimum Detectable Activity **RL**: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: June 15, 2017

SCEG01616C

GEEL003

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-20 Sample ID: 423868003

Matrix: Ground Water
Collect Date: 23-MAY-17 12:19
Receive Date: 23-MAY-17
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatograph	ıy											
EPA300.0 Fluoride	in Liquid "As Re	eceived"										
Chloride		9.78	0.067	0.200	mg/L		1	MAR1	06/02/17	1458	1668347	1
Fluoride		0.182	0.033	0.100	mg/L		1					
Metals Analysis-IC	P-MS											
200.8/200.2 NPDE	ES Metals "As Red	ceived"										
Lithium	J	5.86	2.00	10.0	ug/L	1.00	1	BAJ	05/30/17	1430	1667907	2
Rad Gas Flow Prop	ortional Counting	2										
GFPC, Ra228, Liqu	uid "As Received"	'										
Radium-228	U	ND	1.38	3.00	pCi/L			BXF1	06/13/17	1458	1668800	3
Rad Radium-226												
Lucas Cell, Ra226,	liquid "As Receiv	ved"										
Radium-226	U	ND	0.387	1.00	pCi/L			MXH8	06/14/17	0920	1668812	4
The following Prep	Methods were pe	erformed:										
Method	Description	1		Analyst	Date	,	Time	Pr	ep Batch			
EPA 200.2	ICP-MS 200.2	2 PREP		SXW1	05/24/17	(0735	160	67906			

The following Analytical Methods were performed:

 Method
 Description
 Analyst Comments

 1
 EPA 300.0

 2
 EPA 200.8 SC_NPDES

3 EPA 904.0/SW846 9320 Modified 4 EPA 903.1 Modified

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits

Barium-133 Tracer GFPC, Ra228, Liquid "As Received" 88.6 (15%-125%)

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: June 15, 2017

SCEG01616C

GEEL003

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: Field Blank Sample ID: 423868004

Matrix: Water

Collect Date: 23-MAY-17 12:25 23-MAY-17 Receive Date: Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatography												
EPA300.0 Fluoride in	Liquid "As Re	eceived"										
Chloride	U	ND	0.067	0.200	mg/L		1	MAR1	06/01/17	1339	1668347	1
Fluoride	U	ND	0.033	0.100	mg/L		1					
Metals Analysis-ICP-	·MS											
200.8/200.2 NPDES	Metals "As Red	ceived"										
Lithium	U	ND	2.00	10.0	ug/L	1.00	1	BAJ	05/30/17	1433	1667907	2
Rad Gas Flow Propor	tional Counting	7										
GFPC, Ra228, Liquid	l "As Received"	'										
Radium-228	U	ND	1.59	3.00	pCi/L			BXF1	06/13/17	1458	1668800	3
Rad Radium-226												
Lucas Cell, Ra226, lie	quid "As Recei	ved"										
Radium-226	U	ND	0.351	1.00	pCi/L			MXH8	3 06/14/17	0920	1668812	4
The following Prep M	lethods were pe	erformed:										
Method	Description	1		Analyst	Date	,	Гim	e Pr	ep Batch			
EPA 200.2	ICP-MS 200.	2 PREP		SXW1	05/24/17	(0735	16	67906			

The following Analytical Methods were performed:

Method Description **Analyst Comments** EPA 300.0

2 EPA 200.8 SC_NPDES 3 EPA 904.0/SW846 9320 Modified

EPA 903.1 Modified

Surrogate/Tracer Recovery Test

Recovery% Acceptable Limits

Result

Nominal

Barium-133 Tracer 97.8 (15%-125%) GFPC, Ra228, Liquid "As Received"

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level DL: Detection Limit PF: Prep Factor MDA: Minimum Detectable Activity **RL**: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: June 15, 2017

SCEG01616C

GEEL003

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-21 Sample ID: 423868005

Matrix: Ground Water
Collect Date: 23-MAY-17 13:12
Receive Date: 23-MAY-17
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatography	y											
EPA300.0 Fluoride	in Liquid "As Re	ceived"										
Fluoride	_	0.172	0.033	0.100	mg/L		1	MAR1	06/01/17	1408	1668347	1
Chloride		10.0	0.134	0.400	mg/L		2	MAR1	06/02/17	1527	1668347	2
Metals Analysis-ICI	P-MS											
200.8/200.2 NPDES	S Metals "As Red	ceived"										
Lithium	J	6.06	2.00	10.0	ug/L	1.00	1	BAJ	05/30/17	1436	1667907	3
Rad Gas Flow Propo	ortional Counting	ŗ										
GFPC, Ra228, Liqui	id "As Received"	'										
Radium-228	U	ND	1.45	3.00	pCi/L			BXF1	06/13/17	1458	1668800	4
Rad Radium-226												
Lucas Cell, Ra226, 1	liquid "As Receiv	ved"										
Radium-226		0.326	0.166	1.00	pCi/L			MXH8	06/14/17	0920	1668812	5
The following Prep	Methods were pe	erformed:										
Method	Description	ı		Analyst	Date	-	Гітє	Pr	ep Batch			
EPA 200.2	ICP-MS 200.2	2 PREP		SXW1	05/24/17	()735	16	67906			

The following Analytical Methods were performed:

Method	Description		Analyst Co	omments	
1	EPA 300.0		-		
2	EPA 300.0				
3	EPA 200.8 SC_NPDES				
4	EPA 904.0/SW846 9320 Modified				
5	EPA 903.1 Modified				
Surrogate/Trace	r Recovery Test	Pacult	Nominal	Pacovary%	Acceptable Limits

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits

Barium-133 Tracer GFPC, Ra228, Liquid "As Received" 90.8 (15%-125%)

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Certificate of Analysis

Report Date: June 15, 2017

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-21 Project: SCEG01616C Sample ID: 423868005 Client ID: GEEL003

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: June 15, 2017

SCEG01616C

GEEL003

Company:

GEL Engineering, LLC

Address:

2040 Savage Rd

Charleston, South Carolina 29417

Contact: Project:

Robert Gardner Williams 52

Client Sample ID: dup

423868006

Sample ID: Matrix:

Ground Water

Collect Date:

23-MAY-17 13:30

Receive Date:

23-MAY-17

Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatography	y											
EPA300.0 Fluoride	in Liquid "As Re	eceived"										
Fluoride	_	0.184	0.033	0.100	mg/L		1	MAR1	06/01/17	1436	1668347	1
Chloride		9.96	0.134	0.400	mg/L		2	MAR1	06/02/17	1556	1668347	2
Metals Analysis-ICI	P-MS											
200.8/200.2 NPDES	S Metals "As Red	ceived"										
Lithium	J	6.20	2.00	10.0	ug/L	1.00	1	BAJ	05/30/17	1439	1667907	3
Rad Gas Flow Propo	ortional Counting	7										
GFPC, Ra228, Liqui	id "As Received'	'										
Radium-228	U	ND	1.32	3.00	pCi/L			BXF1	06/13/17	1615	1668800	4
Rad Radium-226												
Lucas Cell, Ra226, 1	liquid "As Receiv	ved"										
Radium-226	U	ND	0.325	1.00	pCi/L			MXH8	06/14/17	0920	1668812	5
The following Prep	Methods were pe	erformed:										
Method	Description	1		Analyst	Date	ŗ	Гim	Pr	ep Batch			
EPA 200.2	ICP-MS 200.2	2 PREP		SXW1	05/24/17	(0735	16	67906			

The following Analytical Methods were performed:

Method	Description	Description									
1	EPA 300.0		-								
2	EPA 300.0										
3	EPA 200.8 SC_NPDES										
4	EPA 904.0/SW846 9320 Modified										
5	EPA 903.1 Modified										
Surrogate/Trace	r Recovery Test	Result	Nominal	Recovery%	Acceptable Limits						

Surrogate/Tracer Recovery Test Recovery% Acceptable Limits Barium-133 Tracer GFPC, Ra228, Liquid "As Received" 94.3 (15%-125%)

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: June 15, 2017

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner
Project: Williams 52

Client Sample ID: dup Project: SCEG01616C Sample ID: 423868006 Client ID: GEEL003

Parameter Qualifier Result	DL	RL	Units	PF	DF Analyst Date	Time Batch Method
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Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: June 15, 2017

Page 1 of 4

GEL Engineering, LLC 2040 Savage Rd Charleston, South Carolina

Robert Gardner

Workorder: 423868

Contact:

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range Anlst	Date Time
Ion Chromatography Batch 1668347 ———									
QC1203797356 423868006 DUP Chloride		9.96		9.95	mg/L	0.119		(0%-20%) MAR1	06/02/17 16:25
Fluoride		0.184		0.182	mg/L	1.53 ^		(+/-0.100)	06/01/17 15:05
QC1203797355 LCS Chloride	5.00			4.51	mg/L		90.1	(90%-110%)	06/01/17 11:43
Fluoride	2.50			2.37	mg/L		94.8	(90%-110%)	
QC1203797354 MB Chloride			U	ND	mg/L				06/01/17 11:14
Fluoride			U	ND	mg/L				
QC1203797357 423868006 PS Chloride	5.00	4.98		10.3	mg/L		106	(90%-110%)	06/02/17 16:54
Fluoride	2.50	0.184		2.58	mg/L		95.7	(90%-110%)	06/01/17 15:34
Metals Analysis - ICPMS Batch 1667907 ———									
QC1203796211 423868001 DUP Lithium		U ND	U	ND	ug/L	N/A		BAJ	05/30/17 14:11
QC1203796210 LCS Lithium	50.0			53.3	ug/L		107	(80%-120%)	05/30/17 14:04
QC1203796209 MB Lithium			U	ND	ug/L				05/30/17 14:01

GEL LABORATORIES LLC 2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

							miniai	<u>.y</u>						
Workorder:	423868												Page	2 of 4
Parmname			NOM		Sample	Qual	QC	Units	RPD%	REC%	Range A	Anlst	Date	Time
Metals Analysis - I Batch 1	ICPMS 667907													
QC1203796212 Lithium	2 423868001	MS	50.0	U	ND		49.6	ug/L		97.3	(75%-125%)	BAJ	05/30/1	7 14:14
QC1203796213 Lithium	3 423868001	SDILT		U	ND	U	ND	ug/L	N/A		(0%-10%)		05/30/1	7 14:17
Rad Gas Flow Batch 1	668800													
QC1203798393 Radium-228	3 421339005	DUP		U	0.515		1.27	pCi/L	84.8		(0% - 100%)	BXF1	06/13/1	7 16:15
QC1203798396 Radium-228	5 LCS		15.2				16.1	pCi/L		106	(75%-125%)		06/13/1	7 16:15
QC1203798392 Radium-228	2 MB					U	0.337	pCi/L					06/13/1	7 14:57
QC1203798394 Radium-228	1 421339005	MS	61.9	U	0.515		67.4	pCi/L		109	(75%-125%)		06/13/1	7 14:57
QC1203798395 Radium-228	5 421339005	MSD	61.9	U	0.515		55.1	pCi/L	20.1*	88.9	(0%-20%)		06/13/1	7 14:57
Rad Ra-226 Batch 1	668812													
QC1203798435 Radium-226	5 421339005	DUP			0.265		0.361	pCi/L	30.6		(0% - 100%)	MXH8	06/14/1	7 09:50
QC1203798438 Radium-226	8 LCS		16.2				14.3	pCi/L		87.9	(75%-125%)		06/14/1	7 09:50
QC1203798434 Radium-226	4 MB					U	0.0537	pCi/L					06/14/1	7 09:50

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QC Summary

Workorder: 423868 Page 3 of 4 **Parmname NOM** Sample Qual QC Units RPD% REC% Range Anlst Date Time Rad Ra-226 1668812 Batch OC1203798436 421339005 MS 119 Radium-226 130 0.265 pCi/L 91.3 (75%-125%) MXH8 06/14/17 09:50 QC1203798437 421339005 MSD 130 0.265 116 pCi/L 2.07 89.4 (0%-20%) Radium-226 06/14/17 09:50

Notes:

The Qualifiers in this report are defined as follows:

- ** Analyte is a Tracer compound
- < Result is less than value reported
- > Result is greater than value reported
- B The target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- E %difference of sample and SD is >10%. Sample concentration must meet flagging criteria
- E General Chemistry--Concentration of the target analyte exceeds the instrument calibration range
- FA Failed analysis.
- FB Mercury was found present at quantifiable concentrations in field blanks received with these samples. Data associated with the blank are deemed invalid for reporting to regulatory agencies
- H Analytical holding time was exceeded
- J Value is estimated
- K Analyte present. Reported value may be biased high. Actual value is expected to be lower.
- L Analyte present. Reported value may be biased low. Actual value is expected to be higher.
- M M if above MDC and less than LLD
- M REMP Result > MDC/CL and < RDL
- N Metals--The Matrix spike sample recovery is not within specified control limits
- N/A RPD or %Recovery limits do not apply.
- N1 See case narrative
- ND Analyte concentration is not detected above the detection limit
- NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Q One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
- R Per section 9.3.4.1 of Method 1664 Revision B, due to matrix spike recovery issues, this result may not be reported or used for regulatory compliance purposes.
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- UI Gamma Spectroscopy--Uncertain identification

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QC Summary

Workorder: 423868

Page 4 of 4

Parmname

NOM Sample Qual QC Units RPD% REC% Range Anlst Date Time

- UJ Gamma Spectroscopy--Uncertain identification
- UL Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y Other specific qualifiers were required to properly define the results. Consult case narrative.
- Z Paint Filter Test--Particulates passed through the filter, however no free liquids were observed.
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
- d 5-day BOD--The 2:1 depletion requirement was not met for this sample
- e 5-day BOD--Test replicates show more than 30% difference between high and low values. The data is qualified per the method and can be used for reporting purposes
- h Preparation or preservation holding time was exceeded

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

* Indicates that a Quality Control parameter was not within specifications.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.



REPORT TO:

Central Laboratory (P-08) 2102 North Lake Drive Columbia, SC 29212

Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

Mike Moore C221

Sample ID: AB27250

Williams Hwy 52 GW 27-NPDES/CCR

Date & Time Sampled: May 23, 2017 10:45
Date & Time Submitted: May 25, 2017 12:43

Collected by: C.SANDEL Location Code: WLG27TDS

GW 27 Login Record File: 170525002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	12.94	0.50	mg/L	5/27/17 00:43	EB & BB
pH by SM4500HB(2011) Holding Time of 15 minutes has been e	7.18 exceeded.	0.00	S.U.	5/25/17 15:25	BF
Sulfates by IC EPA 300.0	13.97	0.50	mg/L	5/27/17 00:43	EB & BB
Total Dissolved Solid-SM2540C	330	2.0	mg/L	5/26/17 13:00	BF

Approved By:		
AUUIUVEU DV.		



Central Laboratory (P-08) 2102 North Lake Drive Columbia, SC 29212

Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

REPORT TO:

Mike Moore C221

Sample ID: AB27251

Williams Hwy 52 GW 28-NPDES/CCR

Date & Time Sampled: May 23, 2017 11:37
Date & Time Submitted: May 25, 2017 12:43

Collected by: C.SANDEL Location Code: WLG28TDS

GW 28 Login Record File: 170525002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	3.98	0.50	mg/L	5/27/17 00:43	EB & BB
pH by SM4500HB(2011)	6.58	0.00	S.U.	5/25/17 15:25	BF
Holding Time of 15 minutes has been e	xceeaea.				
Sulfates by IC EPA 300.0	1.36	0.50	mg/L	5/27/17 00:43	EB & BB
Total Dissolved Solid-SM2540C	68	2.0	mg/L	5/26/17 13:00	BF

Approved By:		



Central Laboratory (P-08) 2102 North Lake Drive Columbia, SC 29212

Tel: (803)217-9384 Fax: (803) 217-9911

REPORT TO:

Mike Moore C221

January 25, 2018

Sample ID: AB27252

Williams Hwy 52 GW 20-NPDES/CCR

Date & Time Sampled: May 23, 2017 12:19
Date & Time Submitted: May 25, 2017 12:43

Collected by: C.SANDEL Location Code: WLG20TDS

GW 20 Login Record File: 170525002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	9.06	0.50	mg/L	5/27/17 00:43	EB & BB
pH by SM4500HB(2011)	6.82	0.00	S.U.	5/25/17 15:25	BF
Holding Time of 15 minutes has been e	xceeded.				
Sulfates by IC EPA 300.0	9.91	0.50	mg/L	5/27/17 00:43	EB & BB
Total Dissolved Solid-SM2540C	619	2.0	mg/L	5/26/17 13:00	BF

Approved By:		
AUUIUVEU DV.		



Central Laboratory (P-08) 2102 North Lake Drive Columbia, SC 29212

Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

REPORT TO:

Mike Moore C221

Sample ID: AB27253

Williams Hwy 52 FIELD BLANK-NPDES/CCR

Date & Time Sampled: May 23, 2017 12:25
Date & Time Submitted: May 25, 2017 12:43

Collected by: C.SANDEL Location Code: WLGFBTDS

GW 10 Login Record File: 170525002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	Less than	0.50	mg/L	5/27/17 00:43	EB & BB
pH by SM4500HB(2011)	7.14	0.00	S.U.	5/25/17 15:25	BF
Holding Time of 15 minutes has been e	xceeded.				
Sulfates by IC EPA 300.0	Less than	0.50	mg/L	5/27/17 00:43	EB & BB
Total Dissolved Solid-SM2540C	14	2.0	mg/L	5/26/17 13:00	BF

Approved By:		
AUUIUVEU DV.		



Tel: (803)217-9384 Fax: (803) 217-9911

REPORT TO:

Mike Moore C221

January 25, 2018

Sample ID: AB27254

Williams Hwy 52 GW 21-NPDES/CCR

Date & Time Sampled: May 23, 2017 13:12

Date & Time Submitted: May 25, 2017 12:43

Collected by: C.SANDEL Location Code: WLG21TDS

GW 21 Login Record File: 170525002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	9.91	0.50	mg/L	5/27/17 00:43	EB & BB
pH by SM4500HB(2011)	6.86	0.00	S.U.	5/25/17 15:25	BF
Holding Time of 15 minutes has been e	exceeded.				
Sulfates by IC EPA 300.0	9.35	0.50	mg/L	5/27/17 00:43	EB & BB
Total Dissolved Solid-SM2540C	575	2.0	mg/L	5/26/17 13:00	BF

Approved By:		
AUUIUVEU DV.		



Tel: (803)217-9384 Fax: (803) 217-9911

REPORT TO:

Mike Moore C221

January 25, 2018

Sample ID: AB27255

Williams Hwy 52 DUP -NPDES/CCR

Date & Time Sampled: May 23, 2017 13:30
Date & Time Submitted: May 25, 2017 12:43

Collected by: C.SANDEL Location Code: WLGDUPTDS

GW 10 Login Record File: 170525002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	9.89	0.50	mg/L	5/27/17 00:43	EB & BB
pH by SM4500HB(2011)	6.89	0.00	S.U.	5/25/17 15:25	BF
Holding Time of 15 minutes has been ea	xceeded.				
Sulfates by IC EPA 300.0	9.30	0.50	mg/L	5/27/17 00:43	EB & BB
Total Dissolved Solid-SM2540C	602	2.0	mg/L	5/26/17 13:00	BF



Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

REPORT TO:

Mike Moore C221

Sample ID: AB27256

Williams Hwy 52 GW 22D-NPDES/CCR

Date & Time Sampled: May 24, 2017 09:12

Date & Time Submitted: May 25, 2017 12:43

Collected by: C.SANDEL Location Code: WLG22DTDS

GW 22D Login Record File: 170525002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	9.35	0.50	mg/L	5/27/17 00:43	EB & BB
pH by SM4500HB(2011)	7.18	0.00	S.U.	5/25/17 15:25	BF
Holding Time of 15 minutes has been e	exceeded.				
Sulfates by IC EPA 300.0	77	0.50	mg/L	5/27/17 00:43	EB & BB
Total Dissolved Solid-SM2540C	550	2.0	mg/L	5/26/17 13:00	BF

Approved By:		
AUDIOVED DV.		



Tel: (803)217-9384 Fax: (803) 217-9911

REPORT TO:

Mike Moore C221

January 25, 2018

Sample ID: AB27257

Williams Hwy 52 GW 23D-NPDES/CCR

Date & Time Sampled: May 24, 2017 10:05
Date & Time Submitted: May 25, 2017 12:43

Collected by: C.SANDEL Location Code: WLG23DTDS

GW 23D Login Record File: 170525002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	13.90	0.50	mg/L	5/27/17 00:43	EB & BB
pH by SM4500HB(2011)	7.28	0.00	S.U.	5/25/17 15:25	BF
Holding Time of 15 minutes has been e	exceeded.				
Sulfates by IC EPA 300.0	31.39	0.50	mg/L	5/27/17 00:43	EB & BB
Total Dissolved Solid-SM2540C	492	2.0	mg/L	5/26/17 13:00	BF

Approved By:		



Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

REPORT TO:

Mike Moore C221

Sample ID: AB27258

Williams Hwy 52 GW 25-NPDES/CCR

Date & Time Sampled: May 24, 2017 10:56
Date & Time Submitted: May 25, 2017 12:43

Collected by: C.SANDEL Location Code: WLG25TDS

GW 25 Login Record File: 170525002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	21.7	0.50	mg/L	5/27/17 00:43	EB & BB
pH by SM4500HB(2011)	7.02	0.00	S.U.	5/25/17 15:25	BF
Holding Time of 15 minutes has been e	xceeded.				
Sulfates by IC EPA 300.0	51.3	0.50	mg/L	5/27/17 00:43	EB & BB
Total Dissolved Solid-SM2540C	536	2.0	mg/L	5/26/17 13:00	BF

Approved By:		



Tel: (803)217-9384 Fax: (803) 217-9911

_____ January 25, 2018

REPORT TO:

Mike Moore C221

Sample ID: AB27259

Williams Hwy 52 GW 24-NPDES/CCR

Date & Time Sampled: May 24, 2017 12:00
Date & Time Submitted: May 25, 2017 12:43

Collected by: C.SANDEL Location Code: WLG24TDS

GW 24 Login Record File: 170525002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	16.37	0.50	mg/L	5/27/17 00:43	EB & BB
pH by SM4500HB(2011)	6.78	0.00	S.U.	5/25/17 15:25	BF
Holding Time of 15 minutes has been ex	xceeded.				
Sulfates by IC EPA 300.0	9.06	0.50	mg/L	5/30/17 00:43	EB & BB
Total Dissolved Solid-SM2540C	510	2.0	mg/L	5/26/17 13:00	BF

Approved By:		
AUUIUVEU DV.		



Tel: (803)217-9384 Fax: (803) 217-9911

REPORT TO:

Mike Moore C221

January 25, 2018

Sample ID: AB27260

Williams Hwy 52 GW 26-NPDES/CCR

Date & Time Sampled: May 24, 2017 13:06
Date & Time Submitted: May 25, 2017 12:43

Collected by: C.SANDEL Location Code: WLG26TDS

GW 26 Login Record File: 170525002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	68.0	0.50	mg/L	5/27/17 00:43	EB & BB
pH by SM4500HB(2011) Holding Time of 15 minutes has been 6	6.29 exceeded.	0.00	S.U.	5/25/17 15:25	BF
Sulfates by IC EPA 300.0	35.33	0.50	mg/L	5/27/17 00:43	EB & BB
Total Dissolved Solid-SM2540C	878	2.0	mg/L	5/26/17 13:00	BF



Tel: (803)217-9384 Fax: (803) 217-9911

REPORT TO:

Mike Moore C221

January 25, 2018

Sample ID: AB27261

Williams Hwy 52 GW 10-NPDES/CCR

Date & Time Sampled: May 25, 2017 09:20
Date & Time Submitted: May 25, 2017 12:43

Collected by: C.SANDEL Location Code: WLG10TDS

GW 10 Login Record File: 170525002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	16.42	0.50	mg/L	5/27/17 00:43	EB & BB
pH by SM4500HB(2011)	7.07	0.00	S.U.	5/25/17 15:25	BF
Holding Time of 15 minutes has been e	exceeded.				
Sulfates by IC EPA 300.0	4.95	0.50	mg/L	5/27/17 00:43	EB & BB
Total Dissolved Solid-SM2540C	241	2.0	mg/L	5/26/17 13:00	BF



REPORT TO:

Central Laboratory (P-08) 2102 North Lake Drive Columbia, SC 29212

Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

Mike Moore C221

Sample ID: AB27262

Williams Hwy 52 GW 11-NPDES/CCR

Date & Time Sampled: May 25, 2017 10:20
Date & Time Submitted: May 25, 2017 12:43

Collected by: C.SANDEL Location Code: WLG11TDS

GW 11 Login Record File: 170525002

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	5.16	0.50	mg/L	5/27/17 00:43	EB & BB
pH by SM4500HB(2011)	7.00	0.00	S.U.	5/25/17 15:25	BF
Holding Time of 15 minutes has been e	exceeded.				
Sulfates by IC EPA 300.0	1.34	0.50	mg/L	5/27/17 00:43	EB & BB
Total Dissolved Solid-SM2540C	98	2.0	mg/L	5/26/17 13:00	BF

Approved By:		
AUUIUVEU DV.		



Tel: (803)217-9384 Fax: (803) 217-9911

_____ January 25, 2018

REPORT TO:

Mike Moore C221

Sample ID: AB27263

Williams Hwy 52 GW 27-NPDES/CCR

Date & Time Sampled: May 23, 2017 10:45
Date & Time Submitted: May 25, 2017 12:43

Collected by: C.SANDEL Location Code: WLG27TM

GW 27 Login Record File: 170525002

O11 21	_		3		
CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Antimony by ICP-MS 200.8	Less than	1.0	ppb	5/31/17 15:43	CDB
Arsenic by ICP_MS 200.8	1.2	1.0	ppb	5/31/17 15:43	CDB
Barium by ICP-OES 200.7	23.4	10.0	ppb	5/31/17 16:30	CDB
Beryllium EPA 200.7	Less than	2.0	ppb	5/31/17 16:30	CDB
Boron - EPA 200.7	Less than	1000	ppb	5/31/17 16:30	CDB
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	5/31/17 15:43	CDB
Calcium EPA 200.7	94600	1000	ppb	5/31/17 16:30	CDB
Chromium by ICP_MS 200.8	Less than	1.0	ppb	5/31/17 15:43	CDB
Cobalt by ICP_MS 200.8	Less than	1.0	ppb	5/31/17 15:43	CDB
Lead by ICP-MS 200.8	Less than	1.0	ppb	5/31/17 15:43	CDB
Lithium (CWA) 200.7	Less than	2.0	ppb	5/31/17 16:30	CDB
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	6/16/17 14:33	PRC
Molybdenum - EPA 200.8	1.4	1.0	ppb	5/31/17 15:43	CDB
Selenium by ICP-MS 200.8	Less than	5.0	ppb	5/31/17 15:43	CDB
Thallium by ICP-MS 200.8	Less than	1.0	ppb	5/31/17 15:43	CDB

Approved By:	·



Tel: (803)217-9384 Fax: (803) 217-9911

_____ January 25, 2018

REPORT TO:

Mike Moore C221

Sample ID: AB27264

Williams Hwy 52 GW 28-NPDES/CCR

Date & Time Sampled: May 23, 2017 11:37

Date & Time Submitted: May 25, 2017 12:43

Collected by: C.SANDEL Location Code: WLG28TM

GW 28 Login Record File: 170525002

			•		_
CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Antimony by ICP-MS 200.8	Less than	1.0	ppb	5/31/17 15:43	CDB
Arsenic by ICP_MS 200.8	Less than	1.0	ppb	5/31/17 15:43	CDB
Barium by ICP-OES 200.7	Less than	10.0	ppb	5/31/17 16:30	CDB
Beryllium EPA 200.7	Less than	2.0	ppb	5/31/17 16:30	CDB
Boron - EPA 200.7	Less than	1000	ppb	5/31/17 16:30	CDB
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	5/31/17 15:43	CDB
Calcium EPA 200.7	17300	1000	ppb	5/31/17 16:30	CDB
Chromium by ICP_MS 200.8	Less than	1.0	ppb	5/31/17 15:43	CDB
Cobalt by ICP_MS 200.8	Less than	1.0	ppb	5/31/17 15:43	CDB
Lead by ICP-MS 200.8	Less than	1.0	ppb	5/31/17 15:43	CDB
Lithium (CWA) 200.7	Less than	2.0	ppb	5/31/17 16:30	CDB
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	6/16/17 14:33	PRC
Molybdenum - EPA 200.8	Less than	1.0	ppb	5/31/17 15:43	CDB
Selenium by ICP-MS 200.8	Less than	5.0	ppb	5/31/17 15:43	CDB
Thallium by ICP-MS 200.8	Less than	1.0	ppb	5/31/17 15:43	CDB

Approved By:



Tel: (803)217-9384 Fax: (803) 217-9911

_____ January 25, 2018

REPORT TO:

Mike Moore C221

Sample ID: AB27265

Williams Hwy 52 GW 20-NPDES/CCR

Date & Time Sampled: Ma
Date & Time Submitted: Ma

May 23, 2017 12:19 May 25, 2017 12:43

Collected by: C.SANDEL Location Code: WLG20TM

GW 20 Login Record File: 170525002

011 20					
CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Antimony by ICP-MS 200.8	Less than	1.0	ppb	5/31/17 15:43	CDB
Arsenic by ICP_MS 200.8	4.2	1.0	ppb	5/31/17 15:43	CDB
Barium by ICP-OES 200.7	54.0	10.0	ppb	5/31/17 16:30	CDB
Beryllium EPA 200.7	Less than	2.0	ppb	5/31/17 16:30	CDB
Boron - EPA 200.7	Less than	1000	ppb	5/31/17 16:30	CDB
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	5/31/17 15:43	CDB
Calcium EPA 200.7	158900	1000	ppb	5/31/17 16:30	CDB
Chromium by ICP_MS 200.8	Less than	1.0	ppb	5/31/17 15:43	CDB
Cobalt by ICP_MS 200.8	1.4	1.0	ppb	5/31/17 15:43	CDB
Lead by ICP-MS 200.8	Less than	1.0	ppb	5/31/17 15:43	CDB
Lithium (CWA) 200.7	5.2	2.0	ppb	5/31/17 16:30	CDB
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	6/16/17 14:33	PRC
Molybdenum - EPA 200.8	1.1	1.0	ppb	5/31/17 15:43	CDB
Selenium by ICP-MS 200.8	Less than	5.0	ppb	5/31/17 15:43	CDB
Thallium by ICP-MS 200.8	Less than	1.0	ppb	5/31/17 15:43	CDB

Approved By:



Tel: (803)217-9384 Fax: (803) 217-9911

12:25

12:43

January 25, 2018

REPORT TO:

Mike Moore C221

Sample ID: AB27266

Williams Hwy 52 FIELD BLANK-NPDES/CCR

Date & Time Sampled: May 23, 2017
Date & Time Submitted: May 25, 2017

Collected by: C.SANDEL Location Code: WLGFBTM

GW 10 Login Record File: 170525002

2001111000111101111101111101111110111111					
CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Antimony by ICP-MS 200.8	Less than	1.0	ppb	5/31/17 15:43	CDB
Arsenic by ICP_MS 200.8	Less than	1.0	ppb	5/31/17 15:43	CDB
Barium by ICP-OES 200.7	Less than	10.0	ppb	5/31/17 16:30	CDB
Beryllium EPA 200.7	Less than	2.0	ppb	5/31/17 16:30	CDB
Boron - EPA 200.7	Less than	1000	ppb	5/31/17 16:30	CDB
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	5/31/17 15:43	CDB
Calcium EPA 200.7	Less than	100	ppb	5/31/17 16:30	CDB
Chromium by ICP_MS 200.8	Less than	1.0	ppb	5/31/17 15:43	CDB
Cobalt by ICP_MS 200.8	Less than	1.0	ppb	5/31/17 15:43	CDB
Lead by ICP-MS 200.8	Less than	1.0	ppb	5/31/17 15:43	CDB
Lithium (CWA) 200.7	Less than	2.0	ppb	5/31/17 16:30	CDB
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	6/16/17 14:33	PRC
Molybdenum - EPA 200.8	Less than	1.0	ppb	5/31/17 15:43	CDB
Selenium by ICP-MS 200.8	Less than	5.0	ppb	5/31/17 15:43	CDB
Thallium by ICP-MS 200.8	Less than	1.0	ppb	5/31/17 15:43	CDB
•					

Approved By:	



Tel: (803)217-9384 Fax: (803) 217-9911

13:12

12:43

_____ January 25, 2018

REPORT TO:

Mike Moore C221

Sample ID: AB27267

Williams Hwy 52 GW 21-NPDES/CCR

Date & Time Sampled: May 23, 2017
Date & Time Submitted: May 25, 2017

Collected by: C.SANDEL Location Code: WLG21TM

GW 21 Login Record File: 170525002

011 21							
CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist		
Antimony by ICP-MS 200.8	Less than	1.0	ppb	5/31/17 15:43	CDB		
Arsenic by ICP_MS 200.8	2.8	1.0	ppb	5/31/17 15:43	CDB		
Barium by ICP-OES 200.7	34.5	10.0	ppb	5/31/17 16:30	CDB		
Beryllium EPA 200.7	Less than	2.0	ppb	5/31/17 16:30	CDB		
Boron - EPA 200.7	Less than	1000	ppb	5/31/17 16:30	CDB		
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	5/31/17 15:43	CDB		
Calcium EPA 200.7	130800	1000	ppb	5/31/17 16:30	CDB		
Chromium by ICP_MS 200.8	Less than	1.0	ppb	5/31/17 15:43	CDB		
Cobalt by ICP_MS 200.8	1.2	1.0	ppb	5/31/17 15:43	CDB		
Lead by ICP-MS 200.8	Less than	1.0	ppb	5/31/17 15:43	CDB		
Lithium (CWA) 200.7	5.4	2.0	ppb	5/31/17 16:30	CDB		
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	6/16/17 14:33	PRC		
Molybdenum - EPA 200.8	1.1	1.0	ppb	5/31/17 15:43	CDB		
Selenium by ICP-MS 200.8	Less than	5.0	ppb	5/31/17 15:43	CDB		
Thallium by ICP-MS 200.8	Less than	1.0	ppb	5/31/17 15:43	CDB		

Approved By:



Tel: (803)217-9384 Fax: (803) 217-9911

_____ January 25, 2018

REPORT TO:

Mike Moore C221

Sample ID: AB27268

Williams Hwy 52 DUP -NPDES/CCR

Date & Time Sampled: May 23, 2017 13:30
Date & Time Submitted: May 25, 2017 12:43

Collected by: C.SANDEL Location Code: WLGDUPTM

GW 10 Login Record File: 170525002

OTT 10							
CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist		
Antimony by ICP-MS 200.8	Less than	1.0	ppb	5/31/17 15:43	CDB		
Arsenic by ICP_MS 200.8	2.8	1.0	ppb	5/31/17 15:43	CDB		
Barium by ICP-OES 200.7	35.6	10.0	ppb	5/31/17 16:30	CDB		
Beryllium EPA 200.7	Less than	2.0	ppb	5/31/17 16:30	CDB		
Boron - EPA 200.7	Less than	1000	ppb	5/31/17 16:30	CDB		
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	5/31/17 15:43	CDB		
Calcium EPA 200.7	130500	1000	ppb	5/31/17 16:30	CDB		
Chromium by ICP_MS 200.8	Less than	1.0	ppb	5/31/17 15:43	CDB		
Cobalt by ICP_MS 200.8	1.2	1.0	ppb	5/31/17 15:43	CDB		
Lead by ICP-MS 200.8	Less than	1.0	ppb	5/31/17 15:43	CDB		
Lithium (CWA) 200.7	5.5	2.0	ppb	5/31/17 16:30	CDB		
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	6/16/17 14:33	PRC		
Molybdenum - EPA 200.8	1.1	1.0	ppb	5/31/17 15:43	CDB		
Selenium by ICP-MS 200.8	Less than	5.0	ppb	5/31/17 15:43	CDB		
Thallium by ICP-MS 200.8	Less than	1.0	ppb	5/31/17 15:43	CDB		

Approved By:	·



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_____ January 25, 2018

REPORT TO:

Mike Moore C221

Sample ID: AB27269

Williams Hwy 52 GW 22D-NPDES/CCR

Date & Time Sampled: May 24, 2017 09:12

Date & Time Submitted: May 25, 2017 12:43

Collected by: C.SANDEL Location Code: WLG22DTM

GW 22D Login Record File: 170525002

		-		
Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Less than	1.0	ppb	5/31/17 15:43	CDB
Less than	1.0	ppb	5/31/17 15:43	CDB
Less than	10.0	ppb	5/31/17 16:30	CDB
Less than	2.0	ppb	5/31/17 16:30	CDB
Less than	1000	ppb	5/31/17 16:30	CDB
Less than	1.0	ppb	5/31/17 15:43	CDB
86000	1000	ppb	5/31/17 16:30	CDB
Less than	1.0	ppb	5/31/17 15:43	CDB
Less than	1.0	ppb	5/31/17 15:43	CDB
Less than	1.0	ppb	5/31/17 15:43	CDB
10.3	2.0	ppb	5/31/17 16:30	CDB
Less than	0.2	ppb	6/16/17 14:33	PRC
9.2	1.0	ppb	5/31/17 15:43	CDB
Less than	5.0	ppb	5/31/17 15:43	CDB
Less than	1.0	ppb	5/31/17 15:43	CDB
	Less than Less than Less than Less than Less than Ress than Less than	Result Limit(MRL) Less than 1.0 Less than 1.0 Less than 10.0 Less than 1000 Less than 1.0 86000 1000 Less than 1.0 Less than 1.0 Less than 1.0 Less than 0.2 Less than 0.2 9.2 1.0 Less than 5.0	Result Limit(MRL) Units Less than 1.0 ppb Less than 1.0 ppb Less than 10.0 ppb Less than 1000 ppb Less than 1.0 ppb Less than 0.2 ppb Less than 0.2 ppb Less than 5.0 ppb	Result Limit(MRL) Units Date & Time Less than 1.0 ppb 5/31/17 15:43 Less than 1.0 ppb 5/31/17 15:43 Less than 10.0 ppb 5/31/17 16:30 Less than 2.0 ppb 5/31/17 16:30 Less than 1.00 ppb 5/31/17 15:43 86000 1000 ppb 5/31/17 15:43 Less than 1.0 ppb 5/31/17 15:43 Less than 0.2 ppb 6/16/17 14:33 9.2 1.0 ppb 5/31/17 15:43 Less than 5.0 ppb 5/31/17 15:43



Tel: (803)217-9384 Fax: (803) 217-9911

_____ January 25, 2018

Mike Moore C221

REPORT TO:

Sample ID: AB27270

Williams Hwy 52 GW 23D-NPDES/CCR

Date & Time Sampled: May 24, 2017 10:05
Date & Time Submitted: May 25, 2017 12:43

Collected by: C.SANDEL Location Code: WLG23DTM

GW 23D Login Record File: 170525002

207 208					
Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist	
Less than	1.0	ppb	5/31/17 15:43	CDB	
1.1	1.0	ppb	5/31/17 15:43	CDB	
Less than	10.0	ppb	5/31/17 16:30	CDB	
Less than	2.0	ppb	5/31/17 16:30	CDB	
Less than	1000	ppb	5/31/17 16:30	CDB	
Less than	1.0	ppb	5/31/17 15:43	CDB	
71880	1000	ppb	5/31/17 16:30	CDB	
Less than	1.0	ppb	5/31/17 15:43	CDB	
Less than	1.0	ppb	5/31/17 15:43	CDB	
Less than	1.0	ppb	5/31/17 15:43	CDB	
7.5	2.0	ppb	5/31/17 16:30	CDB	
Less than	0.2	ppb	6/16/17 14:33	PRC	
12.8	1.0	ppb	5/31/17 15:43	CDB	
Less than	5.0	ppb	5/31/17 15:43	CDB	
Less than	1.0	ppb	5/31/17 15:43	CDB	
	Less than 1.1 Less than Less than Less than 71880 Less than Less than Less than 1.2.8 Less than	Result Limit(MRL) Less than 1.0 1.1 1.0 Less than 10.0 Less than 2.0 Less than 1000 Less than 1.0 T1880 1000 Less than 1.0 Less than 1.0 Less than 1.0 Less than 0.2 Less than 5.0	Result Limit(MRL) Units Less than 1.0 ppb 1.1 1.0 ppb Less than 10.0 ppb Less than 1000 ppb Less than 1.0 ppb T1880 1000 ppb Less than 1.0 ppb Less than 1.0 ppb Less than 1.0 ppb Less than 0.2 ppb Less than 0.2 ppb Less than 5.0 ppb	Result Limit(MRL) Units Date & Time Less than 1.0 ppb 5/31/17 15:43 1.1 1.0 ppb 5/31/17 15:43 Less than 10.0 ppb 5/31/17 16:30 Less than 2.0 ppb 5/31/17 16:30 Less than 1000 ppb 5/31/17 16:30 Less than 1.0 ppb 5/31/17 15:43 T1880 1000 ppb 5/31/17 15:43 Less than 1.0 ppb 5/31/17 15:43 Less than 1.0 ppb 5/31/17 15:43 Less than 0.2 ppb 5/31/17 16:30 Less than 0.2 ppb 5/31/17 16:30 Less than 0.2 ppb 5/31/17 15:43 Less than 0.2 ppb 5/31/17 15:43 Less than 5.0 ppb 5/31/17 15:43	

Approved By:	



Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

REPORT TO:

Mike Moore C221

Sample ID: AB27271

Williams Hwy 52 GW 25-NPDES/CCR

Date & Time Sampled:
Date & Time Submitted:

May 24, 2017 10:56

May 25, 2017 12:43

Collected by: C.SANDEL

Location Code: WLG25TM

GW 25 Login Record File: 170525002

GW 25 LOGIT NECOTO FILE: 17/03/25002					
CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Antimony by ICP-MS 200.8	Less than	1.0	ppb	5/31/17 15:43	CDB
Arsenic by ICP_MS 200.8	Less than	1.0	ppb	5/31/17 15:43	CDB
Barium by ICP-OES 200.7	14.6	10.0	ppb	5/31/17 16:30	CDB
Beryllium EPA 200.7	Less than	2.0	ppb	5/31/17 16:30	CDB
Boron - EPA 200.7	Less than	1000	ppb	5/31/17 16:30	CDB
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	5/31/17 15:43	CDB
Calcium EPA 200.7	110100	1000	ppb	5/31/17 16:30	CDB
Chromium by ICP_MS 200.8	Less than	1.0	ppb	5/31/17 15:43	CDB
Cobalt by ICP_MS 200.8	Less than	1.0	ppb	5/31/17 15:43	CDB
Lead by ICP-MS 200.8	Less than	1.0	ppb	5/31/17 15:43	CDB
Lithium (CWA) 200.7	8.8	2.0	ppb	5/31/17 16:30	CDB
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	6/16/17 14:33	PRC
Molybdenum - EPA 200.8	3.7	1.0	ppb	5/31/17 15:43	CDB
Selenium by ICP-MS 200.8	Less than	5.0	ppb	5/31/17 15:43	CDB
Thallium by ICP-MS 200.8	Less than	1.0	ppb	5/31/17 15:43	CDB



Tel: (803)217-9384 Fax: (803) 217-9911

_____ January 25, 2018

REPORT TO:

Mike Moore C221

Sample ID: AB27272

Williams Hwy 52 GW 24-NPDES/CCR

Date & Time Sampled: May 24, 2017
Date & Time Submitted: May 25, 2017

May 24, 2017 12:00 May 25, 2017 12:43

Collected by: C.SANDEL Location Code: WLG24TM

GW 24 Login Record File: 170525002

011 21	_		_09		
CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Antimony by ICP-MS 200.8	Less than	1.0	ppb	5/31/17 15:43	CDB
Arsenic by ICP_MS 200.8	Less than	1.0	ppb	5/31/17 15:43	CDB
Barium by ICP-OES 200.7	46.1	10.0	ppb	5/31/17 16:30	CDB
Beryllium EPA 200.7	Less than	2.0	ppb	5/31/17 16:30	CDB
Boron - EPA 200.7	Less than	1000	ppb	5/31/17 16:30	CDB
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	5/31/17 15:43	CDB
Calcium EPA 200.7	138700	1000	ppb	5/31/17 16:30	CDB
Chromium by ICP_MS 200.8	Less than	1.0	ppb	5/31/17 15:43	CDB
Cobalt by ICP_MS 200.8	1.4	1.0	ppb	5/31/17 15:43	CDB
Lead by ICP-MS 200.8	Less than	1.0	ppb	5/31/17 15:43	CDB
Lithium (CWA) 200.7	3.4	2.0	ppb	5/31/17 16:30	CDB
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	6/16/17 14:33	PRC
Molybdenum - EPA 200.8	1.0	1.0	ppb	5/31/17 15:43	CDB
Selenium by ICP-MS 200.8	Less than	5.0	ppb	5/31/17 15:43	CDB
Thallium by ICP-MS 200.8	Less than	1.0	ppb	5/31/17 15:43	CDB

Approved By:



Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

REPORT TO:

Mike Moore C221

Sample ID: AB27273

Williams Hwy 52 GW 26-NPDES/CCR

Date & Time Sampled: May 24, 2017 13:06
Date & Time Submitted: May 25, 2017 12:43

Collected by: C.SANDEL Location Code: WLG26TM

GW 26 Login Record File: 170525002

				_
Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Less than	1.0	ppb	5/31/17 15:43	CDB
4.5	1.0	ppb	5/31/17 15:43	CDB
72.9	10.0	ppb	5/31/17 16:30	CDB
Less than	2.0	ppb	5/31/17 16:30	CDB
Less than	1000	ppb	5/31/17 16:30	CDB
Less than	1.0	ppb	5/31/17 15:43	CDB
157800	1000	ppb	5/31/17 16:30	CDB
Less than	1.0	ppb	5/31/17 15:43	CDB
7.2	1.0	ppb	5/31/17 15:43	CDB
Less than	1.0	ppb	5/31/17 15:43	CDB
2.2	2.0	ppb	5/31/17 16:30	CDB
Less than	0.2	ppb	6/16/17 14:33	PRC
Less than	1.0	ppb	5/31/17 15:43	CDB
Less than	5.0	ppb	5/31/17 15:43	CDB
Less than	1.0	ppb	5/31/17 15:43	CDB
	Less than 4.5 72.9 Less than Less than 157800 Less than 7.2 Less than 2.2 Less than Less than Less than	Result Limit(MRL) Less than 1.0 4.5 1.0 72.9 10.0 Less than 2.0 Less than 1000 Less than 1.0 157800 1000 Less than 1.0 7.2 1.0 Less than 1.0 2.2 2.0 Less than 0.2 Less than 1.0 Less than 5.0	Result Limit(MRL) Units Less than 1.0 ppb 4.5 1.0 ppb 72.9 10.0 ppb Less than 2.0 ppb Less than 1000 ppb Less than 1.0 ppb Less than 1.0 ppb Less than 1.0 ppb Less than 1.0 ppb Less than 0.2 ppb Less than 1.0 ppb Less than 5.0 ppb	Result Limit(MRL) Units Date & Time Less than 1.0 ppb 5/31/17 15:43 4.5 1.0 ppb 5/31/17 15:43 72.9 10.0 ppb 5/31/17 16:30 Less than 2.0 ppb 5/31/17 16:30 Less than 1.0 ppb 5/31/17 15:43 157800 1000 ppb 5/31/17 15:43 15800 1000 </td

Approved By:	



Tel: (803)217-9384 Fax: (803) 217-9911

_____ January 25, 2018

REPORT TO:

Mike Moore C221

Sample ID: AB27274

Williams Hwy 52 GW 10-NPDES/CCR

Date & Time Sampled: May

May 25, 2017 09:20

Date & Time Submitted: May 25, 2017 12:43

Collected by: C.SANDEL Location Code: WLG10TM

GW 10 Login Record File: 170525002

O11 10	_		_09		
CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Antimony by ICP-MS 200.8	Less than	1.0	ppb	5/31/17 15:43	CDB
Arsenic by ICP_MS 200.8	1.2	1.0	ppb	5/31/17 15:43	CDB
Barium by ICP-OES 200.7	128	10.0	ppb	5/31/17 16:30	CDB
Beryllium EPA 200.7	Less than	2.0	ppb	5/31/17 16:30	CDB
Boron - EPA 200.7	Less than	1000	ppb	5/31/17 16:30	CDB
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	5/31/17 15:43	CDB
Calcium EPA 200.7	32340	1000	ppb	5/31/17 16:30	CDB
Chromium by ICP_MS 200.8	3.9	1.0	ppb	5/31/17 15:43	CDB
Cobalt by ICP_MS 200.8	1.2	1.0	ppb	5/31/17 15:43	CDB
Lead by ICP-MS 200.8	Less than	1.0	ppb	5/31/17 15:43	CDB
Lithium (CWA) 200.7	31.0	2.0	ppb	5/31/17 16:30	CDB
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	6/16/17 14:33	PRC
Molybdenum - EPA 200.8	2.7	1.0	ppb	5/31/17 15:43	CDB
Selenium by ICP-MS 200.8	Less than	5.0	ppb	5/31/17 15:43	CDB
Thallium by ICP-MS 200.8	Less than	1.0	ppb	5/31/17 15:43	CDB



Tel: (803)217-9384 Fax: (803) 217-9911

____ January 25, 2018

REPORT TO:

Mike Moore C221

Sample ID: AB27275

Williams Hwy 52 GW 11-NPDES/CCR

Date & Time Sampled: May 25, 2017 10:20
Date & Time Submitted: May 25, 2017 12:43

Collected by: C.SANDEL Location Code: WLG11TM

GW 11 Login Record File: 170525002

		-		_
Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Less than	1.0	ppb	5/31/17 15:43	CDB
Less than	1.0	ppb	5/31/17 15:43	CDB
Less than	10.0	ppb	5/31/17 16:30	CDB
Less than	2.0	ppb	5/31/17 16:30	CDB
Less than	1000	ppb	5/31/17 16:30	CDB
Less than	1.0	ppb	5/31/17 15:43	CDB
19320	1000	ppb	5/31/17 16:30	CDB
Less than	1.0	ppb	5/31/17 15:43	CDB
Less than	1.0	ppb	5/31/17 15:43	CDB
Less than	1.0	ppb	5/31/17 15:43	CDB
3.8	2.0	ppb	5/31/17 16:30	CDB
Less than	0.2	ppb	6/16/17 14:33	PRC
Less than	1.0	ppb	5/31/17 15:43	CDB
Less than	5.0	ppb	5/31/17 15:43	CDB
Less than	1.0	ppb	5/31/17 15:43	CDB
	Less than Less than Less than Less than Less than 19320 Less than	Result Limit(MRL) Less than 1.0 Less than 1.0 Less than 10.0 Less than 1000 Less than 1.0 19320 1000 Less than 1.0 Less than 1.0 Less than 1.0 Less than 0.2 Less than 1.0 Less than 5.0	Result Limit(MRL) Units Less than 1.0 ppb Less than 1.0 ppb Less than 10.0 ppb Less than 1000 ppb Less than 1.0 ppb Less than 0.2 ppb Less than 1.0 ppb Less than 1.0 ppb Less than 5.0 ppb	Result Limit(MRL) Units Date & Time Less than 1.0 ppb 5/31/17 15:43 Less than 1.0 ppb 5/31/17 15:43 Less than 10.0 ppb 5/31/17 16:30 Less than 2.0 ppb 5/31/17 16:30 Less than 1.00 ppb 5/31/17 15:43 Less than 1.0 ppb 5/31/17 16:30 Less than 1.0 ppb 5/31/17 15:43 Less than 0.2 ppb 6/16/17 14:33 Less than 1.0 ppb 5/31/17 15:43 Less than 1.0 ppb 5/31/17 15:43

Approved By:

EPA CCR Rule Compliance Monitoring Wells Groundwater Monitoring Data South Carolina Electric & Gas: Williams Station Highway 52 Class Three Landfill

	Gauging Dat	te:07/25-26/201	17	Final Water Quality Indicator Parameters					
Monitoring Well ID	PVC Pipe Elevation, ft.	Depth to Groundwater, ft.	Groundwater Elevation, ft.	Temparature ^o C	pH S.U.	Sp. Cond. µS/cm	Turbidity NTU	ORP mV	DO mg/L
GW-10	52.28	7.29	44.99	22.2	7.7	493	5.66	-18.0	0.4
GW-11	51.72	10.67	41.05	22.8	7.1	317	5.16	-1.9	0.45
GW-20	60.81	20.90	39.91	22.1	6.5	1,077	5.79	-6.1	0.45
GW-21	56.14	16.33	39.81	22.4	6.6	1,035	6.31	10.9	0.47
GW-22D	50.36	15.08	35.28	24.0	6.9	947	9.22	-87.9	0.48
GW-23D	49.69	13.92	35.77	22.7	6.9	850	7.85	22.6	1.13
GW-24	52.40	15.35	37.05	21.8	6.4	935	6.15	-19.2	1.44
GW-25	50.93	14.75	36.18	21.6	6.7	972	6.54	1.3	1.87
GW-26	55.21	24.32	30.89	19.9	6.0	1,540	7.23	-19.1	0.83
GW-27	53.25	7.42	45.83	20.9	6.9	661	5.13	-37.2	0.70
GW-28	51.22	9.57	41.65	22.9	7.0	270	5.35	-18.4	0.47

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis Report for

GEEL003 GEL Engineering, LLC Client SDG: 428949 GEL Work Order: 428949

The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a Tracer compound
- ** Analyte is a surrogate compound
- H Analytical holding time was exceeded
- J Value is estimated
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Jake Crook.

	John Cates	
Reviewed by	•	

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: August 15, 2017

SCEG01615C

GEEL003

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-27
Sample ID: 428949001
Matrix: Ground Water
Collect Date: 25-JUL-17 10:52

Receive Date: 26-JUL-17 Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatograph	ıy											
EPA300.0 Fluoride	in Liquid "As Re	eceived"										
Fluoride		0.265	0.033	0.100	mg/L		1	MXL2	07/28/17	2126	1686727	1
Chloride		16.2	0.134	0.400	mg/L		2	MXL2	07/31/17	1633	1686727	2
Metals Analysis-IC	P-MS											
200.8/200.2 NPDE	ES Metals "As Red	ceived"										
Lithium	U	ND	2.00	10.0	ug/L	1.00	1	SKJ	08/10/17	1530	1686062	3
Rad Gas Flow Prop	ortional Counting	2										
GFPC, Ra228, Liqu	uid "As Received"	'										
Radium-228	U	ND	1.31	3.00	pCi/L			JXC9	08/15/17	1117	1686439	4
Rad Radium-226												
Lucas Cell, Ra226,	liquid "As Receiv	ved"										
Radium-226	•	1.63	0.676	1.00	pCi/L			MXH8	08/10/17	0925	1686419	5
The following Prep	Methods were pe	erformed:										
Method	Description	1		Analyst	Date	-	Γime	Pr	ep Batch			
EPA 200.2	ICP-MS 200.	2 PREP		JXM8	07/27/17	1	700	168	86061			

The following Analytical Methods were performed:

Method	Description		Analyst Co	omments	
1	EPA 300.0		-		
2	EPA 300.0				
3	EPA 200.8 SC_NPDES				
4	EPA 904.0/SW846 9320 Modified				
5	EPA 903.1 Modified				
Surrogate/Trace	r Recovery Test	Result	Nominal	Recovery%	Acceptable Limits

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits

Barium-133 Tracer GFPC, Ra228, Liquid "As Received" 90.8 (15%-125%)

Notes:

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: August 15, 2017

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner
Project: Williams 52

Client Sample ID: GW-27 Project: SCEG01615C Sample ID: 428949001 Client ID: GEEL003

Parameter Qualifier Result DL RL Units PF DF Analyst Date Time Batch Method

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: August 15, 2017

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: Field Blank Project: SCEG01615C Sample ID: 428949002 Client ID: GEEL003

Matrix: Water

Collect Date: 25-JUL-17 11:30 Receive Date: 26-JUL-17 Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	yst Date	Time	Batch	Method
Ion Chromatography	y											
EPA300.0 Fluoride	in Liquid "As Re	eceived"										
Chloride	J	0.0815	0.067	0.200	mg/L		1	MXL2	07/28/17	2253	1686727	1
Fluoride	U	ND	0.033	0.100	mg/L		1					
Metals Analysis-ICI	P-MS											
200.8/200.2 NPDES	S Metals "As Red	ceived"										
Lithium	U	ND	2.00	10.0	ug/L	1.00	1	SKJ	08/10/17	1554	1686062	2
Rad Gas Flow Propo	ortional Counting	7										
GFPC, Ra228, Liqui	id "As Received"	'										
Radium-228	U	ND	1.10	3.00	pCi/L			JXC9	08/15/17	1117	1686439	3
Rad Radium-226												
Lucas Cell, Ra226, 1	liquid "As Receiv	ved"										
Radium-226	U	ND	0.535	1.00	pCi/L			MXH8	8 08/10/17	0925	1686419	4
The following Prep	Methods were pe	erformed:										
Method	Description	1		Analyst	Date	-	Гim	e Pı	rep Batch			
EPA 200.2	ICP-MS 200.	2 PREP		JXM8	07/27/17		1700	16	86061			

The following Analytical Methods were performed:

 Method
 Description
 Analyst Comments

 1
 EPA 300.0

 2
 EPA 200.8 SC_NPDES

 3
 EPA 904.0/SW846 9320 Modified

EPA 903.1 Modified

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits

Barium-133 Tracer GFPC, Ra228, Liquid "As Received"

96.6 (15%-125%)

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: August 15, 2017

SCEG01615C

GEEL003

Company:

GEL Engineering, LLC

2040 Savage Rd Address:

Charleston, South Carolina 29417

Contact: Project:

Robert Gardner Williams 52

Client Sample ID: GW-10

Sample ID:

428949003

Matrix: Collect Date: Ground Water

Receive Date:

25-JUL-17 11:35 26-JUL-17

Collector:

Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatograp	hy											
EPA300.0 Fluorid	e in Liquid "As Re	eceived"										
Fluoride	•	0.515	0.033	0.100	mg/L		1	MXL2	07/28/17	2322	1686727	1
Chloride		17.1	0.335	1.00	mg/L		5	MXL2	07/31/17	1800	1686727	2
Metals Analysis-IO	CP-MS											
200.8/200.2 NPD	ES Metals "As Re	ceived"										
Lithium		34.5	2.00	10.0	ug/L	1.00	1	SKJ	08/10/17	1558	1686062	3
Rad Gas Flow Pro	portional Counting	g										
GFPC, Ra228, Liq	uid "As Received	"										
Radium-228	U	ND	1.46	3.00	pCi/L			JXC9	08/15/17	1118	1686439	4
Rad Radium-226												
Lucas Cell, Ra226	, liquid "As Recei	ved"										
Radium-226	U	ND	0.424	1.00	pCi/L			MXH8	08/10/17	0925	1686419	5
The following Pre	p Methods were p	erformed:										
Method	Description	n		Analyst	Date	-	Time	Pr	ep Batch			
EPA 200.2	ICP-MS 200.	2 PREP		JXM8	07/27/17		1700	168	86061			
TDI - C-11 - C- A -	.1 .41 M1 1 .											

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	·
2	EPA 300.0	
3	EPA 200.8 SC_NPDES	
4	EPA 904.0/SW846 9320 Modified	
5	EPA 903.1 Modified	

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits 98.5 (15%-125%) Barium-133 Tracer GFPC, Ra228, Liquid "As Received"

Notes:

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: August 15, 2017

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-10 Project: SCEG01615C Sample ID: 428949003 Client ID: GEEL003

Parameter Qualifier Result	DL	RL	Units	PF	DF Analyst Date	Time Batch Method
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Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: August 15, 2017

SCEG01615C

GEEL003

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-11 Project:
Sample ID: 428949004 Client ID:

Matrix: Ground Water
Collect Date: 25-JUL-17 12:20
Receive Date: 26-JUL-17
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatograph	y											
EPA300.0 Fluoride	in Liquid "As Re	eceived"										
Chloride		5.83	0.067	0.200	mg/L		1	MXL2	07/28/17	2351	1686727	1
Fluoride		0.324	0.033	0.100	mg/L		1					
Metals Analysis-IC	P-MS											
200.8/200.2 NPDE	S Metals "As Red	ceived"										
Lithium	J	4.51	2.00	10.0	ug/L	1.00	1	SKJ	08/10/17	1602	1686062	2
Rad Gas Flow Prop	ortional Counting	3										
GFPC, Ra228, Liqu	id "As Received"	"										
Radium-228	U	ND	0.860	3.00	pCi/L			JXC9	08/15/17	1118	1686439	3
Rad Radium-226												
Lucas Cell, Ra226,	liquid "As Recei	ved"										
Radium-226		4.55	0.399	1.00	pCi/L			MXH8	08/10/17	0925	1686419	4
The following Prep	Methods were pe	erformed:										
Method	Description	n		Analyst	Date	7	Гіте	Pro	ep Batch			
EPA 200.2	ICP-MS 200.	2 PREP		JXM8	07/27/17	1	1700	168	36061			

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	•
2	EPA 200.8 SC_NPDES	
3	EPA 904.0/SW846 9320 Modified	

EPA 903.1 Modified

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits

Barium-133 Tracer GFPC, Ra228, Liquid "As Received"

101 (15%-125%)

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: August 15, 2017

SCEG01615C

GEEL003

Company: GEL Engineering, LLC

Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-28 Sample ID: 428949005

Matrix: Ground Water
Collect Date: 25-JUL-17 13:07
Receive Date: 26-JUL-17
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatography	y											
EPA300.0 Fluoride	in Liquid "As Re	ceived"										
Chloride	-	3.58	0.067	0.200	mg/L		1	MXL2	07/29/17	0019	1686727	1
Fluoride	J	0.0938	0.033	0.100	mg/L		1					
Metals Analysis-ICI	P-MS											
200.8/200.2 NPDES	S Metals "As Red	ceived"										
Lithium	U	ND	2.00	10.0	ug/L	1.00	1	SKJ	08/10/17	1606	1686062	2
Rad Gas Flow Propo	ortional Counting	ŗ										
GFPC, Ra228, Liqui	id "As Received"	'										
Radium-228	U	ND	1.79	3.00	pCi/L			JXC9	08/15/17	1118	1686439	3
Rad Radium-226												
Lucas Cell, Ra226, 1	liquid "As Receiv	ved"										
Radium-226	•	1.39	0.475	1.00	pCi/L			MXH8	08/10/17	0925	1686419	4
The following Prep	Methods were pe	erformed:										
Method	Description	1		Analyst	Date	-	Гітє	Pr	ep Batch			
EPA 200.2	ICP-MS 200.2	2 PREP		JXM8	07/27/17		1700	168	86061			

The following Analytical Methods were performed:

MethodDescriptionAnalyst Comments1EPA 300.0

EPA 200.8 SC_NPDES
 EPA 904.0/SW846 9320 Modified
 EPA 903.1 Modified

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits

Barium-133 Tracer GFPC, Ra228, Liquid "As Received" 91.3 (15%-125%)

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: August 15, 2017

SCEG01615C

GEEL003

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: DUP

Sample ID: 428949006 Matrix: Ground Water

Collect Date: 25-JUL-17 13:20
Receive Date: 26-JUL-17
Collector: Client

Parameter	Qualifier	Result	DI	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatograph	y											
EPA300.0 Fluoride	in Liquid "As Re	ceived"										
Chloride	•	3.54	0.067	0.200	mg/L		1	MXL2	07/29/17	0048	1686727	1
Fluoride	J	0.0974	0.033	0.100	mg/L		1					
Metals Analysis-IC	P-MS											
200.8/200.2 NPDE	S Metals "As Red	ceived"										
Lithium	U	ND	2.00	10.0	ug/L	1.00	1	SKJ	08/10/17	1630	1686062	2
Rad Gas Flow Prop	ortional Counting	Ţ										
GFPC, Ra228, Liqu	id "As Received"	1										
Radium-228	U	ND	1.44	3.00	pCi/L			JXC9	08/15/17	1118	1686439	3
Rad Radium-226												
Lucas Cell, Ra226,	liquid "As Receiv	ved"										
Radium-226	-	0.856	0.587	1.00	pCi/L			MXH8	08/10/17	0955	1686419	4
The following Prep	Methods were pe	erformed:										
Method	Description	1		Analyst	Date	7	Гіте	Pr	ep Batch			
EPA 200.2	ICP-MS 200.2			JXM8	07/27/17	1	700	16	86061			

The following Analytical Methods were performed:

MethodDescriptionAnalyst Comments1EPA 300.02EPA 200.8 SC_NPDES

3 EPA 904.0/SW846 9320 Modified

EPA 903.1 Modified

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits

Barium-133 Tracer GFPC, Ra228, Liquid "As Received" 106 (15%-125%)

Notes:

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: August 15, 2017

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-20 Project: SCEG01615C Sample ID: 428949007 Client ID: GEEL003

Matrix: Ground Water
Collect Date: 25-JUL-17 14:13
Receive Date: 26-JUL-17
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatograph	ıy											
EPA300.0 Fluoride	in Liquid "As Re	eceived"										
Chloride		9.74	0.067	0.200	mg/L		1	MXL2	07/29/17	0215	1686727	1
Fluoride		0.175	0.033	0.100	mg/L		1					
Metals Analysis-IC	P-MS											
200.8/200.2 NPDE	ES Metals "As Rec	ceived"										
Lithium	J	6.99	2.00	10.0	ug/L	1.00	1	SKJ	08/10/17	1634	1686062	2
Rad Gas Flow Prop	ortional Counting	3										
GFPC, Ra228, Liqu	uid "As Received"	"										
Radium-228	U	ND	1.01	3.00	pCi/L			JXC9	08/15/17	1118	1686439	3
Rad Radium-226												
Lucas Cell, Ra226,	liquid "As Recei	ved"										
Radium-226	U	ND	0.581	1.00	pCi/L			MXH8	08/10/17	0955	1686419	4
The following Prep	Methods were pe	erformed:										
Method	Description	n		Analyst	Date	7	Гime	Pro	ep Batch			
EPA 200.2	ICP-MS 200.	2 PREP		JXM8	07/27/17	1	1700	168	36061			

The following Analytical Methods were performed:

MethodDescriptionAnalyst Comments1EPA 300.02EPA 200.8 SC_NPDES

EPA 200.8 SC_NPDES
 EPA 904.0/SW846 9320 Modified
 EPA 903.1 Modified

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits

Barium-133 Tracer GFPC, Ra228, Liquid "As Received" 102 (15%-125%)

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: August 15, 2017

SCEG01615C

GEEL003

Company: Address:

GEL Engineering, LLC

2040 Savage Rd

Charleston, South Carolina 29417

Contact: Project:

Robert Gardner Williams 52

Client Sample ID: GW-21

Sample ID:

428949008

Matrix:

Ground Water

Collect Date:

25-JUL-17 14:54

Receive Date: Collector:

26-JUL-17 Client

Parameter	Qualifier	Result	DL	RL	Units	PF 1	DF	Analyst Dat	e	Time	Batch	Method
Ion Chromatography												
EPA300.0 Fluoride in	Liquid "As Re	eceived"										
Fluoride	_	0.161	0.033	0.100	mg/L		1	MXL2 07/29/	17	0244	1686727	1
Chloride		9.60	0.134	0.400	mg/L		2	MXL2 07/31/	17	1829	1686727	2
Metals Analysis-ICP-I	MS											
200.8/200.2 NPDES I	Metals "As Re	ceived"										
Lithium	J	7.26	2.00	10.0	ug/L	1.00	1	SKJ 08/10/	17	1637	1686062	3
Rad Gas Flow Proport	ional Counting	g										
GFPC, Ra228, Liquid	"As Received	"										
Radium-228	U	ND	1.15	3.00	pCi/L			JXC9 08/15/	17	1118	1686439	4
Rad Radium-226												
Lucas Cell, Ra226, liq	uid "As Recei	ved"										
Radium-226	U	ND	0.528	1.00	pCi/L			MXH8 08/10/	17	0955	1686419	5
The following Prep M	ethods were p	erformed:										
Method	Description	n		Analyst	Date	Т	ime	e Prep Bat	ch			
EPA 200.2	ICP-MS 200.	2 PREP		JXM8	07/27/17	1′	700	1686061				

The following Analytical Methods were performed:

Method	Description		Analyst Co	omments	
1	EPA 300.0		-		
2	EPA 300.0				
3	EPA 200.8 SC_NPDES				
4	EPA 904.0/SW846 9320 Modified				
5	EPA 903.1 Modified				
Surrogate/Trace	r Recovery Test	Recult	Nominal	Recovery%	Acceptable Limits

Surrogate/Tracer Recovery Recovery% Acceptable Limits Barium-133 Tracer GFPC, Ra228, Liquid "As Received" 102 (15%-125%)

Notes:

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: August 15, 2017

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-21 Project: SCEG01615C Sample ID: 428949008 Client ID: GEEL003

Parameter Qualifier Result DL RL Units PF DF Analyst Date Time Batch Method

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: August 15, 2017

SCEG01615C

GEEL003

Company:

GEL Engineering, LLC

Address:

2040 Savage Rd

Charleston, South Carolina 29417

Contact: Project:

Robert Gardner Williams 52

Client Sample ID: GW-22D

Sample ID:

428949009

Matrix:

Ground Water

Collect Date:

25-JUL-17 15:37

Receive Date: Collector:

26-JUL-17 Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatography	7											
EPA300.0 Fluoride i	n Liquid "As Re	eceived"										
Fluoride	•	0.250	0.033	0.100	mg/L		1	MXL2	07/29/17	0313	1686727	1
Chloride		9.69	0.134	0.400	mg/L		2	MXL2	07/31/17	1858	1686727	2
Metals Analysis-ICP	P-MS											
200.8/200.2 NPDES	Metals "As Re	ceived"										
Lithium		12.9	2.00	10.0	ug/L	1.00	1	SKJ	08/10/17	1641	1686062	3
Rad Gas Flow Propo	rtional Counting	gr S										
GFPC, Ra228, Liqui	d "As Received"	"										
Radium-228	U	ND	1.60	3.00	pCi/L			JXC9	08/15/17	1118	1686439	4
Rad Radium-226												
Lucas Cell, Ra226, 1	iquid "As Recei	ved"										
Radium-226	U	ND	0.641	1.00	pCi/L			MXH8	08/10/17	0955	1686419	5
The following Prep I	Methods were po	erformed:										
Method	Description	n		Analyst	Date	Т	ime	Pr	ep Batch			
EPA 200.2	ICP-MS 200.	2 PREP		JXM8	07/27/17	1	700	16	86061			

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	•
2	EPA 300.0	
3	EPA 200.8 SC_NPDES	
4	EPA 904.0/SW846 9320 Modified	
5	EPA 903.1 Modified	

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits (15%-125%) Barium-133 Tracer GFPC, Ra228, Liquid "As Received" 80.8

Notes:

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: August 15, 2017

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner
Project: Williams 52

Client Sample ID: GW-22D Project: SCEG01615C Sample ID: 428949009 Client ID: GEEL003

Parameter Qualifier Result	DL	RL	Units	PF	DF Analyst Date	Time Batch Method
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Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

Project:

Client ID:

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: August 15, 2017

SCEG01615C

GEEL003

Company: G: Address: 20

GEL Engineering, LLC

2040 Savage Rd

Charleston, South Carolina 29417

Contact: Project:

Robert Gardner

Client Sample ID: GW-23D

Williams 52

Sample ID:

428949010

Matrix:

Ground Water

Collect Date: Receive Date:

26-JUL-17 10:31 26-JUL-17

Receive Date: Collector:

Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatogra	phy											
EPA300.0 Fluorio	de in Liquid "As Re	eceived"										
Fluoride	•	0.318	0.033	0.100	mg/L		1	MXL2	07/29/17	0342	1686727	1
Chloride		14.6	0.134	0.400	mg/L		2	MXL2	07/31/17	2024	1686727	2
Metals Analysis-	ICP-MS											
200.8/200.2 NPI	DES Metals "As Red	ceived"										
Lithium	J	9.21	2.00	10.0	ug/L	1.00	1	SKJ	08/10/17	1653	1686062	3
Rad Gas Flow Pr	oportional Counting	<u>r</u>										
GFPC, Ra228, Li	iquid "As Received'	"										
Radium-228	U	ND	1.23	3.00	pCi/L			JXC9	08/15/17	1118	1686439	4
Rad Radium-226												
Lucas Cell, Ra22	6, liquid "As Recei	ved"										
Radium-226	, <u>i</u>	0.745	0.335	1.00	pCi/L			MXH8	08/10/17	0955	1686419	5
The following Pr	ep Methods were pe	erformed:										
Method	Description	n		Analyst	Date	,	Time	e Pro	ep Batch			
EPA 200.2	ICP-MS 200.	2 PREP		JXM8	07/27/17		1700	168	86061			
TPI - C-11 A	1		1.									

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	
2	EPA 300.0	
3	EPA 200.8 SC_NPDES	
4	EPA 904.0/SW846 9320 Modified	
5	EPA 903.1 Modified	

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits

Barium-133 Tracer GFPC, Ra228, Liquid "As Received"

102 (15%-125%)

Notes:

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: August 15, 2017

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner
Project: Williams 52

Client Sample ID: GW-23D Project: SCEG01615C Sample ID: 428949010 Client ID: GEEL003

Parameter Qualifier Result DL RL Units PF DF Analyst Date Time Batch Method

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: August 15, 2017

SCEG01615C

GEEL003

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner
Project: Williams 52

Client Sample ID: GW-25
Sample ID: 428949011
Matrix: Ground Water

Matrix: Ground Water
Collect Date: 26-JUL-17 11:13
Receive Date: 26-JUL-17
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatography	y											
EPA300.0 Fluoride	in Liquid "As Re	eceived"										
Fluoride	_	0.530	0.033	0.100	mg/L		1	MXL2	07/29/17	0411	1686727	1
Chloride		21.2	0.335	1.00	mg/L		5	MXL2	07/31/17	2053	1686727	2
Metals Analysis-ICl	P-MS											
200.8/200.2 NPDE	S Metals "As Re	ceived"										
Lithium		10.8	2.00	10.0	ug/L	1.00	1	SKJ	08/10/17	1657	1686062	3
Rad Gas Flow Propo	ortional Counting	3										
GFPC, Ra228, Liqu	id "As Received"	"										
Radium-228		1.03	0.936	3.00	pCi/L			JXC9	08/15/17	1118	1686439	4
Rad Radium-226												
Lucas Cell, Ra226,	liquid "As Recei	ved"										
Radium-226	U	ND	0.523	1.00	pCi/L			MXH8	08/10/17	0955	1686419	5
The following Prep	Methods were pe	erformed:										
Method	Description	n		Analyst	Date	-	Гimе	e Pr	ep Batch			
EPA 200.2	ICP-MS 200.	2 PREP		JXM8	07/27/17		1700	16	86061			

The following Analytical Methods were performed:

Method	Description		Analyst Co	omments	
1	EPA 300.0		-		
2	EPA 300.0				
3	EPA 200.8 SC_NPDES				
4	EPA 904.0/SW846 9320 Modified				
5	EPA 903.1 Modified				
Surrogate/Trace	er Recovery Test	Result	Nominal	Recovery%	Acceptable Limits

Barium-133 Tracer GFPC, Ra228, Liquid "As Received"

Result Nominal Recovery Acceptable Limits

101 (15%-125%)

Notes:

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: August 15, 2017

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-25 Project: SCEG01615C Sample ID: 428949011 Client ID: GEEL003

Parameter Qualifier Result DL RL Units PF DF Analyst Date Time Batch Method

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: August 15, 2017

SCEG01615C

GEEL003

Company : Address :

GEL Engineering, LLC

ess: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Project:

Robert Gardner

Client Sample ID: GW-24

Williams 52

Sample ID:

428949012

26-JUL-17

Matrix:

Ground Water

Collect Date:

26-JUL-17 11:48

Receive Date: Collector:

Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time Batch	Method
Ion Chromatograp	hy										
EPA300.0 Fluoride	e in Liquid "As Re	eceived"									
Fluoride	_	0.362	0.033	0.100	mg/L		1	MXL2 07	7/29/17	0440 1686727	1
Chloride		17.5	0.335	1.00	mg/L		5	MXL2 07	7/31/17	2122 1686727	2
Metals Analysis-IO	CP-MS										
200.8/200.2 NPD	ES Metals "As Re	ceived"									
Lithium	J	5.00	2.00	10.0	ug/L	1.00	1	SKJ 08	3/10/17	1701 1686062	3
Rad Gas Flow Pro	portional Counting	g									
GFPC, Ra228, Liq	uid "As Received"	"									
Radium-228	U	ND	1.08	3.00	pCi/L			JXC9 08	3/15/17	1118 1686439	4
Rad Radium-226											
Lucas Cell, Ra226	, liquid "As Recei	ved"									
Radium-226	U	ND	0.485	1.00	pCi/L			MXH8 08	3/10/17	0955 1686419	5
The following Pre	p Methods were pe	erformed:									
Method	Description	n		Analyst	Date	-	Tim	e Prep	Batch		
EPA 200.2	ICP-MS 200.	2 PREP		JXM8	07/27/17		1700	16860	61		
7771 C 11 ' A	1 134 .1 1	c	1								

The following Analytical Methods were performed:

Method	Description		Analyst Cor	nments	
1	EPA 300.0		-		
2	EPA 300.0				
3	EPA 200.8 SC_NPDES				
4	EPA 904.0/SW846 9320 Modified				
5	EPA 903.1 Modified				
Surrogate/Tracer Recove	ery Test	Result	Nominal	Recovery%	Acceptable Limits

Barium-133 Tracer GFPC, Ra228, Liquid "As Received"

Result Nominal Recovery Acceptable Limits

98.1 (15%-125%)

Notes:

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: August 15, 2017

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-24 Project: SCEG01615C Sample ID: 428949012 Client ID: GEEL003

Parameter Qualifier Result	DL	RL	Units	PF	DF Analyst Date	Time Batch Method
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Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Analyst Comments

Report Date: August 15, 2017

SCEG01615C

GEEL003

Company:

GEL Engineering, LLC 2040 Savage Rd

Address:

Charleston, South Carolina 29417

Contact: Project:

Robert Gardner Williams 52

Client Sample ID: GW-26

Sample ID:

428949013

Matrix: Collect Date: Ground Water 26-JUL-17 12:30

Receive Date:

26-JUL-17

Collector:

Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst Date	Time	Batch	Method
Ion Chromatograph	у										
EPA300.0 Fluoride	in Liquid "As Re	eceived"									
Fluoride	_	0.193	0.033	0.100	mg/L		1	MXL2 07/29/17	0509	1686727	1
Chloride		150	1.34	4.00	mg/L		20	MXL2 08/01/17	1207	1686727	2
Metals Analysis-IC	P-MS										
200.8/200.2 NPDE	S Metals "As Re	ceived"									
Lithium	J	2.49	2.00	10.0	ug/L	1.00	1	SKJ 08/10/17	1705	1686062	3
Rad Gas Flow Prop	ortional Counting	g									
GFPC, Ra228, Liqu	iid "As Received	"									
Radium-228	U	ND	1.16	3.00	pCi/L			JXC9 08/15/17	1118	1686439	4
Rad Radium-226											
Lucas Cell, Ra226,	liquid "As Recei	ved"									
Radium-226		8.26	0.613	1.00	pCi/L			MXH8 08/10/17	0955	1686419	5
The following Prep	Methods were po	erformed:									
Method	Description	n		Analyst	Date	,	Time	e Prep Batch	l		
EPA 200.2	ICP-MS 200.	2 PREP		JXM8	07/27/17		1700	1686061			
The following Ana	lytical Methods v	were performed	:								

1 EPA 300.0 2 EPA 300.0 3 EPA 200.8 SC_NPDES 4 EPA 904.0/SW846 9320 Modified 5 EPA 903.1 Modified	Method	Description
3 EPA 200.8 SC_NPDES 4 EPA 904.0/SW846 9320 Modified	1	EPA 300.0
4 EPA 904.0/SW846 9320 Modified	2	EPA 300.0
	3	EPA 200.8 SC_NPDES
5 EPA 903.1 Modified	4	EPA 904.0/SW846 9320 Modified
2 2117,0011 Modified	5	EPA 903.1 Modified

Surrogate/Tracer Recovery Test Result Nominal Recovery% Acceptable Limits 102 (15%-125%) Barium-133 Tracer GFPC, Ra228, Liquid "As Received"

Notes:

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: August 15, 2017

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-26 Project: SCEG01615C Sample ID: 428949013 Client ID: GEEL003

	Result DL	RL	Units	PF	DF Analyst Date	Time Batch	Method
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Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: August 15, 2017

Page 1 of 4

GEL Engineering, LLC 2040 Savage Rd Charleston, South Carolina

Robert Gardner

Workorder: 428949

Contact:

Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range Anlst	Date Time
Ion Chromatography Batch 1686727 ———								
QC1203841824 428949001 DUP Chloride		16.2	16.1	mg/L	0.232		(0%-20%) MXL2	07/31/17 17:02
Fluoride		0.265	0.265	mg/L	0.113 ^		(+/-0.100)	07/28/17 21:55
QC1203841825 428949013 DUP Chloride		150	150	mg/L	0.188		(0%-20%)	08/01/17 12:36
Fluoride		0.193	0.192	mg/L	0.936 ^		(+/-0.100)	07/29/17 05:38
QC1203841823 LCS Chloride	5.00		4.87	mg/L		97.4	(90%-110%)	07/28/17 20:57
Fluoride	2.50		2.45	mg/L		98.1	(90%-110%)	
QC1203841822 MB Chloride		U	ND	mg/L				07/28/17 20:28
Fluoride		U	ND	mg/L				
QC1203841826 428949001 PS Chloride	5.00	8.08	13.6	mg/L		110	(90%-110%)	07/31/17 17:31
Fluoride	2.50	0.265	2.58	mg/L		92.4	(90%-110%)	07/28/17 22:24
QC1203841827 428949013 PS Chloride	5.00	7.49	13.0	mg/L		110	(90%-110%)	08/01/17 13:05
Fluoride	2.50	0.193	2.50	mg/L		92.3	(90%-110%)	07/29/17 06:06

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Page 2 of 4 Sample Qual **Parmname NOM** \mathbf{QC} Units RPD% REC% Range Anlst Date Time Metals Analysis - ICPMS 1686062 Batch QC1203840117 428949001 DUP U ND U ND SKJ 08/10/17 15:34 Lithium ug/L N/A QC1203840118 428949005 DUP Lithium U ND U ND N/A 08/10/17 16:10 ug/L QC1203840116 LCS 50.4 ug/L 50.0 101 (80%-120%) 08/10/17 15:27 Lithium QC1203840115 ND Lithium U ug/L 08/10/17 15:23 OC1203840119 428949001 MS ND Lithium 50.0 U 47.8 ug/L 93.6 (75% - 125%)08/10/17 15:38 QC1203840120 428949005 MS Lithium 50.0 ND 52.5 U ug/L 101 (75% - 125%)08/10/17 16:14 QC1203840121 428949001 SDILT Lithium U ND U ND (0%-10%)08/10/17 15:42 ug/L N/A QC1203840122 428949005 SDILT Lithium U ND U ND (0%-10%)08/10/17 16:18 ug/L N/A **Rad Gas Flow** 1686439 Batch QC1203840968 428949003 DUP Radium-228 U 0.925 U 0.600 pCi/L N/A N/A JXC9 08/15/17 11:26 QC1203840969 LCS Radium-228 19.8 15.7 pCi/L 79.3 (75%-125%) 08/15/17 11:26 QC1203840967 MB Radium-228 U 0.741 08/15/17 11:26 pCi/L

Workorder:

428949

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QC Summary

120747								Page 3 of 4
Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range Anlst	Date Time
Rad Ra-226 Batch 1686419 ——								
QC1203840909 428949001 DUP Radium-226		1.63	1.03	pCi/L	45.1		(0% - 100%) MXH8	08/10/17 11:00
QC1203840911 LCS Radium-226	26.0		24.5	pCi/L		94.4	(75%-125%)	08/10/17 11:00
QC1203840908 MB Radium-226		U	0.0453	pCi/L				08/10/17 10:30
QC1203840910 428949001 MS Radium-226	130	1.63	111	pCi/L		84.6	(75%-125%)	08/10/17 11:00

Notes:

Workorder:

428949

The Qualifiers in this report are defined as follows:

- ** Analyte is a Tracer compound
- < Result is less than value reported
- > Result is greater than value reported
- B The target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- E %difference of sample and SD is >10%. Sample concentration must meet flagging criteria
- E General Chemistry--Concentration of the target analyte exceeds the instrument calibration range
- FA Failed analysis.
- FB Mercury was found present at quantifiable concentrations in field blanks received with these samples. Data associated with the blank are deemed invalid for reporting to regulatory agencies
- H Analytical holding time was exceeded
- J Value is estimated
- K Analyte present. Reported value may be biased high. Actual value is expected to be lower.
- L Analyte present. Reported value may be biased low. Actual value is expected to be higher.
- M M if above MDC and less than LLD
- M REMP Result > MDC/CL and < RDL
- N Metals--The Matrix spike sample recovery is not within specified control limits
- N/A RPD or %Recovery limits do not apply.
- N1 See case narrative
- ND Analyte concentration is not detected above the detection limit
- NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

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QC Summary

Parmname NOM Sample Qual QC Units RPD% REC% Range Anlst Date Time

- Q One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
- R Per section 9.3.4.1 of Method 1664 Revision B, due to matrix spike recovery issues, this result may not be reported or used for regulatory compliance purposes.
- R Sample results are rejected

428949

Workorder:

- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- UI Gamma Spectroscopy--Uncertain identification
- UJ Gamma Spectroscopy--Uncertain identification
- UL Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y Other specific qualifiers were required to properly define the results. Consult case narrative.
- Z Paint Filter Test--Particulates passed through the filter, however no free liquids were observed.
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
- d 5-day BOD--The 2:1 depletion requirement was not met for this sample
- e 5-day BOD--Test replicates show more than 30% difference between high and low values. The data is qualified per the method and can be used for reporting purposes
- h Preparation or preservation holding time was exceeded

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

* Indicates that a Quality Control parameter was not within specifications.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.



Tel: (803)217-9384 Fax: (803) 217-9911

REPORT TO:

Sample ID: AB27973

January 25, 2018

Mike Moore

Williams Hwy 52 GW 27-NPDES/CCR

Date & Time Sampled: July 25, 2017 10:52 Date & Time Submitted: July 26, 2017 14:50

Collected by: C.SANDEL Location Code: WLG27TDS

GW 27 Login Record File: 170726004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	16.51	0.50	mg/L	7/28/17 06:47	ВВ
pH by SM4500HB(2011)	7.15	0.00	S.U.	7/31/17 11:53	PRC
Holding Time of 15 minutes has been e.	xceeded.				
Sulfates by IC EPA 300.0	35.14	0.50	mg/L	7/28/17 06:47	ВВ
Total Dissolved Solid-SM2540C	332	2.0	mg/L	8/1/17 12:10	BF

Approved By:		
AUDIOVED DV.		



Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

REPORT TO:

Mike Moore

Sample ID: AB27974

Williams Hwy 52 FIELD BLANK-NPDES/CCR

Date & Time Sampled: July 25, 2017 11:30 Date & Time Submitted: July 26, 2017 14:50

Collected by: C.SANDEL Location Code: WLGFBTDS

GW 10 Login Record File: 170726004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	Less than	0.50	mg/L	7/28/17 06:47	ВВ
pH by SM4500HB(2011)	6.66	0.00	S.U.	7/31/17 11:53	PRC
Holding Time of 15 minutes has been ex	xceeded.				
Sulfates by IC EPA 300.0	Less than	0.50	mg/L	7/28/17 06:47	ВВ
Total Dissolved Solid-SM2540C	7	2.0	mg/L	8/1/17 12:10	BF

Approved By:		



Mike Moore

Central Laboratory (P-08) 2102 North Lake Drive Columbia, SC 29212

Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

REPORT TO:

Sample ID: AB27975

Williams Hwy 52 GW 10-NPDES/CCR

Date & Time Sampled: July 25, 2017 11:35
Date & Time Submitted: July 26, 2017 14:50

Collected by: C.SANDEL Location Code: WLG10TDS

GW 10 Login Record File: 170726004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	19.45	0.50	mg/L	7/28/17 06:47	ВВ
pH by SM4500HB(2011)	11.31	0.00	S.U.	7/31/17 11:53	PRC
Holding Time of 15 minutes has been of	exceeded.				
Sulfates by IC EPA 300.0	5.51	0.50	mg/L	7/28/17 06:47	ВВ
Total Dissolved Solid-SM2540C	196	2.0	mg/L	8/1/17 12:10	BF

Approved By:		



Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

REPORT TO:

Mike Moore

Sample ID: AB27976

Williams Hwy 52 GW 11-NPDES/CCR

Date & Time Sampled: July 25, 2017 12:20
Date & Time Submitted: July 26, 2017 14:50

Collected by: C.SANDEL Location Code: WLG11TDS

GW 11 Login Record File: 170726004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	5.99	0.50	mg/L	7/28/17 06:47	ВВ
pH by SM4500HB(2011)	6.60	0.00	S.U.	7/31/17 11:53	PRC
Holding Time of 15 minutes has been ex	xceeded.				
Sulfates by IC EPA 300.0	1.47	0.50	mg/L	7/28/17 06:47	ВВ
Total Dissolved Solid-SM2540C	105	2.0	mg/L	8/1/17 12:10	BF

Approved By:		
AUDIOVED DV.		



Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

REPORT TO:

Mike Moore

Sample ID: AB27977

Williams Hwy 52 GW 28-NPDES/CCR

Date & Time Sampled: July 25, 2017 13:07 Date & Time Submitted: July 26, 2017 14:50

Collected by: C.SANDEL Location Code: WLG28TDS

GW 28 Login Record File: 170726004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	3.86	0.50	mg/L	7/28/17 06:47	ВВ
pH by SM4500HB(2011)	6.58	0.00	S.U.	7/31/17 11:53	PRC
Holding Time of 15 minutes has been	exceeded.				
Sulfates by IC EPA 300.0	1.72	0.50	mg/L	7/28/17 06:47	BB
Total Dissolved Solid-SM2540C	95	2.0	mg/L	8/1/17 12:10	BF

Approved By:		



Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

REPORT TO:

Mike Moore

Sample ID: AB27978

Williams Hwy 52 DUP -NPDES/CCR

Date & Time Sampled: July 25, 2017 13:20
Date & Time Submitted: July 26, 2017 14:50

Collected by: C.SANDEL Location Code: WLGDUPTDS

GW 10 Login Record File: 170726004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	3.60	0.50	mg/L	7/28/17 06:47	ВВ
pH by SM4500HB(2011)	6.59	0.00	S.U.	7/31/17 11:53	PRC
Holding Time of 15 minutes has been ex	xceeded.				
Sulfates by IC EPA 300.0	1.64	0.50	mg/L	7/28/17 06:47	ВВ
Total Dissolved Solid-SM2540C	96	2.0	mg/L	8/1/17 12:10	BF

Approved By:		



Tel: (803)217-9384 Fax: (803) 217-9911

REPORT TO:

Mike Moore

January 25, 2018

Sample ID: AB27979

Williams Hwy 52 GW 20-NPDES/CCR

Date & Time Sampled: July 25, 2017 14:13
Date & Time Submitted: July 26, 2017 14:50

Collected by: C.SANDEL Location Code: WLG20TDS

GW 20 Login Record File: 170726004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist	
Chlorides by IC EPA 300.0	9.70	0.50	mg/L	7/28/17 06:47	ВВ	
pH by SM4500HB(2011)	6.78	0.00	S.U.	7/31/17 11:53	PRC	
Holding Time of 15 minutes has been exceeded.						
Sulfates by IC EPA 300.0	9.24	0.50	mg/L	7/28/17 06:47	ВВ	
Total Dissolved Solid-SM2540C	663	2.0	mg/L	8/1/17 12:10	BF	

Approved By:		



Mike Moore

Central Laboratory (P-08) 2102 North Lake Drive Columbia, SC 29212

Tel: (803)217-9384 Fax: (803) 217-9911

REPORT TO:

Sample ID: AB27980

Williams Hwy 52 GW 21-NPDES/CCR

Date & Time Sampled: July 25, 2017 14:54
Date & Time Submitted: July 26, 2017 14:50

Collected by: C.SANDEL Location Code: WLG21TDS

GW 21 Login Record File: 170726004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	10.10	0.50	mg/L	7/28/17 06:47	ВВ
pH by SM4500HB(2011)	6.86	0.00	S.U.	7/31/17 11:53	PRC
Holding Time of 15 minutes has been e	exceeded.				
Sulfates by IC EPA 300.0	8.37	0.50	mg/L	7/28/17 06:47	ВВ
Total Dissolved Solid-SM2540C	621	2.0	mg/L	8/1/17 12:10	BF

January 25, 2018

Approved By:		



Tel: (803)217-9384 Fax: (803) 217-9911

_____ January 25, 2018

REPORT TO:

Mike Moore

Sample ID: AB27981

Williams Hwy 52 GW 22D-NPDES/CCR

Date & Time Sampled: July 25, 2017 15:37 Date & Time Submitted: July 26, 2017 14:50

Collected by: C.SANDEL Location Code: WLG22DTDS

GW 22D Login Record File: 170726004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	9.97	0.50	mg/L	7/28/17 06:47	ВВ
pH by SM4500HB(2011)	7.17	0.00	S.U.	7/31/17 11:53	PRC
Holding Time of 15 minutes has been e.	xceeded.				
Sulfates by IC EPA 300.0	72.67	0.50	mg/L	7/28/17 06:47	ВВ
Total Dissolved Solid-SM2540C	592	2.0	mg/L	8/1/17 12:10	BF



REPORT TO:

Central Laboratory (P-08) 2102 North Lake Drive Columbia, SC 29212

Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

Mike Moore

Sample ID: AB27982

Williams Hwy 52 GW 23D-NPDES/CCR

Date & Time Sampled: July 26, 2017 10:31 Date & Time Submitted: July 26, 2017 14:50

Collected by: C.SANDEL Location Code: WLG23DTDS

GW 23D Login Record File: 170726004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist		
Chlorides by IC EPA 300.0	15.60	0.50	mg/L	7/28/17 06:47	ВВ		
pH by SM4500HB(2011)	7.40	0.00	S.U.	7/31/17 11:53	PRC		
Holding Time of 15 minutes has been exceeded.							
Sulfates by IC EPA 300.0	30.75	0.50	mg/L	7/28/17 06:47	ВВ		
Total Dissolved Solid-SM2540C	512	2.0	mg/L	8/1/17 12:10	BF		

Approved By:		



Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

REPORT TO:

Mike Moore

Sample ID: AB27983

Williams Hwy 52 GW 25-NPDES/CCR

Date & Time Sampled: July 26, 2017 11:13

Date & Time Submitted: July 26, 2017 14:50

Collected by: C.SANDEL Location Code: WLG25TDS

GW 25 Login Record File: 170726004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist		
Chlorides by IC EPA 300.0	23.41	0.50	mg/L	7/28/17 06:47	ВВ		
pH by SM4500HB(2011)	7.11	0.00	S.U.	7/31/17 11:53	PRC		
Holding Time of 15 minutes has been exceeded.							
Sulfates by IC EPA 300.0	49.187	0.50	mg/L	7/28/17 06:47	ВВ		
Total Dissolved Solid-SM2540C	566	2.0	mg/L	8/1/17 12:10	BF		

Approved By:		



Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

REPORT TO:

Mike Moore

Sample ID: AB27984

Williams Hwy 52 GW 24-NPDES/CCR

Date & Time Sampled: July 26, 2017 11:48

Date & Time Submitted: July 26, 2017 14:50

Collected by: C.SANDEL Location Code: WLG24TDS

GW 24 Login Record File: 170726004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	21.58	0.50	mg/L	7/28/17 06:47	ВВ
pH by SM4500HB(2011)	6.43	0.00	S.U.	7/31/17 11:53	PRC
Holding Time of 15 minutes has been	n exceeded.				
Sulfates by IC EPA 300.0	31.99	0.50	mg/L	7/28/17 06:47	BB
Total Dissolved Solid-SM2540C	450	2.0	mg/L	8/1/17 12:10	BF

Approved By:		



Tel: (803)217-9384 Fax: (803) 217-9911

REPORT TO:

Mike Moore

Sample ID: AB27985

January 25, 2018

Williams Hwy 52 GW 26-NPDES/CCR

Date & Time Sampled: July 26, 2017 12:30
Date & Time Submitted: July 26, 2017 14:50

Collected by: C.SANDEL Location Code: WLG26TDS

GW 26 Login Record File: 170726004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	155.1	1.00	mg/L	7/28/17 06:47	ВВ
pH by SM4500HB(2011)	6.41	0.00	S.U.	7/31/17 11:53	PRC
Holding Time of 15 minutes has been e	exceeded.				
Sulfates by IC EPA 300.0	76.86	1.00	mg/L	7/28/17 06:47	ВВ
Total Dissolved Solid-SM2540C	875	2.0	mg/L	8/1/17 12:10	BF



Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

REPORT TO:

Mike Moore

Sample ID: AB27986

Williams Hwy 52 GW 27-NPDES/CCR

Date & Time Sampled: July 25, 2017

ly 25, 2017 10:52

Date & Time Submitted: July 26, 2017 14:50

Collected by: C.SANDEL Location Code: WLG27TM

GW 27 Login Record File: 170726004

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Antimony by ICP-MS 200.8	Less than	1.0	ppb	8/2/17 12:39	CDB
Arsenic by ICP_MS 200.8	1.1	1.0	ppb	8/2/17 12:39	CDB
Barium by ICP-OES 200.7	22.2	10.0	ppb	7/31/17 13:57	CDB
Beryllium EPA 200.7	Less than	2.0	ppb	7/31/17 13:57	CDB
Boron - EPA 200.7	Less than	1000	ppb	7/31/17 13:57	CDB
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	8/2/17 12:39	CDB
Calcium EPA 200.7	94600	1000	ppb	7/31/17 13:57	CDB
Chromium by ICP_MS 200.8	Less than	1.0	ppb	8/2/17 12:39	CDB
Cobalt by ICP_MS 200.8	Less than	1.0	ppb	8/2/17 12:39	CDB
Lead by ICP-MS 200.8	Less than	1.0	ppb	8/2/17 12:39	CDB
Lithium (CWA) 200.7	Less than	2.0	ppb	7/31/17 13:57	CDB
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	8/1/17 14:16	MC
Molybdenum - EPA 200.8	Less than	1.0	ppb	8/2/17 12:39	CDB
Selenium by ICP-MS 200.8	Less than	5.0	ppb	8/2/17 12:39	CDB
Thallium by ICP-MS 200.8	Less than	1.0	ppb	8/2/17 12:39	CDB

Approved By:



Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

REPORT TO:

Mike Moore

Sample ID: AB27987

Williams Hwy 52 FIELD BLANK-NPDES/CCR

Date & Time Sampled: July 25, 2017 11:30
Date & Time Submitted: July 26, 2017 14:50

Collected by: C.SANDEL Location Code: WLGFBTM

GW 10 Login Record File: 170726004

Result	Reporting Limit(MRL)	Units		•	Chemist
Less than	1.0	ppb	8/2/17	12:39	CDB
Less than	1.0	ppb	8/2/17	12:39	CDB
Less than	10.0	ppb	7/31/17	14:39	CDB
Less than	2.0	ppb	7/31/17	14:39	CDB
Less than	1000	ppb	7/31/17	14:39	CDB
Less than	1.0	ppb	8/2/17	12:39	CDB
Less than	100	ppb	7/31/17	14:39	CDB
Less than	1.0	ppb	8/2/17	12:39	CDB
Less than	1.0	ppb	8/2/17	12:39	CDB
Less than	1.0	ppb	8/2/17	12:39	CDB
Less than	2.0	ppb	7/31/17	14:39	CDB
Less than	0.2	ppb	8/1/17	14:16	MC
Less than	1.0	ppb	8/2/17	12:39	CDB
Less than	5.0	ppb	8/2/17	12:39	CDB
Less than	1.0	ppb	8/2/17	12:39	CDB
	Less than	Result Limit(MRL) Less than 1.0 Less than 1.0 Less than 10.0 Less than 1000 Less than 1.0 Less than 2.0 Less than 0.2 Less than 1.0 Less than 5.0	Less than 1.0 ppb Less than 1.0 ppb Less than 10.0 ppb Less than 2.0 ppb Less than 1000 ppb Less than 100 ppb Less than 1.0 ppb	Result Limit(MRL) Units Date & T Less than 1.0 ppb 8/2/17 Less than 1.0 ppb 8/2/17 Less than 10.0 ppb 7/31/17 Less than 1000 ppb 7/31/17 Less than 1.0 ppb 8/2/17 Less than 2.0 ppb 7/31/17 Less than 0.2 ppb 8/1/17 Less than 1.0 ppb 8/2/17 Less than 1.0 ppb 8/2/17 Less than 5.0 ppb 8/2/17	Result Limit(MRL) Units Date & Time Less than 1.0 ppb 8/2/17 12:39 Less than 1.0 ppb 8/2/17 12:39 Less than 10.0 ppb 7/31/17 14:39 Less than 1000 ppb 7/31/17 14:39 Less than 1.0 ppb 8/2/17 12:39 Less than 2.0 ppb 7/31/17 14:39 Less than 0.2 ppb 8/2/17 12:39 Less than 0.2 ppb 8/2/17 12:39 Less than 1.0 ppb 8/2/17 12:39

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Tel: (803)217-9384 Fax: (803) 217-9911

_____ January 25, 2018

REPORT TO:

Mike Moore

Sample ID: AB27988

Williams Hwy 52 GW 10-NPDES/CCR

Date & Time Sampled:

July 25, 2017 11:35 July 26, 2017 14:50

Date & Time Submitted: July Collected by: C.SANDEL

Location Code: WLG10TM

GW 10 Login Record File: 170726004

311 10	10					2031.600.4.1.6. 170720001					
CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Ar Date & Ti	•	Chemist					
Antimony by ICP-MS 200.8	Less than	1.0	ppb	8/2/17	12:39	CDB					
Arsenic by ICP_MS 200.8	Less than	1.0	ppb	8/2/17	12:39	CDB					
Barium by ICP-OES 200.7	190	10.0	ppb	7/31/17	14:39	CDB					
Beryllium EPA 200.7	Less than	2.0	ppb	7/31/17	14:39	CDB					
Boron - EPA 200.7	Less than	1000	ppb	7/31/17	14:39	CDB					
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	8/2/17	12:39	CDB					
Calcium EPA 200.7	41510	1000	ppb	7/31/17	14:39	CDB					
Chromium by ICP_MS 200.8	1.8	1.0	ppb	8/2/17	12:39	CDB					
Cobalt by ICP_MS 200.8	Less than	1.0	ppb	8/2/17	12:39	CDB					
Lead by ICP-MS 200.8	Less than	1.0	ppb	8/2/17	12:39	CDB					
Lithium (CWA) 200.7	30.6	2.0	ppb	7/31/17	14:39	CDB					
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	8/1/17	14:16	MC					
Molybdenum - EPA 200.8	3.7	1.0	ppb	8/2/17	12:39	CDB					
Selenium by ICP-MS 200.8	Less than	5.0	ppb	8/2/17	12:39	CDB					
Thallium by ICP-MS 200.8	Less than	1.0	ppb	8/2/17	12:39	CDB					
•			• •								



Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

REPORT TO:

Mike Moore

Sample ID: AB27989

Williams Hwy 52 GW 11-NPDES/CCR

Date & Time Sampled: July 25

July 25, 2017 12:20 July 26, 2017 14:50

Date & Time Submitted: July 26, 2017 Collected by: C.SANDEL Loc

Location Code: WLG11TM

GW 11 Login Record File: 170726004

Result	Reporting Limit(MRL)	Units		•	Chemist
Less than	1.0	ppb	8/2/17	12:39	CDB
Less than	1.0	ppb	8/2/17	12:39	CDB
Less than	10.0	ppb	7/31/17	14:39	CDB
Less than	2.0	ppb	7/31/17	14:39	CDB
Less than	1000	ppb	7/31/17	14:39	CDB
Less than	1.0	ppb	8/2/17	12:39	CDB
20050	1000	ppb	7/31/17	14:39	CDB
Less than	1.0	ppb	8/2/17	12:39	CDB
Less than	1.0	ppb	8/2/17	12:39	CDB
Less than	1.0	ppb	8/2/17	12:39	CDB
4.0	2.0	ppb	7/31/17	14:39	CDB
Less than	0.2	ppb	8/1/17	14:16	MC
Less than	1.0	ppb	8/2/17	12:39	CDB
Less than	5.0	ppb	8/2/17	12:39	CDB
Less than	1.0	ppb	8/2/17	12:39	CDB
	Less than Less than Less than Less than Less than 20050 Less than	Result Limit(MRL) Less than 1.0 Less than 10.0 Less than 10.0 Less than 1000 Less than 1.0 20050 1000 Less than 1.0 Less than 1.0 Less than 1.0 Less than 1.0 Less than 0.2 Less than 1.0 Less than 5.0	Result Limit(MRL) Units Less than 1.0 ppb Less than 1.0 ppb Less than 10.0 ppb Less than 1000 ppb Less than 1.0 ppb Less than 0.2 ppb Less than 1.0 ppb Less than 5.0 ppb	Result Limit(MRL) Units Date & Ti Less than 1.0 ppb 8/2/17 Less than 1.0 ppb 8/2/17 Less than 10.0 ppb 7/31/17 Less than 1000 ppb 7/31/17 Less than 1.0 ppb 8/2/17 Less than 0.2 ppb 8/1/17 Less than 1.0 ppb 8/2/17 Less than 1.0 ppb 8/2/17 Less than 5.0 ppb 8/2/17	Result Limit(MRL) Units Date & Time Less than 1.0 ppb 8/2/17 12:39 Less than 1.0 ppb 8/2/17 12:39 Less than 10.0 ppb 7/31/17 14:39 Less than 2.0 ppb 7/31/17 14:39 Less than 1.0 ppb 8/2/17 12:39 Less than 1.0 ppb 8/2/17 14:39 Less than 0.2 ppb 8/2/17 14:39 Less than 0.2 ppb 8/2/17 12:39 Less than 1.0 ppb 8/2/17 12:39

Approved By:



Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

REPORT TO:

Mike Moore

Sample ID: AB27990

Williams Hwy 52 GW 28-NPDES/CCR

Date & Time Sampled: July 25, 2017 13:07

Date & Time Submitted: July 26, 2017 14:50

Collected by: C.SANDEL Location Code: WLG28TM

GW 28 Login Record File: 170726004

Result	Reporting Limit(MRL)	Units		•	Chemist
Less than	1.0	ppb	8/2/17	12:39	CDB
Less than	1.0	ppb	8/2/17	12:39	CDB
Less than	10.0	ppb	7/31/17	14:39	CDB
Less than	2.0	ppb	7/31/17	14:39	CDB
Less than	1000	ppb	7/31/17	14:39	CDB
Less than	1.0	ppb	8/2/17	12:39	CDB
18440	1000	ppb	7/31/17	14:39	CDB
Less than	1.0	ppb	8/2/17	12:39	CDB
Less than	1.0	ppb	8/2/17	12:39	CDB
Less than	1.0	ppb	8/2/17	12:39	CDB
Less than	2.0	ppb	7/31/17	14:39	CDB
Less than	0.2	ppb	8/1/17	14:16	MC
Less than	1.0	ppb	8/2/17	12:39	CDB
Less than	5.0	ppb	8/2/17	12:39	CDB
Less than	1.0	ppb	8/2/17	12:39	CDB
	Less than	Result Limit(MRL) Less than 1.0 Less than 1.0 Less than 10.0 Less than 1000 Less than 1.0 18440 1000 Less than 1.0 Less than 1.0 Less than 1.0 Less than 2.0 Less than 0.2 Less than 1.0 Less than 5.0	Less than 1.0 ppb Less than 1.0 ppb Less than 10.0 ppb Less than 2.0 ppb Less than 1000 ppb Less than 1.0 ppb	Result Limit(MRL) Units Date & T Less than 1.0 ppb 8/2/17 Less than 1.0 ppb 3/2/17 Less than 10.0 ppb 7/31/17 Less than 1000 ppb 7/31/17 Less than 1.0 ppb 8/2/17 Less than 2.0 ppb 7/31/17 Less than 0.2 ppb 8/1/17 Less than 1.0 ppb 8/2/17 Less than 1.0 ppb 8/2/17 Less than 5.0 ppb 8/2/17	Result Limit(MRL) Units Date & Time Less than 1.0 ppb 8/2/17 12:39 Less than 1.0 ppb 8/2/17 12:39 Less than 10.0 ppb 7/31/17 14:39 Less than 1000 ppb 7/31/17 14:39 Less than 1.0 ppb 8/2/17 12:39 Less than 2.0 ppb 7/31/17 14:39 Less than 0.2 ppb 8/2/17 12:39 Less than 0.2 ppb 8/2/17 12:39 Less than 1.0 ppb 8/2/17 12:39

Approved By:



Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

REPORT TO:

Mike Moore

Sample ID: AB27991

Williams Hwy 52 DUP -NPDES/CCR

Date & Time Sampled: July 25, 2017 13:20
Date & Time Submitted: July 26, 2017 14:50

Collected by: C.SANDEL Location Code: WLGDUPTM

GW 10 Login Record File: 170726004

Result	Reporting Limit(MRL)	' Ilnite '		•	Chemist			
Less than	1.0	ppb	8/2/17	12:39	CDB			
Less than	1.0	ppb	8/2/17	12:39	CDB			
Less than	10.0	ppb	7/31/17	14:39	CDB			
Less than	2.0	ppb	7/31/17	14:39	CDB			
Less than	1000	ppb	7/31/17	14:39	CDB			
Less than	1.0	ppb	8/2/17	12:39	CDB			
18640	1000	ppb	7/31/17	14:39	CDB			
Less than	1.0	ppb	8/2/17	12:39	CDB			
Less than	1.0	ppb	8/2/17	12:39	CDB			
Less than	1.0	ppb	8/2/17	12:39	CDB			
Less than	2.0	ppb	7/31/17	14:39	CDB			
Less than	0.2	ppb	8/1/17	14:16	MC			
Less than	1.0	ppb	8/2/17	12:39	CDB			
Less than	5.0	ppb	8/2/17	12:39	CDB			
Less than	1.0	ppb	8/2/17	12:39	CDB			
	Less than	Result Limit(MRL) Less than 1.0 Less than 1.0 Less than 10.0 Less than 1000 Less than 1.0 18640 1000 Less than 1.0 Less than 1.0 Less than 1.0 Less than 0.2 Less than 1.0 Less than 1.0 Less than 5.0	Less than 1.0 ppb Less than 1.0 ppb Less than 10.0 ppb Less than 2.0 ppb Less than 1000 ppb Less than 1.0 ppb	Result Limit(MRL) Units Date & T Less than 1.0 ppb 8/2/17 Less than 1.0 ppb 3/2/17 Less than 10.0 ppb 7/31/17 Less than 1000 ppb 7/31/17 Less than 1.0 ppb 8/2/17 Less than 2.0 ppb 7/31/17 Less than 0.2 ppb 8/1/17 Less than 1.0 ppb 8/2/17 Less than 1.0 ppb 8/2/17 Less than 5.0 ppb 8/2/17	Result Limit(MRL) Units Date & Time Less than 1.0 ppb 8/2/17 12:39 Less than 1.0 ppb 8/2/17 12:39 Less than 10.0 ppb 7/31/17 14:39 Less than 1000 ppb 7/31/17 14:39 Less than 1.0 ppb 8/2/17 12:39 Less than 2.0 ppb 7/31/17 14:39 Less than 0.2 ppb 8/2/17 12:39 Less than 0.2 ppb 8/2/17 12:39 Less than 1.0 ppb 8/2/17 12:39			

Approved By:	



REPORT TO:

Central Laboratory (P-08) 2102 North Lake Drive Columbia, SC 29212

Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

Mike Moore

Sample ID: AB27992

Williams Hwy 52 GW 20-NPDES/CCR

Date & Time Sampled: July 25, 2017 14:13

Date & Time Submitted: July 26, 2017 14:50

Collected by: C.SANDEL Location Code: WLG20TM

GW 20 Login Record File: 170726004

20gm (300m m). 17072000 1						
2006): Result		Units		•	Chemist	
Less than	1.0	ppb	8/2/17	12:39	CDB	
4.6	1.0	ppb	8/2/17	12:39	CDB	
54.6	10.0	ppb	7/31/17	14:39	CDB	
Less than	2.0	ppb	7/31/17	14:39	CDB	
Less than	1000	ppb	7/31/17	14:39	CDB	
Less than	1.0	ppb	8/2/17	12:39	CDB	
155700	2000	ppb	7/31/17	14:39	CDB	
Less than	1.0	ppb	8/2/17	12:39	CDB	
1.4	1.0	ppb	8/2/17	12:39	CDB	
Less than	1.0	ppb	8/2/17	12:39	CDB	
5.9	2.0	ppb	7/31/17	14:39	CDB	
Less than	0.2	ppb	8/1/17	14:16	MC	
Less than	1.0	ppb	8/2/17	12:39	CDB	
Less than	5.0	ppb	8/2/17	12:39	CDB	
Less than	1.0	ppb	8/2/17	12:39	CDB	
	Less than 4.6 54.6 Less than Less than 155700 Less than 1.4 Less than 5.9 Less than Less than Less than	Limit(MRL) Less than 1.0 4.6 1.0 54.6 10.0 Less than 2.0 Less than 1.0 155700 2000 Less than 1.0 1.4 1.0 Less than 1.0 Less than 0.2 Less than 1.0 Less than 5.0	Result Limit(MRL) Units Less than 1.0 ppb 4.6 1.0 ppb 54.6 10.0 ppb Less than 2.0 ppb Less than 1.0 ppb Less than 0.2 ppb Less than 1.0 ppb Less than 5.0 ppb	Result Limit(MRL) Units Date & Ti Less than 1.0 ppb 8/2/17 4.6 1.0 ppb 8/2/17 54.6 10.0 ppb 7/31/17 Less than 2.0 ppb 7/31/17 Less than 1.00 ppb 8/2/17 Less than 1.0 ppb 8/2/17 Less than 0.2 ppb 8/1/17 Less than 0.2 ppb 8/1/17 Less than 1.0 ppb 8/2/17 Less than 5.0 ppb 8/2/17	Result Limit(MRL) Units Date & Time Less than 1.0 ppb 8/2/17 12:39 4.6 1.0 ppb 8/2/17 12:39 54.6 10.0 ppb 7/31/17 14:39 Less than 2.0 ppb 7/31/17 14:39 Less than 1.00 ppb 8/2/17 12:39 Less than 1.0 ppb 8/2/17 12:39 Less than 0.2 ppb 7/31/17 14:39 Less than 0.2 ppb 8/2/17 12:39 Less than 1.0 ppb 8/2/17 12:39 Less than 0.2 ppb 8/2/17 12:39	

Approved By:	_
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Tel: (803)217-9384 Fax: (803) 217-9911

_____ January 25, 2018

REPORT TO:

Mike Moore

Sample ID: AB27993

Williams Hwy 52 GW 21-NPDES/CCR

Date & Time Sampled: July 25, 2017 14:54
Date & Time Submitted: July 26, 2017 14:50

Collected by: C.SANDEL Location Code: WLG21TM

GW 21 Login Record File: 170726004

21 25gm 100014 1 10. 17072001						
Result	Reporting Units Completed Analy Limit(MRL) Units Date & Time		•	Chemist		
Less than	1.0	ppb	8/2/17	12:39	CDB	
2.5	1.0	ppb	8/2/17	12:39	CDB	
31.9	10.0	ppb	7/31/17	14:39	CDB	
Less than	2.0	ppb	7/31/17	14:39	CDB	
Less than	1000	ppb	7/31/17	14:39	CDB	
Less than	1.0	ppb	8/2/17	12:39	CDB	
127300	2000	ppb	7/31/17	14:39	CDB	
Less than	1.0	ppb	8/2/17	12:39	CDB	
Less than	1.0	ppb	8/2/17	12:39	CDB	
Less than	1.0	ppb	8/2/17	12:39	CDB	
6.0	2.0	ppb	7/31/17	14:39	CDB	
Less than	0.2	ppb	8/1/17	14:16	MC	
Less than	1.0	ppb	8/2/17	12:39	CDB	
Less than	5.0	ppb	8/2/17	12:39	CDB	
Less than	1.0	ppb	8/2/17	12:39	CDB	
	Less than 2.5 31.9 Less than Less than 127300 Less than Less than	Result Limit(MRL) Less than 1.0 2.5 1.0 31.9 10.0 Less than 2.0 Less than 1000 Less than 1.0 127300 2000 Less than 1.0 Less than 1.0 Less than 1.0 Less than 0.2 Less than 1.0 Less than 5.0	Result Limit(MRL) Units Less than 1.0 ppb 2.5 1.0 ppb 31.9 10.0 ppb Less than 2.0 ppb Less than 1.0 ppb Less than 0.2 ppb Less than 1.0 ppb Less than 5.0 ppb	Result Limit(MRL) Units Date & Tilder Less than 1.0 ppb 8/2/17 2.5 1.0 ppb 8/2/17 31.9 10.0 ppb 7/31/17 Less than 2.0 ppb 7/31/17 Less than 1.0 ppb 8/2/17 Less than 0.2 ppb 7/31/17 Less than 0.2 ppb 8/1/17 Less than 1.0 ppb 8/2/17 Less than 1.0 ppb 8/2/17 Less than 1.0 ppb 8/2/17 Less than 5.0 ppb 8/2/17	Result Limit(MRL) Units Date & Time Less than 1.0 ppb 8/2/17 12:39 2.5 1.0 ppb 8/2/17 12:39 31.9 10.0 ppb 7/31/17 14:39 Less than 2.0 ppb 7/31/17 14:39 Less than 1.00 ppb 8/2/17 12:39 Less than 1.0 ppb 8/2/17 14:39 Less than 0.2 ppb 8/2/17 14:39 Less than 0.0 ppb 8/2/17 12:39 Less than 0.0 ppb 8/2/17 12:39	

Approved By:



Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

REPORT TO:

Mike Moore

Sample ID: AB27994

Williams Hwy 52 GW 22D-NPDES/CCR

Date & Time Sampled: July 25, 2017 15:37 Date & Time Submitted: July 26, 2017 14:50

Collected by: C.SANDEL Location Code: WLG22DTM

GW 22D Login Record File: 170726004

	Log 100014 1.10. 170720001						
Result	Reporting Limit(MRL)	' Ilnite '		•	Chemist		
Less than	1.0	ppb	8/2/17	12:39	CDB		
1.4	1.0	ppb	8/2/17	12:39	CDB		
Less than	10.0	ppb	7/31/17	14:39	CDB		
Less than	2.0	ppb	7/31/17	14:39	CDB		
Less than	1000	ppb	7/31/17	14:39	CDB		
Less than	1.0	ppb	8/2/17	12:39	CDB		
89040	1000	ppb	7/31/17	14:39	CDB		
Less than	1.0	ppb	8/2/17	12:39	CDB		
Less than	1.0	ppb	8/2/17	12:39	CDB		
Less than	1.0	ppb	8/2/17	12:39	CDB		
10.3	2.0	ppb	7/31/17	14:39	CDB		
Less than	0.2	ppb	8/1/17	14:16	MC		
8.1	1.0	ppb	8/2/17	12:39	CDB		
Less than	5.0	ppb	8/2/17	12:39	CDB		
Less than	1.0	ppb	8/2/17	12:39	CDB		
	Less than 1.4 Less than Less than Less than 89040 Less than Less than Less than Less than 40.3 Less than 8.1 Less than	Result Limit(MRL) Less than 1.0 1.4 1.0 Less than 10.0 Less than 2.0 Less than 1.0 89040 1000 Less than 1.0 Less than 1.0 Less than 1.0 Less than 0.2 Less than 5.0	Result Limit(MRL) Units Less than 1.0 ppb 1.4 1.0 ppb Less than 10.0 ppb Less than 1000 ppb Less than 1.0 ppb Less than 0.2 ppb Less than 0.2 ppb Less than 5.0 ppb	Result Limit(MRL) Units bate & T Less than 1.0 ppb 8/2/17 1.4 1.0 ppb 8/2/17 Less than 10.0 ppb 7/31/17 Less than 1000 ppb 7/31/17 Less than 1.0 ppb 8/2/17 89040 1000 ppb 8/2/17 Less than 1.0 ppb 8/2/17 Less than 1.0 ppb 8/2/17 Less than 1.0 ppb 8/2/17 Less than 0.2 ppb 8/1/17 Less than 0.2 ppb 8/2/17 Less than 5.0 ppb 8/2/17	Result Limit(MRL) Units Date & Time Less than 1.0 ppb 8/2/17 12:39 1.4 1.0 ppb 8/2/17 12:39 Less than 10.0 ppb 7/31/17 14:39 Less than 2.0 ppb 7/31/17 14:39 Less than 1.0 ppb 8/2/17 12:39 Less than 0.2 ppb 8/1/17 14:39 Less than 0.2 ppb 8/1/17 14:39 Less than 0.2 ppb 8/2/17 12:39 Less than 0.2 ppb 8/2/17 12:39 Less than 5.0 ppb 8/2/17 12:39		



Tel: (803)217-9384 Fax: (803) 217-9911

10:31

14:50

January 25, 2018

REPORT TO:

Mike Moore

Sample ID: AB27995

Williams Hwy 52 GW 23D-NPDES/CCR

Date & Time Sampled: July 26, 2017
Date & Time Submitted: July 26, 2017

Collected by: C.SANDEL Location Code: WLG23DTM

GW 23D Login Record File: 170726004

Result	Reporting Limit(MRL)	· · Ilnite · · ·		•	Chemist
Less than	1.0	ppb	8/2/17	12:39	CDB
1.9	1.0	ppb	8/2/17	12:39	CDB
Less than	10.0	ppb	7/31/17	14:39	CDB
Less than	2.0	ppb	7/31/17	14:39	CDB
Less than	1000	ppb	7/31/17	14:39	CDB
Less than	1.0	ppb	8/2/17	12:39	CDB
75000	1000	ppb	7/31/17	14:39	CDB
Less than	1.0	ppb	8/2/17	12:39	CDB
Less than	1.0	ppb	8/2/17	12:39	CDB
Less than	1.0	ppb	8/2/17	12:39	CDB
7.8	2.0	ppb	7/31/17	14:39	CDB
Less than	0.2	ppb	8/1/17	14:16	MC
10.8	1.0	ppb	8/2/17	12:39	CDB
Less than	5.0	ppb	8/2/17	12:39	CDB
Less than	1.0	ppb	8/2/17	12:39	CDB
	Less than 1.9 Less than Less than Less than 75000 Less than Less than Less than 1.8 Less than 1.8 Less than	Result Limit(MRL) Less than 1.0 1.9 1.0 Less than 10.0 Less than 2.0 Less than 1000 Less than 1.0 75000 1000 Less than 1.0 Less than 1.0 Less than 1.0 Less than 0.2 10.8 1.0 Less than 5.0	Result Limit(MRL) Units Less than 1.0 ppb 1.9 1.0 ppb Less than 10.0 ppb Less than 1000 ppb Less than 1.0 ppb Less than 0.2 ppb Less than 0.2 ppb Less than 5.0 ppb	Result Limit(MRL) Units bate & T Less than 1.0 ppb 8/2/17 1.9 1.0 ppb 8/2/17 Less than 10.0 ppb 7/31/17 Less than 1000 ppb 7/31/17 Less than 1.0 ppb 8/2/17 75000 1000 ppb 8/2/17 Less than 1.0 ppb 8/2/17 Less than 1.0 ppb 8/2/17 Less than 1.0 ppb 8/2/17 Less than 0.2 ppb 8/1/17 Less than 0.2 ppb 8/2/17 Less than 0.2 ppb 8/2/17 Less than 5.0 ppb 8/2/17	Result Limit(MRL) Units Date & Time Less than 1.0 ppb 8/2/17 12:39 1.9 1.0 ppb 8/2/17 12:39 Less than 10.0 ppb 7/31/17 14:39 Less than 2.0 ppb 7/31/17 14:39 Less than 1.0 ppb 8/2/17 12:39 Less than 0.2 ppb 7/31/17 14:39 Less than 0.2 ppb 8/2/17 12:39 Less than 0.2 ppb 8/2/17 12:39 Less than 0.2 ppb 8/2/17 12:39 Less than 0.0 ppb 8/2/17 12:39

Approved By:	



Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

REPORT TO:

Mike Moore

Sample ID: AB27996

Williams Hwy 52 GW 25-NPDES/CCR

Date & Time Sampled: July 26, 2017 11:13

Date & Time Submitted: July 26, 2017 14:50

Collected by: C.SANDEL Location Code: WLG25TM

GW 25 Login Record File: 170726004

011 20									
CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analys Date & Time	Chemist				
Antimony by ICP-MS 200.8	Less than	1.0	ppb	8/2/17 12:3	9 CDB				
Arsenic by ICP_MS 200.8	1.2	1.0	ppb	8/2/17 12:3	9 CDB				
Barium by ICP-OES 200.7	15.6	10.0	ppb	7/31/17 14:3	9 CDB				
Beryllium EPA 200.7	Less than	2.0	ppb	7/31/17 14:3	9 CDB				
Boron - EPA 200.7	Less than	1000	ppb	7/31/17 14:3	9 CDB				
Cadmium by ICP_MS EPA 200.8	Less than	1.0	ppb	8/2/17 12:3	9 CDB				
Calcium EPA 200.7	112700	2000	ppb	7/31/17 15:1	5 CDB				
Chromium by ICP_MS 200.8	Less than	1.0	ppb	8/2/17 12:3	9 CDB				
Cobalt by ICP_MS 200.8	Less than	1.0	ppb	8/2/17 12:3	9 CDB				
Lead by ICP-MS 200.8	Less than	1.0	ppb	8/2/17 12:3	9 CDB				
Lithium (CWA) 200.7	9.3	2.0	ppb	7/31/17 14:3	9 CDB				
Mercury (CWA) by EPA 245.2	Less than	0.2	ppb	8/1/17 14:1	6 MC				
Molybdenum - EPA 200.8	3.5	1.0	ppb	8/2/17 12:3	9 CDB				
Selenium by ICP-MS 200.8	Less than	5.0	ppb	8/2/17 12:3	9 CDB				
Thallium by ICP-MS 200.8	Less than	1.0	ppb	8/2/17 12:3	9 CDB				

Approved By:



Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

REPORT TO:

Mike Moore

Sample ID: AB27997

Williams Hwy 52 GW 24-NPDES/CCR

Date & Time Sampled: July 26, 2017 11:48

Date & Time Submitted: July 26, 2017 14:50

Collected by: C.SANDEL Location Code: WLG24TM

GW 24 Login Record File: 170726004

	Reporting		0		
Result	Limit(MRL)	Units	Completed A	Chemist	
Less than	1.0	ppb	8/2/17	12:39	CDB
2.4	1.0	ppb	8/2/17	12:39	CDB
42.1	10.0	ppb	7/31/17	14:39	CDB
Less than	2.0	ppb	7/31/17	14:39	CDB
Less than	1000	ppb	7/31/17	14:39	CDB
Less than	1.0	ppb	8/2/17	12:39	CDB
136100	2000	ppb	7/31/17	15:15	CDB
Less than	1.0	ppb	8/2/17	12:39	CDB
1.6	1.0	ppb	8/2/17	12:39	CDB
Less than	1.0	ppb	8/2/17	12:39	CDB
4.0	2.0	ppb	7/31/17	14:39	CDB
Less than	0.2	ppb	8/1/17	14:16	MC
Less than	1.0	ppb	8/2/17	12:39	CDB
Less than	5.0	ppb	8/2/17	12:39	CDB
Less than	1.0	ppb	8/2/17	12:39	CDB
	Less than 2.4 42.1 Less than Less than 136100 Less than 1.6 Less than 4.0 Less than Less than Less than Less than	Limit(MRL) Less than 1.0 2.4 1.0 42.1 10.0 Less than 2.0 Less than 1.0 136100 2000 Less than 1.0 1.6 1.0 Less than 1.0 Less than 0.2 Less than 1.0 Less than 5.0	Less than 1.0 ppb 2.4 1.0 ppb 42.1 10.0 ppb Less than 2.0 ppb Less than 1000 ppb Less than 1.0 ppb Less than 0.2 ppb Less than 1.0 ppb Less than 5.0 ppb	Less than 1.0 ppb 8/2/17 2.4 1.0 ppb 8/2/17 42.1 10.0 ppb 7/31/17 Less than 2.0 ppb 7/31/17 Less than 1000 ppb 7/31/17 Less than 1.0 ppb 8/2/17 136100 2000 ppb 7/31/17 Less than 1.0 ppb 8/2/17 1.6 1.0 ppb 8/2/17 Less than 1.0 ppb 8/2/17 Less than 0.2 ppb 8/1/17 Less than 0.2 ppb 8/1/17 Less than 1.0 ppb 8/2/17 Less than 1.0 ppb 8/2/17	Less than 1.0 ppb 8/2/17 12:39 2.4 1.0 ppb 8/2/17 12:39 42.1 10.0 ppb 7/31/17 14:39 Less than 2.0 ppb 7/31/17 14:39 Less than 1000 ppb 7/31/17 14:39 Less than 1.0 ppb 8/2/17 12:39 136100 2000 ppb 7/31/17 15:15 Less than 1.0 ppb 8/2/17 12:39 1.6 1.0 ppb 8/2/17 12:39 Less than 1.0 ppb 8/2/17 12:39 Less than 1.0 ppb 8/2/17 14:39 Less than 0.2 ppb 8/2/17 14:39 Less than 0.2 ppb 8/2/17 12:39 Less than 5.0 ppb 8/2/17 12:39

Approved By:



Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

REPORT TO:

Mike Moore

Sample ID: AB27998

Williams Hwy 52 GW 26-NPDES/CCR

Date & Time Sampled: July 26, 2017

y 26, 2017 12:30

Date & Time Submitted: July 26, 2017 14:50

Collected by: C.SANDEL Location Code: WLG26TM

GW 26 Login Record File: 170726004

Result	Reporting Limit(MRL)	Units		•	Chemist				
Less than	1.0	ppb	8/2/17 1	2:39	CDB				
4.5	1.0	ppb	8/2/17 1	2:39	CDB				
72.6	10.0	ppb	7/31/17 1	4:39	CDB				
Less than	2.0	ppb	7/31/17 1	4:39	CDB				
Less than	1000	ppb	7/31/17 1	4:39	CDB				
Less than	1.0	ppb	8/2/17 1	2:39	CDB				
167900	2000	ppb	7/31/17 1	5:15	CDB				
Less than	1.0	ppb	8/2/17 1	2:39	CDB				
6.8	1.0	ppb	8/2/17 1	2:39	CDB				
Less than	1.0	ppb	8/2/17 1	2:39	CDB				
2.3	2.0	ppb	7/31/17 1	4:39	CDB				
Less than	0.2	ppb	8/1/17 1	4:16	MC				
Less than	1.0	ppb	8/2/17 1	2:39	CDB				
Less than	5.0	ppb	8/2/17 1	2:39	CDB				
Less than	1.0	ppb	8/2/17 1	2:39	CDB				
	Less than 4.5 72.6 Less than Less than 167900 Less than 6.8 Less than 2.3 Less than Less than Less than	Result Limit(MRL) Less than 1.0 4.5 1.0 72.6 10.0 Less than 2.0 Less than 1000 Less than 1.0 167900 2000 Less than 1.0 Less than 1.0 Less than 1.0 Less than 0.2 Less than 1.0 Less than 5.0	Result Limit(MRL) Units Less than 1.0 ppb 4.5 1.0 ppb 72.6 10.0 ppb Less than 2.0 ppb Less than 1.0 ppb Less than 0.2 ppb Less than 1.0 ppb Less than 5.0 ppb	Result Limit(MRL) Units Date & Time Less than 1.0 ppb 8/2/17 1 4.5 1.0 ppb 8/2/17 1 72.6 10.0 ppb 7/31/17 1 Less than 2.0 ppb 7/31/17 1 Less than 1.0 ppb 8/2/17 1 Less than 0.2 ppb 8/2/17 1 Less than 0.2 ppb 8/1/17 1 Less than 1.0 ppb 8/2/17 1 Less than 5.0 ppb 8/2/17 1	Result Limit(MRL) Units Date & Time Less than 1.0 ppb 8/2/17 12:39 4.5 1.0 ppb 8/2/17 12:39 72.6 10.0 ppb 7/31/17 14:39 Less than 2.0 ppb 7/31/17 14:39 Less than 1.00 ppb 8/2/17 12:39 Less than 1.0 ppb 8/2/17 15:15 Less than 1.0 ppb 8/2/17 12:39 6.8 1.0 ppb 8/2/17 12:39 Less than 1.0 ppb 8/2/17 12:39 Less than 0.2 ppb 7/31/17 14:39 Less than 0.2 ppb 8/2/17 12:39 Less than 1.0 ppb 8/2/17 12:39 Less than 5.0 ppb 8/2/17 12:39				

Approved By	v :		

EPA CCR Rule Compliance Monitoring Wells Groundwater Monitoring Data South Carolina Electric & Gas: Williams Station Highway 52 Class Three Landfill

	Gauging Da	te:09/20/2017		Final Water Quality Indicator Parameters						
Monitoring Well ID	PVC Pipe Elevation, ft.	Depth to Groundwater, ft.	Groundwater Elevation, ft.	Temparature °C	pH S.U.	Sp. Cond. µS/cm	Turbidity NTU	ORP mV	DO mg/L	
GW-10	52.29	6.95	45.34	23.9	8.4	379	6.03	-69.7	0.48	
GW-11	51.72	10.34	41.38	24.7	6.7	291	6.58	78.2	0.60	
GW-20	60.81	20.21	40.60	23.4	6.5	1,100	5.40	-6.2	0.56	
GW-21	56.14	15.20	40.94	24.4	6.5	1,065	5.22	17.3	0.38	
GW-22D	50.36	13.76	36.60	22.9	6.7	963	6.38	200	0.34	
GW-23D	49.69	14.09	35.60	22.8	6.9	861	6.83	174	0.49	
GW-24	52.40	14.81	37.59	24.3	6.3	902	5.36	-5.1	0.50	
GW-25	50.93	14.24	36.69	23.2	6.7	1,035	6.52	29.4	0.64	
GW-26	55.21	23.46	31.75	26.3	6.0	1,639	5.27	-19.4	1.22	
GW-27	53.25	6.32	46.93	22.2	6.7	609	7.44	-2.4	0.80	
GW-28	51.22	9.35	41.87	24.3	6.7	230	5.95	90.9	0.65	

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Certificate of Analysis Report for

GEEL003 GEL Engineering, LLC Client SDG: 433252 GEL Work Order: 433252

The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a Tracer compound
- ** Analyte is a surrogate compound
- H Analytical holding time was exceeded
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Jake Crook.

	Vatherice Cottes		
Reviewed by	•		

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: September 26, 2017

SCEG01616C

GEEL003

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-27
Sample ID: 433252001
Matrix: Ground Water

Matrix: Ground Water
Collect Date: 20-SEP-17 08:59
Receive Date: 20-SEP-17
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF Analyst Date	Time Batch	Method
Ion Chromatograp	hy								
EPA300.0 Fluorid	e in Liquid "As Re	ceived"							
Fluoride		0.267	0.033	0.100	mg/L		1 MAR1 09/21/1	7 1843 1702508	1
Chloride		13.6	0.335	1.00	mg/L		5 MAR1 09/22/1	7 1102 1702508	2
TC1 C. 11	.1 .21 M4 1 .		. 1.						

The following Analytical Methods were performed:

Method Description Analyst Comments

1 EPA 300.0 2 EPA 300.0

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: September 26, 2017

SCEG01616C

GEEL003

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: Field Blank Sample ID: 433252002

Matrix: Water

Collect Date: 20-SEP-17 09:30 20-SEP-17 Receive Date: Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF Analyst Date	Time Batch	Method
Ion Chromatograp	hy								
EPA300.0 Fluorid	e in Liquid "As Re	eceived"							
Chloride	U	ND	0.067	0.200	mg/L		1 MAR1 09/21/17	1912 1702508	1
Fluoride	U	ND	0.033	0.100	mg/L		1		
The following An	alytical Methods v	were performed:							
Method	Description	l		Analyst Comments					
1	ED 4 200 0								

EPA 300.0

Notes:

Column headers are defined as follows:

Lc/LC: Critical Level DF: Dilution Factor DL: Detection Limit PF: Prep Factor MDA: Minimum Detectable Activity RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: September 26, 2017

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-10 Project: SCEG01616C Sample ID: 433252003 Client ID: GEEL003

Matrix: Ground Water
Collect Date: 20-SEP-17 09:38
Receive Date: 20-SEP-17
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF Analyst I	Date	Time Batch	Method
Ion Chromatograph	ıy									
EPA300.0 Fluoride	in Liquid "As Re	eceived"								
Fluoride		0.545	0.033	0.100	mg/L		1 MAR1 09/	21/17	1941 1702508	1
Chloride		17.8	0.335	1.00	mg/L		5 MAR1 09/	22/17	1130 1702508	2
The following Ana	alytical Methods v	vere performed:								

Method Description Analyst Comments

EPA 300.0 2 EPA 300.0

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

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Certificate of Analysis

Report Date: September 26, 2017

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-11 Project: SCEG01616C Sample ID: 433252004 Client ID: GEEL003

Matrix: Ground Water Collect Date: 20-SEP-17 10:15 20-SEP-17 Receive Date: Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF Analyst Date	Time Batch	Method
Ion Chromatograp	ohy								
EPA300.0 Fluorid	le in Liquid "As Re	eceived"							
Chloride	_	6.06	0.067	0.200	mg/L		1 MAR1 09/21/17	2010 1702508	1
Fluoride		0.368	0.033	0.100	mg/L		1		
The following Ar	nalytical Methods v	were performed:							
Method	Description	1	Analyst Comments						
1	EDA 200.0					•			

EPA 300.0

Notes:

Column headers are defined as follows:

Lc/LC: Critical Level DF: Dilution Factor DL: Detection Limit PF: Prep Factor MDA: Minimum Detectable Activity RL: Reporting Limit

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Certificate of Analysis

Project:

Client ID:

SCEG01616C

GEEL003

Report Date: September 26, 2017

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-28
Sample ID: 433252005
Matrix: Ground Water
Collect Date: 20-SEP-17 11:07

Receive Date: 20-SEP-17 Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst Date	Time	Batch	Method
Ion Chromatograph	y										
EPA300.0 Fluoride	in Liquid "As Re	eceived"									
Chloride	_	3.57	0.067	0.200	mg/L		1	MAR1 09/21/17	2039	1702508	1
Fluoride		0.118	0.033	0.100	mg/L		1				
The following Ana	lytical Methods v	were performed:									
Method	Description	1			I	Analys	st Co	mments			
1	EPA 300.0					-					

Notes:

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

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Certificate of Analysis

Report Date: September 26, 2017

SCEG01616C

GEEL003

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: DUP Project:
Sample ID: 433252006 Client ID:

Matrix: Ground Water
Collect Date: 20-SEP-17 11:15
Receive Date: 20-SEP-17
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst Date	Time]	Batch	Method
Ion Chromatography											
EPA300.0 Fluoride in	Liquid "As Re	eceived"									
Chloride		3.58	0.067	0.200	mg/L		1	MAR1 09/21/17	2108 1	702508	1
Fluoride		0.121	0.033	0.100	mg/L		1				
The following Analyti	cal Methods v	vere performed:									
Method	Description				A	Analys	st Coi	mments			
1	EPA 300.0										

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

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Certificate of Analysis

Project:

Client ID:

SCEG01616C

GEEL003

Report Date: September 26, 2017

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Sample ID: 433252007 Matrix: Ground Water Collect Date: 20-SEP-17 12:17

Receive Date: 20-SEP-17 Collector: Client

Client Sample ID: GW-20

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst Date	Time Batch	Method
Ion Chromatograph	ıy									
EPA300.0 Fluoride	e in Liquid "As Re	ceived"								
Chloride	-	9.84	0.067	0.200	mg/L		1	MAR1 09/21/17	2136 1702508	3 1
Fluoride		0.264	0.033	0.100	mg/L		1			
The following Ana	alytical Methods v	vere performed:								
Method	Description				I	Analys	st Cor	nments		
1	EPA 300.0					-				

Notes:

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

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Certificate of Analysis

Project:

Client ID:

SCEG01616C

GEEL003

Report Date: September 26, 2017

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-21
Sample ID: 433252008
Matrix: Ground Water

Matrix: Ground Water
Collect Date: 20-SEP-17 13:07
Receive Date: 20-SEP-17
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF Ana	lyst Date	Time Batch	Method
Ion Chromatography										
EPA300.0 Fluoride in	n Liquid "As Re	ceived"								
Fluoride		0.258	0.033	0.100	mg/L		1 MA	R1 09/21/17	2205 1702508	1
Chloride		9.93	0.134	0.400	mg/L		2 MA	R1 09/22/17	1159 1702508	2
The following Analy	tical Methods w	vere performed:								

Method Description Analyst Comments

EPA 300.0

2 EPA 300.0

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: September 26, 2017

Page 1 of 2

GEL Engineering, LLC 2040 Savage Rd Charleston, South Carolina

Contact: Robert Gardner

Workorder: 433252

Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range Anlst	Date Time
Ion Chromatography Batch 1702508								
QC1203879595 433252008 DUP Chloride		9.93	9.92	mg/L	0.0605		(0%-20%) MAR1	09/22/17 12:28
Fluoride		0.258	0.245	mg/L	5.37 ^		(+/-0.100)	09/21/17 23:32
QC1203879594 LCS Chloride	5.00		4.82	mg/L		96.4	(90%-110%)	09/21/17 18:14
Fluoride	2.50		2.48	mg/L		99.3	(90%-110%)	
QC1203879593 MB Chloride		U	ND	mg/L				09/21/17 17:45
Fluoride		U	ND	mg/L				
QC1203879596 433252008 PS Chloride	10.0	4.96	14.3	mg/L		92.9	(90%-110%)	09/22/17 12:57
Fluoride	2.50	0.258	2.55	mg/L		91.8	(90%-110%)	09/22/17 00:01

Notes:

The Qualifiers in this report are defined as follows:

- < Result is less than value reported
- > Result is greater than value reported
- B The target analyte was detected in the associated blank.
- E General Chemistry--Concentration of the target analyte exceeds the instrument calibration range
- H Analytical holding time was exceeded
- J Value is estimated
- N/A RPD or %Recovery limits do not apply.
- N1 See case narrative
- ND Analyte concentration is not detected above the detection limit

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QC Summary

433252 Page 2 of 2 P

Parmname	NOM	Sample 6	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time

- NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Q One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
- R Per section 9.3.4.1 of Method 1664 Revision B, due to matrix spike recovery issues, this result may not be reported or used for regulatory compliance purposes.
- R Sample results are rejected

Workorder:

- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Z Paint Filter Test--Particulates passed through the filter, however no free liquids were observed.
- ٨ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
- d 5-day BOD--The 2:1 depletion requirement was not met for this sample
- 5-day BOD--Test replicates show more than 30% difference between high and low values. The data is qualified per the method and can be used for e reporting purposes
- Preparation or preservation holding time was exceeded h

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable. ^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

* Indicates that a Quality Control parameter was not within specifications.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

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Certificate of Analysis Report for

GEEL003 GEL Engineering, LLC Client SDG: 433379 GEL Work Order: 433379

The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a Tracer compound
- ** Analyte is a surrogate compound
- H Analytical holding time was exceeded
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Jake Crook.

	Jack H	Croh			
Reviewed by					

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: September 28, 2017

SCEG01616C

GEEL003

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-22D
Sample ID: 433379001
Matrix: Ground Water
Collect Date: 21-SEP-17 08:36

Receive Date: 21-SEP-17 Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF Analyst Date	Time Batch	Method
Ion Chromatography									
EPA300.0 Fluoride in	n Liquid "As Re	ceived"							
Fluoride		0.251	0.033	0.100	mg/L		1 MAR1 09/23/1	7 0324 1703121	1
Chloride		9.62	0.134	0.400	mg/L		2 RXB5 09/25/1	7 1322 1703121	2
The following Analy	tical Methods v	vere performed:							

Method Description Analyst Comments

1 EPA 300.0

2 EPA 300.0

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

SCEG01616C

GEEL003

Report Date: September 28, 2017

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-23D
Sample ID: 433379002
Matrix: Ground Water

Collect Date: 21-SEP-17 09:28
Receive Date: 21-SEP-17
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst Date	Time Batch	Method
Ion Chromatography										
EPA300.0 Fluoride i	n Liquid "As Re	eceived"								
Fluoride		0.309	0.033	0.100	mg/L		1	MAR1 09/23/17	0352 1703121	1
Chloride		14.2	0.134	0.400	mg/L		2	RXB5 09/25/17	1352 1703121	2
The following Analy	ytical Methods v	vere perform	ned:							

Method Description Analyst Comments

1 EPA 300.0 2 EPA 300.0

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: September 28, 2017

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-25 Project: SCEG01616C Sample ID: 433379003 Client ID: GEEL003

Matrix: Ground Water
Collect Date: 21-SEP-17 10:15
Receive Date: 21-SEP-17
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF .	Analyst Date	Time Batch	Method
Ion Chromatography										
EPA300.0 Fluoride in	n Liquid "As Re	ceived"								
Fluoride		0.601	0.033	0.100	mg/L		1	MAR1 09/23/17	0421 1703121	1
Chloride		20.8	0.335	1.00	mg/L		5	RXB5 09/25/17	1421 1703121	2
The following Analy	ytical Methods v	vere performed:								

 Method
 Description
 Analyst Comments

 1
 EPA 300.0

 2
 EPA 300.0

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: September 28, 2017

SCEG01616C

GEEL003

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-24
Sample ID: 433379004
Matrix: Ground Water
Collect Date: 21-SEP-17 11:00

Receive Date: 21-SEP-17 Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF Analyst Date	Time Batch	Method
Ion Chromatography									
EPA300.0 Fluoride i	n Liquid "As Re	ceived"							
Fluoride		0.305	0.033	0.100	mg/L		1 MAR1 09/23/17	0450 1703121	1
Chloride		20.0	0.335	1.00	mg/L		5 RXB5 09/25/17	1449 1703121	2
The following Analy	ytical Methods v	vere performed:							

Method Description Analyst Comments

EPA 300.0

2 EPA 300.0

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

SCEG01616C

GEEL003

Report Date: September 28, 2017

Company: GEL Engineering, LLC Address: 2040 Savage Rd

Charleston, South Carolina 29417

Contact: Robert Gardner Project: Williams 52

Client Sample ID: GW-26
Sample ID: 433379005
Matrix: Ground Water

Collect Date: 21-SEP-17 11:32
Receive Date: 21-SEP-17
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Ion Chromatograp	ohy											
EPA300.0 Fluorid	le in Liquid "As Re	eceived"										
Fluoride		0.185	0.033	0.100	mg/L		1	MAR1	09/23/17	0519	1703121	1
Chloride		135	3.35	10.0	mg/L		50	RXB5	09/25/17	1518	1703121	2
The following Ar	nalytical Methods y	vere perform	ed:									

MethodDescriptionAnalyst Comments1EPA 300.0

2 EPA 300.0

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: September 28, 2017

Page 1 of 2

Contact

GEL Engineering, LLC 2040 Savage Rd Charleston, South Carolina

Contact: Robert Gardner

Workorder: 433379

Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range Anlst	Date Time
Ion Chromatography Batch 1703121 ———								
QC1203881120 433379005 DUP Chloride		135	136	mg/L	1.17		(0%-20%) RXB5	09/25/17 15:47
Fluoride		0.185	0.185	mg/L	0.217 ^		(+/-0.100) MAR1	09/23/17 05:48
QC1203881119 LCS Chloride	5.00		4.61	mg/L		92.2	(90%-110%)	09/23/17 02:55
Fluoride	2.50		2.45	mg/L		97.9	(90%-110%)	
QC1203881118 MB Chloride		U	ND	mg/L				09/23/17 02:26
Fluoride		U	ND	mg/L				
QC1203881121 433379005 PS Chloride	5.00	2.70	7.57	mg/L		97.4	(90%-110%) RXB5	09/25/17 16:16
Fluoride	2.50	0.185	2.50	mg/L		92.7	(90%-110%) MAR1	09/23/17 06:17

Notes:

The Qualifiers in this report are defined as follows:

- < Result is less than value reported
- > Result is greater than value reported
- B The target analyte was detected in the associated blank.
- E General Chemistry--Concentration of the target analyte exceeds the instrument calibration range
- H Analytical holding time was exceeded
- J Value is estimated
- N/A RPD or %Recovery limits do not apply.
- N1 See case narrative
- ND Analyte concentration is not detected above the detection limit

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QC Summary

Workorder: 433379 Page 2 of 2 Pa

Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time

- NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Q One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
- R Per section 9.3.4.1 of Method 1664 Revision B, due to matrix spike recovery issues, this result may not be reported or used for regulatory compliance purposes.
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Z Paint Filter Test--Particulates passed through the filter, however no free liquids were observed.
- ٨ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
- d 5-day BOD--The 2:1 depletion requirement was not met for this sample
- 5-day BOD--Test replicates show more than 30% difference between high and low values. The data is qualified per the method and can be used for e reporting purposes
- Preparation or preservation holding time was exceeded h

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable. ^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

* Indicates that a Quality Control parameter was not within specifications.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.



Tel: (803)217-9384 Fax: (803) 217-9911

08:59

14:18

REPORT TO:

Mike Moore

January 25, 2018

Sample ID: AB28674

Williams Hwy 52 GW 27-NPDES/CCR

Date & Time Sampled: September 20, 2017
Date & Time Submitted: September 21, 2017

Collected by: C.SANDEL Location Code: WLG27TDS

GW 27 Login Record File: 170921003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	14.2	0.50	mg/L	9/25/17 11:46	ВВ
pH by SM4500HB(2011)	7.18	0.00	S.U.	9/22/17 11:18	PRC
Holding Time of 15 minutes has been e	exceeded.				
Sulfates by IC EPA 300.0	32.0	0.50	mg/L	9/25/17 11:46	ВВ
Total Dissolved Solid-SM2540C	318	2.0	mg/L	9/25/17 16:20	PRC



REPORT TO:

Central Laboratory (P-08) 2102 North Lake Drive Columbia, SC 29212

Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

Mike Moore

Sample ID: AB28675

Williams Hwy 52 FIELD BLANK-NPDES/CCR

Date & Time Sampled: September 20, 2017 09:30
Date & Time Submitted: September 21, 2017 14:18

Collected by: C.SANDEL Location Code: WLGFBTDS

GW 10 Login Record File: 170921003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	Less than	0.50	mg/L	9/25/17 11:46	ВВ
pH by SM4500HB(2011)	7.17	0.00	S.U.	9/22/17 11:18	PRC
Holding Time of 15 minutes has been ex	xceeded.				
Sulfates by IC EPA 300.0	Less than	0.50	mg/L	9/25/17 11:46	ВВ
Total Dissolved Solid-SM2540C	Less than	2.0	mg/L	9/25/17 16:20	PRC

Approved By:		



Tel: (803)217-9384 Fax: (803) 217-9911

_____ January 25, 2018

REPORT TO:

Mike Moore

Sample ID: AB28676

Collected by: C.SANDEL

Williams Hwy 52 GW 10-NPDES/CCR

Date & Time Sampled: Septe Date & Time Submitted: Septe

September 20, 2017 09:38 September 21, 2017 14:18

Location Code: WLG10TDS

GW 10 Login Record File: 170921003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	19.7	0.50	mg/L	9/25/17 11:46	ВВ
pH by SM4500HB(2011)	10.80	0.00	S.U.	9/22/17 11:18	PRC
Holding Time of 15 minutes has been e	exceeded.				
Sulfates by IC EPA 300.0	6.0	0.50	mg/L	9/25/17 11:46	ВВ
Total Dissolved Solid-SM2540C	167	2.0	mg/L	9/25/17 16:20	PRC



Mike Moore

Central Laboratory (P-08) 2102 North Lake Drive Columbia, SC 29212

Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

REPORT TO:

Sample ID: AB28677

Williams Hwy 52 GW 11-NPDES/CCR

Date & Time Sampled: September 20, 2017 10:15
Date & Time Submitted: September 21, 2017 14:18

Collected by: C.SANDEL Location Code: WLG11TDS

GW 11 Login Record File: 170921003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	6.1	0.50	mg/L	9/25/17 11:46	ВВ
pH by SM4500HB(2011)	6.79	0.00	S.U.	9/22/17 11:18	PRC
Holding Time of 15 minutes has been e	exceeded.				
Sulfates by IC EPA 300.0	1.8	0.50	mg/L	9/25/17 11:46	ВВ
Total Dissolved Solid-SM2540C	110	2.0	mg/L	9/25/17 16:20	PRC



REPORT TO:

Central Laboratory (P-08) 2102 North Lake Drive Columbia, SC 29212

Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

Mike Moore

Sample ID: AB28678

Williams Hwy 52 GW 28-NPDES/CCR

Date & Time Sampled: September 20, 2017 11:07
Date & Time Submitted: September 21, 2017 14:18

Collected by: C.SANDEL Location Code: WLG28TDS

GW 28 Login Record File: 170921003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	3.6	0.50	mg/L	9/25/17 11:46	ВВ
pH by SM4500HB(2011)	6.64	0.00	S.U.	9/22/17 11:18	PRC
Holding Time of 15 minutes has been e	xceeded.				
Sulfates by IC EPA 300.0	3.1	0.50	mg/L	9/25/17 11:46	ВВ
Total Dissolved Solid-SM2540C	73	2.0	mg/L	9/25/17 16:20	PRC

Approved By:		



Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

REPORT TO:

Mike Moore

Sample ID: AB28679

Williams Hwy 52 DUP -NPDES/CCR

Date & Time Sampled: September 20, 2017 11:15
Date & Time Submitted: September 21, 2017 14:18

Collected by: C.SANDEL Location Code: WLGDUPTDS

GW 10 Login Record File: 170921003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	3.6	0.50	mg/L	9/25/17 11:46	ВВ
pH by SM4500HB(2011)	6.62	0.00	S.U.	9/22/17 11:18	PRC
Holding Time of 15 minutes has been	exceeded.				
Sulfates by IC EPA 300.0	3.0	0.50	mg/L	9/25/17 11:46	ВВ
Total Dissolved Solid-SM2540C	74	2.0	mg/L	9/25/17 16:20	PRC



Tel: (803)217-9384 Fax: (803) 217-9911

REPORT TO:

Mike Moore

January 25, 2018

Sample ID: AB28680

Williams Hwy 52 GW 20-NPDES/CCR

Date & Time Sampled: September 20, 2017 12:17
Date & Time Submitted: September 21, 2017 14:18

Collected by: C.SANDEL Location Code: WLG20TDS

GW 20 Login Record File: 170921003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	9.8	0.50	mg/L	9/25/17 11:46	ВВ
pH by SM4500HB(2011)	6.86	0.00	S.U.	9/22/17 11:18	PRC
Holding Time of 15 minutes has been e	exceeded.				
Sulfates by IC EPA 300.0	9.1	0.50	mg/L	9/25/17 11:46	ВВ
Total Dissolved Solid-SM2540C	631	2.0	mg/L	9/25/17 16:20	PRC

Approved By:		
AUDIOVED DV.		



Tel: (803)217-9384 Fax: (803) 217-9911

REPORT TO:

Mike Moore

January 25, 2018

Sample ID: AB28681

Williams Hwy 52 GW 21-NPDES/CCR

Date & Time Sampled: September 20, 2017 13:07
Date & Time Submitted: September 21, 2017 14:18

Collected by: C.SANDEL Location Code: WLG21TDS

GW 21 Login Record File: 170921003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	10.36	0.50	mg/L	9/25/17 11:46	ВВ
pH by SM4500HB(2011)	6.95	0.00	S.U.	9/22/17 11:18	PRC
Holding Time of 15 minutes has been e	exceeded.				
Sulfates by IC EPA 300.0	8.7	0.50	mg/L	9/25/17 11:46	ВВ
Total Dissolved Solid-SM2540C	594	2.0	mg/L	9/25/17 16:20	PRC



REPORT TO:

Central Laboratory (P-08) 2102 North Lake Drive Columbia, SC 29212

Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

Mike Moore

Sample ID: AB28682

Williams Hwy 52 GW 22D-NPDES/CCR

Date & Time Sampled: September 21, 2017 08:36
Date & Time Submitted: September 21, 2017 14:18

Collected by: C.SANDEL Location Code: WLG22DTDS

GW 22D Login Record File: 170921003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	10.0	0.50	mg/L	9/25/17 11:46	ВВ
pH by SM4500HB(2011)	7.25	0.00	S.U.	9/22/17 11:18	PRC
Holding Time of 15 minutes has been e	exceeded.				
Sulfates by IC EPA 300.0	65.3	0.50	mg/L	9/25/17 11:46	ВВ
Total Dissolved Solid-SM2540C	581	2.0	mg/L	9/25/17 16:20	PRC

Approved By:		



Mike Moore

Central Laboratory (P-08) 2102 North Lake Drive Columbia, SC 29212

Tel: (803)217-9384 Fax: (803) 217-9911

REPORT TO:

Sample ID: AB28683

January 25, 2018

Williams Hwy 52 GW 23D-NPDES/CCR

Date & Time Sampled: September 21, 2017 09:28
Date & Time Submitted: September 21, 2017 14:18

Collected by: C.SANDEL Location Code: WLG23DTDS

GW 23D Login Record File: 170921003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	14.5	0.50	mg/L	9/25/17 11:46	ВВ
pH by SM4500HB(2011)	7.33	0.00	S.U.	9/22/17 11:18	PRC
Holding Time of 15 minutes has been e	xceeded.				
Sulfates by IC EPA 300.0	28.6	0.50	mg/L	9/25/17 11:46	BB
Total Dissolved Solid-SM2540C	495	2.0	mg/L	9/25/17 16:20	PRC

Approved By:		



REPORT TO:

Central Laboratory (P-08) 2102 North Lake Drive Columbia, SC 29212

Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

Mike Moore

Sample ID: AB28684

Williams Hwy 52 GW 25-NPDES/CCR

Date & Time Sampled: September 21, 2017 10:15
Date & Time Submitted: September 21, 2017 14:18

Collected by: C.SANDEL Location Code: WLG25TDS

GW 25 Login Record File: 170921003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	21.8	0.50	mg/L	9/25/17 11:46	ВВ
pH by SM4500HB(2011)	7.13	0.00	S.U.	9/22/17 11:18	PRC
Holding Time of 15 minutes has been e	xceeded.				
Sulfates by IC EPA 300.0	51.8	0.50	mg/L	9/25/17 11:46	ВВ
Total Dissolved Solid-SM2540C	572	2.0	mg/L	9/25/17 16:20	PRC

Approved By:		



Tel: (803)217-9384 Fax: (803) 217-9911

REPORT TO:

Mike Moore

January 25, 2018

Sample ID: AB28685

Williams Hwy 52 GW 24-NPDES/CCR

Date & Time Sampled: September 21, 2017 11:00
Date & Time Submitted: September 21, 2017 14:18

Collected by: C.SANDEL Location Code: WLG24TDS

GW 24 Login Record File: 170921003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	22.4	0.50	mg/L	9/25/17 11:46	ВВ
pH by SM4500HB(2011)	6.54	0.00	S.U.	9/22/17 11:18	PRC
Holding Time of 15 minutes has been ex	xceeded.				
Sulfates by IC EPA 300.0	34.8	0.50	mg/L	9/25/17 11:46	ВВ
Total Dissolved Solid-SM2540C	493	2.0	mg/L	9/25/17 16:20	PRC



Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

REPORT TO:

Mike Moore

Sample ID: AB28686

Williams Hwy 52 GW 26-NPDES/CCR

Date & Time Sampled: September 21, 2017 11:32 Date & Time Submitted: September 21, 2017 14:18

Collected by: C.SANDEL Location Code: WLG26TDS

GW 26 Login Record File: 170921003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Chlorides by IC EPA 300.0	161	1.0	mg/L	9/27/17 11:12	ВВ
pH by SM4500HB(2011)	6.46	0.00	S.U.	9/22/17 11:18	PRC
Holding Time of 15 minutes has been e	xceeded.				
Sulfates by IC EPA 300.0	73.3	1.0	mg/L	9/27/17 11:12	ВВ
Total Dissolved Solid-SM2540C	2802	2.0	mg/L	9/25/17 16:20	PRC



Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

REPORT TO:

Mike Moore

Sample ID: AB28687

Williams Hwy 52 GW 27-NPDES/CCR

Date & Time Sampled: September 20, 2017 08:59
Date & Time Submitted: September 21, 2017 14:18

Collected by: C.SANDEL Location Code: WLG27TM

GW 27 Login Record File: 170921003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	Less than	1000	ppb	9/25/17 14:59	CDB
Calcium EPA 200.7	86730	1000	ppb	9/25/17 14:59	CDB

Approved Bv:		
ADDIOVED DV.		



Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

REPORT TO:

Mike Moore

Sample ID: AB28688

Williams Hwy 52 FIELD BLANK-NPDES/CCR

Date & Time Sampled: September 20, 2017 09:30
Date & Time Submitted: September 21, 2017 14:18

Collected by: C.SANDEL Location Code: WLGFBTM

GW 10 Login Record File: 170921003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	Less than	1000	ppb	9/25/17 14:59	CDB
Calcium EPA 200.7	Less than	100	ppb	9/25/17 14:59	CDB



Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

REPORT TO:

Mike Moore

Sample ID: AB28689

Williams Hwy 52 GW 10-NPDES/CCR

Date & Time Sampled: September 20, 2017 09:38
Date & Time Submitted: September 21, 2017 14:18

Collected by: C.SANDEL Location Code: WLG10TM

GW 10 Login Record File: 170921003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	Less than	1000	ppb	9/25/17 14:59	CDB
Calcium EPA 200.7	29490	1000	ppb	9/25/17 14:59	CDB



Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

REPORT TO:

Mike Moore

Sample ID: AB28690

Williams Hwy 52 GW 11-NPDES/CCR

Date & Time Sampled: September 20, 2017 10:15

Date & Time Submitted: September 21, 2017 14:18

Collected by: C.SANDEL Location Code: WLG11TM

GW 11 Login Record File: 170921003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	Less than	1000	ppb	9/25/17 14:59	CDB
Calcium EPA 200.7	20180	1000	ppb	9/25/17 14:59	CDB



Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

REPORT TO:

Mike Moore

Sample ID: AB28691

Williams Hwy 52 GW 28-NPDES/CCR

Date & Time Sampled: September 20, 2017 11:07
Date & Time Submitted: September 21, 2017 14:18

Collected by: C.SANDEL Location Code: WLG28TM

GW 28 Login Record File: 170921003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	Less than	1000	ppb	9/25/17 14:59	CDB
Calcium EPA 200.7	17460	1000	ppb	9/25/17 14:59	CDB

Approved By:		



Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

REPORT TO:

Mike Moore

Sample ID: AB28692

Williams Hwy 52 DUP -NPDES/CCR

Date & Time Sampled: September 20, 2017 11:15

Date & Time Submitted: September 21, 2017 14:18

Collected by: C.SANDEL Location Code: WLGDUPTM

GW 10 Login Record File: 170921003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	Less than	1000	ppb	9/25/17 14:59	CDB
Calcium EPA 200.7	17350	1000	ppb	9/25/17 14:59	CDB

Approved By:		



Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

REPORT TO:

Mike Moore

Sample ID: AB28693

Williams Hwy 52 GW 20-NPDES/CCR

Date & Time Sampled: September 20, 2017 12:17
Date & Time Submitted: September 21, 2017 14:18

Collected by: C.SANDEL Location Code: WLG20TM

GW 20 Login Record File: 170921003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	Less than	1000	ppb	9/25/17 14:59	CDB
Calcium EPA 200.7	148900	1000	ppb	9/25/17 14:59	CDB



Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

REPORT TO:

Mike Moore

Sample ID: AB28694

Williams Hwy 52 GW 21-NPDES/CCR

Date & Time Sampled: September 20, 2017 13:07 Date & Time Submitted: September 21, 2017 14:18

Collected by: C.SANDEL Location Code: WLG21TM

GW 21 Login Record File: 170921003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	Less than	1000	ppb	9/25/17 14:59	CDB
Calcium EPA 200.7	125800	1000	ppb	9/25/17 14:59	CDB

Approved By:		



Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

REPORT TO:

Mike Moore

Sample ID: AB28695

Williams Hwy 52 GW 22D-NPDES/CCR

Date & Time Sampled: September 21, 2017 08:36
Date & Time Submitted: September 21, 2017 14:18

Collected by: C.SANDEL Location Code: WLG22DTM

GW 22D Login Record File: 170921003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	Less than	1000	ppb	9/25/17 14:59	CDB
Calcium EPA 200.7	86790	1000	ppb	9/25/17 14:59	CDB

Approved By:		



Tel: (803)217-9384 Fax: (803) 217-9911

_____ January 25, 2018

REPORT TO:

Mike Moore

Sample ID: AB28696

Williams Hwy 52 GW 23D-NPDES/CCR

Date & Time Sampled: September 21, 2017 09:28
Date & Time Submitted: September 21, 2017 14:18

Collected by: C.SANDEL Location Code: WLG23DTM

GW 23D Login Record File: 170921003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	Less than	1000	ppb	9/25/17 14:59	CDB
Calcium EPA 200.7	74060	1000	ppb	9/25/17 14:59	CDB



Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

REPORT TO:

Mike Moore

Sample ID: AB28697

Williams Hwy 52 GW 25-NPDES/CCR

Date & Time Sampled: September 21, 2017 10:15

Date & Time Submitted: September 21, 2017 14:18

Collected by: C.SANDEL Location Code: WLG25TM

GW 25 Login Record File: 170921003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	Less than	1000	ppb	9/25/17 14:59	CDB
Calcium EPA 200.7	117200	1000	ppb	9/25/17 14:59	CDB

Approved By:		
ADDIOVEU DV.		



Tel: (803)217-9384 Fax: (803) 217-9911

January 25, 2018

REPORT TO:

Mike Moore

Sample ID: AB28698

Williams Hwy 52 GW 24-NPDES/CCR

Date & Time Sampled: September 21, 2017 11:00

Date & Time Submitted: September 21, 2017 14:18

Collected by: C.SANDEL Location Code: WLG24TM

GW 24 Login Record File: 170921003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	Less than	1000	ppb	9/25/17 14:59	CDB
Calcium EPA 200.7	123000	1000	ppb	9/25/17 14:59	CDB



Tel: (803)217-9384 Fax: (803) 217-9911

___ January 25, 2018

REPORT TO:

Mike Moore

Sample ID: AB28699

Williams Hwy 52 GW 26-NPDES/CCR

Date & Time Sampled: September 21, 2017 11:32 Date & Time Submitted: September 21, 2017 14:18

Collected by: C.SANDEL Location Code: WLG26TM

GW 26 Login Record File: 170921003

CERTIFIED BY SCDHEC (LAB ID 32006):	Result	Reporting Limit(MRL)	Units	Completed Analysis Date & Time	Chemist
Boron - EPA 200.7	Less than	1000	ppb	9/25/17 14:59	CDB
Calcium EPA 200.7	174800	1000	ppb	9/25/17 14:59	CDB

Approved By:		



APPENDIX B

Statistical Analysis of Detection Monitoring Groundwater Quality Results

Run Id:

Williams (Hwy 52)

Detection Monitoring Summary

Run Id: **Location Id:** MW-LF-20 **Double Quantification Rule** Compliance Test: Parameter Sample Date Lab Id Re Upper Limit Compliance Exceedance Possible Post-Hoc Result SSI Trend **Testing** Boron, total mg/L < 1.000 07/25/2017 AB27992 n Boron, total mg/L 09/20/2017 AB28693 < 1.000 n 2 Run Id: **Location Id:** MW-LF-20 Parametric Prediction Interval on Background **Compliance Test:** Parameter Sample Date Lab Id Re Upper Limit Compliance Exceedance Possible Post-Hoc Result Trend **Testing** SSI 1 of 2 156.000 Ca ug/L 07/26/2017 AB27992 106.597 y None Ca ug/L 09/20/2017 AB28693 1 of 2 106.597 148.900 None у 3 Run Id: **Location Id:** MW-LF-20 Compliance Test: Non-Parametric Prediction Interval on Background Useing largest background data value. Parameter Sample Date Lab Id Re Upper Limit Compliance Exceedance Possible Post-Hoc SSI **Testing** Result Trend Chlorides mg/L 07/25/2017 AB27979 1 of 2 19.70 9.70 n Chlorides mg/L 09/20/2017 AB28680 1 of 2 19.70 9.80 n

Location Id: MW-LF-20

Detection Monitoring Summary

								Run Id:	4
Location Id: MW-LF-2									
Compliance Test: Parame	etric Prediction Inte	erval on Background							
<u>Parameter</u>	Sample Date	<u>Lab Id</u>	<u>Re</u> Testing	<u>Upper Limit</u>	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend	
Field pH S.U.	07/26/2017	FLD20170725	1 of 2	7.866	6.500	n/n	<u>—</u>		
Field pH S.U.	09/20/2017	FLD20170920	1 of 2	7.866	6.500	n/n			
								Run Id:	5
Location Id: MW-LF-2	20								
Compliance Test: Parame	etric Prediction Inte	erval on Background							
<u>Parameter</u>	Sample Date	<u>Lab Id</u>	<u>Re</u> Testing	<u>Upper Limit</u>	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend	
Fluoride, total mg/L	07/26/2017	428949007	1 of 2	0.614	0.175	n			
Fluoride, total mg/L	09/20/2017	433252007	1 of 2	0.614	0.264	n			
								Run Id:	6
Location Id: MW-LF-2	20								
Compliance Test: Parame	etric Prediction Inte	erval on Background							
<u>Parameter</u>	Sample Date	<u>Lab Id</u>	Re Testing	<u>Upper Limit</u>	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend	
SO4 mg/L	07/26/2017	AB27979	1 of 2	28.067	9.240	n		<u></u>	
SO4 mg/L	09/20/2017	AB28680	1 of 2	28.067	9.100	n			
								Run Id:	7

Location Id: MW-LF-20

Detection Monitoring Summary

Y C Y MWIE								Run Id:	7
Location Id: MW-LF-2 Compliance Test: Parame		erval on Background							
<u>Parameter</u>	Sample Date	<u>Lab Id</u>	<u>Re</u>	Upper Limit	Compliance	Exceedance	<u>Possible</u>	Post-Hoc	
Total Dissolved Solids mg/L	07/26/2017	AB27979	Testing 1 of 2	427.268	Result 663.000	у	SSI	<u>Trend</u> None	
Total Dissolved Solids mg/L	09/20/2017	AB28680	1 of 2	427.268	631.000	у		None	
								Run Id:	8
Location Id: MW-LF-2	21								
Compliance Test: Double	Quantification Rul	e							
Parameter	Sample Date	<u>Lab Id</u>	<u>Re</u> Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend	
Boron, total mg/L	07/25/2017	AB27993			< 1.000	n			
Boron, total mg/L	09/20/2017	AB28694			< 1.000	n			
								Run Id:	9
Location Id: MW-LF-2									
Compliance Test: Parame	tric Prediction Inte	erval on Background							
<u>Parameter</u>	Sample Date	<u>Lab Id</u>	<u>Re</u> Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend	
Ca ug/L	07/26/2017	AB27993	1 of 2	106.597	127.000	У	<u> </u>	None	
Ca ug/L	09/20/2017	AB28694	1 of 2	106.597	125.800	у		None	
								Run Id:	10

Location Id: MW-LF-21

Detection Monitoring Summary

Run Id: 10 **Location Id:** MW-LF-21 Non-Parametric Prediction Interval on Background Useing largest background data value. **Compliance Test:** Post-Hoc <u>Parameter</u> Sample Date Lab Id Re Upper Limit Compliance Exceedance Possible SSI **Testing** Result Trend Chlorides mg/L 07/25/2017 1 of 2 19.70 AB27980 10.10 n Chlorides mg/L 09/20/2017 AB28681 1 of 2 19.70 10.36 n Run Id: 11 **Location Id:** MW-LF-21 **Compliance Test:** Parametric Prediction Interval on Background Parameter Sample Date Lab Id Re Upper Limit Compliance Exceedance Possible Post-Hoc Testing Result SSI Trend Field pH S.U. 07/26/2017 FLD20170725 1 of 2 7.866 6.600 n/n Field pH S.U. 1 of 2 09/20/2017 FLD20170920 7.866 6.500 n/n Run Id: 12 **Location Id:** MW-LF-21 Parametric Prediction Interval on Background **Compliance Test:** Sample Date Lab Id Re Upper Limit Compliance Exceedance Possible Post-Hoc <u>Parameter</u> Result SSI Trend Testing Fluoride, total mg/L 1 of 2 0.161 07/26/2017 428949008 0.614 n Fluoride, total mg/L 09/20/2017 433252008 1 of 2 0.614 0.258 n 13 Run Id:

Location Id: MW-LF-21

Detection Monitoring Summary

Location Id: MW-LF-2	1							Run Id:	13
		rval on Background							
Parameter	Sample Date	<u>Lab Id</u>	<u>Re</u> Testing	Upper Limit	Compliance Result	<u>Exceedance</u>	Possible SSI	Post-Hoc Trend	
SO4 mg/L	07/26/2017	AB27980	1 of 2	28.067	8.370	n	<u>331</u>		
SO4 mg/L	09/20/2017	AB28681	1 of 2	28.067	8.700	n			
								<u>Run Id:</u>	14
Location Id: MW-LF-2	1								
Compliance Test: Parame	tric Prediction Inte	rval on Background							
<u>Parameter</u>	Sample Date	<u>Lab Id</u>	<u>Re</u> Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend	
Total Dissolved Solids mg/L	07/26/2017	AB27980	1 of 2	427.268	621.000	у	<u></u>	None	
Total Dissolved Solids mg/L	09/20/2017	AB28681	1 of 2	427.268	594.000	у		None	
								<u>Run Id:</u>	15
Location Id: MW-LF-2	2D								
Compliance Test: Double	Quantification Rul	e							
<u>Parameter</u>	Sample Date	<u>Lab Id</u>	<u>Re</u> Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend	
Boron, total mg/L	07/25/2017	AB27994			< 1.000	n			
Boron, total mg/L	09/21/2017	AB28695			< 1.000	n			
								Run Id:	16
								<u>Kun Iu.</u>	10

Location Id: MW-LF-22D

Detection Monitoring Summary

Run Id: 16 **Location Id:** MW-LF-22D Parametric Prediction Interval on Background **Compliance Test:** Post-Hoc <u>Parameter</u> Sample Date Lab Id Re Upper Limit Compliance Exceedance Possible SSI **Testing** Result Trend 07/26/2017 1 of 2 89.000 Ca ug/L AB27994 106.597 n Ca ug/L 09/21/2017 AB28695 1 of 2 106.597 86.790 n Run Id: 17 **Location Id:** MW-LF-22D Non-Parametric Prediction Interval on Background Useing largest background data value. Parameter Sample Date Lab Id Re Upper Limit Compliance Exceedance Possible Post-Hoc Testing Result SSI Trend Chlorides mg/L 07/25/2017 AB27981 1 of 2 19.70 9.97 n Chlorides mg/L 1 of 2 09/21/2017 AB28682 19.70 10.00 n Run Id: 18 **Location Id:** MW-LF-22D Parametric Prediction Interval on Background **Compliance Test:** Sample Date Lab Id Re Upper Limit Compliance Exceedance Possible Post-Hoc <u>Parameter</u> Result SSI Trend Testing Field pH S.U. 1 of 2 07/26/2017 FLD20170725 7.866 6.900 n/n Field pH S.U. 09/20/2017 FLD20170920 1 of 2 7.866 6.700 n/n 19 Run Id:

Location Id: MW-LF-22D

Detection Monitoring Summary

	140							Run Id:	19
Location Id: MW-LF-2									
Compliance Test: Parame	tric Prediction Into	erval on Background							
<u>Parameter</u>	Sample Date	<u>Lab Id</u>	<u>Re</u> <u>Testing</u>	<u>Upper Limit</u>	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend	
Fluoride, total mg/L	07/26/2017	428949009	1 of 2	0.614	0.250	n			
								Run Id:	20
Location Id: MW-LF-2	22D								
Compliance Test: Parame	tric Prediction Into	erval on Background							
<u>Parameter</u>	Sample Date	<u>Lab Id</u>	<u>Re</u> <u>Testing</u>	Upper Limit	Compliance Result	Exceedance	<u>Possible</u> <u>SSI</u>	Post-Hoc Trend	
SO4 mg/L	07/26/2017	AB27981	1 of 2	28.067	72.670	у	_	Downward	
SO4 mg/L	09/21/2017	AB28682	1 of 2	28.067	65.300	у		Downward	
								Run Id:	21
Location Id: MW-LF-2	22D								
Compliance Test: Parame	tric Prediction Into	erval on Background							
<u>Parameter</u>	Sample Date	Lab Id	<u>Re</u> <u>Testing</u>	Upper Limit	Compliance Result	<u>Exceedance</u>	<u>Possible</u> <u>SSI</u>	Post-Hoc Trend	
Total Dissolved Solids mg/L	07/26/2017	AB27981	1 of 2	427.268	592.000	y		None	
Total Dissolved Solids mg/L	09/21/2017	AB28682	1 of 2	427.268	581.000	y		None	
								Run Id:	22
Location Id: MW-LF-2	23D								
Compliance Test: Double	Quantification Rul	le							
<u>Parameter</u>	Sample Date	<u>Lab Id</u>	<u>Re</u> <u>Testing</u>	<u>Upper Limit</u>	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend	

Detection Monitoring Summary

								Run Id:	22
Location Id:	MW-LF-23D								
Boron, total mg/L	07/26/2017	AB27995			< 1.000	n			
Boron, total mg/L	09/21/2017	AB28696			< 1.000	n			
Boton, total nig/L	07/21/2017	AB20070			1.000	11			
								Run Id:	23
Location Id:	MW-LF-23D							Kun Id.	23
Compliance Test:	Parametric Prediction Int	terval on Background							
<u>Parameter</u>	Sample Date	<u>Lab Id</u>	<u>Re</u> <u>Testing</u>	Upper Limit	Compliance Result	Exceedance	Possible SSI	<u>Post-Hoc</u> <u>Trend</u>	
Ca ug/L	07/26/2017	AB27995	1 of 2	106.597	75.000	n	<u>331</u>	<u>11end</u> 	
Ca ug/L	09/21/2017	AB28696	1 of 2	106.597	74.060	n			
								Run Id:	24
Location Id:	MW-LF-23D								
Compliance Test:	Non-Parametric Predictio	on Interval on Backgro	ound Useing largest ba	ckground data value.					
<u>Parameter</u>	Sample Date	<u>Lab Id</u>	<u>Re</u>	<u>Upper Limit</u>	Compliance	Exceedance	<u>Possible</u>	Post-Hoc	
Chlorides mg/L	07/26/2017	AB27982	Testing 1 of 2	19.70	<u>Result</u> 15.60	n	<u>SSI</u>	<u>Trend</u>	
Chlorides mg/L	09/21/2017	AB28683	1 of 2	19.70	14.50	n			
								Run Id:	25
Location Id:	MW-LF-23D								
Compliance Test:	Parametric Prediction Int	terval on Background							
<u>Parameter</u>	Sample Date	<u>Lab Id</u>	Re	Upper Limit	Compliance	Exceedance	Possible	Post-Hoc	
Field pH S.U.	07/26/2017	FLD20170726	Testing 1 of 2	7.866	<u>Result</u> 6.900	n/n	<u>SSI</u>	<u>Trend</u>	

Detection Monitoring Summary

								Run Id:	25
Location Id: MW-LF-2	3D								
Field pH S.U.	09/20/2017	FLD20170920	1 of 2	7.866	6.900	n/n			
								Run Id:	26
Location Id: MW-LF-2	3D								
Compliance Test: Parame	tric Prediction Inte	erval on Background							
Parameter	Sample Date	<u>Lab Id</u>	Re	Upper Limit	Compliance	Exceedance	Possible	Post-Hoc	
			Testing		Result		SSI	Trend	
Fluoride, total mg/L	07/26/2017	428949010	1 of 2	0.614	0.318	n			
								Run Id:	27
Location Id: MW-LF-2	3D								
Compliance Test: Parame	tric Prediction Inte	erval on Background							
<u>Parameter</u>	Sample Date	<u>Lab Id</u>	Re	<u>Upper Limit</u>	Compliance	<u>Exceedance</u>	Possible	Post-Hoc	
COA //	07/26/2017	A D27002	<u>Testing</u>	20.07	Result		<u>SSI</u>	<u>Trend</u>	
SO4 mg/L	07/26/2017	AB27982	1 of 2	28.067	30.750	У		None	
SO4 mg/L	09/21/2017	AB28683	1 of 2	28.067	28.600	y		None	
								Run Id:	28
Location Id: MW-LF-2	3D								
Compliance Test: Parame	tric Prediction Inte	erval on Background							
<u>Parameter</u>	Sample Date	<u>Lab Id</u>	<u>Re</u>	<u>Upper Limit</u>	Compliance	<u>Exceedance</u>	<u>Possible</u>	Post-Hoc	
T-4-1 Dild C-1:d//	07/26/2017	AB27982	Testing 1 of 2	427.269	Result		<u>SSI</u>	Trend	
Total Dissolved Solids mg/L	0 //20/201 /	AB2/982	1 01 2	427.268	512.000	У		Upward	
Total Dissolved Solids mg/L	09/21/2017	AB28683	1 of 2	427.268	495.000	y		Upward	

<u>Run Id:</u> 29

Detection Monitoring Summary

Run Id: 29 **Location Id:** MW-LF-24 **Double Quantification Rule Compliance Test:** Sample Date Post-Hoc <u>Parameter</u> Lab Id Re Upper Limit Compliance Exceedance Possible SSI Result Trend Testing 07/26/2017 < 1.000 Boron, total mg/L AB27997 n Boron, total mg/L 09/21/2017 AB28698 < 1.000 n Run Id: 30 **Location Id:** MW-LF-24 **Compliance Test:** Parametric Prediction Interval on Background <u>Parameter</u> Sample Date Lab Id Re Upper Limit Compliance Exceedance Possible Post-Hoc Testing Result SSI Trend Ca ug/L 07/26/2017 AB27997 1 of 2 106.597 136.000 y None 1 of 2 Ca ug/L 09/21/2017 AB28698 106.597 123.000 None У Run Id: 31 **Location Id:** MW-LF-24 Non-Parametric Prediction Interval on Background Useing largest background data value. **Compliance Test:** <u>Parameter</u> Sample Date Lab Id Re Upper Limit Compliance Exceedance Possible Post-Hoc Result SSI Trend Testing Chlorides mg/L 1 of 2 21.58 07/26/2017 AB27984 19.70 y None Chlorides mg/L 09/21/2017 AB28685 1 of 2 19.70 22.40 None У 32 Run Id:

Location Id: MW-LF-24

Detection Monitoring Summary

Location Id: MW-I	E 24							Run Id:	32
	ametric Prediction Int	erval on Background							
<u>Parameter</u>	Sample Date	<u>Lab Id</u>	<u>Re</u> Testing	Upper Limit	Compliance Result	<u>Exceedance</u>	Possible SSI	Post-Hoc Trend	
Field pH S.U.	07/26/2017	FLD20170726	1 of 2	7.866	6.400	n/n	<u>561</u>	<u></u>	
Field pH S.U.	09/20/2017	FLD20170920	1 of 2	7.866	6.300	n/n			
								Run Id:	33
Location Id: MW-I		l Dld							
Compliance Test: Para	ametric Prediction Int	erval on Background							
<u>Parameter</u>	Sample Date	<u>Lab Id</u>	<u>Re</u> <u>Testing</u>	<u>Upper Limit</u>	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend	
Fluoride, total mg/L	07/26/2017	428949012	1 of 2	0.614	0.362	n			
								Run Id:	34
Location Id: MW-I	_F-24							Kun Id.	34
Compliance Test: Para	ametric Prediction Int	erval on Background							
<u>Parameter</u>	Sample Date	<u>Lab Id</u>	<u>Re</u> Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend	
SO4 mg/L	07/26/2017	AB27984	1 of 2	28.067	31.990	y	<u>551</u>	None	
SO4 mg/L	09/21/2017	AB28685	1 of 2	28.067	34.800	у		None	
								Run Id:	35
Location Id: MW-I									
Compliance Test: Para	ametric Prediction Int	erval on Background							
<u>Parameter</u>	Sample Date	<u>Lab Id</u>	<u>Re</u> <u>Testing</u>	<u>Upper Limit</u>	Compliance Result	<u>Exceedance</u>	Possible SSI	Post-Hoc Trend	

Detection Monitoring Summary

								Run Id:	35
Location Id: MW-LF	-24								
Total Dissolved Solids mg/L	07/26/2017	AB27984	1 of 2	427.268	450.000	у		None	
Total Dissolved Solids mg/L	09/21/2017	AB28685	1 of 2	427.268	493.000	у		None	
								Run Id:	36
Location Id: MW-LF	-25								
Compliance Test: Double	e Quantification Ru	le							
<u>Parameter</u>	Sample Date	<u>Lab Id</u>	<u>Re</u> Testing	Upper Limit	<u>Compliance</u> Result	Exceedance	Possible SSI	<u>Post-Hoc</u> Trend	
Boron, total mg/L	07/26/2017	AB27996			< 1.000	n	_		
Boron, total mg/L	09/21/2017	AB28697			< 1.000	n			
								Run Id:	37
Location Id: MW-LF Compliance Test: Param		erval on Backgroun	d						
-		_	_						
<u>Parameter</u>	Sample Date	<u>Lab Id</u>	<u>Re</u> <u>Testing</u>	<u>Upper Limit</u>	<u>Compliance</u> <u>Result</u>	<u>Exceedance</u>	Possible SSI	<u>Post-Hoc</u> <u>Trend</u>	
Ca ug/L	07/26/2017	AB27996	1 of 2	106.597	113.000	у	<u>551</u>	None	
Ca ug/L	09/21/2017	AB28697	1 of 2	106.597	117.200	y		None	
								Run Id:	38
Location Id: MW-LF Compliance Test: Non-P		on Interval on Backg	round Useing largest bacl	kground data value.					
-	Sample Date	Lab Id		Upper Limit	Compliance	Exceedance	Possible	Post-Hoc	
<u>Parameter</u>	Sample Date	<u>Lau iu</u>	<u>Re</u> <u>Testing</u>	Opper Linit	<u>Compliance</u> <u>Result</u>	Exceedance	SSI SSI	<u>Trend</u>	
Chlorides mg/L	07/26/2017	AB27983	1 of 2	19.70	23.41	y		None	

Detection Monitoring Summary

Y (Y) MY	V I F 25							Run Id:	38
Location Id: MV Chlorides mg/L	V-LF-25 09/21/2017	AB28684	1 of 2	19.70	21.80	V		None	
Chiorides ing E	07/21/2017	71B20004	1 01 2	15.70	21.00	У		None	
								D. H.	20
Location Id: MV	V-LF-25							Run Id:	39
	arametric Prediction Inte	erval on Background							
-									
<u>Parameter</u>	Sample Date	<u>Lab Id</u>	<u>Re</u> <u>Testing</u>	<u>Upper Limit</u>	Compliance Result	Exceedance	Possible SSI	<u>Post-Hoc</u> <u>Trend</u>	
Field pH S.U.	07/26/2017	FLD20170726	1 of 2	7.866	6.700	n/n	<u>551</u>		
Field pH S.U.	09/20/2017	FLD20170920	1 of 2	7.866	6.700	n/n			
								Run Id:	40
	V-LF-25								
Compliance Test: P	arametric Prediction Inte	erval on Background							
<u>Parameter</u>	Sample Date	<u>Lab Id</u>	Re	Upper Limit	Compliance	Exceedance	<u>Possible</u>	Post-Hoc	
Fluoride, total mg/L	07/26/2017	428949011	Testing 1 of 2	0.614	<u>Result</u> 0.530	n	SSI	<u>Trend</u> 	
								Run Id:	41
	V-LF-25								
Compliance Test: P	arametric Prediction Inte	erval on Background							
<u>Parameter</u>	Sample Date	Lab Id	<u>Re</u> <u>Testing</u>	<u>Upper Limit</u>	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend	
SO4 mg/L	07/26/2017	AB27983	1 of 2	28.067	49.187	у	<u>551</u>	Upward	
SO4 mg/L	09/21/2017	AB28684	1 of 2	28.067	51.800	y		Upward	
								Run Id:	42

Detection Monitoring Summary

	_							Run Id:	42
Location Id: MW-LF-2 Compliance Test: Paramet		rval on Background							
<u>Parameter</u>	Sample Date	<u>Lab Id</u>	<u>Re</u> Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	<u>Post-Hoc</u> <u>Trend</u>	
Total Dissolved Solids mg/L	07/26/2017	AB27983	1 of 2	427.268	566.000	у	<u>331</u>	Upward	
Total Dissolved Solids mg/L	09/21/2017	AB28684	1 of 2	427.268	572.000	у		Upward	
								Run Id:	43
Location Id: MW-LF-2	6								
Compliance Test: Double C	Quantification Rule	e							
<u>Parameter</u>	Sample Date	<u>Lab Id</u>	<u>Re</u> <u>Testing</u>	<u>Upper Limit</u>	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend	
Boron, total mg/L	07/26/2017	AB27998			< 1.000	n			
Boron, total mg/L	09/21/2017	AB28699			< 1.000	n			
								Run Id:	44
Location Id: MW-LF-2	6								
Compliance Test: Paramet	tric Prediction Inte	rval on Background							
<u>Parameter</u>	Sample Date	<u>Lab Id</u>	Re Testing	Upper Limit	Compliance Result	<u>Exceedance</u>	Possible SSI	Post-Hoc Trend	
Ca ug/L	07/26/2017	AB27998	1 of 2	106.597	168.000	y		None	
Ca ug/L	09/21/2017	AB28699	1 of 2	106.597	174.800	y		None	
								Run Id:	45

Location Id: MW-LF-26

Detection Monitoring Summary

	MANAGA							Run Id:	45
Location Id: Compliance Test:	MW-LF-26 Non-Parametric Predicti	on Interval on Backgro	und Useing largest ha	ickoround data value					
•		on their var on Backgro							
<u>Parameter</u>	Sample Date	<u>Lab Id</u>	<u>Re</u> <u>Testing</u>	<u>Upper Limit</u>	Compliance Result	Exceedance	Possible SSI	<u>Post-Hoc</u> <u>Trend</u>	
Chlorides mg/L	07/26/2017	AB27985	1 of 2	19.70	155.10	у		None	
Chlorides mg/L	09/21/2017	AB28686	1 of 2	19.70	161.00	y		None	
								Run Id:	46
Location Id:	MW-LF-26								
Compliance Test:	Parametric Prediction In	terval on Background							
<u>Parameter</u>	Sample Date	<u>Lab Id</u>	<u>Re</u> Testing	<u>Upper Limit</u>	Compliance Result	Exceedance	Possible SSI	<u>Post-Hoc</u> <u>Trend</u>	
Field pH S.U.	07/26/2017	FLD20170726	1 of 2	7.866	6.000	n/y			
Field pH S.U.	09/20/2017	FLD20170920	1 of 2	7.866	6.000	n/y			
								Run Id:	47
Location Id:	MW-LF-26								
Compliance Test:	Parametric Prediction In	terval on Background							
<u>Parameter</u>	Sample Date	<u>Lab Id</u>	<u>Re</u> Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	<u>Post-Hoc</u> <u>Trend</u>	
Fluoride, total mg/	L 07/26/2017	428949013	1 of 2	0.614	0.193	n			
								Run Id:	48
Location Id:	MW-LF-26								
Compliance Test:	Parametric Prediction In	terval on Background							
<u>Parameter</u>	Sample Date	<u>Lab Id</u>	Re Testing	Upper Limit	Compliance Result	Exceedance	Possible SSI	Post-Hoc Trend	

Detection Monitoring Summary

									Run Id:	48
Location Id:	MW-LF-2	6								
SO4 mg/L		07/26/2017	AB27985	1 of 2	28.067	76.860	y		None	
SO4 mg/L		09/21/2017	AB28686	1 of 2	28.067	73.300	у		None	
									Run Id:	49
Location Id:	MW-LF-2	6								
Compliance Test:	Paramet	tric Prediction Int	erval on Background							
<u>Parameter</u>		Sample Date	<u>Lab Id</u>	<u>Re</u> <u>Testing</u>	Upper Limit	Compliance Result	<u>Exceedance</u>	Possible SSI	Post-Hoc Trend	
Total Dissolved Soli	lids mg/L	07/26/2017	AB27985	1 of 2	427.268	875.000	у	<u>551</u>	None	
Total Dissolved Soli	lids mg/L	09/21/2017	AB28686	1 of 2	427.268	2802.000	у		None	

2:00:41 PM

All Backgound Results Non-Detect

Run Id: 1 Location Id: MW-LF-20

Boron, total Parameter:

Double Quantification Rule Method:

Percent ND: 100

Sample Date	Modified Result	Analysis Result	Detection Lmit	<u>PQL</u>	<u>RL</u>	Non Detect	Exceedance
07/25/2017	1.000	0.216	0.044	1.000	0.000	Υ	N
09/20/2017	1.000	0.225	0.044	1.000	0.000	Υ	N

Location Id: MW-LF-21 Run Id: 8

Parameter: Boron, total

Method: Double Quantification Rule

Percent ND: 100

07/25/2017 1.000 0.239 0.044 1.000 0.000 Y N 09/20/2017 1.000 0.214 0.044 1.000 0.000 Y N	Sample Date	Modified Result	Analysis Result	Detection Lmit	<u>PQL</u>	<u>RL</u>	Non Detect	Exceedance
09/20/2017 1 000 0 214 0 044 1 000 0 000 Y N	07/25/2017	1.000	0.239	0.044	1.000	0.000	Υ	N
0.572.07.00.00.00.00.00.00.00.00.00.00.00.00.	09/20/2017	1.000	0.214	0.044	1.000	0.000	Υ	N

Location Id: MW-LF-22D Run Id: 15

Parameter: Boron, total

Method: Double Quantification Rule

Percent ND: 100

Sample Date	Modified Result	Analysis Result	Detection Lmit	<u>PQL</u>	<u>RL</u>	Non Detect	<u>Exceedance</u>
07/25/2017	1.000	0.339	0.044	1.000	0.000	Υ	N
09/21/2017	1.000	0.327	0.044	1.000	0.000	Υ	N

Location Id: MW-LF-23D Run Id: 22

Parameter: Boron, total

Method: Double Quantification Rule

Percent ND: 100

07/26/2017 1.000 0.279 0.044				
	1.000	0.000	Υ	N
09/21/2017 1.000 0.272 0.044	1.000	0.000	Υ	N

Location Id: MW-LF-24 Run Id: 29

Parameter: Boron, total

Method: Double Quantification Rule

Percent ND: 100

Sample Date	Modified Result	Analysis Result	Detection Lmit	<u>PQL</u>	<u>RL</u>	Non Detect	<u>Exceedance</u>
07/26/2017	1.000	0.066	0.044	1.000	0.000	Υ	N
09/21/2017	1.000	0.047	0.044	1.000	0.000	Υ	N

Location Id: MW-LF-25 Run Id: 36

Parameter: Boron, total

Method: Double Quantification Rule

Percent ND: 100

07/26/2017 1.000 0.123 0.044 1.000 0.000 Y N 09/21/2017 1.000 0.112 0.044 1.000 0.000 Y N	Sample Date	Modified Result	Analysis Result	Detection Lmit	<u>PQL</u>	<u>RL</u>	Non Detect	<u>Exceedance</u>
09/21/2017 1.000 0.112 0.044 1.000 0.000 Y N	07/26/2017	1.000	0.123	0.044	1.000	0.000	Υ	N
	09/21/2017	1.000	0.112	0.044	1.000	0.000	Υ	N

All Backgound Results Non-Detect

Location Id: MW-LF-26 Run Id: 43

Parameter: Boron, total

Method: Double Quantification Rule

Percent ND: 100

ND Approach: > 50% to <= 100 % Substitute PQL

Sample Date	Modified Result	Analysis Result	Detection Lmit	<u>PQL</u>	<u>RL</u>	Non Detect	<u>Exceedance</u>
07/26/2017	1.000	0.108	0.044	1.000	0.000	Υ	N
09/21/2017	1.000	0.104	0.044	1.000	0.000	Y	N

All Backgound Results Non-Detect

Number Of Locations:	7	Annual Site Wide False Positive Rate (SWFPR): 0.10
Number Of Parameters:	7	Sample Events per Year: 2
Sampling Plan:	Interwell	<u>Verification Sampling:</u> Pass 1 of 2 (one resample)

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Insufficient Background: 0
DOR Tests: 1

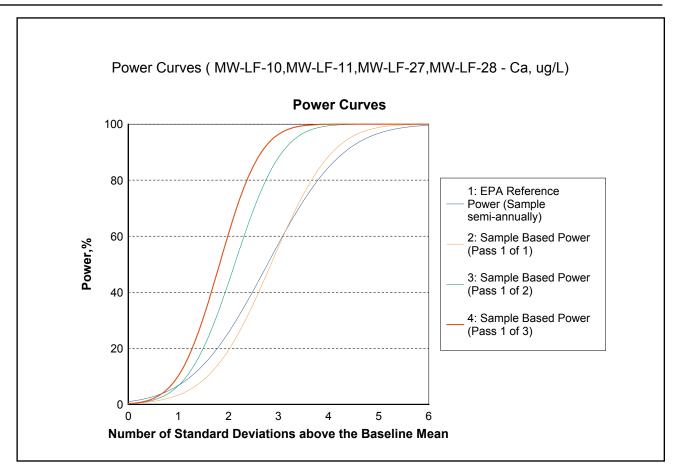
Parameter Name:	Ca, ug/L	Background Date Range:	05/10/2016 to 09/21/2017
Alpha Per Test FPR:	0.00124	Option for LT Pts:	0% to <= 15% Substitute ½ PQL
Total Pts	27	Kappa for Selected Verification Plan:	1.920
<u>LT Pts</u>	0	Mean	39.4467
<u>%LT Pts</u>	0	StdDev	26.7774
Normal/Log Normal	n/y	ln Mean	3.4789
Log Transformed:	y	<u>ln StdDev</u>	0.6199

Parameter Name:	Field pH, S.U.	Background Date Range:	05/10/2016 to 09/21/2017
Alpha Per Test FPR:	0.00124	Option for LT Pts:	0% to <= 15% Substitute $\frac{1}{2}$ PQL
Total Pts	27	Kappa for Selected Verification Plan:	2.100
LT Pts	0	Mean	6.9000
<u>%LT Pts</u>	0	StdDev	0.4540
Normal/Log Normal	n/y	<u>ln Mean</u>	1.9295
<u>Log Transformed:</u>	y	ln StdDev	0.0633

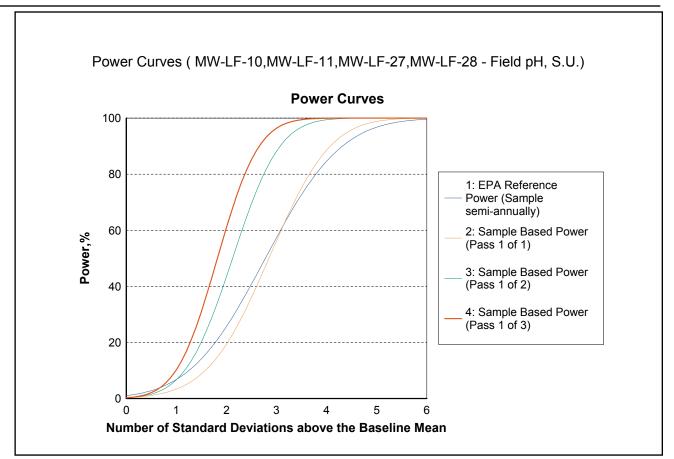
Parameter Name:	Fluoride, total, mg/L	Background Date Range:	05/10/2016 to 09/21/2017
Alpha Per Test FPR:	0.00124	Option for LT Pts:	0% to <= 15% Substitute $\frac{1}{2}$ PQL
Total Pts	27	Kappa for Selected Verification Plan:	1.920
<u>LT Pts</u>	1	Mean	0.3109
<u>%LT Pts</u>	7	StdDev	0.1581
Normal/Log Normal	y/n	<u>In Mean</u>	-1.3425
<u>Log Transformed:</u>	n	<u>In StdDev</u>	0.6753

Number Of Locations:	7	Annual Site Wide False Positive Rate (SWFPR):	0.10
Number Of Parameters:	<u>:</u> 7	Sample Events per Year:	2
Sampling Plan:	Interwell	Verification Sampling:	Pass 1 of 2 (one resample)
Parameter Name:	SO4, mg/L	Background Date Range:	05/10/2016 to 09/21/2017
Alpha Per Test FPR:	0.00124	Option for LT Pts:	0% to <= 15% Substitute $\frac{1}{2}$ PQL
Total Pts	27	Kappa for Selected Verification Plan:	1.920
LT Pts	0	Mean	6.8751
%LT Pts	0	StdDev	8.4772
Normal/Log Normal	n/y	<u>In Mean</u>	1.4193
Log Transformed:	y	<u>ln StdDev</u>	0.9976
Parameter Name:	Total Dissolved Solids, mg/L	Background Date Range:	05/10/2016 to 09/21/2017
Alpha Per Test FPR:	0.00124	Option for LT Pts:	0% to <= 15% Substitute $\frac{1}{2}$ PQL
Total Pts	27	Kappa for Selected Verification Plan:	1.920
LT Pts	0	Mean	179.0000
%LT Pts	0	StdDev	89.8854
Normal/Log Normal	n/y	<u>In Mean</u>	5.0606
Log Transformed:	у	<u>In StdDev</u>	0.5192

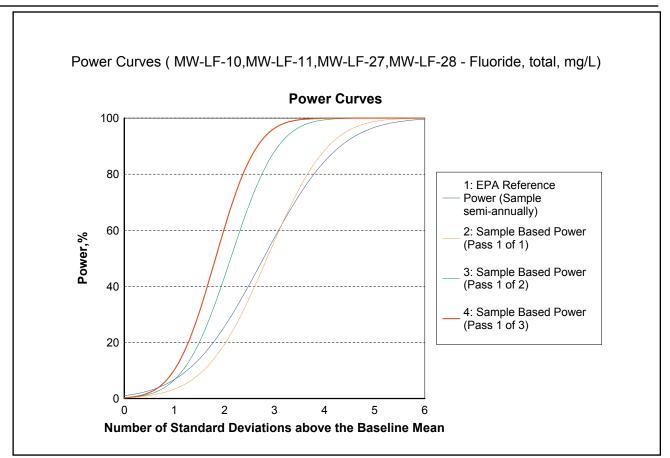
Number Of Locations:	7	Annual Site Wide False Positive Rate (SWFPR): 0.10
Number Of Parameters:	7	Sample Events per Year: 2
Sampling Plan:	Interwell	<u>Verification Sampling:</u> Pass 1 of 2 (one resample)



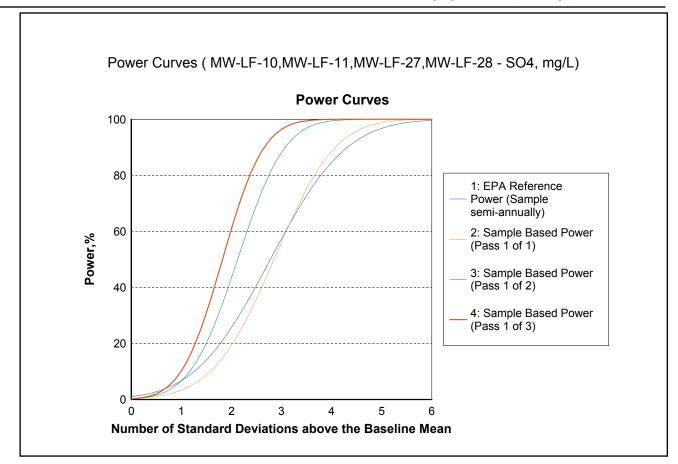
Number Of Locations:	7	Annual Site Wide False Positive Rate (SWFPR): 0.10
Number Of Parameters:	7	Sample Events per Year: 2
Sampling Plan:	Interwell	<u>Verification Sampling:</u> Pass 1 of 2 (one resample)



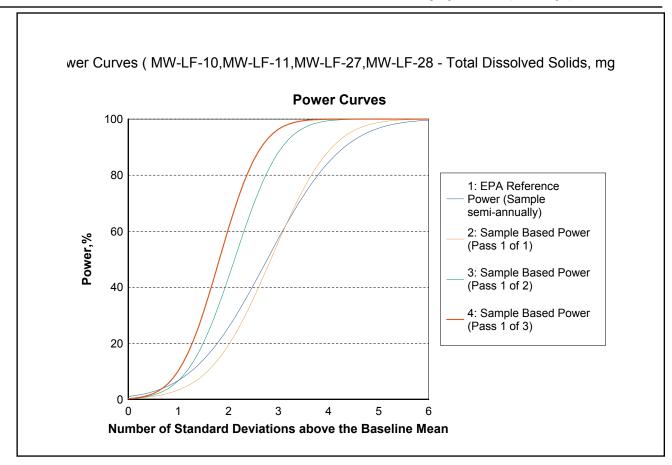
Number Of Locations:	7	Annual Site Wide False Positive Rate (SWFPR): 0.10
Number Of Parameters:	7	Sample Events per Year: 2
Sampling Plan:	Interwell	<u>Verification Sampling:</u> Pass 1 of 2 (one resample)



Number Of Locations:	7	Annual Site Wide False Positive Rate (SWFPR): 0.10
Number Of Parameters:	7	Sample Events per Year: 2
Sampling Plan:	Interwell	<u>Verification Sampling:</u> Pass 1 of 2 (one resample)



Number Of Locations:	7	Annual Site Wide False Positive Rate (SWFPR): 0.10
Number Of Parameters:	7	Sample Events per Year: 2
Sampling Plan:	Interwell	<u>Verification Sampling</u> : Pass 1 of 2 (one resample)



User Supplied Information

Sided: 1

 Background Date Range:
 05/10/2016 to 09/21/2017

 Compliance Date Range:
 07/24/2017 to 09/21/2017

Compliance Locations: MW-LF-20,MW-LF-21,MW-LF-23D,MW-LF-24,MW-LF-25,M

W-LF-26

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Location MW-LF-20

Run Id: 2

<u>Parameter Name:</u> Ca, ug/L

Option for LT Pts (Compliance Data : 0% to <= 15% Substitute PQL

Result >

 Sample Date
 Analysis Result
 Upper Limit
 Upper Limit
 Upper Limit

 7/26/2017
 156.000
 106.597
 y

 9/20/2017
 148.900
 106.597
 y

Run Id: 4

Parameter Name: Field pH, S.U.

 $\underline{Option\ for\ LT\ Pts\ (Compliance\ Data} \qquad \underline{:} \quad 0\%\ to <= 15\%\ Substitute\ PQL$

			Result >		Result <
Sample Date	Analysis Result	Upper Limit	Upper Limit	Lower Limit	Lower Limit
7/26/2017	6.500	7.866	n	6.028	n
9/20/2017	6.500	7.866	n	6.028	n

Run Id: 5

Parameter Name: Fluoride, total, mg/L

Option for LT Pts (Compliance Data : 0% to <= 15% Substitute PQL

Result >

Run Id: 6

Parameter Name: SO4, mg/L

Option for LT Pts (Compliance Data : 0% to <= 15% Substitute PQL

Result >

User Supplied Information

Sided: 1

 Background Date Range:
 05/10/2016 to 09/21/2017

 Compliance Date Range:
 07/24/2017 to 09/21/2017

Compliance Locations: MW-LF-20,MW-LF-21,MW-LF-23D,MW-LF-24,MW-LF-25,M

W-LF-26

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

 Sample Date
 Analysis Result
 Upper Limit
 Upper Limit
 Upper Limit

 7/26/2017
 9.240
 28.067
 n

 9/20/2017
 9.100
 28.067
 n

Run Id: 7

Parameter Name: Total Dissolved Solids, mg/L

Option for LT Pts (Compliance Data : 0% to <= 15% Substitute PQL

Result >

Sample Date	Analysis Result	Upper Limit	Upper Limit
7/26/2017	663.000	427.268	у
9/20/2017	631.000	427.268	y

User Supplied Information

Sided: 1

 Background Date Range:
 05/10/2016 to 09/21/2017

 Compliance Date Range:
 07/24/2017 to 09/21/2017

Compliance Locations: MW-LF-20,MW-LF-21,MW-LF-23D,MW-LF-24,MW-LF-25,M

W-LF-26

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Location MW-LF-21

Run Id: 9

Parameter Name: Ca, ug/L

Option for LT Pts (Compliance Data : 0% to <= 15% Substitute PQL

Result >

 Sample Date
 Analysis Result
 Upper Limit
 Upper Limit
 Upper Limit

 7/26/2017
 127.000
 106.597
 y

 9/20/2017
 125.800
 106.597
 y

Run Id: 11

Parameter Name: Field pH, S.U.

 $\underline{Option\ for\ LT\ Pts\ (Compliance\ Data} \qquad \underline{:} \quad 0\%\ to <= 15\%\ Substitute\ PQL$

			Result >		Result <
Sample Date	Analysis Result	Upper Limit	Upper Limit	Lower Limit	Lower Limit
7/26/2017	6.600	7.866	n	6.028	n
9/20/2017	6.500	7.866	n	6.028	n

Run Id: 12

Parameter Name: Fluoride, total, mg/L

Option for LT Pts (Compliance Data : 0% to <= 15% Substitute PQL

Result >

 Sample Date
 Analysis Result
 Upper Limit
 Upper Limit

 7/26/2017
 0.161
 0.614
 n

 9/20/2017
 0.258
 0.614
 n

Run Id: 13

Parameter Name: SO4, mg/L

Option for LT Pts (Compliance Data : 0% to <= 15% Substitute PQL

Result >

User Supplied Information

Sided: 1

 Background Date Range:
 05/10/2016 to 09/21/2017

 Compliance Date Range:
 07/24/2017 to 09/21/2017

Compliance Locations: MW-LF-20,MW-LF-21,MW-LF-23D,MW-LF-24,MW-LF-25,M

W-LF-26

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

 Sample Date
 Analysis Result
 Upper Limit
 Upper Limit
 Upper Limit

 7/26/2017
 8.370
 28.067
 n

 9/20/2017
 8.700
 28.067
 n

Run Id: 14

Parameter Name: Total Dissolved Solids, mg/L

Option for LT Pts (Compliance Data : 0% to <= 15% Substitute PQL

Result >

Sample Date	Analysis Result	Upper Limit	Upper Limit
7/26/2017	621.000	427.268	у
9/20/2017	594.000	427.268	y

User Supplied Information

Sided: 1

 Background Date Range:
 05/10/2016 to 09/21/2017

 Compliance Date Range:
 07/24/2017 to 09/21/2017

Compliance Locations: MW-LF-20,MW-LF-21,MW-LF-23D,MW-LF-24,MW-LF-25,M

W-LF-26

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Location MW-LF-22D

Run Id: 16

Parameter Name: Ca, ug/L

Option for LT Pts (Compliance Data : 0% to <= 15% Substitute PQL

Result >

 Sample Date
 Analysis Result
 Upper Limit
 Upper Limit
 Upper Limit

 7/26/2017
 89.000
 106.597
 n

 9/21/2017
 86.790
 106.597
 n

Run Id: 18

Parameter Name: Field pH, S.U.

Option for LT Pts (Compliance Data : 0% to <= 15% Substitute PQL

Result > Result < Sample Date Upper Limit Lower Limit Analysis Result Upper Limit Lower Limit 7/26/2017 6.900 7.866 n 6.028 n 9/20/2017 6.700 7.866 n 6.028 n

Run Id: 19

Parameter Name: Fluoride, total, mg/L

Option for LT Pts (Compliance Data : 0% to <= 15% Substitute PQL

Result >

Sample Date Analysis Result Upper Limit Upper Limit 7/26/2017 0.250 0.614 n

Run Id: 20

Parameter Name: SO4, mg/L

Option for LT Pts (Compliance Data : 0% to <= 15% Substitute PQL

Result >

Sample Date Analysis Result Upper Limit Upper Limit

User Supplied Information

Sided: 1

 Background Date Range:
 05/10/2016 to 09/21/2017

 Compliance Date Range:
 07/24/2017 to 09/21/2017

Compliance Locations: MW-LF-20,MW-LF-21,MW-LF-23D,MW-LF-24,MW-LF-25,M

W-LF-26

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

7/26/2017 72.670 28.067 y 9/21/2017 65.300 28.067 y

Run Id: 21

Parameter Name: Total Dissolved Solids, mg/L

Option for LT Pts (Compliance Data : 0% to <= 15% Substitute PQL

Result >

Sample Date	Analysis Result	Upper Limit	Upper Limit
7/26/2017	592.000	427.268	y
9/21/2017	581.000	427.268	y

User Supplied Information

Sided: 1

 Background Date Range:
 05/10/2016 to 09/21/2017

 Compliance Date Range:
 07/24/2017 to 09/21/2017

Compliance Locations: MW-LF-20,MW-LF-21,MW-LF-23D,MW-LF-24,MW-LF-25,M

W-LF-26

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Location MW-LF-23D

Run Id: 23

<u>Parameter Name:</u> Ca, ug/L

Option for LT Pts (Compliance Data : 0% to <= 15% Substitute PQL

Result >

 Sample Date
 Analysis Result
 Upper Limit
 Upper Limit

 7/26/2017
 75.000
 106.597
 n

 9/21/2017
 74.060
 106.597
 n

Run Id: 25

Parameter Name: Field pH, S.U.

Option for LT Pts (Compliance Data : 0% to <= 15% Substitute PQL

Result > Result < Sample Date Upper Limit Lower Limit Analysis Result Upper Limit Lower Limit 7/26/2017 6.900 7.866 n 6.028 n 9/20/2017 6.900 7.866 n 6.028 n

Run Id: 26

Parameter Name: Fluoride, total, mg/L

Option for LT Pts (Compliance Data : 0% to <= 15% Substitute PQL

Result >

Run Id: 27

Parameter Name: SO4, mg/L

Option for LT Pts (Compliance Data : 0% to <= 15% Substitute PQL

Result >

Sample Date Analysis Result Upper Limit Upper Limit

User Supplied Information

Sided: 1

 Background Date Range:
 05/10/2016 to 09/21/2017

 Compliance Date Range:
 07/24/2017 to 09/21/2017

Compliance Locations: MW-LF-20,MW-LF-21,MW-LF-23D,MW-LF-24,MW-LF-25,M

W-LF-26

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

7/26/2017 30.750 28.067 y 9/21/2017 28.600 28.067 y

Run Id: 28

Parameter Name: Total Dissolved Solids, mg/L

Option for LT Pts (Compliance Data : 0% to <= 15% Substitute PQL

Result >

Sample Date	Analysis Result	Upper Limit	Upper Limit
7/26/2017	512.000	427.268	y
9/21/2017	495.000	427.268	y

User Supplied Information

Sided: 1

 Background Date Range:
 05/10/2016 to 09/21/2017

 Compliance Date Range:
 07/24/2017 to 09/21/2017

Compliance Locations: MW-LF-20,MW-LF-21,MW-LF-23D,MW-LF-24,MW-LF-25,M

W-LF-26

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Location MW-LF-24

Run Id: 30

Parameter Name: Ca, ug/L

Option for LT Pts (Compliance Data : 0% to <= 15% Substitute PQL

Result >

 Sample Date
 Analysis Result
 Upper Limit
 Upper Limit
 Upper Limit

 7/26/2017
 136.000
 106.597
 y

 9/21/2017
 123.000
 106.597
 y

Run Id: 32

Parameter Name: Field pH, S.U.

Option for LT Pts (Compliance Data : 0% to <= 15% Substitute PQL

Result > Result < Sample Date Upper Limit Lower Limit Analysis Result Upper Limit Lower Limit 7/26/2017 6.400 7.866 n 6.028 n 9/20/2017 6.300 7.866 n 6.028 n

Run Id: 33

Parameter Name: Fluoride, total, mg/L

Option for LT Pts (Compliance Data : 0% to <= 15% Substitute PQL

Result >

Sample DateAnalysis ResultUpper LimitUpper LimitUpper Limit7/26/20170.3620.614n

Run Id: 34

Parameter Name: SO4, mg/L

Option for LT Pts (Compliance Data : 0% to <= 15% Substitute PQL

Result >

Sample Date Analysis Result Upper Limit Upper Limit

User Supplied Information

Sided: 1

 Background Date Range:
 05/10/2016 to 09/21/2017

 Compliance Date Range:
 07/24/2017 to 09/21/2017

Compliance Locations: MW-LF-20,MW-LF-21,MW-LF-23D,MW-LF-24,MW-LF-25,M

W-LF-26

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

7/26/2017 31.990 28.067 y 9/21/2017 34.800 28.067 y

Run Id: 35

Parameter Name: Total Dissolved Solids, mg/L

Option for LT Pts (Compliance Data : 0% to <= 15% Substitute PQL

Result >

Sample Date	Analysis Result	Upper Limit	Upper Limit
7/26/2017	450.000	427.268	y
9/21/2017	493.000	427.268	y

User Supplied Information

Sided: 1

 Background Date Range:
 05/10/2016 to 09/21/2017

 Compliance Date Range:
 07/24/2017 to 09/21/2017

Compliance Locations: MW-LF-20,MW-LF-21,MW-LF-23D,MW-LF-24,MW-LF-25,M

W-LF-26

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Location MW-LF-25

Run Id: 37

Parameter Name: Ca, ug/L

Option for LT Pts (Compliance Data : 0% to <= 15% Substitute PQL

Result >

 Sample Date
 Analysis Result
 Upper Limit
 Upper Limit

 7/26/2017
 113.000
 106.597
 y

 9/21/2017
 117.200
 106.597
 y

Run Id: 39

Parameter Name: Field pH, S.U.

Option for LT Pts (Compliance Data : 0% to <= 15% Substitute PQL

Result > Result < Sample Date Upper Limit Lower Limit Analysis Result Upper Limit Lower Limit 7/26/2017 6.700 7.866 n 6.028 n 9/20/2017 6.700 7.866 n 6.028 n

Run Id: 40

Parameter Name: Fluoride, total, mg/L

Option for LT Pts (Compliance Data : 0% to <= 15% Substitute PQL

Result >

 Sample Date
 Analysis Result
 Upper Limit
 Upper Limit
 Upper Limit

 7/26/2017
 0.530
 0.614
 n

Run Id: 41

Parameter Name: SO4, mg/L

Option for LT Pts (Compliance Data : 0% to <= 15% Substitute PQL

Result >

Sample Date Analysis Result Upper Limit Upper Limit

User Supplied Information

Sided: 1

 Background Date Range:
 05/10/2016 to 09/21/2017

 Compliance Date Range:
 07/24/2017 to 09/21/2017

Compliance Locations: MW-LF-20,MW-LF-21,MW-LF-23D,MW-LF-24,MW-LF-25,M

W-LF-26

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

7/26/2017 49.187 28.067 y 9/21/2017 51.800 28.067 y

Run Id: 42

Parameter Name: Total Dissolved Solids, mg/L

Option for LT Pts (Compliance Data : 0% to <= 15% Substitute PQL

Result >

Sample Date	Analysis Result	Upper Limit	Upper Limit
7/26/2017	566.000	427.268	y
9/21/2017	572.000	427.268	y

User Supplied Information

Sided: 1

 Background Date Range:
 05/10/2016 to 09/21/2017

 Compliance Date Range:
 07/24/2017 to 09/21/2017

Compliance Locations: MW-LF-20,MW-LF-21,MW-LF-23D,MW-LF-24,MW-LF-25,M

W-LF-26

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Location MW-LF-26

Run Id: 44

Parameter Name: Ca, ug/L

Option for LT Pts (Compliance Data : 0% to <= 15% Substitute PQL

Result >

 Sample Date
 Analysis Result
 Upper Limit
 Upper Limit

 7/26/2017
 168.000
 106.597
 y

 9/21/2017
 174.800
 106.597
 y

Run Id: 46

Parameter Name: Field pH, S.U.

Option for LT Pts (Compliance Data : 0% to <= 15% Substitute PQL

Result > Result < Sample Date Upper Limit Lower Limit Analysis Result Upper Limit Lower Limit 7/26/2017 6.000 7.866 n 6.028 y 9/20/2017 6.000 7.866 n 6.028 y

Run Id: 47

Parameter Name: Fluoride, total, mg/L

Option for LT Pts (Compliance Data : 0% to <= 15% Substitute PQL

Result >

 Sample Date
 Analysis Result
 Upper Limit
 Upper Limit
 Upper Limit

 7/26/2017
 0.193
 0.614
 n

Run Id: 48

Parameter Name: SO4, mg/L

Option for LT Pts (Compliance Data : 0% to <= 15% Substitute PQL

Result >

Sample Date Analysis Result Upper Limit Upper Limit

User Supplied Information

Sided: 1

 Background Date Range:
 05/10/2016 to 09/21/2017

 Compliance Date Range:
 07/24/2017 to 09/21/2017

Compliance Locations: MW-LF-20,MW-LF-21,MW-LF-23D,MW-LF-24,MW-LF-25,M

W-LF-26

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

7/26/2017 76.860 28.067 y 9/21/2017 73.300 28.067 y

Run Id: 49

Parameter Name: Total Dissolved Solids, mg/L

Option for LT Pts (Compliance Data : 0% to <= 15% Substitute PQL

Result >

Sample Date	Analysis Result	Upper Limit	Upper Limit
7/26/2017	875.000	427.268	y
9/21/2017	2,802.000	427.268	y

User Supplied Information

Sided: 1

 Background Date Range:
 05/10/2016 to 09/21/2017

 Compliance Date Range:
 07/24/2017 to 09/21/2017

Compliance Locations: MW-LF-20,MW-LF-21,MW-LF-23D,MW-LF-24,MW-LF-25,M

W-LF-26

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Williams (Hwy 52) Non-Parametric Prediction Interval on Background

User Supplied Information

Background

Background

 Background Date Range:
 05/10/2016
 to 09/21/2017

 Compliance Date Range:
 07/24/2017
 to 9/21/2017

No. of Verification Resamples:

Run Id: 3

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

PU (Upper) Value:

PQL

One-Sided Upper Confidence Level, %

98.34

 Sample
 Sample
 Greater than

 Location
 Date
 Result
 PU (Upper)

 MW-LF-20
 07/25/2017
 9.70
 n

 MW-LF-20
 09/20/2017
 9.80
 n

Run Id: 10

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code
00940Parameter Name
ChloridesUnits
mg/LSample Count
27Option for LT Pts.
0% to <= 15% Substitute
POL

One-Sided Upper PU (Upper) Value:

Confidence Level, %

98.34 19.70

 Sample
 Sample
 Greater than

 Location
 Date
 Result
 PU (Upper)

 MW-LF-21
 07/25/2017
 10.10
 n

 MW-LF-21
 09/20/2017
 10.36
 n

Williams (Hwy 52) Non-Parametric Prediction Interval on Background

User Supplied Information

 Background Date Range:
 05/10/2016
 to 09/21/2017

 Compliance Date Range:
 07/24/2017
 to 9/21/2017

No. of Verification Resamples:

Run Id: 17

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Background

Background

PQL

One-Sided Upper PU (Upper) Value:

Confidence Level, %

98.34 19.70

 Location
 Date
 Result
 PU (Upper)

 MW-LF-22D
 07/25/2017
 9.97
 n

 MW-LF-22D
 09/21/2017
 10.00
 n

Run Id: 24

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code
00940Parameter Name
ChloridesUnits
mg/LSample Count
27Option for LT Pts.
0% to <= 15% Substitute
POL

One-Sided Upper PU (Upper) Value:

Confidence Level, %

98.34 19.70

 Sample
 Sample
 Greater than

 Location
 Date
 Result
 PU (Upper)

 MW-LF-23D
 07/26/2017
 15.60
 n

 MW-LF-23D
 09/21/2017
 14.50
 n

PQL

Background

Williams (Hwy 52) Non-Parametric Prediction Interval on Background

User Supplied Information

 Background Date Range:
 05/10/2016
 to 09/21/2017

 Compliance Date Range:
 07/24/2017
 to 9/21/2017

No. of Verification Resamples:

Run Id: 31

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

One-Sided Upper PU (Upper) Value:

Confidence Level, %

98.34 19.70

 Location
 Date
 Result
 PU (Upper)

 MW-LF-24
 07/26/2017
 21.58
 y

 MW-LF-24
 09/21/2017
 22.40
 y

Run Id: 38

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Parameter Code
00940Parameter Name
ChloridesUnits
mg/LSample Count
27Option for LT Pts.
0% to <= 15% Substitute
POL

One-Sided Upper PU (Upper) Value:

Confidence Level, %

98.34 19.70

 Sample
 Sample
 Greater than

 Location
 Date
 Result
 PU (Upper)

 MW-LF-25
 07/26/2017
 23.41
 y

 MW-LF-25
 09/21/2017
 21.80
 y

Williams (Hwy 52) Non-Parametric Prediction Interval on Background

User Supplied Information

 Background Date Range:
 05/10/2016
 to 09/21/2017

 Compliance Date Range:
 07/24/2017
 to 9/21/2017

No. of Verification Resamples:

Run Id: 45

Background Locations: MW-LF-10,MW-LF-11,MW-LF-27,MW-LF-28

Background

PQL

One-Sided Upper PU (Upper) Value:

Confidence Level, %

98.34 19.70

 Location
 Date
 Result
 PU (Upper)

 MW-LF-26
 07/26/2017
 155.10
 y

 MW-LF-26
 09/21/2017
 161.00
 y

Location ID: MW-LF-20 Confidence Level: 0.95 Date Range: 05/11/2016 to 09/20/2017	Parameter Code: Parameter: Units:	01022 Boron, total mg/L
Option for LT Points: > 50% to <= 100 % Substitute PQL	Percent of ND:	100
Theil-Sen Non-parametric estimate of the slope (One-Sided Test)		
Median Slope:	0.000	mg/L per year
Lower Confidence Limit of Slope, M1:	0.000	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.000	mg/L per year
Non-parametric Mann-Kendall Test for Trend		
S Statistic:	0.000	
Z test:	1.645	
At the 1.0 % Confidence Level (One-Sided Test):	None	

Location ID: MW-LF-20 Confidence Level: 0.95 Date Range: 05/11/2016 to 09/20/2017 Option for LT Points: 0% to <= 15% Substitute PQL	Parameter Code: Parameter: Units: Percent of ND:	00916 Ca ug/L 0
Theil-Sen Non-parametric estimate of the slope (One-Sided Test)		
Median Slope:	-1.818	ug/L per year
Lower Confidence Limit of Slope, M1:	-19.367	ug/L per year
Upper Confidence Limit of Slope, M2+1:	20.893	ug/L per year
Non-parametric Mann-Kendall Test for Trend		
S Statistic:	-0.104	
Z test:	1.645	
At the 1.0 % Confidence Level (One-Sided Test):	None	

Location ID: MW-LF-20 Confidence Level: 0.95 Date Range: 05/11/2016 to 09/20/2017	Parameter Code: Parameter: Units:	00940 Chlorides mg/L
Option for LT Points: 0% to <= 15% Substitute PQL	Percent of ND:	0
Theil-Sen Non-parametric estimate of the slope (One-Sided Test)		
Median Slope:	1.02	mg/L per year
Lower Confidence Limit of Slope, M1:	0.07	mg/L per year
Upper Confidence Limit of Slope, M2+1:	2.30	mg/L per year
Non-parametric Mann-Kendall Test for Trend		
S Statistic:	1.77	
Z test:	1.64	
At the 1.0 % Confidence Level (One-Sided Test):	Upward	

Location ID: MW-LF-20 Confidence Level: 0.95 Date Range: 05/11/2016 to 09/20/2017	Parameter Code: Parameter: Units:	00400 Field pH S.U.
Option for LT Points: 0% to <= 15% Substitute PQL	Percent of ND:	0
Theil-Sen Non-parametric estimate of the slope (One-Sided Test)		
Median Slope:	-0.059	S.U. per year
Lower Confidence Limit of Slope, M1:	-0.210	S.U. per year
Upper Confidence Limit of Slope, M2+1:	0.257	S.U. per year
Non-parametric Mann-Kendall Test for Trend		
S Statistic:	-0.661	
Z test:	1.645	
At the 1.0 % Confidence Level (One-Sided Test):	None	

Location ID: MW-LF-20 Confidence Level: 0.95 Date Range: 05/11/2016 to 09/20/2017 Option for LT Points: 0% to <= 15% Substitute PQL	Parameter Code: Parameter: Units: Percent of ND:	00951 Fluoride, total mg/L 0
Theil-Sen Non-parametric estimate of the slope (One-Sided Test)		
Median Slope:	0.056	mg/L per year
Lower Confidence Limit of Slope, M1:	-0.020	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.201	mg/L per year
Non-parametric Mann-Kendall Test for Trend		
S Statistic:	1.355	
Z test:	1.645	
At the 1.0 % Confidence Level (One-Sided Test):	None	

Location ID: MW-LF-20 Confidence Level: 0.95 Date Range: 05/11/2016 to 09/20/2017 Option for LT Points: 0% to <= 15% Substitute PQL	Parameter Code: Parameter: Units: Percent of ND:	00945 SO4 mg/L 0
Theil-Sen Non-parametric estimate of the slope (One-Sided Test)		
Median Slope:	-9.959	mg/L per year
Lower Confidence Limit of Slope, M1:	-20.457	mg/L per year
Upper Confidence Limit of Slope, M2+1:	-6.452	mg/L per year
Non-parametric Mann-Kendall Test for Trend		
S Statistic:	-3.649	
Z test:	1.645	
At the 1.0 % Confidence Level (One-Sided Test):	Downward	

Post Hoc Trend Analysis Run Id: 7

00515 Location ID: MW-LF-20 **Parameter Code:** Parameter: **Total Dissolved Solids Confidence Level: Units:** mg/L Date Range: 05/11/2016 to 09/20/2017 0% to <= 15% Substitute PQL **Option for LT Points:** Percent of ND: 0 Theil-Sen Non-parametric estimate of the slope (One-Sided Test) Median Slope: -5.598 mg/L per year Lower Confidence Limit of Slope, M1: -36.039 mg/L per year Upper Confidence Limit of Slope, M2+1: 104.012 mg/L per year Non-parametric Mann-Kendall Test for Trend S Statistic: -0.104

1.645

None

Z test:

At the 1.0 % Confidence Level (One-Sided Test):

Location ID: MW-LF-21 Confidence Level: 0.95 Date Range: 05/11/2016 to 09/20/2017	Parameter Code: Parameter: Units:	01022 Boron, total mg/L
Option for LT Points: > 50% to <= 100 % Substitute PQL	Percent of ND:	100
Theil-Sen Non-parametric estimate of the slope (One-Sided Test)		
Median Slope:	0.000	mg/L per year
Lower Confidence Limit of Slope, M1:	0.000	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.000	mg/L per year
Non-parametric Mann-Kendall Test for Trend		
S Statistic:	0.000	
Z test:	1.645	
At the 1.0 % Confidence Level (One-Sided Test):	None	

Location ID: MW-LF-21 Confidence Level: 0.95 Date Range: 05/11/2016 to 09/20/2017 Option for LT Points: 0% to <= 15% Substitute PQL	Parameter Code: Parameter: Units: Percent of ND:	00916 Ca ug/L
		0
Theil-Sen Non-parametric estimate of the slope (One-Sided Test)		
Median Slope:	4.628	ug/L per year
Lower Confidence Limit of Slope, M1:	-8.579	ug/L per year
Upper Confidence Limit of Slope, M2+1:	30.546	ug/L per year
Non-parametric Mann-Kendall Test for Trend		
S Statistic:	0.419	
Z test:	1.645	
At the 1.0 % Confidence Level (One-Sided Test):	None	

Location ID: MW-LF-21 Confidence Level: 0.95 Date Range: 05/11/2016 to 09/20/2017 Option for LT Points: 0% to <= 15% Substitute PQL	Parameter Code: Parameter: Units: Percent of ND:	00940 Chlorides mg/L
		0
Theil-Sen Non-parametric estimate of the slope (One-Sided Test)		
Median Slope:	1.23	mg/L per year
Lower Confidence Limit of Slope, M1:	-0.27	mg/L per year
Upper Confidence Limit of Slope, M2+1:	2.79	mg/L per year
Non-parametric Mann-Kendall Test for Trend		
S Statistic:	1.36	
Z test:	1.64	
At the 1.0 % Confidence Level (One-Sided Test):	None	

Location ID: MW-LF-21 Confidence Level: 0.95 Date Range: 05/11/2016 to 09/20/2017	Parameter Code: Parameter: Units:	00400 Field pH S.U.
Option for LT Points: 0% to <= 15% Substitute PQL	Percent of ND:	0
Theil-Sen Non-parametric estimate of the slope (One-Sided Test)		
Median Slope:	-0.194	S.U. per year
Lower Confidence Limit of Slope, M1:	-0.398	S.U. per year
Upper Confidence Limit of Slope, M2+1:	0.054	S.U. per year
Non-parametric Mann-Kendall Test for Trend		
S Statistic:	-1.076	
Z test:	1.645	
At the 1.0 % Confidence Level (One-Sided Test):	None	

Location ID: MW-LF-21 Confidence Level: 0.95 Date Range: 05/11/2016 to 09/20/2017	Parameter Code: Parameter: Units:	00951 Fluoride, total mg/L
Option for LT Points: 0% to <= 15% Substitute PQL	Percent of ND:	0
Theil-Sen Non-parametric estimate of the slope (One-Sided Test)		
Median Slope:	0.037	mg/L per year
Lower Confidence Limit of Slope, M1:	-0.042	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.152	mg/L per year
Non-parametric Mann-Kendall Test for Trend		
S Statistic:	1.147	
Z test:	1.645	
At the 1.0 % Confidence Level (One-Sided Test):	None	

Location ID: MW-LF-21 Confidence Level: 0.95 Date Range: 05/11/2016 to 09/20/2017 Option for LT Points: 0% to <= 15% Substitute PQL	Parameter Code: Parameter: Units: Percent of ND:	00945 SO4 mg/L	
		0	
Theil-Sen Non-parametric estimate of the slope (One-Sided Test)			
Median Slope:	-7.524		mg/L per year
Lower Confidence Limit of Slope, M1:	-15.873		mg/L per year
Upper Confidence Limit of Slope, M2+1:	-2.762		mg/L per year
Non-parametric Mann-Kendall Test for Trend			
S Statistic:	-3.023		
Z test:	1.645		
At the 1.0 % Confidence Level (One-Sided Test):	Downward		

Post Hoc Trend Analysis Run Id: 14

00515 Location ID: MW-LF-21 **Parameter Code:** Parameter: **Total Dissolved Solids Confidence Level: Units:** mg/L Date Range: 05/11/2016 to 09/20/2017 0% to <= 15% Substitute PQL **Option for LT Points:** Percent of ND: 0 Theil-Sen Non-parametric estimate of the slope (One-Sided Test) Median Slope: 49.535 mg/L per year Lower Confidence Limit of Slope, M1: -60.332 mg/L per year Upper Confidence Limit of Slope, M2+1: 122.909 mg/L per year Non-parametric Mann-Kendall Test for Trend S Statistic: 0.730 Z test: 1.645

None

At the 1.0 % Confidence Level (One-Sided Test):

Location ID: MW-LF-22D Confidence Level: 0.95 Date Range: 05/11/2016 to 09/21/2017	Parameter Code: Parameter: Units:	01022 Boron, total mg/L
Option for LT Points: >50% to <= 100 % Substitute PQL	Percent of ND:	100
Theil-Sen Non-parametric estimate of the slope (One-Sided Test)		
Median Slope:	0.000	mg/L per year
Lower Confidence Limit of Slope, M1:	0.000	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.000	mg/L per year
Non-parametric Mann-Kendall Test for Trend		
S Statistic:	0.000	
Z test:	1.645	
At the 1.0 % Confidence Level (One-Sided Test):	None	

Location ID: MW-LF-22D Confidence Level: 0.95 Date Range: 05/11/2016 to 09/21/2017 Outline for LT Printer 09/2 to 37 159/ Substitute POI	Parameter Code: Parameter: Units:	00916 Ca ug/L
Option for LT Points: 0% to <= 15% Substitute PQL	Percent of ND:	0
Theil-Sen Non-parametric estimate of the slope (One-Sided Test)		
Median Slope:	-4.742	ug/L per year
Lower Confidence Limit of Slope, M1:	-14.103	ug/L per year
Upper Confidence Limit of Slope, M2+1:	3.073	ug/L per year
Non-parametric Mann-Kendall Test for Trend		
S Statistic:	-0.313	
Z test:	1.645	
At the 1.0 % Confidence Level (One-Sided Test):	None	

Location ID: MW-LF-22D Confidence Level: 0.95 Date Range: 05/11/2016 to 09/21/2017 Option for LT Points: 0% to <= 15% Substitute PQL	Parameter Code: Parameter: Units: Percent of ND:	00940 Chlorides mg/L
		0
Theil-Sen Non-parametric estimate of the slope (One-Sided Test)		
Median Slope:	-0.24	mg/L per year
Lower Confidence Limit of Slope, M1:	-1.00	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.10	mg/L per year
Non-parametric Mann-Kendall Test for Trend		
S Statistic:	-1.05	
Z test:	1.64	
At the 1.0 % Confidence Level (One-Sided Test):	None	

Location ID: MW-LF-22D Confidence Level: 0.95 Date Range: 05/11/2016 to 09/20/2017	Parameter Code: Parameter: Units:	00400 Field pH S.U.
Option for LT Points: 0% to <= 15% Substitute PQL	Percent of ND:	0
Theil-Sen Non-parametric estimate of the slope (One-Sided Test)		
Median Slope:	-0.211	S.U. per year
Lower Confidence Limit of Slope, M1:	-0.528	S.U. per year
Upper Confidence Limit of Slope, M2+1:	0.000	S.U. per year
Non-parametric Mann-Kendall Test for Trend		
S Statistic:	-1.507	
Z test:	1.645	
At the 1.0 % Confidence Level (One-Sided Test):	None	

Location ID: MW-LF-22D Confidence Level: 0.95 Date Range: 05/11/2016 to 07/25/2017	Parameter Code: Parameter: Units:	00951 Fluoride, total mg/L
Option for LT Points: 0% to <= 15% Substitute PQL	Percent of ND:	0
Theil-Sen Non-parametric estimate of the slope (One-Sided Test)		
Median Slope:	-0.014	mg/L per year
Lower Confidence Limit of Slope, M1:	-0.106	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.111	mg/L per year
Non-parametric Mann-Kendall Test for Trend		
S Statistic:	-0.124	
Z test:	1.645	
At the 1.0 % Confidence Level (One-Sided Test):	None	

Location ID: MW-LF-22D Confidence Level: 0.95 Date Range: 05/11/2016 to 09/21/2017	Parameter Code: Parameter: Units:	00945 SO4 mg/L	
Option for LT Points: 0% to <= 15% Substitute PQL	Percent of ND:	0	
Theil-Sen Non-parametric estimate of the slope (One-Sided Test)			
Median Slope:	-40.339	mg/L per year	
Lower Confidence Limit of Slope, M1:	-73.611	mg/L per year	
Upper Confidence Limit of Slope, M2+1:	-3.934	mg/L per year	
Non-parametric Mann-Kendall Test for Trend			
S Statistic:	-1.981		
Z test:	1.645		
At the 1.0 % Confidence Level (One-Sided Test):	Downward		

Post Hoc Trend Analysis Run Id: 21

00515 Location ID: MW-LF-22D **Parameter Code:** Parameter: **Total Dissolved Solids Confidence Level: Units:** mg/L Date Range: 05/11/2016 to 09/21/2017 0% to <= 15% Substitute PQL **Option for LT Points:** Percent of ND: 0 Theil-Sen Non-parametric estimate of the slope (One-Sided Test) Median Slope: 47.980 mg/L per year Lower Confidence Limit of Slope, M1: -69.215 mg/L per year Upper Confidence Limit of Slope, M2+1: 94.938 mg/L per year Non-parametric Mann-Kendall Test for Trend S Statistic: 0.521

1.645

None

Z test:

At the 1.0 % Confidence Level (One-Sided Test):

Location ID: MW-LF-23D Confidence Level: 0.95 Date Range: 05/11/2016 to 09/21/2017	Parameter Code: Parameter: Units:	01022 Boron, total mg/L
Option for LT Points: > 50% to <= 100 % Substitute PQL	Percent of ND:	100
Theil-Sen Non-parametric estimate of the slope (One-Sided Test)		
Median Slope:	0.000	mg/L per year
Lower Confidence Limit of Slope, M1:	0.000	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.000	mg/L per year
Non-parametric Mann-Kendall Test for Trend		
S Statistic:	0.000	
Z test:	1.645	
At the 1.0 % Confidence Level (One-Sided Test):	None	

Location ID: MW-LF-23D Confidence Level: 0.95 Date Range: 05/11/2016 to 09/21/2017 Option for LT Points: 0% to <= 15% Substitute PQL	Parameter Code: Parameter: Units:	00916 Ca ug/L
	Percent of ND:	0
Theil-Sen Non-parametric estimate of the slope (One-Sided Test)		
Median Slope:	8.381	ug/L per year
Lower Confidence Limit of Slope, M1:	5.266	ug/L per year
Upper Confidence Limit of Slope, M2+1:	18.143	ug/L per year
Non-parametric Mann-Kendall Test for Trend		
S Statistic:	2.815	
Z test:	1.645	
At the 1.0 % Confidence Level (One-Sided Test):	Upward	

Location ID: MW-LF-23D Confidence Level: 0.95 Date Range: 05/11/2016 to 09/21/2017	Parameter Code: Parameter: Units:	00940 Chlorides mg/L
Option for LT Points: 0% to <= 15% Substitute PQL	Percent of ND:	0
Theil-Sen Non-parametric estimate of the slope (One-Sided Test)		
Median Slope:	1.33	mg/L per year
Lower Confidence Limit of Slope, M1:	0.00	mg/L per year
Upper Confidence Limit of Slope, M2+1:	2.16	mg/L per year
Non-parametric Mann-Kendall Test for Trend		
S Statistic:	1.49	
Z test:	1.64	
At the 1.0 % Confidence Level (One-Sided Test):	None	

Location ID: MW-LF-23D Confidence Level: 0.95 Date Range: 05/11/2016 to 09/20/2017 Option for LT Points: 0% to <= 15% Substitute PQL	Parameter Code: Parameter: Units:	00400 Field pH S.U.
	Percent of ND:	0
Theil-Sen Non-parametric estimate of the slope (One-Sided Test)		
Median Slope:	-0.194	S.U. per year
Lower Confidence Limit of Slope, M1:	-0.325	S.U. per year
Upper Confidence Limit of Slope, M2+1:	0.000	S.U. per year
Non-parametric Mann-Kendall Test for Trend		
S Statistic:	-1.885	
Z test:	1.645	
At the 1.0 % Confidence Level (One-Sided Test):	Downward	

Location ID: MW-LF-23D Confidence Level: 0.95 Date Range: 05/11/2016 to 07/26/2017	Parameter Code: Parameter: Units:	00951 Fluoride, total mg/L
Option for LT Points: 0% to <= 15% Substitute PQL	Percent of ND:	0
Theil-Sen Non-parametric estimate of the slope (One-Sided Test)		
Median Slope:	-0.010	mg/L per year
Lower Confidence Limit of Slope, M1:	-0.117	mg/L per year
Upper Confidence Limit of Slope, M2+1:	0.088	mg/L per year
Non-parametric Mann-Kendall Test for Trend		
S Statistic:	-0.124	
Z test:	1.645	
At the 1.0 % Confidence Level (One-Sided Test):	None	

Location ID: MW-LF-23D Confidence Level: 0.95 Date Range: 05/11/2016 to 09/21/2017 Option for LT Points: 0% to <= 15% Substitute PQL	Parameter Code: Parameter: Units: Percent of ND:	00945 SO4 mg/L 0	
Theil-Sen Non-parametric estimate of the slope (One-Sided Test)			
Median Slope:	-3.866	n	ng/L per year
Lower Confidence Limit of Slope, M1:	-12.884	n	ng/L per year
Upper Confidence Limit of Slope, M2+1:	0.314	n	ng/L per year
Non-parametric Mann-Kendall Test for Trend			
S Statistic:	-1.355		
Z test:	1.645		
At the 1.0 % Confidence Level (One-Sided Test):	None		

Post Hoc Trend Analysis Run Id: 28

00515 Location ID: MW-LF-23D **Parameter Code:** Parameter: **Total Dissolved Solids Confidence Level: Units:** mg/L Date Range: 05/11/2016 to 09/21/2017 0% to <= 15% Substitute PQL **Option for LT Points:** Percent of ND: 0 Theil-Sen Non-parametric estimate of the slope (One-Sided Test) Median Slope: mg/L per year 56.267 Lower Confidence Limit of Slope, M1: 24.888 mg/L per year Upper Confidence Limit of Slope, M2+1: 202.578 mg/L per year Non-parametric Mann-Kendall Test for Trend S Statistic: 2.606

Location ID: MW-LF-24 Confidence Level: 0.95 Date Range: 05/11/2016 to 09/21/2017	Parameter Code: Parameter: Units:	01022 Boron, total mg/L	
Option for LT Points: > 50% to <= 100 % Substitute PQL	Percent of ND:	100	
Theil-Sen Non-parametric estimate of the slope (One-Sided Test)			
Median Slope:	0.000	mg/L per year	
Lower Confidence Limit of Slope, M1:	0.000	mg/L per year	
Upper Confidence Limit of Slope, M2+1:	0.000	mg/L per year	
Non-parametric Mann-Kendall Test for Trend			
S Statistic:	0.000		
Z test:	1.645		
At the 1.0 % Confidence Level (One-Sided Test):	None		

Location ID: MW-LF-24 Confidence Level: 0.95 Date Range: 05/11/2016 to 09/21/2017	Parameter Code: Parameter: Units:	00916 Ca ug/L	
Option for LT Points: 0% to <= 15% Substitute PQL	Percent of ND:	0	
Theil-Sen Non-parametric estimate of the slope (One-Sided Test)			
Median Slope:	2.854	ug/L	per year
Lower Confidence Limit of Slope, M1:	-21.594	ug/L	per year
Upper Confidence Limit of Slope, M2+1:	22.666	ug/L	per year
Non-parametric Mann-Kendall Test for Trend			
S Statistic:	0.104		
Z test:	1.645		
At the 1.0 % Confidence Level (One-Sided Test):	None		

Location ID: MW-LF-24 Confidence Level: 0.95	Parameter Code: Parameter:	00940 Chlorides
Date Range: 05/11/2016 to 09/21/2017	Units: Percent of ND:	mg/L
Option for LT Points: 0% to <= 15% Substitute PQL		0
Theil-Sen Non-parametric estimate of the slope (One-Sided Test)		
Median Slope:	1.05	mg/L per year
Lower Confidence Limit of Slope, M1:	-3.97	mg/L per year
Upper Confidence Limit of Slope, M2+1:	3.33	mg/L per year
Non-parametric Mann-Kendall Test for Trend		
S Statistic:	0.10	
Z test:	1.64	
At the 1.0 % Confidence Level (One-Sided Test):	None	

Location ID: MW-LF-24 Confidence Level: 0.95 Date Range: 05/11/2016 to 09/20/2017 Option for LT Points: 0% to <= 15% Substitute PQL	Parameter Code: Parameter: Units: Percent of ND:	00400 Field pH S.U. 0
Theil-Sen Non-parametric estimate of the slope (One-Sided Test)		
Median Slope:	-0.176	S.U. per year
Lower Confidence Limit of Slope, M1:	-0.295	S.U. per year
Upper Confidence Limit of Slope, M2+1:	0.365	S.U. per year
Non-parametric Mann-Kendall Test for Trend		
S Statistic:	-0.848	
Z test:	1.645	
At the 1.0 % Confidence Level (One-Sided Test):	None	

Location ID: MW-LF-24 Confidence Level: 0.95 Date Range: 05/11/2016 to 07/26/2017	Parameter Code: Parameter: Units:	00951 Fluoride, total mg/L	
Option for LT Points: 0% to <= 15% Substitute PQL	Percent of ND:	0	
Theil-Sen Non-parametric estimate of the slope (One-Sided Test)			
Median Slope:	0.024	mg/L per year	
Lower Confidence Limit of Slope, M1:	-0.158	mg/L per year	
Upper Confidence Limit of Slope, M2+1:	0.130	mg/L per year	
Non-parametric Mann-Kendall Test for Trend			
S Statistic:	0.499		
Z test:	1.645		
At the 1.0 % Confidence Level (One-Sided Test):	None		

Location ID: MW-LF-24 Confidence Level: 0.95 Date Range: 05/11/2016 to 09/21/2017 Option for LT Points: 0% to <= 15% Substitute PQL	Parameter Code: Parameter: Units: Percent of ND:	00945 SO4 mg/L 0	
Theil-Sen Non-parametric estimate of the slope (One-Sided Test)			
Median Slope:	-7.353		mg/L per year
Lower Confidence Limit of Slope, M1:	-24.828		mg/L per year
Upper Confidence Limit of Slope, M2+1:	14.282		mg/L per year
Non-parametric Mann-Kendall Test for Trend			
S Statistic:	-0.313		
Z test:	1.645		
At the 1.0 % Confidence Level (One-Sided Test):	None		

Location ID: MW-LF-24 Confidence Level: 0.95 Date Range: 05/11/2016 to 09/21/2017	Parameter Code: Parameter: Units:	00515 Total Dissolved Solids mg/L
Option for LT Points: 0% to <= 15% Substitute PQL	Percent of ND:	0
Theil-Sen Non-parametric estimate of the slope (One-Sided Test)		
Median Slope:	-15.593	mg/L per year
Lower Confidence Limit of Slope, M1:	-81.659	mg/L per year
Upper Confidence Limit of Slope, M2+1:	58.186	mg/L per year
Non-parametric Mann-Kendall Test for Trend		
S Statistic:	-0.313	
Z test:	1.645	
At the 1.0 % Confidence Level (One-Sided Test):	None	

Location ID: MW-LF-25 Confidence Level: 0.95	Parameter Code: Parameter: Units:	01022 Boron, total mg/L	
Date Range: 05/11/2016 to 09/21/2017 Option for LT Points: > 50% to <= 100 % Substitute PQL	Percent of ND:	100	
Theil-Sen Non-parametric estimate of the slope (One-Sided Test)			
Median Slope:	0.000	mg/L per year	
Lower Confidence Limit of Slope, M1:	0.000	mg/L per year	
Upper Confidence Limit of Slope, M2+1:	0.000	mg/L per year	
Non-parametric Mann-Kendall Test for Trend			
S Statistic:	0.000		
Z test:	1.645		
At the 1.0 % Confidence Level (One-Sided Test):	None		

Location ID: MW-LF-25 Confidence Level: 0.95 Date Range: 05/11/2016 to 09/21/2017	Parameter Code: Parameter: Units:	00916 Ca ug/L
Option for LT Points: 0% to <= 15% Substitute PQL	Percent of ND:	0
Theil-Sen Non-parametric estimate of the slope (One-Sided Test)		
Median Slope:	6.949	ug/L per year
Lower Confidence Limit of Slope, M1:	-0.851	ug/L per year
Upper Confidence Limit of Slope, M2+1:	25.054	ug/L per year
Non-parametric Mann-Kendall Test for Trend		
S Statistic:	1.277	
Z test:	1.645	
At the 1.0 % Confidence Level (One-Sided Test):	None	

Location ID: MW-LF-25 Confidence Level: 0.95 Date Range: 05/11/2016 to 09/21/2017	Parameter Code: Parameter: Units:	00940 Chlorides mg/L	
Option for LT Points: 0% to <= 15% Substitute PQL	Percent of ND:	0	
Theil-Sen Non-parametric estimate of the slope (One-Sided Test)			
Median Slope:	0.72	mg/L per year	
Lower Confidence Limit of Slope, M1:	-0.72	mg/L per year	
Upper Confidence Limit of Slope, M2+1:	2.11	mg/L per year	
Non-parametric Mann-Kendall Test for Trend			
S Statistic:	0.94		
Z test:	1.64		
At the 1.0 % Confidence Level (One-Sided Test):	None		

Location ID: MW-LF-25 Confidence Level: 0.95	Parameter Code:	00400
	Parameter: Units: Percent of ND:	Field pH
Date Range: 05/11/2016 to 09/20/2017		S.U.
Option for LT Points: 0% to <= 15% Substitute PQL		0
Theil-Sen Non-parametric estimate of the slope (One-Sided Test)		
Median Slope:	-0.132	S.U. per year
Lower Confidence Limit of Slope, M1:	-0.220	S.U. per year
Upper Confidence Limit of Slope, M2+1:	0.000	S.U. per year
Non-parametric Mann-Kendall Test for Trend		
S Statistic:	-1.312	
Z test:	1.645	
At the 1.0 % Confidence Level (One-Sided Test):	None	

Location ID: MW-LF-25 Confidence Level: 0.95 Date Range: 05/11/2016 to 07/26/2017	Parameter Code: Parameter: Units:	00951 Fluoride, total mg/L	
Option for LT Points: 0% to <= 15% Substitute PQL	Percent of ND:	0	
Theil-Sen Non-parametric estimate of the slope (One-Sided Test)			
Median Slope:	-0.018	mg/L per year	
Lower Confidence Limit of Slope, M1:	-0.424	mg/L per year	
Upper Confidence Limit of Slope, M2+1:	0.406	mg/L per year	
Non-parametric Mann-Kendall Test for Trend			
S Statistic:	-0.124		
Z test:	1.645		
At the 1.0 % Confidence Level (One-Sided Test):	None		

Location ID: MW-LF-25 Confidence Level: 0.95 Date Range: 05/11/2016 to 09/21/2017	Parameter Code: Parameter: Units:	00945 SO4 mg/L
Option for LT Points: 0% to <= 15% Substitute PQL	Percent of ND:	0
Theil-Sen Non-parametric estimate of the slope (One-Sided Test)		
Median Slope:	27.943	mg/L per year
Lower Confidence Limit of Slope, M1:	22.059	mg/L per year
Upper Confidence Limit of Slope, M2+1:	33.741	mg/L per year
Non-parametric Mann-Kendall Test for Trend		
S Statistic:	3.440	
Z test:	1.645	
At the 1.0 % Confidence Level (One-Sided Test):	Upward	

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00515 Location ID: MW-LF-25 **Parameter Code:** Parameter: **Total Dissolved Solids Confidence Level: Units:** mg/L Date Range: 05/11/2016 to 09/21/2017 0% to <= 15% Substitute PQL **Option for LT Points:** Percent of ND: 0 Theil-Sen Non-parametric estimate of the slope (One-Sided Test) Median Slope: 42.005mg/L per year Lower Confidence Limit of Slope, M1: 15.087 mg/L per year Upper Confidence Limit of Slope, M2+1: 109.467 mg/L per year Non-parametric Mann-Kendall Test for Trend S Statistic: 1.981 Z test: 1.645

Upward

At the 1.0 % Confidence Level (One-Sided Test):

Location ID: MW-LF-26 Confidence Level: 0.95 Date Range: 05/11/2016 to 09/21/2017	Parameter Code: Parameter: Units:	01022 Boron, total mg/L	
Option for LT Points: > 50% to <= 100 % Substitute PQL	Percent of ND:	100	
Theil-Sen Non-parametric estimate of the slope (One-Sided Test)			
Median Slope:	0.000	mg/L per year	
Lower Confidence Limit of Slope, M1:	0.000	mg/L per year	
Upper Confidence Limit of Slope, M2+1:	0.000	mg/L per year	
Non-parametric Mann-Kendall Test for Trend			
S Statistic:	0.000		
Z test:	1.645		
At the 1.0 % Confidence Level (One-Sided Test):	None		

Location ID: MW-LF-26 Confidence Level: 0.95 Date Range: 05/11/2016 to 09/21/2017 Option for LT Points: 0% to <= 15% Substitute PQL	Parameter Code: Parameter: Units: Percent of ND:	00916 Ca ug/L
		0
Theil-Sen Non-parametric estimate of the slope (One-Sided Test)		
Median Slope:	7.257	ug/L per year
Lower Confidence Limit of Slope, M1:	-1.550	ug/L per year
Upper Confidence Limit of Slope, M2+1:	22.904	ug/L per year
Non-parametric Mann-Kendall Test for Trend		
S Statistic:	1.370	
Z test:	1.645	
At the 1.0 % Confidence Level (One-Sided Test):	None	

Location ID: MW-LF-26 Confidence Level: 0.95 Date Range: 05/11/2016 to 09/21/2017	Parameter Code: Parameter: Units:	00940 Chlorides mg/L
Option for LT Points: 0% to <= 15% Substitute PQL	Percent of ND:	0
Theil-Sen Non-parametric estimate of the slope (One-Sided Test)		
Median Slope:	-2.41	mg/L per year
Lower Confidence Limit of Slope, M1:	-18.58	mg/L per year
Upper Confidence Limit of Slope, M2+1:	5.82	mg/L per year
Non-parametric Mann-Kendall Test for Trend		
S Statistic:	-0.42	
Z test:	1.64	
At the 1.0 % Confidence Level (One-Sided Test):	None	

Location ID: MW-LF-26 Confidence Level: 0.95 Date Range: 05/11/2016 to 09/20/2017	Parameter Code: Parameter: Units:	00400 Field pH S.U.
Option for LT Points: 0% to <= 15% Substitute PQL	Percent of ND:	0
Theil-Sen Non-parametric estimate of the slope (One-Sided Test)		
Median Slope:	-0.256	S.U. per year
Lower Confidence Limit of Slope, M1:	-0.443	S.U. per year
Upper Confidence Limit of Slope, M2+1:	-0.081	S.U. per year
Non-parametric Mann-Kendall Test for Trend		
S Statistic:	-2.425	
Z test:	1.645	
At the 1.0 % Confidence Level (One-Sided Test):	Downward	

Location ID: MW-LF-26 Confidence Level: 0.95 Date Range: 05/11/2016 to 07/26/2017	Parameter Code: Parameter: Units:	00951 Fluoride, total mg/L	
Option for LT Points: 0% to <= 15% Substitute PQL	Percent of ND:	0	
Theil-Sen Non-parametric estimate of the slope (One-Sided Test)			
Median Slope:	0.098	mg/L per year	
Lower Confidence Limit of Slope, M1:	-0.001	mg/L per year	
Upper Confidence Limit of Slope, M2+1:	0.151	mg/L per year	
Non-parametric Mann-Kendall Test for Trend			
S Statistic:	1.608		
Z test:	1.645		
At the 1.0 % Confidence Level (One-Sided Test):	None		

Location ID: MW-LF-26 Confidence Level: 0.95 Date Range: 05/11/2016 to 09/21/2017 Option for LT Points: 0% to <= 15% Substitute PQL	Parameter Code: Parameter: Units: Percent of ND:	00945 SO4 mg/L 0	
Theil-Sen Non-parametric estimate of the slope (One-Sided Test)			
Median Slope:	-8.726		mg/L per year
Lower Confidence Limit of Slope, M1:	-22.425		mg/L per year
Upper Confidence Limit of Slope, M2+1:	2.263		mg/L per year
Non-parametric Mann-Kendall Test for Trend			
S Statistic:	-1.355		
Z test:	1.645		
At the 1.0 % Confidence Level (One-Sided Test):	None		

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00515 Location ID: MW-LF-26 **Parameter Code:** Parameter:

Total Dissolved Solids Confidence Level:

Units: mg/L Date Range: 05/11/2016 to 09/21/2017 0% to <= 15% Substitute PQL **Option for LT Points:** Percent of ND: 0

Theil-Sen Non-parametric estimate of the slope (One-Sided Test)

Median Slope: 19.810 mg/L per year Lower Confidence Limit of Slope, M1: -17.673 mg/L per year Upper Confidence Limit of Slope, M2+1: 140.089 mg/L per year

Non-parametric Mann-Kendall Test for Trend

S Statistic: 1.147

Z test: 1.645

At the 1.0 % Confidence Level (One-Sided Test): None